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EXPERIMENTS ON CANCER-PRODUCING SUBSTANCES

BY

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(From the Cancer Hospital Research Institute, London.)

(With Special Plate.)

In a previous paper¹ the production of cancer by a mixture of compounds formed from isoprene

(2 methyl butadiene $\text{CH}_2 = \text{C} - \text{C} = \text{CH}_2$)



at about 820° C. was recorded. In the present paper further experiments on the formation by heat of cancer-producing materials are described. The nine products tested were obtained from the following sources at, approximately, the temperatures* stated: (1) acetylene (700°), (2) acetylene (800-900°), (3) California petroleum (880°), (4) isoprene (700°), (5, 6, and 7) Durham Holmside coal (450°, 560°, and 1,250°), (8) human skin (920°), (9) yeast (920°).

Technique

These substances, with the exception of the coal, were exposed to heat in the manner described in the earlier paper.¹ A silica tube about 36 in. by 1 in. is filled with pieces of porous plate and heated in a gas furnace; the temperature is ascertained by means of a nichrome thermocouple inserted into an inner silica tube which reaches nearly to the middle of the larger one. When the temperature required has been reached, the gas liquid or vapour derived from solid materials is passed through the heated tube and the condensable products collected in water-cooled receivers. Further details are given under "Skin Tar" below. By this method the temperature at the point of the thermocouple is measured very accurately, but it is not possible to control the temperatures to which the vapours may be exposed in all other parts of the tube; hence the temperatures stated in this paper are to be taken as approximate only.

The tarry products were applied twice weekly to mice (generally 100 for each test) in the interscapular region.

ACETYLENE TAR

A compound even simpler than isoprene—namely, acetylene $\text{HC}\equiv\text{CH}$ —can be used as a source of cancer-producing compounds. Berthelot in 1866 showed that a tarry material containing benzene is formed when acetylene is heated; this synthesis of benzene is, of course, of great importance in the history of organic chemistry. He says:

'En chauffant l'acétylène pur, dans une cloche courbe sur le mercure à la température de ramollissement du verre vert, on voit ce gaz diminuer peu à peu de volume. En même temps des produits goudronneux apparaissent. Dans une expérience au bout d'une demi-heure 97 centièmes de l'acétylène primitif avaient disparu 3 centièmes seulement subsistant. Après une suite fastidieuse de manipulations méthodiques j'ai obtenu en quantité suffisante un liquide jaunâtre que j'ai soumis à une distillation fractionnée. J'ai isolé toute une série de carbures d'hydrogène polymères de l'acétylène (benzène, styrène, hydride de naphthalène, hydride d'anthracène, carbures fluorescents, etc.). Le benzène forme près la moitié du produit total.'

Recently Zelinski² has shown that these condensation products of acetylene can be prepared in much greater quantities if the gas is passed through a heated tube filled with wood charcoal, about 70 to 74 per cent. of the acetylene is then converted into "goudron acétylénique." He obtained by this method as much as 180 grams of liquid in eleven hours at 640° to 650°, the compounds identified were benzene, toluene, paraffene, styrol, indene, naphthalene, fluorene, and anthracene.

These "produits goudronneux" of acetylene, discovered by Berthelot sixty years ago, have considerable cancer-producing power (Figs 1 and 2). In the series of experiments described here acetylene, generated in the ordinary way from calcium carbide, was purified by bubbling through watery solutions of (1) copper sulphate and sulphuric acid (two flasks), (2) mercuric chloride and hydrochloric acid, and (3) caustic soda, and then passed into the silica tube. The tube was charged in the earlier experiments with wood charcoal as in Zelinski's method, the charcoal was first extracted with ether to remove any traces of wood tar which might possibly be present. Later it was found that porous plate could be used, and with the latter material stoppage of the tube by deposition of carbon from the gas occurred much less frequently. The tar is a mobile dark brown liquid smelling of benzene, the yield in these experiments was generally not more than 4 or 5 c.c. an hour. Two different products made at 700° and at 800° to 900° respectively were used.

Acetylene Tar (700°)—The two first tumours appeared on the 86th day, the first section showing a malignant growth was obtained on the 153rd day (Fig 1). By the 258th day 15 tumours had been obtained of these, 13 were undoubtedly cancers in which the epithelium reached or penetrated the panniculus carnosus, the other 2 were papillomata with some downgrowth.

Acetylene Tar (800° to 900°)—The first tumour appeared on the 105th day. This tar was certainly less effective than the 700° tar, unfortunately there was a high mortality in the 800° to 900° series which made comparison more difficult. On the 125th day the 700° series consisted of 28 mice, of which 13 bore tumours, and the 800° to 900° series of 14 mice, of which only 2 bore tumours. The experiment was not continued after the 216th day as it was clear that the 800° to 900° tar was inferior to the other, this series of mice, and another pair fed subsequently with tar made at the same temperature, yielded in all 8 cancers and 6 papillomata with downgrowth (Fig 2). Altogether, in these and some other series of mice to be reported later, 30 cancers have been produced with three different preparations of acetylene tar. This acetylene tar resembles isoprene tar in the comparative simplicity of its composition: elements other than carbon and hydrogen can be present in it in traces only. It therefore offers for the study of cancer production a material less complex than coal tar, for in the latter oxygen, nitrogen, and sulphur are present also. The samples of acetylene tar prepared hitherto seem to be less active than isoprene tar (820°) in causing the growth of tumours, but the former has the great advantage of being easier to prepare in quantity. A chemical study of acetylene tar is now in progress in this Institute.

* All temperatures referred to in this paper are on the centigrade scale.

HEATED PETROLEUM
In this experiment a petroleum having no cancer producing power was found to acquire this power when heated

The Californian petroleum used had been tested in the unheated state by Dr. Leitch, and found by him to have no cancer producing action¹, in his experiment 100 mice were used, and although the painting was continued until the 515th day, when the first mouse died, no tumours were obtained. A sample of this oil was then passed at the rate of 12 to 15 ccm an hour over porous plate in the silver tube at about 880° in a current of hydrogen, the product is darker and more viscous than the original oil, and smells of benzene. The first tumour appeared on the 67th day after nineteen applications of this material, the first sections showing malignancy were obtained on the 206th day. The experiment was not continued after the 206th day, when 10 mice, all bearing tumours, remained alive. Altogether 15 tumours were examined microscopically, of these, 11 were certainly malignant, for the downgrowing epithelium reached or penetrated the primum nucleus carnosus, and the remaining 4 were papillomata. The importance of heat in the formation of cancer-producing substances is shown very clearly by this experiment. In the petroleum industry the changes brought about in the oil by heating, including the conversion of aliphatic into aromatic compounds (anthracene, phenanthrene, pyrene, etc.), are well known, and have been the subject of many patents. The experiment shows also that the products of petroleum most dangerous to workmen must be any strongly heated distillation residues, two out of the few fully recorded cases of petroleumi cancer in the literature² occurred in men exposed to such materials.

ISOPRENE TAR (700°)

The isoprene tar described in a previous paper¹ was made by Staudinger, Lindle, and Heiold, who first prepared such material, and found considerable chemical differences between this prepared from isoprene at 700°, and at 800°. At 820°, the former consisted chiefly of unsaturated, the latter chiefly of saturated aromatic compounds. One might expect, then, that a comparison of the cancer-producing power of two such tars would indicate the class of compound which causes the growth of the tumours. Accordingly, an isoprene tar was made at 700° to 720°, the technique being in other respects the same as that of the earlier preparation at 820°. The 700° to 720° tar differed from the 820° tar in being more liquid, and in retaining a faint smell of isoprene, in causing new growth it was certainly inferior. The rates of production of tumours by the two tars are compared in Table I.

TABLE I—*I of Isoprene Tars (700° and 820°)*

	Number of Mice Alive—			Percentage with Tumours
	With Tumours	Without Tumours	Total	
Day 87 Isoprene tar 700°	5	41	46	11
	14	27	41	35
Day 132 Isoprene tar 820°	3	16	19	16
	1	7	8	75
Day 187 Isoprene tar 820°	3	15	18	17
	19	1	20	95

TABLE II—*Tars from Durham Holmside Coal*

known time steps (450° 560° 1250°)
The tar was heated in the Amsterdam gasworks and found that the tar produced cancer more than the tar from the Rotterdam gasworks. The tar from the Rotterdam gasworks was heated at a lower temperature and contained a smaller amount of paraffins and phenol. The tar from the Rotterdam gasworks was heated at a lower temperature and contained a smaller amount of paraffins and phenol. The tar from the Rotterdam gasworks was heated at a lower temperature and contained a smaller amount of paraffins and phenol.

not give quite conclusive results. But it is known that different coals may yield tars differing considerably in chemical composition (see, for instance, Boin ten³), in such experiments it is therefore necessary that the tars compared should be derived from the same sample of coal. Through the kindness of the Fuel Research Board and of the staff of H.M. Fuel Research Station at Greenwich, some material very well fitted to the object in view was obtained—namely three tars made from Durham Holmside coal at 450°, 560°, and 1250°, the list of these would correspond most nearly to the ordinary gasworks tar.

TABLE II—*Tars from Durham Holmside Coal*

Day	450°		560°		1250°	
	With Tumours	Without Tumours	With Tumours	Without Tumours	With Tumours	Without Tumours
138th	1	0	11	55	11	52
178th	4	0	14	30	18	23
230th	2	47	10	19	10	10
290th	5	22	11	6	6	5
373rd	5	6	4	—	2	1

The experiment was stopped on the 373rd day

The results given in the table show that the 450° tar was much inferior to the two others in tumour production. Thus on the 230th day the tumour bearing mice made up 50 per cent of the 1,250° series, 33 per cent of the 560° series, and only 4 per cent of the 450° series. Seven tumours from the 450° mice were examined microscopically, there was little or no downgrowth in six of these in the seventh the epithelium reached the primum nucleus carnosus, and must be regarded as malignant in character. From each of the two other series 6 epitheliomata were obtained, the remaining tumours from these two series being, in all, 15 papillomata, of which 13 showed downgrowth. The comparison of such batches of mice is subject to many sources of error, but this experiment seems to demonstrate (1) that the 450° tar is much less active than the other two, and (2) that the 1,250° tar is somewhat more active than the 560° tar. The results, then, indicate that, when coal is carbonized, (1) the cancer-producing agent is being formed in very small amount even below 450°, (2) a rapid increase in its formation takes place between 450° and 560° and (3) this increase continues, but at a much slower rate from 560° to 1,250°, in other words, the curve expressing the formation of this agent with rising temperature ascends at first very steeply from the region about 450° and proceeds much less steeply from 560° to 1,250°.

TARS DERIVED FROM YEAST AND FROM HUMAN SKIN

Until recently all the cancer producing substances available for experiment have had their origin in more or less remote geological periods, they have been derived from the coal or oil shales of the Carboniferous period, from the Oligocene lignite beds, or from petroleum bearing strata ranging from the Devonian to the Miocene. But is it necessary to go so far back into the past for such materials? The laboratory product isoprene is actually derived, by way of turpentine oil or caraway oil, from plants now living. Experiments were carried out to ascertain whether other plants and animals living at the present day could yield compounds which produce cancer.

The two materials selected for the first experiments were (1) yeast representing the unicellular organisms in which no malignant growth can occur, and (2) human skin, including the epidermis in which cancer may arise naturally.

Skin Tar

Human skin was obtained from amputated breasts and limbs and from the margin of the incision at autopsies, in subjects affected with cancer skin having any appearance of infiltration with the growth was rejected. The skin was freed as far as possible from adipose tissue cut into small pieces and dried in a vacuum desiccator over calcium



FIG 1—Acetylene tar (700°) 177th day Invasion of voluntary muscle ($\times 150$)



FIG 2—Acetylene tar (800°-900°) 216th day Two nodular epithelioma living in voluntary muscle ($\times 100$)

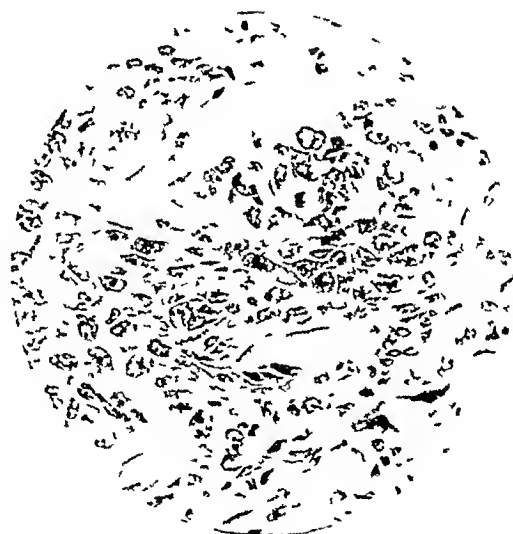


FIG 3—Heated Californian petroleum (830°) 170th day Invasion of voluntary muscle ($\times 350$)



FIG 4—Skin tar (920°) Mouse on 20th day after 58 applications Section showed epithelioma

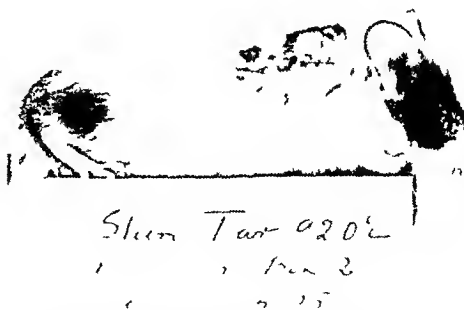


FIG 5—Skin tar (920°) Mouse on 216th day Section showed downgrowth just reaching the panniculus carnosus

100

F 100

chloride. Microscopic sections of such skin before drying show that the epidermis may occupy as little as one fiftieth of the area of the section, all the rest consists of the fibrous tissue of the dermis. Hence it may be that only a very small fraction of the tar obtained from such skin is derived from the epidermis. A current of hydrogen, purified by passing through solutions of potassium permanganate and sulphuric acid, silver nitrate, and caustic soda was passed through a silica tube 36 in. in length, of which the proximal one third was filled with dried skin (about 45 grams) and the distal two thirds with porous plate, the temperature near the middle of this distal portion was read by means of the thermocouple. The temperature was first raised to the degree selected (920° or 780°) and heat was then applied very gently to the proximal portion of the tube containing the skin which was thus decomposed slowly (45 grams of dried skin in six to seven hours) the volatile products passed over the hot porous plate and the condensate (solid ammonium carbonate and carbon watery fluid and tar) was collected in cooled receivers, and subsequently shaken with water and ether. The ethereal layer was shaken twice with water to remove ammonia and a part of the pyridine the ether evaporated in *vacuo*, and the black oily residue was applied to a series of 50 mice twice weekly.

Skin Tar (920°)—The first papilloma appeared on the 93rd day, and the first specimen showing malignant growth microscopically was obtained on the 128th day. On the 183rd day 13 out of the 16 mice alive bore tumours. In all, at the time of writing (233rd day) sections of 4 cancers and of 5 tumours in which the downgrowth reaches, or nearly reaches, the panniculus carnosus, have been obtained, while of the 8 mice alive 5 bear tumours which have the appearance of malignancy (Figs 4 to 9).

[Note added at Correction of Proof—At the present date (June 22nd, 1925) total numbers of tumours produced are

	Cancers	Papillomata
Acetylene tar	36	15
Skin tar (920°)	12	8
Yeast tar (920°)	3	2

These experiments with skin tar seem to be the first in which a cancer-producing material has been obtained by any treatment of human tissues. One cannot, of course, assume that these cancers of the skin produced by a tar derived from skin are in any way more closely allied in origin to the naturally occurring epitheliomata than are cancers produced by a tar derived from the floor of the Coal Age, at the present stage of the investigation one cannot even form any opinion upon this point. However, it is not wholly impossible that the living skin may be capable of forming very slowly substances which, when required in bulk and rapidly, can *in vitro* be produced from skin only at a red heat, many instances are known of the ease with which the body or its enzymes bring about chemical changes which otherwise demand strong reagents or high temperatures—for example, the hydrolysis and oxidation of fats and proteins. In making cancer-producing material from skin we expect to obtain a good supply of it in a few hours, and must hence use very vigorous methods, it is possible that the body at its own temperature takes months or years to produce a quantity of some substance sufficient to influence the growth of a few cells only.

Yeast Tar (920°)

Compressed yeast was treated in exactly the same manner as the human skin, the products in the receivers contained more water and less ammonia than did those from the skin, but the two tars showed no obvious difference. Most unfortunately there was a high death rate among the mice painted with 920° yeast tar, this makes difficult any exact comparison with the tar made from skin at the same temperature, but there is no doubt that the yeast tar was the slower in action. Thus, on the 182nd day, 11 out of the 18 mice in the skin series, and only 1 out of the 9 mice in the yeast series, showed tumours. The first tumour was situated underneath the epidermis, it was noticed on the 178th day, and the mouse was killed four days later. The tumour (Fig 10) was an epithelioma. Sections from another mouse (229th day) showed a tumour with downgrowth approaching the panniculus carnosus. At the time of writing (238th day) 3 out of the original 50 mice are alive, all bear tumours, and of these one is almost certainly malignant.

DISCUSSION

1 It may be said that these pyrogenous materials derived from acetylene, isoprene, petroleum, yeast, and skin produce cancer simply because they are all "irritants", and that the multiplication in the laboratory of instances of "chronic irritation" is not required. To apply thus to a substance, after it has been shown to produce cancer, the term "irritant" gives an appearance of explanation which is illusory, we only know that the substance produces cancer. There seems to be a tendency at the present time to state that a substance such as soot gives rise to cancer because it is an irritant, and at the same time tacitly to regard it as an irritant simply because it gives rise to cancer, thus circular treatment of the matter is of no value at all. Would anyone have thought of singling out soot as an irritant if its carcinogenic power had happened to remain unknown?

Again, the undoubted irritants which do not produce cancer are so numerous that the same term cannot usefully be applied to define the action of other agents, some of them not obviously irritating in character, which do produce cancer. Thus blast-furnace tar, and some petroleumums which give negative results in mice, do far more visible damage to the skin than acetylene tar or isoprene tar. Chlorinated acetylene tar is much more irritating than the original tar, but the carcinogenic power has been greatly reduced. Other irritants which have given negative results on the mouse's skin are acridine, the effect of which on the human skin is well known, and the product obtained by combining ethylene with phenyl magnesium bromide in the presence of nickel chloride. Other instances could be taken from the industrial diseases of the human skin.

It seems, then, that the irritation which causes the growth of cancer must be of a special kind or must act upon some special element in the tissues.

2 No invariable relation has been found between the temperatures at which these various materials are formed and their comparative activity in producing tumours. Thus the three tars made from coal at 450°, 560°, and 1,250° show an ascending order of potency, the 820° isoprene tar is more active than the 700° tar, and experiments still in progress indicate that the 920° skin tar will prove more effectual than the 780° tar. In all these cases the higher temperature gives the more active product. But, on the other hand, in the case of acetylene, a low temperature (700°) gives a product more active than that produced at 800° to 900°, possibly at the latter temperature a larger proportion of the gas is decomposed into carbon and hydrogen. The errors inherent both in the measurement of the temperature to which the substance is exposed, and in the comparison of different series of mice, take effect upon such experiments, and no general conclusion on the influence of temperature can be drawn at present. But the three sets of observations on products from (1) Durham Holmside coal, (2) Californian petroleum, and (3) isoprene, agree in indicating the importance of that range of temperature where the formation of aromatic compounds is known to be in progress.

3 The idea suggests itself that acetylene may be a decomposition product common to coal, mineral oils, yeast, skin and isoprene, and that the cancer-producing material obtained from these very diverse sources is actually formed from acetylene by the synthetic process discovered by Berthelot. One would, then, expect a tar made from acetylene itself to be more active than any other, but this has not proved to be the case. Probably the yield of cancer-producing substance depends largely upon catalytic reactions which cannot as yet be controlled. Further experiments upon products from other tissues and tissue constituents are in progress in this Institute.

SUMMARY

1 Cancer has been produced in mice by substances obtained by heating (1) acetylene, (2) isoprene, (3) yeast, (4) human skin, to temperatures ranging from 700° to 920°. Acetylene is the simplest organic compound from which a carcinogenic material has so far been obtained.

2 A petroleum which produced no tumours of any kind in mice in a prolonged experiment showed very active

A chemical precipitation reaction is described by Kahn ¹⁸ to which class Botche's reaction also belongs ¹⁹. The latter has been shown by me to have little diagnostic value ^o. The rate of sedimentation of red corpuscles has been used for the diagnosis of cancer by Høffgaard ¹.

The flocculation method was first used by Weil and Braun ². They noted the flocculating power of cancer scrums upon leathin solution in 17 cases. During the course of this work Roffo ²³ has published a flocculation reaction for the diagnosis of malignant tumours based upon the Sachs Georgi reaction but the details of his method are not very definite.

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Remarks

BY

The value of accurate diagnosis of malignant disease, especially in early or latent cases, by a serological method does not require emphasis. Many attempts by various methods have been directed to this end, hitherto without conspicuous success, although the occurrence of profound changes, such as anaemia and cachexia, in the later stages of malignant disease would suggest the possibility of profound changes in the antecedent changes in the serum. Murray has recently brought forward some evidence of a toxic reaction evoked at one site in an animal which he suggests that there is some systemic constitutional change. If such be the case then it is not improbable that the medium of distribution of the locally produced toxin is the blood. On these grounds a serological method would appear a priori to be practicable. Experiments carried out by me in the laboratory of the Cancer Research Committee have shown that experiments carried out by me in the laboratory of the Cancer Research Committee have shown that

On these grounds a serological
reaction would appear *a priori* to be practicable
in experiments carried out by me it was found that
fixative properties often showed antigen in complement
in the urine. It seemed possible that a method
dispens with the colloidal flocculation reaction which
Moreover the fact that the Sachs (corg.) antigen employed
in Prof. H. field's laboratory was in gave a number
of positive reactions with serum from cases of carcinoma,
aid to indicate the possibility of obtaining a specific
precipitation reaction for malignant disease

The compound has been largely used to discover antibodies in the serum. This method was first used by Sato and Tera in 1923 and they were followed by many workers on this method. The reaction of the serum of cancer subjects and the reaction of the serum of normal subjects to the precipitin reaction of the serum of cancer subjects have been described by Weil and his associates. The reaction of the serum of cancer subjects and the reaction of the serum of normal subjects to the precipitin reaction of the serum of cancer subjects have been described by Weil and his associates. The reaction of the serum of cancer subjects and the reaction of the serum of normal subjects to the precipitin reaction of the serum of cancer subjects have been described by Weil and his associates.

(a) A 1 per cent alcoholic solution of cholesterol is prepared by dissolving 1 gram of cholesterol (Kahlbaum) in 100 cc of absolute alcohol in a glass stoppered bottle.

(b) Sterile normal (0.85 per cent) saline. The solution is made with distilled water and should be free from calcium and

3 Apparatus

(a) The trays flocculation used in the Sigma are those They are sterilized by dry heat

(b) The dropping apparatus for preparing the saline emulsion of antigen is shown in the drawing (Fig 1) It consists of a Win cluster flask tightly corked with a large rubber stopper through which pass (1) The tube the end of a Dr. The inner end is

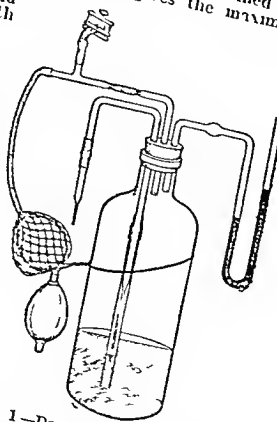


Fig 1—Dropping apparatus for preparing saline emulsion of ery tube to the outer end of dropping pipette is attached, below the level of the saline

in the Winchester (2) A tube to which a Higginson's syringe is attached for raising the air pressure inside the flask (3) A mercury U tube, which registers the air pressure inside the flask. The apparatus is very simple, and has been in constant use without attention for several years. Alternatively the Drejer Ward dropping apparatus may be used.

(c) Two water baths, one at 55° C for incubation of the serums, and an open one at 37° C (kept at constant level) for incubation. A simple constant level bath can be made by inverting a Winchester bottle full of water held in the rings of a retort stand so that the cork, which has a fairly wide hole through it, just meets the level of the water in the bath.

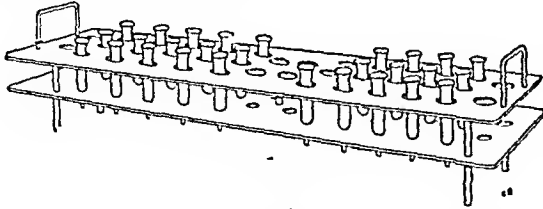


FIG. 2.

(d) An agglutinoscope for reading the results is useful. The one I have used consists of a wooden box, which contains a strip of light illuminating a slit in front of which is a tray with holes for the agglutination tubes.

4 Test Serums

The serums were obtained by venipuncture at the bend of the elbow with sterile precautions. The serum is allowed to stand in contact with the clot in the ice-chest overnight. It is then pipetted off, centrifuged free from red cells and heated at 55° C for half an hour. At first the serums were heated at 55° C for one hour but the shorter period has been found equally satisfactory. The serums after heating are not tested for twenty-four hours during which time they are kept in the ice-chest. Anomalous results were sometimes found if the serums were tested immediately after heating. This has also been found to be the case with the Sachs Georgi reaction (Browning and Macenzie²⁵).

Preparation of Saline Emulsion of Antigen

Immediately before use 0.1 c.c. of 1 per cent cholesterol (Krichbaum) is added to each 1 c.c. of diluted antigen. 1 c.c. of cholesterolized antigen is then placed in a graduated cylinder and saline is delivered drop by drop from the dropping apparatus from a height of 34 cm at a rate giving a dilution of 1 in 13 in one and a half minutes. The antigen is always freshly prepared, and is translucent faintly bluish and opalescent, and only slightly turbid. Only one dilution of antigen is used. Prepared in this manner the saline emulsions give the same degree of flocculation with a positive serum on successive days.

Arrangement of Test

Only four flocculation tubes are used for each test serum, the same serum dilutions are put up as for the Sigma reaction, omitting only the first tube containing 20 drops of pure serum. The 1 in 20 dilutions of serum were at first put up in addition, but it was found that even normal serums sometimes showed flocculations in the last tube of this dilution, and that some serums tended to flocculate in the last two tubes. As a routine, therefore, four serum dilutions have been put up, containing 10, 5, 2, and 1 drops of serum respectively, and 0, 5, 8, and 9 drops of normal saline. To the four tubes are added 15 drops of the saline emulsion of antigen. A control tube containing 10 drops of saline and 15 drops of antigen is put up, together with positive and negative controls. The pipette is washed with distilled water, alcohol, and ether, and dried, after use for each test serum. The tubes are shaken in order from right to left, and are incubated for three hours at 37° C in a constant-level water-bath. The water level is maintained at half the level of the fluid in the flocculation tubes. The trays are then stood overnight (about eighteen hours) at room temperature (about 18 to 22° C).

Readings

The tests are read after three hours, and again at the end of eighteen hours. With strong positive serums there is good flocculation at the end of three hours, which is much increased by the further period at room temperature. A weak flocculation, showing only traces at the end of three hours, is then easily visible. The flocculi are generally much coarser than in the Sigma reaction, and are visible with the naked eye without the use of a lens. They appear to be lighter, and do not sink to the bottom of the tube so readily as in the Sigma reaction.

"S++" indicates a degree of flocculation in which only a few large clumps remain in the fluid, or have sunk to the bottom of the tube. When there are coarse granular flocculi evenly distributed in the fluid and easily visible to the naked eye, this is taken as "S" reading. A "T₁" reading is only just visible to the naked eye. Turbidity less than this, visible only with a lens, may be neglected, as normal serums may give this degree of turbidity. Unless one of the four tubes shows an "S" reading the reaction is considered to be negative.

Source of Material

The serums were obtained chiefly from patients undergoing either in-patient or out-patient treatment at this hospital. In the case of malignant disease the clinical diagnosis is, in the majority of cases, been controlled by operation, microscopic sections, or post-mortem examinations. In the absence of such positive evidence, where there was doubt about the correctness of the clinical diagnosis the cases have been considered separately.

The control serums have been obtained from normal healthy individuals, male and female, and from patients with various diseases other than malignant undergoing treatment in this hospital. I am also indebted for control serums to the Central Laboratory, Ministry of Pensions, obtained from patients free from evidence of cancer.

In order to obtain a just appreciation of the value of such a reaction the elimination of bias in the readings is of the utmost importance. To prevent such bias the serums were numbered, the tests were put up, and the readings made without knowledge of the source from which the serums were derived. Only then were the results compared with

the information as to the clinical characters of the case from which the serum was obtained. Doubtful border-line readings have been classed as incorrect.

RESULTS

By this method 500 serums have been examined by three separate antigens. These antigens were prepared in a similar manner, but were derived from three separate sources. All were prepared from cases of carcinoma of the breast by the above method. The

first two were used undiluted and received only 0.05 c.c. of 1 per cent cholesterol per 1 c.c., the third was diluted 1 in 4 with absolute alcohol and received 0.1 c.c. of 1 per cent cholesterol per 1 c.c.

The results obtained are as follows. In 500 cancer and control cases a correct result was obtained in 75 per cent. Out of 239 cases of malignant disease the result was correct in 170 (71 per cent). In 261 controls of all kinds comprising healthy individuals and others with various diseases, 204 were correct (78 per cent). These results have been analysed according to the site or organ affected by the malignant process, to discover how the reaction is affected, and whether any light is thrown on it thereby.

Since the foregoing figures were compiled a further 125 serums have been examined by the third antigen, with correct results in 81 per cent of cases of malignant disease, and 82 per cent correct in the controls.

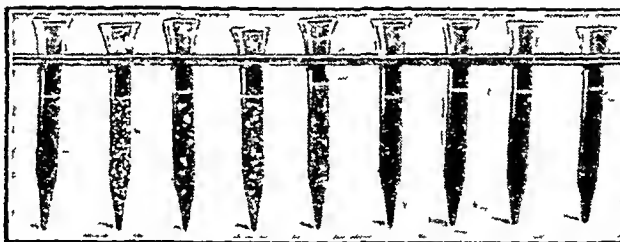


FIG. 3.—Tube 1 Saline control. Saline 10 drops + antigen 15 drops. Tube 2 Serum 10 drops + antigen 15 drops (dilution 1 in 25). Reading S+. Tube 3 Serum 5 drops + saline 5 drops + antigen 15 drops (dilution 1 in 52). Reading S+++ Tube 4 Serum 2 drops + saline 8 drops + antigen 15 drops (dilution 1 in 13). Reading S++ Tube 5 Serum 1 drop + saline 9 drops + antigen 15 drops (dilution 1 in 26). Reading S. Typical reaction with a cancer serum. Tubes 6, 7, 8 and 9 similar quantities. Completely negative reaction with a non-cancer serum.

TABLE I—Malignant Disease

Site of Disease	Number of Cases	Number Correct	Percentage Correct	Evidence Accepted of Malignancy		
				Clinical	Post mortem	Microscopical
A CARCINOMA						
Buccal cavity (excluding tongue)	29	20	70.0	18	—	6
Tongue	8	5	62.5	4	1	3
Oesophagus	5	4	80.0	2	3	3
Stomach	12	9	75.0	6	2	5
Colon	7	6	86.0	4	1	2
Rectum	35	19	54.0	10	6	25
Adrenals	2	1	50.0	—	2	2
Thyroid	1	1	100.0	1	—	1
Intra abdominal (primary site unknown)	5	4	80.0	4	—	—
Bladder and genital primary (male)	14	12	86.0	9	1	4
Breast	50	29	58.0	12	—	35
Cervix uteri	39	34	87.5	19	2	14
Vulva and vagina	6	2	33.0	—	—	6
Skin (epithelioma head and neck)	9	9	100.0	4	—	5
	222	155	70.0	93	18	112
B SARCOMA						
Lung and thorax	4	3	75.0	4	—	—
Bone—						
Pelvis	4	4	100.0	2	2	2
Femur	3	2	66.0	1	—	2
Foot	1	1	100.0	—	—	1
Lymphatic glands	2	2	100.0	2	—	—
	14	12	86.0	9	2	5
C LYMPHADENOMA						
	3	3	100.0	—	1	3
Total	239	170	71.0	102	21	120

Carcinoma

With all three antigens a high percentage of positive results is obtained with carcinoma of the alimentary tract. The high percentage shown by oesophageal (80 per cent) and stomach growths (75 per cent) is also noteworthy, as these are "inaccessible," and visible only by indirect methods. In cases of growths of the rectum positive results are much less numerous, and are amongst the lowest recorded (54 per cent). This is rather striking, and suggests that it may be due to the local character of the growth at this site. The stage in which most of the rectal cases were seen was early, with little or no spread. This was determined at operation by Miles's abdominal perineal method, and by subsequent examination of the parts removed. Where there were visceral deposits a positive result was often obtained.

Another striking feature is the low percentage of successes (58) given by breast cancers. This is all the more remarkable when one considers that all the antigens were derived from breast tissue. Here again it seems possible that the size and local character of the growth is the explanation, since a positive result was generally obtained if metastases were present.

These results contrast strongly with those obtained with carcinoma of the cervix and body of the uterus, in which the percentage of successes was strikingly high (87.5) and the flocculations were usually very well marked. The reason for this is evident, as most were advanced inoperable cases, though a few were operable. It may be mentioned that out of five negative reactions three were doubtful cases of carcinoma.

Bladder cases (86 per cent) and epithelioma of the skin (100 per cent), though not numerous, gave satisfactory results. In general, squamous-celled growths appear to react better than growths of glandular origin. Out of 222

cases of carcinoma of all sites and varieties 155 gave a correct result=70 per cent correct.

Size of Growth—With reference to what was said above concerning the size of the growth in the breast influencing the reaction, further evidence is afforded by rodent ulcers out of four cases, three, which were of very small size, gave negative result, while the fourth was very extensive and gave a strong positive reaction.

Sarcoma

The antigens reacted well with the serums of cases of sarcoma, the results showing that in 14 cases of all varieties, 12 gave a positive result=86 per cent correct. Sarcoma at all sites reacted equally strongly. This may be due to the fact that the blood stream is more intimately connected with, and therefore affected by, the sarcoma.

Three cases of lymphadenoma (Hodgkin's disease) were investigated, and all three gave strong positive flocculations. If the lymphadenoma are classed among the neoplasms of the lymphatic system, with Mallory and the American school this result may be regarded as correct, but if they are to be classed with the infective granulomata, the result would be incorrect. In any case, blood changes in the disease undoubtedly occur.

TABLE II—Controls

Type	Number of Cases	Number Correct	Percentage Correct	Evidence of Non-malignancy		
				Clinical	Post mortem	Microscopical
1 Non-malignant tumours	19	13	68.5	5	—	14
2 Healthy individuals	21	20	95.0	21	—	—
3 Syphilitic disease	15	11	73.0	15	—	—
4 Medical conditions	111	86	77.5	59	3	4
5 Surgical conditions (non-neoplastic)	95	74	78.0	62	1	28
Total	261	204	78.0	162	4	46

1 The non-malignant tumours, comprising papillomata, fibromata, adenomata, ovarian cysts, fibroadenomata, and an enchondroma, have been classed among the controls. The results obtained with them are rather difficult to assess. On the one hand, a few of the large tumours, such as fibroids of the uterus and adenomata, have given weak positive reactions. These have been classed as incorrect reactions. This accounts for the rather low figures of correct results (68.5 per cent). A large supporting ovarian cyst, discovered at operation, gave a strong positive reaction, as did a case of fibroids with an ovarian dermoid cyst. The papillomata, which were of small size, were uniformly negative.

2 Twenty-one healthy individuals gave completely negative results, usually without a trace of flocculation, except in the case of one female, whose serum gave a weak positive. A second sample of this serum at a later date gave a negative result. (As additional controls, serums from individuals suffering from various diseases other than neoplastic have been examined. These have been grouped for convenience into medical and surgical conditions.)

3 In view of the various flocculation reactions for syphilitic disease, the results obtained with the present reaction in the case of serums from syphilitics are of special interest, and have therefore been extracted from the general body of the results obtained in non-neoplastic diseases. It will be observed that in 15 cases of syphilitic disease of all stages except the primary, the reaction was negative in 11 (73 per cent of cases). These cases were all free from evidence of new growth. Where, however, new growth was present in conjunction with syphilis, as in certain cases of carcinoma of cervix or tongue showing a positive Wassermann reaction, a positive reaction was obtained. It is evident, therefore, that the reaction is different in character from the flocculation reactions for syphilitic diseases—a subject which receives consideration below.

4 The heading "Medical conditions" includes alimentary disorders, cardiac and blood diseases, diseases of the ductless glands, skin lesions, tuberculosis and other pulmonary conditions, and, in addition, indefinite or trivial disorders in patients attending the out-patient department, serums sent from outside sources, and the like. All were from patients considered free from malignant disease. In the alimentary disorders, gastric ulcer and dyspepsia, a high percentage (90) of correct results was obtained. Active pulmonary tuberculosis or other tuberculous conditions gave a rather large number of false positives. Over the whole series of 111 cases, comprising a great variety of medical disorders, 77.5 per cent of the cases gave correct negative results. Of the negative controls, 59 were definitely free from malignant disease on clinical grounds, 3 were verified by *post-mortem* and microscopic examination, and 1 by microscopic evidence only—a total of 63. Of these 63 definitely non-malignant cases negative results were obtained in 76 per cent.

5 Among the more frequent surgical diseases, gastric and duodenal ulcers, the majority of which were confirmed by operation, gave a good proportion of correct results (86 per cent). Breast cases also showed 86 per cent. One case of surgical tuberculosis (spinal cases) gave a strong false positive. Surgical conditions show the same total percentage of correct results as medical conditions (78 per cent). Of the above cases 80 were verified as non-malignant either by operation or direct examination, 28 of these being confirmed microscopically. In 5 cases the evidence was lacking. Among the 80 verified cases, 73 gave a correct negative result (81 per cent).

Evidence of Malignancy

Of the 239 cases regarded as malignant, evidence of malignancy was definite in 222, or 93 per cent. Of these, microscopic examination was carried out in 120, or 50 per cent of the cases, and *post-mortem* examination with microscopical diagnosis in 21. The clinical evidence was regarded as undoubted in 102. These were confirmed either by operation or by direct examination in the case of accessible growths. In these 222 definite cases of carcinoma, positive reactions were obtained in 158, or 71 per cent correct. This is about the same percentage as is obtained by the Wassermann reaction in untreated cases of syphilis of all kinds.*

Evidence of Non-malignancy

Of the 261 cases regarded as non-malignant 208 were verified, 162 upon clinical grounds, and 46 by microscopical and *post-mortem* evidence. Of these 208 cases, 164 gave a correct negative result (79 per cent).

Incorrect Reactions

A *False negative* was given by 69 of the 239 cases of malignant disease (28.8 per cent). Of the 222 verified cases 62 gave negative or doubtful reactions (28 per cent).

B *False Positives*.—Of 25 serums among the medical cases giving false positive reactions, no fewer than 14 (56 per cent) were derived from outside sources, and of the 21 false positives* given by serums from surgical cases 4 were from outside sources—13 in all. Concerning these 18 serums no satisfactory information could be obtained, though they were all believed to be from non-malignant cases. The conditions under which the serums had remained after withdrawal of the blood, and the lapse of time after withdrawal, were unknown. These conditions may have militated against a correct result.

Of the remaining 28 medical and surgical cases, 10 showed only weak or doubtful positive reactions. These have been placed in the scale against the reaction.

Value of Reaction in Diagnosis

In certain supposed malignant cases the flocculation reaction proved more accurate than the clinical diagnosis, for in no fewer than 34 cases its correctness was afterwards verified by operative, *post-mortem*, or microscopical examination. On the other hand, in 17 cases the reaction

supported the erroneous clinical diagnosis of malignant disease. In supposed non-malignant cases a positive reaction was obtained in 5 cases, which were subsequently proved to be malignant. On three occasions the reaction was incorrect.

Influence of Removal of Growth

Removal of a growth, provided that metastases are absent, appears to cause a diminution or actual inhibition of flocculation in some cases, though this has not occurred in all. Thus, in one case of carcinoma of the breast which gave a positive flocculation prior to operation, the blood, when investigated six weeks later, gave only a weak positive reaction. A second case gave only a doubtful positive flocculation previous to operation. On microscopic examination the tumour showed changes suggestive of early malignant disease. The blood, when examined ten weeks later, gave a rather stronger reaction. A third examination seventeen weeks after operation gave a definite positive reaction. The patient, after operation, had received *radium* treatment. On the other hand two patients who had had radical excisions of the breast and had no signs of recurrence, the one fifteen months and the other four years after operation, both gave completely negative reactions.

Two cases of carcinoma of the rectum, on whom complete excisions by Miles's abdomino-perineal method had been performed, without signs of recurrence four and a half and five and a half years afterwards respectively, gave negative reactions. In these cases flocculation reactions had not been performed prior to operation. A case of carcinoma of the body of the uterus, which had been extensively treated by radium, gave nevertheless a strong positive reaction, due, no doubt, to the abdominal metastases present.

Relation to Wassermann Reaction

In 487 out of the 500 cases Wassermann reactions were performed, two serums persistently proved to be anti-complementary. In all but 5 of the 239 cases of malignant disease Wassermann reactions were done, one serum being anti-complementary. Twenty-one positive Wassermann reactions were obtained among these 235 cases, including one case of lymphadenoma, in comparison with the 170 positive flocculations. On the 201 controls, 253 Wassermann reactions were done, one being anti-complementary. These gave 18 positive reactions. They were accompanied by only 7 positive flocculations. Among the latter was a case of fibroids and another of adenomyoma of the uterus. A third case, diagnosed as carcinoma of the uterus, proved to be chronic metritis.

It is evident from the above that the flocculation reaction here described is dependent upon factors different from those in the Wassermann reaction. The reacting substance in the serum is probably not euglobulin nor the globulin fraction upon which the Sachs-Georgi flocculation is said to depend (Browning and Mackenzie²⁵). The addition of an equal volume of a saturated solution of ammonium sulphate to the serum diminishes, but does not inhibit, the reaction. Further the antigenic substances are almost certainly different. This is shown by the fact that carcinoma serums rarely if ever react positively with the Syphilis antigen in the absence of a syphilitic factor even if used in the same dilution and treated in the same manner as the antigen here described.

FACTORS INFLUENCING THE REACTION

A Serum

1 *Heat*.—Positive serums do not flocculate unless they have been heated. No experiments have been done to show what is the least period of heating required for the reaction. Increase of time from a quarter of an hour to three hours does not appear appreciably to affect the result.

2 *Age of Serums*.—Serums appear to be unstable if the reaction is performed immediately after heating and variable reactions may be obtained. Hence the sera not examined for twenty-four hours after heating. Within

* Since the compilation of these figures one of the cases included therein has returned to hospital with a well marked cancer of the oesophagus verified by microscopical section.

limits, lapse of time after withdrawal of the blood does not seem to affect the reaction, positive serums giving approximately the same results on successive days. The reaction tends gradually to disappear. It is not known whether this occurs in sterile serums kept in sealed tubes.

3 *Infected Serums*—Absolute sterility of the serums does not appear to be necessary, but gross infection causes anomalous results.

B Antigen

1 *Dilution*—The antigen, unless diluted to a proper strength before the emulsion is made, may show spontaneous flocculation, or no flocculation may occur.

2 *Cholesterolin*—Flocculation does not take place, or is meagre, without the addition of cholesterolin. The flocculation is not so marked with the smaller amounts of cholesterolin.

3 *Saline*—The use of distilled water instead of saline for making the emulsion does not seem to prevent flocculation.

C Incubation

Incubation at 37° C for longer periods than three hours, up to twenty-four hours, does not increase the reaction. The reaction does not occur so readily at 55° C. If the trays are placed in the 37° C incubator after the three hours in the water-bath the reaction does not proceed so far as when they are kept at room temperature after the water-bath.

DISCUSSION

1 Nature of Reaction

In common with other colloid flocculation tests—for example, Sigma and Sachs-Georgi—the precise nature of the reaction is not at all clear, nor are the substances upon which the reaction depends any better defined. It is evident that the reaction is due to a diminution of surface tension in an unstable colloidal system, in the course of which aggregates are formed of visible size. The nature of these colloids is unknown.

2 Specificity

That this reaction is not at present absolutely specific for malignant disease is evident from the false positive shown above, notably with tuberculosis and certain febrile and other conditions, but the antigen has at least some specific relations with human serums.

(a) *Rat Antigen*—An antigen prepared in a manner precisely similar to the human antigen, from a rat carcinoma, gave no flocculation at all with carcinoma serums which had already given flocculations with the human antigen. An antigen prepared from this rat carcinoma according to the formula of Roffo,³ similarly gave no flocculation using the Sachs-Georgi method—a result opposed to those of Roffo. Moreover, cross-experiments with nine serums from rats grafted with rat carcinoma gave no flocculation with the human antigen, nor did they give any flocculation with the antigen prepared from their homologous tumour.

(b) *Lecithin-Cholesterolin Antigen*—An “artificial” antigen, prepared from a 1 per cent solution of ovalbumin (B.D.H.), diluted with alcohol 1 in 4, to which 0.1 ccm of a 1 per cent solution of cholesterolin per 1 ccm was added in a manner similar to the carcinoma antigen, did not react in the same way with carcinoma serums, although it showed in some cases flocculation with such serums. It seems clear, therefore, that the carcinoma antigen has some specific properties.

(c) *Cellular Disintegration*—The non-specific reactions which the carcinoma antigen exhibited seemed to be related to some extent to cellular disintegration. Thus, in the tuberculous cases there was considerable tissue or bone destruction. In the case of metritis, there was much cellular destruction and pus formation. Possibly the reaction may show some relation to the antitryptic index, though this has not been investigated.

(d) *Globulin-Albumin Ratio*—According to Locy and Tonniet,⁶ and others, cases of malignant disease show an alteration of the globulin albumin ratio in the serum. Wegner⁷ asserts that “the determination of the albumin globulin quotient must lead to the same result as the flocculation reaction—that is, a serum whose quotient is raised must flocculate easily.” Kennedy,⁸ has, however, shown recently that changes in the globulin albumin ratio occur only in the serum of advanced cases of cancer. Consequently this reaction would not appear to depend solely upon this factor.

(e) *Cholesterolin Content*—It seemed possible that the reaction might be due to the cholesterolin content of the serum reacting with a colloidal system highly saturated with cholesterolin, and that the variations in flocculation might be due to the amount of cholesterolin in the different serums. It does not seem to be certain whether there is any constant increase in the amount of cholesterolin in the serum in malignant disease. On the one hand, Liden⁹ and Gordon-Reeves¹⁰ have found an increase in the amount of cholesterolin in the serum of cancer patients, while Galea¹¹ finds that the amount of blood cholesterolin varies according to the site of the tumour, and some, indeed, have found hypercholesterinaemia. In this reaction serums which might be expected to contain large amounts of cholesterolin did not give a positive reaction in the absence of malignant disease. Cases of cholelithiasis, which contain a high percentage of cholesterolin in the serum, did not react positively. Increase of the amount of cholesterolin in the antigen did not change the character of the reaction, but merely increased the sensitiveness of the antigen. It seems that the reaction does not depend solely upon the cholesterolin content of the serum.

(f) *Lowering of Surface Tension*—According to Volz and Benedetti,¹² colloidal flocculation reactions are due to a lowering of the degree of dispersion of the globulin of the serum, and Hoyer¹³ considered that the interaction of the serum colloids with the colloids of an antigen is in the nature of an adsorption phenomenon between the surfaces of the colloids. J. Bauer¹⁴ states that there is a lowering of the surface tension of the blood serum and tissue fluids in carcinomatous diseases. If this is the case, then the formation of aggregates and flocculi through changes in the colloids of the antigen can be readily explained. If, however, it were simply a question of the lowering of the surface tension, one would expect cancer serums to form flocculi with any antigen—for example, the Boidet and Ruelens antigen of the Sigma test. As has been shown, however, this is rarely the case, so that the antigen used in this reaction would appear to have some additional specific properties.

SUMMARY

1 Over the whole series of 500 cases, comprising malignant and non-malignant conditions, 75 per cent correct results were obtained.

2 In 239 cases of malignant disease, 170 positive flocculations were obtained (71 per cent correct).

3 In 261 controls, comprising healthy individuals, cases of non-malignant neoplasms, medical and surgical conditions, 204 gave a negative result (78 per cent correct).

4 Healthy individuals gave a uniformly negative reaction, except in one instance.

5 Non-malignant tumours usually give a negative reaction.

6 In the absence of malignant disease flocculations do not in the majority of cases occur with syphilitic conditions, but a control Wassermann reaction or Sigma reaction is advisable.

7 With acute febrile conditions—for example, tuberculosis or sepsis—positive flocculations may occur.

CONCLUSIONS

1 The preparation of an antigen and arrangement of a simple flocculation reaction has been described. This reaction gives a high percentage of correct results, both in malignant and non-malignant conditions.

2 Including certain conditions, the reaction is of value in the diagnosis of malignant disease

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NASAL, AURAL, AND OTHER FOCAL SEPSIS AS A CAUSE OF NEURASTHENIA AND INSANITY

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The purport of this communication is first, to draw more widespread attention to sepsis as often the essential cause of functional psychoses, arising from slight blunting of intellectual activity, through the more definite forms of rhinoinfection, inability to concentrate, unsociability, and the various syndrome of psychic abnormality grouped under the terms "neurasthenia" and "hypochondriasis," to the graver manifestations of unsoundness of mind accompanied by suicidal impulse, delusional insanity, mania and ultimately dementia praecox, and secondly, to lay stress on the import of the fact that the sepsis is most frequently what is conveniently termed "focal" and "latent" or "cryptogenic."

Many years ago I held a post of resident clinician in Stratford Winson Green Asylum, where there were about 600 inmates, and to which the acute cases occurring in and around Birmingham were mostly sent. One could not fail to be impressed with some of the acute manic cases which were apparently cut short by a blue pill and active treatment of the gastro-intestinal tract. It is now generally accepted that general paralysis of the insane is a legacy of syphilis, and alcohol and toxæmia of gastro-intestinal origin are recognized as causes of functional psychosis of toxic origin. The number of cases of insanity due to apical dental sepsis and cured by extraction of often long teeth is growing rapidly. It is because it is not as yet widely known that focal sepsis of the nasal sinus tonsil, and even my cause functional psychosis and insanity that I desire to emphasize the importance of not overlooking such sources of mental trouble, without, however, contending that therein lie the most frequent source of sepsis causing mental aberration. Nor do I touch here on a subject I have elsewhere discussed—the question of focal sepsis as a cause of mental delinquency and crime—although a fruitful subject if approached with judgement as a matter requiring careful deliberation. On defective delinquency and functional psychosis the splendid work carried on at the State of New Jersey's mental hospital, as described by Dr. Henry Cotton,¹ is worthy of most careful attention.

In 1907 in the Long Fox Lecture¹ I stated that—

All patient suffering from purulent sinusitis are liable to suffer from general toxic symptoms toxic products reaching the blood either from direct absorption from the implicated sinuses or from

the gastro-intestinal tract but lymphatic absorption of toxic matters, in the presence of channels of communication with the intracranial venous sinuses must be held to account for the profound mental depression and difficulty in thinking clearly almost amounting to slow cerebration that is very frequently present in frontal ethmoidal or sphenoid ethmoidal sinus suppuration and some times a less marked degree, even in simple maxillary sinus disease. Many patients have come with drawn and expression and sallow complexion expressing their weariness of life and a profound melancholia which was quite foreign to their natural state of mind—symptoms which have completely disappeared with the removal of their sinus disease, sometimes it has been difficult to recognize in the round faced cheerful individual one who shortly before bruted it as a haggard melancholic.

Up to sixteen years ago I had never met with a case where definite mental aberration preceded and was relieved by necessary sinus treatment, though many of my patients were the subjects of a psychosis and several had confessed to strong suicidal impulses. Shortly after this I encountered examples of definite insanity. The most remarkable in my experience occurred in 1911. It will be more useful to relate this one case at some length than cite many cases, some of which I have already published.²

A healthy looking well nourished man aged 29, keen and good at outdoor games shooting and so forth had a severe attack of influenza in 1901. In 1903 he had his first definite appendicitis. Appendicectomy was performed in 1907. This was followed by insomnia, for which he went on a voyage to Madeira.

Recovery seemed complete and till early 1911 he was very bright full of fun and keen on politics and his work. (Acquired relative immunization). In February 1911, he had influenza with bad headaches and general malaise but not badly, so did not stay in bed and went on till insomnia compelled him to give up work and go away for five weeks. He returned then miserable and depressed. He tried to work for the next two months, his doctor advising this as it would take his mind off himself but he found it impossible to continue. He was sent on a voyage but seemed in a mental mist all the time and terribly depressed. (After he told me, he took a pistol with him intending to shoot himself.)

When I saw him in August 1911 he looked ruddy and well nourished but had been obliged to give up work though he still played fairly good golf. But he said his memory was gone he could not think and his mind was a blank. He had post nasal discharge which he had been told was of no importance. I found fetid pus in the one nostrum explored. He travelled to Bristol wandering up and down the train corridor the greater part of the night and could not sit still. He declared he was "devil driven" and that it was a sin to have an operation, because he was dead. Mr. Stook gave an anæsthetic on September 25th, 1911 and I opened both maxillary antra which contained fetid pus and from the frontal sinuses pus was washed out. Lavage of frontal sinuses and antra was continued daily but his delusions became morbid. He refused all food because he was dead. The matron of the home said she feared to keep him because he was insane and ought to be under certificates but instead of certifying with his parents consent I operated again on October 29th, assisted by Mr. A. J. Wright performing my radical osteoplastic flap frontal sinus operation. The frontal sinuses were unusually large and the mucosa much diseased. Cultures from the antra and frontal sinuses yielded pure *Staphylococcus aureus* (J. Walker Hall).

For several weeks he refused all food and had to be forcibly fed by male attendants. He tore off his dressing when he got the chance.

He went home on December 3rd with the operation wounds healed mentally much improved but still subject to delusions of having committed unpardonable sins even then at times he refused food and declared he was dead. His delusions continued for some months but they became progressively less dominant and less than a year later he was writing sensible letters full of interest in life. Very soon after that he was back at his work since then he has remained in excellent health and has occupied a responsible position for a period of twelve years.

I would emphasize the following points in this case

(a) The long history of sepsis following influenza in 1901 with gastro-intestinal infection and appendicitis probably of nasal origin—a by no means infrequent occurrence.

(b) After a period during which the infection was inhibited by auto-immunization a second attack of influenza caused a relapse and the nasal sinus infection caused profound mental disturbance—melancholia with resisted suicidal impulses. Despite a prolonged holiday and a voyage he could no longer regain the power of work, and he then developed delusions.

(c) He did not lose his delusions for several months after disinfection and detoxication, but after his general health had been restored he regained all his old mental activity and general health and has continued to occupy a position of responsibility without intermission.

(d) The patient was undoubtedly insane, and apart from the symptoms related, the letters in my possession that he

¹ This paper and the three papers that follow it were read before the Bath and Bristol Branch of the British Medical Association at the University of Bristol May 27th 1925.

wrote prior to operation on his frontal sinuses suffice to demonstrate his delusional insanity. And he been satisfied as means it would have been a matter of great difficulty for him to regain the confidence of his bank directors.

(c) Bacteriological examination of the nasal sinus contents demonstrated pure culture of *Staphylococcus aureus*, so often regarded as of little import. Teeth and tonsils were not involved, his previous appendectomy had apparently removed the only other involved focus of infection, making his a pure nasal infection case.

Let me refer very briefly to one example at the other extreme—the very mild type of chronic nasal sepsis.

A man, aged 56 complained of deafness with post nasal catarrh, never severe, but of twenty-seven years' duration. He had been tired off and on during that long period, but latterly had been getting depressed, lessened mental acuity causing difficulty in carrying on his work, he complained also of general muscular weakness. Exploration of his nasal sinuses revealed no obvious pus, but Dr Todd, who examined the extracted contents found, together with polymorphonuclears, streptococci and Friedländer's pneumobacillus in the right sphenoidal and posterior ethmoidal cells, the other sinuses being sterile. The infected sinuses were opened and drained and he soon felt stronger, increased in weight, and, as he put it, brighter than he had ever done for years past.

It is certainly not intended to suggest that all patients whose tonsils, sinuses, ears, or teeth are mildly infected must be operated on, or that they are the subject of functional psychoses, any more than is the individual who is somewhat melancholic because his liver is sluggish or he is constipated. Few individuals are there who, in the course of common colds or influenzal attacks and so forth, have not been the subject of transient nasal sinusitis, fortunately the great majority of such infections clear up spontaneously by auto-immunization, or with the appropriate measures of ordinary medication, while every medical practitioner knows that rest, feeding up, change of air, and so on are very often all that is required to obtain complete cure.

It is cases of chronic sepsis with mental depression and neurasthenic symptoms which do not yield to ordinary medicinal measures, or that seem to clear up only to recur, that we need to recognize, and to associate the functional psychosis with the physical abnormalities that may be the underlying and removable cause.

It is necessary to emphasize the "latent" or hidden character of the focal sepsis in many patients who nevertheless are the worst sufferers from chronic toxicæmia. First, there is often an absence of pain or other symptoms directing attention to the real source of infection, and, secondly, it is significant that patients with chronic copious purulent discharge but seldom suffer from toxicæmic symptoms as compared with those with little discharge, and that often non-purulent to the naked eye. Many years ago I suggested

that in the numerous polymyositis in the one case, as contrasted with the purity of polymyositis in the others, we have an explanation of the remarkable differentiation to which I have drawn attention.¹ Subsequent experiences have borne out the truth of this, and in the latent character of apical dental sepsis, which often enough can only be detected by radiograms, we have a further exemplification of the cryptogenic character of some of the most potent sources of focal sepsis.

If it be recognized that owing to the existence of focal sepsis a considerable percentage of patients are miserable, the subject of neurasthenia or of functional psychosis of grave character, rendering their lives more or less useless to themselves or a source of danger to the community, it is hardly necessary to urge the duty of ferreting out these septic foci—which involves regard to the gastro-intestinal tract (for example, for evidence of colitis, enteric ulceration, appendicular infection), to the genito-urinary tract, the teeth, fauces, nasal sinuses, the ear, and so forth.

In such investigations we must often invoke the aid of radiology, of analysis of gastric contents and of the feces. How many asylums to day have such essential resources at their disposal? Yet within a few years I believe that with each one will be actively associated a consulting physician, surgeon, dentist, radiologist, laryngologist, and pathologist. Let us cast no stones, for hitherto we as a profession have barely recognized the symptoms which should call for the elimination of focal sepsis as the *fons et origo* of some patients' afflictions in whom the ostensible diseases are

merely the end results. Of this we may feel assured—sepsis is a far deadlier foe to civilized races than tuberculosis.

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ON AURAL FOCAL SEPSIS AS A SOURCE OF NEURASTHENIA AND INSANITY

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It has long been recognized that disease of the ear may lead to mental disturbance more or less severe. Even so simple a matter as removing a plug of wax has been recorded to have cut short an attack of mania. As regards aural suppuration, attention in the past appears to have been directed in this connection to deafness, tinnitus, pain, vertigo, and intracranial complications. In short, only disease of the organ of hearing, and local complications, seem to have been considered. With such I am not here immediately concerned.

Many instances of the association of one or more of these conditions with mental trouble have been recorded. Tinnitus especially is noteworthy, some writers even go so far as to say that most cases with hallucinations of hearing ought to be classed as suffering from delusions, there being some definite aural lesion to account for their symptoms. Vertigo is well known to induce definite neurasthenia in some cases. We ought to be careful that disinclination to mix in traffic, or a shivering from work, say, as a stoker, or on a scaffolding, is not incorrectly ascribed to neurasthenia, when really due to laudable prudence. I have had the good fortune to see both this false neurasthenia and a true neurasthenia disappear when suitable treatment has relieved the vertigo. A few cases of intracranial abscess have been published where treatment has relieved a definite psychosis, but too many of the records showing this association are from autopsies, no treatment having been instituted. I may summarize the situation by recalling the plea of Forrester¹ which, in 1901, he added to a record of a case successfully treated—that every patient suffering from mental change should have the ears examined. In the same year Dr. Bernard Hollander wrote

By these cases one is forcibly taught the lesson that an apparently slight and unimportant ailment such as a running from the ear, which is apt to be looked upon as an inconvenience rather than a disease, may prove very dangerous.

TOXÆMIA

Putting aside these local manifestations, I shall omit all cases in which tinnitus, vertigo, or intracranial complications were known to be present, and all cases in which there was not a family history free from mental taint, and shall confine myself to those instances in which surgical treatment of aural sepsis brought relief from the mental symptoms.

Towards the close of last century much attention seems to have been directed to the question whether toxicæmia was a factor of importance in the causation of insanity. Among the records of many discussions, perhaps the most interesting is that at the Medical Society of London on May 11th, 1896, opened by Dr. A. M. Hamilton of New York, on "The connexion of autotoxa with certain forms of insanity." The idea that chronic septic absorption could

produce "toxæmia" was not, however, then current, the word was applied rather to poisoning from the presence in the circulation of products of abnormal metabolism, or the result of intestinal stasis. It is not surprising, therefore, that at that time little attention appears to have been given to the middle ear tract as a possible source of chronic toxæmia. But it is now over fifteen years since West and Scott³ pointed out this possible complication. It seems noteworthy that even now the possibility is in some danger of neglect.

NEURASTHENIA

Perhaps for this reason the evidence I shall put forward is less complete than its importance deserves. It is not common in aural practice to find cases of definite insanity. Far more usual is it to see patients with minor disturbances, such as are usually described as neurasthenia. It is remarkable how regularly the same group of mental symptoms occurs in all descriptions of toxæmia, whether considered from a general or a local aspect. There is a sort of mental lassitude, the victim finds that the effort demanded by social duties is becoming too great, work which formerly he performed with ease and pleasure has become laborious, when he forces himself to work, he cannot concentrate his mind, he feels he has lost his initiative, memory may fail or more typically become "patchy", and to make a decision even on some quite minor matter involves a disproportionate effort.

A sufferer from such a condition came to me two years ago. He told me nothing of his trouble, but sought advice for a running ear. I carried out a radical mastoid operation for purely local conditions. Some months later he came to tell me of his neurasthenia, which all his friends had noted. After the operation the whole of the train of symptoms which were practically identical with the series I have indicated above, completely disappeared.

Another case was that of a chef. He had had to give up his work and though he had been trained in a less strenuous occupation he found this also was too great a strain. There was some physical evidence of toxæmia but the most marked feature was his depression and hopelessness. A short fortnight after the operation on his ear—which was performed mainly on account of the general condition—the change in his whole bearing was remarkable. He became bright and cheerful, got work at a big hotel as head chef and has been hard at it ever since—a matter of three years.

EPILEPSY

For statistical information on the association of ear disease with epilepsy I would refer to a paper by Dr Omerod.⁴ He found an incidence of epileptic fits several times greater in the subjects of otorrhoea than in the hospital population generally. I will cite a case in my own practice.

A man of middle age came to me for otorrhoea of old standing rather profuse and associated with some pain but not much. He was also subject to fits described by his doctor as epileptiform. While other treatment was being tried for the ear, the fits became more frequent—one or two every week. I therefore operated on an extensively diseased mastoid. This was only ten weeks ago but he has had no fits since the operation, and the outlook is distinctly promising.

INSANITY

Undoubtedly the most dramatic and convincing cases are those in which definite mental derangement has yielded to surgical treatment. The earliest case that I have found to illustrate my thesis is reported by L. Merz.⁵ In this definite association of mental disease with otorrhoea was noted before operation on a chronic mastoid abscess resulted in restoration to mental health. Nearly fifty years ago Dr W. Rhys Williams recorded a very striking case.⁶

A man aged 26 married family history, negative general health good, always industrious and sober. Thirteen days before admission to Bethlem he became depressed and rambling in his speech. Then he became excited, violent and incoherent. He had delusions: (1) that he was firing rockets at Edinburgh Castle; (2) of seeing devils; (3) of persecution by electricity. No aural symptoms were noted but he was noisy and sleepless. After admission he was sullen and quiet but a fortnight later he was again raving. Ten months after a discharge was noticed from the left ear. He stated that he had had this for a long time. Mastoid tenderness and swelling were observed, and a chronic abscess of the Bezold type was treated three operations being performed and 'he became sane at once'. Shortly after he was discharged cured.

I showed at the meeting of this Branch in January last a man who had had mild otorrhoea very chronic with no serious local symptoms. He had been comfortable under palliative treatment

for some months. But somnambulism with a habit of lighting fires and even more serious derangements of conduct developed and it appeared that he was going to become certifiably insane. I performed a radical mastoid operation with the happy result of completely relieving his mental condition and he remains well and is at work.

SUMMARY

What deductions are we to draw from these cases? It will not be disputed that an examination of the ears should be a part of the routine examination of every subject of mental disease. But even where there appears no local condition calling for surgical treatment, if we suspect that focal sepsis is at the bottom of the trouble, we must not forget the ears when seeking a possible source of that trouble. This is not less important when dealing with cases of milder mental disturbance, for the patient may think the running ear of little moment and omit to mention it, but such cases seem to yield comparatively readily to treatment. Finally, when considering the question of operative treatment of otorrhoea, we must have in mind the possible effects on the general health, mental as well as physical, of septic absorption from this source.

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FOCAL SEPSIS AS A FACTOR IN THE CAUSATION OF NEURASTHENIA AND INSANITY

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This question of mental disturbances from focal sepsis is most important, but sufficient attention has not been given to it in the past. It serves to emphasize the absolute necessity for a most scrupulous examination of every patient suffering from neurasthenia or graver mental trouble. This is, indeed, only fair, for there might be found some definite lesion to account for what had been thought an hallucination. In one case, it was alleged as a sign of insanity that the patient said he had a cannon-ball in his chest, this man was found, on x-ray examination, to have a large and unsuspected aneurysm.¹ Further, it is remarkable what gross damage may exist with apparently little mental change; it is necessary to be on guard that a serious intracranial lesion is not overlooked.

In considering the mental changes associated with focal sepsis, I might instance for comparison the well known mental disturbances associated with the onset of infective fevers such as typhoid or pneumonia. If an acute infection could so much disturb the mentality in a few hours, it should cause no surprise that a chronic toxæmia could produce insanity in the course of months. I propose, however, to leave out of account the acute fevers, as not being within the scope of "focal sepsis."

The cases in which chronic septic absorption appears to be a definite factor in causing mental disturbance are of the greatest interest and importance. I will relate one or two that have come within my own observation.

Case 1—Just before the war I was called to see a young professional man who had attempted to commit suicide. The family history was exceedingly bad and it was at first thought that the prospect of mental recovery was poor. An alienist called in consultation took a different view. He observed that the periods of depression to which the patient was subject coincided with attacks of constipation so severe as to be absolute for eight or ten days together and he was strongly opposed to the man becoming an inmate of an asylum even as a voluntary boarder. Advice was given as to the proper regulation of the bowels, and the patient was put in the care of friends. He completely recovered and has been since 1916 an active and hard working man.

Case 2—A woman was admitted to hospital with acute mania. Observation showed that she had always a slight daily rise of temperature. Further investigation revealed infection by *B. coli* of the urinary tract. Under treatment this was relieved and simultaneously the mental state became normal.

Case 3—A working quarrryman, a man of poor education became during the war the owner of a quarry and the possessor of considerable wealth. He began to suffer from delusions and

melancholia and was soon quite insane. It seemed clear that his altered circumstances and the responsibilities of ownership and management had brought about his downfall. He had however a very septic mouth, extraction of all his teeth was followed by complete restoration to mental health.

Case 4—In this instance a man had no fewer than three sources of septic absorption: he suffered from chronic nasal sinus disease, from dental sepsis, and from chronic appendicitis. The mental state was one of extreme introspection, with definite suicidal tendencies. Surgical treatment of all three foci has been carried out. It is six weeks only since this was completed. He says he is 'a new man'. Although the history is so recent, it is full of promise.

I think it probable that most of the cases of puerperal mania are septic in origin—perhaps the actual focus of infection is small and the grade of infection low. The important point seems to be that, if in a given case of mental disease we can find the cause, and eliminate it, we shall be able to give a good prognosis. This good prognosis we are accustomed to give for example in cases of post-typhoid insanity, because we recognize that the toxic state does not last. It is therefore of the greatest importance that we do not overlook any source of chronic poisoning when called upon to examine a patient with mental disturbance. A careful and thorough physical examination is more likely to be fruitful than investigation of the origin of the mental state along psycho-analytical lines.

FOCAL SEPSIS OF DENTAL ORIGIN CAUSING MENTAL IMPAIRMENT

BY

W. R. ACKLAND, M.D.S., M.R.C.S.,
CONSULTANT DENTAL SURGEON, BRISTOL LOCAL INFIRMARY

It has not been my fortune to treat any cases of definite insanity, but I have had a number of cases showing severe if non-certifiable mental impairment. I think my best contribution to the discussion will be to give you a short account of three of these.

Case 1—The brother of a professional man was brought to me during the war. He was a soldier on sick leave and for eight months there had been no improvement in his condition. He showed the most extreme degree of apathy. If sitting at table he would get up for something and forget before he had taken two steps for what he had risen. In speaking he would leave out words or break off in the middle of a sentence unable to finish. He was dull and listless, dispirited, slow, tremulous and uncertain in his movements. His complexion was a sickly earthy colour. He had some dull dental pain, which did not seem to be a matter of importance, but he had been persuaded to seek advice for this symptom. His mouth was in a terrible state full of crowns and bridges the roots supporting which were mostly suppurating. Under general anaesthesia a complete clearance of the offending teeth was made. Within a fortnight the good effect was apparent. His colour improved, his health became normal, his spirits returned and his mind became alert. He returned to his duty and has remained well since.

Case 2—A clergyman on a visit to Clifton was brought to me on account of offensive breath. His appearance was dreadful, his colour ashen grey, his speech slow, hesitating and indistinct. He showed an absolute lack of initiative and volition, and simply did what he was told in everything. He had had to give up his work owing to loss of memory. I found a mouth full of pyorrhoea with teeth mostly loose, and the odour beyond description. A complete dental clearance was made. His health, physical and mental, was restored to normal, he was able to go back to work, and has been busily employed ever since.

Case 3—A woman, aged 38, was white haired, wasted, and looked 50. So great was her mental torpor that she showed a long latent period between hearing a question and giving the answer, so that one was inclined to think her deaf. The answer when it came showed that her mental processes were sound. She was suffering from sleeplessness and neurasthenia, and was extremely thin. Her mouth was in a shocking state, the few teeth she had left were either loose from pyorrhoea or dead and affected by periodontitis. All the others had fallen out. Extractions produced a marvellous effect.

It is interesting to consider the route by which the toxin in these cases reaches the general circulation. In what for convenience I call the "open sepsis" of pyorrhoea the poison is swallowed, and perhaps, for a time, does little general harm. But presently the gastric defences break down, and absorption occurs. On the other hand, in the "closed sepsis" of apical abscess the absorption is directly into the circulation. In either case the toxin in the circulation probably directly affects the brain.

DISEASE OF THE ANTERIOR ETHMOID CELLS AS A CAUSE OF OPTIC AND RETROBULBAR NEURITIS

BY

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So far as I am aware there are no recorded cases of optic neuritis and retrobulbar neuritis due to disease of the anterior ethmoid cells.

During the last eighteen months four cases of optic neuritis and one of retrobulbar neuritis have been referred to me for examination by Mr. Potts, the surgeon to the ophthalmic department of this hospital, in each the evidence that the anterior ethmoid cells were diseased was definite. With the exception of the case of retrobulbar neuritis there was evidence that the maxillary antrum was involved, no doubt secondarily. Logan Turner and J. S. Fraser have drawn attention to the fact that a definite condition of the eye and a definite condition of the nasal sinuses or antrum should be present before operation, and that it should be clearly directed to the particular nasal condition. The surgeon should have a clear knowledge of the position and relationship of the various nasal sinuses. An x-ray photograph will show if any of the cells are abnormally placed. Transillumination of the frontal sinus and maxillary antrum is an important aid in diagnosis. The directional action of the everted epithelium lining the various cavities should be known.

It is now known that nasal sinus disease may be a cause of albuminuria, arthritis, and certain toxicæmias. These are distant infections, and are amenable to operation on the affected sinus or sinuses, but the question arises whether the bones walls may become affected and infection thus spread to the overlying optic nerve. This may be possible in disease of the sphenoidal sinus and posterior ethmoid cells, but does not seem possible in the case of disease of the anterior cells. If infection does not spread by the blood stream nor by contact then I would suggest that spread takes place by the lymphatics. The lining membrane of the orbit and the sheath of the optic and third nerves are continuous, and the lymphatics must be continuous. Moreover, the nasal lymphatics can be injected through the lymphatics of the frontal region.

DIAGNOSIS

Cross infection of the sinuses with a large flow of pus, with swelling and moisture of the mucous membrane of the nares, does not seem to be a necessary condition attending optic nerve disease. The most severe cases are those in which the mucous membrane is dry and the pus thick and scanty. In them operation yields the most favourable and dramatic results. In anterior ethmoid disease pus is seen in the anterior part of the middle space, and in the posterior nasal space it is seen winding round the Luschka's cartilage. The position of the referred pain is a useful guide to anterior cell disease. It is assumed that cases of optic neuritis due to causes other than nasal sinus disease, such as cerebral pressure, cysts, etc., of the pituitary fossa, testicular syphilis, or nephritis, will not come into the hands of the rhinologist, but he should be able to say quite definitely whether or no his help will be of use. If the relationship of the rhinologist and the ophthalmologist had been closer in the past, as present-day knowledge impels it to be, then Mr. Rudyard Kipling would have wrought a happier ending in his book *The Light that Failed*.

OPERATION

I remove as little as possible of the middle turbinate bone. Anterior turbinatectomy is all that is necessary. In a punch forceps and a small ring knife to open the cells. Complete excitation may be necessary, and I have even felt the instrument to be in contact with the soft tissues of the orbit. Ecchymosis of the eyelids sometimes follows, it causes no inconvenience to the patient and is soon absorbed. I use lavage for some days previous to operation, if improvement takes place then no operation may

be necessary. An important matter in the after-care of these cases is warmth and free ventilation. If I quote the notes of two cases I think it may be sufficient.

CASE I

I was sent for on July 1st to see Mrs. J., aged 82. She complained of pain in the left eyeball and along the superior maxilla and almost complete blindness of the left eye. There was ptosis of the lid and the eyeball could only be moved slightly outward and downwards; the pupil was contracted. I referred her to Mr. Lott, who reported well marked optic neuritis, central scotoma, paralysis of the third nerve and slight proptosis; he suggested that I might find some nasal trouble. She gave a history of an influenza cold in her head some few weeks previously. Examination showed swelling of the middle turbinate with mucopurulent discharge in the middle anterior part of the space, and in the post nasal space over the Eustachian cartilage, the maxillary antrum was dull. I advised operation as a possible cure. She consented and three days later, under general anaesthesia, I completely excised the anterior cells up to the soft tissues of the orbit. There was ecchymosis of both eyelids. Six weeks later she had completely recovered her sight and movement of the eyeball and ptosis and proptosis had disappeared.

CASE II

F. C., a gardener, aged 22, was admitted to the eye department of the hospital on October 11th, 1924. Receding optic neuritis of the left eye was diagnosed. He complained of severe supra-orbital headache and occasional occipital pain, that he felt giddy, was sleepy at times and of nausea. On examination I found slight mucopurulent discharge coming from under the anterior end of the middle turbinate bone. In the post nasal space pus was seen winding round the left Eustachian cartilage, there was a similar condition on the right side but less marked. The report as to vision was R.V. = 6/5 (part) L.V. = 6/36. There was slight hyperaemia of the left disc, physiological pit filled in, and lamina not visible.

On October 12th left vision = 6/60. The following day, under general anaesthesia, the anterior ethmoidal cells were opened, right and left gently curetted, both maxillary antra burred and pus evacuated from the left.

On October 16th left vision = 6/36 and on October 27th 6/18. On April 23rd of this year it was 6/12. There is no active optic neuritis now present and vision is practically normal. This case was shown at the laryngological meeting in May, 1925.

ARTHRITIS DEFORMANS: OBSERVATIONS ON ITS ETIOLOGY AND TREATMENT

(Preliminary Communication)

BY

L. S. ASHCROFT, L. CUNNINGHAM, T. P. McMURRAY,
AND H. S. PEMBERTON

(David Lewis Northern Hospital, Liverpool)

Under the term "arthritis deformans" (Vuchow) we have included all forms of non-specific hypertrophic or idiopathic, active or inactive, arthritis which we have encountered in a routine investigation of upwards of fifty cases, seen in our wards and privately. This investigation has been conducted from several sides.

1. *Clinical*.—Daily observation has been made in the wards for as long, in some cases, as six months.

2. *Bacteriological*.—The joints have been opened (T. P. McM.) in a large proportion of cases, and from them an organism has been recovered (L. S. A.) which is identical in every case in its cultural and biochemical features. This organism does not correspond to any organism which has been previously described in association with this or any other disease, in so far as we have examined the literature. In only one case has it been recovered from the synovial fluid, in all the others it has been isolated from either the membrane or articular bone. No lesions have as yet been produced in animals, so far only the intravenous inoculation of rabbits has been attempted. Nothing constant has been isolated from foci of sepsis, faeces, urine, blood, or fasting stomach contents.

3. *Metabolic*.—Routine examinations have been made (L. C., H. S. P.) of gastric secretion, basal metabolism, acid-base ratio, renal and hepatic efficiency, and of glucose tolerance. The outstanding features, so far, appear to be the large proportion of cases showing achlorhydria or hypochlorhydria, the practically universal diminution of carbohydrate tolerance, and the relative absence of acidosis, renal or liver defects, or of changes in the basal metabolic rate.

4. *Therapeutic*.—Apart from correction of deformities (T. P. McM.) and removal of focal sepsis wherever practicable, the only routine treatment employed has consisted in the use of large amounts of 0.4 per cent hydrochloric acid and a carbohydrate-free diet extending over a period of months. Improvement—first by diminution of pain and then by increase of mobility—has been obtained in practically every case, even without the removal of focal sepsis.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF REVERSE PERISTALSIS

A congenitally weak-minded boy, aged 13, recently had an attack of diphtheria, which was treated with antitoxin in ordinary doses. About ten days after his admission to hospital, and after all acute symptoms had passed off, he became very constipated and lost his appetite, his tongue becoming furred and dry. Ordinary aperients failing to produce an action of the bowels, a simple enema was administered. This was retained for about three quarters of an hour, when it was returned unchanged, he vomited at the same time, and the motion noticed in the vomit several pieces of oval brown substance, rather less than the size of a small walnut. On examining these about an hour later I found them to be typical, formed faeces. The boy was then quite comfortable, he had had the bowels moved, though by the mouth, and his tongue had already cleared. He has since made a perfect recovery, and his bowels have become normal after the use of aperients.

The enema appears to have set up a reverse peristalsis which carried the faeces from the colon to the stomach in something less than three-quarters of an hour.

Colwyn Bay

ROBERT E. LORD, M.D., B.Sc. Lond.

PROLONGED CHEYNE-STOKES RESPIRATION FOLLOWED BY RECOVERY

THE following case seems of sufficient interest to be placed on record.

A male infant 1 month old, was brought to the CMS Hospital Pakhoi, South China, at 11 a.m. on May 9th, 1924. The child was cyanosed, the temperature was 99° F., the pulse was very feeble (160), and the respirations very irregular (50 to 60). As there was some history of cough it was for the moment thought to be a case of bronchopneumonia but auscultation of the chest showed nothing abnormal, and suspicion fell on the alimentary system. The mother, who lived on a junk, said that as she had been short of milk she had, the previous day, given the child a quantity of 'yeet'. This concoction very popular among the local Chinese is made of flour, cane sugar and boiling water. Castor oil was given at once and 3 minims doses of brandy, diluted at intervals.

At 2 p.m. the temperature had fallen to 98° F. and the respirations had become markedly irregular and finally, an hour later, assumed the Cheyne-Stokes type. The temperature rose to 100° F. At night the condition of the child was critical. The breathing cycle was of 7 to 9 respirations, the pulse was very feeble and difficult to count. An injection of digitalin gr. 1/1200 and strychnine gr. 1/1200 was given, and a rectal saline containing 20 minims each of brandy and aromatic spirits of ammonia administered. The latter was not retained it was repeated at midnight and again at 4 p.m. On these occasions it was partially retained.

At 8 a.m. the next day the Cheyne-Stokes breathing was very definite, temperature 100° F. and pulse still running. The child could not swallow water.

At 10 a.m. 2 ounces of saline with the addition of 1/2 minim liq. strychninae was injected subcutaneously. This was followed by a very definite reaction and at noon the temperature had risen to 103° F. The child was then able to swallow a little water. The injection was repeated at 4 and at 9 p.m. and though the cerebral control over the breathing was still inhibited the temperature remained at 103° F. during the day and the length of the Cheyne-Stokes cycle increased to 16.

By the following morning the child was able to take the breast which had been massaged and the milk flow improved. The temperature was now about 102° F. and the Cheyne-Stokes cycle about 30. The breathing gradually became normal and by 4 p.m. after forty-four hours of Cheyne-Stokes respiration had become quite regular. The temperature fell steadily, and five days after admission became normal.

Apart from flatulence which was controlled by small doses of salol the infant made an uneventful recovery, and on the tenth day after admission was discharged. It was then feeding and sleeping normally and the mother had a full supply of milk.

As there is no reason to suppose that the preparation given had not been well boiled and was therefore sterile, it would seem that the child was suffering from an auto-infection which was the cause of the medullary centre being depressed.

A. J. WATSON, M.B., B.S. Dunelm

Leikhoi, South China

ACCESSORY MAMMILL

A CHINESE woman, aged 25, complained on the second day of her puerperium of two painful swellings situated in either axilla. She stated that she first observed them when 15 years of age, they were then the size of a hazelnut. She consulted a doctor, who diagnosed them as "tumours," presumably lipomata, and no treatment was suggested. As they pained her at regular intervals she went, two years later, to a hospital, where a similar diagnosis was made and their removal was offered, operation was refused.

I found over each of these swellings an accessory nipple, and was able to express a small quantity of milk from each. In the following days the production of milk in both normal mammae was superabundant, and they required support. The accessory mammae shared in this full lactation, were freely secreting, and painful. It was felt that belladonna plasters were contraindicated lest normal and accessory mammae might communicate, and the mother so lose her milk or atropine be administered indirectly to the baby. It was hoped that involution would occur as a result of no demand being made upon their function if they were independent, and this has now taken place to some extent, although milk can still be squeezed from either.

These accessory mammae are perfectly formed, hemispherical, each superficially $\frac{3}{4}$ inches in diameter (the normal mammae are 7 inches). They are symmetrically situated upon the anterior border of each axilla. The nipple is centrally placed, three-eighths of an inch in diameter.

DOUGLAS D. S. STEWART, M.R.C.S., L.R.C.P.

Northampton

Reports of Societies.

AUTO-INFECTION IN NEUROLOGICAL LESIONS

A MEETING of the Edinburgh Medico-Chirurgical Society was held on June 3rd, with Sir DAVID WALLACE, President, in the chair.

Dr CHALMERS WATSON showed two cases of disseminated sclerosis to illustrate some of the points of his communication—The role of auto-infection or auto-infection in the etiology of disease of the higher and lower nervous systems.

The first case was a patient whose illness had lasted ten years, commencing with pruritus affecting the soles of the feet, gradually spreading up to the elbows and thighs, and later affecting the small of the back. This condition remained stationary for a year or two. Later she developed some insensitiveness and certain brain symptoms, but improved after a time in hospital. Now she had a recurrence of her symptoms showing Rombergism and a typical ataxic gait. Dr Watson wished to emphasize the importance of the general medical examination, to find out to what particular strain the patient had been subjected. In many cases the condition which this patient showed was found. She suffered from pronounced pyorrhea and constipation of the seven to eight day type. The urine, in accordance with Dr Watson's experience of most of these cases, was comparatively normal—free from albumin and sugar and practically free from bacteria. The other patient was an ex-serviceman who was perfectly healthy up to the time he contracted a severe dysentery. His signs showed a good deal of disturbance in co-ordination. He had a marked gastro-intestinal lesion, and a specially prepared vaccine produced distinct improvement.

Dr Watson drew no particular conclusions from these results except that they were interesting and stimulating, but his reason for showing the cases was to emphasize the association of these physical disorders with these neurological lesions. He referred to the view of French alienists of a hundred years ago, that mental disorders had their origin in abdominal disorders. This teaching had been largely disregarded, and though neurologists had added much to their knowledge of the symptoms and minute anatomy of disorder of the lower nervous system, corresponding advance in the knowledge of etiology and treatment had not been made.

Dr Watson referred to his views as published since 1900, on the factor of auto-infection taking origin in one or other of the mucous surfaces of the body—for example faulty state of teeth and gums, abnormal conditions of the digestive tract as revealed by physical examination, examination of the stools, and x-rays, and abnormalities in the urine, more especially the presence of bacteria and cells. He referred to the recent work on disseminated sclerosis, and to the conclusion tentatively drawn by experts from it, as to the intestinal tract being the primary source of the toxic agent responsible for the changes in the nervous system.

Dr ROBERT ROBERTSON agreed that in early cases of disseminated sclerosis something could be done for patient by studying their cases from a general point of view. Dr Chalmers Watson indicated. He recounted several cases in which removal of septic foci produced considerable amelioration in the nervous system symptoms.

Tryparsamide in Syphilis of the Nervous System

Mr DAVID LEES then read a communication—a preliminary note—on the use of triparasamide in the treatment of syphilis of the nervous system. He referred to the composition of the drug and to the fact that it was not a powerful treponemacidal agent, its use in the treatment of syphilis being based on other considerations: (1) a powerful stimulative effect on animal economy and on animal resistance, (2) a high degree of penetrability, and (3) a fair or moderate degree of treponemacidal action which, on account of the unusual penetrability of the drug, was equally available for therapeutic purposes in all parts of the body. Mr Lees said that in the beginning of 1924, by the aid of the Medical Research Council, he was able to commence the treatment of five patients, and up to now eighteen patients had been treated by this drug. All the patients suffered from syphilitic infection of the central nervous system, and showed both positive serological reactions and positive findings in the cerebrobiology of the spinal fluid. With few exceptions all had been intensively treated with salvarsan, mercury and iodides, and other forms of treatment, but none of them had shown that amount of clinical or serological improvement in their spinal fluid which justified any hope for any permanency as a result of this treatment, prolonged in some cases for three or four years. The drug was given intravenously in doses ranging from 2 to 3 grams weekly, the former being the initial dose. Mercury or bismuth was also given. Triparasamide was definitely contraindicated in patients with optic atrophy or other disease of the optic tract or albuminuria. No grave constitutional effects were produced. The immunity to disturbance of the liver was noticeable. One patient had severe jaundice under arsenobenzol. So far he had had 90 grams triparasamide and had shown no evidence of liver trouble. As a result of the treatment the general condition of most of the patients was markedly improved. They developed a sense of well-being, their cerebriation improved, and their power of application to work increased. The most marked change was in the cerebrospinal fluid. The cell count decreased in all cases. The amount of globulin progressively decreased. The cerebrospinal fluid under the Wassermann test became completely negative in three cases within a comparatively short period, averaging three months. Lange's gold sol test showed a marked improvement in every case. Mr Lees said that so far as he had been able to evaluate the drug it seemed to be specially

valuable in meningo-vascular syphilis, in early tabes, and in early general paralysis. It did not seem to retard or control advanced paresis. It did not appear to influence the blood Wassermann reaction to any appreciable extent, and so it would appear that adjuvant treatment with salvarsan and bismuth should be given. Mr. Lees showed six cases to illustrate his paper.

EDINBURGH OBSTETRICAL SOCIETY

At a meeting of the Edinburgh Obstetrical Society held on June 10th, the President, Professor B. P. WATSON, in the chair, three interesting papers were communicated to the Fellows.

Professor J. A. KILGORN (Dundee) described a case of abdominal pregnancy secondary to tubal gestation, operated on by him after full term. The case was of interest as there were no abnormal signs during pregnancy, and it was not until the patient was going to the maternity hospital thinking she was in labour that she collapsed and fainted, and was admitted to hospital in a serious condition. The condition was diagnosed and the abdomen opened forthwith. On opening the sac fetal gas escaped, followed by a gush of about two pints of chocolate-coloured fluid, and a dead, but not macerated, foetus weighing 5 lb. was delivered. The placenta was easily peeled off with little bleeding, showing that the foetus had been dead for some time, though it was in a good state of preservation. The sac could not be removed owing to adhesions, and it was plugged with a Mikulicz tampon, which was removed in forty-eight hours. The patient made an uneventful recovery. The probability was that the gestation had occurred in the right tube, and had gradually eroded the upper wall and had passed with membranes intact into the abdominal cavity. Spurious labour probably had occurred one month before operation, as foetal movements had ceased at that time and there was a history of slight pain and uterine haemorrhage then, the sac had become infected later.

Dr. DOUGLAS MILLER described his impressions of a visit to certain American and Canadian obstetrical and gynaecological clinics. As most of the chief cities had been visited in Dr. Miller's two months' stay across the water, his impressions were of great interest, especially when he came to discuss the various hospitals and their regimes and compared them with those in this country.

Dr. GIFFORD KENNEDY described a case of unusually slow foetal heart beat (80 a minute), which continued during a long first stage of labour and during the second stage also, but on delivery the child was found to be absolutely healthy, and nothing abnormal could be elicited on auscultation of the heart after birth.

At the annual general meeting of the Chelsea Clinical Society held at St. George's Hospital, Dr. GORDON LANE, the retiring president, opened a discussion on Facultative diagnosis. By this expression he meant the employment of the practitioner's powers of clinical diagnosis without resort to laboratory assistance. He thought that perhaps too much reliance was placed upon certain methods of diagnosis without using that power of observation that was inherent in everyone, to a greater or lesser degree. This was, perhaps, especially the case in the diagnosis of functional derangement of the ductless glands. Dr. C. O. HAWTHORNE laid stress on exact clinical methods, but was strongly in favour of describing what was observed, and being very exact in the deductions which were to be made logically from those observations. Messrs. FITZWILLIAMS, FORBES, A. R. THOMPSON, and Dr. CREWDSOM THOMAS took part in the discussion which followed.

At a meeting of the London Dermatological Society held at St. John's Hospital, Leicester Square, on Wednesday, June 17th, the annual oration of the society was delivered by Professor Dubreuilh of Bordeaux on Chronic sunburn and epithelioma of the skin. The annual dinner was held at the Frodoeur Restaurant, Professor Dubreuilh being the guest of the society.

Reviews.

TUMOURS AND CANCERS

If a philosopher, a physician, and a biologist agreed to co-operate in writing about cancer they would, it might be expected, produce a book of an unusual pattern which, if the co-operation were close, might resemble Mr. HASTINGS GILFORD'S *Tumours and Cancers*.¹ The closer the co-operation of the three hypothetical authors of the hypothetical book, the more striking would be the resemblance of their product to the volume Mr. Gilford has produced, for in it we meet the philosopher, physician, and biologist in every page and every paragraph.

The title of the book gives no indication of its distinctive character, and even the qualification "A Biological Study" adds little to satisfy the curiosity awakened by a glance through the table of contents. Here we notice that the volume is divided into eight books, whose titles are—"Introduction, growth and overgrowth," "Development," "The origin of cancer," "Nature and natural history of cancer," "The cause of cancer," "Cure and prevention of cancer," "Retrospect and prospect." Those who take the plunge to find what it is all about will have to wade to a good depth before their curiosity is satisfied, and it may perhaps happen that, even after reading Books V and VI on the natural history and cause of cancer, they will not find it easy to say in a few sentences what they have learnt.

To understand Mr. Gilford's views about cancer we must first appreciate the sense in which he uses the word "development" and its distinction from "growth." "Growth is a quantitative change with no reference to quality. To develop, on the other hand, is to become more intricate, to advance in complexity or quality. Though a thing may grow it does not necessarily develop, and though it may develop it need not grow" (p. 32). "Development either makes for progress or is regressive, with a tendency to work back in the form of a *reductio ad antiquum*. Regressive development is but another name for degeneration" (p. 77). He looks upon development, therefore, as first a progressive and later a regressive change, it is essentially a circular movement, "beginning with integration from inorganic elements and ending in disintegration into inorganic elements" (p. 627). Mr. Gilford looks on cancers as variations of the regressive development of single cells or cell groups, whereby they become quasi-embryonic and proliferate. Elsewhere the biologist in him speaks of cancers as composed of cells which have been stopped in their upward development, and as a consequence unduly hastened in their downward development. When the physician enters, cancer is referred to as "Nature's punishment for a biological crime", and when the philosopher steps forward he refers to cancer as the "captain of the degenerations," a motley company which includes defective intelligence, imbecility, idiocy, insanity, diabetes, tabes dorsalis, dementia, epilepsy, neurasthenia, alcoholism, and others. All such degenerations are, the author holds, becoming more common as civilization advances.

Such are some of the distinctive ideas of the book. We do not quote these passages as standards by which the book should be judged, but mention them as indicating its general character, in the hope that what we have said may invite others to study it for themselves. It is stimulating matter to read, because on almost every page some provocative idea or some startling generalization is to be met. In particular, Book III deserves special recommendation, for this scholarly and philosophical essay on normal and premature development is a masterly exposition of a difficult chapter in biology. Having said so much in praise, we feel compelled to draw attention to one fault: the book is unconscionably long. It ought to be read through without too much interruption if the thread of the argument is not to be lost, but how many readers will have the leisure or perseverance to continue faithfully to page 700? If

¹ *Tumours and Cancers*. By Hastings Gilford F.R.C.S. With an introduction by Sir Frederick Keeble (B.L. Sc.D. F.R.S. London: Selwyn and Blount Ltd. 1925. (Roy. 8vo. pp. xii + 703. £2 2s. net.)

repetitions had been avoided all the information might have been given in perhaps half the space. If Mr Gilford finds that this imposing book does not reach so many busy people as he wishes, it is to be hoped that he will offer the medical world a more compact and less expensive statement of his views.

PROBLEMS OF PERSONALITY

A STRINGS of studies by well known American, English, French, and Swiss psychologists has been published in a volume entitled *Problems of Personality* as a tribute to the pioneer work of Dr Morton Prince in the sphere of psychopathology. In his early years Dr Prince wrote a number of papers on general medicine and neurology, but he soon began to take a special interest in abnormal psychology. The *Dissociation of a Personality*, in which the complex disintegrations of an hysterical case are portrayed and interpreted, is probably his best known work, and it is interesting to note that he was writing on hypnotism, post-hypnotic suggestion, automatic writing, and double personality in 1890, at about the time when Pierre Janet published his famous work, *L'Automatisme Psychologique*, in which states of mental dissociation were made the subject of psychological investigation. Dr Prince has undoubtedly done much to arouse interest in a previously neglected sphere of medicine, and he has well deserved the respect paid to him which has now found tangible expression in the publication of this volume.

The studies included in the volume are written by workers in both abnormal and normal psychology, and the subjects chosen by the various contributors naturally cover a wide range. As might be expected, many divergent points of view are expressed, and some of the essays are polemical in tone. The book certainly reveals the extent to which psychology and psychopathology are lacking in that coherence and unity which is found in other branches of science, but its contents indicate that considerable advances have been made in the understanding of the human personality since the days when Dr Prince began his investigations. There is much in this work which the psychopathologist will find of interest.

PATHOLOGY

DR LUDWIG ASCHOFF, professor of pathological anatomy at Freiburg University, has published a series of lectures which he delivered in the United States during 1924, in a book entitled *Lectures on Pathology*. He appears to have travelled from one medical school to another, delivering memorial lectures and addressing medical societies, fourteen of these lectures are gathered together in this volume. The first is on the reticulo-endothelial system of the body, a theme on which Professor Aschoff can speak with paternal authority, for it was he who, in 1913, first proposed this designation for the reticulum cells of the splenic pulp and lymphoid apparatus and the reticulo-endothelial cells of the lymph nodes, blood sinuses of the spleen, capillaries of the liver lobules, bone marrow, adrenal cortex, and hypophysis. He proposed this name because these cells have in common the function of producing reticulum and of lining sinusoid blood and lymph spaces, they act simultaneously as lining endothelial cells and producers of reticulum. That this conception of the reticulo-endothelial system was correct, and the introduction of a new phrase justified, has been supported by the results of many careful studies in microscopical anatomy, and the term "reticulo-endothelial system" is coming into general use. Professor Aschoff's lecture is concerned chiefly with the significance of the reticulo-endothelial system in blood destruction, blood production, and general metabolic functions. The first lecture makes its chief appeal to the histologist, the second, on the pathogenesis of human pulmonary tuberculosis, to the physician, and the fourth, on pathological fatty changes,

will be welcomed by the biochemist. In fact, Professor Aschoff has something to say to nearly everybody, as a bare mention of the titles of the remaining lectures will show. Of these the more important are those on the morphology of the suprarenals, arterio-sclerosis, ovulation and menstruation, the origin of gall stones, the site and formation of bile pigment, the goitre problem, and renal secretion and renal disease. Dr Aschoff in his preface acknowledges his indebtedness to "various gentlemen" who translated the lectures and assisted in their preparation for publication, and he has been fortunate in their help, for the book reads easily without reminding us that it has been translated from another tongue.

Pathological Technique by Dr F. B. Mallory and Dr J. H. Wright, has long been a popular book with laboratory workers, and has now reached an eighth edition. It was first issued in 1897 as a practical manual for workers in pathological histology and bacteriology, has grown with the times, and has been built up into a rather expensive but almost indispensable book of reference. For the information of those who do not know the book we may say that it covers the whole field of practical pathology, having sections on histological methods, culture media, microscopical examination of bacteria and fungi, animal parasites, serological technique, and post mortem examinations. The main differences those familiar with previous editions will notice are that the chapter on blood has been rewritten and now presents both the technique of examination and the clinical interpretation of results, that the divisions devoted to bacteriology and serum diagnosis have been enlarged, and that brief directions have been added for photomicrography and the photography of gross pathological specimens. The book has grown to more than 660 pages, with 163 illustrations.

OPERATIVE SURGERY

THE fourth volume of Dr W. S. Bickham's treatise on *Operative Surgery* deals with thoracic and abdominal surgery and maintains the even and high standard of its predecessors. The descriptions of the operations, which are on the same plan as in the previous volumes, are detailed and alternative methods are given. On the whole the work is written on conservative lines—that is, methods which have been tried and tested are explained, and although it is well up to date the text has not been allowed to digress into controversial matters. On the big subject of gastric surgery the author quotes mainly the work and methods of the Mayos, Moynihan, Billroth, Balfour, and Kocher, and for statistics draws largely on the work of the Mayo Clinic. How recent the statistics with reference to Rammstedt's operation for congenital hypertrophic stenosis are it would be interesting to know, as the average mortality quoted is about 18 per cent. Perhaps the most disappointing chapter, especially in a book of this kind, which must be mainly one of reference, is that on the surgery of the spleen. Here we find little allusion to the "medical" spleens and their relation to splenectomy. The chapters on the biliary apparatus and intestinal surgery are good in that the illustrations are chosen with special reference to the display of operative technique. In the earlier chapters Trendelenburg's operation for embolism of the pulmonary arteries is described, and also three alternative methods of massage of the heart with their relative values are given.

The first section of the fifth volume is concerned with what is called the colo-recto-anal tract, in it are described the various modifications of the operations for colostomy, excision of the colon and rectum, colopexies and colopexions, haemorrhoids, fistulae, and the congenital abnormalities of these parts. It is surprising to find that, in

Problems of Personality. Studies presented to Dr Morton Prince. Pioneer in American Psychopathology. Edited by C. MacFie Campbell, H. S. Langfield, William McDougall, A. A. Roback, and E. W. Taylor. The International Library of Psychology, Philosophy, and Scientific Method. London: Kegan Paul, Trenchard, Trubner and Co. Ltd. New York: Harcourt, Brace and Co. Inc. 1925. (Demy 8vo pp. xiii + 434 18s. net.)

Lectures on Pathology. By Ludwig Aschoff. M.D. New York: Paul B. Hoeber Inc. 1924. (Med 8vo pp. x + 363. 35 figures. 5 dollars.)

Pathological Technique. By F. B. Mallory, A.M. M.D. and J. H. Wright, A.M. M.D. S.D. Eighth edition revised and enlarged. Philadelphia and London: W. B. Saunders Company. 1924. (Demy 8vo pp. 666. 163 figures. 32s. 6d. net.)

Operative Surgery. By W. S. Bickham, M.D. F.A.C.S. Vol. IV and V and index volume. Philadelphia and London: W. B. Saunders Company. 1924 and 1925. (Roy. 8vo. Vol. IV pp. iii + 842. 773 figures. Vol. V pp. iii + 880. 1118 figures. Vol. V pp. iii + 842. 1224 figures. 50s. net. A volume £15 the set index volume free. Sold in complete sets only.)

dealing with the question of hemorrhoids, injection with carbolic acid is not mentioned. The major part of the volume is devoted to the genito-urinary tract, it contains a vast amount of information, and the author has not spared himself when dealing with such subjects as plastic operations on the ureters, operations for epispadias and hypospadias, and ectopic vesicle. The modifications described are legion. Textbooks are apt to slur over such subjects as the manner of using cystoscopes, urethrotomes, lithotrites, and evacuators, but here a very satisfactory account is given. In spite of the facilities afforded by ureteric catheterization, Lums's separator still maintains its hold on the textbook. Dr Bickham seems to have a partiality for Kelly's direct method of cystoscopy and ureteric catheterization in the female. It is difficult to understand why separate methods should obtain for the two sexes. If it is necessary to master the details of the cystoscope for the male, it would seem far simpler to apply them to the female as well.

The sixth volume, with a separate volume for the general index to all the volumes filling some 190 pages, brings to a close this vast compilation on surgical operative procedure. The sixth volume, after dealing with operations upon the ejaculatory ducts and prostate, proceeds to describe obstetrical and gynecological operations. The final chapter is devoted to deformities and disabilities of an orthopaedic nature not included in the earlier volumes. The operations on the prostate are very fully discussed, and the liter methods, such as partial prostatectomy by the intraurethral punch method, and transurethral prostatectomy by various criteria for prostatic obstruction, are described. The gynecological operations are fully detailed and illustrated, and special attention has been given to the numerous plastic devices which are employed in these regions. Where special instruments are required these are clearly illustrated. The midwifery section deals with delivery, version, Caesarian section, and the surgical treatment of the complications associated with pregnancy.

It must be with a great sense of relief that the author can survey the completion of his task. It has been an immense undertaking, and is thoroughly well done, but the volumes, it appears, are not sold separately, and how many surgeons will care to spend so large a sum as the publishers demand for a single book remains to be seen.

VOLUMETRIC ANALYSIS

SUTTON'S Volumetric Analysis has been a standard work for many years. The fact that it has passed through ten editions is substantial testimony of the appreciation in which it is held. The reason, we think, is not far to seek. It is a manual of technical chemistry as well as of volumetric methods. There are few chemical operations of a quantitative nature in which some attempt has not been made to subordinate them to a volumetric process, and few that cannot be made by one plan or another to yield trustworthy results in the hands of a practised operator. Some of these, it must be confessed, involve such cumbersome preparation that they are only useful when needed repeatedly, a single demand is more expeditiously discharged by a non-volumetric method. In many cases, however, there is no choice but to resort to some form of volumetric process. It is for these cases that the value of the work is inestimable. The new edition⁶ describes methods for the determination of a number of materials not treated of formerly and gives a large choice of methods for dealing with operations provided for in former editions. Published methods of procedure have been multiplied so extensively in recent years that there is a danger of some of the best being overlooked among the multitude and thus omitted from the mere lack of space to include all of them. Instances of such omission were inevitable, but the book has the saving merit of containing within a remarkably manageable space a most comprehensive collection of the directions and data needed for laboratory operations. From our first view of the

variety of subjects treated we expected to find a chapter devoted to methods for the chemical determinations employed in physiological laboratories, but none is the only physiological subject we found in the index. The text of the volume appears commendably free from error, and the quality of its contents will maintain the status which the work has so long held.

THROAT BIOPSIES

The term "biopsy" was introduced into dermatology by Darier to describe the excision and histological examination of a fragment of tissue from a lesion in a living patient in order to elucidate or confirm a diagnosis. Dr AMY has, in *Ja Biopsie Clinique en Oto-Rhino-Laryngologie*,⁷ elaborated in a substantial volume the application of this principle to oto-rhino-laryngology. The information gained by this means does not necessarily stop at the confirmation or correction of a diagnosis, because the more exact and detailed this is rendered by the aid of histological examination, the more accurate will be the prognosis and the more precise will be the indications for treatment, moreover, in certain cases the progress of the patient and the results of treatment can be checked by repeated biopsies. It is almost inevitable that in such a book the author should appear to claim too much for a particular method, but he quite frankly tells of its limitations, its failures, and of the harm that may follow if it be employed in unsuitable cases.

The exposition of the subject includes the histological as well as the clinical and manipulative aspect, and there are numerous excellent illustrations of the histopathology of the special regions concerned.

The book is overweighted with long case histories, and the author would do well on a future occasion to cut these down ruthlessly and devote even more space to illustrations and histological detail. The book as it is does infinite credit to the industry of the author and to the teaching in the clinic of Dr Lemaitre.

BOOKS FOR NURSES

We cannot always find space to review textbooks written for nurses, but we have received two which we think deserve to be brought to the notice of our readers because they are books which give in a plain and trustworthy fashion the sort of information which is necessary for a nurse's education in her work. The first of these, *Elementary Anatomy and Physiology for Nurses*, by Dr H. CLIFFORD BARCLAY, is a book which has already proved its usefulness, for it has run to a third edition.⁸ This well illustrated book explains the structure and function of the body in everyday language, and its teaching is made more easily assimilable because of the homely analogies with which the author explains his facts. Anatomy and physiology can only be rightly understood as sections of the larger subject of biology, a fact of which Dr Barclay frequently reminds the reader. "How can these dry bones live?" is a question which many a medical man preparing to lecture to nurses must have asked himself. A spark of physiology may light the fire, but plenty of biology is needed to feed the flames. Dr Barclay's book is well illustrated, and if the easy conversational style gives it a living interest to nurses we think that this success must be ascribed in chief to his wide biological outlook.

The other book, of larger scope, is the well established *Text-Book for Nurses* by Mr HENRY GROVES and the late Dr J. M. FORTESCUE-BRICKDALE. Since first published in 1912 this textbook has been in great demand, and fresh editions or impressions have been called for no less than ten times. The chief aim of the book, which deals with anatomy, physiology, surgery, and medicine, is to enable the nurse to understand the principles underlying the medical and surgical treatment which it is her duty to assist in carrying

Aubn. Preface de M. le Prof. Agrégé T. Lemaitre. Paris. Vigot Frères (Roy. Bro. pp. vii + 334. 39 figures. Fr. 30).

⁸ *Elementary Anatomy and Physiology for Nurses*. By H. Clifford Barclay. M.D. Ch.B. M.R.C.S. L.R.C.I. F.R.C.S. Edin. Third edition. London. Baillière Tindall and Cox. 1924. (Demy Bro. pp. x + 411. 49 figures. 12s. net.)

⁶ *A Systematic Handbook of Volumetric Analysis*. By Francis Sutton. F.I.C. F.C.S. Eleventh edition, revised throughout with numerous additions. By W. Lincoln Sutton, F.I.C. and Alfred E. Johnson, B.Sc. London. L.C.C. A.R.C.S.E.I. London. J. and A. Churchill. 1924. (Demy Bro. pp. vii + 629. 120 figures. 35s. net.)

wisely omitted. The medical section of the present third edition* has been revised by Dr J. A. NIXON and to this section a chapter on hygiene has now been added. We need say no more of the scope of the book than that it covers the syllabus prescribed by the General Nursing Council and provides a good basis for studying for the examinations by which a nurse's knowledge is tested.

While speaking of books for nurses we may mention a useful little pamphlet by Miss Louise KINGHAM, matron of the Weymouth and Dorset County Royal Eye Infirmary, entitled *The Nursing of Eye Cases*¹⁰. It will give a nurse a clear appreciation of the relative gravity of accidents to the eye, and enable her to follow intelligently the various ophthalmic operations at which she may have to assist.

NOTES ON BOOKS

THE volume on the lido ciliary diaphragm¹¹ is the second of a series of ophthalmological monographs written by Professor L. BRIEN of Paris. The first, dealing with the cornea and sclera, appeared about a year ago, the third, on the lens, is announced as in course of preparation. In the volume before us the author includes the whole of the uveal tract anterior to the ora serrata. After a summary of the anatomy and physiology of the structures concerned, the nervous and muscular anomalies of the pupil and ciliary body are dealt with in a very clear and comprehensive survey. This section is the most useful in the book. The remaining chapters deal with the diseases of the region seriatim—inflammations, wounds, neoplasms, congenital abnormalities, sympathetic ophthalmia and glaucoma are also considered as being diseases peculiarly associated with the part in question. The monograph is clearly and concisely written, it is authoritative rather than discursive, it does not enter largely into detail, and never becomes overburdened. The illustrations are numerous, but some of them lack clarity.

The relations of dermatology to general medicine are illustrated in two short essays—on the relations of eczema to internal diseases¹² by Professor S. EHRMANN, and on the relation of the genital organs to changes in the skin¹³ by Dr K. WIENER—both forming part of the series of monographs edited by Professor Jadassohn of Breslau and Professor Pinkus of Berlin. After definition of the term "eczematous diseases" Professor Lührmann discusses the occurrence of eczema in various metabolic diseases, such as diabetes, the urea acid diathesis and nephritis, and then considers the subject of eczema of the outflow of the alimentary canal and genito-urinary tract. The final chapter is devoted to the description, diagnosis, and treatment of the condition variously known as eczema nummular, neurodermatitis circumscripta, and lichen circumscriptus chronicus (Vidal). Dr Wiener's study deals with the various dermatoses associated with puberty, menstruation, pregnancy, labour, and the puerperium, as well as those attributed to diminution, absence, or pathological increase of the activities of the sex glands. A bibliography of recent literature is appended.

The *Synopsis of Medical Terminology*,¹⁴ by Dr M. J. SEIFERT, is a short dictionary of medical terms. It will be useful to students seeking the meaning of technical terms, and, we hope, a guide to anyone who may be labouring under a desire to coin a new word. To previous generations, well grounded in the classics, this book would have been valued only by the forgetful but to-day, when many students commence their course with less knowledge of Latin and perhaps none of Greek, it is likely that such a dictionary will meet a larger need. The habit of analysing all scientific terms greatly simplifies the study of any subject but since most medical terms have their origin in the Greek and Latin languages this good habit often requires the aid of a dictionary.

* *Text Book for Nurses* by E. W. Hov. Grove, M.D. B.Sc. M.S. F.R.C.S. and the late J. M. Fortepene Brickle, M.A. M.D. Oxon. F.R.C.P. Lond. The Medical Section revised by J. A. Nixon C.M.G. M.D. Cantab. F.R.C.P. Lond. Third edition. Oxford Medical Publications. London: H. Milford Oxford University Press 1925. (Demy 8vo pp. xxvii + 645 223 figures 20 net.)

¹⁰ *The Nursing of Eye Cases* by Louise Kingham S.R.N. London: H. Milford Oxford University Press 1925. (Cr. 8vo pp. 16 1s net.)

¹¹ *Scintologie Oculaire. Le Diaphragme Iriso-ciliaire. Anatomie, Physiologie, Pathologie*. Par Professor F. Ehrmann. Paris: Masson et Cie 1924. (Roy. 8vo pp. 240 125 figures Fr. 25.)

¹² *Beziehungen der ekzematösen Eruptionen zu inneren Leiden*. By Hofrat Professor Dr. S. Ehrmann. Halle a. S. Carl Marhold 1924. (Med. 8vo pp. 56 GM 150.)

¹³ *Die Beziehungen der Genitalorgane zu Hautveränderungen*. By Dr. Kurt Wiener. Halle a. S. Carl Marhold 1924. (Med. 8vo pp. 77 GM 2.)

¹⁴ *Synopsis of Medical Terminology*. By M. J. Seifert. A.B. M.D. F.A.C.S. New York and London: D. Appleton and Co. 1925. (Demy 8vo pp. 30 3s 6d net.)

for its punctual observance. This book, after some observations on the general principles of medical terminology, gives an alphabetical list of medical suffixes, followed by a similar list of word root and an alphabetical list of prefixes. It occupies only thirty pages and it would perhaps have been more convenient if the book had been bound in such a way that it could be slipped into a pocket instead of being destined for the shelf.

Under the somewhat sonorous title of *Hygienic Fundamentals of Food Handling*¹⁵ an unpretentious little book has been prepared by two American writers, CHARLES THOM and ALBERT C. HUNT. It contains much miscellaneous information often omitted from books on hygiene—about such subjects as the decomposition of eggs, the preservation of fermentable food, and the canning of fruit. On the other hand, it does not give a very good account of the common type of food poisoning due to the salmonella toxin. In this, as in other American books, *B. botulinus* occupies a much more conspicuous place among the agents which threaten danger to food than it does in English presentations of the subject of food poisoning. We cannot picture any one class of people to whom this book would be particularly useful, but we think that some bacteriologists and medical officers of health, whose duties bring them into touch with problems of the preservation of food, would find it useful for occasional reference.

¹⁵ *Hygienic Fundamentals of Food Handling*. By Charles Thom and Albert C. Hunt. Baltimore: Williams and Wilkins Co. London: Baillière Tindall and Cox 1924. (Med. 8vo pp. 223 23 figures 15 net.)

PREPARATIONS AND APPLIANCES

Kharulphan

THE Kharulphan brand of novarsenobenzol is a preparation made by Messrs Burroughs Wellcome and Co. Snow Hill Buildings, I.C.1, for subcutaneous and intramuscular injection. Its special feature is its great solubility: it dissolves rapidly and completely in its own weight of water or saline. As regards its lack of irritant properties the manufacturers state that it can be injected subcutaneously with a minimum of discomfort to the patient. The activity of the drug has been tested biologically under the arrangements approved by the Board of Trade and the Ministry of Health. This preparation should be found of great value by medical practitioners, for novarsenobenzol can be administered in this form with a minimum of trouble both to the practitioner and to the patient.

Hexamine and Methylene Blue

Messrs Burroughs Wellcome and Co. put up in tablets a combination of 3 grains of hexamine with 1/4 grain of methylene blue. The purpose of this combination is to enhance the well known action of hexamine as a urinary disinfectant. Methylene blue has a well marked action as a urinary antiseptic and acts equally well in acid or alkaline urine, whereas hexamine only acts under the former condition.

"Vacacneum"

"Vacacneum" is a vaccine prepared from *Staphylococcus pyogenes* and *Bacillus prodigiosus*. It is recommended for non specific vaccine therapy. A complete treatment it is stated consists of eighteen injections at intervals of two days. The makers claim that this treatment produces beneficial results in a number of conditions particularly in tabes and asthma. The preparation can be obtained from Messrs H. R. Napp Ltd., 3, Clements Inn, London, W.C.2.

"Otalgan"

"Otalgan" is a 5 per cent solution of phenazono (phenyl dimethyl pyrazolon) in anhydrous glycerin. The preparation is recommended for instillation into the ear for the relief of otitis media. This preparation also can be obtained from Messrs H. R. Napp.

An Ultraviolet Lamp

A new lamp for ultra violet radiation or 'artificial sunlight' (to use a term which is becoming discredited) has been introduced by the Medical Supply Association Ltd. (167 185 Gray's Inn Road, London W.C.1). Its distinguishing feature is that the radiation is obtained from an arc burning one pencil of tungsten and the other of carbon though if a more rapid reaction is desired both elements may be of tungsten. The visible illumination with this lamp is of less intense quality than with mercury vapour but there is no doubt as to the effectiveness of the ultra violet radiation. The lamp in the design of which the firm had the assistance of Dr Percy Hall is well constructed. The arc is contained in a polished aluminium hood which is supported on a vertical stand and this is mounted on a non base with rubber tyred castors. It has been stated that the carbon arc is the more useful for general treatment while the tungsten arc has its advantages in local use, as in the treatment of sinuses and discharging gland. This apparatus provides for both general and local irradiations the latter by means of a localizing mask which fits in front of the hood and carries a quartz lens. An extremely easy mechanism provides for horizontal and vertical movements and for a rotary movement around the support, the procedure of striking the arc and adjusting the elements is scarcely less simple than that of operating an ordinary electrical switch. The lamp has, we are informed, been manufactured entirely at the firm's London works.

ROCKEFELLER MEDICAL FELLOWSHIPS.

GREAT BRITAIN

The Medical Research Council announces that it has awarded Rockefeller Medical Fellowships, tenable in the United States of America during the academic year 1925-26, to the following

DAVID CAMPBELL, B.Sc., M.D. Glas., Pollok Lecturer in Pharmacology and Therapeutics, University of Glasgow

WILLIAM NORMAN CRAIB, M.C., B.A. Camb., of Good Hope, B. Chir. Camb., House Physician, Guy's Hospital, London

MISS KATHERINE HOPE COWAN, M.Sc. Manch., D.Sc. Lond., Assistant in Biochemistry, University College, London

WILLIAM SIFONRIED DAWSON, M.A. B.M.Oxf., M.R.C.P., Senior Assistant, Maudsley Hospital, London

HOWARD WILLIAM FLOREY, M.B. Melb., B.A. Oxf., John Lucas Walker Student, University of Cambridge

ARTHUR DAVIN RITCHIE, M.A. St. And., B.A. Camb., Lecturer in Physiological Chemistry, University of Manchester

GEORGE PALLING WRIGHT, B.A., B.M.Oxf., Macgregor Student and Demonstrator in Histology, University College, London

Dr Craib, Dr Florey, and Mr Ritchie have been appointed on modified conditions, while holding scholarships or emoluments from other sources. Mr Ritchie's Fellowship is being held during a short period of work in Canada this summer.

EPSOM COLLEGE

The annual general meeting of the Governors of Epsom College was held on June 26th, with the chairman of council, Dr Raymond Crawford, in the chair.

The chairman said that he hoped this would be a memorable year in the annals of the college and one pregnant of far-reaching results. Increased support from the profession and others had enabled the council to face increased commitments in various directions. In its determination to attain the highest educational level, it had made substantial improvements in the pecuniary prospects of the masters. The year had seen the completion of the rebuilding of the chapel as a memorial to the masters and boys who fell in the war. The new chemical block, thought and talked about for so many years, was now actually in hand, and had been made possible by several generous bequests. The vacated space would afford much needed additional accommodation for classrooms and lecture-room, and for a natural history museum, much better than that they now had. The council was now in a position, by the munificence of a benefactress, to carry out a complete transformation of the existing library, and to make it far more attractive and serviceable to the boys than in the past. The chairman expressed the hope that similar help from some other quarter might be forthcoming towards the equipment of a museum worthy of a school that supplied so many recruits to scientific professions. £500 would solve all difficulties in that direction. Another need of the college was the leveling and extension of some parts of the playing fields, so that all the boys might play their games under more inspiring conditions. The bursar had secured an estimate for the work, which showed that it could be well done for £1,500. These things were beyond the capacity of the normal revenue of the college, which this year was bearing the cost of an extensive substitution of electric light for gas, and which would almost at once have to provide better washing and drying facilities in the Lower School and probably in the not distant future to undertake the centralization of a scattered and wasteful system of heating and hot water supply.

The chairman concluded on a note of gratitude to all who had helped them to their good subscribers, donors, and benefactors, to their organization of local secretaries, which he wished to extend far more widely, to the great medical institutions, the British Medical Association and *British Medical Journal*, the *Tanet*, the Medical Insurance Agency, and numerous Panel Committees, to Mr Gerald Stanley, who had established at his own expense a scholarship giving free education at the college, and to Mr Arthur Chudleigh, who had given to the chapel a silver-plated cross, six candlesticks and vases for the altar, and in which dish

He hoped that the generosity of all these might prove contagious in many quarters.

On the motion of Dr de Havilland Hall, seconded by Sir St Clair Thomson Dr Raymond Crawford was appointed a vice president of the college in recognition of the fact that he had collected over £1,000 for the Royal Medical Foundation attached to the college.

Pensions and Scholarships

The scrutineers, Dr E. Climson Greenwood, Dr Raymond Crawford, and Sir William Hale-White, reported the successful candidates to be as under

Pensionerships	Votes
* Baynes, Donald	4,755
† Ayres, Edith C.	2,004
† Chatterton Percy	1,468
† Stephenson Hilda	1,440
† Goulston Arthur	1,428
† Willis, Joseph D.	1,399
† Kennedy, Florence A.	1,354
† Shaw, Annie C.	1,124
* Christie pensioner	† Ordinary pensioners
† Pugh pensioners	

Foundation Scholarships

	Votes
McClintock, John H. T.	10,764
Leathwaite, Christopher	9,809
Emrys Roberts, Hugh M.	9,491
Beck, Geoffrey A.	9,025
Allen, Edward V. M.	8,863
Pinniger, John L.	8,208
Burgess, Christopher J. V.	6,648
Ryle, Ian N.	6,319
Marsh, Thomas A.	6,201
Sanderson, Paul B.	6,026
Wolfenden, Henry C. L.	5,665
Farman, Henry C.	5,095
Kee, Eric M.	4,821

MENTAL INVALIDS

THE Moulton Lectures for 1925 were delivered in the Royal College of Physicians, Edinburgh, by Dr C. C. Easterbrook, Physician Superintendent of the Crichton Royal Institution, Dumfries, on June 22nd, 24th, and 26th. He took as his subject "Mental invalids."

The Body-Mind

In the first lecture, on the "Body-Mind," he dealt with the conception of the biopsychic nature of the human organism in health, in bodily disease, and in mental disease. He maintained that the integration of the various parts of the organism into a working unit had been effected by the nervous system at gradually ascending levels of its activity corresponding to the phylogeny of man's adjustment with environment, and was represented from below upwards by the vegetative, sensorimotor, and mental provinces of the nervous system. The first of these in its sympathetic and autonomic parts integrated the biological machinery of metabolism, growth, development, and decay, and differences had to be recognized between sympathetic-tonic and autonomic individuals. The sensorimotor nervous system integrated the motor machinery of the body and its parts, and recent work on the constitution and innervation of the skeletal muscles showed that this part of the system had a bearing on the peripheral explanation of the genesis of emotion. The mental nervous system integrated the mental machinery of the body and its parts, subvocal conscious and unconscious mental activity, and its highest level in the cerebral cortex, unified and expressed the individual, put him in relation with his environment, and regulated his conduct. Consciousness—that is self-consciousness—was to be explained by stimulation of the cerebral cortex from within or from without the body. With regard to unconscious mental activity, man's origin of mind must be regarded as coextensive with his body. The new psychology stressed the importance of feeling, desire, and instincts in human mentation and conduct, and lowered the influence of reason, moral sense, will, and self-control, the higher qualities of mind which distinguished man from animals and had made him the master. The lecturer observed that the terms of physics and chemistry were inadequate in biology, and still more so in psychology, for the terms of each science had their own distinctive meaning, and in man biological and psychological occurrences were unique.

* See BRITISH MEDICAL JOURNAL, February 28th 1925 p. 422.

Clinical Examination, Causation and Prevention of Mental Diseases

In the second lecture Dr Easterbrook dealt first with the clinical examination of mental invalids, and detailed what he considered to be in ideal form of clinical record. He then went on to consider the causation of mental diseases and their prevention. He expressed the opinion that it was better to regard the two great factors productive of mental disease as a nervous constitution, inherited or acquired, which was a predisposing factor, and stress, which was an exciting factor, rather than, as was commonly done, to speak of heredity and stress. The nervous constitution, inherited or acquired, was the essential causal basis of a mental breakdown, and it was very important that it should be recognized by the individual. The sources of evidence of this constitution were six in number—namely: (1) The presence of some congenital nervous, mental, or moral defect. (2) The occurrence in previous life from infancy onwards of some acquired psychosis, psychoneurosis, or neurosis. (3) The occurrence in earlier life of periodic or persistent morbid tendencies—that is, faulty habits and vices. (4) The presence of an abnormal temperament, either inherited or acquired, which was the most frequent and the most subtle sign of a nervous constitution and specially important to recognize, this might include the unusual development of such qualities as irritability, jealousy, waywardness, optimism or pessimism, etc., or it might take the form of an abnormal conflict between the instincts of the "herd" and of self-preservation. (5) The presence of a nervous or degenerate physiognomy and physique had to be considered, but, in the lecturer's opinion, this was apt to be artificial, and was not of great importance. (6) A family history including the occurrence of mental and nervous diseases and of morbid disposition and habits among the individual's nearest blood relatives. Dr Easterbrook classified the various stresses or exciting factors which might produce mental disease in seven classes, which included direct pathologic stresses involving diseases of the nervous system, indirect pathologic stresses involving bodily disease, metabolic disorders, and endocrine disorders, toxic stresses such as the action of alcohol, cocaine, lead, etc., on the nervous system, energetic stresses, which included external agencies producing shock, exhaustion, and poisoning of the nervous system, hygienic stresses, including privations or excesses in mode of life, biologic stresses, including abnormal changes occurring in the organism during the mental and reproductive epochs and crises of life, and psychic stresses, including excessive mental perturbations, such as prolonged worry, and privations, such as solitude and want of occupation.

Classification of Mental Diseases, Curative Treatment

In the third lecture Dr Easterbrook dealt with the classification of mental diseases, and added some remarks on methods and aspects of curative treatment. He proposed a nosological classification of mental diseases by which they were divided into the congenital psychoses, such as mental defectiveness in its various grades, and the constitutional psychoses, which included melancholia, confusion, dementia, delusional insanity, and the psychoneuroses, etc. He pointed out that the great autonomic feature of these disorders was chromatolysis of the cortical cells, which became unduly worn out, and of which numbers disappeared, the organic psychoses included conditions such as cerebral sclerosis, haemorrhage, tumour, and other gross nervous lesions, the organismal or "bodily" psychoses included a great number of infective and other bodily diseases which produced an indirect mental effect, the toxic and energetic psychoses included the influence of drugs and the various energetic traumas. The lecturer next considered some aspects of curative treatment. He pointed out in the first place the great importance of the movement which was at present taking place for the voluntary admission of patients to asylums. In 1900 the number of voluntary private patients admitted into the Royal and District Asylums in Scotland had been 84 while in 1924 the number had risen

to 431. This was of special importance in regard to the early treatment of mental disease. He considered that no general hospital or medical school could be regarded as complete without its psychiatric clinic. He attached great importance to the open air rest treatment in active psychosis, and showed plans of buildings specially adapted for this purpose. In regard to endocrine therapy, it had, he said, been found that most glandular extracts in all probability acted simply because of their large nucleoprotein content, and without reference to the particular gland from which they were derived. Thus, however, did not apply to thyroid extract which in large doses continued for a week, produced a marked catabolic effect with loss of weight, when the thyroid administration was stopped at the end of a week, a marked anabolic rebound took place in which the patient not only gained quickly in weight, but in which the mental symptoms were likely to disappear, thus greatly shortening the period of treatment.

THE HEALTH GOVERNMENT OF GERMANY

The League of Nations, in continuance of its policy of giving information to its constituent members in matters of international importance, has issued two statements on the subject of public health services, one relating to Germany, the other to Austria. They have been prepared, the former by Dr. Gottfried Levy, medical director of the central health office in Berlin, and the other by Dr. Hermann Schloetter. The pamphlets, which contain 60 and 80 large octavo pages respectively, would have been much the better for tables of contents. The subjects dealt with include notification of infectious diseases, the procedure for their investigation, the periodic publication of statistics, the registration of births and deaths, public health legislation and sanitary organization, sanitary equipment, hospitals, sanatoriums, lunatic asylums, etc. the campaigns against tuberculosis and venereal diseases, the protection of maternity and of babies and children, housing, water supply, and drainage, and, finally, the control of foodstuffs. Germany is a federation of eighteen States which possess the right of enacting their own laws, so long as the central authority (Reich) does not use its legislative power.

Notification of Disease and Registration of Death

The reader will find many differences between German and English administration. Notifications of infectious disease are made to the police authorities, and by them are forwarded to the district medical officer, any change of the place of residence of an infected person must be intimated to the police of both areas. In puerperal fever the medical officer may only visit with consent of the householder, which, however, is seldom refused. Where anthrax, glanders, dysentery, or typhoid fever occurs the police may order an official post-mortem examination, "if possible by a doctor," before burial. The Reich has not yet adopted the international system of registering causes of death. The birth of a stillborn child must be notified on the following day to the registrar. Illegitimate births must be notified within a week by attending midwives. A stillbirth is defined as one in which no pulsations of the heart are observable after issue from the womb. As regards deaths in general, "the accuracy of entries in the annual 'causes of death' is in the main ensured by the fact that these statistics extend to all the towns, in which medical post-mortem examination is generally compulsory." Registration, however, is done by non-medical persons, and apparently a medical certificate is unnecessary, in some places post-mortem examinations may be made by barber surgeons or "layers-out." Statistics are given for various States showing that in 25 to 30 per cent of fatal illnesses there was no medical attendance.

Health Officers

Candidates for appointments as State health officials must follow a specified course of study and examination. The subjects include forensic medicine, psychiatry, social hygiene, pathological anatomy, and bacteriology. If a

candidato fails to pass any part of the examination he is not allowed to come up for re-examination more than once. "In Prussia it is a condition of appointment as Kreis (district) medical officer that the candidato should have worked five years as an independent medical practitioner after passing the examination." The word "after" will be noted in this quotation as indicating a conception and scheme quite different from that of this country. The same officer deals with public health and forensic medicine, and must have had considerable experience in general practice.

The English reader will find in the pamphlet a curious reminder of the old practice of affixing warning notices to houses in which there are cases of infectious disease. "The marking shall be in a conspicuous place and shall be in the form of a yellow signboard by day and a yellow lantern by night." These marks are required for typhoid fever and relapsing fever. The campaign against alcoholism occupies an important place in Germany.

In Germany the State authorities have always given the fullest attention to the social consequences of alcoholism—for example, the deterioration or destruction of efficiency, increased debility of health and mortality, undermining of family life, degeneracy in children and increased crime and vagrancy. The following measures have been taken by the Government: the establishment of a Reich monopoly for the production and sale of spirits entailing higher prices and consequently lower consumption; restriction of retail sale on dry days in certain highly industrialized districts; prohibition of the hawking of spirits, encouragement of the establishment of temperance hotels and of the production of non-alcoholic refreshing and stimulating drinks; licensing regulations, control of imports, general popular education, and lastly, legislative measures for placing drunkards under guardians or trustees and confining them in sanatoriums.

A considerable percentage of the surplus proceeds of the brandy monopoly (amounting to 20,000,000 marks in 1922) is applied annually to combating alcoholism and diseases consequent, such as tuberculosis and venereal diseases, to subsidizing the establishment of teetotal inns, young people's clubs, and dairies, to instituting training courses for juvenile welfare workers and officers of philanthropic societies and to educational work (anti-alcoholic exhibitions, touring lectures, etc.). In addition to the State administrations the large private welfare associations also receive considerable financial assistance.

The pamphlet contains information on many other matters of interest, not only to public health officers, but to students of sociology in this country. The pamphlet for Austria contains even fuller details.

Nova et Vetera.

THE SALERNIAN RULES OF HEALTH

To wander through what were formerly the abodes of splendour or renown is always a melancholy proceeding, but in no case is this more true than in the case of the modern Salerno. Here is a sleepy Italian town of some forty thousand inhabitants. Few people move in the streets, and those few seem in no hurry about their business. Though the town has no natural attractions in itself, its situation at the head of a bay bearing its own name is exceedingly beautiful. From the sea the ground slopes upwards and reaches to the height of small mountains a short distance away. The oldest part of the town stands on high ground and still retains houses dating back to the twelfth, to the eleventh, and even, it is said, to the tenth centuries. Certainly the cathedral dates from the year 1070 and contains sarcophagi which may yet retain the mortal remains of the Norman adventurers who conquered Apulia in the eleventh century. We search in vain for any remains of the once famous medical schools or hospitals, "while memory watches o'er the sad review."

It was in 1075 that Duke Robert of Normandy, while leading the French and Normans to a crusade, arrived at Salerno and remained during the following winter. The crusade was successful, but the Duke, having received a wound, returned to Salerno to be cured. Either the cure was tedious or dalliance in love caused him to spend a whole year in the town, and this long absence abroad may have largely contributed to his loss of the English crown and to his twenty-eight years' imprisonment.

Though its renown as a centre of medical education has

long since gone, Salerno will remain famous by reason of the poem in rhyming Latin verse entitled "*Regimen Sanitatis Salernitanum*." This was composed in honour of Duke Robert and presented to him in 1076. It was esteemed so highly that no fewer than 100 manuscripts still exist, and over 240 printed editions appeared between 1480 and 1846.

It is really a treatise on all matters relating to the preservation of health (*Conservandae Bonae Valetudinis Praecepta*), and though it contains the accumulated wisdom of the school the main part is thought to have been composed by John de Milano, who, indeed, in a manuscript of date 1418, is named as the author. It is written in a popular style, and in its original form was comparatively short, the edition of Arnould containing but 326 verses. Later writers have added to it to such an extent that the edition of M. Baudry de Balzac contains 2,300 verses, and that of Rienzi 3,520.

The following extracts have been made from the text of Arnould de Villa Nova, who lived close to Salerno in the thirteenth century, and it is this text which Sir Alexander Crooke published in 1830. It is much the same as that entitled "*Conservandae Bonae Valetudinis Praecepta* longo Saluberrima Regi Anglorum quondam a Doctoribus Scholae Salernitanae. The Salerne schoole or the Regiment of Health. That is Physiell Observations for the perfect preserving of the Body of Man in Continuall Health. Edinburgh, printed by Andie Hart, and are to be sold at his shop, on the north side of the hie Street, a little beneath the Crosso Anno domini 1613" (Black letter.)

The Salerno Schoole doth by these lines impart
All health to England's King, and doth advise
From care his head to keepe from wrath his heart,
Drinke not much wine, sup light and soone arise
When meat is gone long sitting breedeth smart
And after noone still waking keep your eyes
When moov'd you finde your selfe to Nature's needs,
Forbeare them not, for that much danger breeds

Use three Physicians still first Doctor Quiet,
Next Doctor Merri man and Doctor Dret

Long sleep at afternoon breeds slouth, agues and rhumes

Great harmes have growne and maladies exceeding
By leeping in a little blast of wind
So Cramps and Dropsies, Colicks, have their breeding
And Mized brames, for want of vent behind
Besides we find in stories worth the reading
A certaine Romaine Emperour was so kind
Claudius by name he made a proclamation,
A seapo to be no losse of reputation

Pears, apples, peaches milke and cheeso
Salt-meats, Red Deere Hart, Beefe and Goat all these
Are meates that breed ill blood and melancholy

Wine Women Baths, by Art or Nature warme,
Usde or abuse, do men much good or harme

Six things that here in order shall insue
Against all poison have a secret powre
Peares Garlick Radish roots Nuts, Triacle, Rew
But Garlick cheese, for they that it devoure
May drinke, and eat not who their drinke do brew,
May walk in aires infected every houre,
With Garlick then hath power to save from death
Beare with it though it make unsavoury breath
And scorne not Garlick like to some that thinke
It onely makes man winke, and drinke and stinke

Though all ill savours do not breed infection
Yet sure Infection cometh most by smelling
Who smelleth still perfum'd his complexion
Is not perfum'd by *Poet Martialis* telling
Yet for your lodging rooms give this direction
In houses where you munde to make your dwelling,
That nere the same there be no evill scents
Of puddle waters or of excrements
Let ayre be cleare, and light and free from faults
That come of secret passages and vaults

If wine have overnight a surfeit brought
Then early in the morning drinke a draught
And that a kind of remedy shall yield

(The poem then goes on to describe the kinds of wine and when they ought to be drunk.)

It in your drinke you mingle Rew with Sage
All poyson is expell'd by power of those,
And if you would withall lusts heat aswage
Add to the same the gentle floure of Rose

Would not be sick when the seas do rage
Sea water drinke with wine before he goes

Of washing of your hands much good doth rise,
'Tis wholesome cleanly and relieves your eyes

Some to drinke onely water are assign'd
But such by our consent shall drinke alone
For water and small beere we make no question
Are enemies to health and good digestion
And Horace in a verse of his rehearces
That water drinkers never make good verres

To show what liberties the translator has taken and how he has
do additions both here and elsewhere, the original runs

Potus atque sumptus sit edendi valde necesse
Infrigidat stomachumque cibum nititur fore crustum)

We see the better sort thereof [cheese] doth crite
To make as it were a period of their meat
The poorer sort when other meat is scant
For hunger eat it to relieve their want

To close your stomach well this order sutes
Cheese after Flesh Nuts after Fish or Fruits
Yet some have said, beleeve them as you will
One nut doth good two hurt, the third doth kill

Raw pears are heavy to digest we see
Drink after Pears, tines after Apples order
To have a place to purge yourself of ordure

Cool damsons are good for health by reason
They make your intestines soluble and slacke

By Figs are lice engendered, I must provoken

New Rennish wine stirs urine doth not blude
But rather loose the belly breeding wind

It [vinegar] makes one melanchol hurts their eyes,
Not making fat nor mending their complexion
It lessens sperme makes appetite to rise
But taste and scent is good against infection

Four special virtues hath a rop in wine
It maketh the teeth white it clears the eye
It adds unto an empty stomach fulnesse
And from a stomach full it takes the dulnesse

Good dyet is a perfect way of curing
And worthy much regard and health assuring

The wormes that knowes the wombo and never stint
Are kill'd and purg'd and driven away with mint
But who can write thy worth (O soveraigne worme)
Some ask how men can die while thou dost grow

Rew is a noble hearbe to give it right
To chew it fasting, it will purge the sight
One qualitie thereof yet blame I must
It makes man chaste and women fild with lust
Faire ladies, if these Physicke rules be true
That Rew hath such strange qualites as these
Eat little Rew lest your good husbands rew
And breede betweene you both a sinew disease
Rew whets the wit and move to pleasure you
In water boyld it rids a roome of fleas

For writers old and new, both ours and forren
Affirme the seed [of green willow] make women chaste and barren

If in your teeth you hap to be tormented
By meane some little wormes therein do breed
Which paine (if heed be tane) may be prevented
By keeping cleane your teeth when as you feed
Burne Frank incense (a gum not evil scented)
Put henbane unto this and Onyon seed
And with a Tunnell to the tooth that's hollow
Convey the smoke thereof and ease shall follow

Four humours raigne within our bodies who's
And these compared to foure elements
The Sanguin Cholier Flegme and Melancholy
The latter two are heavy dull of sense
The other are more joviall quick and joly
And may be likened thus (without offence)
Lyke fire both warme and moist is Sanguin deare,
Lyke fire doth Cholier hot and dry appeare
Lyke water cold and moist is Flegmatique
The Melancholy cold dry earth is like

The Sanguin gamesome is and nothing nyce,
Loves wine and women and all recreation
Lies pleasant tales and newes plays cards and dice
Fit for all company and every fashious
Though bold not apt to take offence nor usefull
But bountiful and kind and looking chearefull
Inclining to be fat and prone to laffer
Loves mirth and musick, cares not what comes after

(The poem describes the characteristics of Cholier as being
violent and fierce, ambitious, proud bountiful, often inebriate, a
right bold speaker and 'as bold a lark' easily roused to anger,
having a good appetite, 'yet ever looking pin'd')

In younger yeares they use to grow apace,
In elder hairy on their breast and face

The Flegmatique Most of no great growth inclining rather to
be fat and square lazy, not well educated, dreamy, or else still
spitting to avoid the flegme

The Melancholy Very studious and solitary person apt to be
hateful to others constant sometimes extreme in love, seldom
in love, mistaking, sparing, not daring

Now though we give these humours severall names
Yet all men are of all participant
But all have not in quantity the same
For some (in some) are more predominant

If Sanguin humor do too much abound
These signs will be thereof appearing chiefe
The face will swell, the cheeke grow red and round,
With burning eyes the pulse beat soft and briefe
The venes exceed, the belly will be bound
The temples and the forehead full of griefe
Unquiet sleepes that so strange dreames will make
To cause one blush to tell when he doth wake
Besides the moisture of the mouth and spittle
Will taste too sweet and scarce the throat to tickle

If Cholier do exceed as may sometime,
Your eares will ring and make you lo be wakefull
Your tongue will scrape all rough and oftentimes
Cause vomit, unaccustomed and hatefull
Great thirst, your excrements full of slime
The stomach squeamish sustenance ungratefull
Your appetite will sceme in nought delighting
Your heart still grieved with continuall bying
The pulse beat hard and swift all hot extreme
Your spittle sowie, of firewore oft your dreames

If Flegme aboundance have due limits past
These signes are here set downe will plainly shew
The mouth will sceme to you quite out of taste
And apt with moisture still to overflow
Your sides will sceme all sore down to the waste,
Your meat war bothsome, your digestion slow
Your head and stomach both in so ill taking,
One reeking ever gipping t'other raking
With empty venes the pulse beat slow and soft
In sleep, of Seas and Rivers dreaming off

But if that dangerous humor over raigne
Of Melancholy sometime making mad
These tokens then will be appearing plaine
The pulse beat hard the colour darke and bad
The water thin a worke fantastick blaine
Irris grounded jo or els perpetuall sad
Affrighted oftentimes with dreames like visions
Presenting to the thought all apparitions
Of bitter belches from the stomach coming
His crye (the left especiall) ever burning

To bleed doth cheere the pensive and remove
The raging furies bred by burning love

Make your incision large and not too deepe
That blood have speedy issue with the fume
So that from sinnewes you all hurt do keepe
Nor may you (as I taught before) presume
In sixe ensuing houres at all to sleepe
Lest some slight blisse in sleepe cause an apostume

First in the Spring for quantity you shall
Of blood take twyce as much as in the Fall

In Spring and Summer let the Right Arme blood,
The Left and Winter for the left are good
The Heart and Liver Spring and Summer bleeding
The Left and Winter hand and foot doth mend
One vein cut in the hand doth helpe exceeding
Unto the spleene voyce breast and intrals lend
And swages griefes that in the heart are bleeding

The Translator to the Reader

But here the Salerne school doth make an end
And here I cease to write but will not cease
To wish you live in health and out in peace
And ye our Physick rules that frindly read
God grant that Physick you may never neede

These few extracts will show the scope and intention of
the poem and that it was well suited to the needs of the
time in which it was written is evident

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British Medical Journal.

SATURDAY, JULY 4TH, 1925

CANCER RESEARCHES

INVESTIGATIONS into the biochemical properties of the blood serum in disease, especially when they come to fruition and prove to be of practical service in diagnosis, are of interest to all clinicians. While still in the imperfect stage they are of even greater interest to laboratory workers, who may by their experiments and criticism develop a more finished and certain technique than had been foreseen by the individual who began the work. On the other hand, the play of instructed criticism may prevent the adoption into practical medicine of a jejune or a fallacious method. The sero diagnostic methods in cancer have been numerous and varied, but none so far has satisfactorily passed the test of reliability. Remembering the many attempts in the past, with their claims pitched high and their accomplishments so disappointing, we approach each new reaction with increasing scepticism if only it would exhibit a human amount of fallibility we should bid it a kinder welcome. Probably in most cases the organisms are aware of the clinical diagnosis before recording the results of their reactions (indeed, in working out the method this must be so at the beginning), and unconsciously they are biased in their interpretations, smoothing out the doubtful findings and dismissing or excusing the palpably adverse. The critical student, unimpressed by the reputed perfections of another's bantling, emphasizes the failures. Not infrequently, too the number of cases tested or recorded is much too small, or the sample of other diseases is too selected for the real worth of the reaction in practice to be estimated. Now and again a method is propounded which, from internal evidence, impresses the reader as worthy of trial.

We publish this week (p. 4) a communication by Dr. H. J. B. Fry of the Cancer Hospital Research Institute giving details of a sero diagnostic method of his own devising which seems to have been sufficiently well tested to be put before the critics, and for which the claims are modestly stated. It is a simple flocculation reaction that apparently gives sharp readings. The "antigens" (why cannot pathologists agree to use a more accurate designation?) have been prepared from mammary carcinomata, and are composed of the alcohol soluble constituents of the material from which substances soluble in saline and acetone have previously been removed. The alcoholic extract, fortified with cholesterol, is standardized and added to four dilutions of the inactivated serum under test. The tubes are incubated, and a preliminary reading is taken at the end of three hours, the final result being determined after twenty-four hours at room temperature. A positive result is indicated by the appearance of flocculi in the tubes. In a series of 500 cases, comprising malignant and non-malignant conditions, 75 per cent of correct results were obtained, positive results were obtained in 71 per cent of the cancer cases, and negative results in 78 per cent of the non-cancerous, while the serums of healthy individuals in all but one instance reacted negatively. The analysis of the results is interesting.

There are two rather surprising findings in the use of this method. Seeing that the "antigen," at least in its mode of preparation, so closely resembles that of Boidet and Ruelens used in the flocculation reaction for syphilis, it might have been imagined that syphilitic serum would be apt to give positive reactions, but when tested in parallel with the Wassermann reaction Dr. Fry's reaction did not seem to be sensitive in this respect. The latter depends on some other reacting substance present in the serum. The other unexpected feature is that the antigens prepared from the epithelial cell carcinomata of the breast reacted even better with serums from other malignant manifestations than they did with the serums of patients suffering from mammary cancer. In fact, a very low percentage of successes (58) was given by breast cancers, while epitheliomata, as of the skin, oesophagus, bladder, and cervix uteri, showed from 80 to 100 per cent of positive results. The antigen also gave satisfactory results with the serum from cases of sarcoma. Taking all the cases of malignant disease together, the results of this reaction are as good as those obtained by means of the Wassermann reaction in all cases of untreated syphilis. So much for the positive side. On the other hand, the reaction proved fallacious in about 20 per cent of the non-cancerous cases. Perhaps this figure is unduly high, for Dr. Fry has considered as non-cancerous all those cases in which a diagnosis of malignancy could not be established. The sensitivity of the reaction with tuberculous serums, in particular, is unfortunate, but, excluding this disease, the results of the reaction are very promising, and would seem to be very helpful in the diagnosis of clinically doubtful conditions. The further exploration of this reaction by Dr. Fry and others will be welcomed.

Another member of the staff of the Cancer Hospital Research Institute, Dr. E. L. Kennaway, contributes to our columns this week (p. 1) an important paper bearing on the problems of the etiology of cancer. He had previously¹ investigated various fractions of coal tar and compounds derived from tar in order to throw light on the chemical constitution of the cancer-producing factor. The finding of such a substance would have been much more than a mere laboratory triumph, for it might have afforded an insight into the unknown substances which, it must be supposed, are responsible for the induction of malignant processes in general; whether we admit that their function is exciting or merely predisposing. The analysis of coal tar, however, having proved disappointing in this respect, Dr. Kennaway has approached the problem from another aspect. From such compounds of known chemical constitution as isoprene and acetylene he has been able to prepare tar-like products of comparatively simple composition, containing no elements other than carbon and hydrogen, which have proved particularly effective in producing epithelioma when applied to mice. The influence of high temperatures on the formation of carcinogenic substances from coal and petroleum, so important industrially, led him to try if similar substances could be produced from previously living tissues. A tar prepared from yeast had the cancer-producing property. A distillation product from human skin also exhibited the same property. It is obvious that in the living body there cannot be such a crude process in action to produce from the tissues this carcinogenic substance, but it is not beyond the bounds of possibility that

¹ BRITISH MEDICAL JOURNAL, March 29th 1924, p. 564.

"the human skin may be capable of forming very slowly substances which, when required in bulk and rapidly, can *in vitro* be produced from skin only at a red heat" The hydrolysis and oxidation of fats and proteins which take place in the body can only be performed in the laboratory by strong reagents and high temperatures. In discussing the results he has obtained in these interesting researches Dr Kennaway dissents from the views of some critics that the carcinogenic agents, as established by the experiments at the Cancer Hospital, merely act because they are "irritants." There are irritants and irritants some may produce cancer, while many do not. The property of producing cancer is a special property, whether a substance possesses it or not cannot be determined from a knowledge of its chemical constitution or its immediate effect on tissues, but only from the slow, unintentional mass experiment on human beings, or, more directly and speedily, by the set experiment on lower animals.

CLASSIFICATION OF BACTERIA

ALL bacteriologists will agree that the time has come when more serious effort should be made to classify bacteria in a scientific way, but the difficulties of the task are enormous. The earlier classifications, based primarily on morphology, have proved unsatisfactory. Later, when the botanist stepped in to catalogue these tiny members of his extended kingdom, he neglected the physiological behaviour of too many of them, with the result that his cumbersome Latin titles found no favour with the practical bacteriologist. Meanwhile the philistine pathologist has been a flagrant offender in the eyes of the systematic biologist, because he has simply named his germ according to the disease it produces, and neglected the conventions of both botanists and zoologists. As a rule the biologist has only been interested in the bacillus and the pathologist in the disease.

We have been watching with great interest the labours the Society of American Bacteriologists has undertaken with the object of deciding on some acceptable system of classification. In September, 1917, appeared the preliminary report of the committee, presided over by Dr Winslow, on characterization and classification of bacterial types, and in May, 1920, the final report of the committee was published. In 1923 a committee of the same society prepared a manual of determinative bacteriology, which in general followed the classification suggested by Winslow and his colleagues. These publications constitute a notable advance, and should do a great deal to produce order out of the prevailing chaos.

We welcome a further contribution to the same subject from Dr R. E. Buchanan, professor of bacteriology at the Iowa State College.¹ He has written the first of a series of monographs on systematic bacteriology, to be published by the Society of American Bacteriologists. This is a book of close on 600 pages, devoted to the history of the nomenclature and classification of the groups of bacteria hitherto described. The first chapter is an historical account of the various classifications of bacteria that have been proposed. Thence he passes, in the second chapter, to a discussion of codes of nomenclature and their relation to the problems of bacterial terminology. The third and final chapter, which constitutes nearly

two thirds of the book, contains an alphabetical list of the names which have been proposed for subgenera, genera, subtribes, tribes, subfamilies, families, orders, and classes of bacteria, including casual or vernacular terms which have had more or less extensive recognition. Professor Buchanan has attempted with each name to give the original diagnosis of the term, to discuss its usage by bacteriologists, and to point out whether or not its use is legitimate. Wherever practicable the author has quoted the original description and discussed the comments of subsequent writers. Obviously the compilation of such a dictionary as this has necessitated an immense amount of study, and there is no doubt that it will be extremely useful as a guide to correct nomenclature.

CENTENARY OF THE HOUSE OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON

FOUNDED by Thomas Linacre in 1518, and therefore now in its fifth century, the Royal College of Physicians of London has had four homes, three of them close together in the neighbourhood of St Pauls—in Knightbridge Street (1518-1614), in Amen Corner (1614-1666), destroyed by the Great Fire, and in Warwick Lane (1674-1825). Its move in 1825 had been foreshadowed for some time by the alteration in the character of the neighbourhood, which had become "the wrong end of the town," and by the deterioration of the building. In 1814 the College petitioned for, and succeeded in obtaining from Parliament, an Act to allow it to hold its meetings and exercise its powers within the City of Westminster. But the really effective influence in bringing about the removal was that of Sir Henry Hallford, who was elected President at the early age of 54 in 1820 and remained in the chair for the univalled term of twenty-four years—in fact until his death in 1844. He was physician in ordinary to four sovereigns, and through his personal influence with George IV and the Prime Minister, the Earl of Liverpool, was largely responsible for the grant on the present site of the College in Pall Mall East, then valued at £6,000, for ninety-nine and a half years, this was extended in 1864, during the presidency of Sir Thomas Watson, by an Act of Parliament to nine hundred and ninety-nine years. The architect of the present house, Sir Robert Smirke, R.A., also designed the British Museum, the General Post Office in St Martin's le Grand, and numerous other well known buildings. In 1822, while the new College—which with its fittings cost £25,000—was being erected, George IV showed his appreciation of the character and abilities of Sir Henry Hallford by declining that every future President of the College should for the time being hold the office of physician in ordinary to the King. But this high honour to the College apparently lapsed, for the next President (1844-56), Dr John Aitken Paris, did not receive any Court appointment to Queen Victoria. At 3 p.m. on June 25th, 1825, there was a grand ceremonial opening of the new College, attended by no fewer than five dukes of the blood royal and many other distinguished personages, Sir Henry Hallford, wearing the decoration of the Royal Guelphic Order (K.C.H.) conferred on him that morning, delivered an eloquent inaugural oration in Latin to the three hundred auditors, who were subsequently entertained at a sumptuous collation until about 5 p.m., when the President and some fifty of the ninety-one Fellows solemnly retired to the library to hold the Comitia Majora. The centenary of this opening was celebrated at the College on the night of June 25th, 1925, by a *conversazione*, arranged by the Treasurer, Dr S. Phillips, and attended by some four hundred of the Fellows, Members, and guests, including ladies and some of Sir Henry Hallford's descendants.

¹ *General Systematic Bacteriology*. By R. E. Buchanan. Ph.D. Monographs on Systematic Bacteriology. Baltimore: Williams and Wilkins Co. London: Baillière Tindall and Co. 1925. (Roy. Bro. pp. 597)

The guests were received in the library by Sir Humphry and Lady Rolleston. It is a fine room, and in it are hung some of the most precious of the College portraits—those of William Harvey (by Janssen), Radcliffe (Godfrey Kneller), and Sir Thomas Watson, prints were on view in two rooms, and by the generosity of Lord Ashfield of Southwell three cinematograph shows of nature films were given in the lecture room. The censor's room, the handsome panelling of which dates from 1674, when the house in Warwick Lane was built, contains the fine portraits of Richard Warren (Grimsborough), Linacre, Thomas Sydenham, Sir Samuel Guth, William Heberden the elder, of the *Commentaries*, whom Samuel Johnson called "Ultimus Romanorum, the last of the learned Physicians," Sir George Baker, and of other well known physicians. Altogether the College possesses one hundred and twelve portraits in oils and six thousand engravings of physicians, they have recently been catalogued by the Huxleyan Laboratory, Dr Arnold Clapham—a labour of love, but nevertheless a very onerous task. The walls of the reading room on the ground floor also carry a number of fine portraits, especially the full-length presentments of Sir Henry Hallford (Thomas Lawrence), Sir William Jenner, and Sir Richard Quain. The library, of about forty thousand volumes is particularly rich in old books, more than four thousand dating from before 1600, of these about one hundred were rescued from the College when burnt down in the Great Fire of London. Much interesting information of a personal and even gossip character is given in *The Gold-headed Cane*, written by Dr William Macmillan and published anonymously in 1827. A second edition appeared in the following year. It was supposed to be the reminiscences of the cane carried successively by Radcliffe, Mead, Astle, Pitcairn, and Matthew Baillie. In 1884 Dr William Munk published a much expanded edition carrying the story down to 1858. All these editions are now rather difficult to pick up. In 1915 there appeared from the publishing house of P. B. Hoeber (New York) a fourth edition, with an introduction by Sir William Osler and a preface by Dr Francis R. Packard, the editor of the *Annals of Medical History*, thus, like the fifth edition in 1923, with an introduction and annotations by Dr G. C. Percher, reproduced the text of Macmillan's second. The gold-headed cane, one of the curiosities of the College, reposes, with Harvey's dissecting pointer and other interesting relics, in a case in the large library. The exterior of the College has now, to match the adjoining Canada House opened by the King and Queen on Monday, put on creamy white in place of the sombre hue that has characterized it for many a long year.

WOMEN'S WAR MEMORIAL

THE FIVE SISTERS WINDOW in York Minster is one of the most famous in Christendom, there is nothing quite like it anywhere else—nothing, at any rate, on the grand scale. The architect must have been a bold man. The window of five lancet lights occupies practically the whole of the end of the lofty north transept, soaring without tracery in austere simplicity to the roof, the middle light is the highest, the others dropping with the curve of the rich York is not rich in stained glass, and the visitor is constantly drawn back to the crossing of the nave from which the great window is best seen. It is in grisaille—that is, the general effect is a pattern in grey with a few spots of colour. It looks like transparent tapestry, and the story is that five sisters in the thirteenth century embroidered the design. The window had got into rather bad condition, and had been glazed outside, thus the amount of light passing through was diminished. The menace of German bombs

caused it to be taken down, it was then seen that both the glass and the lead mouldings were in bad condition. At this stage the idea occurred to Mrs. Little, a lady residing in York, of inducing women to collect money enough to put it in order as a memorial to women who gave their lives in the war. The appeal was immediately successful, the £3,000 required was received within nine weeks, and enough came in afterwards to pay the cost of an oak screen bearing a roll of honour containing the names. It has been placed in the St. Nicholas Chapel near the window, and has twelve panels bearing altogether 1,400 names. One panel contains the names of the medical women—Laura Foster, Elsie Impey, Sybil Lewis, Isobel Tate, Marion Wilson, Elsie Inglis, and Louisa Woodcock. Each panel is covered by a door, and that to the medical women bears the emblem of the medical profession—the rough stick with the twisted serpent—made from a drawing of the emblem designed for the Gates of Honour the British Medical Association has just put up at the new house. The owner of Rievaulx Abbey, in northern Yorkshire, gave the lead for the restoration, it, therefore, is also of the thirteenth century. All the work was done in the Minster workshops, and the reinstated window was unveiled by the Duchess of York on June 24th. Deputations from all branches of women's war services were present in uniform, and the medical members in academic dress. A procession was formed, which passed through the streets, lined by civilians and thousands of spectators, to the Minster, where a short religious service was held. Representatives were present from the Dominions also from the Home Office, the India Office, the Air Ministry, the Royal Navy, the Army Council, the mercantile marine, Queen Alexandra's Royal Naval Nursing Service, Queen Alexandra's Imperial Military Nursing Service, the Territorial Force Nursing Service, Princess Mary's Royal Air Force Nursing Service, Joint Committee of the British Red Cross and Order of St. John of Jerusalem, Queen Mary's Army Auxiliary Corps, Women's Royal Naval Service, Women's Royal Air Force, Women's Foreign Corps, Women's Land Army, Scottish Women's Hospitals, Friends' War Victims Relief Committee, and Serbian Relief Fund. Miss Frances Evans, M.S., M.B. Lond., who had charge of the French hospital at Abbeville Royumont during the war, represented the Medical Women's Federation. At the same time as the ceremonial was taking place in York, commemoration services were being held in South Africa, South and West Australia, Tasmania, New Zealand, and Canada. The knowledge that these services were taking place made the words of the Archbishop in his address particularly true—"The emotion which unites us here is, as it were, a beating of the Empire's heart."

THE CIVIL RESEARCH COMMITTEE

A STATEMENT was made about the functions of the new Committee of Civil Research in a Treasury minute issued last week. It stated that the president of the Committee will be the Prime Minister and the regular chairman to act in his absence a Minister nominated by him. The members of the Committee will be such persons as are summoned by the Prime Minister or the chairman. It is modelled on the Committee of Imperial Defence, and, like it, will be an advisory body without administrative or executive functions. Its duty will be to give connected forethought from a central standpoint to the development of economic, scientific, and statistical research in relation to civil policy and administration, and it will define new directions in which inquiry would be valuable within these limits. The Committee will consider such questions as are referred to it by the Cabinet, the president, the chairman, and Government departments, and the president or chairman may summon for consideration of particular business

such outside economic, scientific, or statistical experts as he may think fit. It will be authorized to refer particular inquiries to special subcommittees, which may include outside specialists as well as expert officers of the department or department concerned. Departmental officers may be appointed to act as secretaries of such subcommittees. The scheme has been approved by the Treasury. The Earl of Balfour (Lord President of the Council), in reply to a question by Viscount Haldane in the House of Lords on Tuesday, said that the Committee was an additional wheel required to complete the mechanism of Cabinet government, but would not substantially modify that government. He specified three directions in which its assistance would be immediately available: it would deal with matters which concerned more than one department, with matters which, though they concerned only one department, were abnormal and raised problems of unrecustomed magnitude with which the fixed organization of the department was not well capable of dealing, and it would afford a convenient method by which the Dominions could be called into counsel at their desire if any question were raised in which they were specially interested. The defects of the existing machinery of government could not be cured by any other method. Royal Commissions conducted important investigations, but their functions were not conducive to rapid administrative action, especially because they had fixed references from which they could not depart, and lacked continuity. If the new Committee was to work well it must be with the full assent and co-operation of existing departments. The Committee would not be entitled to dictate in the smallest degree to any Minister or any Ministerial department, but it would serve to bring departments together to deal with problems no department was capable of dealing with alone.

ROYAL MEDICAL BENEVOLENT FUND

THE eighty-ninth annual report of the Royal Medical Benevolent Fund, for the year 1924, is a document we have studied with mingled feelings. On the one hand, we find a record of unselfish and devoted work on the part of a few of our colleagues. On the other hand, it is scarcely a credit to our profession that the income of a charity of this kind should be considerably less than £10,000. It is true that the Fund is rather better supported than it was forty years ago. Thus in 1884 there were 25,321 names on the *Medical Register*, and the income of the Fund was £3,068, in 1924 registered practitioners numbered 49,958, and the income was £9,189. Nevertheless, while the demands on the Fund increase steadily every year, the income grows very slowly, nearly half of it is derived from invested property, subscriptions and donations amounting only to £4,846. While the Committee of Management is able to record an increase of £1,000 in new subscriptions, old subscriptions fell off, from death and other causes, by the same sum. The amount expended in grants (numbering 343) was £5,001, and in annuities (numbering 147) £3,467, the working expenses were £1,254. All current subscriptions and donations are paid into the grant account, out of this the monthly grants are made with which our readers are familiar from the summaries of sad cases which appear from time to time in the columns of the *BRITISH MEDICAL JOURNAL*. Not only do the applications for help become more numerous each year, but the increase in the cost of living makes it necessary to give larger grants than formerly whenever possible. The amount of hardship and even starvation of which many of the older applicants complain is so distressing "that if it could only be made better known to the profession, there would at once be a large wave of benevolence, which would pour money into the funds of the society." Among the ways in which

further support has been sought of late years is the sending out of a letter written by a vice-president or a local secretary and reproduced in facsimile, another is the posting of reminders to those whose subscriptions have lapsed for some time. Acknowledgement is made in the report of the great assistance rendered to the Fund by the British Medical Association in the collection of subscriptions. During 1924 the Association forwarded £1,110, being an increase of £200 on the amount collected in the previous year. A gift of £210 from the Medical Insurance Agency is gratefully acknowledged, and in this connection the Committee of Management places on record its regret at the death of one of its members—Dr G. E. Huship, late Treasurer of the British Medical Association, who was instrumental in obtaining liberal grants to the Fund from the Agency, of which he was chairman for fifteen years. The report includes some account of the work of the Guild, or Ladies' branch of the Fund, which renders invaluable help, it has district representatives who get into personal contact with the grantees, and are able to advise about gifts of comforts in the shape of special foods, clothes, and coals. In a great number of cases, especially where there are children to be educated, the two funds work together, and constant and close co-operation is maintained between them. We commend the Fund and the Guild to the sympathetic notice of all our readers.

THE CONSERVATIVE TREATMENT OF ECLAMPSIA

THOUGH there is still some disagreement about the details of the treatment of eclampsia, it appears to be generally agreed that conservative measures are superior to such radical procedures as delivery by high forceps, forcible dilatation of the cervix, and vaginal Caesarian section. Last July Professor Stroganoff of Leningrad presented a paper to the Royal Society of Medicine which included an account of the special chloral treatment associated with his name, it was reported in our issue of July 12th, 1924 (p. 53). Three articles on this subject have now been published in the *American Journal of Obstetrics and Gynecology* for March, 1925. Dr H. J. Stander, who has studied the Stroganoff method in Leningrad, discusses this treatment in detail, and points out two steps in the method which appear to him irrational. He believes that chloroform used in the small quantity stipulated by Stroganoff cannot produce a satisfactory narcosis, and the possibility of chloroform poisoning is a further argument against its use. Dr Stander does not agree with Professor Stroganoff that intubation of 200 to 300 c.c. (7 to 11 fl. oz.) will be of any material value in the lowering of the blood pressure or in eliminating toxins, and holds that it should not be employed at all, or alternatively that larger quantities of blood should be withdrawn up to as much as 1,000 c.c. (35 fl. oz.). Dr E. Speidel compares the Stroganoff method with the treatment advocated at the Rotunda Hospital in Dublin, the McPherson system, and the use of veratrum viride. He suggests that the value of veratrum treatment may have been discounted unduly because too small a dose has been given, and states that Dr Gillespie advises that in antepartum eclampsia 60 minims of veratrine—a standardized preparation of veratrum—should be injected hypodermically as the initial dose, and followed by doses of 15 minims every ten minutes, until there is sighing respiration, copious bilious vomiting, and a soft pulse with a rate of 40 to 60. No other advocate of this remedy appears to have recommended such heroic doses. The treatment recommended by Dr Ross McPherson resembles both the Rotunda and Stroganoff methods to some extent, but he depends entirely upon morphine for the narcosis. Dr Speidel, after trying this method for two years, was disappointed with the

results, the maternal mortality being high and the morphine tending to check elimination by the bowels and to produce pulmonary complications, in spite of the simultaneous administration of atropine. He found, moreover, that the morphine was insufficient as a narcotic, and that manipulations incited convulsions. Dr. Speidel, therefore, favours the Rotunda method, and suggests that reports by the larger maternity hospitals on the systems they employ should be collected annually in order to reach some definite conclusion with regard to the treatment of eclampsia. He considers that every hospital ought to establish a definite routine of treatment so that no time may be lost in dealing with any case. His other recommendations include the following: The eclamptic patient should be treated in a well lit room (not a darkened room, as recommended by Professor Stroganoff), she should lie on her side, with her head low and near the edge of the bed, particular care being taken to prevent the aspiration of secretion into the lungs. No anaesthetics should be used during the convulsions, but the administration of oxygen and nitrous oxide is advised as a preventive measure during manipulations. A hot wet pack, together with the uniform and continuous warmth obtainable by the use of an electrically heated blanket, will secure relaxation and hasten delivery. Venesection to the extent of 500 ccm (nearly one pint) followed by the introduction of 500 ccm of 10 per cent glucose solution, should be employed if the blood pressure is above 150 mm Hg and convulsions continue. Dr. C. L. King recommends the use of morphine, 1/2 grain being given to the patient on admission. Venesection to the extent of 500 to 800 ccm follows, the blood pressure being carefully watched and the procedure discontinued immediately it falls to 130 mm. If only a small amount of blood has been withdrawn and the convulsions have not been checked, this procedure is repeated. Dr. King reports that, as a rule, convulsions cease after this treatment, but if they do not 1/4 grain of morphine is given. He has employed 1 grain or more without harmful effects, and sometimes he uses in addition chloral hydrate and potassium bromide. The stomach and the colon are washed out subsequently. Under this treatment he reports that there has been no maternal mortality. Should labour begin during the treatment it is permitted to continue naturally, if it does not begin he thinks it should be induced, but generally not until convulsions have ceased and the patient's condition has improved.

THE HEATING OF LIVING ROOMS

THE Fuel Research Board of the Department of Scientific and Industrial Research has just issued a "technical paper" on the heating of rooms, and we have fortunately been able to induce Dr. Fraser Harris to study it for us. It is, he writes, a very good example of the investigation of a familiar, everyday problem by the combined methods of physics, mathematics, and physiology. The object of the research was to ascertain and express in scientific terms the conditions making for comfort indoors when the sources of heat were respectively coal, coke, gas, and electricity. Even "comfort" is a relative term, here it means comfort to one whose occupation is sedentary for several hours together. The observations were carried out in the Westminster Technical Institute. The paper opens with a succinct account of the physiology of the production and the loss of animal heat, and calorimetry generally. The equipment of the experimental room is fully described, as well as are the methods for measuring such variables as

air temperatures, wall and floor temperatures, velocities of draughts, and the total volume of air passing through the room in a unit of time. Radiation from the source of heat was measured in absolute units by a Richmond radiometer and by a Bone-Callander-Lates volometer. British thermal units were used. The distinction is clearly drawn between heating by radiation and heating by convection (heating of air), a subject about which there is a great deal of popular confusion. The experimental room received no direct sunlight, and therefore no heat of solar origin. All factors were investigated: the sizes of the rooms (1,000, 2,000, and 4,000 cubic feet), the number of persons (from one to six), the distances from the source of heat at which the occupants experienced comfort or the reverse ("zones of comfort"), and the relative humidity. Some interesting figures are given in comparing the proportion of heat received by the room with the total potential heat of the fuel or source. This ratio is called the "efficiency", thus, with the open coal fire from 17.5 to 25 per cent of the total heat-energy reaches the room as radiated heat, and 5 per cent more is received in convected air, making a total of from 22.5 to 30 per cent "efficiency", the rest (from 77.5 to 70 per cent) is lost up the chimney. The total efficiency of a modern gas fire is about 55 to 60 per cent—45 to 50 per cent by radiation and 10 per cent by convection. The total efficiency of an electric heater is 100 per cent, 70 per cent of this is radiated and 30 per cent convected. The efficiency of a "radiator" system (hot-water coils) is about 50 per cent. The various factors involved in the problem are stated so admirably that we may quote the paragraph: "The rate at which heat must be delivered to a room in order that its temperature may be maintained at a constant level depends upon the size, construction, and position of the room and upon the external weather conditions. When the heat is first turned on to a room in cold weather there is a gradual rise in the temperature of the air and fabric of the room, the total heat capacity usually being so great that a steady state is not attained for some days. When a steady state is reached, and there is no further rise in temperature of the structure, the amount of heat delivered to the room must be exactly balanced by the amount flowing out by conduction through the walls, floor, ceiling, windows, etc., together with that carried away by the air which passes through the room." The paper contains thirteen tables of statistics and six diagrams (curves). Table XIII is one of the most interesting: it shows the cost in pence for a sixteen hour day to heat by radiation rooms of the three different sizes, and with from one to six occupants, by means of the open coal fire, the open low-temperature coke fire, the open gas fire, and the electric heater. In commenting on this table it is remarked that "for continuous heating by far the cheapest means of providing radiation is an open fire of low-temperature coke, open coal fires are slightly more expensive, gas fires are about 2½ times as dear as coal, and electric heaters are 5½ times as dear as coal." The whole investigation, although carried out on lines of such scientific accuracy, is exceedingly practical, as one of the concluding sentences testifies: "Whatever the method of heating adopted, the cost will be closely allied with the completeness of the insulation of the rooms, and it is of the greatest importance to construct houses in such a way as to avoid high conduction losses." Builders, we fear, give very little heed to this principle in the construction of walls. An air space between two thicknesses of brick and double windows are two practical suggestions made. The pronouncement on hot-water radiators is valuable: "It will be seen that at 50 per cent efficiency hot-water radiators prove to be the cheapest method of heating continuously a 1,000 cubic foot room, but that for a 4,000 cubic foot room an open low-temperature coke or coal fire is cheapest

¹ Department of Scientific and Industrial Research. Fuel Research Board. Technical paper No. 12. The Heating of Rooms: a Comparison of the Costs of Different Methods on the Basis of Warmth Comfort. By Margaret Fishenden, D.Sc., assisted by R. E. Willgren, B.Sc. London: H.M. Stationery Office. Price 1s. net.

until there are more than three people in the room, when hot-water radiators again become the most economical." In an investigation of so exhaustive a character we would have expected some reference to the method of heating by hot-water piping the walls and ceilings of large buildings known as the "panel system," examples of which are to be found in Bush House, Kingsway, and in Austria House in the Strand. Similarly, the method adopted in Liverpool Cathedral, which is practically a return to the Roman method of heating the floors by means of hot air, might also have been alluded to, particularly since this method attracted so much attention in the press in the autumn of 1924. The data are all given in British units and the decimal system is not used, which will make comparison of the statistics with those of Continental works somewhat troublesome. There is a full bibliography and an excellent index, which occupies no less than four pages out of a total of forty-eight pages for the entire monograph.

AN INTERNATIONAL HEALTH CONGRESS

As travelling facilities increase the world grows smaller and more convenient for congresses and conferences, that is being discovered by all classes of the community, and questions which were at one time no more than national have become international, whether the objects are health, politics, religion, labour, or revolution. At the same time, owing to the great war, an enormous share of such wealth as has not been destroyed has been transferred from the Old world to the New, and the idealism which finds so congenial a field in America has opportunity for expressing itself in ways which make for the welfare of mankind. A recent example is to be found in the action of the United Fruit Company, whose headquarters appear to be at Boston, Massachusetts, though its activities must be mainly elsewhere. In 1923 it held a round table conference of nine medical superintendents of its hospitals in Central America. It is claimed, indeed, that the company has transformed great tracts of jungle into fertile and wholesome garden lands, has carried civilization into the tropics, and has been a pioneer in looking after the health and welfare of many thousand employees. The conference of 1923 decided that there should be a larger gathering, and invitations were issued to eminent workers in tropical medicine in the four quarters of the globe to meet at Kingston, Jamaica, on July 22nd, 1924, after the conference finished its work (on August 1st) the members were given opportunity to inspect the health activities of the company in Honduras, Panama, and elsewhere. The proceedings of the gathering at Kingston have been issued in a large and handsome volume,¹ with a preface by Professor M. I. Rosenau of the Harvard Medical School. The contributors from this country included Sir Arbuthnot Lane, Sir Leonard Rogers, Sir James Fowler, Sir Arthur Newsholme, Sir Thomas Oliver, Dr Arthur E. Horn, Professor John W. Stephens, and Dr John G. Thomson. Dr Bunting was present from Toronto, and many other well known authorities. Some seventy papers were read, mostly on subjects of great importance. We do not propose to attempt to give any account of the contents of the thousand pages of *Proceedings*, the striking fact is that such a meeting was held. The United Fruit Company is to be congratulated on the way in which it organized the conference. The volume of *Proceedings*, well printed and well illustrated, is defective in that while it has a table of contents there is no index, so that it will be very difficult to use it for reference on particular points as to which it ought to be available for ready consultation. Otherwise there can be nothing but praise for the enterprise and its outcome.

¹ *Proceedings of the International Conference on Health Problems in Tropical America*. Boston Massachusetts. United Fruit Company. 1924 (Med. 8vo pp xii + 1010 16 plates)

THE SECRETARYSHIP OF THE ROYAL SOCIETY OF MEDICINE.

THE Royal Society of Medicine has decided to mark Sir John MacAlister's retirement from the office of secretary, which took effect on July 1st, by appealing for funds to raise a memorial to his great work for the society. What this work has been has already been summarized in our columns. It is anticipated that his numerous friends will gladly contribute, and that Fellows of the society will be anxious to see a permanent memorial of the man to whom the existence of their institution is chiefly due. It is hoped that the memorial will take the form of some portrait in oil or stone. At its last meeting the council selected, from a very large number of applicants, Mr. Geoffrey R. Edwards, B.A. Cantab., to succeed Sir John MacAlister as secretary. Mr. Edwards was educated at St. Paul's School and St. John's College, Cambridge. He studied in Germany to qualify for the Woods and Forests Department of the Indian Civil Service. On his return from India he joined the Royal Air Force as a pilot. While up on active service he was wounded and had to fight in the enemy's country, and was imprisoned in Germany for fourteen months. Subsequently he served on the Repatriation Commission in Germany and on the Inter Allied Aeronautical Commission of Control. On demobilization he was appointed assistant secretary to the National Physical Laboratory, Teddington, where he has had considerable experience in library and editorial work and in organization. He takes up his duties on September 1st.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

In order to obtain designs for the permanent quarters of the London School of Hygiene and Tropical Medicine to be erected on the site adjoining Keppel Street, Gower Street, and Malet Street, near the British Museum, the board of management of the school in December last instituted a competition limited to five architects who had specialized in the planning and equipment of the type of building required, and appointed Sir Frank Brines, Director of Works at H.M. Office of Works, as assessor. The board, under the chairmanship of the Right Hon. Sir Alfred Mond, M.P., has now unanimously adopted the assessor's award in favour of the design submitted by Mr. P. Morley Holder, and he will be appointed architect for the new building. It will be remembered that the funds for the erection of the new building are being provided by the Trustees of the Rockefeller Foundation, who offered the British Government nearly half a million sterling for site, building, and equipment.

We greatly regret to announce the death, on June 27th, as the result of a motor-car accident, of Mr. Hamilton Drummond, F.R.C.S. Ed., assistant surgeon to the Royal Victoria Infirmary, Newcastle-on-Tyne, and a son of Sir David Drummond, formerly President of the British Medical Association. We hope to publish a memoir in an early issue.

THE Committee of the Royal College of Physicians of London and the Royal College of Surgeons of England is about to appoint a Stierfeld Research Scholar. The emolument will probably be £250 per annum and the tenure three years, at the discretion of the Committee. Applications stating the nature of the proposed research should be sent to the Registrar, Royal College of Physicians of London, Pall Mall East, S.W. 1, not later than October 1st. Further particulars will be found in our advertisement columns.

NINETY-THIRD ANNUAL MEETING of the British Medical Association, BATH, 1925



Doorway of St John's Hospital (From a wood engraving by Horace Gerrard)

THE ninety-third Annual Meeting of the British Medical Association will be held at Bath at the close of this month, under the presidency of Dr F G Thomson, physician to the Royal United Hospital, Bath, and consulting physician to the Royal Mineral Water Hospital. The Annual Representative Meeting will open in the Concert Hall of the Pump Room at Bath on Friday, July 17th. The statutory Annual General Meeting will be held on the afternoon of Tuesday, July 21st, in the Concert Hall, and on the evening of the same day the new President will deliver his Address to the Association in the Palace Theatre. The twelve Sections among which the scientific and clinical work of the meeting is being divided this year, will meet on the three following days, July 22nd, 23rd, and 24th. The list of Sections and sectional officers, together with the full provisional programme and time table and announcements about hotel accommodation, etc., are published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL this week. On the last day of the meeting, Saturday, July 25th, there will be excursions to places of interest in the neighbouring West Country. We publish

below the fourth of a series of descriptive and historical articles on Bath. The British Medical Association last met in that city in 1878.

BATH AND THE POETS.

BY

JOHN HATTON,

DIRECTOR OF THE ROYAL MINERAL BATHS

BATH certainly has done its share in inspiring the poetic muse. Whether it is the effect of its waters, or the stately grace of its architecture, or the beauty of its situation, or whether it is that literary interests are here rather more strongly developed than is usual and the stirring of wit on it produces almost a shower of divine sparks, might form a pretty subject for debate. Whatever the cause, this much is certain, poets do write about it. About Bath itself, its springs, its buildings, its beauties, natural and artificial. And the men and women of Bath who live only through their creators' pens, but more vividly to many than those of flesh and blood—what a fascinating and very human company they form. Across the pages of the last five hundred years or more they make a goodly procession, these literary characters of Bath. Chaucer is responsible for their leader

A good wife was there of beside Bath
But she was some deal dwe, and that was seith
Of cloth making she had such an hant
She passed them of Ypres and of Gaunt

Next comes Shakespeare

Cupid lud by his brand and fell asleep
A maid of Druis thus advent'ge found
And his love finding fire did quickly steep
In a cold valler fountain of that ground
Which borrow'd from his holy fire of love
A dateless lively heat still to endure
And give a seething bath which yet me prove
Against strange maladies a sovereign cure

It is not only the poets who have been inspired by Bath, the novelists and the dramatists demand a place in the procession. Here, headed by the Strip-violeted Rodenel Pandom, is the queer collection gathered together by Dr Tobias Smollett in the intervals of failing to build up a plot and quarrelling with his professional brethren.

Once everybody knew them, now they are but almost forgotten names, and so they pass disconsolate—Miss Snapper and Miss Snapper, and Narcissa. Mr Freeman and Godfrey Gruntlett. A faint "Hallo!" comes from the fox-hunting Squire, and Peregrine Pickle can still find a few nodding acquaintances. Then, strangely incongruous in such surroundings, and like a faint ghost, for he does not really belong here and is only allowed in our procession because his

spirit was evoked in Bath, comes Robinson Crusoe, for here it is said Defoe met Alexander Selkirk and heard from his lips the story which later he gave to the world as the history of Robinson Crusoe.

Tom Jones and Squire Allworthy are far from shadowy, for both have good Somerset blood in their veins, even if the real Squire Allworthy—for he is almost a portrait—was that great Cornishman, Ralph Allen, who became the Man of Bath. Fielding is naturally well represented, for he lived on the edges of Bath, in Twerton and Widcombe, and was a welcome guest at Prior Park, and so Squire Western comes blustering along, and Tom nearly loses Sophia, and Miss Bridget Allworthy and the Blifils complete a group typical of the West Country when George the Second reigned.

There was a breath of the fresh air of the downs in Fielding's men, and something of the West Country apple blossom in his women, but the artificiality of the town is thick on Christopher Anstey's sprightly, amusing, objectionable B---n---r---d Family. Mr Simpkin B---n---r---d, Miss Prudence B---n---r---d, Miss Jennet W---d---n and Tabitha Ruit, in spite of their long journey, find Bath to their liking.

Two hundred and sixty long miles are we come
Tis a plaguy long way—but I ne'er can repine,
As my stomach is weak, and my spirits decline,
For the people say here—be whatever your ease,
You are sure to get well if you come to this place

for after recovering from their journey and the "Charming sweet sounds both of fiddles and bells," which welcomed their arrival, they soon find that

Of all the gay places the world can afford,
By gentle and simple for pastime adored
Fine balls, and fine concerts, fine buildings, and springs,
Fine walks and fine views and a thousand fine things,
(Not to mention the sweet situation and air)
What place my dear mother with Bath can compare?

There seems no keeping *The New Bath Guide* out of anything about Bath, and even if we nowadays can scarcely agree with Horace Walpole that "so much humour, fun and poetry, so much originality, never met together before," this witty, slightly indecent book probably gives the truest

picture we have of, at any rate, a large section of Bath society in the eighteenth century.

Now comes a familiar group, benighted and feathered, powdered and perfumed. Sir Anthony Absolute drinking protestingly his glass of water and bullying his son between each dose, Sir Lucius O'Tigger telling Bob Acres of the very snug lying in the Abbey, Lydia, languishing exquisitely, and Julia distracted by her Fankland, Mr Fag (of Bath), David (of the county), and the useful Lucy, and Miss Malaprop herself, destined to bring Mr Sheridan a more lasting fame than all his eloquence and statesmanship.

Fanny Burney has passed quickly with all the people from *Evelina*, and then there is another faint whiff of bygone perfume—lavender, surely, this time, clean and with just a tinge of pungency—and Catherine Morland appears, with Henry Tilney, and the General. Bath gave Jane Austen many of her characters, and with her one may still sit in the Pump Room and see the perennial comedy played again and again—the same play, but brought up to date and redressed, as the producers say. Miss Thorpe and Isabella and John Thorpe are there, and Miss and Mr Allen, and James Morland and Miss Tilney are not far to seek.

Next we hear the voice of Cyrus Angelo Bantam, Esquire, Master of the Ceremonies.

"Welcome to Bath sir. This is indeed an acquisition. Most welcome to Bath sir. It is long, very long Mr Pickwick, since you drank the waters. It appears an age, Mr Pickwick. Remarkable!"

This leads in Mr Pickwick himself, the devoted Sam Weller, and those sticklers for the rigour of the game, the Dowager Lady Snaphrugh and Miss Colonel Wugsby. (Miss Bolo has already gone home in a flood of tears and a sedan chair) and Mr Winkle, still suffering some embarrassment from his endeavours to be helpful, and a little group of footmen and fat chairmen and thin chairmen who hurry up to take their places in the procession, wiping from their lips the remains of boiled mutton with the usual trimmings.

More and more figures pass. There is Monsieur Beaucaire and the Incomparable Bellairs, but many are shadowy and have fading names. Victorians and Edwardians and an ever-growing group, the creatures of this present age. So we leave them, with Mr H G Wells's Sir Richmond Hardy and Miss Grammont.

"They went to the parapet above the river and stood there, leaning over it elbow to elbow and smoking cigarettes. Away in some sunken gardens ahead of them a band was playing and a cluster of little lights about the bandstand showed a crowd of people down below dancing on the grass. These little lights, these bobbing black heads and the lilting music this little inflamed centre of throbbing sounds and ruddy illumination made the dome of the moonlit world about it seem very vast and cool and silent. Our visitors began to realize that Bath could be very beautiful—there was Pulteney Bridge with its noble arch its effect of height over the swelling river and the cluster of houses above more beautiful than the Ponte Vecchio at Florence. It is the most beautiful bridge in the world," said Miss Grammont.

The members of the British Medical Association may perhaps have some means of rendering themselves immune to the attacks of *B. pocticus*, *B. bathoniensis*, or the close of the Annual Meeting may see a serious outbreak of such Friewell Odes as Lady Mary Wortley Montagu's beginning "To all you ladies now at Bath." And if a few moments have been snatched from Sectional Meetings and other important matters, to view Bath from Beechen

Chiff and see the grey city in its green cup, someone may say with the eighteenth century John Scott

Bath ere I quit thy pleasing scene
Thy beechen cliff I'll climb again
To view thy mountains' vivid green,
To view the hill surrounded plain
To see distinct beneath the eve
As in a pictured prospect nigh
Those attic structures shining white
That form the sunny crescent's bend

Or it may be after nightfall, when the velvet valley is pink with a thousand points of light, and the city is, as Henry Chappell, the porter poet of Bath, says

Bathed in ghostly light
Asleep at peace beneath the witching beam,
Seeming within the soft embrace of Night
To be the beautiful City of a dream

A great poet can praise greatly, and few finer tributes have been paid to any city than Swinburne's *Ballad of Bath*—too long to quote in full here, and too beautiful to quote in clipped extract.

Many writers have found Bath a congenial place of residence. Frederic Harrison spent the last years of his long life here, Mrs C N Williamson, who has ranged over most of the countries of Europe "Rita," who found in Bath both the characters and setting for one of her most popular works, and that distinguished authority on literature and wines, Professor George Santsbury.

Bath has a famous writer this year is Mayress, Madame Sarah Grand, who will assist in welcoming the members of the Association to the city she loves and has made her home.

"I happened upon Bath accidentally" (Madame Sarah Grand has written). "One day the question was, 'Where shall we go for a change?' And one said 'Let's go to Bath the Beautiful.' So we went for a month and at the end of the month we were singing a chorus song of praise like the Lotus Eaters and one said, 'Let's stay for ever in Bath the Beloved.'"

So we stayed, where history, archaeology, and the picturesque jostle each other at every turn where poetry and romance are in the air, and character walks the streets where music holds its own and philanthropy has more than enough to do where the invalid throws away his sticks or forsakes his bathchair in a week, where the provision shops overflow with good things for the gourmet and he may have green peas and new potatoes out of his garden till the end of November. And as to society—surely there never was a more sociable, more hospitable, friendlier place or pleasanter people, or more liberal minded. It is not so Bath and die, but see Bath and live, and let live. Differences of opinion all go into the social stockpot here and reappear as food for conversation. Bitterness dies in Bath of the prevalent sense of humour and love of fun.

SICKNESS INSURANCE FOR MEDICAL MEN

The risk every medical man runs to a greater or less extent of being stopped in his work by disablement through illness or accident is now realized by most members of the profession. The work of the majority is so personal in its nature that if a man is prevented from attending to it himself he must suffer serious pecuniary loss, both direct and indirect. Physicians, surgeons, and specialists have to depend entirely upon their ability to give constant personal attention to their patients, and the same is true of general practitioners, though perhaps to a lessened extent when they are in partnership. Those who are engaged in the public health service, or who hold institutional appointments, are not exposed to quite the same immediate risks, as frequently the contract of service



The Royal Roman Bath and Cross Bath with Royal United Hospital in the background (From a wood engraving by Horace Gerrard)

they hold with a local authority is adequate to help them through a temporary period of illness or disablement, but if the period becomes prolonged they also are exposed to serious losses. It is therefore incumbent on every medical man engaged in practice to build up for himself a strong reserve fund which can be drawn upon to meet the expenses incurred through disability from accident or illness. Probably the surest and safest way of providing for such contingencies is by an insurance contract. Recent experience has shown, what indeed ought to have been obvious, that the terms of the contract must be very carefully examined and that it should not be concluded without obtaining skilled advice.

An interesting example of how men have helped themselves is provided in the development of what is known as the Holloway group of friendly societies. Members of friendly societies enjoy certain privileges, but have to submit to certain restrictions, which tend to impair a society's usefulness to members of the medical profession. There have also been tried during the last fifty years various methods of protection by insurance companies who have sought to meet the requirements of the medical and other professions. The forms of protection offered by the insurance companies have followed two main lines.

1. An annual contract—that is, a policy providing for a fixed payment in the event of disablement from sickness or accident during a period usually not exceeding twenty-six weeks, together with capital sums payable in the event of death or loss of limbs or eyes. As a rule these contracts can be obtained without any medical examination, and it is possible for either party to terminate the contract at the end of the policy year. These contracts are obtainable at a comparatively low premium but they are of less value to the medical man who desires protection over a long period than to commercial classes with less need for sickness insurance.

2. The non-cancellable contract—that is to say, a policy which providing its conditions are complied with can be continued in force until an agreed age, but not beyond age 65.

The companies granting these contracts have no power to vary the conditions of the policy or exclude any diseases no matter how frequent or prolonged the disablements may be. The permanency of these contracts gives them an increasing value, and they have been very largely taken up by all sections of the medical profession. The policies for which there is the largest demand provide for payment in the event of disablement in one of two well established ways.

The first is by a contract for immediate payment for any disability which lasts more than seven days the payment continues in full for twenty-six weeks but is then reduced by one-half for the remainder of the disablement up to the termination of the agreed period.

The other is the deferred non-reducible system. Under it there is no payment for the first four weeks, three months, or six months of any disablement, as may be preferred, but the full amount is paid thereafter so long as the disablement lasts up to the agreed age.

Quite recently a new form of policy has been granted, which provides for immediate and non-reducible payments. Whilst attractive this form of contract is unsound in theory. In the first place the statistics upon which the premiums have been calculated do not extend to show a non-reducible benefit, and the companies offering this form of contract are therefore experimenting with this class of insurance. In the second place, such a contract removes the principal inducement to an early recovery from disability, which is undesirable both from the point of view of the company and the assured.

Yet another experiment is being made which has appealed particularly to some members of the medical profession, and should receive careful consideration. It is a practice of the friendly societies to make payment to its members who are totally unable to follow the occupation in which they have been engaged. Some insurance companies have granted contracts of a similar nature to surgeons and general practitioners. It would appear that if it is

possible for a friendly society to grant this form of protection then there ought to be no reason why an insurance company should not do it, but it must be borne in mind that while a friendly society has the privilege of altering its conditions by a vote of its members, there is no such freedom reserved by an insurance company. Once an insurance company has granted its contract it is bound by its conditions. It may sound very attractive to a surgeon to be able to get a sickness and accident policy which purports to issue a definite weekly payment if he is unable to follow the specific side of the profession that he is practising, but it must be recognized that the premiums that are charged for sickness and accident insurance are not calculated to provide for any such risk, and, while it may appear a very desirable contract, it may really be that the company is undertaking liabilities for which no adequate provision is being made. This point is of such importance that it needs to be carefully examined. For instance, supposing a surgeon seriously injured his right hand, it might prevent him from following his ordinary professional duties, and be sufficient to enable him to establish a claim within the meaning of the policy, but when the injury had healed, although he might still be unable to operate, the condition of his general health might not be in any way impaired, and he would be able to devote his knowledge and attention to another part of the profession. He might be unable to earn so large an income as when doing his special work, but he might be able to make good in another direction. An insurance company granting such a policy might have to pay an annuity up to the agreed age, although the policy holder was in a position to make an income in another branch of the profession, and was actually doing so. Some of the insurance companies that have had considerable experience in sickness and accident insurance decline to grant such contracts.

Another effect of this condition providing for total incapacity to follow a specific line of practice is to make possible claims for partial disablement. An experienced actuary has given the following opinion upon this aspect of the subject:

"The sickness portion of a permanent sickness and accident policy only covers total disablement. It is always possible for an additional premium to protect oneself against partial disablement by accident for a sum assured, which is usually one-fourth or at the most one-third of the sum assured payable in event of total disablement but it is not possible to effect an insurance against partial disablement by sickness. It would probably be regarded as rashness in this age of enterprise to predict that any particular condition would never lend itself to insurance treatment but if an exception to an otherwise wholesome rule, viz., not to prophesy before you know, could be made I should venture to claim that this exception must be that of providing partial disablement benefit under a sickness policy. It is a multifarious condition capable neither of precise statement nor of treatment from the insurance standpoint. The system can only be framed upon general lines and it can only provide therefore for total disablement."

The position with regard to sickness and accident insurance has now reached a stage which calls for the most serious consideration of the profession. The companies that have the longest experience have been operating for about forty years, but they will probably require carefully to observe their experience for another fifteen years in order to obtain trustworthy vital statistics. The selection of risks requires special skill, and the incidence of certain diseases demands constant observation. A conservative attitude towards this special class of insurance is therefore to the advantage of both the general public and the companies.

The oldest companies enjoy large reserve funds, which are periodically valued on a stringent actuarial basis. In life assurance it is always possible to know the basis of the valuation that the company uses, and the same public should be given to sickness and accident funds. There is one office that is always prepared to give this information upon application. In all cases a separate account for sickness and accident funds should be produced. It is hoped that the Board of Trade Committee which is considering the Assurance Companies Act, 1909, will make it compulsory upon all companies transacting permanent sickness business to make returns to the Board of Trade.

in the same manner as life companies do at the present time

It is desirable that a medical man, before entering into any contract for sickness and accident insurance, should avail himself of the guidance that is obtainable from the Medical Insurance Agency (British Medical Association House, Tavistock Square, London, W.C.1)

It cannot be too often emphasized that, just as a medical man who intends investing funds seeks either the counsel of his bank manager or stockbroker, from whom he expects an independent opinion, so he should seek in like manner the aid of the Medical Insurance Agency, which exists to give him free, independent, and impartial advice upon all insurance matters

INTERNATIONAL CONGRESS OF RADIOLOGY

FIRST DAY'S PROCEEDINGS

THE International Congress of Radiology began its heavy programme of work on July 1st at the Central Hall, Westminster, under the general presidency of Mr C THURSTON HOLLAND of Liverpool. The members attending, exceed by at least one hundred the anticipations of the organizers. Up to the eve of the Congress close upon 500 members had registered, more than half of whom came from abroad. In the first list of 350 arrivals, 60 were from Germany, 30 from France and Belgium, 12 from Italy, and just over 50 from the United States. Constantinople and Buenos Aires and Moscow were all represented, and a contingent came from the State Institute of Roentgenology, Leningrad.

On the evening before the Congress a reception, which was very largely attended, was given by the executive of the Congress at the house of the Royal Society of Medicine. Members and their friends were received by Mr Thurston Holland. An exhibition of old books, prints, and curiosities in the possession of the Royal Society of Medicine had been arranged, there was a cinematograph display, and Dr Murray Levick gave a lecture, illustrated by his own photographs, on the habits of the Adello penguins in the Antarctic.

OFFICIAL OPENING CEREMONY

H.R.H. the DUKE OF CONNAUGHT opened the Congress officially on Wednesday afternoon, July 1st. Among those on the platform, besides the President and officers of the Congress, were Mr Neville Chamberlain (Minister of Health), Lord Dawson of Penn, Sir Humphry Rolleston, and Sir George Newman. Delegates were introduced representing the radiological societies of the Dominions and of various foreign countries.

The Duke of Connaught said that it was an eloquent tribute to the value of Roentgen's discovery that, thirty years afterwards, such a large body of scientists and medical men should meet to discuss the many directions in which the science had developed. The dreams of the earlier days might not have been all fulfilled, but there were reasons for believing that with the more intelligent appreciation of the effects of x-rays more striking advances might be made. The consuming question that interested scientists and medical men the world over was the discovery of the cause and treatment of cancer. No surer method of promoting cordial international relations could be imagined than the meeting in congress of the leading intellects of all countries. His Royal Highness went on to speak of the value of mobile x-ray outfits which could be taken to the patient's bedside, of the work of the British Institute of Radiology, and of the research on radium which was proceeding in this and other countries.

Mr NEVILLE CHAMBERLAIN welcomed the members on behalf of the Government. He said that few could have anticipated in the early days of Roentgen's discovery what it meant for mankind. Such succeeding discoveries in this province seemed only to lift the curtain a little higher, and to indicate still further possibilities opening out. He did not believe that advances could be made except by continual research and experiment, to the interplay of

minds devoted to these problems. It was the duty of his department to do all that it could to encourage research. At present this was hampered, so far as radium was concerned, by the fact that radium was both scarce and dear. Mr Chamberlain went on to say that the path of exploration was always strewn with wreckage, and very often with the bones of explorers, and radiology had been no exception. Not a few of the pioneers had fallen victims to dangers which at the beginning were unrecognized. All honour to such pioneers! They had moved the rocks for others. He did not doubt that when the Congress closed all its members would feel that another step had been taken towards further triumphs for the benefit of humanity.

Sir HUMPHRY ROLLESTON conveyed the thanks of the Congress to His Royal Highness, and went on to speak of the British Institute of Radiology and the hopes and ambitions it represented. He could not help feeling that the Congress and the Institute were very closely related. The Congress was in the butterfly stage, and worked intensively for a short time, but the Institute was in the larval stage and carried on its work from day to day. The Institute deserved all possible encouragement and help, for it was a sort of central bureau where all matters connected with radiology could be stored, discussed, and provided to any radiologist or other medical man requiring them. The Institute would become the centre of a worldwide organization for systematic research.

INTERNATIONAL UNITS AND STANDARDS FOR X-RAY WORK

A joint meeting of the Sections of Physics and Radiology was held on Wednesday morning to discuss the subject of international units and standards for x-ray work.

Sir WILLIAM BRUCE, in a brief introduction, referred to the difficulties surrounding the problem, which he said, must be settled on the basis of compromise. There were three factors which must be isolated: (1) the determination of a scientific unit, which was a matter of physics pure and simple, (2) the determination of a standard or description of an apparatus which could be used for comparison, (3) the comparison of this standard with the results obtained in treatment. It was of no use arriving at any one of these factors to an extreme conclusion and leaving the others indefinite, because, just as the strongest part of a chain was its weakest link, so any indefiniteness in any one of these divisions would govern the value of the work in others.

Dr H. BLEIBERG, speaking in French, said that radiologists must look to radium to supply the physical unit of dosage for fundamental standardization. He called upon radiologists of all countries to attempt a standardization of dosage which might be common to them all, and to elect an international committee for the study of this very important question, such committee to be composed of medical men and physicists.

Dr N. S. FINZI (London) seconded this proposal. The most difficult question, in his view, would be the setting up of a biological unit on account of the numerous factors, such as wave lengths of radiation employed and duration, which had to be reckoned with. If radium were used in standardization, the beta radiation should be eliminated.

Others who joined in the discussion were Dr W. ALTSCHUL (Pirgny), Dr I. SER SOLOMONY (Paris), Dr J. H. SHAW (Cardiff), and Dr H. MOORE (London). The last-named expressed the opinion that the most important step was to provide radiologists with a generating apparatus with which they could get an x-ray beam of definite quality. Given this factor, the problem of dosage would solve itself. The solution was in the hands of radiologists if they chose to scrap their present apparatus and to install a constant voltage apparatus, the only deterrent was cost.

A motion to elect an international committee for the study of this question was carried.

Periodical International Congresses

The international delegates conferred during the meeting, and it was agreed that the Congress should be constituted the first International Congress of Radiology, which means that it is to be followed by others in different countries.

Victoria.

[FROM OUR SPECIAL CORRESPONDENT]

NEW HOUSE OF THE VICTORIAN BRANCH

THE Victorian Branch of the British Medical Association decided a short time ago to build itself a new house. It has recently been completed and was formally opened on May 20th. It is of concrete, in three stories, and has cost £11,000. In the entrance hall a memorial has been erected to members who fell in the great war, on the same floor is a meeting hall capable of seating 350 people. On the first floor is a library, a reading room, the council chamber, and offices.

At the opening ceremony the chair was taken by Dr Argyle, President of the Branch, who was accompanied on the platform by the Attorney-General of Victoria, the Lord Mayor of Melbourne, the two vice-presidents of the Branch, the vice-president of the New South Wales Branch, the Dean of the Faculty of Medicine, Melbourne University, the chairmen of committees, the honorary secretary, and the chairman of the Building Committee. Dr R. H. Fotherston, convenor of the Building Committee, gave a brief history of the old hall and the circumstances which led to the erection of the new building.

President's Address

The President (Dr Argyle) then gave an address. In 1879 the Victorian Branch, he said, was founded with 62 members, to-day it had 1,185. He then sketched the development of modern knowledge since the Branch was founded, referring in particular to the establishment of antiseptic surgery by Lister. The system came into use in the Melbourne Hospital in the early eighties, and by a process akin to revolution it had now been replaced by aseptic methods, the use of which rendered it possible for a surgeon to operate on every region of the body with practically no risk at all from the operation. He then touched upon some of the developments of bacteriology which had enabled preventive medicine to become a real force in the community. Typhoid fever had practically vanished in large cities. In Victoria in 1878 the deaths from that fever were 50.7 per 100,000, to-day the rate was only 2 per 100,000. With adequate sewerage in the country towns the disease would vanish altogether. Deaths from diphtheria in Victoria in 1878 were 65.4 per 100,000, to-day the rate had dropped to 7 per 100,000. Tuberculosis in 1878 claimed 1,678 per 100,000, to-day only 71.1. Within the same period physiology and pathology, assisted by biochemistry and physical science, had moved forward in no uncertain way, investigators were busy in the diagnostic field, and in epidemic and tropical diseases the work of biological inquiries had reaped a rich harvest. The greatest contribution to medicine by the physicians was the discovery of the x-rays by Roentgen in 1895. It was almost impossible to overestimate the value of the method in both medicine and surgery. No hospital was complete, no textbook up to date, no practitioner safe, if the x-rays were not regularly used as part of the daily routine for the accurate diagnosis of injury or disease. The discovery of radium by M. and Madame Curie in 1898 added yet another physical weapon for the treatment of cancer and allied conditions. Many puzzling diseases of nutrition were now known to be deficiency diseases due to the lack of some element in the food supply. But though much had been done there remained much to do, especially in regard to tuberculosis and cancer. The net result of all the discoveries and activities during the last forty-seven years was remarkable. In Victoria in 1878 the death rate per 1,000 was 14.56, in 1924 it was 10.05. The medical profession in Victoria had done its part in the great war of 966 members, 407 enlisted for active service (about 42 per cent), and of these 43 (10.5 per cent) died on service. One-third of those who remained behind also did war service.

In declaring the building open Dr Argyle used the words of Dr Osborn Taylor to dedicate it: "To the noble profession, whose gospel is the healing of mankind, whose honour is the Hippocratic oath."

The Attorney General (Mr Eggleston), after congratulating the Branch on its acquisition of such a fine home, said that the general community did not fully realize the extent of its indebtedness to the medical profession, or the magnitude of the sacrifices which members of the profession frequently made.

The Lord Mayor of Melbourne expressed the congratulations of the citizens, and Dr C. G. Laws spoke in the name of the New South Wales Branch, of which he is vice-president. Dr Douglas Stephens, senior vice-president of the Victorian Branch, also responded, and Dr J. Newman Morris, on behalf of the members of the Branch, presented Dr Fotherston with a cheque in recognition of his services for the new building. Afterwards a reception was held in the library.

Scotland.

MEMORIAL TO SIR WILLIAM MACCOWEN AT ERSKINE

AT the Princess Louisa Scottish Hospital for Limbless Sailors and Soldiers at Eiskine there was unveiled on June 20th a memorial to the late Sir William Maccowen. As one of the pioneers in the founding of this hospital, Sir William devoted himself with great energy and enthusiasm to the work carried on there during the war, and it was largely to his splendid services and surgical skill that the institution owed its success. The memorial takes the form of a mural tablet, designed by Mr G. H. Paulin, and is placed in the entrance hall of the main building, and upon it due recognition is made, not only of his association with Eiskine, but also of his outstanding achievements and world-wide fame in the realm of surgery. The tablet is of bronze set in marble, and bears the following inscription:

"In honour of Sir William Maccowen C.B. D.L. F.R.S., Honorary Surgeon to the King in Scotland, Regius Professor of Surgery in the University of Glasgow, a world-renowned surgeon, a great man to whom this hospital owes its inception to whose untiring labours its success is due who within these walls, by his skill restored to active and useful lives many of those maimed and broken in the Great War."

Over the tablet was placed a wreath designed by H. R. H. Princess Louise, who had hoped to attend the ceremony, but whose health did not permit of the journey north. In her absence the unveiling was performed by Principal Sir Donald MacAlister, Bt., who delivered a graceful and eloquent oration on Sir William Maccowen and his services to the hospital, in the presence of a large company. Sir John Reid, in handing over the memorial to the custody of the Lord Provost of Glasgow on behalf of the hospital, read a personal letter which he recently received from Princess Louise, in which Her Royal Highness expressed her great regret that she could not attend and take part in the proceedings. "It is a very real disappointment to me," she added, "to have to write this to you, as I have been counting all along on coming to be among you all, who have so kindly wished me to be with you for this occasion at Eiskine House, which I am proud of looking upon as my hospital, for, as you well know, I take a true and affectionate interest in it. It was Sir William's special child, which he created and put his whole heart and soul into." Sir John Reid joined in paying tribute to the work of Sir William, as did also Lord Provost M. W. Montgomery in accepting custody of the memorial. Dr James A. Adams spoke in the name of the medical profession. Dr J. A. C. Maccowen, speaking on behalf of Lady Maccowen and his sisters and brothers, expressed appreciation of the graceful tribute that had been rendered to his father's memoir. In proposing a vote of thanks to the Lord Provost, the Marchioness of Ailsa said the tablet spoke with admiration and gratitude of Sir William's services to the hospital, but the real memorial would be the carrying to completion of the ideal he so magnificently conceived of establishing it as a permanent national institution for the benefit of disabled sailors and soldiers.

WILLIAM AND JOHN HUNTER MEMORIAL AT GLASGOW

The University of Glasgow on June 24th conferred honorary degrees on a number of distinguished men, and afterwards another ceremony took place at which homage was paid to the memory of two great medical brothers, William and John Hunter, who were natives of East Kilbride, the former a student and graduate of Glasgow University. Both proceeded to London, where they achieved great distinction, one as a physician and the other as a surgeon. In common they were creators of great and invaluable museums. William gave to Glasgow University the Hunterian Museum, remarkable not only for collections in anatomy, natural history, and a fine library of books and manuscripts, but also for a world renowned collection of coins. John Hunter, "the pioneer of all that is philosophic in modern biology," presented his museum to the Royal College of Surgeons of England. The memorial to the brothers has been erected in the University grounds on a lawn facing University Avenue, and forms a striking piece of architecture. Built of white stone, it is enclosed in a three-sided rectangular stone court formed by low walls having stone ledge seats, and is approached by a short flight of steps. Rising from its rear wall is the main feature of the monument—a squat stone with two shoulders of panelled wall. On the upper part of the centre stone are the arms of Glasgow University, below which is the following inscription:

"In gratiam memoriam fratrum de scientia naturali et medendi arte Optime meritorum Gulielmi (1718-1783) et Johannis Hunter (1728-1793) quorum uterque famæ venitor aeternae hic collegium chirurgicum Londini regum ille Glasguae alumnus idem et dator matrem studiorum Universitatem musæo condito ornavit

On either side of the main piece are chiselled heads of the two brothers, while on the east and west ends respectively of the higher walls are the arms of the Royal College of Surgeons of England and the Royal Faculty of Physicians and Surgeons of Glasgow. The origin of the memorial dates back to 1893, when the idea was first mooted by the late Dr. George Ritchie Mathew when publishing a biography of the two brothers. Unfortunately, before any steps could be taken in furthering the idea Dr. Mathew died, but his suggestion lived, and has now matured in the present memorial. Mrs. Mathew, his widow, who strongly supported the proposal and has been instrumental in having his wishes carried out, had the privilege, as was most fitting, of unveiling the monument. On behalf of the subscribers Dr. David Murray, chairman of the Memorial Committee, formally asked the University authorities to accept custody of the memorial, "to commemorate two Lanarkshire men who by their own genius, without the aid of powerful friends or by the chances of fortune, attained to the highest eminence, and from whose careers we should learn that whatever is to be of enduring value must be the outcome of individual effort, of self-reliance, and of unremitting labour." Sir Donald MacAlister gratefully accepted custody of the memorial in the name and by the authority of the University Court. In so doing he said that the University, though its field of service was wider than the city, the west country, or the Scottish homeland itself, had yet a special relation and responsibility to these. It had to keep before the eyes of the citizens of Glasgow, and of actual and potential students who frequented its precincts, visible tokens of the things it stood for and sought to foster. Its buildings should be stately and suggest the dignity of learning. Its grounds for health, exercise and recreation should be ample and seemly, and so manifest the fostering care of Alma Mater for the well-being of her alumni. Its public museums should be comprehensive and well furnished, that minus the most various might find therein matter to stimulate interest and evoke intelligent inquiry. Its portraits and memorials of the worthies who were exercised within its walls should be many and conspicuous, that examples of excellence in their several kinds might be held up before all, and set forth visibly as the abiding heritage of their successors for encouragement and imitation. This memorial to the brothers Hunter enriched the University in more than one of these respects. It told in especial of two humble Glasgow students who by dint of

industry and native talent, rose to fame as leaders of science and benefactors of their kind. It said with silent eloquence, "What Glasgow students did, Glasgow students can do." For this additional stimulus to higher endeavour the students and teachers of the University thankfully acknowledged their debt to the contributors. Sir John Blind Sutton, Bt., President of the Royal College of Surgeons of England, who at the graduation was the recipient of the degree of LL.D., spoke as representing John Hunter, and Professor F. K. Monro, President of the Royal Faculty of Physicians and Surgeons of Glasgow, as representing William Hunter. In doing so both paid tribute to the memory of these great medical brothers, who each in his own way had won fame, and whose names are still held in reverence.

EFFECTS OF THYROID EXTRACT ON ACID FOWLS

At a meeting of the Royal Society of Edinburgh on June 22nd, when Principal Sir Alfred Irving was in the chair, a paper was contributed by Dr. I. A. L. Crow, director of the Animal Breeding Research Department of Edinburgh University, on rejuvenation of the aged fowl through thyroid medication. Dr. Crow said that as a fowl got old its plumage got lighter and its fecundity decreased. Experiments had shown that the cause of this was, possibly, a progressive inefficient functioning of the thyroid gland. Desiccated thyroid had been given to old fowls, with the result that all the birds became rejuvenated, the plumage of the cocks becoming similar to that of normal hens, whilst the egg yield of the hens was increased to a remarkable extent.

GRANT TO ROYAL SIMPSON MEMORIAL HOSPITAL

On June 24th a deputation from the Royal Maternity and Simpson Memorial Hospital, Edinburgh, met the Lord Provost's Committee of Edinburgh Town Council to support an application for a grant towards capital expenditure. The deputation explained that property in the neighbourhood of the hospital had recently been purchased at a price of £650, and that the cost of alterations necessary to adapt this property for the purposes of the hospital would be about £950. The Lord Provost's Committee agreed to recommend that the town council should grant £950 to the hospital for this purpose.

CENTRAL MIDWIVES BOARD FOR SCOTLAND

At a meeting of the Central Midwives Board for Scotland on June 24th Dr. James Haig Ferguson was in the chair, and Sir Archibald Buchan-Hepburn, Bt., was appointed deputy chairman in place of the late Dr. Michael Dewar. Intimation was made that the Scottish Board of Health had approved the new rules for extended training of midwifery nurses, which come into force on May 1st, 1926, and will apply to all persons commencing midwifery training thereafter.

Ireland.

IRISH FREE STATE PENSION RIGHTS
Important Notification

Medical officials under county health boards and other local authorities should bear in mind that if they desire to avail themselves, for pension purposes, of Section 8 of the Local Government Act, 1919, they must notify their local authorities of their intention at a date not later than July 25th next. The following summary of the pension rights of medical officers under the Acts of 1919 and 1925 has been addressed to Local Medical Committees by the Irish Medical Society. What the medical officers affected have to consider is whether in each individual case the benefits of Section 8 of the Act of 1919, and in certain cases the benefits of the Local Government, 1898 Act, gave more favourable terms than the benefits under the Act of 1925. (1) Generally, the older provisions appear more favourable, but we prefer not to lay down any hard and fast rule, as there may be some cases in which the terms of the more recent Act would operate to greater

advantage than those of the earlier Acts. We desire to call particular attention to the fact that there is no scale save a maximum one prescribed by the 1925 Act. Subject to this the Minister has arbitrary power. (2) Under Section 8 of the Local Government Act, 1919, the fact alone that a medical officer is 60 years of age, and has served as an officer of a local authority for not less than twenty years, entitles him, with the consent of the Minister, (i) to resign his office, and (ii) to receive a mandatory pension on a defined minimal and maximal scale. No medical certificate of permanent disability is required with these conditions. Under the Local Government Act, 1925, a medical officer to resign under the conditions (just mentioned) of the Local Government Act, 1919, must have attained 65 years of age and must have twenty-five years' service—that is, under the 1925 Act, an extra five years is added to each condition. The recent Act (1925) would be more advantageous (a) in the case of women doctors who, on marriage, would resign their offices, (b) in some respects in the case of a medical officer who had served in a pensionable office outside the area of his present pensioning authority—that is, the County Health Board. The following draft letter might be employed by medical officers who prefer to retain their rights under the Act of 1919.

Address and Date
Board of Health

To the Secretary

Sir,
I beg to notify you for the information of Board of Health that it is not my intention to avail myself of the provisions of Part 4 of the Local Government Act 1925 with the exception of the several sections which by Section 43 of that Act are made applicable to an officer making the election which I am doing.

I am Yours faithfully

England and Wales.

THE LONDON UNIVERSITY SITE

THE correspondence between the Principal Officer of the University of London and the Treasury, which is printed at page 43, would, if taken literally on its face value, appear to amount to a final decision that the University headquarters shall not be established in the Bloomsbury district, as was proposed some time ago, when the Government, through the mouth of Mr H A L Fisher, then President of the Board of Education, made a definite offer of a site, subject to certain contingencies set out in the correspondence. Lord Haldane, when opening the new headquarters of the National Union of Students of the Universities and University Colleges of England and Wales, in Endsleigh Street, Bloomsbury, last week, said that the Royal Commission on University Education in London, of which he was chairman, had, among other things, reported that London must have a university centre, and that the centre should be Bloomsbury. There was no situation in London comparable to that neighbourhood for the home of the University, for headquarters, for lecture rooms, or for a club house and an assembly place for students. The University would not achieve success unless it avoided the extreme act of folly which it seemed about to commit in not setting to work to get a constitution for the University. The Union he was addressing was formed three years ago, and already includes about 30,000 undergraduates. The new building provides an adequate central office and club rooms. A university, Lord Haldane said, was essentially dependent on its atmosphere. In the Union there was a body of students, women as well as men, who represented the university atmosphere from different parts of the world. University students, men and women, wherever they might be, whether in Washington, Tokyo, Berlin, or Paris, thought alike, provided only there was a sufficient height of knowledge. London, the greatest city in point of numbers in the world, and not diminishing in importance, was without a proper university. There were in London many colleges, several of which exceeded

in size universities in the provinces, but they were not brought together under one roof, and it was not easy to bring them under one roof. He himself had been at work on the problem for over thirty years.

GUY'S HOSPITAL MEDICAL SCHOOL

The annual Guy's Hospital garden party—a pleasant event in pre-war days—was revived on June 29th when H R H the Duke of York, deputizing for the Prince of Wales, who is president of the hospital, distributed the prizes to the successful students in the medical school. The Duke was received by the Treasurer of the hospital (Mr F P Whitbread), the Vice-Chancellor of the University of London (Professor Ernest A Gidner), and the members of the hospital staff, and after a visit to the concert-room for certain presentations, he proceeded to the physiological theatre, where a distinguished company had assembled. The Treasurer extended a hearty welcome to His Royal Highness, and referred to the intimate way in which the progress of the hospital, now in its bicentenary year, had been bound up with the progress of the medical school. The Duke did not address the assembly, but contented himself with distributing the fourteen medical and seven dental prizes and scholarships and individually congratulating the successful students. One remarkable and probably unprecedented success was the winning of the Treasurer's gold medal for clinical medicine and the Treasurer's gold medal for clinical surgery, as well as the Beauchamp prize for pathology, by the same student—Mr D W C Northfield. The brief proceedings concluded with an enthusiastically accorded vote of thanks, moved by Dr Finckh, senior physician to the hospital, who referred to the great traditions of Guy's and the generations of good doctors and wise and humane men who had gone forth from the school. The Duke of York afterwards visited the Henriette Raphael Nurses' Home, where work contributed by the Ladies' Association (of which the Duchess is president) was on view. An interesting collection of antiquities was arranged in one of the departments, it included relics of Thomas Guy and some of the earliest books and prints connected with the hospital. The wards, museum, and laboratories were open to inspection, and each visitor was handed an extremely well got up pamphlet, which contained not only the order of proceedings, but also a history of and guide to the hospital.

DEPUTATION TO THE MINISTER OF HEALTH FROM THE LONDON COUNTY COUNCIL

A deputation from the London County Council on various matters connected with health administration in London was received by the Minister of Health on June 8th. Mr Neville Chamberlain, in the course of his reply, said that Poor Law reform was part of the programme of the Government for next year, conditional, however, upon the passing during the present session of the Rating and Valuation Bill. One of the questions which would then come up for consideration was the extent to which the present Poor Law infirmaries could be used for the accommodation of advanced cases of tuberculosis, on the surface it seemed as if they would be very suitable, but he thought it was clear that in any satisfactory provision for the institutional treatment of tuberculosis in London there must be some central body capable of taking a survey of the needs of the whole area and seeing that those needs were properly and suitably provided for. This did not necessarily imply with it central administration of the units of institutions—a matter on which he would not like to commit himself at the present time. On another aspect of the tuberculosis problem—that of after-care—the Minister said that he regarded the experiments that had been carried out at Papworth and Preston as extremely interesting and valuable, but they could not provide a complete solution of the problem. There were, however, other experiments in progress or in contemplation for the setting up of workshops in large towns which would be under medical supervision and would work under such conditions as might be laid down by medical advice, but which he did not think could be run without a subvention. He was in communication with the Treasury on the matter, and if he was fortunate enough to soften the heart of the

Chancellor of the Exchequer he might be able to put forward a scheme for grants in aid for certain experimental stations. He also spoke on the subject of refuse disposal and drainage and indicated that he would take steps to secure expert inquiry to see whether certain views put forward by the deputation could be met.

Correspondence.

MEDICAL EDUCATION IN WALES

SIR,—As one who has taken a deep interest from its inception in the proposal to establish a really national Welsh School of Medicine, I have read Sir Isambard Owen's letter in your issue of June 20th (p. 1150) with some surprise. I am surprised both by what is said in that letter and by what is omitted from it.

1 Sir Isambard Owen writes "The policy of separating the Cardiff School of Medicine from its parent college was not a recommendation of the recent Royal Commission" that policy, he states, originated with the University and was dictated by financial factors. Sir Isambard Owen omits any mention of the strong move to make a National School of Medicine which developed before the appointment of the Royal Commission. That was, and is, an important factor in the situation, and the final recommendation of the Royal Commission is sufficiently explicit.

216 The endeavour at once to give the School of Medicine a national status and to recognize the special interests of the University College at Cardiff produced a highly complicated plan which was admitted by the Departmental Committee to be only the best that could be devised under disadvantageous conditions. After a careful consideration of the various suggestions in relation to our general task we have decided to recommend the mere simple plan suggested to us by Sir Isambard Owen of organizing the Medical School as a constituent College of the University to be governed under the University by a Council and Senate of its own.

I have italicized the last lines of this quotation because I find it difficult to reconcile them with Sir Isambard Owen's assertion that the policy of separating the Cardiff School of Medicine from its parent college was not a recommendation of the Royal Commission. Any man is as well entitled to change his mind as any woman proverbially is to change hers, but Sir Isambard Owen seems to have executed a complete volte-face.

2 Sir Isambard Owen does not mention that the new scheme of erecting the school as a "school of the university" and not as a "college of the university" was in the first place suggested by the Senate of the College at Cardiff itself. The University Council, in proposing the new scheme of constitution, is in effect bowing to the suggestions of Cardiff College, of the council of which Sir Isambard Owen is a member.

3 Sir Isambard states that the article in the *BRITISH MEDICAL JOURNAL* (which he is criticizing) "seems to suggest that this scheme [that is, the scheme now proposed by the University Council] has the approval of the faculty of medicine of the university, my information is that it has not yet been before the faculty." Sir Isambard Owen is in error when he suggests that the article in the *BRITISH MEDICAL JOURNAL* seems to suggest that the scheme has the approval of the faculty of medicine, although no doubt it would have that approval if submitted to it. The article in the *BRITISH MEDICAL JOURNAL* states quite correctly that the original recommendation of the Royal Commission (in favour of separation as a "college") has been endorsed by the faculty of medicine. It will, perhaps, be a sufficient indication of the way in which the matter is being dealt with by Sir Isambard Owen and his colleagues on the council of Cardiff College if I point out that the college has come to a decision against the scheme, without even taking the opinion thereon of its academic bodies.

4 Another cause of surprise to me is that Sir Isambard Owen, though he refers to the opinion expressed by the Vice-Chancellor of the University of Liverpool in a communication to the *Western Mail*, does not refer to the views previously set out in an article in the same newspaper (February 7th, 1925) by Sir Charles Sherrington, Professor

of Physiology in the University of Oxford, and President of the Royal Society.

Dealing first with the word "separation" as applied to the Medical School, Sir Charles Sherrington said that it might suggest that the school would suffer thereby. It was not, he said, perhaps sufficiently realized that the question of separation will not affect the present academic arrangements, and that those who opposed separation on this ground did so without knowing the true facts of the case. The supreme academic authority of the University is, he pointed out, the Academic Board—composed of representatives of all the faculties of the university. The present academic relationship of the School of Medicine to the University on the one side and to the University College at Cardiff on the other, will remain unaltered in the independent School of Medicine.

He then passed on to consider the question of the independent colleges which would accrue from independence. He wrote as follows:

In the first place there will be a more efficient administration of the school, which has to report to (and is subject to) the council of Cardiff College, which again on many matters has to receive the consent of the council of the University. As the Board of Medicine the College Council and the University Council all have their own administrative machinery and sub-committees it is not difficult to see that the present administration of the school is very complicated and slow in action. The proposal to give the School of Medicine independence within the University is essentially a proposal to make its Board of Medicine an effective administrative body with power similar to that of the councils of the constituent colleges of the University. I venture to say that the independence of the school does not entail further academic separation but does involve a more efficient administration of the school.

Under the constitution in favour of which he was writing, the status of the Medical School would, he said, be that of a school of the university carrying on its work in complete harmony with the University College of Cardiff, but functioning as a unit of the university rather than as a department of a constituent college. There was no reason, he believed, why this arrangement of itself should affect academic intercourse, for at Oxford and Cambridge the measure of independence enjoyed by the colleges and the school of medicine did not affect intellectual and take place of how this might be brought about did not depend upon the question of governance. The University of Wales, he continued, occupied a unique position among the universities of Great Britain, not only on account of its federal character, but also because it was a national university in a sense not true of any other British university. It was a single expression of ideals and aspirations of a whole nation, it had several constituent parts, but the university itself was one and undivided. The highest interests of the medical school demanded, in Sir Charles Sherrington's opinion, that it should be associated directly with the national university rather than with one of the constituent parts of that university. This claim was "not only inherent in the federal character of the university, but also records with the importance of medical science as a branch of learning and with its vital bearing upon the well being of the community." The idea of a school of medicine for the whole of the Principality had captured the imagination of the Welsh people, if their hopes were to be realized the young institution must be given full freedom to develop. Complete incorporation of the medical school with the Cardiff College would prevent it from developing on its own lines, would lead to a conflict of interests, and would saddle it with the necessity of submitting to College exigencies. Sir Charles Sherrington concluded his article with the following words:

The nature of the constitution of the University of Wales as well as the national status of the school in my opinion point unmistakably to the recognition of the school as an independent unit of the University. Given the support of the Welsh people and given full freedom of action in framing and directing its own policy it is my hope and expectation that the School of Medicine will go from strength to strength and may come to rank with the finest and most up to date schools in the world.

The real factor in the situation is this that as things

are at present in Cardiff it will not be possible to develop a first-rate school of medicine unless it is separated from the local college and placed directly and fully under the University of Wales itself—I am, etc.,

Leechard, Cardiganhire June 27th JOHN LYNN-THOMAS

THE DIPLOMAS OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON

SIR,—In your notice of the death of Dr. Edwin John Slade-King, which appeared in the JOURNAL last week (p. 1200), you omitted to mention the fact that Dr. Slade-King was the last medical man left who held the diploma of "Extra Urbem Licentiate" of the Royal College of Physicians. The power to grant the diploma of "Extra Urbem Licentiate" was secured to the College by the statute of 14 and 15 Henry VIII (1522-23), and brought under the authority of the College all those who practised medicine in England, with the exception of Doctors of Medicine of Oxford and Cambridge. Before this statute was enacted the College had authority only over those who practised medicine in London and seven miles round. When, however, the Medical Act of 1858 came into force, this provision in the statute was repealed, and the grade of "Members of the College" was instituted in place of the "Licentiates" and "Extra Urbem Licentiates." Under the Medical Act of 1858 a new grade of "Licentiate" was established which referred to those who passed the qualifying examination now known under the letters L.R.C.P. Dr. Slade-King was one of the last to take the "Extra Urbem Licentiate." This he did in 1857, and with his death the diploma becomes extinct—I am, etc.,

London W 1 June 26th

ARNOLD CHAPLIN

PERINEAL DRAINAGE AND PROSTATECTOMY

SIR,—Mr. William Billington has raised (June 20th, p. 1150) a very interesting topic—namely, perineal drainage in internal urethrotomy and prostatectomy. With regard to perineal drainage in internal urethrotomy, does Mr. Billington enquire this out in all cases? Personally I feel that internal urethrotomy is an operation which has justified its existence by time, experience, and results, and should a case demand perineal drainage, then I would consider it one for external urethrotomy and not internal urethrotomy. The cases of stricture in which I have employed perineal drainage have been those complicated with severe cystitis and a type rarely seen in this country, but frequently in the East—namely, when the perineum is a mass of sinuses and fistulae and dense fibrous tissue. In the latter type external urethrotomy with drainage of the bladder is the only way by which the sinuses can be dealt with and the condition cleared up.

I have on a few occasions done median perineal lithotomy in children for stone when, owing to total lack of nursing and having the bare minimum of instruments with me, no other course was available. Necessity knows no rules, with the open desert as my operating theatre and the beautiful crystal an and "Allah" as my helpers, the results were delightful. Drainage was perfect.

With regard to perineal drainage in prostatectomy, I feel that this is adding another complication to an already sufficiently complicated operation. We must remember that an enlarged prostate is not an affection of the prostate alone, but a symptom of a generalized condition in individuals who are not only past the autumn of their days, but are fast approaching the winter.

Prostatectomy is a serious operation in the hands of even the expert, with its mortality rate nearer 20 per cent than 10 per cent, in the hands of the general surgeon the mortality must be far higher, and if perineal drainage will lower this mortality rate, then by all means let it be fully considered. I have only on one occasion used perineal drainage, and my reason for then doing so was the enormous cavity left after the removal of a big prostate with much sepsis of the bladder, but instead of cutting down on to a Wheelhouse's staff I pushed a long sinus forceps through the prostatic cavity into the perineum and

cut down upon that, using the ends to drag up the drainage tube into the prostatic cavity.

I am convinced that the mortality rate of suprapubic prostatectomy can be still further decreased by more attention being paid to the renal excretion tests. I rely on the urea excretion and phenol sulphonephthalein tests, and also very largely on the general condition of the patient himself. The subjects of prostatectomy will not tolerate long waits in cold and draughty corridors and a subsequent prolonged operation. Rapidity with the choice of a suitable anaesthetic and the production of as little shock as possible are among the many essentials for a lessened mortality rate. I have used gas and intratracheal oxygen for my last two cases, and I have been more than pleased with the complete relaxation obtained and the absence of vomiting and of post-operative shock.

SIR JOHN LYNN-THOMAS (BRITISH MEDICAL JOURNAL, June 27th, p. 1194) mentions the lower rate of mortality from the perineal operation. This may be so, but are the end-results satisfactory? The occasional drainage down to the nerve supply of the compressor urethrae muscle in this operation, with the resulting incontinence, leaves the patient in a worse condition than when he had the original disease. I have lately met with an instance of a patient who had undergone perineal prostatectomy and now spends his time going from hospital to hospital, and from surgeon to surgeon, seeking relief from this terrible affliction.

There is nothing worse from a public standpoint than to operate on doubtful subjects. In doubtful cases permanent suprapubic drainage properly done and a suitable apparatus fitted is a far better procedure than to submit many decrepit old men to the risks of so serious an operation.

I quite agree with Sir John Lynn-Thomas when he states that "we have to look out for weakness in the minute details of the plan of attack." A still greater consideration is the patient himself—I am, etc.,

London W June 27th

THOS. CAREY EVANS

URINARY INFECTIONS

SIR,—Dr. Sangumetti (June 27th, p. 1168) discusses lavage of the bladder with a weak solution of collargol in certain urinary infections. He apparently advocates this method of treatment for acute and chronic conditions indiscriminately, for many different types of infection, and even in cases of a definitely descending character.

In acute infections vesical lavage is usually quite unnecessary and may be positively harmful. The majority of acute cases clear up rapidly, if the patient is put to bed, the bowels attended to, and the urinary tract washed out in the natural way with copious quantities of bland drinks. Potassium citrate followed by hexamine with acid sodium phosphate may be useful in some cases, while sandalwood oil has an almost magic effect if the infection is due to the staphylococcus.

Lavage is undoubtedly useful in chronic infections when the bladder is not emptying itself effectually. If it is employed in chronic infections great care must be taken to exclude the possibility of the underlying condition being tuberculosis, which contraindicates irrigation.

Vesical lavage in cases of definite descending infection would appear to resemble cleaning the ball and leaving the living-rooms untouched.

When irrigation is necessary, a solution of silver nitrate is much less messy than one of collargol, and probably just as effective—I am, etc.,

London W 1 June 27th

W. K. IRWIN

THE DIAGNOSIS OF PNEUMONIC PLAGUE

SIR,—The great importance of the differential diagnosis of pneumonic plague and plague pneumonia from the point of view of prognosis and prevention cannot be overestimated by workers amidst plague, as pointed out by Dr. N. A. Dree Sharp of Lagos in your issue of December 27th, 1924 (p. 1216). It is surely no satisfaction to anyone concerned with a case of the former to establish its diagnosis after the patient's death. Unfortunately, however, medical literature abounds with expressions like pneumonic plague and plague pneumonia, septicæmia

plague and plague septicaemia, that are loosely applied and held to be interchangeable. And thus confusion becomes worse confounded, inasmuch as these terms are neither identical nor interchangeable.

It is obviously forgotten that bubonic plague is essentially and primarily an infection of the lymph channels, and glands, and remains so in about 30 to 40 per cent of cases admitted to hospital in Bombay. Infection of the blood and internal organs—that is, *plague septicaemia*—occurs at a later stage in about 60 to 70 per cent, and is a secondary manifestation. So also is the advent of pneumonitis, which has been recognized as plague pneumonia.

On the other hand, septicaemic plague is a primary infection of the blood without the intervention of the lymphatic system, and is therefore a far graver infection. Here, too, pneumonitis may supervene as a secondary pneumonia, it is often mistaken for pneumonic plague in the absence of examination of the blood. True pneumonic plague, however, occurs from direct infection of the respiratory tract either from droplet infection from a patient or from a localized focus in the tonsils. I suggested the possibility of the latter mode of infection in 1909, and it was subsequently confirmed by the observations of the Plague Commission in Manchester during the epidemic of pneumonic plague in 1911.

The early diagnosis of pneumonic plague and plague pneumonia (secondary) is at times beset with considerable difficulty in the absence of physical signs during life, and also of the characteristic sputum. No amount of painstaking examination gives any indication of their presence. The physician can therefore only infer its presence on account of the prevailing epidemic. High temperature, exaggerated pulse and respiration ratio, extreme restlessness and delirium, pain and sense of constriction in the chest dyspnoea, and at times cyanosis, are the only indications to guide him or raise his suspicion. Death is rapid—within three to four days. Where, however, buboes exist the above may be considered as positive signs of plague pneumonia. The character of the sputum, when it does appear, is by no means constant. It may be purulent haemorrhagic, or pellets of coagulated blood, or bright red frothy blood-tinged mucus. Any of these characteristics may not develop till shortly before death. The clinician is thus greatly handicapped. At the autopsy, however, deep-seated and localized foci of infection or infarcts, or even solid consolidation, may be found and give pure cultures of the *Bacillus pestis*.

Prognosis, however, differs. Extensive observations at the Bombay hospitals throughout a series of epidemics have shown that cases of plague pneumonia recover to the extent of 10 to 15 per cent provided the lung infection is strictly localized. Pneumonic plague—and, for that matter, septicaemic plague also—are both equally fatal, the mortality being 100 per cent. In my experience, extending over twenty-seven epidemics of plague, I have not observed a single bacteriologically verified case of pneumonic plague recover. The single exception was one in which there existed a symbiosis with the *Bacillus pyocyaneus* in the lungs. This combination was established by frequent cultural and animal experiments with the sputum, until at last the organisms finally disappeared from it.

The above facts thus indicate that small blame should attach to any clinician if he fails to verify the presence of pneumonic plague or plague pneumonia during life. Geimino to the subject, an isolated instance of plague pneumonia causing infection of the bubonic type may be here quoted. An English plague nurse working at the Arthur Road Hospital had severe coryza with injected eyes, and was advised to rest. Whilst bending over a bubonic plague patient to feed him he happened to cough, and some sputum went into one eye. Within two days she developed parotid and cervical buboes, with considerable oedema of the neck and pharynx, oedema of the glottis soon supervened, and death occurred within five days. This case illustrates the possibility of such a contingency—
I am, etc.,

N H CHOKSY MD, F.C.P.S.,
Late Medical Superintendent Arthur Road and
Maratha Plague Hospitals

Bombay Feb 7th

STATICS OF THE SMALL PLYVIC VISCERA
Sir,—I am sorry that the reviewer of vol. II of my *Statics* (June 27th, p. 1176) should think it a sin for an author to believe in himself. The late Sir Henry Duthie once said to me, "If an author does not believe in himself, who can be expected to believe in him?" And, of course, no worker is going to the pains of writing a book, and much less of getting it published, unless he believes that his point of view materially and in an important manner differs from current opinion. If I am wrong in stating that "many operating gynaecologists are clearly at sea" in the matter of prolapse, I am clearly at a loss to know how I am to be taken into account by the majority of these surgeons. I am sorry, if I can be shown to be wrong I will gladly retract those statements. They were at least made in good faith. But in this respect I remind your reviewer that even as late as last April we heard in exposition on prolapse in which not only the work done on the pelvic floor musculature in this respect was completely ignored, but which imputed prolapse to merely local lesions, and consequently did not take into account the conception "that man is individual." The connective tissue hypothesis does not explain how it is that prolapse—or, as I think it would be better called, "puccendal hernia"—is related to the intra-abdominal pressure (a pressure affecting the whole individual) as other herniae, or how it is related with general metabolism, as shown by its common use in later life. But because I believe so—and show it is so—your reviewer is vexed with me.

Your reviewer accuses me of implying throughout my book that I alone know anything of prolapse. I am sorry, too, if that is so, I was not aware of it, if it be so it was not intentional. I can at least reply that your reviewer, throughout the major part of his review, seems to imply that he knows as much or more of prolapse. Yet as a reviewer he fails in his main and primary task—that of criticism. He, indeed, is critical, but it is of the author, not of the argument. Had he shown that my argument is erroneous he would have put your readers, and more especially myself, under a greater obligation—I am, etc.,
R H PARSONS, F.R.C.S. Eng
Rugby June 27th

BRITISH MEDICAL WOMEN IN INDIA

Sir,—Having recently been engaged in administrative work in India I can perhaps supply some of the information "Medical Woman" (June 27th, p. 1195) asks for. The population of India is so vast, and the prejudice among Indian women against the attendance of male doctors is so widespread, that the field of usefulness for women doctors is almost unlimited. Unfortunately your correspondent is right in thinking that the opportunities for British medical women are really few.

Religious prejudice and social custom in India are so strong that a newcomer, ignorant of both, and endeavouring to form a private practice, would be seriously handicapped. Moreover, owing to the poverty of the people, she could not hope to make a suitable livelihood outside the large towns.

The Women's Medical Service for India offers good prospects, but it is small and not likely to offer more than two or three openings a year for British medical women. The field in connexion with mission hospitals is larger, but the salaries are small, and special interest in mission work is, of course, required by the societies.

Other appointments are occasionally offered in connexion with Indian States and municipalities. Sometimes a European is asked for, but even then a newcomer in the country would be at a disadvantage, and the employers are usually unwilling to enter on negotiations with people at a distance, which may end in nothing, or to meet the cost of passages.

If a young medical woman had friends in a large town in India and had sufficient capital for a few years' subsistence, she might go out, and would probably be well come as an honorary worker in the women's hospital. She would thus gain experience of the language and country, and might hope to do well later in private practice.

She must however, be competent, and have some experience of her profession. Even if she does not desire private practice she is far more likely to obtain a hospital appointment if she is on the spot, has some knowledge of the country, and can be interviewed.

The Secretary of the Countess of Dufferin Fund, Delhi and Simla, is always glad to assist medical women in India with advice regarding possible openings. I believe also that some of the large women's mission hospitals are willing to appoint young British medical women as house surgeons for a year or two without permanent service. This would give excellent opportunities of acquiring knowledge of the country and tropical work.—I am, etc.,

M I BALFOUR, M.B.,
Late Secretary of the Countess of Dufferin
Fund India

Edinburgh June 29th

FRACTURE OF BOTH PATELLAE BY MUSCULAR ACTION

SIR,—The cases of simultaneous fracture of both patellae reported by Mr Twistington Higgins and Mr W M Cummins in the *BRITISH MEDICAL JOURNAL* of May 30th (p 1006) and June 6th (p 1062) respectively, have reminded me of a similar case which occurred in Cairo in 1915, and which may be of interest.

I was present at an evening performance at a place of entertainment, and a dance performed by an Armenian girl was taking place. During one of the steps the girl collapsed, and it was seen that she was unable to rise and in great pain.

I was accompanied by a friend, Dr Kinnaird, and when the manager came forward and asked if a doctor was present, my friend went and attended the case. He afterwards informed me that both patellae were fractured and that he attributed the fractures to muscular action.

In spite of the almost unanimous opinion of the many Egyptian medical men who soon collected, Dr Kinnaird subsequently wired both patellae, and the woman made an excellent recovery. The "girl" in question appeared, when off the stage and devoid of make-up, to be nearer 40 than 30 years of age.

It was not noticed that great effort was made, or that the step performed at the time of the fracture demanded extraordinary exertion, and the collapse of the woman was a great surprise to the onlookers.—I am, etc.,

London W 14 June 26th

P J SIMPSON, F.R.C.V.S.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

AFTER debating unemployment on June 29th, when a vote of censure on the Government was defeated, the House of Commons has devoted the rest of this week to the Widows, Orphans and Old Age Contributory Pensions Bill, which has been considered in Committee. The text of the Government's Unemployment Insurance Amendment Bill has been issued.

The Medical Committee of the House of Commons, which met on June 29th, when Dr Tiernantle was in the chair, decided to meet again specially on July 2nd to receive a report from the party of medical members of Parliament who had been to Geneva to investigate the Spallinger treatment for tuberculosis. Sir Henry Craik pointed out that announcements had appeared in the lay press describing the party as a subcommittee of the Medical Committee, and announcing that it had been favourably impressed by what it saw. The truth was that the party were not selected or deputed by the Medical Committee, and he protested against a statement having been made before the committee had received a report from the party.

The committee briefly discussed the recently issued Treasury minute on the new Committee of Civil Research, and Dr Tiernantle reported that the Prime Minister had informed him that the appointment of this committee and its work would not come under the review of the House of Commons on any estimate.

Safety in Aviation—Captain Guest opened a short debate on fatal accidents in the Air Force and the high premiums charged for insuring the lives of flying officers. He said the risks were taken between the ages of 17 and 28 in the main and twenty years was the extreme flying life of the average officer. Since 1922 the number of flying accidents had been about 120 and he suggested that the Government should organize a compulsory

insurance scheme. The Secretary for Air, Sir Samuel Hoare, said that, judged by the number of flying hours the number of fatal and other accidents tended to decrease every year. The policy of the Air Ministry was that every individual regularly engaged in flying duties should be supplied with an Irvine parachute, and that there should be parachutes available for each aircraft up to the full number of passengers carried besides the pilot. In addition there would be a 25 per cent supply of spare parachutes. The experience of the United States in parachutes had been instrumental in saving a substantial number of lives during the last eighteen months. The Air Ministry was issuing instructions that no parachute descents should be made in bad weather. Descents from aeroplanes were safer than from kite balloons. The Air Ministry was hurrying the delivery of parachutes. He was supplying the Life Offices Association with statistics on air risks, and hoped a reduction of the life insurance premiums for airmen would be arranged.

Removal of Bethlem Hospital—On the London County Council Money Bill Dr Haden Guest drew attention to the condition of the Zoar Street area of North Southwark. There were 165 persons to the acre in Southwark as a whole, but the death rate had gone down from 21.4 in 1903 to 14.2 in 1924. In 1903 the death rate for the Zoar Street area was 40.3 and in 1924 it was 26.6. Certain factors connected with the buildings and with the arrangement of the courts and alleys of that area made its death rate twice as heavy as in other parts of Southwark. A medical report said that the physique of the adults in the area was poor but that the children were in a better condition. To relieve congestion on this area and in Southwark as a whole there might soon be available the site of the Bethlem Hospital with an open space of 13 or 14 acres around it. The hospital authorities had decided to move to a site outside London, and to sell the Southwark site for a commercial price. They were precluded from doing that without bringing a bill before Parliament and a bill for the purpose had already been read a second time in the House of Lords. He advocated the use of the Bethlem Hospital site for the most part as a public open space and for the rest for working class dwellings. The bill was read a second time.

Medical Services in West Africa—On June 29th Mr Amery told Lieut Colonel A. McDouneil that the estimates for the four West African Colonies provided for a total of 246 qualified medical officers. There were at present thirty-two vacancies after allowing for selected candidates at present under instruction in tropical medicine. In the East African Medical Service which included the medical staff of Kenya, Uganda, Nyasaland, Zanzibar, Somaliland, and Tanganyika the authorized strength was 152. There were seven posts unfilled. The medical department of Northern Rhodesia had an establishment of thirteen medical officers, and there was one vacancy.

Ambulance Service in London—On June 29th Dr Little asked the Minister of Health if the recommendations of the Ambulance Committee of King Edwards Hospital Fund had received his consideration. Mr Neville Chamberlain replied that so far as these recommendations could be dealt with by administrative action they had been put into operation. So far as they required legislation they must await the general measure of Poor Law reform which he had in contemplation.

Doctors Cars and Obstruction—Mr N. McLean asked the Home Secretary whether he was aware that regulations existed which rendered doctors liable to prosecution if they left a motor car unattended in the street, and whether he proposed to issue a regulation exempting them when these circumstances arose in the course of their professional duties. Sir W. Joynson-Hicks said that medical practitioners were not exempt from the ordinary law as to driving offences, and the Minister of Transport did not think it practicable to make exceptions to the existing law or regulations in favour of any particular class of persons. The police exercised discretion in regard to prosecuting for obstruction when it was caused by a doctor's attendance on a patient. Mr McLean asked whether the Minister was aware that practitioners visiting sick patients had been summoned, and that only owing to the good sense of the magistrates were they saved from a conviction. He asked whether the Minister would not make some regulation which would enable a medical practitioner to have the particular privilege when visiting sick people of leaving his car unattended. Sir W. Joynson-Hicks said he did not think it desirable to make such a regulation. The police acted with discretion. Quite conceivably it might happen that someone was ill in Bond Street and a medical practitioner might block the whole place for a couple of hours.

General Nursing Council—The House of Commons has set up a Select Committee to consider the rules of the General Nursing Council on the prescribed training for nurses and the reservation of seats on the council for matrons. The Committee has power to send for persons, papers and records. Its members are Sir Richard Barnett, Sir George Berry, Mr Rhys Davies, Mr Fisher, Dr Tiernantle, Sir Charles Forrester Waller, Mr G. Hurst, Sir Richard Luce, Colonel Sinclair, Miss Wilkinson and Mr P. Wilson.

Institutional Treatment of Encephalitis Lethargica—In answer to Dr Haden Guest Sir Kingsley Wood said the Minister of Health was advised that no special institutional provision was required for cases of encephalitis lethargica in the acute stage. Such cases might in general be properly admitted to isolation hospitals, infirmaries or general hospitals. The provision of a special institution for the reception of children suffering from the after effects of this disease who could not be admitted to mental hospitals, was under consideration.

Obituary.

SIR H. N. THOMPSON, KCMG, CB,
late AMS

MAJOR GENERAL Sir Harry Neville Thompson, KCMG, CB DSO, Army Medical Staff (ret.) died at O'borne on June 21, aged 64. He was the son of the late Rear Admiral Sir Harry Thompson, rector of Clonmilly, Down, and was educated at Trinity College, Dublin, where he obtained MB and ChB in 1883. Thirty-six years later he was conferred upon him the honorary degree of MD. He entered the army as surgeon on August 2nd 1884 and became colonel on November 17th, 1913 and major-general on December 26th, 1917. He was in the army since 1884.

His first experience of active service was in the Nile campaign in 1898 when he received the British and Egyptian medals. In South Africa he served from 1900 to 1902, taking part in the relief of Kimberley, in operations in the Orange River, in the Tlokoeng, and in the actions of Paardeberg, Poplar, Pretoria, and Diamond Hill, and in the actions at Johannesburg. He was mentioned in dispatches in the *London Gazette* of November 15th 1901, and named the Queen's medal with two clasps. In the recent great war he went out with the original expedition to Belgium, as colonel and ADMS of the 2nd Division, and, in the retreat from Mons, remaining with the advanced field hospital, was taken prisoner, and held in Germany as a prisoner of war for six months. The hardships which he then underwent had a permanent effect on his health.

After his release he served successively as ADMS of the 48th Division, as DMS of the 6th Army Corps from May 20th 1915, as DMS of the 1st Army from July 1917 and finally as DMS of the British Army of the Rhine. He was mentioned in dispatches at least five times—in the *London Gazette* of January 1st, 1916 June 15th 1916, December 24th, 1917, May 25th, 1918, and December 30th, 1918, and received the CMC in 1916, the CB in 1918, and the KCMG in 1919. He received also the French Croix de Guerre, the American Distinguished Service Medal and the Portuguese Order of St. Aviz, of which he was a Grand Officer. He held also the Coronation and Durburgh medals of 1903, and King George's Coronation medal of 1911.

We are indebted to Lieut.-General Sir William Ellis, KCB, FRCS, Director-General AMS, for the following appreciation.

The news of the death of Sir Harry Thompson will come as a great shock to the members of his old corps and will cause widespread sorrow. Throughout his service he had been one of its most outstanding and popular figures, while his gift of inspiring not only admiration, but also warm affection, earned for him an unusual number of close and lifelong friendships. The soldier never had a bitter friend, and the Royal Army Medical Corps has had few officers devoted more whole-heartedly to its interests and well-being. Sir Harry might have been regarded as expressing through his own personality the very soul of *esprit de corps* that quality so hard to define though so well understood by every soldier and, in its true significance, so misunderstood outside the army. His athletic record, his kindness of heart, and his handsome and genial presence would in themselves have ensured his popularity with his comrades but in a sense these tended to mask the sterling qualities of character which were so abundantly displayed at times when stress or emergency called for the best that was in a man. A striking personality, a gallant comrade, has left us, but he has left a memory and an example which will not readily be forgotten in the corps to which he devoted his life.

Treatment of Yaws.—Mr. Oimshy Gore (Under Secretary for the Colonies) told Colonel Day that he was not aware of any increase in the prevalence of yaws in East Africa but that prevalence was undoubtedly serious. Its cure by intramuscular injections of the East African Commission which also noted the delay in utilizing in Kenya the experience gained in Tanganyika. But the remedy had been in active use in Kenya for at least three years and he did not think any special action was necessary to make the preparation available in larger quantities.

Chinies for ex-Servicemen.—Major Tryon (Minister of Pensions) said in reply to Captain Hudson that the British Red Cross Society had intimated that it could not continue the claim for disabled men in Broad Street Holborn unless the number of pensions were increased. With the patients had to be directed of cases this was impossible and the general decline in the number to the more permanent clinics of the Ministry among others to that at Buhaga Street Millbank where the facilities for all varieties of treatment were particularly good.

Ante-natal Work.—The Minister of Health has stated in answer to questions (1) That of the areas mentioned by the Chief Medical Officer in his report for 1924 as showing excessive rates of infant mortality most as a result of the issue of a circular from the Ministry of Health were already taking steps to provide additional facilities for the ante-natal examination and institutional treatment of pregnant women. The medical officers of the Ministry paid special attention to these points on their visit to the areas concerned. (2) That under the existing National Health Insurance Act attendance at confinements was not included within the scope of medical benefit. The question of providing a maternity service under the National Insurance Acts had been brought to the notice of the Royal Commission on Health in 1924. The Council of the Southwark Borough Council did not provide the instance of by midwives for confinements but the London County Council received notice in 1924 that the aid of doctors was required in 1924 and refused it in three cases where the income of the family was above that laid down in the scale for necessitous persons. One woman general relieving officer in Southwark is principally concerned with the parents of necessitous children.

Veneral Disease.—The Minister of Health informed Mr. Bennett he was aware that Colonel L. W. Harrison of the Ministry of Health had at the Congress of the Royal Institute of Public Health at Brighton on May 29th objected to the honorary secretary of the Society for the Prevention of Veneral Disease quoting from the evidence of witnesses before Lord Trevelthins Committee on the ground that that evidence was confidential. The Ministry of Health had not received from the Trevelthins Committee a request that the evidence should be treated as confidential and Mr. Chamberlain understood that it decided not to ask for publication. In reply to Sir William Davison Mr. Chamberlain said the Government had not yet decided to allocate to the Society for the Prevention of Veneral Disease a portion of the grant for propaganda and education in the prevention and combating of veneral disease.

Ophthalmic Benefit.—Mr. Neville Chamberlain informed Mr. Bennett that the new model scheme for the provision by approved societies of ophthalmic benefit is an additional benefit contained a provision that except in the case of renewal or repair of optical appliances the applicant for the benefit must have obtained and furnished his society with a written recommendation from a medical practitioner. Representations both from bodies representing opticians and from representatives of the medical profession including ophthalmic specialists had received due consideration.

Shortage of R.A.M.C. Officers.—The Secretary for War answered Major Harvey said it was impossible to deal within the limits of a parliamentary answer with the reasons which might account for the present shortage of Royal Army Medical Corps officers or with the steps the War Office was taking to find a remedy.

Preservatives in Foods.—The Minister of Health has stated in reply to questions (1) that the form in which the regulations giving effect to the principal recommendations of the Committee on Preservatives in Foods should be finally made is under consideration. (2) The deaths reported as due to ptomaine poisoning during the five years 1920 to 1924 numbered 32, 48, 22, 21 and 16 respectively. It was not possible to state in how many of these cases the poisoning was due to the eating of tinned foods.

Bovine Tuberculosis.—Figures to show the percentage of cattle in the whole country found to be tuberculous when slaughtered are not available. At the Aldgate slaughterhouses in 1924 the percentage of all bovines found to be tuberculous was 0.45 of bulls, 4.40 of calves, 0.04 of cows, 28.0 of heifers, 3.1 and of oxen 2.0. These proportions were probably below the average for the whole country. Tuberculosis is rarely found in sheep slaughtered for food.

Votes in Brief.
In 1924 twelve deaths in England and Wales were returned by medical certificate or coroners inquest as due to insect bites. The Home Secretary states that provision is made under the regulations of the Workmen's Compensation Act whereby in any difficulty the referee can obtain a x-ray examination and that x-ray photographs are frequently arranged for by the medical referees. No representation has been made to him for any further provision.

L J McWELNIA, M D, M Ch, F R C P I,
 Profes or of Pathology and Bacteriology, University College,
 Dublin

WE announce with much regret the death, at the age of 61, of Dr L J McWeeney, Professor of Pathology and Bacteriology in University College, Dublin (National University), which took place at his home in St Stephen's Green, Dublin, after a long illness. He was a distinguished man in medical science, and his death at a comparatively early age must be regarded as a national loss.

Ldmond Joseph McWeeney was the eldest son of the late Mr T McWeeney, at one time a prominent figure in Irish journalism. In his boyhood he gave early promise of distinction in the Catholic University in the years preceding the foundation of the Royal University, subsequently he went to the College of St Beitin at St Omer. He matriculated in the Royal University in 1881, at the first examination after its foundation. In the following year he won a university scholarship in modern languages. In 1884 he obtained his B A degree with first-class honours and, as a result, was one of the first group of graduates of the Royal University in Ireland whose academic career had begun with its foundation. During his arts course he had commenced the study of medicine, and after graduating in arts he gave his undivided attention to medicine. In 1887 he passed his M B, B Ch, and B A O examinations with honours. In 1888 he went to the University of Vienna, where he studied pathology under Rokitsanski. The following year he devoted to the study of bacteriology under Koch at Berlin. On completion of his course of study under Koch, McWeeney returned to Dublin in 1890, trained as few young Irish doctors were at that time in pathology and bacteriology. This training he put at the services of his old medical school in Cecilia Street, at which so many distinguished Irish doctors received their medical education. He took his M D degree in 1891, and three years later won the first medical studentship of the Royal University.

From 1891 to the present year Professor McWeeney was at the head of the department of pathology and bacteriology at the medical school of University College. A tireless worker, he was familiar with the scientific literature of the Continental medical centres, and his contributions to medical literature were numerous. Among the public positions which he held were those of bacteriologist to the Local Government Board, Crown analyst in Ireland, pathologist to the Mater Misericordiae Hospital, and to the Coombe and the National Lying-in Hospitals. In addition to the degrees of his own university, he held the Fellowship of the Royal College of Physicians in Ireland, the D P H of the Royal College of Surgeons, the Fellowship of the Royal Academy of Medicine, and was a member of the British Medical Association for many years.

HENRY CORBY, M D, M Ch,
 Professor of Obstetrics and Gynaecology, University College,
 Cork

THE death of Professor Henry Corby, M D, which took place recently at his residence in St Patrick's Place, Cork, has removed one of the foremost members of the profession in the city of Cork.

Henry Corby was born on September 27th, 1848. He was the youngest son of the late William Corby, of Cashel, co Tipperary. He entered at an early age the Queen's College, Cork, which was then one of the three constituent colleges of the Queen's University in Ireland. His first intention was to study for law, but soon after entering the Cork College he changed his mind and entered the medical school. During his time in the medical school he attended the arts lectures and took his B A degree in due course. Having pursued a distinguished medical course he received in 1875 the degrees of M D, B Ch, B A O of the Queen's University. Almost immediately after obtaining his medical degrees, he was appointed house surgeon in the North Charnitable Infirmary, Cork, and later was appointed surgeon to the same hospital. In 1883, on the resignation of Professor Macnoughton Jones from the chair of midwifery in the medical school of the

Queen's College, Cork, Dr Corby was appointed his successor, and occupied the office until his death. Dr Corby also held the positions of consulting physician to the Cork Maternity Hospital and surgeon to the South Charnitable Infirmary, Cork. He was long a member of the British Medical Association, and represented the Munster Branch on the Irish Committee.

Professor Corby was a member of the Cork Corporation, and occupied the position of High Sheriff of the city. At the various literary and scientific societies in Cork he delivered many lectures, which were subsequently published in pamphlet form. Among these were "Experiences of a House Surgeon," "Health Homes," and "Industry and Ability." In 1881 he married Katie, daughter of Thomas Coppinger-Cronin, Kerry Hall, Cork. Of the marriage there were twelve children of whom five survive, the eldest is Dr Cecil Corby of Summerhill, co. Meath. Leo, the youngest son, practised as a dental surgeon in Cashel, co Tipperary, and lost his life in very tragic circumstances while motoring to Cork during the civil strife, he failed to hear the military challenge and was shot dead.

H GRAEME ANDERSON, M D GLAS, F R C S ENG,
 Surgical Consultant, R A F, Surgeon St Mark's Hospital

WE regret to record the sudden death, on June 28th, of Mr H Graeme Anderson, a surgeon of great ability, who had identified himself, during the war and after, with the medical and surgical aspects of aviation. While playing in a lawn tennis tournament he was seized with a heart attack and died almost at once. Only the day before he had attended, in his official capacity as consulting surgeon to the R A F, the Royal Air Force pageant at Hendon. The news of his untimely death has been received with consternation among a wide circle of colleagues and friends.

Henry Graeme Anderson was born on August 1st, 1882, the younger son of Nicol Anderson of Brailhead, Renfrewshire. After studying medicine at the University of Glasgow, at King's College, London, and at the London Hospital, he graduated M B, Ch B GLAS in 1904, obtained the diploma of F R C S Eng in 1909, and proceeded M D, with commendation for his thesis in 1919. For two years he was house surgeon, and later pathologist, to St Mark's Hospital for Cancer and Diseases of the Rectum, and he acted as clinical assistant at the Hospital for Sick Children, Great Ormond Street, and in the aural department of the London Hospital. His next posts were those of surgical registrar to the Royal National Orthopaedic Hospital, the Metropolitan Hospital, and the Cancer Hospital. On his appointment as assistant surgeon to St Mark's Hospital he began to acquire a considerable experience of rectal surgery, and in particular of the operative treatment of haemorrhoids. He published two papers on this subject in our columns before the war: the first (in 1909) gave the after-results of 300 operations, and the second (in 1913) discussed the three operations in common use at that time at St Mark's.

On the outbreak of war Graeme Anderson joined the Royal Navy as surgeon lieutenant. He was attached as surgeon to the original R N A S Expeditionary Force, and served at Antwerp and Ypres, and on the Belgian and North French coast. In 1917 he was appointed surgeon to the British Flying School at Vendome, France, and in the two following years held the corresponding post at the central R A F Hospital. He was transferred later from the Royal Navy to the Royal Air Force, with the rank of major. He was one of the small number of air medical officers who obtained a pilot's certificate at a time when this qualification was not compulsory, and he devoted much thought and research to the physical fitness of airmen, the prevention and treatment of aerial accidents, and the improvement of flying conditions. At the end of the war he was retained as surgical consultant to the R A F, and continued to give highly valued services in the treatment of aerial injuries and the selection of aviators from the surgical point of view. In January, 1918, he had contributed to the BRITISH MEDICAL JOURNAL a paper on the medical aspects of aeroplane accidents, and in March 1918,

we published a full report of a paper, read by him before the Medical Society of London, on the selection of candidates for the Air Service. In the following year appeared an excellent book on the *Medical and Surgical Aspects of Aviation*, edited and for the most part written by him when surgeon to the Royal Air Force Central Hospital, it was reviewed at some length in our issue of August 16th, 1919.

After his return to civil practice Gwynne Anderson resumed work on the staff of St Mark's Hospital, where he was promoted full surgeon, and at the Belgrave Hospital for Children, where he was senior assistant surgeon. He acted also for a time as surgical specialist to the Ministry of Pensions. With increasing experience in rectal surgery his reputation steadily grew. He contributed articles on this subject to Baughn's *System of Operative Surgery* and to the *Practitioners' Encyclopedia of Medicine and Surgery*, and was elected a member of council of the Subsection of Proctology in the Royal Society of Medicine. Last summer he contributed to our columns, jointly with Dr Cuthbert Dukes, a paper on the treatment of hemorrhoids by submucous injections of chemicals.

Gwynne Anderson leaves a widow and one daughter. At the funeral service on July 2nd, at St Columba's Church, Port Street, the Air Council was represented by Air Commodore David Munro, Medical Administrator, R.A.F., and there was a large gathering of hospital and service colleagues and personal friends.

W J J STEWART, M.D. (Ed.), D.P.H. (Cam),
Medical Superintendent, Willesden Municipal Hospital

We regret to record the death of Dr Stewart, medical superintendent of the Willesden Municipal Hospital, at the age of 57. He had been in poor health for some time, and his final illness was the result of influenza contracted early this year. His devotion to duty made him continue at work when wiser counsels should have prevailed. He had been in the service of the Willesden Council for the past twenty-two years, and during his period of office the hospital came to be regarded by the public and by the council as one of the best of the municipal institutions of Willesden. Dr Stewart spared himself in no way to make the public understand that the hospital was conducted in their interests and for their benefit, and that he and all the staff were entirely at their service.

William James Johnstone Stewart graduated in medicine at the University of Edinburgh thirty-four years ago, and proceeded M.D. in 1896 after obtaining the D.P.H. at Cambridge in 1895. He devoted his life to the study of infectious diseases and the administration of isolation hospitals, and he came to be recognized as one of the first authorities on these subjects in the country. During the war he was chosen by the War Office to take charge of the Adington Park War Hospital for soldiers suffering from infectious diseases. He built up and administered this large hospital in a manner which gave the highest satisfaction to both the military and civil authorities concerned, and well earned the gratitude of his country.

A colleague, closely associated with him in his work, writes: "Stewart's loss will be felt keenly by all his colleagues, for he was a genial man with a kindly heart, ever ready to exert himself and take any amount of trouble to help his juniors and further their interests. Dr Stewart was one of the many silent workers in the municipal service whose works are more the subject of criticism than of praise, but who nevertheless at all times and in all circumstances perform their duties with a singleness of purpose and conscientiousness which is characteristic of the official life of this country. He leaves a widow, to whom we extend our heartfelt sympathy in her sad bereavement."

Professor H. Kossatz, a well known hygienist of Heidelberg, has died at the age of 61.

Dr Burton, professor of hygiene in the Lillo Faculty of Medicine, and Dr Anderson of the Caen Medical School, have recently died.

Medico-Legal.

AN ACTION FOR NEGLIGENCE

POWELL v. MAYBURY

A special jury at the Hampshire Assizes on June 20th awarded Mr. Percy John Powell, a fancy goods dealer of Southsea, £1,000 damages against Dr. Alexander Maybury of Hampshire, for alleged improper medical treatment and negligence.

The action was tried by Mr. Justice Shearman, and counsel were for plaintiff Mr. Lyster Goddard, K.C., and Mr. W. Blake Olliver, for defendant Mr. F. B. Charles, K.C., and Mr. W. J. H. Brown.

The Pleadings

In the pleadings the plaintiff stated that from September to November 1921 he engaged the defendant to attend and treat him for neuritis in the right arm and alleged that such treatment was negligent and unskilful. On October 26th when the defendant was endeavouring to break down adhesions in the plaintiff's right arm while the plaintiff was under an anaesthetic the defendant dislocated the arm and broke off the lesser tuberosity of the humerus. The plaintiff alleged that Dr. Maybury used greater violence than was necessary or prudent and that the violence was negligent and unskilful. On November 1st the defendant performed an operation on the plaintiff while under an anaesthetic with the object of reducing the dislocation. The operation failed and the plaintiff alleged that, although the defendant continued to attend him up to the middle of November, the defendant took no further step to reduce the dislocation. As the result of the alleged negligence the plaintiff went into the Royal Portsmouth Hospital and underwent a further operation on November 23rd for the dislocation of the shoulder joint and his right arm was now two inches shorter than his left and he could not lift the arm away from the body. The defendant absolutely denied that he was guilty of the alleged negligence and unskilfulness, and said his treatment was proper and ordinary.

Plaintiff's Case

Counsel for the plaintiff said actions of this kind were serious and were brought with some reluctance because nobody liked to charge a professional man with negligence in the performance of his professional duties. But there were two sides to the question and one had to remember that they were dealing not only with the status and reputation of a professional man but also with the plaintiff, who would not bring an action of this sort without good ground and unless he had suffered severely. The defendant had been in practice for many years at Portsmouth and the plaintiff was a middle-aged man who throughout his life had been active in conducting his own business besides being a keen tennis player. During some part of his life he was troubled with pain in his shoulder which at one time was diagnosed as neuritis and also with gastric trouble. On September 17th 1921 he consulted Dr. Maybury who correctly diagnosed the gastric trouble as due to pyrosis and advised the plaintiff to have some teeth extracted. Under Dr. Maybury's advice Mr. Powell made considerable progress, and so far as the medical treatment was concerned there was no complaint. Dr. Maybury also diagnosed that the plaintiff was suffering from neuritis in the shoulder and on October 25th while under an anaesthetic there, Dr. Maybury operated to break down any adhesion which might be in the shoulder, and counsel invited the jury to say that in the course of manipulation, Dr. Maybury dislocated the plaintiff's right shoulder. It was a dislocation of some considerable extent. Counsel said that it was essential in the interests of the patient that steps should be taken to reduce the dislocation immediately. If this were left, reduction became impossible without an operation. That was what had happened in this case. Whether Dr. Maybury realized at that time that he had dislocated the plaintiff's shoulder was one of the questions the jury would have to consider. If he did not counsel then submitted he ought to have known. Something happened which caused the doctor anxiety, and that something could only have been the dislocation of the shoulder. Plaintiff was put to bed but no bandage was applied to the shoulder or to the arm. When Dr. Maybury saw the plaintiff the following evening he expressed no anxiety and did not indicate that anything upward had happened. Next morning the plaintiff found himself quite helpless in his right arm, and he could not dress himself without assistance. With Dr. Maybury's consent the plaintiff went home, where he faints and the plaintiff's daughter, a trained nurse with experience in orthopaedic cases at St. Thomas's Hospital, could not understand his collapsed state. She questioned Dr. Maybury who must at the time have had grave suspicions which he did not disclose to her. On four occasions Dr. Maybury pushed his fist under the patient's arm and applied pressure which was the recognized method adopted by surgeons for reducing an ordinary dislocation. On October 31st an x-ray photograph was taken and the plaintiff's daughter was not allowed to be present. Dr. Maybury would not allow a second opinion to be taken, but insisted on a second operation which took place in the nursing home the same two doctors being present. It was not successful, but Dr. Maybury told the plaintiff he was satisfied with the progress he was making, and that everything was going on well. Dr. Maybury refused to allow the plaintiff to see his brother, who was a doctor, but eventually the plaintiff became so dis-

satisfied that he went to Brighton to see his brother. As a result he entered Portsmouth Hospital, where Dr Smith, the house-surgeon, saw at once that his arm was dislocated, and, after an x-ray photograph was taken, an operation was performed by Mr Harold Burrows. After the time which had elapsed it was impossible to reduce the dislocation, and the arm was now shorter by two inches, which meant that the plaintiff was gravely handicapped for the rest of his life. Counsel submitted that the most skilful surgeons sometimes made mistakes, but it anything went wrong the patient expected the surgeon to tell him and take every step in his power to remedy it.

Counsel's opening was borne out by the plaintiff, but both the nursing home sister and nurse said in their evidence, that they heard nothing whatever while the arm was being manipulated.

The plaintiff's daughter in her evidence, said she told Dr Maybury that she thought her father's arm was fractured, but the reply was "No there is nothing to worry about."

Dr N R Smith said when he first saw the plaintiff's shoulder at the Royal Portsmouth Hospital it was obvious that some gross injury had been occasioned, but what it was he did not know at the time.

Mr Harold Burrows F.R.C.S., said the x-ray photograph indicated a dislocation in fact it was obvious apart from the photographs, but it was not clear how long it had been obvious. It was beyond reduction, and when he operated the humerus was dislocated and the lesser tuberosity was torn away. The tearing off of the lesser tuberosity was not recent and healing had taken place. It was not a common thing for a fracture to take place when breaking down adhesions, but he had heard of cases. It ought not to happen. After a dislocation occurred it was important to reduce it at once.

Defendant's Case

Counsel for Dr Maybury in opening, said the allegations were every bit as bad as a criminal matter. Dr Maybury had been in Portsmouth for forty years, was well known, and had had dozens and dozens of operation cases which had been successful during the whole of his career, there had never been a suggestion that he was negligent or unskilful. The accusations that he had not exercised the ordinary skill of a general practitioner were absolutely untrue. Was over an attack launched upon a doctor in the circumstances more unworthy, more ungenerous, than this attack? From the very first Dr Maybury attended the plaintiff who was not a rich man, with an assiduity and care that was altogether admirable. It was admitted that the medical treatment was perfectly good. The case was loaded with prejudice. If there were a fracture of the tuberosity it might just as well have been done in the hospital as out of it. Dr Maybury had not to exercise the highest skill, but he had to be reasonably careful and not go below the professional standard. A doctor could not guarantee not to make a mistake. He did not admit that there had been a mistake, but if there had been Dr Maybury would tell them that rightly or wrongly, his impression was that he got the shoulder back to justify the strapping, and he hoped and believed that there would be a reduction of the dislocation as soon as it was released the head of the bone slipped out of position. But for Miss Powell and the plaintiff's brother's interference the operation performed by Mr Burrows would have been performed by Dr Maybury. Counsel maintained that it was Mr Burrows's cutting which had hurtened the plaintiff's arm, any doctor would first try to reduce the dislocation by manipulation before doing what Mr Burrows did, the cutting was the last resource. Dr Maybury's only fault, if there was a fault, was that he was too hopeful and believed he had got the shoulder back so clamped it down and left it to set, but the condition of the shoulder was such that this was impossible.

Dr Maybury bore out counsel's opening statement, and Mr W H Battle and Mr J E Adams, consulting surgeon and surgeon respectively to St Thomas's Hospital, London, gave evidence in support of the defendant.

The Judge's Summing Up

Mr Justice Shearman in summing up, said it was for the jury to fix the standard of skill which they considered a patient had a right to expect from a medical man. The jury had to decide whether the defendant was guilty of negligence on October 25th. It was alleged that Dr Maybury was a bungler and was not fit to do his job that he used violence and dislocated the shoulder through negligence. It was also suggested that the anaesthesia was incomplete, but of that there was no evidence. On the other hand it was stated that such a dislocation could arise under proper and correct treatment and the jury had to be satisfied before finding in favour of the plaintiff that there was negligence in causing the dislocation. Another difficulty of the case was that the plaintiff said the doctor was negligent in that after the dislocation he did not discover it and immediately put it right. The defendant said he discovered the dislocation immediately it occurred and put it back at once, but the plaintiff said that was untrue and that the doctor did not know it. The dislocation having taken place the jury were asked to say that Dr Maybury did not know it until the x-ray photograph was taken, and it was suggested that not knowing was negligence. Was the defendant guilty of negligence as a surgeon on October 25th 1924 either in pushing the arm out or finding he had pushed it out in not pushing it back? If they took the defendant's view that he did his best and it was not negligence and that anybody might have done it, it was their duty to say so. The defendant claimed that he put the shoulder back and it slipped out afterwards, and that was the fault of the abnormal bone and not his fault.

The jury returned a verdict for the plaintiff as stated above, stay of execution being granted pending an appeal.

Universities and Colleges.

UNIVERSITY OF LONDON

THE UNIVERSITY SITE

At the meeting of the Senate on June 24th it was announced that the following correspondence had passed between H.M. Treasury and the University on the subject of the Bloomsbury site.

Treasury Chambers
3rd June, 1925

Sir,

I have had before the Lords Commissioners of His Majesty's Treasury Sir Cooper Perry's letter of the 13th ulto stating that in connexion with proposals by the Delegacy and the Council of King's College for an appeal to the public for funds for new construction or endowments the Co-ordination and Developments Committee of London University desire to be informed of the answers to certain questions addressed to their Lordships in Sir Cooper Perry's letter of the 18th December last. My Lords regret that a reply to the last named letter has been delayed.

I am now to inform you (1) that the Lords Commissioners of His Majesty's Treasury are not able to hold out any hope that Parliament could be asked to contribute a larger sum than £370,000 building the Strand in the event of King's College and the Strand site reverting to the Crown.

(2) On the assumption that King's College would for their part be unwilling to move to the Bloomsbury site or unable to do so on these terms, my Lords apprehend that the University may desire to reconsider the policy of transferring their central buildings to Bloomsbury, and if the University can suggest any practicable alternative for an increase without undue cost of the accommodation for their central offices, my Lords would be prepared to consider it.

(3) My Lords are not without hope that it might be possible to make arrangements with the vendors of the Bloomsbury site whereby at least a part of it might be occupied on terms for other University purposes, but this might depend on the course of negotiations which have not been initiated.

R S MEIKLEJOHN

The Principal Officer,
London University

University of London
South Kensington S.W. 7,
24th June, 1925

Sir,

I am desirous to say in reply to your letter of the 3rd June that as the Lords Commissioners of H.M. Treasury have already been informed, the Senate passed a resolution in November, 1923 that in their opinion the removal and reinstatement of the secular and theological Departments of King's College on a scale adequate in the opinion of the Senate to present needs and future requirements should be effected without expense to the University or the Council of King's College in return for the surrender to the Government of the present site and buildings in the Strand. As it is certain that the expense of rebuilding King's College on the Bloomsbury site on the scale contemplated in the above resolution would far exceed the sum of £370,000 and as the Lords Commissioners of H.M. Treasury are not able to hold out any hope that Parliament could be asked to contribute a larger sum than £370,000 a reversal of value of the site and buildings of King's College in the event of reverting to the Strand in the event of themselves compelled to decline the offer contained in Mr Fisher's letter of 7th April 1920 conditionally accepted by the Senate on October 20th, 1920. Amongst the conditions laid down by the Senate was

(5) That the terms of the removal of King's College from the Strand to the Bloomsbury site shall be a matter of subsequent negotiation between His Majesty's Government, the Council of King's College and the Senate of the University, and that an agreement shall be concluded between the said parties.

It is obvious that this condition cannot now be fulfilled.

The important questions raised in paragraphs (2) and (3) of your letter will demand the anxious consideration of the Senate after reference to the relevant Councils and Committees, and to other bodies which may be interested.

The Senate note with satisfaction that the Lords Commissioners of H.M. Treasury recognize the need for increased accommodation for the central offices of the University.

E C PERRY
Principal Officer

The Secretary,
H.M. Treasury

Vice-Chancellor

Professor E. A. Gardner Litt.D. has been re-elected Vice-Chancellor for the year 1925-26.

Emeritus Professor

The title of Emeritus Professor of Hygiene and Public Health in the University has been conferred on Sir William J. R. Simpson, C.M.G. M.D., F.R.C.P. as from the end of the present session on his retirement from King's College after twenty-seven years' service on the closing of the Department of Bacteriology and Public Health.

THE Fellowship of Medicine announces that on July 9th Mr G Grey Turner will lecture on "Gall stone disease—a pit fall for the practitioner," at 5.30 p.m., in the West Lecture Hall at 1 Wimpole Street, W. The Prince of Wales's General Hospital (North East London Post Graduate College, Tottenham, N) will hold a vacation course in medicine, surgery, and the specialties from August 4th to 15th. Beginning on the same date, the All Saints' Hospital will give a month's special course in diseases of the urinary system. From August 24th to September 5th the Queen Mary's Hospital, Stratford, has arranged an intensive course in medicine, surgery, and the special departments. The fee for both intensive courses is £3 3s each, or £2 2s for either week, and for the special course in urology £5 5s. Copies of the syllabus of each, together with the Fellowship programme of the general course of instruction available under its scheme, may be obtained from the Secretary at No 1, Wimpole Street, W 1.

A COURSE of lectures and practical instruction for the diploma in psychological medicine of the Universities of London, Cambridge, Durham, etc., will commence at the Bethlem Hospital, Lambeth Road, S.E. 1, on September 14th. Full particulars can be obtained on application to the Medical Superintendent.

THE Midland Branch of the Society of Medical Officers of Health, Birmingham, proposes to commemorate the knight hood conferred on the medical officer of health, Birmingham, by entertaining Sir John and Lady Robertson at a complimentary dinner at the Queen's Hotel, Birmingham, on Friday, July 10th, at 7 p.m. All members of the society are invited. The cost of the dinner will be 10s. 6d. without wine. This amount should be sent to the honorary branch treasurer, Dr. T. Ridley Bailey, at the Health Offices, Fenn Hall, Wolverhampton.

THE managers of the Pleasant Drivon Studentship in Mental Pathology announce that they have made no award this year.

THE annual general meeting of the Council of the Association of Infant Welfare and Maternity Centres will be held at Carnegie House, 117, Piccadilly, W. 1, on Tuesday, July 7th, at 3.30 p.m. The subject for discussion is heliotherapy, with Dr. Eric Pritchard in the chair. The speakers will be Professor Leonard Hill, Dr. G. I. Stehling, Dr. C. W. Sileby, Dr. Stella Churchill, and Dr. Percy Hall. Admission is free without ticket.

At the annual prizegiving of the London (Royal Free Hospital) School of Medicine for Women, on June 25th, the Dean, Dame Louisa Aldrich Blake, announced that Lord Riddell, president of the hospital, had provided for two fellowships for research in maternity and gynaecology at the Royal Free Hospital, and that Mr. Alfred Langton, chairman of the hospital, had endowed another fellowship for research in infant feeding. Dr. Mary Thomas stated that in a few months it was proposed to institute private rooms for paying patients at the Royal Free Hospital.

THE new Watford and District Peace Memorial Hospital, erected at a cost of over £65,000, was opened by H.R.H. Princess Mary, Viscountess Lascelles, on June 24th. The Bishop of St. Albans conducted the dedication service, after which Princess Mary opened the hospital door with a gold key.

THE new wards and other additions made to the Tilbury Seamen's Hospital were opened on June 24th by Viscountess Inesbape. The Bishop of Colchester having dedicated the new buildings, the company inspected the hospital's new features, including a wing for nurses.

MRS. ELLA ROWCROFT of Torquay announced on June 25th her intention of defraying the whole cost of the erection of the new Torbay Hospital at Torquay. Mrs. Rowcroft and her sister, Miss Wills, have given £123,000 towards the new hospital, which will be begun almost immediately.

MESSRS. MAY AND BAKER, LTD., of Battersea, S.W. 11, have issued a catalogue of their pharmaceutical preparations and of vaccines for the treatment of gonorrhoea and its complications (prepared in the pathological laboratory of the London Lock Hospital). Tables of weights and volumes and of percentage solution equivalents are provided.

WE have received the first number of *La Pediatria, Archivio di Patologia e Clinica Pediatrica*, which is being issued under the editorship of Professors R. Jewmura of Naples and G. Caronia of Rome as a supplement to the fortnightly pediatric journal of the same name, the two journals being now respectively called *Archivio La Pediatria* and *Rivista La Pediatria*. The object of this new journal, which will appear at irregular intervals, is to publish works whose size and character preclude publication in existing journals except at great expense to the author. The present issue contains articles by Drs. G. Cristina and G. Caronia on the etiology of scarlet fever, accompanied by illustrations of the micro-organisms which they claim to be the cause of scarlet fever, by Dr. D. Caffarella on the plurality of the antigens in the Wassermann reaction in congenital syphilis, and by Dr. M. Gerbasi on the variability of the strains of the typhoid bacillus. The price is 20 lire.

THE London School of Hygiene and Tropical Medicine, Endleigh Gardens, N.W. 1, invites applications for four research studentships, each of the value of £250 per annum. Applications must be sent to the Secretary by August 31st. Particulars will be found in our advertisement pages.

THE following promotions in and appointments to the Order of the Hospital of St. John of Jerusalem in England are announced—As *Knights of Grace*: Lieut. Colonel F. S. Lambert, R.A.M.C. (T); Major General Sir Samuel Guise Moors, K.C.B., C.M.G., D.I.; J. J. Waldo, Captain W. T. Wood, R.A.M.C.; Major Arnold W. Izard, M.D. As *Fringes*: Lieut. Colonel J. C. Strathearn, O.B.E., D.I.; W. C. Rigby, Dr. John Rodley, and Dr. W. H. Curse.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to *The Editor, British Medical Journal, British Medical Association House, Tavistock Square, W.C. 1*.

ORIGINAL ARTICLES and LITTEPS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C. 1 on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the *Journal* should be addressed to the Financial Secretary and Business Manager.

THE TELEPHONE NUMBERS of the British Medical Association and the *British Medical Journal* are: *MUSEUM* 9861, 9862, 9863, and 9864 (internal exchange four lines).

THE TELEGRAPHIC ADDRESSES are:

EDITOR of the *British Medical Journal*, Astology Westcott, London.

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc.) *Articulate Westcott* London.

MEDICAL SECRETARY, *Medicera Westcott* London.

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Drumsheugh Gardens, Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central).

QUERIES AND ANSWERS

TREATMENT OF DISSEMINATED SCLEROSIS

J. R. writes to inquire about intravenous injections in the treatment of disseminated sclerosis.

The intravenous injections referred to were probably with one of the salvarsan compounds—for example sodium silver salvarsan. This treatment is founded on the belief now widely held that disseminated sclerosis is an infective disease, and on the fact that certain observers have found spirochaetes in the nervous tissues after death from this disease. It is certain that this organism is not the spirochaete of syphilis and that syphilis is not the cause of disseminated sclerosis, nevertheless treatment by salvarsan and mercury on the same lines as for syphilis is probably the best treatment we have for disseminated sclerosis. In a disease which has a marked natural tendency to remission it is extremely difficult to assess the value of any mode of treatment but the results are quite sufficiently encouraging to justify the continued use of this method if the cases are recognized at a reasonably early stage. In disseminated sclerosis as in so many diseases intravenous injections of protein—for example typhoid vaccine—have also been used either alone or in addition to salvarsan treatment.

STUDY IN OPHTHALMOLOGY

'OPHTHALMIC' who is a graduate of medicine at present practising in one of the Dominions wishes to know what course he should pursue with a view to obtaining post-graduate study in eye work, towards which he has a strong inclination. He asks what are the facilities in London and Paris and what diploma might be obtained.

There are ample facilities for the study of ophthalmology both in London and in Paris. There is also a choice of English diplomas in ophthalmology. To name the two best known there is the diploma offered by the University of Oxford and that of the Royal College of Surgeons of England. A graduate who obtains either of these diplomas secures the full mail of high attainment in eye work. If our correspondent proposes to undertake the training necessary for the attainment of either of these diplomas his work will be mapped out by the course prescribed by the bodies issuing the diplomas. These he can obtain by inquiry from the Secretary of the Medical School, Oxford University or from the Secretary of the Royal College of Surgeons, Lincoln's Inn Fields, London, W.C. 2. The courses are very similar and require attendance on prescribed courses of study practical work and clinical work. The course is strenuous and means real work. One year's study in a recognized hospital is necessary before a candidate may enter for the examination, and in the case of the Oxford diploma two months of this year must be spent at Oxford. If he is well grounded in general medicine and has a good foundation in the physical sciences, our correspondent should have no difficulty in carrying out the prescribed course of study in the time allotted. If his ambition

do not run to the course prescribed for candidates for the diplomas, he might take up post graduate study of eye diseases and a course of refraction work at any of the British or Parisian hospitals which do post graduate work. The British hospitals are cited in the Educational Number of the BRITISH MEDICAL JOURNAL, published each year early in September, and brief notices of these same hospitals will be found in the Medical Directory under the sections devoted to hospitals and also in the advertisement pages.

POWER OF ENTRY BY LOCAL AUTHORITY

"R P" writes: Has an Inspector of nuisances employed by a rural district council the right of authority to demand admission into the private residence of an invalid in order to inspect the house and take measurement of rooms etc?

* * Section 102 of the Public Health Act, 1875, relating to nuisances, deals with the power of entry of the local authority. This Section states *inter alia*: "If admission to premises for any of the purposes of this Section is refused any Justice on complaint thereof on oath by any officer of the Local Authority (made after reasonable notice in writing of the intention to make the same has been given to the person having custody of the premises) may by order under his hand require the person having custody of the premises to admit the Local Authority or their Officer." Section 103 of the Public Health Act, 1875 states: "Any person who refuses to obey an order of a Justice for admission of the Local Authority or any of their Officers on any premises shall be liable to a penalty not exceeding £5." Having regard to these sections it is likely that the magistrates would grant an order to inspect the house, but unless it was represented to them that inspection was urgently required on account of some nuisance dangerous or injurious to health they would be unlikely to grant the order to the detriment of the sick person occupying the house. The power of the justice in this matter is discretionary.

INSULIN IN CANCER

"A" asks for notes of any experience of the use of insulin in inoperable carcinoma. He would welcome suggestions as to dose, the intervals between doses, and the tests necessary.

INCOME TAX

Principles of Assessment

"A M H" has purchased a practice having previously resided outside the United Kingdom, and seeks general advice.

* * Our correspondent should bear in mind that income tax is payable on earnings, whether realized in cash or not and that the amount of the net cash receipts can be substituted for the profits, computed on the value of the fees booked only when the circumstances justify the assumption that there will not be a substantial difference between these figures. He is liable to be assessed on the basis of the past three years' profits of the practice he has purchased, but if at the end of the year he can show that for some specific cause—for example the change of proprietorship—the profits have fallen short of the amount assessed he can claim an adjustment accordingly. There are several guides to the income tax regulations, that published by Nelsons at 2s 6d, or thereabouts, is a very useful one at the price.

Purchase Money

"A E S" owes his late partner a part of the purchase price of his practice and pays interest thereon, the Inspector of taxes insists on deducting this amount in calculating the income on which the earned allowance is due.

* * The point has not been settled by judicial authority but we should not regard "A E S's" prospects of appeal as good. In substance, "A E S" is assessed in respect of two incomes—his own earned income and the interest which he pays, and which is, in essence, income of his late partner. On this latter income he accounts for the tax to the Revenue and recoups himself for the amount so paid by deducting it from the interest when he pays his late partner. But that interest is investment income to the recipient and we fear the courts would not uphold a claim to regard it as earned income of the payer.

Three Years' Average

"NFLHL's" income from professional earnings has been falling and consequently his average assessment is higher than his earnings for the year of assessment. Has he any remedy?

* * The answer is in the negative. The special provision which authorized an adjustment was repealed after the war, and the average is now open to review only in special circumstances—for example, after a change in the proprietorship of the practice, or if an actual loss on working is incurred.

LETTERS NOTES ETC

Punch's contribution to the celebration of the railway centenary takes the form of a special supplement to the issue of July 1st giving a full account of his activities as a railway hero's critic, prophet and humorous commentator from 1841 down to the present day.

THE MEDICAL WITNESS

DR ABRAHAM ARABIAN (London, W.) writes: I have no doubt that the majority of your readers must have shared my experience of having been twitted by members of the legal profession with our traditional inability to say old unnecessarily long technical terms. And I have no doubt that they will all have shared my experience of having been confronted with that choice piece of pathological hyperbole translated by the learned judge in the case as "just a hunch." I can remember hearing it to the court of at least half a dozen occasions in the past twenty years whenever an article on the subject appears one looks for it with perfect confidence and now I see that even an eminent legal counsel selects this venerable example in his exhortation to medical witnesses to use "simple language." I confess I have always regarded the doctor who was originally responsible for this piece of evidence as a lineal descendant of Mrs Harris the choice perfection of the composition smells too much of the lamp. But it is possible that it really issued from the lips of a colleague whose accuracy and fluency were indeed to be envied if we deplored his lamentable lack of a sense of proportion. And it is equally possible that one of your readers as inquisitive and as sceptical as I, but more enterprising, can supply chapter and verse. But in any case I feel it is about time that we were entitled to receive during the course of instruction when we are to be stigmatised for our inability to express ourselves in "plain English," another example of what should not be said or which is quite as convincing and, if I may say so, much more probable.

POSTURE TO AID DELIVERY OF DETACHED PLACENTA

DR CHARLES J. HILL (Aitken, (Aitken) near Rotherham) writes: According to Shears (*Obstetric*), "Delivery from the vagina is favoured by the lateral position. If a patient receives a vaginal douche in the dorsal position the solution is retained but if she turns upon her side the solution runs freely from the vagina. A patient delivered herself lying on her back. Thirty minutes later pressure from above failed to deliver the placenta although I felt sure it was in the vagina. The midwife suggested that the patient should turn on her side. This she did and with slight pressure the placenta was on the bed. The pelvis was roomy, the placenta small. In the dorsal position the small placenta lay in the hollow of the sacrum, posterior to the hue of pressure applied. By changing the posture of the patient the placenta was brought into the line of pressure and so was easily delivered."

GALL STONES IN ADOLESCENTS

"EVE, M.B." writes: May I add yet another to the already long people instance of the last few months? A schoolgirl between 13 and 14 years of age when she had suffered for a year or two for symptoms so that the trouble must have been present at an even earlier date. Symptoms occurred periodically, and included jaundice pain referred to the epigastrium, and a rise of temperature—sometimes to 104° F. As my condition did not respond to medical treatment and the outlook seemed desperate, a surgeon was called in. He operated as I was recovering from an exceptionally severe bout and found an enlarged gall bladder quite empty, a widely dilated common duct and a liver showing signs of impeded biliary outflow. Nature had evidently just effected a cure by the passage of a large stone. Drainage was instituted and I made an uneventful recovery, and have never had a recurrence of the familiar symptoms. I or obvious reasons I prefer anonymity, but enclose my card.

A WARNING

THE Registrar of the General Medical Council writes: I understand that advertisements for an assistant or a locum tenens have been answered by Mr K R G Shaw. Practitioners should be warned that before engaging him, it is desirable that inquiry as to his registration should be made at the office of the General Medical Council, 44, Hallam Street, Portland Place, London, W. 1.

CORRECTION

We are asked to make the following corrections in the paper on the estimation of the cardiac output as a measure of its efficiency by Dr T. Stacey Wilson, published in the JOURNAL of June 27th (p. 1167). Column 1, line 14 from foot for "a certain amount of definite elasticity" read "a certain definite amount of elasticity." Column 2, line 14 from top for "the middle line of the costal arch" read "the middle line on to the costal arch."

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 32, 34, 35, 38 and 39 of our advertisement columns and advertisements as to partnerships, assistantships and locum tenencies at pages 36 and 37.

A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 12.

The Mackenzie Davidson Memorial Lecture OF THE RELATIONSHIP OF RADIOLOGY AND SURGERY.

DELIVERED BEFORE THE INTERNATIONAL CONGRESS
OF RADIOLOGY, JULY 3RD, 1925,

BY

SIR BERKLEY MOYNIHAN, Bt, F.R.C.S.,
Leeds

It must, I feel sure, be difficult for the younger generation of physicians and surgeons fully to realize the magnitude and the high value of the help that is now given to us by the work of the radiologist. Each generation inherits the work of its forerunners, and it requires an effort of imagination denied to most of us to picture the conditions of earlier days in which many of our present resources were still undeveloped. None of us, I think, quite appreciated the difficulties against which Lister had to contend in his early investigations until we were suddenly confronted with the nauseating and startling horrors of those heavily infected wounds with which we had to deal in the first few months of the great war. And the lessons we learnt then increased, if that were possible, both the admiration we all felt for the toilsome and honest work that Lister did, and our gratitude for the imperishable heritage which he bequeathed to us.

So it is also with radiology. It requires a considerable effort of memory, and some skill in reconstruction, to recall for ourselves the days when only the note given by a sound in the bladder as it impinged against a stone made certain the diagnosis of calculus. The word "certain" is too emphatic, for I can still vividly remember Marcus Beck telling us in his ward at University College Hospital of the errors in diagnosis that might then arise when the sound struck the spine of the ischium and produced a muffled note, or when a trilet on the watch chain of the surgeon twinkled at the moment the instrument was rotated in the bladder. Nor can I easily forget the infrequency with which an exploratory operation upon the kidney revealed the presence of the stone whose existence had been confidently predicted, nor the uncertainty and ill success which attended the search for a calculus in the ureter. The change from those days, with the hesitation, the guesswork, the bitter and humiliating disappointments, to these days of confidence and precision is almost immeasurable, and it is to the devoted and skilful workers in the fields of radiology that we are grateful for the transformation. It is natural and fitting that this day should be held as a day of remembrance for one of the greatest of the pioneers—Mackenzie Davidson. It will, perhaps be appropriate if, in my role of a physician doomed to the practice of surgery, I endeavour to show, more particularly in connexion with abdominal diseases, in what degree we have taken advantage of the new methods of diagnosis and of treatment which radiology has afforded us.

DIAGNOSIS

Let me begin with the pharynx and oesophagus, though in evening's entertainment might not unprofitably be devoted to a discussion of the value of radiology in connexion with the disorders, real or assumed, of the hidden portions of the teeth. It is true that diverticula of the pharynx were known long before the days of radiology. The first case was related in a letter from Mr Ludlow, a surgeon of Bristol, to Dr William Hunter of Glasgow and is recorded on page 85 in volume 3 of the *Medical Observations and Enquiries* of 1767. Ludlow speaks of a "preternatural bag" in the pharynx. The figures he gives are exquisite, and are unsurpassed for beauty and accuracy by any later illustrations. The specimen is in the Hunterian Museum at Glasgow to this day and a recent drawing of it shows that it has changed very little in the last 150 years.

The diagnosis of the condition in its fully developed state

is not difficult. Radiology not only makes the diagnosis quite certain, but it gives a quality of precision that could not otherwise be obtained. We learn not only that the preternatural bag is there, but we know where it lies, how large it is, what attachments it has made, and all details that may be helpful to us at the time of operation.

Of diverticula of the oesophagus we knew nothing before the days of x-ray examinations except that which was learnt from *post mortem* examinations. These little *wayside* turrets are not often of clinical importance. When filled with food they press upon and distort the tube from which they spring, and cause an uneasy suspicion as to the presence of cancer, a suspicion that only time allays.

Oesophagus

Of the condition known as *cardiospasm* we could, of course, know nothing accurately apart from the examination made by the radiologist. It is true that our museums contain many specimens of "idiopathic dilatation of the oesophagus," but the recognition of this deformity, the knowledge of the size, position, extent, and occasions of emptying the pouch, the extent of the tube involved, and the position of the hiatus, we learn only from the screen examinations. In the first case I saw after I had just learnt of the disease from Professor Milneuz we had "washed the stomach out" many times and removed from it large quantities of fermenting, offensive, and disgusting food that had been long retained. When this little operation was repeated under the control of the x-ray we saw with amazement that the tube never entered the stomach, but lay coiled within the immense cavity formed by dilatation of the oesophagus. We failed completely to pass any bougie into the stomach though careful and repeated attempts were made. A duck-shot tied on to the end of a long piece of silk at last was seen on the screen to enter the stomach and to pass along the intestine until it emerged at the anus. When all the length of silk was entangled in the intestines and formed there a fixed point, I threaded bougies over the strand hanging from the mouth and so guided them safely into the stomach. The obstruction was fully dilated, and the patient taught to pass bougies. When she was expert the silk was cut at the mouth and at the anus, and a week later the whole length of it was vomited. Since those early days I have treated many patients, and though examinations with the oesophagoscope are made, we still rely chiefly upon the radiologist for the information which directs our treatment. There is no doubt that most of these cases were formerly regarded as malignant, and gastrectomy was done for them. A patient in the Leeds Infirmary was seen by me twenty years after this operation had been performed by Mr Ward, on the supposition that a carcinomatous growth obstructed the gullet. An x-ray examination showed the typical appearance of this disease.

The differentiation between "cardiospasm" and carcinoma now presents no difficulties, for the appearance of the oesophagus filled with an opaque medium is quite characteristic in both diseases. The large size of the oesophagus, its tolerance to food, the vigour of the peristaltic waves, which do not move the meal forward, the rounded, blunt end of the shadow which reaches to the diaphragm in cases of cardiospasm contrast as sharply as possible with the slight distension of the oesophagus, the intolerance to food, the incompleteness of the obstruction, and the narrow tapering of a shadow which is very rarely exactly on a level with the diaphragm, in cases of carcinoma.

Diaphragmatic hernia is a rare disease. Its recognition without the aid of radiology is excessively difficult or perhaps impossible. It so happens that I have had four cases in my charge—two in the time before we used the x-rays and two since. Neither of the first two was recognized until the abdomen was opened, and both were discovered with a shock of surprise. The latter two had been recognized by the radiologist, one was on the left side as most cases are, in the other the sac lay in the right side of the chest, and its contents—the stomach and the transverse colon—were easily recognized in the radiograph. I know of only one other similar case, it was operated upon by Sir Hugh Rigby.

Ulcer of the Stomach

In connection with gastric disease it is hardly too much to say that we owe almost everything to the radiologist. As we look back upon the history of gastric ulcer in respect of its symptoms, its diagnosis, and its treatment, we must now realize that before the radiologist came to the rescue there was little that could meet with our confident acceptance. I do not doubt that more errors have been made in the diagnosis of gastric ulcer than of any other disorder. Its symptoms are mimicked with so much accuracy by other diseases that it is not only the unwary who are deceived. The radiologist has put all this right, or nearly right, and has, I think, explained the cause of the so remarkable plianism by those other diseases which arouse gastric symptoms. It is, however, not only diagnosis that has been at fault, but the treatment that has been based upon it. How can we explain the devotion of physicians to the alkali treatment of gastric ulcer except on the assumption that the diagnosis upon which such methods first were founded were erroneous? For in about 80 per cent of the proved cases of gastric ulcer the free hydrochloric acid content of the gastric juice is either normal or below normal or absent. And the surgeon is far from guiltless in the matter. He has too often been content to accept the diagnosis of "gastric ulcer," and, being, as which, unhappily, he has been led to believe is a principle for all gastric disorders and a swift and certain cure for gastric ulcer. The accuracy with which a competent radiologist, given time, can make a diagnosis of chronic gastric ulcer which the operation will confirm must in time lead to the abolition of these foolish practices by us all, and a radiology will prove the most effective remedial agency for so much of the literature and practice of days that are not yet past. May I urge once again that, until our knowledge is clarified and our practice established in reason, no diagnosis of gastric ulcer based upon clinical evidence alone be accepted as a warrant for treatment? A chronic gastric ulcer, unlike the Emperor's new clothes, is a real thing. It is to be seen, and during operation can be handled, exposed, and demonstrated. If it is there at all it is there for all to see. No gifts of vision are conferred upon the surgeon which are denied to the onlooker. If the surgeon says an ulcer is there, my competent witness can test the truth of his statement. And the accuracy of the radiologist in the diagnosis of this disease nearly approaches that of the surgeon who inspects and handles the stomach. The radiological diagnosis of gastric ulcer is not, however, constant in its accuracy. The greatest difficulties are met with when the ulcers are small, lie on the lesser curvature, are close to the cardiac orifice, and veer towards the posterior surface. The sheltered position of the part of the stomach which harbours them, the overlying liver, the barrier made by the wall of the thorax, and the impossibility of direct palpation of the stomach here, all are hindrances to the exact methods applicable to the exposed gastric area. All these difficulties are, however, in some degree surmounted if the patient is carefully watched as it enters the stomach, and if convergence of the folds of the gastric mucosa to a definite point is observed. There are times when an ulcer may be demonstrated if the filled stomach is pressed down from the epigastrium by a pad of wool, more and more increased in size, the stomach is thus rotated a little on its long axis, and an oblique or transversal view may then disclose an ulcer either. The numerous errors in diagnosis are, however, so few that the accuracy of the diagnosis made with its help is confirmed. If the diagnosis of gastric ulcer is made by no matter whom, let us agree that it is not to be retied upon by the therapist with drugs or weapons unless the radiologist confirms it. It is admittedly true that this expert may sometimes fail to see an ulcer which is undoubtedly present, especially if he is hurried in his examination by the impetuosity of the physician or the impatience of the sufferer himself. But, given a good chance his errors will be few, far fewer than those of any other investigator. And it must be conceded by us all that the value of any treatment

—dietetic, medicinal, or operative—cannot be gauged unless we know the precise condition for which that treatment has been prescribed. At present, with the best will in the world, I am unable to learn anything which satisfies my intelligence as to the worth of any of the methods of medical treatment in cases of gastric ulcer. And I am not often without the opportunity of seeing lamentable examples of mischievous and needless surgery practiced upon those who were unmistakably arranged as the victims of gastric ulcer in need of surgery. In all parts of the world operations are being practiced by those whose natural gifts may perhaps warrant their ambitions to be surgeons but whose apprenticeship to the most superb and most difficult of all the arts has not been served with that devotion and surrender which alone equip a man for this office. I am amazed at the ready acceptance by patients of the eager ministrations of incompetent operators, when adequate skill and experience are at their command. The frequency of secondary operations when the first, being needless, yet produced effects that must now be undone, and of skilful operations for carcinoma, say of the breast which invite a quick new growth of carcinoma cells distributed over the carcass, wound, are a reproach to surgical work.

I think that the radiologist has done much to explain the reasons for the so frequent inaccuracy of the diagnosis of gastric ulcer. When we inquire as to the conditions which cause the symptoms of this disease, we who deal with the living are quick to admit that it is not only the presence of an open ulcer with its crater of varying depths, that is the responsible and immediate agent, for it is a very common experience to find an open ulcer when the symptoms are in temporary abeyance, the patient enjoying one of the "interludes" so characteristic of the disease. I believe that a state of active increase of the ulcer is essential to the production of symptoms when activity dies down and the ulcer makes its endeavor to heal all is quiet. The enlarging ulcer sets up a spasm in the stomach—the "miserere" of the radiologist. The "notch" on the greater curvature, opposite, or about exactly opposite, the "miserere" on the lesser curvature, is sometimes so deep that it seems to cleave the stomach into two parts. Watched attentively for as long a period as is safe, and examined from time to time, it appears unchanged. The conclusion at first was irresistible that an hour glass stomach existed. Yet when an operation was performed the spasm had vanished. The cause of the symptoms of an ulcer seems clearly to be in this spasm. The pain is doubtless due, in part, to the distension of the zone lying on the cardiac side of this spasm.

The occurrence of spasm is not, however, restricted to cases of gastric ulcer. There is a reflex spasm which in many of its qualities so closely resembles the direct spasm that in haste a false conclusion as to the presence of an ulcer may be drawn. The reflex spasm, even when it is as deep as the direct spasm, is rarely so constant, or so immobile. It is apt to be shallow, fugitive, changing from one part of the stomach to another, and it creeps part persuading one of conditions so diverse as cholecystitis, tuberculous disease of the intestine or even chronic appendicitis, and certain conditions of the central nervous system. No gastric ulcer, of course, exists without infection, infection may be present, too, in the pyloric part of the stomach when its primary source lies elsewhere. It is long since I described the "pyloric blush" of chronic appendicitis, and Bartholomew, these two conditions, spasm and infection, are present both in the true and in the apparent disease of the stomach, there is little wonder that the symptoms aroused by them should often lead even the alert and earnest diagnostician astray. The only competent authority to distinguish between operation between the spurious and the true is the radiologist, and, as I have before ventured to claim, his work has pride of place among the methods of diagnosis in all forms of gastric disease.

It is not only in the diagnosis of gastric ulcer that our resources have been so greatly augmented, but in the recognition of its occasional complications. Many years ago I laboured hard to discover, and in several papers elaborately described, the various signs which permitted the hopeful recognition of an hour-glass stomach. The signs

were many, the labour to elicit them protracted, the judgement difficult and not free from faults. Now the radiologist will tell us every detail that is relevant, not only is the diagnosis indisputable, but the site of the constriction, the size of the two complements of the stomach, the speed with which one or other will empty, the degree of adhesion if any—all, and even more than these, are stated with unequivocal accuracy.

Cancer of the Stomach

We shall all, I do not doubt, be prepared to concede our inability to diagnose cases of carcinoma of the stomach in an early stage. Of gastric carcinoma there are, speaking roughly, two great groups. In the one the patient has suffered for years at intervals from mild or severe forms of gastric discomfort. Finally, one attack, at first very like all the others, proves rebellious. Relief is not given by the remedies which hitherto have proved so easily successful. At the operation an ulcer, transformed in part to carcinoma, is found. In the second group are the cases I refer to as 'the bolt from the blue type'. The patient has perhaps been notorious for vigorous gastric health, he scorns the suggestion that he may perhaps have been a little dyspeptic. His denial of former ill health is disdainful to the point of arrogance. Suddenly he becomes ill, and perhaps the illness is ushered in by hæmatemesis of great severity. He loses zest for many things—food, his former activities of work or play, he loses weight, becomes anæmic, and when he is examined a lump is felt in the epigastrium. It is a melancholy but indisputable truth that, despite the activities of a small body of surgeons in this country, carcinoma of the stomach is almost always an incurable and fatal disorder. I should doubt if there are a hundred patients in the whole country who are alive and well five years after operation for the second type of carcinoma to which I have just referred. The reason for this lamentable condition of affairs lies chiefly in our incapacity, by any clinical means, to make a diagnosis in the early stage. As a profession we are not, however, blameless. We have not the courage of our experience. For when a patient over 45 begins with these insidious failures of health our tendency is to procrastinate, when we should not delay a moment. Lives are lost in part through ignorance, in part through timidity. The radiologist is now our strength. He is able, given time, to make a diagnosis of filling defects, to recognize interrupted waves of motion, of a break in peristalsis on the affected curvature, whilst the movement on the normal curvature is unchecked, of deflections of the current of the opaque meal, long before we could be in the least degree confident, by any other means at our command, of the presence of a growth. To ensure a success in treatment greater than that most meagre form we now command, two changes are essential. All patients about whom we have a doubt should be sent forthwith to the radiologist, and the x-ray examination should not be hurried.

Diverticula

What should we know of diverticula of the duodenum but for the radiologist? I have carefully searched the literature of this subject, and though the condition was first described in 1710 by Chomel, no case had been diagnosed during the lifetime of a patient before 1912. Yet J. T. Case, in a study of 6,847 consecutive patients upon whom a radiological examination of the stomach and duodenum was made, found no fewer than 85 cases of diverticulosis. Not many of the patients who possess these little wayside tracks from the duodenum suffer from them; their removal is therefore rarely necessary. But regard should be paid to them in all operations in which a diagnosis of duodenal ulcer, or of cholelithiasis, is not supported by the conditions disclosed at an operation, for the retention of foodstuffs in these cavities, or its fermentation, may cause symptoms which are apt to be ascribed to other lesions, and when these are not found on inspection the operation may, in ignorance of this condition, be abandoned as a failure.

Of diverticula of the jejunum occurring during life nothing could be known apart from their demonstration by x-ray examination. The cases are few in number, and the little pouches do not often cause much harm. This is all

to the good, for when present they are apt to affect so great a length of intestine as to make removal of the affected segment a matter of difficulty, or even impossible. The best example that has fallen within my knowledge occurred in the practice of my colleague Mr. Brithwaite, the radiological examination and the diagnosis being made by Dr. Rowden.

Colon

The subject of radiology in relation to diseases of the colon has so recently been discussed in London that I need say little concerning it to day. When I operated upon the first case recognized as diverticulitis in this country on April 2nd, 1906, so slight was our knowledge of the disease that a diagnosis during the life of the patient had never been made. Many of the specimens on our museum shelves bearing the label "carcinoma" were examples of the massive inflammatory thickening round these little crypts, and the fact that the majority of the fistulous tracks from the colon to the bladder were not due to carcinoma was generally unrecognized. The diagnosis of diverticulosis is now made with complete confidence by the radiologist, and by comparison of one radiograph with another taken some months later we are able to judge of the progress of the disease and to come to a decision as to whether operative treatment is likely to be necessary.

I have a number of patients suffering from this disease who are kept in good health, and are sheltered from the attentions of the surgeon, by medical treatment. This ensures a daily emptying of the intestine, and includes an orgy of aperients on the Saturday afternoons and Sundays which are given over, religiously, to the observance of the ritual of free and frequent evacuation. I find that operative treatment in the chronic form of this disease is rarely necessary.

The diagnosis of carcinoma of the large intestine may present such difficulties to the radiologist that great care is needed to avoid error. The opaque meal and the opaque enema both have their uses, but I find far greater help from the latter. Owing to the loading of the colon, and the tenacity with which faecal masses will adhere to the mucous membrane, some days may have to be spent in the administration of aperients and in lavage of the colon before it is empty. A small hard adherent mass of faecal material will show the same filling defect as a growth, and imprisoned gas will prevent the entry of the opaque material. Spasm of the colon, especially in heavy smokers, may suggest an organic stricture, and the overlapping of one part of the bowel by another may cause a deepened shadow or prevent a free entry of the barium mixture. I have been misled both by negative and by positive diagnosis made by the radiologist, but I have been far more often aided than hindered, especially if a day-to-day examination of the faeces for blood, when the diet is free from hæmoglobin, has been made. By collating these two methods of examination, radiological and hæmatological, with the clinical history we are able to recognize malignant disease of the colon before a tumour can be felt, and before obstruction has developed, and having regard to the fact that the colon lends itself to removal better than most parts of the body, and that recurrence after early operation is rare, this a great achievement.

Gall Bladder

The recognition of diseases of the gall bladder is now receiving help from the radiologist. In making a diagnosis we are all accustomed to speak of cholelithiasis—to say that a patient is suffering from "gall stones." But I believe that we shall be able before very long to look upon gall stones in much the same way as we now regard hæmorrhage from a duodenal ulcer, or its perforation—that is, as a quite unnecessary complication. Gall stones are the expression of tedious events in a terminal stage. Despite my friend Rosing of Copenhagen, I have unchanged belief in the view that gall stones are the consequence of infections which reach the gall bladder from one or more of several sources. Our business is to search out the inaugural symptoms, the symptoms of infection of the gall bladder, and to use all the means that the radiologist—employing, too, the method of Graham—can

bring to our aid. I look forward hopefully and not without confidence to the day when we shall regard cholelithiasis as a preventable disorder. It is true that the clinical diagnosis nowadays is not often at fault. We are able to predict the presence and the position of stones in the gall bladder or the ducts with a large measure of certainty. Even the pre-calcious stage of this disorder is becoming day by day easier to discover. Though we can clearly see the gall stones on the radiograph in about one-third of the total number of cases in which they are shown by operation to be present, they are not often seen where they are not confidently expected. The indirect signs of cholecystitis are of more interest than the shadow of stones, for they display the changes which the disease has brought about in neighbouring organs by the presence of an enlarged gall bladder, or by the traction exerted by a shrunken gall bladder which has become adherent to them. The advantages of Graham's method would seem to be chiefly in the opportunities afforded for research into the physiological activities of the gall bladder, and into the functions of the liver. We do not yet know in what circumstances and at what rate the gall bladder fills and empties, and we have still much to learn of the secretory activities of the liver. The absence of any shadow after the Graham injection has been made is indicative of a closure of the cystic duct by a stone or by a stricture. But a mistake in the recognition of these two conditions is almost unknown. The danger attaching to Graham's present method appears to be very slight, and doubtless, with enlarging experience, will disappear. The salt used by Graham is useless as a test for hepatic efficiency owing to the fact that its colour is destroyed in serum.

The x-ray examination of the gall bladder after its removal and of the stones which it contained shows that the smaller stones almost always contain nothing but cholesterol. A very few have a nucleus, or an ingredient, of calcium. It is only after a certain size has been reached, and a chronic irritation of the gall bladder has been incessantly at work, that calcium in little spots or in a thin film is laid down on the surface of the stone.

The conclusion I draw from the radiological work done in connexion with cholelithiasis is that it enables a diagnosis to be made which would, in rare instances, perhaps be in doubt, that it discovers the existence of associated lesions in neighbouring viscera, and chiefly that it is a powerful instrument of research in enabling us to discover the composition of stones, and therefore to learn something of the processes at work in their formation, and by Graham's method to add something to our very imperfect knowledge of the functions of the gall bladder and of the liver. In other conditions the help of the radiologist to the clinician is still more invaluable. In diseases of the kidney and ureter, in the discovery of stone within the bladder or of diverticula protruding from it we are even in danger of allowing our clinical diagnosis to ignore the history, and to base itself confidently upon radiology alone. No doubt others are as weak as I am. When a patient complains of pain in the loins I am tempted to ask first what the radiologist says, and to accept his word as law. Indeed, he is so constantly right when the clinician alone would be so often in doubt that here too he is both guide and governor. The use of the "bonnet" which so greatly helped us in the removal of projectiles during the war may well be remembered when the kidney, delivered from the wound, is being searched for stones. And here, too, research work upon the normal and pathological anatomy of the kidney and ureter, after opaque injections have been made, and upon the chemical constitution of stones, has added notably to our knowledge.

One of the most delightful uses to which radiology has been put is that which Sierd introduced for the localization and discovery of tumours of the spinal cord. My knowledge of this comes from Mr. Percy Sargent. I confess that I felt a thrill of pleasure when I first learnt of this most ingenious method.

Limitations

One very important point remains. All the methods, other than the application of our own senses directly to the patient which we so willingly use in the practice of

surgery, are after all mediocrity. They strengthen our clinical acumen by adding weapons of varied and sometimes, in the case of radiology, of immense value. But they all supplement our clinical resource, they do not, and cannot, supplant them. In regard to gastric ulcer I cheerfully acknowledge that the radiologist is, on the whole, a more competent and a more accurate diagnostician than I am. He has pride of place. But I find an occasional case when, being confident of the existence of an ulcer, I learn that the radiologist doubts, or even denies, the diagnosis which nevertheless in operation confirms. I accept with gratitude a positive diagnosis made by the radiologist but if my clinical sense urges me, after the receipt of a negative report from the x-ray department, to hold to my diagnosis, I may find my tenacity rewarded. In a long series of cases the radiologist will, however, prove to be right more often than the clinician.

When the clinical diagnosis of an ulcer, or of a diseased gall bladder, or of an ectopic growth, is not confirmed by the x-ray report, what is to be done? The whole case must once again be reviewed. In cases of gastric ulcer I hesitate to go contrary to the report of the radiologist, but sometimes I am driven by my own confidence to do so. In cases of duodenal ulcer I prefer my own opinion, linked with that of the chemist, to that of the radiologist. If he gives a negative opinion and I am persuaded of the accuracy of my own, I am prepared to act upon it. And I find I am more often right than he is. In gall bladder disease the clinician, if unsupported by the radiologist, should be prepared to act alone. I could quote many instances where patients, including medical men, have heard the diagnosis of cholecystitis from the clinician, and on learning that it lacks confirmation by the radiologist have been hilled into contentment and a dangerous inactivity, only to be roused by a very formidable catastrophe. If the careful clinician has made a diagnosis of cholecystitis or cholelithiasis a report from the radiologist that gives it no countenance should be disregarded. And so it is with suspected malignant conditions of the large intestine. Though a radiological examination often affords the greatest help when confirmed with the clinical history, and with the direct search for occult blood, the earliest and the most certain diagnosis of these diseases, after all, is made when the barrier of the abdominal wall is lifted and an

TUMORS

The treatment of carcinoma wherever it occurs is a disheartening business. The recognition by patients and by medical men of the earlier conditions of malignant disease, even in parts that can be seen or are easily accessible to examination, is unhappily infrequent. It seems almost incredible that patients should allow ulceration of the tongue, for example, to progress to a stage in which remedies are almost hopeless. The diagnosis presents no difficulties, and inspection of the tongue in a mirror ought surely to awaken anxiety. And at every meal time discomforts must be felt or limitations of diet be necessary. When a lump appears in the breast of a woman her natural timidity makes her perhaps, unwilling to submit herself to examination. And when the tumour is plainly felt by a medical man no little time is lost in discussions as to its nature. Nothing but the microscope can settle the diagnosis in a difficult case, to wait for the appearance of those signs which convince the surgeon that the tumour is malignant is to give time for the disease to be disseminated. A review of many cases over a period of twenty years results in this interesting law: "In tumours of the breasts of women over 40 years of age, not less than 80 per cent are malignant, no matter what the physical signs of the tumour may be." Diagnosis, therefore, is largely a matter of the age of the patient. It is a far more reliable guide than any other. Many cases follow upon chronic inflammatory lesions—in the mouth, in the breast, in the stomach, upon the skin, in the colon. Cancer therefore is often a preventable disorder. And in its early stages in most organs of the body it is a curable disorder. To the surgeon two facts about cancer appear indisputable: that it comes as a result of long continued irritation, and that it begins as a purely local disorder and can in that stage be wholly eradicated.

It is pitiable to find so large a number of cases which are inoperable, or which, having been treated by operation, suffer recurrence. To deal with these cases many remedies have been sought. Radium has proved its value in some of them, and the application of x-rays was soon included among our methods. Twenty years ago or more I sent all my breast cases, and all cases in which glands had been removed from the neck after excision of the tongue, to the radiologist. Of the effects produced by the methods of radiology in such cases it was difficult to judge. If the patient remained free from recurrence, one was unable justly to apportion credit between the radiologist and the surgeon, if the disease returned, both had proved powerless. I came tardily and reluctantly to the conclusion then that on the whole more harm than good was done, and I abandoned the method entirely.

When the deep x-ray methods were introduced I felt renewed hope, and with the most skilful and enthusiastic co-operation of Dr. Cooper I have submitted a very large number of patients to his treatment. An exposure to the deep x-ray may be made (a) before operation, (b) during operation, (c) after operation, (d) when operation is impossible.

(a) Before Operation

In my own practice this is not often adopted in cases of cancer, for I feel that if a growth is to be removed it may be possible to eradicate it to day and impossible to-morrow, and I never waste one single day. But in cases of carcinoma of the breast, when the activity of the growth and the rate of its extension seem almost inflammatory, it may be worth while to apply the rays, not so much to the growth as to the area around it, in the hope that the cells in lymphatic vessels, which might be set free to implant themselves upon the surface of a wound, may be destroyed.

In cases of carcinoma of the rectum, or of the uterus, with much induration and thickening around the tumour, and when adhesions appear to be present, the rays may cause a change so great as to make one doubt the truth of the earlier observations. The growth shrinks, loses its induration and fixity, and from appearing irremovable seems now to offer no difficulty. In one case in which, in an enfeebled old woman, much distressed by a teasing diarrhoea, I had performed colotomy, the growth entirely disappeared. I had removed a gland at the time of operation, and the diagnosis of carcinoma was not in doubt. No doubt the growth will reappear, but its complete removal is an evidence of the great effect which the rays are able to produce. In all cases of splenic enlargement one or more exposures to x-rays are given. The reduction in the bulk of the spleen is almost incredible from filling the whole abdomen the organ shrinks until a lump the size of a golf ball is felt below the costal margin. Then the spleen may be removed with a safety and with such ease as could not be claimed for any operation upon it in its original state.

(b) During Operation

In cases of Crile's operation upon the glands of the neck, and in cases of carcinoma of the breast, I think we might more often expose the entire area of operation to the rays before we close the wound. I have done this in a number of cases, and though it is impossible accurately to gauge its value, on theoretical grounds it certainly appears a very desirable procedure. I have long felt disheartened by our inability to perform more often than we do radical operations for carcinoma of the stomach. I therefore determined to enlist the help of the radiologist. The application of x-rays to the surface of the abdomen, though it may rarely do good in these cases, does sometimes appear to do him. I tried a new method. While the abdomen was opened and the stomach exposed I moved the patient to the x-ray room, and there, bringing the growth as far as possible into a widely opened wound covered by a single layer of mercurochrome gauze, I applied the lamp directly to the stomach for a period of forty minutes. The abdomen was closed. Seven weeks later in one case, nine weeks later in another, I reopened the abdomen and found the growths so changed and shrunken that I was able to remove them, with all their attached glands. Two operations of gastrectomy in this way were performed in 1923 and to-

day both patients are alive and well. One has gained 33 lb in weight, another 9 lb. In both two transfusions of blood were given—one at the time of the x-ray exposure and one before the removal of the stomach was undertaken.

(c) After Operation

As soon as the wound is healed after removal of the breast a course of treatment by the radiologist is now advised in all cases. The hope we entertain is that cancer cells in the neighbourhood of the wound will be killed, and that recurrence may be so prevented. Of the prophylactic value of the rays we cannot speak with any certainty. A local recurrence after an operation for mammary carcinoma is in any event so rare that a very long series of cases would be necessary to establish the value of post-operative radiation. But, again, on theoretical grounds the treatment appears so rational that I should not feel content to omit it.

It is perhaps desirable to urge once again the necessity for an x-ray examination of the chest and neck before any operation for carcinoma of the breast is undertaken. The search for metastatic deposits in outlying regions should invariably be made before removal of the primary source is undertaken. When recrudescence of the growth has taken place in the neighbourhood of the wound, or when glands appear in the neck, radiation will often produce the most remarkable results. I have known multiple nodules scattered widely over the chest wall to disappear completely, and to remain absent until the patient's death in consequence of visceral deposits, and glands grossly enlarged and causing pain in the neck and head are diminished in size or caused to vanish, and the lancinating pains soon disappear.

(d) Inoperable Cases

A visit to the radiological department engaged in the treatment of these cases is a depressing experience. Cases for which the surgeon can do nothing and cases for which he has done all he can, are sent to this last resort. All the surgical outcasts find refuge here. If radiology could do nothing for them no blame could attach to it, for more unpromising derelict material it would be impossible to find. Yet something is wrought upon these cases that at times approaches the miraculous. Growths shrink and wither away, and foul and extensive ulcers make vigorous attempts to heal, and haemorrhage from excavating caverns ceases entirely. Growths of the thyroid seem to melt away, and growth of the prostate, hard, fixed, and painful, may disappear very quickly. But the return is not long delayed. The most dramatic result I have ever seen was in connection with a carcinoma of the thyroid as large as the patient's head which disappeared almost entirely within a month, only to return with almost equal haste and quickly to prove fatal. There are, of course, many disappointments, and at present one is not able confidently to reckon upon any improvement in the individual case, but the fight for each one is always worth while.

The effects produced upon the patient are sometimes apt to be serious unless great care is taken. The red cells are so diminished in number that great enfeeblement results. I have many times given one or two transfusions of blood in patients who have to submit to x-ray treatment, and hypodermic injections of udon are administered regularly, and most patients are given artificial sunlight baths.

The gifts of radiology to medicine and to surgery have been most lavishly bestowed. When we consider that this science is a newcomer into the fields of diagnosis, of therapy, and of research, the results obtained in so short a time are surely matters for which humanity at large may feel profoundly thankful. If I may for one moment arrogate to myself a greater authority and a wider responsibility, I should like to offer to you, gentlemen, in the name of all your colleagues, my respectful homage for the immense benefit you and your forerunners have already conferred upon mankind, and to express my confident prediction and my warmest hopes for the continued and beneficent progress of the science which you so worthily represent.

THE CLINICAL VALUE OF THE VAN DEN BERGH REACTION FOR BILIRUBIN IN BLOOD

WITH NOTES ON IMPROVEMENTS IN ITS TECHNIQUE

BY

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The reaction of Hujmans van den Bergh for the recognition and estimation of bilirubin in blood serum, plasma, and other albuminous fluids of the body is now well known to clinicians. More than two years have elapsed since the method was first described in the English language, and since then ample opportunity has been afforded of testing its applications in different directions.

It is not proposed to discuss here the influence of the method on research work in connexion with hepatic disease and bile-pigment metabolism, although this influence has already been great. It seems worth while, however, to reconsider, after two years, the present position and value of the test in its purely clinical aspects, and whether it has been of much service in the routine study of hepatic disease. Certain improvements in technique, which must add greatly to any merits possessed by the test, are also referred to.

During the past two years one of us (J. W. M.) has received a great deal of correspondence from workers, both in America and Great Britain, who have made use of the test. Various points of difficulty have been raised, some easily solved by the results of experience or by experiment and some not easily explainable at a distance without knowledge of the reagents used. From this correspondence, however, several important points have emerged, and require discussion.

Publications on the purely clinical application of the test are already numerous, especially in Germany. No full bibliography need be attempted, but ample records of clinical results are contained in the following:

Feigl and Querner (1919) Lepehne (1920, 1921) Rosenthal and Holzer (1921) Brülé Garban and Weissmann (1922) Andrews (1924) and Hughes (1924). Application of the test to special clinical problems has been made by Strauss and Buckmann (1922) Girard (1924) Schamberg and Brown (1924)—latent and overt salvarsan (arsphenamine) jaundice Schiff and Ehrsberg (1922)—catarrhal jaundice Fishberg (1921)—jaundice in myocardial insufficiency Andrews (1924)—peculiar diazo reaction in uraemia Brown Ames Warren, and Peabody (1925)—study of the blood pigments in pernicious anaemia.

OTHER CLINICAL TESTS FOR BILIRUBIN IN BLOOD SERUM

Since the introduction of the van den Bergh reaction a number of other colorimetric methods for the estimation of bilirubin in blood serum have been developed, most of them designed for purely clinical use. One well known and simple method is that of Meulengracht (1921), in which the yellow serum is compared with a standard solution of potassium bichromate. By this method quantitative changes in the bilirubin content of a serous serum are easily determined, but the presence of leucins or carotins in a serum are obvious sources of error. Moreover, the Meulengracht test is unsuitable for the detection of latent jaundice, and gives no qualitative differences such as are brought out by the van den Bergh technique. Van den Bergh has stated (1924) that after an examination by Muller (one of his co-workers) of all the simple colorimetric methods, the conclusion was reached that the original diazo method is still the best, and the present writers are in agreement with this. One other test for bilirubin in blood serum of recent introduction may be referred to here.

This method introduced by Fouchet (1918) has attracted considerable attention particularly in France and although not so delicate as the van den Bergh reaction it is said to give a positive result in a dilution of 1 in 60,000 of bilirubin. It consists essentially in mixing equal volumes of the serum with a reagent made up as follows:

Trichloroacetic acid	5 grams
Ferric chloride solution	2 c cm
Water	20 c cm

The mixture of serum and reagent is stirred with a glass rod, and in the presence of bilirubin a greenish blue colour appears. The maximum reaction is said to be obtained after twenty minutes, and an almost instantaneous coloration in concentrations of bilirubin of less than 1 in 20,000. A scale of standard units of male elute green diluted with pure white lead has been devised to give a rough quantitative method for clinical use. This test does not bear comparison with the diazo-reaction of van den Bergh for clinical purposes, but is important as affording a good and delicate confirmatory test of the presence of bile pigment in blood serum.

DIFFICULTIES IN THE TECHNIQUE OF THE VAN DEN BERGH REACTION

In an article written by one of us (J. W. M.) in 1923 time limits for the development of different varieties of the "direct" van den Bergh reaction were given as follows:

Prompt Direct Reaction—Bluish violet colour, beginning immediately and maximal in ten to thirty seconds.

Delayed Direct Reaction—Reddish coloration, gradually deepening to become more violet, begins only after one to fifteen minutes, or even much longer.

Biphasic Direct Reaction—Reddish colour appears at once, and either slowly or quite rapidly deepens to violet.

These directions were founded on a moderate experience and formed an average of the results obtained up to that time. It was not expected, however, that different observers, using different reagents, would obtain results within these exact limits, and it was believed that each observer must to some extent interpret his results from his own experience. Andrews (1924), after considering the above directions and the time limit of thirty seconds given for the prompt direct reaction, states:

I have hardly ever found such a reaction and even with fresh bile the colour goes on changing after thirty seconds. If a red colour begins to appear within thirty seconds I consider that the direct reaction is positive.

One point of great importance for the development of the van den Bergh reaction has not been emphasized hitherto, but must always be considered in the interpretation of results. The interval of time between the withdrawal of blood and the carrying out of the test must be known, and should for routine clinical purposes be as short as possible—certainly not longer than two hours or thereabout. Experience has proved that serums showing a prompt direct reaction when tested at once give a slow and often long drawn-out result when retested on the following morning. This has prevented one of us (J. W. M.) from dealing with serums forwarded by post for control examination.

Differences in reaction, either to the acid or alkaline side, are of great importance for the development of the correct colour of the azo bilirubin compound. This can easily be proved after completion of the indirect reaction and addition of diazo-reagent to the supernatant fluid, by testing the effects of very dilute acid alcohol or alcoholic-ammonium hydrate on the colour developed in the test. This point emphasizes the need for care and cleanliness in the reagents and glassware employed.

The occurrence of haemolysis in a serum interferes with the colour reaction in the test, and in recent work we have used oxalated plasma only. In practice, 0.2 c cm of a 10 per cent solution of potassium oxalate is placed in a small wide loosely corked bottle, and evaporated to dryness during sterilization of the bottle. The oxalate is in this way finely distributed over a large surface, and will prevent coagulation of 10 to 15 c cm of blood, if the bottle be shaken.

IMPROVEMENTS IN TECHNIQUE

A Lepehne's Technique for the Qualitative Reaction

This method has simplified the reading of results in the direct reaction, since it gives standards for comparison both in respect of the rate of development and time of completion.

Three small test tubes are taken. The first or control tube contains plasma diluted with water. The third tube contains plasma in which the diazo reaction is allowed to develop and reach its maximum by the method described below. The second tube contains plasma to which diazo reagent is added last of all the character of any reaction being watched in comparison with the control tube (I) and the completed reaction (III).

Lepehne has applied an interesting observation of Adler and Strauss (1922) as an aid to completion of the reaction in tube III. These writers found when attempting to

solve the problem of the two varieties of bilirubin apparently differentiated by the diazo reaction, that the addition of a small amount of caffeine-sodium-salicylate induced in many icteric serums an increased rapidity in development of the maximal colour. They quote, for example, one serum giving a delayed reaction (16 units) only, the direct reaction being negative. Addition of a trace of caffeine-sodium-salicylate brought about a prompt direct reaction, maximal in ten seconds, while no change in colour ensued for at least two minutes in the absence of the drug. The original paper should be consulted for an account of the work leading indirectly to this observation. We have made use of caffeine-sodium-salicylate in a number of experiments, but find that the action stated above is by no means constant, at least with the samples of the drug used by us. In some serums the hastening of the colour reaction is definite, at other times no such effect was observed.

The technique of Lepelme, however, is so easy, and gives such good standards for comparison, that we recommend it strongly as the best method of carrying out the direct qualitative test.

Method

0.25 ccm of the oxalated plasma is placed in each of three small test tubes. To tube I (the control) add 0.2 ccm of water. Drop a small flake of caffeine sodium salicylate into tube III (shake to dissolve completely), and then add 0.2 ccm of fresh diazo reagent. In this tube a prompt or rapidly developing reaction may be obtained, quickly arriving at its maximum. Some times in our experience, the effect of the drug is negative, but in any case ample time should be allowed for the colour reaction in tube III to be completed.

To tube II then add 0.2 ccm of fresh diazo reagent watching and timing the development of any prompt or biphasic reaction in comparison with the control tube I, and the completed reaction in tube III.

B Improvement in the Quantitative Estimation of Bilirubin

It has always been insisted on by van den Bergh that the estimation of bilirubin made possible by the indirect reaction is by no means accurately quantitative. He states (1924) that he has always called it simply "an estimation," and not a quantitative determination. This is because some bilirubin is always carried down and lost in the albuminous precipitate during the performance of the indirect reaction. This is particularly noticed in serums giving a prompt direct reaction, where the loss may be considerable, and the precipitate coloured bright yellow. In serums giving a delayed reaction the loss is much less. Where bilirubin is present abundantly the loss can be reduced by previous dilution of the serum with water, but this method is inapplicable where only small amounts of bilirubin are present.

This difficulty has been solved by Thannhauser and Andersen (1921), who have pointed out that all the azo-bilirubin can be retained for estimation in the supernatant fluid if diazo-reagent be first mixed with the test plasma to allow "coupling" to take place, and then alcohol and saturated ammonium sulphate solution be added. In this way after shaking and centrifuging, a layer of clear ammonium sulphate solution is left at the bottom of the centrifuge tube, above this a white albuminous precipitate, and on the surface the clear reddish-violet alcoholic solution of azo-bilirubin. By this technique all the bilirubin from plasma giving a direct prompt reaction is available for estimation. This method is unnecessary for serums giving the delayed reaction only, where the loss of bilirubin in the albuminous precipitate is slight.

Method

The method may be summarized as follows. To 1 ccm of serum add 0.5 ccm of diazo reagent. After a minute or two add 2.5 ccm of 95 per cent alcohol and 1 ccm of a saturated solution of ammonium sulphate. Mix and centrifuge. If the colour of the supernatant fluid is too intense for quantitative estimation, dilute with alcohol 2 parts, water 1 part.

The rationale of this method need not be discussed in detail. It may be mentioned, however, that pure bilirubin is scarcely soluble in alcohol, and in the ordinary indirect reaction it is astonishing how much bilirubin remains in the alcoholic supernatant fluid after precipitation of the protein. Azo bilirubin on the other hand, is freely soluble

in alcohol. Moreover, Adler and Strauss have pointed out that in serums from cases of obstructive jaundice associated with a prompt direct reaction the globulin content of the serum is always diminished. They found that salting out the globulin fraction with magnesium sulphate hastened the development of the direct diazo reaction under experimental conditions. It seems likely that the removal of globulin, or of water, or both, by ammonium sulphate in the method suggested by Thannhauser and Andersen has something to do with the results obtained, but this question requires further investigation. In this method some water certainly goes over into the saturated ammonium sulphate solution, so that the dilution of the serum in the supernatant alcoholic solution is really slightly less than 1 in 4. For practical purposes, however, the dilution of the serum in making the estimation may safely be taken as 1 in 4.

Table contrasting the Results of the Original Method of van den Bergh (I) and the Thannhauser and Andersen Modification (II)

Disease	Type of Reaction	Bilirubin Units	
		I	II
Lost salvarsan jaundice	Direct—either prompt or biphasic	15	60
Pot salvarsan jaundice		10	55
Carcinoma—head of pancreas		30	170
Carcinoma of liver—metastatic		70	150
Catarrhal jaundice	Indirect only	45	55
Ditto—end stage		05	05

C Improved Standard Solution

The standard ethereal solution of monorhodanate, originally used by van den Bergh for estimation of bilirubin in "units," has also been a difficulty and source of trouble. In a review on jaundice (1923) some of the criticisms of this standard solution were briefly discussed, and it must be admitted that even when the test is carried out as carefully as possible with clean glassware and carefully prepared reagents, the colours of the test solution and of the standard may not accurately match. Slight changes in reaction of the various reagents may, as already noted, account for this, and one practical point noticed by us is that for diluting the test fluid, in order to bring it within the range of the standard solution, alcohol must be used and not water, or a change in colour tone at once ensues.

The practical difficulties with the ethereal standard solution do not end here. It must be freshly prepared for each set of estimations, and evaporation must, of course, be prevented. During the past summer Professor Højens van den Bergh has informed us of a new artificial standard solution which he and Muller have found can replace the monorhodanate ethereal solution. So far as we are aware this standard has not been published, so we wish to acknowledge its source. The new standard is made up by dissolving 2.161 grams of anhydrous cobaltous sulphate in 100 ccm of distilled water. This solution gives a colour equivalent to 1 unit of bilirubin (1 in 200,000), and is almost identical in colour with the original monorhodanate standard. It is permanent if kept in the dark, and the writers have found it entirely satisfactory in practice, and in direct comparison experiments with the original standard. The cobalt salt must be anhydrous, and at first the supply of the new cobalt standard should be compared with the old ethereal standard and any necessary adjustments in colour made. We have found slight adjustments necessary with the cobalt salt used by us. The ideal thing would be to compare the standard with the diazo-reaction given by a solution of 1 in 200,000 of pure bilirubin, but pure bilirubin is practically unobtainable.

It seems certain that this new and permanent standard must replace the older ethereal solution. If a Hellige wedge colorimeter be used one wedge can be kept full and sealed, and is then available at any time.

SUMMARY AND CONCLUSIONS

1 The van den Bergh reaction is the best method so far available for the clinical investigation of the bilirubin

content of blood serum or plasma. It has numerous advantages over other tests which have subsequently been proposed: (a) its extreme delicacy, (b) is not given by other yellow substances which may colour the plasma, (c) gives important qualitative distinctions between certain forms of icterus, (d) can now be used for a satisfactory quantitative estimation of bilirubin.

2 The qualitative reaction may enable a positive diagnosis of obstructive or of haemolytic icterus to be made. Painful anaemias, except in the stage of rapid temporary improvement, can be distinguished from secondary anaemias. In some diseases (for example, catarrhal jaundice, subacute liver atrophy, cardiac failure) the reaction may pass through all the stages from completely delayed to prompt direct, as the disease progresses. As a rule, however, in the commonest type of jaundice (the toxic and infective hepatic group) no information of any diagnostic or prognostic value is given to the clinician.

3 The test is of great practical value for the detection of "latent" prejudice

RADIOLOGY OF THE GALL BLADDER BY GRAHAM'S METHOD *

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It is generally admitted that the routine examination by x-rays of the gall bladder area for the presence of stones is subject to serious limitations as regards diagnostic value, for even by means of good radiographs and skilful interpretation their existence can only be clearly demonstrated in, at the outside, 35 to 40 per cent of the cases where they are present. Though an x-ray finding if positive is of definite diagnostic value, a negative finding does not exclude the presence of gall stones and must be ignored.

In the interpretation of shadows found in the gall-bladder, there are two types sufficiently characteristic to be practically diagnostic of gall stones. These are the annular or ring-like shadow (Fig 1) and the cluster of shadows resembling a bunch of grapes (Fig 2). The finding of these shadows in a radiograph of the right upper abdomen is practically certain evidence of the presence of gall stones, especially if, by radiographs taken in different positions of the body, they are shown to be situated nearer the front of the abdomen than the back. Other atypical shadows may be found in the region of the gall bladder which call for more serious thought and skill in interpretation before they can be taken as evidence of gall stones.

A large number of gall stones, however, are not sufficiently opaque to rays to throw any shadow at all when they are in the body. Some, indeed, are so translucent that even when the gall bladder containing them is removed and radiographed they are no more opaque than the bile or the walls of the gall bladder by which they are surrounded, in

4 Various alterations in the original technique have improved and simplified its use in clinical mechanics.

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fact, they may be even less opaque, and may show in the radiograph of the free gall bladder as translucent areas in the shadow of the more opaque gall bladder and bile.

In 1913 Holland and Williams investigated the factors underlying this varying degree of opacity of gall stones. They found that the opacity depended on the proportion of the pigment and other salts of calcium. Those containing a large proportion of cholesterol were the most translucent, while those containing a large proportion of pigment or other salts of calcium were the most opaque. The calcium salts are often deposited at the periphery of the stone and so give rise to the characteristic annular shadow.

Apart from the direct x-ray evidence of gall stone, the existence of a pathological condition of the gall bladder may often be suspected from abnormalities of contour, position, or function, of the stomach or duodenum, found during the examination of the gastro-intestinal tract by the opaque meal, or by a process of elimination, by means of x rays, of gastric, duodenal, and appendiceal lesions, and of urinary stones.

GRAHAM'S METHOD OF EXAMINATION

The method of radiologically investigating the gall bladder, observations on which we wish to record in this paper, is attributable to Graham of St Louis, USA. It is based on the use of a salt opaque to x rays which, when injected into the blood stream, is excreted by the liver, enters the gall bladder, and is there concentrated, thus rendering the gall bladder under normal conditions opaque to x rays.

Rountree has shown that certain dyes — for example, phenol tetrahydrophthalein — when injected into the blood stream, are excreted almost entirely by the liver. The rate of disappearance of this dye from the blood as a test of liver function and that tetrahydro-phenolphthalein and sodium — were excreted by kidney and were opaque to x rays although more opaque, was, in for general use. More recently after a careful chemical and



FIG 1—Two gall stones showing opaque periphery and nucleus the intermediate portion being more translucent
Annular type of shadow

* Read at a meeting of the Liverpool Medical Institution



FIG. 2—Gall bladder containing a large number of small opaque gall stones. Cluster type of shadow.

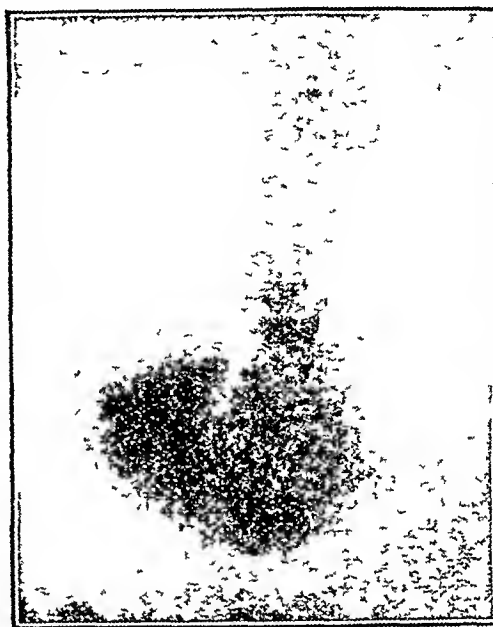


FIG. 3—Collection of many small opaque stones in the fundus of the gall bladder causing a hemispherical shadow to the outer side of the duodenum. This was an accidental discovery during an opaque meal examination of the stomach and duodenum in the erect position.

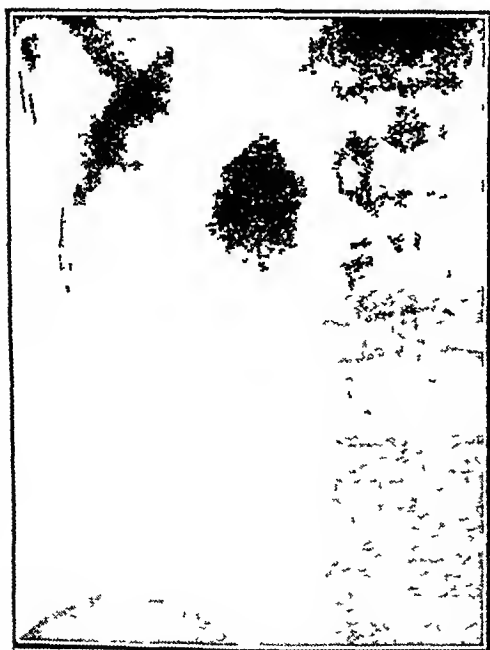


FIG. 4—Normal gall bladder seen eight hours after intravenous injection of sodium salt of tetrabrom phenolphthalein (Graham's method).

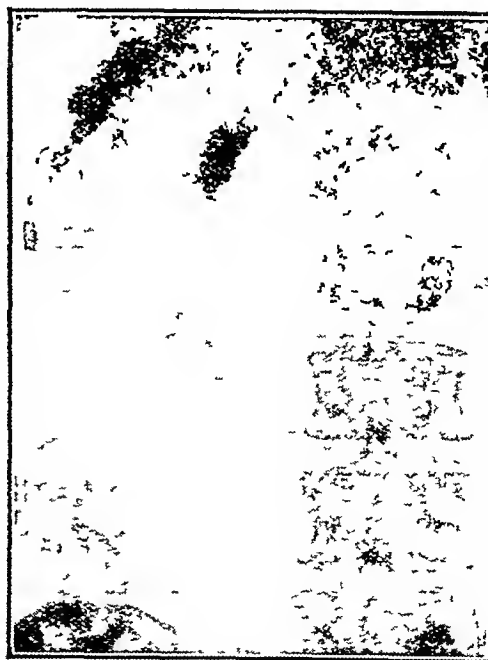


FIG. 5—Same case as Fig. 4 twenty-four hours after injection. Shadow of gall bladder is smaller but more opaque than in Fig. 4.

experimental comparison of the bromine and iodine salts, state their preference for the latter. In our investigations the sodium salt of tetra-bromophenolphthalein has been used throughout. It was obtained as a crystalline powder from the Mallinckrodt Chemical Works of St. Louis.

Method followed in this Inquiry

Our procedure was as follows:

1 All cases were first examined radiologically by the ordinary direct method for gall stones. In every case of our series which was operated on, except one, where a doubtful and non diagnostic shadow was seen in the region of the gall bladder, the result of this examination was entirely negative.

2 The cases were then examined radiologically by Graham's method of intravenous injection of the dye. The technique adopted was as follows:

No special preliminary preparation was made except that during the four hours preceding the injection no food or fluid was allowed.

Five grams of the salt were dissolved in 40 ccm of distilled water and sterilized by boiling for twenty to thirty minutes. This solution was very slowly injected intravenously in two doses, the second being given half an hour after the first. In view of the danger of necrosis which might follow extravasation of the dye into the subcutaneous tissues, the needle was inserted separately into the median basilic vein and blood was allowed to flow freely from it before attaching the syringe. It is most important that the rate of injection should be slow if untoward symptoms are to be avoided. The injection of the dye was followed by a few cubic centimetres of sterile normal saline solution to avoid leakage of the salt when the needle was removed.

During the first day no food other than a glass of milk at lunch and in the evening was allowed. During the second day ordinary fish diet was given. For the forty-eight hours following the injection 40 grains of sodium bicarbonate were given every three hours during the day.

Two and a half hours after the injection (that is one and a half hours before the first radiographic examination) 0.5 ccm of pituitrin was given hypodermically, followed three quarters of an hour later by a simple enema.

Radiographs of the gall bladder area were taken four, eight, twenty-four and thirty-six hours after the injection.

Reaction following Injection

The injections occasionally gave rise to unpleasant symptoms of vasomotor shock—such as pains in the back, dizziness, nausea, vomiting, cyanosis, coldness, or "queer feelings"—associated with a lowering of the blood pressure, a preliminary rise was sometimes observed.

We have encountered no serious symptoms in our cases, only a slight reaction occurred in most of them, serious symptoms can be avoided by slow injection. If necessary a hypodermic injection of 10 minims of a 1 in 1,000 solu-

tion of adrenaline hydrochloride may be given, we have never had to use this, occasionally we have given brandy after the injection.

The X-ray Appearances of the Normal Gall Bladder after the Injection

The shadow of the gall bladder containing the dye, which has been excited by the liver, can be made on four to five hours after the injection has been given.

1 The shadow increases in intensity, owing to the progressive concentration of the dye, up to anything between eight and twenty-four hours. The shadow is homogeneous, oval or pyriform in shape, and of even contour. After this the shadow became less intense as the dye becomes diluted and passes out.

2 The gall bladder shadow also varies in size, being larger at the earlier examinations (five to eight hours), and then becomes gradually smaller. This variation in size is important evidence of normal distensibility and contractility of the gall bladder.

Physiological Requirements

Before the shadow of the gall bladder containing the dye can be produced three requirements must be fulfilled—namely:

(1) The dye must be excited by the liver. This will not take place if there be, for example, gross cirrhosis or carcinoma of the liver.

(2) The dye must be able to pass into the gall bladder. This will not take place if there be obstruction to the cystic duct or common bile duct, such as might be caused by gall stones, adhesions, papilloma, thickened bile, catarrh, etc., or if the gall bladder be filled with gall stones or growth.

(3) The dye must become concentrated in the gall bladder, by absorption from the gall bladder mucosa, contraction of the gall bladder, and retention of the dye for a sufficient length of time. This will not take place if there be chronic cholecystitis or if there be a fistula connecting the gall bladder directly with the gastro-intestinal tract and so allowing the immediate or early escape of the dye from the gall bladder.

The Abnormal Gall Bladder

If there is any obstruction due to gall stones, adhesions, thickened bile, etc., we may find either that the gall bladder fails to fill at all with the dye and so gives no X-ray shadow, or that it fills scantily, giving a persistently faint shadow, or that there is delayed filling.

Another evidence of pathology is marked delay of emptying, or an unduly large size of the shadow, due to loss of elasticity of the gall bladder walls. On these may be a

TABLE I—Showing Results of Inie tion on by Graham's Method of Ten Cases who were subsequently Operated on

Case	X ray Findings								Deduction	Operative Findings
	Gall bladder Shadow after Injection									
	Intensity				Size					
W D	4 hrs 2	8 hrs 4	24 hrs 2	36 hrs —	4 hrs 4	8 hrs 3	24 hrs 1	36 hrs —	Normal gall bladder	Normal gall bladder (gastric ulcer)
M J	1	3	4	—	4	4	3	—	Normal gall bladder	Normal gall bladder (pathological appendix)
J O	—	—	—	—	—	—	—	—	Pathological gall bladder	? Normal gall bladder ? Slender adhesion at neck of gall bladder
R C	—	—	—	—	—	—	—	—	Pathological gall bladder	Small pathological gall bladder Stone impacted in cystic duct
V C	—	—	—	—	—	—	—	—	Pathological gall bladder	Gall bladder full of stones Cystic duct completely occluded
F W	—	—	—	—	—	—	—	—	Pathological gall bladder	Gall bladder adherent connexion r with one large stone
V W	—	—	—	—	—	—	—	—	Pathological gall bladder	
M M	1	1	—	—	4	4	—	—	Doubtful	One small stone in gall bladder No evidence of obstruction of cystic duct
M F	—	—	—	—	—	—	—	—	Pathological gall bladder	Healed duodenal ulcer Dense adhesions around neck of gall bladder
1 st H	2	3	3	3	3	2	3	2	Pathological gall bladder	Pancreatitis and subacute cholecystitis S-shaped twist in neck of gall bladder

numbers 1 2 3 4 have been employed to denote different degrees of intensity and size of the the maximum intensity of the gall bladder shadow seen after injection. As regards size of the gall bladder

TABLE II—Showing Results of Investigation by Graham's Method of Four Cases who were not Operated on

Case	X ray Findings								Deduction	Remarks
	Gall bladder Shadow after Injection									
	Intensity				Size					
D J	4 hrs 1	8 hrs 3	24 hrs 3	35 hrs 1	4 hrs 4	8 hrs 4	24 hrs 3	35 hrs —	Normal gall bladder	Normal individual with no gall bladder symptoms
A H	—	—	—	—	—	—	—	—	Pathological gall bladder	Clinically and biochemically—obstructive jaundice
R F	—	—	—	—	—	—	—	—	Pathological gall bladder	Clinically and biochemically—carcinoma head of pancreas
I W	—	—	—	—	—	—	—	—	Pathological gall bladder	Two gall stones shown by ordinary x ray examination

deformity of contour of the shadow, or mottling, or central defects (indicating stones in the gall bladder itself, but not causing obstruction, or papilloma)

RESULTS OF INVESTIGATION

Of the series of cases in which the gall bladders were investigated by Graham's method ten were subsequently operated on and four were not operated on. Our radiological findings and deductions together with the operative or other findings are shown in Tables I and II.

In only one of the ten patients operated on were the surgeon's findings at variance with our radiological deductions. In this case (J O) the evidence obtained by an examination of the gall bladder by Graham's method (on two occasions) indicated a pathological condition of the gall bladder. Yet at operation no gross evidence of pathology was obtained. The only abnormality found was a slender adhesion over the common duct, when this had been divided the gall bladder, previously full, was seen to empty. It is doubtful whether this could be sufficient to prevent the dye from passing into and being concentrated in the gall bladder. We trust that a further examination of the gall bladder by Graham's method after the patient has recovered sufficiently from the effects of the operation may throw further light on the question.

CONCLUSIONS AS TO THE VALUE OF GRAHAM'S METHOD

In estimating the value of this method of radiologically examining the gall bladder three facts must be borne in mind:

1. That only a maximum of 35 to 40 per cent of gall stones show evidence of their presence by the ordinary method of direct radiography.
2. That a negative finding by the ordinary method does not exclude the presence of gall stones.
3. That "gall stones are incidental and not essential to a cholecystitis which may necessitate surgery."

It is therefore in those cases which by the ordinary direct method of radiography fail to show the presence of gall stones that this new method is of particular value. By no other means short of operation can we ascertain whether this negative finding signifies a normal condition of the gall bladder or not. In other words, it should be used as an adjunct rather than as an alternative to the ordinary method of examination.

A striking feature of the cases shown in Table I is the fact that of all seven cases where a pathological condition of the gall bladder was found at operation, only one case gave the slightest evidence of this before injection, whilst all gave evidence of a pathological condition when examined by Graham's method. The two cases where a definitely normal gall bladder was found at operation both gave definite indication of a normal gall bladder by Graham's method.

The single remaining case where a pathological gall bladder was deduced from the findings by Graham's method, and where at operation no gross evidence of a pathological condition was found, as already stated, needs further investigation.

However, the successes encountered in all the other cases are, in our opinion, a striking testimony to the value of this method as a diagnostic aid in the examination of the gall bladder.

We wish to express our thanks to Dr Leggate for his valuable assistance and to those physicians and surgeons of the Liverpool Royal Infirmary who have allowed us to investigate their cases.

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LEPTOSPIRA IN LONDON WATERS

By

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THE occurrence in the British Isles of sporadic cases of spirochaetal jaundice, although apparently few in number, shows that under certain conditions the disease may be acquired in this country, and therefore any observations throwing light on the origin of these outbreaks may help to eradicate the infection. The following notes on the presence of a leptospira, morphologically identical with *Leptospira icterohaemorrhagiae*, in London tap water, Thames river water, and water from several other sources in the neighbourhood, are published in the hope that they will draw attention to these interesting organisms, which under certain conditions may assume grave importance from the point of view of public health.

Attention was first directed to this subject by the discovery of leptospira in one of Professor Leiper's cultures at the London School of Hygiene and Tropical Medicine, which had been prepared to show the ciliated embryos of the broad tapeworm, *Dibothriocephalus latus*. The faeces of a patient infected with this worm, and containing large numbers of ova, had been mixed with ordinary London tap water in a Petri dish, then incubated at 30° C for sixteen days, and subsequently kept at room temperature for about one week. When examined by dark-ground illumination, the water was found to be swimming with leptospira, there being as many as thirty to forty organisms in each field of the microscope. Under the impression that the leptospira might have had a human origin, the faeces of a number of patients in the Seamen's Hospital, and also from other sources, were mixed with tap water in Petri dishes and the mixtures incubated at 25° C. In every case without exception large numbers of leptospira appeared in the water after an incubation period of ten to fourteen days. Subsequently cultures were prepared by mixing faeces with boiled tap water and incubating, when it was found that these organisms never appeared, thus showing that they were present in the water and not in the faeces. Finally, cultures were made by mixing tap water with faeces, both human and animal, which had been sterilized by boiling, and in every case leptospira appeared after incubating at 25° C for not less than ten days.

From these experiments it was evident that leptospira is present in London tap water, and an attempt was made to determine in what numbers. Although, subsequently, leptospira was found in the slime on the inside of a dripping tap in the laboratory, the direct examination of water under the microscope gave negative results, even

after centrifuging. Therefore a mixture of sterilized water and sterilized faeces was poured into a number of Petri dishes, and subsequently a measured quantity of unboiled tap water added to each, the resulting mixture was incubated at 25° C. It was found that the addition of less than 0.5 c.c.m. of tap water produced inconsistent results, whilst the addition of this amount, or more, invariably resulted in the development of leptospira. Consequently, at the time of the experiment (March) London water must have contained approximately two leptospira in every cubic centimetre.

Subsequently water from other sources was examined, and by employing the method above described leptospira were found in the following: Tring tap water, a rain-water tank in Major S. S. Flower's conservatory at Tring, and water storage tanks at a school in Buckinghamshire. In addition, these organisms were found by direct examination, in London sewage water, in Thames river water off the landing stages at Gravesend and Tilbury respectively, and in the sludge at the outlet of one of the main tanks in the aquarium of the London Zoological Gardens, which was examined through the kindness of Mr. E. G. Boulenger. Finally, my friend Dr. A. Robertson drew my attention to the presence of leptospira, in considerable numbers, in the sludge on the inside of a bowl which received the water draining from the melted ice of an ice-chest in the laboratory.

Culture Experiments

Up to the present I have not succeeded in isolating a pure culture of this water leptospira, and therefore it has been grown only in the presence of other bacteria. All attempts to grow it on any of the ordinary culture media used for *L. icterohaemorrhagiae* failed owing to the more rapid growth of the contaminating bacilli and cocci, which decomposed the media before there was any sign of leptospira.

By far the simplest and most successful way of growing these organisms is the coprozoic method mentioned in the earlier part of this article. A portion of human faeces about the size of a pea is mixed in a Petri dish with about 20 c.c.m. of the water to be examined and the mixture kept in the dish at a temperature of 25° to 30° C. Leptospira can generally be found after ten days, and reach their maximum growth about the twentieth day. They usually persist for a period of four to five weeks, gradually diminishing in number, until they seem to disappear, about two months after the preparation of the culture. This disappearance, however, is only apparent, due possibly to the organisms becoming so scanty that they are not easily detected. In order to produce their reappearance it is only necessary to add a small quantity of fresh faeces and continue the incubation at 25° to 30° C.

With this method the organisms can readily be obtained in considerable numbers, and it affords a convenient way of growing them for demonstration. The cultures should be kept either in the dish or in a shaded corner of the laboratory, for exposure to a bright light is rapidly fatal. It is essential to employ Petri dishes, as the same mixtures of tap water and faeces, when placed in test tubes, or flasks, and incubated at 25° C. never showed any development of leptospira. Moreover, when a culture containing large numbers of these organisms was poured into a test tube the leptospira gradually lost their motility and died off in four or five days. In parenthesis, it may be noted that this property of requiring a large surface and not growing in tubes is in marked contrast with that of *L. icterohaemorrhagiae* cultured on Wenyon-Noguchi medium, in which Dr. Okell has found that although growth takes place readily in tubes, the organism does not grow in Petri dishes or Roux bottles exposing a large surface. Obviously, it is difficult to compare the conditions when one organism is growing in association with many kinds of bacteria and protozoa, whilst the other is growing in pure culture, but the ordinary pathogenic strain of *L. icterohaemorrhagiae* may be grown in a mixture of faeces and water, and in these circumstances requires the same large surface as the water leptospira.

The luxuriant growth of leptospira in the presence of

faeces may be due to the production of sulphuretted hydrogen in the water, for Dobell¹ observed that this substance favoured the growth of other water spirochaetes, and the same effect has been noticed by Zucker². These organisms will also grow in a 0.1 per cent solution of potassium nitrate in sterile tap water, but only comparatively small numbers have been obtained in this medium. The food supply of organisms growing in such a medium is a little obscure, the leptospira may obtain its nourishment either from traces of organic matter present in the water, or by synthesis of food substances from the inorganic salts. Further experiments are necessary to decide this question, which is of some interest from a theoretical point of view.

Filtration Experiments

The water leptospira will pass through an L3 Pasteur Chamberland filter, and may be observed by direct examination of the filtrate. With an L5 filter of the same make leptospira, as such, could not be detected in the filtrate, even after employing the centrifuge. Nevertheless, when the filtrate was poured into a Petri dish and incubated for about ten days at 25° C., leptospira appeared in the liquid. This experiment has been repeated successfully on three separate occasions, and although it is conceivable that leptospira, as such, may have been present in the filtrate in extremely small numbers, so that they were almost impossible to detect by microscopic examination, the more probable hypothesis is that the organisms were present in some other form. The L5 candle is of such fine texture that it is very difficult to believe that an ordinary leptospira could pass through, and the negative results of direct examination of the filtrate support the view that some other stage must have been present.

Animal Experiments

The results of these few experiments are inconclusive, as up to the present I have not succeeded in isolating a pure culture of the water leptospira, and therefore the animals have been inoculated with a mixture of organisms. In no case were leptospira recovered from the inoculated animals, except in three guinea-pigs which died the day after an intraperitoneal injection of 4 c.c.m. of a water culture. The peritoneal fluid of these animals, examined after death, contained actively motile and apparently healthy leptospira. In addition, the following results may be mentioned:

(a) Two guinea-pigs each inoculated intraperitoneally with 0.5 c.c.m. of a suspension of leptospira in water. Both showed febrile symptoms and one died on the tenth day with general darkening of the viscera but subinoculations into two other guinea-pigs gave negative results. The other individual showed rectal haemorrhages on the twelfth, thirteenth, and fourteenth days but no other symptoms.

(b) A young guinea-pig was given by mouth 4 c.c.m. of a suspension of leptospira in water. Its temperature gradually rose to 104° F. and was accompanied by epistaxis on the ninth day. Two days later it was killed and showed slight jaundice and two haemorrhagic spots on the lungs. Blood from the heart and liver was inoculated into two other guinea-pigs, both of which showed febrile symptoms and one of them had rectal haemorrhages on the seventh to the tenth days inclusive.

Owing to the necessity of bringing the investigation to a premature termination, due to the author's sudden departure for China, it has not been possible to continue these experiments, and it is doubtful whether any conclusions can be drawn from the results. Case (b) is the most suggestive, as the symptoms resembled those of a mild case of spirochaetal jaundice, and subinoculations produced fever, in one case accompanied by rectal haemorrhages. The difficulty of recovering leptospira from inoculated guinea-pigs is not sufficiently recognized by authors who have worked with exceptionally virulent strains. Buchanan³ only recovered the organism from one guinea-pig out of 44 inoculated with leptospira from proved cases of spirochaetal jaundice, which shows the necessity of long-continued observations before their presence can be definitely excluded. Up to the present very little attention has been paid to the minor clinical symptoms of guinea-pigs

inoculated with leptospiira, but in view of the existence of strains with varying degrees of virulence, they would probably repay closer attention.

DISCUSSION OF RESULTS

Although water leptospiira have been recorded from various parts of the world, the only record, so far as I am aware, of their occurrence in this country is by Coles,¹² who found them at Bournemouth. J. G. Thomson and D. Thomson² described "a new variety of *Treponema* found in an old specimen of human faeces," which is almost certainly the organism under discussion, but assumed that it came from the faeces and not from the tap water in which the faeces had been kept. In addition, the interesting observations of Buchanan³ demonstrated the existence of a free living leptospiira in the slime on the roofs of coal mines in East Lothian. In the latter case, although the organisms were not discovered in surface water, there is presumptive evidence, in view of their habitat, that they are identical with the water leptospiira.

Considering the variety of sources from which this leptospiira has been obtained it is evidently a very widely distributed organism, and there is little doubt that further observations will result in its being found in the majority of water supplies, therefore it is of some interest to determine whether it possesses any pathogenic significance. Morphologically it is impossible to distinguish the common water leptospiira from *L. icterohaemorrhagiae*, although, perhaps, too much importance should not be attached to such a resemblance in organisms presenting so few morphological characters. On the other hand, there is a biological relationship between them, for agglutination of a leptospiira from London tap water was produced by a 1 in 40 dilution of an anti-leptospiira serum, prepared at the Wellcome Physiological Laboratories for a virulent strain of these organisms, isolated by Buchanan. For the supply of this serum I am indebted to my friend Dr. Okell, who had used it in his researches on jaundice in dogs.

If we turn our attention to the history of recent outbreaks of spirochaetral jaundice it is obvious that there must be some very widespread source of infection in nature, for it is impossible to explain the origin of the cases in any other way. Certain outbreaks, notably that in Edinburgh described by Lyon and Buchanan,⁴ have been traced to human carriers of the infection, and once the disease becomes established in man it seems to be contagious, especially among children. The exact mechanism of transmission in such cases is not obvious, but presumably the infection is conveyed by the urine, which often contains living leptospiira. No such explanation, however, can be offered for the origin of most outbreaks, which generally seem to be associated with conditions that would favour the saprophytic growth of leptospiira.

The best example of this nature is the outbreak in East Lothian, described by Buchanan,³ who was able to show that certain coal mines were the source of infection. In the infected mines typical *L. icterohaemorrhagiae* were obtained from the slime on the roof, in situations that appeared inaccessible to rats. Moreover, the inoculation of this slime into guinea-pigs produced the characteristic symptoms of spirochaetral jaundice, to which the animals succumbed, and abundant leptospiiral organisms were present in all their organs.

On the Continent various epidemics have been traced to insanitary bathing establishments, amongst which may be mentioned the outbreak near Magdeburg described by Kornei,⁵ which was arrested by closing certain bathing sheds. The Vesle outbreaks in Northern France were traced to the river, and leptospiiral organisms were found by Etiegeon⁶ in the river water and mud. During the great war epidemics of the disease occurred in wet ill drained trenches, where conditions, especially in dug outs, would undoubtedly favour the growth of leptospiira.

The disease has also been recorded from among workers in sewers, or, in one or two cases, in persons who had fallen into filthy water.

The best example of such a case is that described by Manson-Bahr⁷ of a seaman who fell into the Thames off Gravesend, and was nearly drowned. Five days later he developed a typical attack of spirochaetral jaundice, and

Wenyon and Brown, who made a laboratory examination of this case, were able to recover the leptospiira from guinea pigs inoculated with the patient's blood. A subsequent examination, recorded in the earlier part of this paper, supports Dr. Manson-Bahr's view that the infection had originated from immersion in contaminated water, for I found the Thames water at Gravesend to contain as many as one leptospiira in every 40 fields of the microscope.

The work of Zuelzer⁸ and others on water leptospiira shows that non-pathogenic forms may acquire pathogenic properties after prolonged culture, although Buchanan³ is the only observer who has succeeded in finding virulent leptospiira living saprophytically in nature.

The occurrence of a similar infection in wild rats, in which the organism can exist as a harmless commensal, has led to the view that they may serve as a reservoir, and in view of the usual habitat of these animals it seems reasonable to assume that they acquire the infection by drinking filthy water containing leptospiira. The observations of Foulerton,⁹ Stevenson,¹⁰ and Balfour¹¹ show that a considerable proportion of London rats are infected with the disease, Balfour¹¹ finding leptospiira in 22.6 per cent of 154 brown rats. Since the organisms are passed out in the urine, these animals may serve to spread the infection, but their agency is not essential, as outbreaks have occurred in which their presence was definitely excluded.

Considering all the known facts concerning outbreaks of spirochaetral jaundice, there is reasonable evidence for the assumption that certain strains of water leptospiira may acquire pathogenic properties, and therefore constitute a potential source of human infection. The conditions under which they acquire such properties are not clear, but one important factor is the dose, as the results of inoculation experiments with the water leptospiira, as well as with blood spirochaetes, have shown that it is necessary to introduce a minimal number of organisms in order to produce infection. For example, Buchanan³ failed to infect guinea-pigs by the inoculation of 1 c.c. of slime containing leptospiira, but with four times this amount produced fatal infections. On the other hand, the occurrence of laboratory infections among experienced bacteriologists, who have worked with this disease in guinea pigs, suggests that after passage through these animals the virulence for man is considerably increased, and it is possible that similar variations may occur in nature.

The susceptibility of the host is another important factor, for the inoculation of identically the same dose into a number of guinea-pigs produces very different results, ranging from a complete absence of any obvious effects up to the development of a fatal attack of intense haemorrhagic jaundice. Probably the human host is equally variable in susceptibility to infection, and it is a noteworthy feature that most of the recent outbreaks of the disease have been confined to children or young adults.

The presence of leptospiira in water in small numbers is obviously harmless, otherwise a considerable proportion of the population would be affected, but under insanitary conditions, and especially when faecal contamination of the water takes place, the organism may increase in numbers and constitute a real source of danger. Under modern sanitary conditions there is little likelihood of the disease assuming any great importance, but under abnormal conditions, such as war, or in countries where sanitation has not yet developed, the infection is likely to continue, as the causative agent is evidently capable of living indefinitely as a saprophyte, either in water or in damp localities containing suitable organic matter. Spirochaetral jaundice may be added, therefore, to the long list of diseases which owe their origin to insanitary conditions and lack of attention to public hygiene.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

REMOVAL OF AN OVARIAN CYST IN AN AGED WOMAN RICHMOND

15 November, 1923, I was asked by a colleague to tap an ovarian cyst. The patient was an old lady who had previously refused operation for various reasons. The necessity for tapping became more and more frequent, and on each occasion from 16 to 18 pints of thick glaucous fluid were drawn off. The last interval between paracenteses was three weeks. The old lady declared that her life was not worth living with the continuous discomfort of pressure symptoms, and said she would rather be operated on and die under the anæsthetic than endure it any longer. After a lengthy discussion with the patient's doctor I decided to take the risk and make an attempt at permanent relief. I said that if I could not remove the tumour in its entirety in a given time I would not proceed further with the operation. My only fear was that it might be malignant. I tapped the cyst for the last time on May 3rd, and operated exactly one week later.

The operation was performed on May 10th, when the patient was 90 years of age. The usual midline incision was made, and I found a large multilocular ovarian cyst with multiple adhesions to the peritoneum, but fortunately these could easily be broken down by the hand and did not require ligature. The pedicle was clamped, ligatured, and the cyst removed whole. It was not malignant, and contained over a gallon of fluid. The operation took twenty-five minutes.

The patient sat up in a chair on the seventeenth day, and walked from one room to another on the twenty-second day. To use a familiar and unscientific expression, "she did not turn a hair," and continues to enjoy good health. This case may not constitute a record, but it is sufficiently unusual to warrant publication.

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SEVERE GENERALIZED DERMATITIS AFTER A LOCAL SCALD

The case of severe dermatitis following ultra violet light reported by Drs. MacCormac and McCler (April 11th, p. 695) is interesting and instructive. Recently I had a case presenting many points in common, but caused by scalding. A lady, aged 55, scalded one foot and instep (probably a scald of the second degree), which was treated rather casually with home remedies, no doctor was called in, and no serious attempt was made to keep the part aseptic. Putrid healing occurred after some months, but then the condition became worse and spread over the body. When I first saw her, three months after the accident, the affected foot was acutely inflamed and there were extensive raw areas—copiously weeping. The other foot was similarly but less severely affected. There was a generalized acute eczematous dermatitis all over the chest, trunk, legs, and arms, with considerable pruritus, the face alone escaped. In ten days, with aseptic treatment of the foot and soothing applications to the rest of the body, and mistura alba, the condition completely cleared up. There was no previous history of eczema, no doubt the generalized dermatitis was produced by toxic absorption from the scalded foot.

London S.W.

REDMOND ROCHE, M.R.C.S., L.R.C.P.

A NOVEL METHOD OF REDUCING A DISLOCATION OF THE ELBOW

A BRITISH sailor came into the Cottage Hospital at Algiers recently with a typical dislocation of the right elbow, the forearm being displaced forwards. It so happened that Professor Curtillet, surgeon to the Civil Hospital, was in the

hospital—a circumstance which enabled me to watch the reduction of the displacement by what appeared to me to be a novel method.

Standing on the right side of the patient, who was in the erect position, he grasped the patient's right arm firmly above the elbow with both hands, leaving the forearm free. Having raised the limb to an obtuse angle with the trunk he then, suddenly, taking the patient quite by surprise, imparted to the limb a violent flail-like movement, whereupon the displaced forearm slipped back into its place. The pain was no doubt considerable, indeed, the patient collapsed and fell to the ground, but it was only momentary, for he got up smiling. Dr. Curtillet told me he had employed this method many times with invariable success, and it is so simple that it deserves to be more commonly known.

Alger.

ALFRED S. GLENN

PLUGGING THE POSTERIOR NARES

The customary method of plugging the posterior nares in epistaxis by the use of a catheter or of Belloq's sound has several disadvantages. The use of a forehead mirror is almost essential, and, when the hæmorrhage is severe, it may be impossible even to see the thread. In a case where the Belloq sound failed the following method was successful.

One end of a piece of packing tape was twisted several times round the tip of the forefinger, which was put into the mouth and pushed up behind the palate into the nasopharynx. With snare forceps introduced through the nose the tape was then easily seized and drawn out through the anterior nares. A roll of gauze was attached and secured in position in the usual manner.

This method, being carried out by the sense of touch alone, can be employed where a suitable light is not available, or where the view of the pharynx is obscured by blood. In such circumstances the method, which I believe to be new, may prove useful.

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FACIAL FISTULA OF THE SCROTUM

The case here recorded was shown to the Sierra Leone Branch of the British Medical Association as an interesting case, showing the vitality and resistance to sepsis of some of the natives.

A man aged about 46 was admitted to the Connaught Hospital, Freetown, Sierra Leone, on November 22nd 1924 complaining of a wound in the leg. He was found also to have a facial fistula of the scrotum with a large right inguinal hernia in a much enlarged scrotum. The opening was about three quarters of an inch in diameter and could be probed to a depth of two inches. The patient stated that about eighteen months previously he had been stabbed with a knife while at work on his farm, but there is a suspicion that the wound was inflicted while engaged in burghling as he was known to be a burglar. Very seldom had he used rectum or anus since that time. All faeces passing by the fistula.

An operation was performed by Dr. J. Y. Wood of the West African Medical Staff assisted by Dr. E. J. Wright and the writer.

As there did not appear to be much adhesion at the external ring an incision two inches long was made just below this with a view to cutting across the loop making an end to end anastomosis and performing a radical cure for hernia. This was found to be impossible owing to adhesion and the wound was closed. A fresh incision was then made above the fistula and enclosing the latter elliptically. The bowel proved to be the cæcum much dilated and not a double loop. One side was embedded in a dense mass of hard fibrous tissues from which it could not be freed. It was found possible however, by careful dissection to free the sac below the mass. The base of the fistula was then cut across by a second elliptical incision—the edge in the fibrous mass being freed sufficiently to catch it with stitches. A row of continuous sutures closed the aperture about two inches long in the bowel. A second row stitched down a fold of the outer coats over this. A third row of interrupted sutures massed the sac over this and the wound in the scrotum was closed. The wound healed by first intention the first dressing not being removed for ten days during which time the patient remained on fluid diet. On the third day after operation the bowels acted naturally and continued to do so, a purge being given on the tenth day. He was discharged on the eighteenth day completely cured but still with a scrotal hernia. The scrotum at the site of the operation was soft and pliable and the fibrous mass had practically disappeared.

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AN INDIGINOUS OPERATION FOR STRANGULATED HERNIA

Medicine is to some extent spread throughout Mohammedan communities in Northern Nigeria. The physician is the *malam*, or learned man, and the main part of his practice consists in selling amulets and prescribing draughts of water in which are dissolved the ink used to write a sentence of the Koran. The surgeon, represented by the *haiber*, deals with abscesses and wounds, and cures, while the greater part of his work is very crude, it is often founded on sound common sense and occasionally has quite brilliant results, as evidenced in the following case.

Yesufu a Hausa native of Kano province aged about 40 consulted me with regard to a faecal fistula. He said that three years ago a swelling which had come down into his scrotum for a long time and disappeared when he lay down became suddenly larger and refused to disappear. It gave him great pain and he vomited. The village practitioner who treated all acute swellings thus with good results—heated in narrow head until red hot and plunged it into the swelling causing black water to come out and then in a short time faces the pain disappeared and the patient was well but all his motions now came out from the opening which had never closed. He was well nourished and healthy looking. On the anterior surface of the scrotum just below and to the right of the root of the penis, was an opening from which semi solid faeces were propelled intermittently. Nothing but a small amount of mucus was ever discharged from the anus. I thought it better to see if any obstruction existed internally before closing the fistula. On opening the abdomen the transverse colon was found to be the portion of bowel implicated in the hernia, while coils of bowel consisting of terminal ileum caecum ascending colon and transverse colon were adherent in the right iliac fossa. The adhesions could not be undone so the appendix having been removed an anastomosis was made between the entering loop of colon which was thus and atrophic. Following this operation faeces passed both by the fistula and by the anus. Twelve days later, on the day before the fistula was to be closed the temperature relapsed fever developed—not an unusual complication in the wards at present and impossible to eradicate under existing epidemic conditions the blood was crowded with large spirochaetes but they rapidly fell as did the temperature, after intravenous injection of neo-harsivan.

Under spinal anaesthesia the inguinal canal was opened and the bowel freed from adhesions to the peritoneal sac which was very thick, the fistula was excised and the bowel closed and returned to the abdomen. The sac being dealt with the inguinal canal was obliterated after excising the testicle and cord conditions for repair being unfavourable. No further complications occurred and the patient was discharged with the bowels acting by the proper route.

As an emergency procedure with the facilities available the indigenous operation was undoubtedly excellent and probably saved the man's life.

Kano Nigeria
QUINTIN STEWART FRCS, FRCSE,
West African Medical Service

Reports of Societies.

PEDIATRICS

THE provincial meeting of the Section for the Study of Disease in Children of the Royal Society of Medicine took place at Cambridge on June 20th. By kind permission of Professor Hopkins the meeting was held in the Sir William Dunn Laboratory of Biochemistry, the chair was taken by the President, Dr H C CAMERON.

Bone Formation and Rickets

A discussion on the biochemistry of bone formation and the application of this to the pathology of rickets was opened by Dr H D KAY, who briefly stated and criticized the various theories of the biochemical mechanism of the deposition of bone in normal animals which have been advanced by Pfaundler, Pauli and Samco, Freudenberg and Georgy, and particularly by Robinson and his collaborators. The central discoveries on which new ideas of the mechanism of bone formation depended were (1) that the cells of ossifying cartilage, and to a less extent those of full-grown bone, contained a powerful phosphoric esterase which decomposed most phosphoric esters readily, and (2) that there was a phosphoric ester present in blood upon which this enzyme acted, resulting in the liberation of phosphate ions in the immediate neighbourhood of the site of ossification. Tertiary calcium phosphate (or possibly some compound of even greater lability) was laid down because of the local increase in the concentration of PO_4^{3-} ions brought about by the enzyme led to the solubility product

of $Ca_3(PO_4)_2$ (or that of the more basic compound) being exceeded. The evidence on which this modern view rested was critically examined, and it was found to explain many of the facts. Rickets, however, was not necessarily associated with a shortage either in the enzyme activity of the bone, or in the amount of phosphoric ester in the blood, which was hydrolysable by the bone enzyme. Dr H W C VINES suggested that in the light of Dr Robison's discovery of a phosphoric ester in ossifying cartilage, the deposition of calcium salts might be carried out according to the equations—

1 $CaR + 2H_3PO_4 \rightarrow CaH_2(PO_4)_2 + H_2R$
2 $19CaH_2(PO_4)_2 + 52NaHCO_3 \rightarrow [Ca(HCO_3)_2 \cdot 6Ca_3(PO_4)_2] + 26Na_2HPO_4 + 52H_2O + CO$

The double salt could be prepared by the neutralization of a solution of $CaH_2(PO_4)_2$ by $NaHCO_3$. Phosphoric acid or dried calcium phosphate dissolved this salt molecularly with the formation of $CaHPO_4$. Taking the view that the Ca and P equilibrium of the plasma was directly dependent upon the skeletal Ca salts through the agency of $CaHPO_4$, it was shown that buffered protein solutions to which solid $CaHPO_4$ was added in certain concentrations came into an equilibrium, in which the percentage Ca content was about 12 mg, and the PO_4 10 mg, the pH being constant at pH 7.4. From this a graph was built up indicating the probable conditions in the plasma. It was shown that a very slight decrease in the plasma PO_4 concentration would cause a fall in Ca to below 7.5 mg per cent. This would be compatible with tetanic rickets with low Ca and normal phosphorus. A further decrease in PO_4 to 50 per cent of the normal value would lead to a Ca value of 9 mg per cent, indicating perhaps a rachitis with normal calcium and low phosphorus. Any further decrease in P_2O_5 would lead to a lowering of Ca. From these experiments Dr Vines suggested that rickets might be associated primarily with an error in phosphorus metabolism, and that the calcium metabolism was affected secondarily. A discussion followed in which many speakers took part, and in which the decrease of the grosser forms of rickets during the last few years was emphasized, and the great variety of satisfactory methods of cure was illustrated.

Pulmonary Lesions due to the *Pneumococcus*

Dr J F GASKELL described certain experiments on which he had been engaged in an endeavour to elucidate the origin and relationships of the various forms of pulmonary lesions produced by the pneumococcus. Rabbits were used for the experiments, and he claimed that a close parallel existed between the lesions obtained and the various forms met with in children. All experiments had been made with a single strain of pneumococcus type I, which had been obtained from a fatal human case. The virulence of the strain was varied at will, and could be controlled and measured with sufficient accuracy by the minimal lethal dose to mice of saline dilutions of the way being expressed as the titre. With low titres no lesions were obtained in the lung, with titres between 3 and 4 either central round the main bronchus or more diffuse. With titres between 4 and 5 the lesions were larger and became lobular in type, with titres between 5 and 6 either lobular consolidation was produced or the lung lesions, though diffuse, were incomplete, and were accompanied by double pleurisy with much purulent effusion, and often also by pericarditis. To produce the lobular lesion the dose must be small. With titres of 6 and over a septicaemic condition was produced, with intense invasion of the blood stream and characteristic sero-haemorrhagic effusion in all lobes, very mild, a positive blood culture could not be obtained from the heart's blood in the first three days. Evidence was given that with the lower titres the condition was a bacteraemia rather than a septicaemia, and the theory was advanced that the organisms present in the blood were always within the leucocytes and not free. Dr Gaskell suggested that the size of the lung was of importance in the production of the lobular lesion, and that the larger

lung of adults gave a longer period for the defensive mechanisms to concentrate, and thus prevent the involvement of the pleura, while in children the periphery of the lung was reached by the spreading infection much more rapidly, and thus empyema was common and lobular pneumonia comparatively rare.

After the meeting a dinner was held in Christ's College, by kind permission of the Master and Fellows.

TROPICAL MEDICINE

The annual general meeting of the Royal Society of Tropical Medicine and Hygiene was held at 11, Chandos Street, Cavendish Square, on June 18th. The retiring President, Surgeon Rear-Admiral Sir Percy Bassett-Smith, handed over the badge of office to the newly elected President, Dr ANDREW BALFOUR, who, in taking the chair, reviewed the activities and growth of the society during the two years' presidency of Sir Percy Bassett-Smith. The Chalmers Memorial Gold Medal, which is given biennially to persons under 45 years of age for "researches of outstanding merit contributing to our knowledge of tropical medicine and hygiene," was presented by the new President to Professor Warrington Yorke of the Liverpool School of Tropical Medicine, in recognition of his work on trypanosomiasis, malaria, and many other subjects.

Observations on Malaria during Treatment of General Paralysis

Professor WARRINGTON YORKE read a paper on "Further observations on malaria made during treatment of general paralysis," a previous communication on the same subject having been made by him in conjunction with Dr J. W. Scott Macfie last year. They had noted that induced malaria, whether as a result of direct inoculation of the blood of an infected patient or the bites of infected mosquitos, was remarkably susceptible to the action of quinine in a dosage of 30 grains on three consecutive days. It was further discovered that quinine has no true prophylactic action, for in the case of patients bitten by infected mosquitos daily doses of 10 grains of quinine, administered for five days before, on the day of, and for seven days after, the infecting bite of the mosquito did not prevent the onset of typical malaria. Similarly, 30 grains given on the day of the bite and on each of the two succeeding days did not prevent malaria. From these results it was evident that quinine, though very efficacious for the primary attack of malaria when parasites appeared in the blood, had no action on the sporozoites injected by the mosquitos. The communication made by Professor Yorke dealt with the subsequent history of the cases reported upon last year. Of the cases, which numbered over a hundred, of malaria induced by the inoculation of virulent blood and treated by the three-day course of quinine from one and a half to two and a half years ago, the number of relapses had remained at 2 per cent. The inoculation of the strain from man to man during three years, involving more than forty passages, had not produced an increase in virulence or any morphological variation in the parasite itself. Turning to the infections induced by the bites of mosquitos and treated like the series just mentioned, the more prolonged observations showed that 21 of the 37 patients relapsed. Of these 2 relapsed in the first month, 2 in the second, 1 in the third, and the rest from the fourth to the eleventh months. The late development of these relapses was in marked contrast to the experience of the war, when the vast majority of relapses occurred within one to one and a half months of cessation of treatment. Of the 21 relapses, in the majority of cases fever disappeared either spontaneously or as a result of a second short course of quinine. These results were very different from those obtained during the war. It did not appear that the amount of quinine or the manner of its administration, the period of the year when infection or treatment occurred, or the strain of parasite, could explain this outstanding difference. The only factor which could reasonably account for it was the individuality of the patient. This factor appeared to be the one which determined whether a relapse would occur and if so when.

On the subject of the mechanism of the action of quinine Professor Yorke could see no reason to alter the opinion expressed in the communication made last year. Quinine destroyed large numbers of the malarial parasite, the halcyon bodies of which acted as an antigen to stimulate the production of antibodies which, if present in sufficient amount, brought about a sterilization of the infective and the cure of the patient. As to the immediate action of quinine in destroying parasites, some evidence had been obtained that the drug, acting indirectly, certain bodies co-operating with the quinine in producing a substance directly toxic to the parasite. The use of large doses of prolonged courses of quinine was not advocated. On the other hand, the best method of treating malaria was to deal with the attack with a few moderate-sized doses as it arose, and if relapses occurred the treatment should be repeated, the general health should be maintained by diet and the avoidance of exhaustion, for relapse was directly related to the reaction of the patient himself and his capacity to develop immune body.

CHLOROFORM ANAESTHESIA

A meeting of the Anaesthetic Section of the Royal Society of Medicine was held in the University Buildings at Manchester on June 27th.

Dr H. P. FAIRHURST (Glasgow) opened a discussion on chloroform anaesthesia. At a time when chloroform was being subjected to criticism as an anaesthetic, even to the extent of protesting altogether against its use, he thought it proper that its legitimate uses should be discussed since a considerable amount of space in textbooks was devoted to the teaching of its exhibition as an anaesthetic. The fact that people talked of an ideal anaesthetic seemed to indicate that no ideal anaesthetic had as yet been discovered. On the other hand, Professor Hobday considered chloroform the ideal anaesthetic for animals. Ether was the most formidable rival of chloroform, and it certainly had its proper place as an anaesthetic, though it was not supreme. It was productive of fatigue, its stimulative action on the circulation left the patient in a condition of reaction at a moment when stimulation was most needed, and the subsequent fall of blood pressure was the cause of many post-operative fatalities. Dr Fairhurst thought too much emphasis was laid on the condition of the patient during operation, and the after-effects were ignored. Statistics were misleading, as they included many personal factors, such as variations in skill of different anaesthetists and variations in the condition of the patients prior to operation. Chloroform should not be the choice of the occasional anaesthetist, but the expert would not have more fatalities with it than with ether. Desirable surgical conditions were more easily reached with chloroform than with ether, while in the post-anaesthetic stage the blood pressure tended to rise and would respond to stimulation. At the time of operation there was less tendency to bleeding, and afterwards the chances of lung complication were fewer. As offsets to these advantages there was certainly the danger of acidosis and chloroform syncope. It was usual to classify syncope as of two kinds—sudden and gradual. There was, however, no vital distinction between the two. They were of the same nature, differing only in rapidity of onset. In the sudden variety the time available for remedial measures was less. It was rarely necessary to do more than control the circulation by putting the patient in the Trendelenburg position if the condition were recognized at the onset. Lary considered ventricular fibrillation the result of light chloroform anaesthesia rather than overdosage. The suprarenal glands were stimulated, and the result was fibrillation. As the result of clinical experience the speaker did not agree with the overdosage theory, whereas the alternative theory of vagus inhibition appealed to him. He said he practised light dosage with a Veinon-Harcourt apparatus up to 3 or 3½ per cent of vapour strength, the bottle being immersed in hot water to increase the percentage and keep it uniform. Atropine gr. 1/100 was given to adults, and in smaller doses to children. In the later stages of anaesthesia deficient oxygenation was combated by oxygen inhalations, and in deep abdominal cases was given through out. Sepsis in the abdominal cavity ruled out chloroform.

In conclusion, he quoted Willet, who stated that if he had to be operated upon and the anaesthetist was unknown to him he would choose chloroform for the anaesthetic, but if he had a warning, and could choose his anaesthetist he would prefer chloroform.

Dr J. BLOMFIELD (London) said it was difficult to criticize a paper which was so eminently rational, and he only differed from the opener on one point. There were certainly two kinds of chloroform syncope, and from clinical experience he concluded that there were deaths due to overdosage and deaths without overdosage. He had seen a man die in the early stages of chloroform anaesthesia, the administration being conducted by a competent anaesthetist, the corneal reflex still brisk, there being no evidence of overdosage, no high concentration of the drug, no deep anaesthesia, the patient sitting up in his struggles, when he suddenly fell back and died.

Dr S. R. WILSON (Manchester) agreed with the opener on many points, but he disputed Professor Hobday's dictum regarding chloroform as the ideal anaesthetic for animals. It was the regular thing for two out of every ten or twelve dogs anaesthetized with chloroform to die, whereas he himself had not lost a single dog in the past five years when giving ether. Veterinary anaesthesia was in the same position to-day as that of human anaesthesia twenty years ago. He agreed with Dr Blomfield that there were two types of chloroform syncope. If vagus control had any importance, why give atropine as a routine measure?

Dr W. J. McCANN (Birmingham) believed that a C.E. mixture varying in proportions with the type of case was the nearest approach to the ideal anaesthetic. When giving chloroform sufficient was not done to ward off its dangers. The patient should have preliminary preparation with brandy, strychnine, atropine, digitaline, and pituitum. Ether was given for too long at a time, and 17 hours deep ether anaesthesia was enough for anyone. In certain operations a mixture was essential—for example, in operations on children on the eye in brain, mastoid, Gasserian ganglion, and lung operations.

Dr G. R. PHILLIPS (London) called attention to the construction of the Vernon Harcourt inhaler in which a special apparatus was provided to increase concentration up to 41 per cent, without heat. The percentage of chloroform used was uncertain when heat was used. Dr C. P. THOMAS (Birmingham) advocated the routine lowering of the head a few inches as a precaution against heart failure when using chloroform, especially in gynaecological cases.

Dr ALEXANDER WILSON (Manchester) said that he had met with two patients who died on the table before any anaesthetic had been administered. The patients died from circulatory failure precisely similar to that which occurred after severe haemorrhage. The symptoms were pillor and dilatation of the pupil, with convulsions in some cases. Artificial respiration should be commenced at once, and the head of the table lowered. Overdose occurred in two conditions. In one there was violent struggling, with consequent deep inhalations and subsequent overdose. In the other the patient was gradually over-osed, even with small amounts, as the result of respiratory obstruction. In the first, death was due to cardiac paralysis, resulting from over-excitation, and not really to chloroform. Again, from over-excitation, so common in the past, might be a contributory cause.

Dr FETTERSTONE (Birmingham) said that he must have clear reasons for so doing before giving chloroform, for once the drug had been absorbed it was well-nigh impossible to get it out of the system quickly. Light anaesthesia at the beginning of operation was dangerous, and there was also a danger of collapse later, in children, when they had been returned to bed. Moreover, with chloroform there was a fall in the systolic pressure during administration, accompanied by a rise in the diastolic pressure. Thus the weak pulse was hampered, not only by a falling output of the heart, but also by increased peripheral resistance. Nervous patients should never be given chloroform, for fear of collapse.

On the conclusion of the discussion, a demonstration was given in the physiological laboratory by Drs S. R.

WILSON and B. McSWINEY of the effects of adrenalectomy injections during chloroform and ether anaesthesia on a dog. An exhibition was also arranged of physiological methods of investigating acidosis, and a new anaesthetic apparatus was also on view.

TUBAL PREGNANCY

At the last meeting of the North of England Obstetrical and Gynaecological Society, held at Leeds, with Dr J. L. GYMILL, President, in the chair, Dr E. O. CROFT (Leeds) recorded several cases of tubal pregnancy recently operated on by him presenting somewhat unusual symptoms.

1 The first patient a married woman aged 39 whose only child was born ten years ago had menstruated regularly until June, 1924. This period was prolonged to seven days and on the seventh day she had a sudden violent pain in the left groin passing through to the rectum colicky in nature which lasted twelve hours. Two shorter similar attacks of pain followed at intervals of six hours and vaginal bleeding continued for a week. She then had, during the following six months varying slight attacks of pain, with menstrual periods regular though increased in amount. She was admitted to hospital on January 17th 1925 when there was rigidity in the left lower quadrant of the abdomen and on vaginal examination a small swelling in the left tubo-ovarian region was felt. At operation a small dark round mass was discovered in the tube and on handling this the tube broke across just proximal to the side of this lump. Beyond it the tube appeared normal. The entire tube was excised. The points of intratubal bleeding and mole formation remaining for six months with return of menstruation and the small size of the mole contained in a small portion of the tube the rest of which was normal. The length of time the mole had been retained must have accounted for the lack of microscopic evidence of villi on examination of it.

2 The second patient was aged 42 had four children (the youngest born five years previously) and had had left salpingo-oophorectomy for tubo-ovarian abscess fourteen years previously. The points of interest in this case in addition to the previous operation were the absence of amenorrhoea and the large amount of evidence of old inflammatory disease around the tubal mole and there was no history of any acute symptoms.

3 This case was that of a married woman aged 29 who had had one child and one abortion. She was admitted to hospital in June 1924. She had slight loss and slight pain for a day or two and then three days before admission a severe flooding which subsided. On the day of admission she had severe pain and was very blanched and suffering severely from shock. At operation the right tube was much enlarged and there was a large quantity of free blood in the peritoneal cavity. The tube was removed and later after hardening was opened and found to contain a perfect ovum with embryo in its amniotic cavity. The points of interest were the absence of amenorrhoea no mole formation (ovum intact), and profuse haemorrhage from the open end of the tube.

4 This patient aged 31 was married and had two children the second born six years previously. She began to lose on January 18th 1925 the date her normal period was due but she only had slight aching pain in the abdomen never on acute attack. Vaginal examination revealed the uterus displaced forwards by a tender swelling in the pouch of Douglas. At operation much dark tarry blood was found in the peritoneum with the right tube ruptured and containing much clot. Haemorrhage there was no amenorrhoea but two months continuous loss and an absence of any acute attack of pain in spite of a severe rupture of the tube and intraperitoneal haemorrhage.

5 The interest of this case was that after a series of six abortions none of which went beyond six weeks the patient had a tubal pregnancy and the later history resembled more that described in textbooks seven weeks amenorrhoea with sudden attack of pain and slight loss followed by severe pain and free bleeding.

6 This patient had two years sterility following marriage and then on July 16th 1924 a month after a normal period had severe pain in the left lower abdomen and a week later slight bleeding which continued for three weeks to the date of admission. For three days before admission she had severe pain and at the operation a large amount of intraperitoneal haemorrhage was found with a mole still present in the left tube. The points of interest were two years sterility and pain at the date of the expected period but no show until a week later.

In recording these cases Dr Croft drew attention to the unusual points, indicating how the usually recognized symptoms and signs were only exceptionally present in any one case, and endeavoured to show that early symptoms, if seriously noted, would more often lead to earlier treatment before an acute catastrophe took place.

Treatment of Incision of the Uterus
Mr W. W. KING (Sheffield) read notes of a case of incision of the uterus replaced by a new form of Aveling repositors. The case was of interest because of the slight

trauma which apparently began the process, and the case with which the inverted uterus was replaced by his modification of Aveling's repositor three weeks after the accident.

The patient, aged 27, was delivered spontaneously of her first child on March 1st, 1925. A slightly abnormal amount of haemorrhage during the second stage caused her medical attendant to put his hand into the vagina for the purpose of removing the placenta from the uterus. The placenta was, however, mainly in the vagina and came away without any difficulty. Serious collapse and vomiting followed immediately, but no further haemorrhage. Inversion was thought of but the absence of haemorrhage and an external tumour were taken by him to negative the diagnosis. The shock passed off, and the puerperium was afebrile and on the eighteenth day a routine pelvic examination was made. This disclosed a rounded tumour in the vagina which was recognized as an inversion. Mr. King saw her the same day when she looked and felt perfectly well. The inverted uterus was the size of a cricket ball in the vagina. She was admitted to hospital and after a few days' treatment with glycerin the modified Aveling's repositor was inserted and the uterus was completely reinserted in six hours, with very little pain or discomfort. Recovery was uninterrupted.

The instrument, as modified by Mr. King, made it possible to get the point from which traction was made as close to the vulva as possible, and so diminish the liability to lateral displacement, secondly to supply a ready means of adapting the shape to that of the vagina, and thirdly, a gauge is provided by which the process of reinsertion could be noted without removing the apparatus.

The stem was of copper and could be bent to fit the curve of the vagina and so transmit pressure in the correct axis. Before fitting the apparatus a small piece of strapping placed on the stem should indicate the position the plate would occupy when the fundus had been reinserted to a point at or about the cervix. The plate from which traction was made was rectangular measuring 6 by 3 cm. and could be fixed at any position on the stem by means of a set screw. The corners of the plate were drilled to take the ordinary circular elastic bands supplied in stations. When these bands were looped into the holes and attached to a suitable belt and extended by about 2.5 cm. the right amount of pressure was produced. Attached at first half an inch from the vulva and readjusted as reinsertion took place, the prearranged point indicated above would be reached. The cup used was of the ordinary type till the fundus had been replaced to the level of the cervix and then the instrument was withdrawn and the cup replaced by a smaller cylindrical one which could easily pass through the cervix. After reinsertion this cup could be withdrawn with great ease and no pain.

The President congratulated Mr. King on the instrument and its successful use. Dr. Croft thought the original Aveling repositor was conical at the lower end, and so its removal was easy.

Puerperal General Peritonitis

Dr. CARLTON OLDFIELD (Leeds) read notes of two cases of puerperal general peritonitis. At the outset he referred to a short paper, contributed by himself to the Society two years previously, on twelve cases operated on, with seven recoveries. His main reason for returning to the subject was that the statistics of the recent investigation of puerperal infections proved two things that general peritonitis was very common, and that the treatment of it was by no means successful.

The first patient had a spontaneous delivery on January 30th, 1925, the only interference being rupture of the membranes by the midwife when they were bulging at the vulva. On the sixth day after delivery—sixteen hours after the onset of severe pain—she was admitted into the Leeds Infirmary with temperature 99.8° F., pulse 108 and the abdomen rigid and tender, not moving on respiration. Laparotomy allowed large quantities of yellowish foul-smelling liquid to escape from the peritoneal cavity. The appendix and right tube were normal, the left tube red and inflamed. Left salpingectomy was performed with drainage of the abdomen. Examination of this tube showed it acutely inflamed, no organisms were grown from the fluid removed. The patient made a good recovery.

The second patient was 31 years old and had four children. She had a profuse purulent vaginal discharge during pregnancy, normal labour on December 29th, 1924. One hour after delivery the temperature was 103° F. and pulse 120. Pyrexia persisted with rigors on the second, fourth, fifth and sixth days after delivery. On January 4th, 1925, the temperature was 104° F., pulse 135, she had severe abdominal pains, diarrhoea and occasional vomiting, and the abdomen was distended. She was operated on the next day, and a large quantity of sero-purulent fluid evacuated. The left tube which was swollen and congested was removed and drainage tubes put in the pelvis. She died on January 9th of general peritonitis. Streptococci were grown from the fluid.

Dr. Oldfield thought it desirable that in cases of puerperal infection a sharp lookout should be kept for

evidence of general peritonitis, and the abdomen should be opened as soon as the condition had been diagnosed. His experience of fourteen cases (with eight recoveries) appeared to show that the death rate from puerperal peritonitis could be considerably reduced by operative treatment on the lines adopted by surgeons in treating general peritonitis.

Breech Presentation and Ectopic Pregnancy

Dr. GORDON FITZGERALD (Manchester) read notes of a case in which a breech presentation was complicated by an extrauterine pregnancy.

The patient, a 4 para, aged 32, was admitted to hospital in labour the breech presenting. Previous labour had been without difficulty and so none was anticipated here. During the second stage there was considerable delay, and on examination a mass was found in front of the breech which resembled a cervical lip, supported by the presenting part. The swelling was soft and bluish and the efforts made to push it up were unsuccessful. After some further delay the mass ruptured and there was much haemorrhage, and then the labour was terminated fairly quickly. The uterus contracted well following a slight further haemorrhage. Two days later, after a recurrence of haemorrhage, Dr. FitzGerald examined her and was surprised to find the examining finger pass more easily through an opening in the posterior fornix than up towards the cervix. Under an anaesthetic a cavity filled with blood clot lying in the left broad ligament was found. From the cavity recent and old blood clot was removed and also a small embryo about an inch in length. The cavity was briefly packed with gauze which was removed in twenty-four hours, and the puerperium was otherwise uneventful.

No indication was obtained from the patient's history as to when the extrauterine pregnancy ruptured through, or was aborted from, the tube. Accepting the view that ovulation ceases during pregnancy, this (two months' embryo) must have remained about eight lunar months unabsorbed.

Uterine and Ovarian Tumours

Mr. W. GOUGH (Leeds) described two cases of sarcomas of the uterus.

The first patient, aged 66, had her last pregnancy twenty-three years ago, menopause ten years ago. There was a history of three months' vaginal haemorrhage, but no pain. Exploration with a curette produced rounded compressed nodules, the colour of milk chocolate, which on examination showed sarcoma of a mixed cell type. Vaginal hysterectomy was done and the uterus examined later had the pedicle of the polypoid growth still present on the posterior wall half an inch from the fundus.

The second patient, aged 59, had one child thirty years ago and ever since the menopause eight years ago had suffered from discharge with occasional bleeding. Examination revealed a hard rounded central tumour extending to two inches above the umbilicus and a large polypus with sloughy surface filled the vagina. At operation the polypus broke into fragments with suspicious case and a large quantity of greyish stringy growth was removed from the uterine cavity. Microscopical examination showed a rounded cell sarcoma. Abdominal parasthysterectomy was performed. On opening the specimen the fundus was found to contain a fibroid as large as a tangerine orange, below this was a large cavity with foul sloughy nodular walls from which the growth had been excavated at the first operation.

The second case might have been one of so-called sarcomatous degeneration of a fibroid, but Mr. Gough held that this did not occur, for he had never seen a section showing definitely this change.

Dr. CARLTON OLDFIELD showed a specimen of a growth about the size of a walnut projecting from the anterior wall of the cervix, removed by Wertheim's operation, which, on pathological examination, showed an adenoma with no definite evidence of malignancy. He had taught for many years that cancer of the cervix could be diagnosed, practically always, by the finger or a Volkman's spoon. He considered it unnecessary, and often harmful, to cut away a piece for microscopic examination before operation, but showed this specimen as an instance in which a mistake in diagnosis would have been prevented by a microscopic examination.

Dr. Croft showed a specimen of fibrocystic tumour of the ovary. The major part of the tumour consisted of dense, fibrous tissue in which a few strands of involuntary muscle fibres appeared. Several cysts were present, one the size of a fist and the others from one half to two inches in diameter. The walls of two small cysts were calcified. This was no doubt a fibromyoma of the ovary, showing the unusual development of cysts.

Reviews.

ALLBUTT'S SUMMARY VIEW OF ARTERIO-SCLEROSIS

THE LATE SIR CLIFFORD ALLBUTT'S recently published *Arterio-sclerosis: A Summary View* has its saddening associations. Though to the last mentally as young and progressive as ever, he had been conscious of physical failure, and so was almost feverishly anxious to finish what he felt would be his last utterance. He did, indeed, succeed in completing a work which contains references to papers by others published as recently as January last, but he was never to see any of the proofs of this much expanded lecture to a post-graduate class in Cambridge. It was characteristic that, not content with his classical two volumes on *Diseases of the Livers, including Angina Pectoris* (1915), he continued to work, to collect fresh observations, and keep up with the literature on the subject of hypertension with which his name must long be intimately associated. This essay, divided for convenience into six chapters and provided with an excellent index, is written in the attractive style so characteristic of the scholar-physician whose modesty perhaps somewhat hid his real greatness, so that time will probably even heighten our appreciation of this master mind.

At the outset the reader's critical sense is whetted by the probing of the meanings of the abstract phrases so glibly on our lips, which appear to give more satisfaction than their unaltered interpretation really justifies. "Intestinal toxins" is criticized as a most pernicious catchword, for, as someone said of another writer, "we are guessing in the dark about a guess in the dark." Arguments are later brought forward against the popular view that arterio-sclerosis is due to poisons manufactured in the intestine, on the grounds, among others, that most of these bodies are depressor and asphyxiating rather than pressor, and the production of hypertension is referred to "a wisp of metabolism, possibly in the liver." But later he adds that if he were to suspect intestinal toxins as a cause he would give large doses of charcoal and might try kaolin.

The discussion of morbid anatomy carries the story pleasantly back to the far-off battle, some fifty years ago, when he had the opportunity of comparing the microscopic sections of George Johnson on the one hand, and of Gull and Sutton—or, as his friend Dr. W. H. Dickinson used to call them, "the allies"—on the other hand, the appearance of alleged hypertrophy of the muscular media he regards as one of increased tone only, under the influence of some cigot-like poison. After a generous reference to Dr. H. Batty Shan's monograph on *Hypertension and Hypertension*, the first of these two conditions is defined as a disease independent of the kidneys, with its own characters, of which high arterial pressures, systolic and diastolic, seem to be the chief, while hypertension is a general term for incidental high blood pressures. That some normal individuals have a systolic pressure of 160 to 170 mm. Hg he does not believe, though he cannot deny this statement any more than that in some "normal persons" the bowels act only once or twice a week. Insistence is laid on the instability of abnormal pressures, whether high or low, and on the probable occurrence in the subjects of intermittent phases of indisposition, recurrent headache, "suppressed gout," or "biliousness," of periods of high blood pressure as part of some obscure metabolic perversion or transient toxæmia, investigation of which, though they are perhaps difficult to catch, may throw light on the causes of hypertension.

In the chapter attractively entitled "Clinics" Sir Clifford Allbutt's long experience sounds the warning that, in spite of the general and more optimistic opinion, dyspnoea, however slight, means that the hypertensive patient whether renal or non-renal and even though blissfully unconscious of illness, has entered, not upon the first, but upon the last stage of his malady. He points out that uræmia occurs in cases of hypertension without any renal change, and is emphatic that severe uræmia even with neuro-retinitis may occur in cardiac disease in which the

kidneys show nothing more than congestion. But the outlook is widely different in the renal and the non-renal cases, for when the kidneys are capable of recovery the uræmia may be transient, and in the majority of such instances recovery follows a first or even a second attack. The slight and often transient paralyses or aphasia the "slight strokes" often by "sanguine pathologists" ascribed to passing spasm of the cerebral vessels, are regarded as of the worst urgency and probably due to small haemorrhages. Sir Clifford reiterates his opinion that in the majority of patients with angina pectoris the blood pressure is not raised, and says that in practice the cases with high pressure are more amenable than the ordinary run to treatment or to cure, but there is not any reference to the surgical treatment of angina, on which Professor K. F. Wackebach lectured at the Royal College of Physicians last year when Sir Clifford spoke so finely and impressively (vide *BRITISH MEDICAL JOURNAL*, 1924, 1, p. 828).

The chapter on treatment is valuable, especially for its wise and wide survey. In speaking of the insidious onset and the suggestion that everyone should be examined and have the blood pressure estimated every five years, the comment follows that "this rule would indeed set up an epidemic of fidgets." The doctrine not to treat high blood pressure as such on the ground that it is merely a symptom, and that it is "compensatory," and so would be an unscientific therapeutic procedure, meets with scant sympathy at his hands. The action of vasodilators is transient and gives but momentary relief, too strict a diet is inadvisable, and, like vasodilators, vasectomy is disappointing though useful at times. For iodides, which he usually gives in 1-grain doses twice or thrice daily in atherosclerosis with or without high pressure, no enthusiasm is expressed, but spirit treatment under watchful guidance is admitted to be very helpful though the fish air, change of scene, and attendant freedom from worry are far more important than "the water chemicals." The recent use of diathermy is recorded and the sphere of utility of endocrine preparations philosophically considered.

In conclusion, short as is the "Summary View" it is a welcome and useful record of the mature and wise final expression of the great Regius Professor's long experience, and will therefore appeal to the profession of which he was eminently the recognized leader.

HUMPHRY ROLLSTON

THE CELL IN DEVELOPMENT AND INHERITANCE

THE title of the first edition (1896) of the work by Professor Wilson of the chair of biology at Columbia University, U.S.A., was *The Cell in Development and Inheritance*, and as such for the next ten years we accounted that work one of the most valuable of the monographs of the Columbia University Biological Series. But much of the water of life has flowed under the morphological bridges within the last thirty years.

The first edition had 377 pages and 142 illustrations, as compared with the 1232 pages and 529 illustrations of the splendid work before us.

In the new edition the old title is slightly altered, but no title of reasonable length could describe the contents of this storehouse of facts and theories, for here are treated in the fullest manner possible all of the following. The general morphology of the cell, cell division, reproduction and cell life, gametes, fertilization and parthenogenesis, meiosis, sexuality in lower organisms, cell chemistry and cell physiology, chromosomes and sex, heredity and the chromosomes, growth and cell development, and development and heredity.

We are left in doubt which is the more worthy of admiration—the complexity, resource and infinite variety of Nature or the vast patience of the author of this treatise. We are particularly glad to find that this book so up to date in every respect, yet opens with a sympathetic recognition of the place of the cell theory of Schleiden and

The Cell in Development and Heredity By Edmund B. Wilson. Third edition. New York: The Macmillan Company, 1925. (Med. 8vo, pp. xxxvii + 1232, 529 figures, 36s. net.)

Schwann in biological history. For there has been of late a tendency in certain quarters to belittle the importance of that generalization made under the disadvantageous conditions surrounding the study of life nearly one hundred years ago. So wholly praiseworthy is Professor Wilson's view on this subject that we must quote his opening sentences:

"Among the milestones of modern scientific progress the cell theory of Schleiden and Schwann, enunciated in 1838-39, stands forth as one of the commanding landmarks of the nineteenth century. Its importance is not to be judged by its original form, as first outlined, it was but a rude sketch, in many respects faulty and distorted. Its announcement nevertheless marked a turning point in the advance of biology, opening a new point of view for the study of living organisms and revealing the outlines of a fundamental common plan of organization that underlies their endless external diversity. The cell theory thus became a perennial source of fruitful researches, which, down to our own day, have continued to press forward into always expanding fields of discovery. Long ago it became evident that the key to every biological problem must finally be sought in the cell, for every living organism is, at some time, has been, a cell."

Words as true as they are necessary.

It should not be supposed that this book is just a catalogue of facts of microscopic cell morphology, such as highly interesting and speculative topics as living matter, a continuum, the immortality of protoplasm, syngamy, senescence and rejuvenescence, rhythm, rhythm, and many other theories of fundamental interest are discussed. The bibliography alone is extremely valuable, and there is a welcome glossary of terms. There are two indexes—one of authors, the other of subjects. The figures throughout are exceedingly clear.

NERVOUS DISEASES

In the preparation of the second edition of his textbook of nervous diseases¹ Professor HANS CURSCHMANN has had the assistance, as co-editor, of Professor FRANZ KRAEHLER of Berlin, during the fifteen years which have elapsed since the first edition appeared three of the original contributors have died—Professors HANS STEINER, MAX ROTHMANN, and MAX LEWANDOWSKY. To the new volume there are twelve contributors, including the two editors, it contains over nine hundred pages and there are some three hundred illustrations, many of them photographs of cases, carefully chosen and exceptionally good, and constituting in themselves a very useful study. After an opening chapter by Professor KraeHLer on the general examination of cases of nervous disease, the book follows in anatomical basis, diseases of the peripheral nerves being first considered by the same writer. Professor F. K. WALTER deals with the diseases of the spinal cord and medulla oblongata, among which is included disseminated sclerosis, before the individual diseases are described full accounts are given of the anatomy and physiology and of the regional diagnosis of cord lesions. The myopathies, including dystrophia myotonica and myasthenia, are discussed by Professor CURSCHMANN. Professors HUGO LIEPMANN and KRAEHLER contribute a detailed chapter on the general anatomy and physiology of the cerebrum and cerebellum, the methods of examination and localizing features of brain lesions, and an account of the different types of aphasia. Chapters follow on meningitis and hydrocephalus by Professor HUGO STAECK, on brain tumour and brain abscess by Professors LEWANDOWSKY and GEORGE SEITZ, and on cerebral syphilis by Professor R. GRUPP. Professor SEITZ deals with encephalitis and vascular lesions, with diseases of the extrapyramidal system, and with certain types of idiosyncrasy, all the accounts are thoroughly up to date and are well illustrated. An interesting section on the physiology and pathology of the vegetative nervous system, written by Dr R. GIEVING, is followed by a chapter by Dr CURSCHMANN on nervous disorders associated with the endocrine organs (exophthalmic goitre, myxoedema, tetany, acromegaly and Frolich's syndrome, and lipodystrophy). Vasomotor and trophic disorders are considered by Professor CURSCHMANN, and nervous diseases due to intoxications by Professor F. QUENSEL. Lastly, there are accounts of the orthopaedic treatment of nerve lesions by Professor H. v. BAAYER, and

of the surgery of nervous diseases by Professor FEDOR KIANSE.

This book is a comprehensive manual of nervous diseases. It contains sufficiently detailed accounts of rare diseases to be of value both to neurologists and general physicians, and it should prove an excellent book of reference for the practitioner who desires to keep in touch with modern neurology. A textbook of this standard in English, but not a mere translation, seems to be needed.

NOTES ON BOOKS

THE editor of the history at home and abroad of *The 21st London Field Ambulance* during the great war is to be congratulated on having produced a most readable book, which can be read with interest by those who had not the good fortune to serve with the unit whose exploits it commemorates. After preliminary training in England the unit left Ipswich at midnight on 1 February 20th-21st, 1916, touched at Southampton, left there for Le Havre on the evening of 1 February 21st, and thence proceeded to the village of Atraines, there it joined the 56th Division, with which it served for the remainder of the war. It received its first real glimpse of heavy fighting in the Somme area, and, after doing duty at the capture of Combles, was moved to the La Bassée-Laentie area, where fighting was of a less exciting nature. Here it stayed until March, 1917, when it moved towards Arras for the first Arras battle. Next it visited St. Omer and shared in the third battle of Ypres, after which it went to Bapume and wintered at Aubigny. In March, 1918, the unit went through the famous German offensive against Cambrai and from that time to the close of hostilities took part round Arras in the many engagements which preceded the German retirement, finishing up at Query le Petit on the eve of the signing of the armistice. After further moves later to Mons and Jemappes the unit was sent home by way of Antwerp and demobilized at the Crystal Palace. Its roll of honour comprised twenty-four names, and its honours and awards numbered forty-two, including four mentions in dispatches. The book is well printed and illustrated with photographs and sketches. A foreword by Lieut. Colonel C. S. BRENNER, D.S.O., who commanded the unit from its foundation until after the armistice, explains the reason for the delay in its appearance. Copies may be obtained from H. L. Chase, "Kingsley," Merstham, Surrey.

Rice is, it has been stated, the staple food of more than half the population of the world. If for that or for any other reason a reader of the *BRITISH MEDICAL JOURNAL* should take it into his head to cultivate rice he will learn to what countries he may go and all about its production from a little book² by Mr C. E. DOUGLAS. It appears to be the first work published on the subject, and deals with it in every aspect—historical, ceremonial, botanical, physical, with the details of its cultivation, with its relation to soil, to climate, to its food value, and, finally, with exactly the right way to cook rice and prepare a rice pudding—which is undoubtedly useful knowledge if duly applied. The little book is one of a long and excellent series issued by the same publishers on common commodities and industries.

¹*The 21st London Field Ambulance*. An outline of the four and a half years' service of a unit of the 56th Division at home and abroad during the great war 1914-19. Foreword by Lieut. Colonel C. S. Brenner, D.S.O. London: Morton, Burt and Sons, Ltd. 1924. (Fcap. 4to pp. 104. 9 plates. Cloth 4s. leather 6s. 3d. postage 3d. extra.)
²*Rice: Its Cultivation and Preparation*. By Charles E. Douglas. M.I. Merch. & Pittman's Common Commodities and Industries. London: Sir J. P. Palmer and Sons, Ltd. 1925. (Cr. 8vo pp. ix + 143. 25 figures. 3s. net.)

PREPARATIONS AND APPLIANCES

A Self-retaining Anal Speculum

MR. HAROLD BURROWS, O.B.E., F.R.C.S. (Southsea) informs us that Messrs. Arnold and Sons (John Bell and Croyden, Ltd.) 50-52, Wigmors Street, W.1, have recently made for him a small self-retaining speculum, which is especially useful for the injection treatment of piles. On the end of the speculum is a bulb which renders it self-retaining, so that the operator has both his hands free.

Using Testing by Diabetic Patients

DR. A. CLARKE BEGG (Swansea), having found the advantage of diabetic patients examining their own urine regularly, has devised, and Messrs. Allen and Hanbury, Ltd. 48 Wigmors Street W.1 have made a small outfit for their use. It is packed in a wooden case which contains Fehling's solution No. 1 and 2, the (dilute) solution of non-perchloride spirit lamp, half a dozen test tubes, a notebook to record daily results, and full directions for the test. Dr. Begg recommends Fehling's instead of Benedict's test as all medical men are familiar with the former and can better assist the patient if he gets into difficulties. Dr. Begg thinks it essential that patients should test occasionally for diuretic acid, and should be instructed to get medical advice at once if any red coloration is shown with the iron perchloride.

¹*Lehrbuch der Nervenkrankheiten*. Herausgegeben von Dr. Hans Curschmann, Ro. tock und Dr. Franz KraeHLer. Berlin. Zweite Auflage. Berlin Julius Springer. 1925. (Roy. 8vo, pp. x + 952. illustrated. G.M. 36.)

FIRST INTERNATIONAL CONGRESS OF RADIOLOGY.

LONDON MEETING

THE International Congress of Radiology, the opening of which was reported in our last issue (p. 32), closed on July 4th, after a very successful four days' meeting at the Central Hall, Westminster, under the general presidency of Mr C THURSTON HOLLAND, C.B.M. The British organizers had described it as a "preliminary meeting," but directly the Congress assembled a meeting of the international delegates resolved to declare it the First International Congress of Radiology, and to elect Mr Thurston Holland as its President. At a later meeting of the delegates it was resolved that the Congress should meet next in Stockholm in 1928 under the presidency of Professor GOSTA FORSSSELL. Some general principles were adopted for the guidance of future Congresses, one of which was that any country having a radiological society or societies should be entitled to send not more than five official delegates, but that only one vote should be exercisable by each country. Professor Forssell was appointed chairman, Mr Thurston Holland vice-chairman, and Dr Stanley McWhille secretary, of the international delegates' committee, pending the next meeting of delegates.

The proceedings of the Congress took place in three sections. The Section of Physics was presided over by Mr C. L. S. PHILLIPS, the Section of Electrophysics and Actinotherapy by Sir HENRY GAYLOR, and the Section of Radiology was divided into two parts—one for the discussion of radio-diagnoses and the other for the discussion of treatment by radium and x-rays. Dr A. E. BARCLAY presided over the first, and Dr N. S. FRYER over the second. These two halves of a section each carried out a very full and well co-ordinated programme, the one beginning with radiological diagnosis of bone conditions, and passing on to the gall bladder, the alimentary tract, the thorax, and the skull, while the other devoted three sessions to radium therapy and three to x-ray therapy. The number of papers read was 150. It is possible only to note some of the outstanding communications.

RADIOLOGICAL DIAGNOSIS

The Position and Form of the Stomach

Dr R. O. MOORE (Oakland, California) brought forward the results of an x-ray study of the living anatomy of the stomach, liver, and colon in 1,000 healthy adults. He showed that in 75 per cent of the male subjects the lowest part of the greater curvature was below the interiliac line, and that this position was most frequently in a zone from 2½ to 5 cm below that line. In the female subjects the lowest part was below the line in 88 per cent of the cases examined, and in 43 per cent was more than 5 cm below the line. In 12 per cent of the males and in 30 per cent of the females the lesser curvature also was below the interiliac line. The pylorus in both sexes was most often found well below the transpyloric plane. All these were thoroughly normal and healthy subjects. He held that the use of the term "gastroptosis," like "coloptosis" also, was seldom justifiable—the form, position, and relations of the abdominal viscera differed so widely among normal individuals.

Dr I. S. HINSCHE (New York) complained that his compatriot had made no mention of the great work on this subject done by Mills of St. Louis, who had shown, after many years of very careful examination, that there was a definite relationship between visceral form and bodily habitus. Dr Moore said that he fully appreciated Mills's work, though he did not think that the position of the stomach could be so exactly guided according to changes in the bodily habitus as Mills had described. With regard to the need of this work, it was enough to point out that both in England and America there were thousands of physicians who regarded a "fallen" stomach or "fallen"

colon as symptomatic of ill health, when actually this was not the case.

Professor GOSTA FORSSSELL (Stockholm) urged the abandonment of the terms "hypertrophic" and "hypotrophic" as applied to the stomach, because these terms indicated an abnormal state, whereas both types were quite normal. One of these states was adapted to certain physiological conditions, and the other to certain different conditions, but equally physiological. Often in textbooks there was mentioned a hypertrophy of the pylorus in children, but as a rule there was no such hypertrophy. The condition did not really relate to the pylorus at all. It was really a case of contraction—perhaps sometimes a real hypertrophy—of the pyloric canal, not of the pylorus.

In discussing a paper by Dr DE BACKER (Ghent), giving the results of a radiological study of the digestive tract in normal children, Dr LE WILD (New York) said that the colon in children needed a great deal more elucidation. The statement that the long colon in the child would necessarily be outgrown was an error, this type of colon might persist throughout life.

The Art of Palpation

Dr A. E. BARCLAY (Manchester) said that palpation under the x-ray screen was a complex art, and one which was not acquired without much patient practice. It was not an art learned at the bedside, what it required was not only a delicate sense of touch, but a complex of touch and sight. It was of the greatest possible value in detecting the final changes in the stomach and other organs. The most important palpation of the stomach was that which was done while the first mouthfuls of food were passing down. Here a little pressure would often bring out a filling defect, more especially as to the margins. No matter with what care palpation was done, however, plates also were necessary. Radiologists should always attempt to show on their plates what they detected by palpation, and the success of a screen examination must not leave the radiologist content with faulty radiographic records.

Diverticula of the Small Intestine

Dr J. T. CASE (Battle Creek, Michigan) gave an interesting account, illustrated by radiographs, of some 70 cases of diverticula he had observed. One point was that in cases of multiple diverticula it was always found that the larger diverticula were nearest the stomach, and the smaller ones further away. By x-ray findings he had been able to differentiate between true and false diverticula. Of his 70 cases a number were found only at autopsy, some were found at operation for acute trouble apparently not related to the diverticulum. About three-fourths of the patients had no symptoms due to the diverticula, they died or they came to operation from some other cause, only in one-fourth did the need for operation arise or a fatal issue occur owing to pathological changes in the diverticula. In other words, the diverticula were subject to the same changes as the appendix.

The Mucous Membrane of the Digestive Tract

Professor FORSSSELL (Stockholm) offered some observations on the motor mechanism of the mucous membrane of the digestive tract, and showed some pictures demonstrating unmistakable variations in the relief of the mucous membrane in one and the same loop of the small intestine. He said that typical dissimilarities in the x-ray picture were not caused by different fillings, but by a real dissimilarity in the folds. He had tried to obtain more knowledge of the nature of the movements of the intestinal mucous membrane by means of direct observation, and he had found what he held to be convincing proof of the active participation of the mucous membrane in the movements which brought about a change in its relief. It seemed probable that the musculature would exhibit the

phenomenon of contraction at the place of the fold, he had made histological preparations of different parts of the alimentary tracts of men and of animals, and these had proved that the overlapping muscular cells in the muscularis mucosae occurred typically in the folds of the mucous membrane, being most marked at the tips of the folds, so that the muscularis mucosae within the area of the folds often attained a thickness several times greater than in the furrows between the folds. This phenomenon of overlapping was most marked in the stomach cavity, but it was quite distinct in the small intestine also.

Dr H. M. INNOMIS (New York) spoke on the observation of intermittent obstruction of the small intestines. This work, he said, depended upon screen examination, he was unable to make a diagnosis from the plate. The screen examination, moreover, had to be very painstaking, if it was to elicit the required information. The writhing and twisting of the duodenum and its marked inability to empty itself were perhaps the most characteristic signs.

Radiology in Thoracic Surgery

Mr. MORRISTON DAVIES (Ruthin) said that in thoracic surgery, where accurate diagnosis and localization were necessary as a preliminary to treatment, the clinical methods of examination were incomplete and not sufficiently discriminating. Radiology was not a substitute for clinical examination, but both in diagnosis and during the course of treatment it was such a valuable adjunct that treatment should not be carried on without resort to this method for checking the clinical findings. He referred to certain cases in which the diagnosis was possible only by x-rays. One patient was sent to him for bronchitis and emphysema, and clinically there was nothing suggestive of anything beyond those conditions, but on x-ray examination it was possible to diagnose primary broncho-ecarcinoma, for which the patient was operated on later. Another case was that of a girl with curies of the spine and with a little patch of dullness at the back of the right lung. By x-ray examination, and by that alone it was possible to make a diagnosis of hydrath of the lung. A woman who had been treated for thirty years at a general hospital for dyspnoea and palpitation, and was sent to him as a case of basal pneumothorax, proved on x-ray examination to have a diaphragmatic hernia. Another case was sent to him as early tuberculosis, and the x-rays showed a gumma in the upper lung. Another patient who presented only laryngeal symptoms was proved by x-rays to have military tuberculosis. The rays would frequently show greater changes than the hand or the ear could detect. Radiology was of equal importance during and after operative measures.

Detection of Non-opaque Foreign Bodies

A paper which called forth the special reclamations of the Section was read by Dr W. F. MANGES (Philadelphia) on the detection of non-opaque foreign bodies—usually nutshells and other hard vegetable substances—occasionally bones—in the air passages and food passages. Dr Manges's method was to watch the respiratory movements during inspiration and expiration, taking the x-ray picture at the full extent of both these acts, and by a comparison of the air entry to the lungs and the displacement of the mediastinum and heart he was able to arrive at the exact situation of the non-opaque body. The patients—usually children—were placed with the arms above the head, the face directly forward, the tube 36 inches distant and centred very carefully in the middle line, and the exposures were made as short as possible, the same exposure being given for expiration as for inspiration otherwise the impression of density on the two sides was unequal. The knack of making exposures at inspiration required to be developed—one had to learn to "shoot on the wing." The difficulty at expiration was not so great, because here there was a certain prolongation of the moment of rest.

X-ray Examination of the Male Urethra

Dr E. H. P. CAYE (Hullow) read a paper on the x-ray examination of the male urethra. The methuoscope although it must have first place as an aid to diagnosis

had certain limitations. With radiography it was possible to penetrate further and to visualize the whole course of the urethra. Cases of prostatic enlargement formed a group to which this method was applicable. The degree of enlargement of one or both lobes was clearly visible in the radiogram, and by repeated examinations the rate of growth could be determined. Similarly, in post-prostatic cases the contraction of the prostatic cavity could be observed by the same means. Radiography, again, could throw new light on the sphincteric action in normal and pathological conditions. He described the technique to be employed in using lipiodol, and the proper way of taking radiograms of the part. The injection was painless and discomfort to the patient was considerably less than that caused by urethroscopy or cystoscopy, and no ill effects, immediate or remote, were experienced.

The Venous System

Dr M. C. COSMAN (Boston) reported on a comprehensive study of brain tumours by means of x-rays. Certain of these tumours gave signs that furnished a clue, not only to their location, but to their type. In gliomas only 11 per cent might be expected to be seen radiologically, but pituitary tumours were characteristic, and meningiomas showed recognizable changes. In ten cases which came under his observation aneurysm of the intracranial portion of the internal carotid diagnosed radiologically had been confirmed either by operation or autopsy.

Among several other papers dealing with the localization of brain tumours and compressions of the spinal cord was one by Dr Jacques LOURISTIN (Aix les-Bains), in which he described the value of radiologic diagnosis by the lipiodol method for localized compression in the spinal cord as well as for exploration of the bronchial tree. He said that lipiodol was eliminated after a time, and did not act as an irritant.

The papers on radiological diagnosis were so numerous that there was little time for discussion. Moreover, very many of the papers—and those some of the most valuable—were scarcely intelligently reported without the illustrations which accompanied them. Very frequently the illustrations overshadowed the text. This applies to such papers as that by Dr H. J. P. PIER (Montreal) on normal varieties of bone simulating disease, to the very able paper by Dr WOODWARD MORISON (Manchester) on diaphragmatic hernia to Professor KILIAN's anatomical atlas of the x-ray signs in phthisis, and to the whole group of papers, chiefly by American and German authors, on cholelithography.

Cinematograph Demonstration

Two or three of the papers were illustrated by the cinematograph. Dr FRANKEL (Berlin) gave by this method a demonstration of a new symptom of ulcer ventriculi within folds. Dr L. G. COLE (New York) showed a long reel of cinematograph film, which had been produced under his direction, to illustrate the anatomy, physiology, pathology, and radiology of the stomach. The gastric cycle and the action of peristalsis were wonderfully well shown. All the ingenious devices of screen production, familiar to the public in the animated cartoon of which the immortal "Felix" is an example were employed to tell either the profession or the public—one was not sure which—everything that could be told about the stomach, and the film ended with some comic "business," in which a surgeon and a physician, supporters of rival theories, were left belabouring one another in true knockabout style! Dr Cole also showed a very elaborate film production illustrating tuberculosis, once again with all the brightness of subtitles and "close-ups," and the movement of inanimate objects—a curious and clever mixture of scientific demonstration and amusing entertainment.

RADIOTHERAPY

Radiation in Cancer of the Breast

Dr CASMAN (Antwerp) showed a remarkable cinematograph film illustrating the operation, in an actual case, of burning radium tubes in the breast. In cancer of the breast he favoured a combined method whereby x-rays,

radium, and surgery were all employed. Each of these agents used alone had its limitations. The difficulty with surgery was twofold: the unsuspected extent of the lesion and the anatomical impossibility of the extirpation of the tumour. The percentage of surgical successes left very much to be desired. The difficulty with x rays was to ensure that a sufficient amount of x -ray energy was absorbed in the tumour. Radium had a more limited field than x rays, but its action was more powerful. He began his treatment of a case with the x rays, making them embrace the whole area of infection as far as possible, thus, as he described it, "rounding up" the cancer. Some four or five weeks after the x -ray application he made a small "corner-shaped" incision and carefully buried radium tubes surrounded by gauze and fixed at a certain distance from the edges of the area to be treated. By using this method he had been able to employ an intensive radiation without menaces to the adjoining tissues, the radium being buried at some distance from the skin. In estimating the radium dosage the x -ray irradiation which the tissues had absorbed must not be lost sight of. Dr. Casman contented himself with the film demonstration of his technique and did not enter upon a discussion of comparative results.

Dr. BURTON J. LEE (New York) gave a report on a series of eight primary operable cases of carcinoma of the breast from the Breast Clinic of the Memorial Hospital in his city. All these cases had been treated entirely by irradiation, without surgery at all. A period of four and a half years or longer had elapsed in each of the cases since treatment was begun. The reason for withholding surgery was either the age of the patient or her refusal to submit to operation. He had to confess, however, to a considerable pessimism with regard to the end results of surgery in the treatment of mammary carcinoma. In this group of eight cases the oldest patient was 90 years of age, by the introduction of radium tubes she was made comfortable for three years until her death from intercurrent disease. The average age of the patients was 58, the rate of growth of the disease in six of the patients was slow, and in two moderate. Axillary nodes were palpable in two of the patients. In the three cases in which biopsy was done the result showed carcinoma simplex. Three of the patients were treated entirely by x rays, of these one was alive, and the other two had died respectively two years and four years following treatment. Radium was used alone in two patients, and radium and x rays combined in the other three. The radium used was approximately 1 millicurie per cubic centimetre, and the x rays were from a low-voltage tube, 6 min. exposure, focal skin distance 10 in., filtration 3-4 mm. aluminium. Of the eight cases five were now alive and well, two had died from intercurrent disease, and one of metastases. He held that radiotherapy was the treatment of choice in primary operable carcinoma of the breast in those of advanced age, and was justifiable if surgical intervention was refused, the results in this limited group of cases might be compared with the results obtained in surgery without disadvantage to radiotherapy.

Inoperable Carcinoma of the Cervix Treated by Radium

Dr. MALCOLM DONALDSON reported on 85 cases of inoperable carcinoma of the cervix treated by radium. His paper embodied the conclusions given in his article in the *BRITISH MEDICAL JOURNAL*, May 9th (p. 876). He added that he was still in doubt as to whether it would be better further to increase radium intensity (either per unit of needle or by inserting more needles) or to increase the duration of application. Although the cases treated by his latest technique were an improvement on the previous ones, yet in those cases which were not doing well the site where growth went ahead was more often in or around the portion of the rectum lying beneath the vagina. It had occurred to him that this was due to the fact that the intensity in that area had been too much diminished in the effort to get the bulk of the radium against the more localized growth in the broad ligaments. In his next series of cases he intended that the time factor should be the same—namely, 144 hours—but that the number of needles should be increased, several being placed around

the lower part of the rectum. He realized that by so doing a great deal of proctitis and even fistulae might be set up, but possibly the fear of this complication had been the cause of this portion of the body being left at the mercy of the cancer cells.

The paper was discussed by Professor DAELS (Ghent), Dr. BURTON LEE (New York), Dr. M. R. J. HARRIS (Dublin), and others. Dr. ZWEIFEL (Munich) said that at his clinic radium had been used in cancer of the cervix, but subsequently a combined method of radium and x rays was chosen. Among the operable cases there had been 43 per cent. of cures, and among inoperable ones 7 per cent. of definite cures. He hesitated to include the more recent cases, but he believed the proportion of cures would prove to be higher, thanks to the combined method now used. Professor HERMANN WINTZ (Erlangen) said that squamous carcinoma of the cervix was much more sensitive to x rays than to radium.

The Encirclement Method of Radium Treatment

Mr. SIMPSON HANDLEY (London) described his encirclement method of radium treatment. He said that every aggregation of cancer cells had a definite life cycle, and after increasing in size for a varying period and at a varying rate tended spontaneously to undergo fibrotic changes. The centre of a mass already degenerating or dying would succumb to a much smaller radiation dose than the actively growing periphery. Attention might almost be concentrated on the periphery and the central portion left to take care of itself. The disappearance of a lump of malignant tissue was not of so much importance as the arrest of its spread. In addition to the spread of a nodule by infiltration, cancer cells spread by permeation of the lymphatics, a process which, when once it started, would outstrip the process of infiltration. Often it was best to ignore altogether for the time being the visible deposit and to direct attention entirely to the zone of infiltration and of permeation surrounding it. The radium tubes should be so arranged as to give a lethal dose to that zone. Afterwards, if the nodule had not disappeared, a second irradiation might be given in a narrower circle, and later still, if a vestige remained, another irradiation on the nodule itself.

Malignant Disease of the Upper Air Passages

Mr. DOUGLAS HARRIER (London) said that sarcomas of the upper air passages, especially those of the round-celled type, invariably reacted well to radium treatment. He spoke of cases which had been treated in this way five years ago, and were now completely well and apparently cured. In endothelioma there were some equally remarkable results. In this condition radium might be taken as having diagnostic value. If a tumour was a true endothelioma it would almost entirely disappear under radium. Radium was not equally successful in all diseases of the upper air passages, but in carcinoma of the larynx and some other conditions he thought that surgery by itself had seen its day.

Dr. C. REGAUD (Paris Radium Institute) spoke of the treatment of epithelial cancers of the tongue and floor of the mouth. Out of 174 traceable cases in which treatment had taken place from one to five years earlier, 42 were alive and without any symptoms of cancer—50 per cent. of these had been operable cases and 34 per cent. on the border-line—and another 39 showed healing of the localization in the tongue and apparent sterilization, but had died or were expected to die of adenopathy. The principle of treatment had been to distribute numerous weak radio-active foci in and immediately around the cancerous part, to use the gamma rays only, and to give continuous irradiation over a long time.

Radium Therapy in Various Conditions

Dr. S. A. HEYERDAHL (Oslo) spoke on actinomycosis treated by radium. His first case, before coming for radium treatment, had been operated on twice without permanent result. Radium treatment was tried in 1913, and after ten years there was no relapse. Later he had had the opportunity of treating 17 men and 4 women with

radium, giving usually two or three applications with intervals of six weeks. In all cases there were good results, which had continued up to the present, the treatment dating back for from two to ten years.

Dr F. TOMISIK (Pisguc) gave an account of the treatment of pernicious anemia by radium. He had tried to diminish the activity of the spleen by massive irradiation over long periods, and he had succeeded in twenty cases in which other methods, including blood transfusion, had not succeeded at all. He recommended radium treatment in preference to splenectomy. He also gave an account of the effects of prolonged irradiation in Pisguc during the last few years he had employed a method of protected radium irradiation of the spleen, using 2 mm zinc filters, at a distance of 3 cm. He used 80 to 100 mg of radium, dividing up the tumour area into twenty five small fields and treating each field successively for one or two days. The blood picture greatly improved. Dr R. H. STIVERS (Detroit) said that during the past year he had treated four cases of leukaemia with intravenous injections of radium in order to get the prolonged action of comparatively small doses. Three cases had not been very successful—two, in fact, had died. But in the fourth case the injection of 200 mg was given last October, with marked improvement in November, and the patient had another 200 mg in January. Before the first treatment his blood count was something like 200,000 leucocytes, but since the second injection it had been normal. This patient had previously been irradiated for five or six months, but did not seem to respond, and that was the reason why intravenous injections of radium were given.

Altogether about thirty papers were contributed on the subject of radium, some of them recounting a single observation and others founded on a vast experience. Among the latter was the paper by Professor A. BAYER describing the practice at the Brussels Radium Institute in treating various cancers by a combination of surgery and radium and sometimes a ray also. The total number of cases so treated during two recent years was 742. The results had been particularly satisfactory in cancer of the rectum and cancer of the uterus. He insisted that no one method must be considered as subordinate to any other. He did not approve of the subordination of radium therapy to surgery, as practised in France and in other countries.

X-Ray Treatment of Breast Cancer

Professor HERMANN WITZ, of the Erlangen Clinic, described the results in 106 cases of breast cancer treated by x rays which had been observed for a period of three years following treatment. He divided the cases into three groups: (1) those in which the tumour was restricted to the breast and could be moved, and in which there was no infection of axillary or supraclavicular glands, (2) those in which the tumour had already infiltrated the surrounding region, and axillary glands were palpable, (3) those in which the glands in the supraclavicular region were palpable, and in some cases metastases were also apparent. The cases were those in which on careful examination no trace of cancer could be found, "lost" cases those in which the patient had died or was in a dying condition, and those who could not be followed up.

Group (1)	Treated	Cured	Lost	Clinical Cure
Group (2)	21	20	1	95.2%
Group (3)	41	28	13	68.2%
	44	8	36	18.1%

He noted that in groups (2) and (3) the results were better than in surgical statistics. It was essential that the requisite dose for the destruction of the carcinoma cells should be applied to the axillary and supraclavicular regions as well as to the tumour itself, and of equal importance was a carefully planned scheme of after-treatment. Care must be taken to avoid lung fibrosis, and by adjustment had been brought down to 5 per cent. He found the percentage of successes in primary x-ray treatment considerably greater than in prophylactic x-ray treatment after operation, and he had abandoned prophylactic x-ray treatment in the strict sense of the word, preferring to wait until the nodules on the skin or the gland metastases gave pronounced indications for treatment.

Dr DOUGLAS WINSTON brought forward the results of x-ray treatment in 15 cases of operable carcinoma of the breast. At the present stage irradiation should not be advised in preference to operation or operation was made when patients refused to discuss the technique and results of irradiation treatment. Eight of his cases had been treated solely by x rays, two with radium insertion and x rays and five with surface applications of 0.5 gram radium element and additional x-ray applications. The interim results of the cases were too recent for detailed conclusions—suggested that radiation was a suitable alternative to operation in some operable cases, and the other of the disease itself intrinsically, and the other had been discontinued after two years after treatment had abdominal metastases after a patient. One patient had never cases, but one died acting well locally. Three were new cases, but one died showed no signs of the disease. In the remaining nine cases the general and local condition had taken place or the subject, remarked that statistics in breast cases, but checked on the average duration of untreated cases, it was true that surgical statistics came out very badly by this criterion, but Professor Wintz's figures, on the three year basis would always appear much too good, although, on the other hand, statistics after five, six, or seven years would tell unfairly the other way, because the methods of application had greatly improved since those early days.

The Stimulating X-Ray Dose

Dr E. H. ZWERNER (Munich) opened a discussion on "The stimulating dose." He described a number of experiments by various workers which went to prove the existence of such a dose. It had been shown that plant exposed to small doses of x rays grew more quickly than normal controls. Russ and others had found by experiment on mice a positive stimulation effect. In the irradiation of the tissues in fibroid an increased loss of blood had been noticed, especially when the treatment was given shortly before the period of calving after x-ray exposure. Nearly all malignant tumours could be influenced to more or less increase of growth. In a large number of cases of cancer of the uterus treated at the clinic at Munich many cases of commencing cancer, which if untreated would have lived at least a year, died within a shorter time—even as short as six months—after radium and x-ray treatment, and such cases suggested that it was the radiological interference which had led to the quickened growth. The dose applied in the depth had not been sufficient to kill the growth, but, on the contrary, had stimulated it.

Dr I. S. HENSEN (New York) thought that it was necessary to distinguish between the effect on the cell as an individual unit, on the tissue as a cell complex, and on the organ as a tissue complex. There was no question but that the effect on the individual cell was always in the nature of a "stimulus," an "insult," but in the complex structure of the tissue there came into play compensatory powers which might result in stimulation rather than destruction. Dr DOUGLAS WENSTON (London) said that it was clear from the examination of buds and plants under the microscope that there was a stimulation dose. There were also certain clinical cases which appeared to point to a stimulation dose, and it was dangerous to assume that there was no such dose without absolute proof of its non-existence. Professor WITZ (Erlangen) said that it was only a certain dose, measured by biological standards, which was stimulating. It appeared that 40 per cent of the unit skin dose might be considered a stimulating dose for a squamous-celled carcinoma. Professor BECKER (Paris) said that recent French research had shown that there was a stimulating action, but that it was feeble and of short duration. The effects might partly be due to secondary infection of a microbe character.

Methods in X-Ray Therapy

Dr G. E. FRAHLER (Philadelphia) described what he called the saturation method in x-ray therapy. The principle of it was to repeat x-ray doses at short intervals in order to maintain the erythema dose—which in the case

of unfiltered rays fell by 50 per cent in value in about three days—it approximately its original level. Thus, malignant cells while still undergoing division, received the prolonged maximum action of the rays. This method, which had advantages over the single massive dose, required careful measurement of the quality of radiation and accurate direction of "cross fire."

Dr ISAC GERBER (Providence) spoke of the usefulness of minute doses of filtered radiations in superficial pyogenic infections, particularly of the skin. Needle infections of surgeons had been completely aborted or promptly circumscribed by x-ray treatment. Deep phlegmons and cellulitis would localize very quickly, erysipelas also yielded to this treatment. The dose given was never more than 25 per cent of the skin erythema dose, and was as low as 6 per cent in children. This dose was simply applied to the surface, and in a great many cases a single exposure sufficed. Dr W. MICHURILL (Bradford) referred to the need for adequate filtration when attempting to deal with the conditions. Dr SCHNARUS (Düsseldorf) had proved that the excellent effects of x-rays in furunculosis were caused by an immunity to the staphylococcus developing after irradiation.

Effect of X Rays on Mitosis in Tissue Culture
Dr T. S. P. STRANGEWAYS and others who have been working with him gave a demonstration of their researches on the effect of irradiation on living tissue cells *in vitro*. The ultimate object of their work has been to find the optimum dose of radium or x-rays to destroy a cancer. They also exhibited stained specimens which showed the effects of exposing the cells to radium or x-rays. These brought out the effects of the radiations on actively dividing cells at certain distances and for certain times. A further demonstration given by these workers was of the internal structure and movements of the actual living cell, shown by means of dark-ground illumination.

ACTINOTHERAPY

Sir HENRI GAUVAIN opened a discussion on actinotherapy. He said that the treatment by light was based on clinical experience and observation. Use should by all means be made of the results of discoveries with regard to the action of light on the body, but these discoveries, sometimes apparently contradictory, must not be allowed to deflect the clinical judgement. The clinical result of the treatment given was the final thing to be considered. He himself was in the habit of describing the action of light as twofold—first, on the mind, and, secondly, on the body. At Alton it had been possible to demonstrate that, with exposure to light, there was a definitely increased response of mental health. With regard to the effect of light on the body, he thought it might be described as twofold. There was first the direct or local action, the effect of light on the skin, which was of various kinds, including inflammatory response and the formation of pigment. Some workers went so far as to urge that pigmentation should be avoided, but he believed that pigmentation should be important therapeutic significance. Patients who had a very marked well so frequently did well in other respects that there must be some association between pigment formation and therapeutic effect. Then there were the remote or indirect effects of light, with regard to which he did not propose to speak. There had been a tendency, especially in this country lately, to use very short-wave ultra-violet rays. These had a rapid and remarkable action, but very little penetrative power. He reminded the Section of the antagonism of rays—some rays appeared to stultify the effect of other rays. In fact, light therapy was in some ways the most intriguing of the therapies because of the unexpectedness (even if occasionally the confusing character) of some of its results.

Dr LEONARD HILL (London) gave what amounted to a lecture in this Section on sunlight and artificial sunlight treatment. He mentioned, among other matters, how entirely the effect of ultra-violet rays was screened off by garments, even by the thinnest zephyr. Artificial silk was the most permeable material, being an acetocellulose, whereas natural silk was a protein. If the patient receiving ultra-violet treatment insisted on being clothed the garment

should be an artificial silk zephyr. He went on to point out how little danger from sunburn existed in the smoke-polluted air of English cities, and gave some figures illustrating the striking differences between various localities, even between places so near together as Hampstead and Kingsway, at this last station the ultra-violet rays were not then minimum. There was no need in England to take all those precautions against sunburn which Rolher had found necessary at Leyden. Dr Leonard Hill described the action of ultra-violet radiation on the tissues, saying that it put up a general resistance, not a specific immunity, to infection.

Professor SEVER (Copenhagen) spoke of the action of ultra-violet and visible rays in therapy, and especially how visible rays, penetrating into the skin, heated up the subcutaneous blood. He also insisted on the advantage of radiant visible heat, such as the open fire or the gas fire. Dr R. G. BANNERMAN (Alton) dealt with some of the biological effects of mercury vapour lamps. It would appear that a massive dose of mercury vapour radiation was followed by a phase of depression of the organism, and therefore, while an erythematous reaction might be desirable or even essential in the local treatment of a local condition, it was to be avoided in the treatment of a general condition.

Dr S. ROTUNDO brought forward the results of some experimental research carried out at Giessen University dermatological clinic. The work had shown that in the case of light baths intensive reaction of the skin must be avoided on account of the danger of focal reaction. By combining light treatment with systematic hydrotherapy, massage, and exercises in the sun or in the artificial light bath, the best results were secured. Natural sun baths were best, with quartz lamps it was more difficult to make the pigmented skin hyperemic. It might be that the visible spectrum had a helpful effect, but without ultra-violet radiation no therapeutic effect was possible, whereas the visible rays could be dispensed with.

Dr A. EMMERSON (London) spoke on the bactericidal effects of ultra-violet rays, these effects could be seen when a very thin film of blood containing bacteria was exposed to an ultra-violet source. When photosensitizers such as eosin were added to the mixture of blood and bacteria the direct bactericidal action could take place upon exposure to visible light. Direct exposure of defibrinated blood to ultra-violet rays destroyed the bactericidal properties of the irradiated and slightly haemolysed after one hour's irradiation, and examined by the spectroscope, the presence of methaemoglobin could be detected.

Dr MORRIS LEVICK referred to the importance of red light as a physiological and curative agent. The red rays were absorbed by muscle and, he believed, by inflammatory exudate. Carbon filaments yielded a light much richer in red and infra-red frequencies than the ordinary metal filament, and the infra-red rays could be cut out by red-stained soda glass screens. To avoid undue heating the lamps should be placed at a distance of two feet, allowing of free circulation in the air around the part. He cited the value of red radiations in cases of musculo-wasting, tuberculous ulcerations, and other conditions.

Electrotherapy

One of the three discussions in this Section was devoted to electrotherapy, and was opened by Dr E. P. CUMMERBATCH, who referred particularly to diathermy, and continued by Dr WILLIAM BIERMAN (New York), who described his method of surgical diathermy in the treatment of haemorrhoids, which, he said, was a marked improvement on the cauterization that it caused less injury to the tissues and introduced heat in the most effective way. Dr S. JELLINEK (Vienna) gave an account, illustrated by some remarkable microscopic slides, of the bone changes, immediate and delayed, occurring after electrical shock.

International Units and Standards
The opening of the combined discussion by the Sections of Physics and Radiology on international units and standards for x-ray work was reported last week. A great

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[The President
of the Congress]

part of the discussion dealt with the technique of physical measurement in a way which does not lend itself to a useful abbreviation. The feeling evident throughout the discussion was in favour of setting up a standard which should be expressed in terms of absolute units. Perhaps the most helpful thing was said by one of the British physicists, who declared that the necessary preliminary to a really universal system of measurement would be to arrive at a constant source of current for the tube. If a standard type of x-ray beam with a constant voltage apparatus were available, that beam could be measured in terms of the international unit, whatever that unit might be. The outcome of the discussion was a resolution to appoint an international committee to study the question of measurement. This committee was not appointed at the Congress, because it will be necessary to communicate with the various scientific bodies throughout the world in order to arrive at a representative membership, but it was agreed that the following gentlemen, who constituted the British X-Ray Unit Committee appointed in 1923, should form a group to nominate the international committee: Sir William Bragg (Chairman), Professor F. L. Hopwood, Dr. E. A. Owen, Mr. C. E. S. Phillips, Professor A. W. Porter, and Professor Sidney Russ.

Silvanus Thompson Memorial Lecture

In the course of the Congress the eighth lecture in memory of Silvanus Thompson, founder of the Röntgen Society, was delivered by the Duc de Broglie, the well known French physicist, who is a doctor honoris causa of the universities of Oxford and Leeds. His general subject was the absorption of x-rays and gamma rays and the secondary rays which accompany them. The lecture was a review of recent work and a description of the lecturer's own investigations on x-ray absorption spectra. He said that it was now possible to begin to describe a definite wave-length to the gamma rays, the absorption of which resembled closely x-ray absorption, with certain differences, however, which were very curious to observe in the cloud-expansion apparatus, and might perhaps help eventually to explain the difference between the observed effects of the two radiations. In the concluding part of his lecture the Duc de Broglie suggested that there might be a kind of "trigger" effect of radiation on living cells. On these deep problems ignorance had to be confessed, but there was little doubt that the joint efforts of biologists and physicists would sooner or later cause some ordered conceptions to emerge from the present obscurity. A vote of thanks was recorded on the motion of Dr. A. E. Barclay, seconded by Dr. KAYE.

Protection of X-Ray Workers

Dr. G. W. C. KAYE (National Physical Laboratory) opened a discussion in the Physics Section on protective and manipulative methods. He said that although the radiologist was not likely to tempt Providence by foolhardy exposure, he did not always appreciate the results of scattered radiation. Radiation was given off from the body of a person who was being subjected to x-rays, and the scattering produced by the air in the room in the vicinity of the x-ray tube was something like that of the primary radiation. If the scattering was excessive the operator should be behind a screen or wall. Each outfit should be protected by walls extending from the floor to the ceiling, and floor and ceiling should also be protected. The protecting lead for a strength not exceeding 70,000 volts should be at least 1 mm thick, and for 100,000 volts 2 mm thick. There was a danger in using gamma rays to test the protection of materials, as these made the protection appear much better than it actually was. All protective boxes should be tested for leakage. He was surprised that the open bulb was still being used, as in many cases it was often possible to take a radiogram of the hand in any part of the room. Generous ventilation of the x-ray rooms had an importance second only to that of protection, and nausea, floor space should be adequate, and the material should be wood, cork, or rubber. M. PIRON (Paris) spoke on the same subject, and described an oil-immersed tube, of the same size as the

Coolidge universal tube, which could withstand 200,000 volts on the direct current. Every part of the glass wall was cooled and had the same temperature. After the box was earthed the patient ran no risk of receiving an electric shock. Mr. V. I. PIRNIS (director of radiological research, Woolwich), who said that he had to do with x-ray protection in fifteen service hospitals, laid stress on the need for efficient ventilation. He also related an instance in which several patients in a ward above an x-ray room had ulcer on the heel after leaving hospital, these lesions were undoubtedly due to radiation having reached them through the ceiling.

The Organization of a Hospital Radium Service

Professor L. L. HOLLOWAY (St. Bartholomew's) described the organization of a hospital radium service. The radium of which he was in charge was distributed among 220 containers. He illustrated the various holders, thermometers, and magnifiers for reading identification marks on the needles—all conceived to avoid handling the radium—also the ingenious drawers, lead encased, in which radium was kept. He submitted a list of the regulations operative in the hospital. Dr. G. FAIRLIE (New York) said that in his hospital colour was largely used for identifying tubes at a distance, and in that way no open wounds resulting from the manipulation of radium had to be dealt with, though the fingers, especially around the nails, became red and scaly.

Exhibition of Apparatus

During the four days of the meeting an excellent exhibition of apparatus and accessories associated with x-ray work and electrotherapy was held at the Central Hall, to which over thirty firms contributed.

THE CONGRESS DINNER

The Congress dinner was held at the Hotel Cecil Central on Thursday evening, under the presidency of Mr. C. THURSTON HOLLAND, who was supported by Sir Humphry Rolleston, F.R.C.P., Dr. E. M. Callender, President of the Medical Society of London, Sir Robert Jones, Sir Dawson Williams, and other members of the Committee of the Congress and the officers. Representatives of seventeen countries were present.

The President recalled the early days of Roentgen's epoch-making discovery, less than thirty years ago. Soon after the discovery was announced the speaker became possessed, through the generosity of his great friend, Robert Jones, of a complete x-ray apparatus—cost outfit—coil, tube, tube stand, and electrical supply—less than £30. Nowadays a young radiologist, if he desired to practise all the branches and to the full extent, would require an outlay on instruments of approximately £3,000. The early work on radiology was done by a band of youngish men, all comparatively unknown in medicine and surgery, who had to fight to a large extent against prejudice, and to wait a considerable time before they were able to establish radiology as a means of diagnosis—to say nothing of treatment—in the position it now held. But what would medicine and surgery be at the present day without radiology? Many of that band of youngish men had suffered physically, some had lost their lives. Quite recently radiology had had to mourn some great figures whose lives might have been prolonged had their enthusiasm been less—Leonard of Philadelphia, Albert-Schönberg of Hamburg, Beigomio of Bordeaux, and in this country Archibald Reid. To-day it was possible for a young man to start on a career of radiology without taking any of these risks, what was more, he could start with the advantage of the knowledge that the older men could impart. He could take diplomas in radiology at two universities—Cambridge and Liverpool—and soon he would be able to take a diploma at a third—Edinburgh. Nevertheless, the speaker did not envy the young men. It would not be theirs to know the thrill of discovering for the first time a stone in the kidney, or of seeing as a novel thing the outline of the stomach under the opaque meal. Yet, no doubt, there was much still to be done, perhaps only the threshold had been reached, and if such congresses as the present were to be repeated, and such work had a joy which money-making could not give. The President concluded

with a tribute to some of the men behind the Congress—to Dr Robert KNOX, the moving spirit, the Presidents of the three co-operating bodies, Dr Barclay of the Roentgen Society, Dr Melville of the Electro-Therapeutic Section of the Royal Society of Medicine, and Sir Humphry Rolleston of the British Institute of Radiology, the honorary treasurer, Dr James Metcalfe, and the joint secretaries, Dr J. E. A. LANHAM and Dr John Muir.

Delegates from the different countries then expressed, most of them in one or two sentences, their appreciations.

Professor C. BÉCLÈRE, speaking in French, after an eulogy of the organizers of the Congress, referred to the appropriateness of the portrait of Roentgen on the dinner card. He said that this was an act of justice and of gratitude, a proper homage to the intellect of the scientist and the character of the man. What portraits might accompany that of the great Roentgen at future Congresses? He hoped those of Henri Becquerel and the Curies, whose discoveries had opened a new domain to radiology. Such a group would be an eloquent symbol of the intimate bonds which united great discoverers, and a testimony to the fact that this science of radiology, like other sciences, was a collective piece of work, an achievement to which men of many different countries contributed—here and there a man of genius, but also, not less to be regarded, a multitude of modest workers animated by the same spirit. It was essential that the co-operation in science of men of different nations should become closer, more active, and more powerful. One of the necessary conditions for the progress of radiology was the *entente* between radiologists of all countries.

Professor HANS DIETLEN, speaking for German radiologists, said that internationalism had always been a necessary condition of effective culture, and his countrymen were grateful for the opportunity of participating in this gathering.

Professor M. NEMENOV (Russia), who spoke in German, said that the Russian delegation came from a far country after a political earthquake, and were hardly sure of their reception, but it was enough for them to exchange the first few words to know that they were in hospitable company.

Professor CARL SONNE (Denmark) said that his country was the first to place actinotherapy on a firm scientific basis, and he was glad to find actinotherapy represented by a section in the Congress. Dr L. F. DRIESSEN (Holland) said that he spoke for a small country, but he was glad to point to the disproportionately large attendance of members of the Dutch Roentgenological Society, of which he was president. Professor GÖSTA FORSSELL (Sweden) said that the Congress was a model to all future international meetings, but those who entertained subsequent Congresses would be hard put to it to reach the high level of British hospitality. Dr P. M. HICKES (United States) presented the felicitations of American radiologists on "pulling off" such a wonderful Congress. If the statesmen and editors of the world would take a lesson in brotherly love from the scientific men the troubles of the world would very soon be straightened out.

Others who responded more briefly were Dr CARLOS HEUSEN (Argentina), Professor A. SCHÜLLER (Austria), Professor DE NOBELE (Belgium), Dr HOWARD PIRIE (Canada), Dr W. ALTSCHUL (Czechoslovakia), Dr M. PONZO (Italy), Mr M. R. J. HAYES (Irish Free State), Dr S. A. HEYERHAEL (Norway), Dr J. DEBICKI (Poland), and Dr R. FEISSLY (Switzerland).

MACKENZIE DAVIDSON MEMORIAL LECTURE

The Mackenzie Davidson Memorial Lecture, held under the auspices of the Electro-Therapeutic Section of the Royal Society of Medicine and the Roentgen Society, was delivered by Sir BERKELEY MOYNIHAN on Friday evening before a very large gathering. Among those present was Lady Mackenzie Davidson. Sir Berkeley Moynihan's lecture on "The relationship of radiology and surgery," is printed in full at page 47 this week.

Dr STANLEY MELVILLE proposed, and Dr A. E. BARCLAY seconded, a vote of thanks to Sir Berkeley Moynihan, and Mr THURSTAN HOLLAND, who presided, presented him with the Mackenzie Davidson memorial medal amid much acclamation.

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS

ELEVENTH ANNUAL CONFERENCE

THE eleventh annual conference of the National Association for the Prevention of Tuberculosis was held at the house of the Royal Society of Medicine on July 6th and 7th, under the presidency of Sir ARTHUR STANLEY. The proceedings were opened by Sir KINGSLEY WOOD, M.P. (Parliamentary Secretary to the Ministry of Health), who expressed official appreciation of the work of the association and of its character as a voluntary body.

Visitors were present from the United States, Denmark, Austria, and Russia. The Russian representative, Dr VONEBELFF (Moscow), said that the health of the Russian population was rapidly improving, and the campaign against tuberculosis was now organized on a large scale. The propaganda found successful in England was being followed, and the people were encouraged to active participation in health work. Dr WOODS HUTCHINSON (United States) spoke eloquently on the decline of tuberculosis as a result of sanitary skill and enlightened public opinion.

Sir ARTHUR STANLEY said that the association, responding to a suggestion made at the last conference by the late Minister of Health (Mr John Wheatley), had drawn up a memorandum on the establishment of model workshops for the tuberculous community, but owing to the change of Government and the pressure of public work the matter was in abeyance. The propaganda of the association had gone steadily forward. A vote of thanks to Sir Arthur Stanley for his services as chairman of council was recorded on the motion of Sir ST. CLAIR THOMSON, seconded by Sir HUMPHRY ROLLESTON.

Tuberculosis in Childhood

Two subjects were before the conference, one of them "Tuberculosis in childhood," and the other "The treatment of tuberculosis by sanatorium." Professor PIQUET had been announced to open the first of these discussions, but owing to illness in his family he was unable to leave Vienna, and his paper was read by Dr Richard WAGNER, of the children's clinic in that city. Professor PIQUET made use of the statistics of the Registrar-General for England and Wales to show the enormous significance of tuberculosis as a cause of mortality at the most efficacious period of life. It appeared to assert itself as the chief mortal disease from the age of 10 up to the age of 46. Dr WAGNER also read a paper of his own, on the nutritional treatment of tuberculosis in childhood, in which he gave some statistics of the morbidity from this cause in Vienna and Lower Austria. He described also the nutritional classes at the children's clinic, and the results which followed.

Dr A. STANLEY GRIFFITH dealt with the bovine tubercle bacillus as an important source of human tuberculosis. The highest percentage of bovine infections was found in children under 5 years of age. It would be difficult, though not impracticable, to free the whole country from bovine tuberculosis, but until the ideal of tubercle-free herds was attained universally all milk not from such herds or not efficiently pasteurized should be sterilized in the home before being given to infants, children, or sick persons. As to the objection that bovine tubercle bacilli in milk might confer an immunity to the more dangerous human infection, he thought there was no evidence that the absorption from the alimentary tract of small numbers of bovine bacilli had any significant or lasting immunizing effect. Dr C. RIVIERE said that in modern civilized communities repeated infection with the tubercle bacillus was inevitable. This infection led to immunity and protection against the disease. The primary infection was of importance, and probably determined the whole future *qua* tuberculosis. Infection in early infancy was dangerous and postponement was valuable, but could only be temporary. The infection might be with the highly virulent human strain, commonly by the air passages, or with the bovine strain, comparatively innocuous to man, by the alimentary tract. Was it worth while to withhold this latter source of infection knowing that the alternative was the dangerous

human type of the bacillus? Nevertheless, he hoped that some day public opinion would be ripe for a less clumsy procedure of tubercle immunization than the giving of milk.

SIR ROBERT PHILLIP spoke of the lines on which preventive treatment of the child had proceeded of recent years. The Giancher method, by which delicate children were transferred from dubious home environment to presumably healthy surroundings in the country, was subject to the fallacy that most of the children thus taken in hand were already tuberculous, and the excellent results following the system were to be attributed to a progressive detubercularization along natural lines. Another proposal was that prior to "spontaneous" infection the child should undergo artificial inoculation in order to anticipate the effect of exposure, but it had yet to be seen to what extent, in the absence of disease, parents would consent to submit the newly born infant to inoculation with tubercle bacilli, however modified, and however simple the process might be. His own plan of "anticipatory detubercularization" proceeded on the assumption that infection took place practically always during childhood, that the occurrence of the subsequent process of tubercularization might be definitely determined, and that it was possible to limit and counter the process by detubercularization. His method had two aspects—environmental and antigenic. The results had been described by him in the *BRITISH MEDICAL JOURNAL* (March 24th, 1923).

Among other speakers Sir WILLIAM THOMPSON referred to the drop in child mortality from tuberculosis during recent years in the Irish Free State, Dr FRANCIS HEWITT related some experiences from the Edinburgh Royal Infirmary, and Professor LOUIS McLEOD dealt with the provision for infected pregnant women.

On the second day of the conference, with Sir ROBERT PHILLIP in the chair, the discussion was continued, and Sir HERMAN GAVARIN gave an address on the prevention, treatment, and after-care of surgical tuberculosis in children. He refused to believe that bovine tuberculosis could not be relegated to the horrors of the past. The argument that drinking slightly infected tuberculous milk would enable one to acquire immunity to infection he described as a dangerous and unnecessary doctrine. Dr GORDON PUGH followed with an illustrated description of the constitutional treatment of early non-pulmonary tuberculosis as carried out at Queen Mary's Hospital for Children at Carshalton, and showed the special spinal and hip frames and carriages designed to facilitate the application of heliotherapy, arc-lamp treatment, and gymnastic exercises, while immobilizing the diseased part. Professor JOHN FRISER referred to the relative incidence of surgical tuberculosis among town and country children. In Scotland the disease was more frequent among dwellers in the country. In the cities the organization of milk inspection was thorough, in the country it was too often a dead letter.

After some general discussion the conference unanimously passed resolutions urging the Government to use every possible means to render effective all the provisions enacted in the Milk and Dairies Acts of 1914 and 1922 and the subsequent regulations, also asking the Ministry of Health and the Board of Education to consider the desirability of including in school education more definite instructions regarding the principles of health conservation, personal and communal, and simple methods for the prevention of tuberculosis.

The Sanoerysin Treatment

The final session was concerned with the treatment of tuberculosis by sanoerysin, and was almost entirely occupied by lectures, each of an hour's duration. Professor HENRI MOELLGAARD of Copenhagen recapitulated the principles and results of the treatment, as set out in his recent article in these columns.¹ He added that up to the time he wrote his paper he believed that sanoerysin had no influence on surgical tuberculosis, but some evidence had come before him during the last few days that in suitable doses it was effective here also. The results of his

veterinary experiments had been supported by some recent researches made in the Danish State Serum Institute, and reported by Dr MADSEN in May last.

Dr KARL LARSEN (Professor of Clinical Medicine, Copenhagen University) described experiences with sanoerysin treatment during the last seven months in the university clinic. Before coming to the results he dealt with the reactions and dangers of the treatment. The treatment resolved itself into a short series of injections, the effect of which on the patient's temperature diminished with each injection. The greatest risk was the occurrence of the acute stage of shock described by Professor MOELLGAARD, the shock was most likely to occur when the injection was given while the patient still had fever reaction from a previous injection. The danger of the treatment really consisted in following the injections too rapidly upon one another, with consequent accumulation. He advised a less intensive treatment than the one originally proposed, so that the harmful effects might be reduced and controlled. In grave febrile cases it was necessary to be particularly cautious. Dr LARSEN then showed charts and x-ray photographs relating to a small number of cases of pulmonary tuberculosis in which a decidedly favourable effect of the compound was seen. Apart from improvement in the general condition—the cessation of the febrile or subfebrile state—there were certain objective changes, particularly the disappearance of rales, freedom of the expectoration from bacilli, and improvement in the x-ray picture. The material was as yet too small and heterogeneous for conclusive statistics to be furnished, but an estimate was possible in about 40 cases coming under his own observation in which the treatment was finished or almost finished. Eight of these patients must be regarded as clinically cured, 17 showed very considerable improvement, 9 still showed signs of active phthisis after six months' treatment, and in 6 patients the disease had not been arrested at all, but rather had tended to spread. The best results were obtained in patients who had been suffering for less than a year from the illness. During the last twelve months the treatment had been employed in Danish sanatoriums, and here the statistics, relating to 250 cases in which the treatment might be said to be finished, showed decided improvement in 52 per cent. It was still too early to give a pronounced and final verdict, but it seemed to him that the compound was able to bring about in many patients a pronounced and rapid improvement not obtainable by any other method.

Professor EILE CURRIE said that his experience had been confined to eight selected cases. All the cases had done well, and the improvement had been so much more rapid and dramatic than was to be expected in cases of this type that he was unable to avoid the conclusion that sanoerysin was the favourable factor in each. These eight cases had impressed themselves on his mind more sharply than a far larger number of cases in which other recent methods had been tried. All the cases at first lost weight under treatment, and all experienced severe reactions at the beginning, but, on the other hand, the weight was rapidly regained after the inoculations, the cough diminished or disappeared, the sputum in several of the cases disappeared or showed a great fall in bacterial content, and some improvement was noticed in the x-ray picture. The use of serum was definitely helpful in the control of albuminuria, but it had its own inconveniences. He had found it useful to space the doses rather more widely than was originally advocated by Dr SEECHER during his visit to London in December last. The speaker believed that the use of sanoerysin should be safeguarded, not so much by reducing the dosage as by selecting patients with tuberculous lesions of relatively small extent. He thought that this treatment should not at present be handed over to general practice, but should be carried out by specialists at special hospitals.

SIR ROBERT PHILLIP said that the Medical Research Council was hard at work to determine whether, on the one hand, the experimental process advanced by Professor MOELLGAARD was sound, and, on the other, whether and to what extent the results brought forward could be corroborated by further results.

¹ *BRITISH MEDICAL JOURNAL*, April 4th, p. 643. See also preliminary report by the Medical Research Council, *BRITISH MEDICAL JOURNAL*, April 18th, p. 735.

British Medical Journal.

SATURDAY, JULY 11TH, 1925

INTERNATIONAL RADIOLOGY

THE Congress of Radiology in London last week may be considered to mark the coming of age of radiology as a special department of medicine. It is true that it is thirty years since Roentgen made his discovery bringing to the point of utility a series of researches which had been prosecuted in a rather desultory way by physicists in this and other countries. But some few years elapsed before it was realized how great were the services the discovery might render to various arts, to none have they been so great as to medicine. The conference was not summoned as an International Congress, but it was attended by representatives of the specialty in many countries, who quickly voted with unanimity that it should be recognized as the first International Congress of Radiology.

If the Congress marked the coming of age of radiology, it was Sir Berkeley Moynihan who made the birthday speech in his Mackenzie Davidson Memorial Lecture which is published in full in the opening pages of this issue. That the lecture should have been delivered during the first International Congress of Radiology was most appropriate, for Davidson, then at Aberdeen, was one of the first to take up the new method seriously, to equip himself with the best apparatus available, and to be satisfied with nothing but the best results then possible to be obtained. Afterwards he removed to London, and, by his ingenuity in devising apparatus, his energy in trying new methods and the enthusiasm with which he preached the new doctrine, did in the early days more, perhaps, than anyone in this country to establish its practice on sound lines. The choice of the orator also was fortunate. Sir Berkeley Moynihan's powers of lucid exposition are unrivalled, and no surgeon of the future will be in quite so good a position to describe the greater accuracy of diagnosis which is owed to radiology, for he has watched its development and himself experienced the steady increase in the value of the information it can afford. Emphasis must be laid on the word 'can,' for, as he insists more than once, the radiologist must be allowed time enough for his study of the case if the full advantage of all that he can do for the surgeon is to be obtained. It will not do merely to direct that an x-ray examination must be made, the surgeon—or, for that matter the physician, whether doomed to be a surgeon or not—should consult with the radiologist. If this were always done it would prevent misunderstandings and would incidentally reduce the activities of the non-medical radiologist, a reform for which there is need. Emergencies apart, what the surgeon ought to say to the radiologist is "Examine this case thoroughly, using all the methods at your disposal, and then tell me and show me the evidence you have collected, giving me your judgement on its significance."

Sir Berkeley Moynihan confined his survey to the alimentary canal, going beyond it only to make a brief reference to the urinary tract. Even so, he had a very wide field from which to gather his harvest, and he brought in many sheaves, for, much as radiology has

done to make diagnosis more accurate in diseases and injuries of the head, the chest, and the limbs, it has done more, with the possible exception of the last named, for the abdomen. He did not stint his praise. Speaking of gastric diseases, with special reference to ulcer, he proclaimed that it was hardly too much to say that we owe almost everything to the radiologist, the accuracy of the radiologist in the diagnosis of gastric ulcer nearly approaches that of the surgeon who, with the abdomen open, inspects and handles the stomach. Of what used to be called idiopathic dilatation of the oesophagus, now known as cardio-sprism, we could, he said, "know nothing accurately apart from the examination made by the radiologist." Again, he observed that the recognition of diaphragmatic hernia "without the aid of radiology is excessively difficult or perhaps impossible." Passing to the diagnosis of diseases of the gall bladder, he said that in cholelithiasis radiology enables a diagnosis to be made which otherwise would be in doubt, it discovers associated lesions in neighbouring viscera, and is an instrument of research into the composition of stones, and may so throw light on their formation.

But, though he was generous in recognition Sir Berkeley Moynihan discussed quite frankly the limitations of radiology, directing attention in particular to gastric ulcer and cholelithiasis. His observations should be read in full, but a not unfair summary would be that a positive report from the radiologist is of far greater value than a negative, and that where a negative report is opposed to the impression produced on the mind of the surgeon by all the clinical evidence taken together it should be disregarded. Perhaps here we have light thrown on dark words he used at the beginning of the lecture when he described himself, not for the first time, as "a physician doomed to the practice of surgery." Others, perhaps, would gladly accept the doom without repining, but the phrase was something more than a jest. It meant, we suspect, that everyone must, before all things, strive for the highest attainable accuracy of diagnosis, and must neglect no means to that end before resorting to the knife—that the day of the "look and see" surgeon has passed. He was careful to insist that once the diagnosis has been made as precise as possible there should be no delay in acting upon it. This is one of the observations that make the lecture of so great value to the general practitioner. Before closing Sir Berkeley Moynihan spoke shortly of therapeutic applications of radiology, and referred to a method he has tried in carcinoma of the stomach—that of opening the abdomen and exposing the organ for forty minutes to x-rays under a single layer of macintosh gauze. In two cases in which this method was used the results proved decidedly encouraging for when the abdomen was opened again seven and nine weeks later the growths were so changed and shrunken that it was possible to remove them with all their attached glands. Reports of future experience with this method will be awaited with particular interest.

The verdict of all who attended it is that this first International Congress of Radiology was a great success. Foreign members praised the way in which it was organized; the credit is in large measure due to Dr Robert Knox, chairman of the Organizing Committee who was described by Mr Thurstan Holland at the dinner as the moving force behind the whole project, Dr Stanley Melville, secretary-general, and the joint secretaries, Dr Lynham and Dr Muir, upon whose shoulders, as secretary of the British Institute

of Radiology—the headquarters of the Congress—a great deal of the preparatory work fell

The Congress was international, no nation was excluded, and twenty-two, we are told, were represented. It had several set discussions and saw some striking demonstrations, but the number of papers in the three sections was so large that time to debate them could not be found. Following our preliminary notice published last week, the work of the Congress is reported at some length in this issue (p. 67). The full text of all the papers will, we are told, eventually be published in the *Journal of Radiology*.

Before separating, the members decided by a unanimous vote that the next Congress shall be held in Sweden three years hence; it was to be noted at the dinner that no speaker was received with applause so warm as the leading representative of that country, Dr. Forssell, who seemed to personify for his brother radiologists the spirit of international amity the Congress was designed to promote.

THE CIVIL RESEARCH COMMITTEE.

We gave last week (p. 25) some particulars of the Treasury minute defining the functions of the new Committee on Civil Research and of the Lord President of the Council's speech indicating the objects with which it has been set up. Lord Balfour described the new Committee as "an additional wheel required to complete the mechanism of Cabinet government," and he specified three directions in which the services of this new Committee would at once be available—namely, in co-ordinating the work of different Government departments, in tackling special problems, and in securing the counsel of the Dominions.

Health questions have suffered as much as, if not more than, other questions from our present ill-co-ordinated system of administration. Such problems as hookworm disease, sleeping sickness, yellow fever, plague, and bilharzia are international, and demand co-operation between neighbouring countries. It may be difficult to secure this co-operation if rival Governments must first be consulted, but within the British Empire co-operation should be possible of achievement. Nevertheless, our present system of administration offers insuperable difficulties, as all reformers in imperial hygiene know only too well. Thus, all medical problems in India are handled by the India Office, and those of Ceylon by the Colonial Office. Hence, under existing arrangements the much needed campaign against hookworm disease would be superintended by two separate organizations, each with its own traditions, and each jealous of any infringement of its rights. A traveller returning from a tour of the Empire would find it difficult to discover which Government department, if any, supervised the health questions which seemed to him so pressing in different parts of the Empire. The Foreign Office, the Colonial Office, the War Office, the Air Ministry, the Admiralty have each established areas of authority, the self-governing Dominions are, of course, entirely independent in such matters, so that the means they are taking to tackle their health problems come only unofficially to the notice of the central seat of government. In the face of such a complicated and unco-ordinated system, small wonder that no bold attempt is made to attack problems of imperial health.

Health matters are, we understand, among the first which the new Civil Research Committee proposes to study, and the particular question of co-ordinating

medical services throughout the Empire is worthy of the first claim on its attention. Its elastic nature should enable this Committee to cope with almost any question, for it would appear that the only permanent member of the Committee is the Prime Minister, though the Minister nominated by him to act as chairman will, it may be assumed, act in that capacity continuously for a considerable period, if not for the lifetime of the Ministry. For any particular subject to be discussed the chairman (or the Prime Minister) will call together a committee of experts. It may perhaps be assumed that there will be committees dealing with shipping, trade, foodstuffs, agricultural problems, mining and many other questions which require the co-ordination of different Government departments.

In its working the new Committee will not be hampered by rigid rules. The Treasury minute lays it down that the Civil Research Committee shall be an advisory committee without administrative or executive functions. Lord Balfour, in laying stress on this, said that it would be modelled on the Committee of Imperial Defence, which was established some twenty-five years ago to co-ordinate the work of the army and navy and to consider all questions connected with the defence of the realm. In referring to the advantages which flowed from the work of this body he remarked that a valuable characteristic of the Committee of Imperial Defence was that it could not give orders to anybody, instead of increasing friction between departments and causing jealousy against itself in the minds of departments, it was of inestimable value in making all the departments work as parts of one machine. We imagine, then, that health questions which have been discussed by the Civil Research Committee, often, probably, together with representatives from different Government departments and from the Dominions and Colonies, will be referred back by the Cabinet to the home departments concerned, and, if the Committee's deliberations have pointed to any practical measures, it will bring pressure to bear on each department to see that these are executed, and will satisfy itself that they are executed.

So far we have spoken only of the more efficient working of the machinery of State as already established, but we think we detect in the establishment of this advisory body something more than a touch of lubrication of the wheels of government. We hope we may discern beneath the argument of expediency official recognition of the principle that henceforth human life must be guided by science. Nearly all the necessities of life are brought to this small island from distant lands, and a watchful eye must scan the activities of far away fields. In our peculiarly vulnerable position foresight alone can protect us from dangers threatening ahead, and for this peering into the future we shall need the help of every instrument of science. The Civil Research Committee will, we hope, not only possess the seeing eye, but also the co-ordinating brain. Certainly we need both these faculties in all the big health problems of the Empire.

THE Royal College of Surgeons of England will give a reception at its house in Lincoln's Inn Fields on Monday evening, July 13th, in connexion with the Convention of English-speaking Ophthalmological Societies. Fellows and Members of the College wishing to attend are asked to apply to the Secretary of the College for cards of admission.

AN EXHIBITION OF SPECIMENS

During the present month a special exhibition of specimens is to be seen in the museum of the Royal College of Surgeons of England, Lincoln's Inn Fields. The specimens shown represent additions and donations made during the past twelve months, and many of them are of exceptional interest. One hundred and seventy of these new specimens are of a pathological nature, and have a direct bearing on problems which are now occupying the attention of medical men. Especially numerous are the preparations which illustrate lesions of bone. The visitor's eye is at once attracted by a series which was presented to the College by the executors of the late Sir William MacEwen, and represent the results obtained by that great surgeon during his experimental inquiry on bone growth. Sir William often visited the museum of the College to study Humerian specimens, particularly those which illustrate the manner in which bones grow, and had expressed a wish that his own might be added to the Humerian series. A valuable addition to the same series is made by Mr. I. W. Hey Groves. It is evident from the number of specimens of myeloma in the neighbourhood of the knee-joint that this form of tumour is engaging the attention of surgeons. Visitors to the exhibition have an opportunity of satisfying their curiosity as to the nature of the ailment which so disfigured the face of a chimpanzee, known as "Mick," which lived in the ape house of the Zoological Gardens for twenty-seven years. His muzzle became massive, and two horn-like bony excrescences arose at each side of his nose—very similar to the condition seen in the "horned" men of West Africa, a condition now described as frambesial osteitis. The skull of "Jelly," who was also in the Zoological Gardens for many years, is also exhibited, and shows a less marked degree of the same disorder, evidently one which results from some form of slow infection. A striking feature is the massive growth of the alveolar bone of the jaws, with an arrest in the eruption of the permanent teeth. The exhibition contains also some delicate dissections which illustrate points in the finer anatomy of the thyroid and other glands of internal secretion of lower vertebrates. For these Mr. R. H. Burne, physiological curator, is responsible. Of especial interest are the preparations which show the peculiar system of lymph vessels which are connected with the thyroid gland of *Lophius*, the angler fish. Many additions have been made to the craniological and other series in the museum. The exhibition is open to all medical men between the hours of 10 and 5, except Saturdays, when the museum closes at 1 o'clock.

"GOUNDOU" HORNE MEN IN AFRICA

The nature of the osseous tumours involving the infra-orbital ridges of the maxillary bones in a case of the condition, referred to in the preceding paragraph as that presented by the horned men of West Africa, was described to the Royal Irish Academy by the late Professor Alexander Macalister in 1882 and 1883. In 1887 Surgeon J. J. Lempriere, of the Army Medical Staff, described in our columns three other cases of this condition, which is well known on the Gold Coast under the title of "henpuye" or "dog's nose," and on the Ivory Coast as "n'goundou," from which its more common designation of "goundou" is derived. Other accounts of this disease were contributed to this JOURNAL by H. Strickland and J. O. Shucrore. Major Botreau-Roussel, of the French Colonial Army, has now published a book on "goundou," based on his observations on the

Ivory Coast between 1912 and 1917, when he collected 130 cases and operated on 113 patients. He claims to have established that this condition is only one symptom of an hypertrophic osteitis affecting several bones and sometimes involving the greater part of the skeleton. He maintains that it is always secondary to tropical frambesiosis. Professor Cornil of Nancy has shown that the lesions are not tumours in the pathological sense of the term, but are due to inflammatory osteogenic hyperplasia comparable with that occurring in syphilis. Dr. J. N. Roy of Montreal, who was associated with Major Botreau-Roussel in 1912, and has himself observed thirty-four cases, contributes an article to the *Revue de Laryngologie, d'Otologie et de Rhinologie*, in which he disagrees with the view that this condition is due to frambesiosis, or to a lesion of the central nervous system, or to syphilis, or to insect bites. Roy has found spheroidal bodies 25 to 30 μ in diameter in these tumours, and is of the opinion that etiological significance is to be attached to them. While admitting that goundou and yaws are often associated, Roy insists that there is no real connexion between the two diseases. Botreau-Roussel, however, in support of his contention points out that in 103 out of his 130 cases frambesiosis either accompanied or preceded the development of the osteitis, the bone lesions appearing in 98 cases during the eruption or immediately afterwards. He also emphasizes the importance of the fact that the pathological processes in the bones are similar to those in syphilis and frambesiosis. In one case the bone lesions and the skin eruption yielded simultaneously to treatment by novarsenobenzol. The disease is far more widespread than was originally believed, and Roy has collected evidence of its occurrence in the West African littoral, Zanzibar, British East Africa, the Malay Peninsula, the East and West Indies, Southern China, Honduras, Mexico, and Brazil. He mentions an instance of the disease being contracted by a European who had lived on the west coast of Africa for twelve years, and reports the discovery of a skull of a 7-year-old child, found in an Inca grave in Peru, which presented the typical aspects of the condition. The bony growths are usually bilateral, and develop on the nasal bones or on the ascending process of the superior maxilla; these bones may be invaded simultaneously. The disease may become generalized, exostoses forming on nearly all the skeletal bones. The disease occurs usually during early childhood, but is often observed in adults, and is possibly a little more common in males than in females. Botreau-Roussel illustrates his descriptions with a large number of photographs and radiographs, and appends a good bibliography.

A RESEARCH INSTITUTE FOR KENYA

Not long before his tragic death at Nairobi last February the late Sir Robert Coryndon, Governor of the Colony, had expressed himself strongly as to the need for a museum and library devoted largely to the study of natural history and its allied sciences in Kenya Colony, a proposition that has met with the universal approval it deserves. It has been felt in the colony that the services of Sir Robert Coryndon were of the greatest value to Kenya, and it is proposed to build a memorial to him at Nairobi in the form of a hall or the wing of a building to bear his name and form part of a larger museum or institute for the advancement of the natural sciences on the progress of which the welfare of the colony depends. There is at present in Nairobi a small but admirable Natural History Museum, full of merit so far as its restricted resources have permitted its development and receiving some small measure of support from the public purse. It was Sir Robert Coryndon's idea that this museum should be enlarged and extended in connexion with a library and an institute for the undertaking of research, and he

¹ BRITISH MEDICAL JOURNAL, December 10th 1887 p. 1273

² Ibid. 1893 vol. 1 p. 163

³ Ibid. 1910 vol. 1 p. 503

⁴ *Osteites l'antiques (Goundou)*. Par Botreau-Roussel. M. le Dr. Major de Ire Classe des Troupes Coloniales. Collection de la Société de Pathologie Exotique. Paris. Masson et Cie. 1925 (Roy. 8vo pp. 129 69 figures. Fr. 16)

particularly mentioned veterinary and botanical research as called for at the present time. An appeal was issued from Government House, Nairobi, last March, asking for subscriptions to the Corindon Memorial Fund, and this appeal has met with a considerable amount of support locally. It has now been brought to the attention of a wider public, and it may here and now be recommended to the notice of readers of the *BRITISH MEDICAL JOURNAL* as an appeal for funds for an object that is entirely deserving. Sir Robert Corindon had some five and thirty years of experience as an administrator in South Africa and Kenya Colony. He recognized that vast areas of fertile land in the African continent are closed to human enterprise by disease and by the insect carriers of disease that render them uninhabitable for working man and domestic beast alike. He knew that it is to science—bacteriological, entomological, veterinary, and so forth—that we must look for the key to these areas, if they are to be rendered fit for human habitation, whether black or white. To those interested in the population of tropical countries it has long been, indeed, a platitude that the man of science is even more indispensable to the administrator in the tropics than he is in less torrid climates. The fact is known, and, what is more, is acted upon nowadays by our politicians and our statesmen, and was emphasized only a week or two ago by Mr Oimsby-Gore when addressing the Imperial Entomological Conference. As was perhaps natural in the circumstances, Mr Oimsby-Gore eulogized the horn of the administrator in this partnership of government and science. So, too, does the writer of a leading article on "Science and administration" in the *Times* of June 20th, who describes the modern co-operation between statesman, entomologist, bacteriologist, botanist, veterinary surgeon, and medical man in the enterprise of tropical sanitation adding the words "But the part of the statesman is the greatest, because if he fails complete disaster is assured." It is always an ungrateful task to attempt to assess separately the values of the work performed by the hand and the head acting together, although we cannot help thinking that it has been done by some noted fabulist. At any rate, the teaching of experience shows that the plucking of a sleeper across the rails by a naughty child can assume complete disaster to the best train in the world.

THE SANITARY CONDITION OF BARGES

DURING recent years the annual reports of the Registrar-General for England and Wales have provided evidence of the unhealthiness of the occupation of barges and lightermen. Thus in the period covered by the three years 1910, 1911, and 1912 the comparative mortality figure was 1,102, which compares very badly with 790 for all occupied males, of 470 for the open-air occupation of farm labourer, and of 838 for what one might conceive to be the like occupation of fisherman. These facts are commented upon by Dr Dearden in that part of the annual report of the medical officer of health for the Port Sanitary Authority of Manchester which deals with the sanitary condition of ships (pp 39-52). He points out that although amongst bargemen and lightermen there is an excess of liability to fatal accidents, as shown by the mortality rate of 193 against the average one of 49, yet this is insufficient to explain the high mortality figure. Excessive liability to respiratory diseases, particularly pneumonia, is the cause of the high mortality of bargemen. The fisherman whose record shows the effect of a strenuous life equally with that of the bargee, is in a totally different class when respiratory diseases are taken into account. The liability of the bargee to die from phthisis is the same as that for all male workers, as the figures quoted in Dr Dearden's tables show, but these tables, which compare the mortality of bargemen, fishermen, farm labourers, and occupied and retired males, reveal

the fact that the mortality of bargemen from pneumonia is almost twice, and then mortality from bronchitis more than thrice, that of fishermen. The mortality of bargemen from respiratory disease of all sorts is more than twice that of fishermen, and three times that of farm labourers. The occupation of bargee is one that should be favourable to good health, since it is carried out in the open air and involves a considerable amount of muscular exercise, but Dr Dearden's investigations have convinced him that the real reason for this excessive mortality from respiratory disease is to be found in the evil influence of the housing conditions on these boats. On one occasion during the year under review a company was prosecuted by the health authority for a nuisance existing on a barge, the offence being dampness of cabin and bedding owing to rain water and river wash penetrating through the scuttle hatchway. The magistrate decided that no nuisance had been proved and dismissed the summons. This decision must discourage a firm policy of reform.

EPIDEMIC HICCUP

DURING recent years the occurrence of epidemics of hiccup have been reported from time to time, and the etiology of this condition has attracted considerable attention. Dr I. T. Cadham of Winnipeg has recently published an account¹ of the three Winnipeg epidemics in 1919, 1922, and 1924. In the first of these epidemics 1,000 cases were reported, the second was on a smaller scale, but in the third a record of 1,400 cases was obtained in a population of a quarter of a million. Each of these epidemics began early in November, reached its height by the beginning of December, and declined rapidly. The great majority of the patients were adults, and more than 90 per cent of the cases occurred in males, no evidence of any racial immunity was forthcoming. In the 1924 epidemic four patients reported that they had had a previous attack in 1919, and two other patients had had a previous attack in 1921. All agreed that the symptoms in the second attack were less severe than in the first, and each patient was cured within thirty-six hours, whereas the previous attacks had lasted more than three days. Cultures from the naso-pharyngeal secretion yielded a streptococcus resembling that isolated by Rosenow, to whose work in this connexion we referred on April 7th, 1923 (p 603). It was considered, however, that no definite etiological factor had been established, though bacteriological investigations are proceeding. Each epidemic was associated with an outbreak of a catarrhal infection of the influenza type, which, however, appeared two weeks later and occurred equally in both sexes. The relation of hiccup epidemics to encephalitis lethargica has been much discussed, in both conditions the difficulty of tracing infection is pronounced. Dr Cadham points out that the first epidemic of hiccup in Winnipeg, in 1919, coincided with the first epidemic of encephalitis in that city, there being 104 cases of encephalitis, with 25 deaths. During the milder epidemic of 1921, 31 cases of encephalitis were reported, and in the winter session of 1922-23 108 cases, though during that time no record was obtained of a single case of hiccup. Three cases of encephalitis during the 1919 epidemic began with hiccup, one patient in 1921 developed hiccup simultaneously with myeloma of the arms, legs, and abdomen, and during the 1924 epidemic one patient suffered from herpes zoster, hiccup, and lethargy, suggesting the existence of a lesion in the central nervous system. Dr W. R. Brain has recorded the case of a patient developing a mild form of encephalitis lethargica after suffering for a month from intermittent brief attacks of hiccup.² He suggests that hiccup is probably a myoclonus of the diaphragm, a view supported

¹ *Journ Amer Med Assoc* February 21st 1925 p 580

² *BRITISH MEDICAL JOURNAL* November 10th 1923 p 806

by Dr M J Chevis, who attributes to it a rheumatic etiology. Dr Cudham believes that myoclonic spasms of the rectus abdominis occurred more frequently in these cases than is generally recognized. A little light is thrown on the difficult problem of infection by Dr L Archer-Brown,² who describes the circumstances attending the onset of the disease in himself during an epidemic in Philadelphia. Other interesting characteristics of this disease are the intermittent character of the spasms, the mild neuritis frequently following hyperaesthesia of the scalp, face, and neck, the slow pulse, and the absence of pyrexia. Various remedies have been suggested, but their value is difficult to estimate. Sedative remedies, including chloroform and morphine preparations, are perhaps most generally used, and protein injections have been recommended, and benzyl benzoate has been found useful.

THE SPAHLINGER TREATMENT

From Parliamentary reports (p. 89) will be found a very full account of the memorandum presented to the Parliamentary Medical Committee by five of its members who recently went to Switzerland to visit M Spahlinger's laboratory near Geneva. The members of the party acted on their own initiative, and the recommendations with which the memorandum concludes are, by request, omitted. The opinion of the committee appears to be divided upon the question whether any action should be taken by it on the memorandum. M Spahlinger is now in this country, and on July 7th met at the House of Commons the five medical members who had made the journey to Geneva. We are informed that an interview between him and Sir George Newman was then arranged for some day next week, and that the Ministry is likely to maintain the position it has taken up all along—namely, that it is willing to give a thorough test to the method provided an adequate supply of serums and antitoxins can be assured. Another interview is to take place between the five members of Parliament and M Spahlinger on Monday to hear from him whether he can assure supplies for the treatment in London of a considerable number, say 1,000, cases of tuberculosis. As will be seen, the memorandum states that the public can entertain no hope of securing treatment by the method at the present time, and that it will be useless for patients to apply. There is, we are told, again talk of an appeal to the public to contribute to a fund to aid M Spahlinger in the preparation of the materials.

THE HONG KONG MEDICAL CONFERENCE

At the invitation and with the co-operation of the Hong-Kong and China Branch of the British Medical Association, the China Medical Missionary Association held its seventeenth biennial conference at Hong-Kong last January. Delegates attended from Great Britain, India, and America, and authorities in different branches of medicine and surgery addressed the conference. By a coincidence the two bodies which met in conference—the Branch and the association—took origin in the same year (1886). In the following year the Hong-Kong College of Medicine was founded, with Sir Patrick Manson as its first dean, and out of this college grew the university and its medical school. The latest issue to reach us of the *Caduceus* (the journal of the Hong-Kong University Medical Society) is a special number, containing an account of the proceedings in the various sections. The conference opened with a congregation of the university in the City Hall, at which His Excellency the Governor of Hong-Kong, as Chancellor of the University, presided, and conferred the honorary

degree of LL.D. upon Drs Philip Conslind, Henry Houghton, Edward Hume, and Ernest Mann. The President of the Branch, Dr G E Aubrey, welcomed the delegates on behalf of the British Medical Association, and read messages, including congratulatory scrolls from the Provisional Chief Executive of the Republic of China and the Vice-Minister of Foreign Affairs, Peking. The *Caduceus* prints English renderings of these picturesque Oriental salutations, the Vice-Minister's message ends thus: "At Hong-Kong learned doctors will come together. Without good physicians how can we sustain lives? The modern science is superior to the old as it is more exact. I want to see some wonderful results which will outshine the past and guide the future." So much interest was shown in the proceedings of the Section of Medicine that it was decided to spread the discussions over five sessions, some thirty papers were read and debated, and the bulk of these will appear in full in the *China Medical Journal*. Irregular fighting has been going on in various parts of China for some years past, and for that reason much prominence was given in the Surgical Section to the subject of war wounds. In the Section of Obstetrics and Gynaecology there were good attendances, and the general discussions, we learn, were short and snappy. In view of the importance of the trade exhibition to delegates from districts where they are wholly out of touch with modern appliances and drugs, the Great Hall of the University was set apart for this purpose. The prudence of this decision is shown by the statement that this hall "soon became the most popular rendezvous for those not engaged in sessions and committees." Altogether the conference seems to have been a great success.

SOUTH AFRICAN MEDICAL CONGRESS

The twentieth South African Medical Congress, Pietermaritzburg, from July 6th to 11th, was opened by Sir John Dove-Wilson. The President (Dr D Campbell Watt) delivered his address on the same day. The work of the congress is divided into five sections. The members are meeting as a whole to hear the opening addresses on the subject for discussion in each section at 9 a.m., and subsequently the sections hold their separate sessions. The sectional discussions and their openers are as follows: Medicine, "Focal infection," Dr R L Gudwood; Surgery, "Treatment of carcinoma of the breast," Dr H A Moffat; Public Health, "The milk supply," Dr S J Clegg; Obstetrics and Gynaecology, "Caesarian and prevention of foetal death," Dr Lance Impey; Special Subjects Section, "The work of the laboratory in relation to the practice of medicine," Sir F Spencer Lister. Two business meetings of the congress are being held and the South African Committee of the British Medical Association meets on two of the mornings. There is a trade exhibition of drugs, instruments, and so forth, and at a public meeting in the Town Hall Dr T Shadick Higgins, M.O.H. Cape Town is giving a lecture on public health in relation to social welfare. During the week social entertainments of various kinds have been arranged, including a civic reception and a banquet. The honorary general secretary is Dr C G Kay Shup.

The next issue of the *BRITISH MEDICAL JOURNAL*, dated July 18th, will be a special commemorative number in connexion with the opening of the Association's New House by H.M. the King accompanied by Queen Mary, on Monday, July 13th, and the dedication and opening by the Archbishop of Canterbury of the Memorial Gates erected by the Association as a tribute to its members who fell in the war. Articles, letters, and information relating to other matters will for the most part be held over

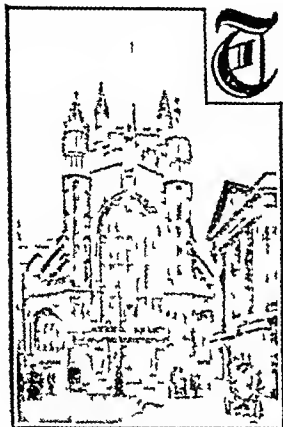
¹Ibid. April 28th 1925 p. 744
²Ibid. April 21st 1925, p. 704

NINETY-THIRD ANNUAL MEETING

of the

British Medical Association,

BATH, 1925.



BATH ABBEY

June 6th, June 20th, and July 4th, 1925

THE Annual Meeting of the British Medical Association will be held at Bath at the close of this month, under the presidency of Dr F. G. Thomson, physician to the Royal United Hospital, Bath, and consulting physician to the Royal Mineral Water Hospital. The Annual Representative Meeting will open in the Concert Hall of the Pump Room at Bath on Friday, July 17th. The statutory Annual General Meeting will be held on Tuesday afternoon, July 21st, in the Concert Hall and on the evening of the same day the new President will deliver his Address to the Association in the Palace Theatre. The twelve Sections, among which the scientific and clinical work of the meeting is being divided this year, will meet on the three following days, July 22nd, 23rd, and 24th. The list of Sections and sectional officers, together with the programme and time table and other announcements, were published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of July 4th. On the last day of the meeting, Saturday July 25th, there will be excursions to places of interest in the neighbouring West Country, some of which are briefly described in the article printed below. Descriptive and historical articles on Bath have appeared in our issues of December 6th, 1924, and of

PLACES OF INTEREST AROUND BATH.

BY

JOHN HATTON,

DIRECTOR OF THE HOT MINERAL BATHS

Bath lies in the midst of a beautiful district, exceptionally rich in places of varied interest. The combs of Somerset, the Wiltshire Downs, and the Cotswold country of Gloucestershire, with the range of the Mendips running out into the Bristol Channel, provide an unusual variety of scenery. Stonehenge, and Wells Cathedral, the busy port and university city of Bristol, and the tiny artists' village of Castle Combe, give it houses like Longleat and Badminton, and the Cheddar Caves—all the extremes of contrast in human effort in the provision of places for worship or dwelling.

These notes cannot cover all the places selected for excursions during the meeting of the British Medical Association at Bath, but it is hoped that they will give some idea of the wealth of interest and beauty to be found in the West country.

WELLS

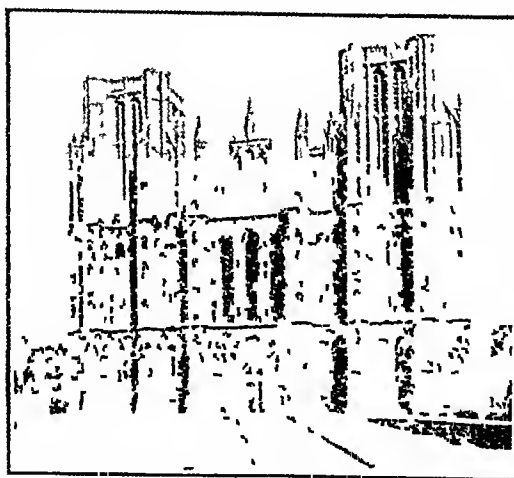
"The Cathedral Church of Wells," wrote Professor Freeman, "is the best example to be found in the whole world of a secular church, with its subordinate buildings. There

is no other place where you can see so many of the ancient buildings still standing, and still put to their own use."

In 909 the diocese of Wells was established by King Edward the Elder, the existing church, probably founded by King Ina of the West Saxons at the instigation of St. Aldhelm near the springs or wells which gave the place its name, served as the first cathedral. The first Norman bishop, Robert of Lewes, built a great new church, but, to an unusual degree, this massive Norman cathedral has dis-

appeared. About 1180 Bishop Reginald built or rebuilt the church and part of the present church may be said to be the work of this prelate.

In 1206 Jocelyn became bishop and it is to this great man that Wells owes its crowning glory, the West Front. Jocelyn and his brother Hugh (afterwards Bishop of Lincoln) were natives of Wells, and they loved their birthplace with an undying devotion. Hugh, who built much in Lincoln Cathedral, gave of his wealth to Wells, and Jocelyn spent all that he had upon the cathedral in which he had been canon during the episcopate of Reginald, whom he was to succeed on the bishop's stool. Old Fuller wrote, "The West Front of Wells is a masterpiece of art indeed. England affordeth not the like," and modern writers have endorsed his praise. At the top is a large niche, where was the figure of Our Lord seated in glory. Below are the twelve Apostles, St. Andrew, the patron of the church in the centre, beneath this is the resurrection course showing naked figures rising



Wells Cathedral West Front

from their graves, then come rows of saints, kings and queens, and curious biblical scenes, and a coronation of Our Lady over the main doorway. The statuary is generally agreed to be the finest collection of mediaeval statuary in England, and many of the individual figures compare favourably with the greatest masterpieces of Italy or France. In 1242, full of years and honour, the great bishop died. "God," says Fuller, "to square his great undertakings giving him a long life to his large heart."

The interest of Wells is by no means confined to the West Front. The North Porch, one of the oldest parts of the church, is a magnificent example of early work still retaining much of the Norman influence, in spite of rich undercut foliage and beautifully carved figures. The most striking feature of the interior is the curious arrangement of inverted arches built to support the great central tower. The beautiful Lady Chapel, like the side chapels, is of the Decorated period, the windows are filled with richly coloured old glass—almost all in fragments. The fourteenth century Jesse window in the choir, however, is perfect. It is a superb piece of work, probably the finest of its kind in England. One of the side chapels has recently been restored; it is the war memorial for the county of Somerset, and here is kept the beautifully illuminated Book of Remembrance containing the names of all the men of the county who gave their lives in the great war.

Before leaving the interior of the cathedral other remarkable features must be mentioned. The clock, with its little figures of knights in armour galloping wildly round at the stroke of the hour, and the unique series of carvings, full of vigour and humour, in the capitals of the piers. The Chapter House, approached by a great twisting stair, is one of the gems of English architecture. The cloisters are largely of Perpendicular work, with the library over the east wall, containing many books of extraordinary interest, including the greater part of Bishop Ken's library and many of the old book chains still hanging on the original bookcases. Near by is the mortared Bishop's Palace, entered by a drawbridge, the building itself an exquisite example of early thirteenth century domestic architecture. A great gateway, usually known as the Bishop's Lye, leads into the Market Place. On the north side of the cathedral is the Denbury, an almost perfect example of the fifteenth century house, overlooking the great Cathedral Green, which forms the ideal foreground for the West Front. Beyond, under the Choir Gate, is the Vicar's Close, a perfect street of fourteenth century houses, at the far end the little chapel of the Vicar's Choral, now used by the students of the Theological College.

GLASTONBURY ABBEY

Glastonbury Abbey, around which legend and mystery have gathered more thickly perhaps than around any other sacred spot in Britain, lies in Tennyson's

island valley of Avilion

Deep meadowed happy fair with orchard lawn,
And bowery hollows crown'd with summer sea

Here at the foot of the Great Tor St. Joseph of Annathorpe first planted in these islands the Christian faith, and the Chapel of St. Mary, more usually known as St. Joseph's Chapel, is the traditional spot upon which St. Joseph and his little band erected the original wattled church. It has been said that this was not only the first Christian church in England but the first in the world. To this spot, the legends tell us, was brought the Holy Grail. Tennyson not only records the story of the Holy Grail itself and the foundation of the Abbey, but of the famous Glastonbury thorn which still blossoms every year at Christmas tide. The most striking feature of the chapel is the beautiful Norman doorway with its richly ornamented arches adorned with sculptures.

The Abbey Church was cruciform in shape and over 550 feet in length. Still standing are three bays of the south nave aisle, the eastern piers of the central tower, part of the transept wings, one of the chapels of the northern transept, and the south wall with five pointed windows.

The discovery of the foundations of the Edgar Chapel has formed the subject of a book of unusual interest, *The Gate of Remembrance*, by Mr. F. B. Bond, F.R.I.B.A., who carried out the work of excavation. Tradition has it that the bodies of St. Joseph of Annathorpe, King Arthur, Queen Guinevere, and St. Patrick lie within the sacred ruins of this great Benedictine Abbey. It is curious that the best preserved fragment of this great group of religious

buildings should be the Abbot's Kitchen. This, like the Abbey itself, has now been acquired by the National Council, control being in the hands of a committee of trustees. The fourteenth century Abbot's kitchen is to be used as a museum for the many energetic tiles and numerous relics found in the course of the excavations.

The tower on the summit of Glastonbury Tor is all that remains of the fourteenth century Pilgrim Chapel of St. Michael. The view from the top of the Tor will find amongst the most beautiful and extensive in the county. In the High Street of the little town the fifteenth century Abbot's hostelry, now the George Hotel, will be noticed and a small building known as the Tribunal, which was originally the Abbot's justice room. Near the entrance to the Abbey precincts is the Glastonbury Museum, containing what is probably one of the finest collections of La Vieille objects in this country. The Lake Villages at Glastonbury and Merle have been systematically investigated by Dr. Arthur Bullock, F.S.A., and Mr. H. St. George Gray of Trunton Castle, and the work, which is being resumed this summer, has yielded much harvest of finds of extraordinary interest.

CHEDDAR

The limestone range of the Mendips runs from the neighbourhood of Bath out into the Bristol Channel, where outliers appear as the Steep and Flat Holme islets. The tableland itself is generally bare, but by no means uninteresting, and the slopes and numerous combs are often of great beauty. The most striking scenery is, of course, in Cheddar Gorge, the finest limestone chasm in the county. Cliffs, crowned with pinnacles, rising in some places to a height of over 400 feet, stand sheer above the winding roadway, clothed with ivy and wild flowers, and inhabited by innumerable jackdaws and other birds. It is now generally agreed that the gorge has been formed by the action of water, it was at first a great cave, or perhaps a series of caves, cut by an underground river, the roof eventually falling in, leaving the open gorge. At the foot of the gorge are the famous caves. Gough's, the larger and more impressive, contains massive stalactite formations of wonderful form. Cox's Cave is smaller, but exquisitely fairy-like in its stalactite beauty. In the village is a restored Market Cross and the Perpendicular church of St. Andrew.

BRADFORD-ON-AVON

Some nine miles from Bath, at the other end of the beautiful Limpley Stoke Valley through which run the river, the railway, and the road, is Bradford-on-Avon, a picturesque little cloth weaving town disposed in terraces of sixteenth and seventeenth century houses on the steep hillsides. Rubber factories have taken the place of the cloth mills which once produced the famous West of England broadcloth, the successors of the hand looms brought to Bradford by the Dutch weavers in the seventeenth century.

The Saxon Church of St. Lawrence, one of the most perfect and precious of Saxon relics still existing, appears to have been built about the end of the tenth century, replacing the original wooden church built by St. Adhelm in the opening years of the eleventh century. For ages this little stone church, which consists of a chancel, nave, and porch, was lost to view, being almost obscured by various excrescences which had grown about the building in the course of its misuse as a dwelling-place and workshops, and it was not until 1857, when the vicar, Canon Jones, a local antiquary looking down on the town from the hill, was struck with what would appear to be a cruciform roof, which seemed to indicate the presence of something more important than ordinary houses. The bridge is another notable feature of Bradford-on-Avon, with a Mass chapel corbelled out on one of the piers. These bridge chapels are now extremely rare in this country.

Bradford has a notable example of fourteenth century work in the great Tilt Barn, attached to the Barton Farm. This huge barn (shown in Mr. Gerard's wood engraving)

is 167½ feet long by 30 feet wide, with an Early English roof supported by huge trusses carried direct from the ground. The Hall, formerly Kingston House, was built in the seventeenth century by John Hall, a wealthy cloth merchant of the town. The handsome front of the house, rich in decoration of the Jacobean style, is set on a terrace overlooking a particularly beautiful old English garden. The British Pavilion of the Paris Exhibition of 1900 was modelled on this house as being a typical example of an English country house.

This corner of Wiltshire is distinguished for the many fine manor houses it contains. Two of exceptional beauty and interest, Great Chisfield and South Wraxall, lie in the neighbourhood of Bradford.

Farleigh Castle

This picturesque castle ruin, lately much preserved by the Office of Works, dates from the reign of Richard II, when Sir Thomas Hungerford started to build. The gatehouse remains and the chapel, and in a ruinous condition two of the minor towers. The chapel contains several Hungerford monuments and much interesting armour.

Downside Abbey

The great and growing Benedictine Abbey of Downside is on the way to becoming one of the really important modern Gothic buildings in this country. Of the Abbey Church itself much still remains to be done, but the nave which is to form the memorial of the old Downside boys who were killed in the great war, is to be consecrated on July 25th, a couple of days after the excursion to Downside in connexion with the British Medical Association. In the north transept is the shrine of Blessed Oliver Plunkett, Archbishop of Armagh, who was martyred in 1681. Attached to the community is the well known public school of Downside, which was founded at Douai about the year 1605. It was removed to this country at the time of the French Revolution, and after being carried on for twenty years at Acton Burnell, near Shrewsbury, was established at Downside in 1914.

Norton St Philip

At this little village the chief feature of interest is the half timbered George Inn, an unusually well preserved specimen of a fifteenth century hostelry. The galleries overlooking the small courtyard are still in existence, and a winding stair leads to the great room at the top of the house, formerly used as a wool market. The Duke of Monmouth made this his headquarters on the night preceding the engagement of Philip at Norton, a short time before the decisive battle of Sedgemoor.

Lacock Abbey

An interesting example of a conventual establishment, Lacock Abbey, still preserves sufficient of the Augustinian nunnery, founded in 1232, to give a very clear idea of the life of a religious house in the Middle Ages. Later work has from time to time been added, much of it extremely beautiful, and the Long Gallery and some of the other rooms contain many interesting pictures.

It was at Lacock that Fox Talbot, an ancestor of the present owner and one of the discoverers of photography, made his early experiments and succeeded in securing photographic reproductions.

Corsham Court

Corsham Court, the seat of Field Marshal Lord Methuen, is a handsome Elizabethan mansion built about 1502. The

gallery contains an exceptionally fine collection of Dutch and Flemish painting. Near the entrance to the parlour are some beautiful dishouses founded by Lady Hungerford in 1668.

Longleat

Longleat the seat of the Marquess of Bath, K.G., described by Macaulay as 'the most magnificent country house in England, is situated in Wiltshire, but a small portion of the park lies in Somerset. The building was started in 1567 by Sir John Thynne, an ancestor of the present owner, and the design is in the characteristic sixteenth century style in which Italian influence is prominent. The beautiful park of 2,000 acres contains a large herd of deer. The lake is fed by the long leat from which the place gets its name. The finest viewpoint is justly known as Heaven's Gate. When the saintly Bishop Ken was deprived of his see he was welcomed to Longleat, and there he wrote those well known morning and evening hymns: 'Awake my soul, and with the sun, and glory to Thee, my God, this night. The Bishop was buried at Frome, where his grave may be seen at the east end of the beautiful St John's Church.



Tithe Barn interior Bradford on Avon (From a wood engraving by Horace Gerrard)

Bristol

Eleven miles from Bath, where the Avon is still navigable from the sea by outgoing steamers, is the great port and commercial city of Bristol. The city has a population of 350,000 and an unusual variety of industries, including world famous tobacco and chocolate factories and aeroplane works. The early history of Bristol and its strongly fortified castle is full of interest, but there is only space in these notes to refer to some of the most important features of the city as it is to-day.

As befits a city whence John and Sebastian Cabot sailed to discover the American continent, Bristol is primarily a port, and in the midst of its busy streets, and almost under the cathedral walls, there is still a suggestion of the Merchant Venturers of other days in the sight of a tall ship lying alongside the modern steamers at the city quays.

But the size of modern ships has rendered vast new docks nearer the mouth of the river necessary, and the corporation has spent over seven million pounds in the establishment of Avonmouth, where the largest of the docks has an entrance lock of 875 feet, and a depth of water over the sill of 35 to 45 feet in ordinary tides. Vast cold stores, grain docks, grain elevators, and warehouses and discharging stations enable the ever-increasing trade in grain, meat, timber, and oil to be dealt with expeditiously. The fruit traffic and the passenger traffic, especially to the West Indies, New Zealand, and Canada, are extending every year.

Bristol Cathedral contains much of interest, its most striking feature perhaps being the fine Norman doorway. It was originally the church of an abbey of Augustinian monks. Founded in 1142, there appears to be little doubt that an earlier church stood on the site. The vestibule to the Chapter House is very beautiful, and the graceful Early English Lady Chapel is of particular interest. It has some good examples of Early English, Decorated, and Perpendicular styles of architecture, and underwent extensive restoration in 1860-61.

Bristol also possesses in St Mary Redcliffe Church what is generally admitted to be the finest parish church in England. This exquisite building—

‘This mystery of a human hand,
The pride of Limestone and the Western land’—

with its graceful spire, claimed by many to be the finest example of Perpendicular architecture in England, was largely built in the fourteenth and fifteenth centuries by the Cringes, two of the most famous of Bristol's Merchant Venturers. It was in the monument room in the tower that the boy poet Chatterton claimed to have discovered the Rowley manuscripts.

Bristol owes much to the munificence of the Wills family, and amongst the monuments of their generosity is a very fine Municipal Art Gallery. Isolated with the gallery is an unusually complete museum, which, by the way, is about to be further extended through the same generous hand. The geological department, the Drane Family Smyth botanical room, the Greville-Smith insect room, and the section illustrating the history of the city, containing much Bristol elf and Nilsen glass, are all of exceptional interest.

Bristol University is rapidly making history. It was only erected by a charter of King Edward VII sixteen years ago, and it already possesses the finest buildings of any modern university in Britain. Last month His Majesty the King opened the magnificent new block, given, at a cost of over half a million pounds, by Sir George Wills and his late brother, Mr H. H. Wills. (A description of the building and the opening ceremony appeared in the *BRITISH MEDICAL JOURNAL* of June 13th, 1925, p. 1098.) The most striking feature of this block is the University Tower, a truly magnificent piece of modern Gothic architecture. Rising to a height of over 200 feet, it is visible from many parts of the city. The belfry contains a great 10-ton bell, which has been christened Great George. The entrance hall beneath the tower contains some fine fan vaulting and a flight of stone steps leading to the Great Hall, of which the hammer-beam roof of English oak is a notable feature. The Faculty of Arts is housed in this building, the buildings erected for the Faculties of Science and Medicine are behind, and the Faculty of Engineering is housed at the Merchant Venturers' College. A new building on St Michael's Hill is now being erected for the Department of Physics. Next at hand are the Victoria Rooms, now the clubrooms and hall for the University of Bristol Union. Research work in fruit-growing is carried on at the University orchards at Long Ashton. The well known public school, Clifton College, is near by.

Bristol has many other features of interest. The Clifton Downs, on which stands the Cabot Tower, whence a superb view is obtained of the city and surrounding country, the magnificent Avon Gorge, spanned by the Suspension Bridge, a well stocked Zoological Garden, the Royal West of England Academy, at which educational work is carried on and an important annual exhibition held, and the Royal Colonial Institute, an active centre for visitors from the distant countries of the Empire.

One of the most notable of the old buildings of Bristol is the Red Lodge, a mansion built by the wealthy merchant Sir John Young in 1590. The Red Lodge has a handsome staircase and a magnificent carved chamber on the first floor. The whole building, full of objects of extreme interest, is in the care of the Bristol Savages, a club of artists and others interested in art generally.

Bristol possesses two large well equipped hospitals—the Royal Infirmary and the General Hospital—as well as a number of special hospitals.



From the
Official Guide

to the City
of Bristol

THE STATE OF THE PUBLIC HEALTH.

SIR GEORGE NEWMAN'S REPORT FOR 1924
ENGLAND AND WALES

[First Notice]

THE annual report of the Chief Medical Officer of the Ministry of Health for 1924 has been issued. It deals with England and Wales, and the statistics it contains are founded on the returns published by the Registrar General relating to births, deaths, and infectious diseases, and on the various data and records in respect of vital data under the National Health Insurance Acts, supplemented by annual and special reports of medical officers of health, and from the results of investigations by medical officers of the Ministry and other departments interested in the physical, industrial, and social welfare of the people.

The report contains twelve chapters, and follows the general lines of its five predecessors, but in one chapter the administration of the Insurance Medical Service has been dealt with more fully than usual. To this we hope to return later. We may note at once that Sir George Newman again points out that the work is done quietly, without ostentation, with scant public recognition, often without thanks or reward other than the consciousness of work well done. The types of the few become conspicuous, the great volume of valuable work done by the vast majority passes unnoticed.

Births and Deaths

In 1924 there were 28,198 fewer births and 28,450 more deaths than in 1923. The birth rate was 18.8 per 1,000 of population, a decline of 0.9 on the previous year and of 6.7 as compared with 1920. The death rate was 12.2 per 1,000 persons living, which is 0.6 higher than in the previous year but among the lowest in the history of the country. The decline in the death rate has been accompanied by a steady reduction in the birth rate from an average of 21.8 per 1,000 persons living in the decennium 1911-20 to 18.8 in the year 1924. With the exception of the war years the birth rate in 1924 was the lowest yet recorded. Sir George Newman considers it highly probable that the crude mortality rate is now at or near its lowest point and will hereafter increase, owing to the change in the distribution of age groups of the population. A declining birth rate, he points out, implies an increase of the average age of population, not necessarily any strengthening of the forces of mortality.

The diseases to which the most noteworthy increases in deaths were attributed are set out in the following table.

	Per 1,000 deaths
Bronchitis, pneumonia, and other respiratory diseases	174
Diseases of heart and circulation	168
Cancer and malignant disease	106
Diseases of the nervous system	100
All forms of tuberculosis	87

Infant Mortality

Ignoring for the present the effect of illegitimacy, the infant mortality shows an increase over 1923 at all periods of the first year of life. It is pointed out that a high infant mortality rate implies (a) the loss of many infants, (b) the maiming of many surviving children, for conditions which kill some injure others, (c) a high death rate in the next four years of child life, and (d) the existence of unhealthy conditions in the mothers or in the home life of the people. The infant mortality was 75 per 1,000 births. Calculated on the average infant mortality of 1901-10, there was in 1924 a saving of 39,000 infant lives. It implies a better physical condition in children from 1 to 5 years of age, and a more enlightened understanding of personal and public hygiene. What is described as the "closely related mortality among women in childbirth" still remains high, and has shown little or no improvement since 1894. The number of women who died in childbirth was 2,703, and 144 died from conditions associated with it. Of the 2,847 as many as 1,018 died from puerperal fever—"a preventable condition."

¹ *The State of the Public Health*. Annual Report of the Chief Medical Officer of the Ministry of Health for the Year 1924. H.M. Stationery Office (Med. Soc. pp. 256 3 6d net).

In commenting on the statistics Sir George Newman points out that the relative slightness of the decline of mortality in the first month of life is consistent with the belief that neglect of ante-natal hygiene has had all consequences, but that the fact that some improvement, even in the first month of life, has been achieved is of hopeful augury. The evidence, he states, appears to show that whether or not some biological change is taking place in the reduction of virulence of certain maladies and infectious-affecting children under 1 year of age, the predominant factor in the recent improved health of infancy is to be found in better mothering, proper food, and improved domestic conditions immediately concerned with child welfare. He warns us, however, against false confidence. International comparisons and other observations show that the problem is very complicated, and it is vain to argue that any one hygienic measure is sufficient wholly to account for the movement of the rate of mortality. Sir George Newman writes:

'When an historian says that the average citizen of 1925 is more civilized than the average citizen of 1725 he is making a general statement dependent upon a multitude of interrelated particulars and nobody is foolish enough to attribute the change to any one difference to say that man is more civilized now because such and such particular changes have come about. Unfortunately in medical history this particularism is ever and again repeated. We read that in such or such a town infant mortality began to decline when an infant welfare centre was established; therefore the welfare centre caused the decline. We have not long to wait before another particularist publishes the statistics of another town where infant mortality declined without the establishment of a welfare centre, therefore welfare centres are valueless. Both conclusions are worthless in logic yet both are triumphantly paraded by the sectaries to which they appeal. The lessons which other students of social evolution learned long ago—the lesson of the multiplicity of causation, is one that cannot be too often or too strongly impressed upon the student of communal hygiene. The history of infant mortality affords many instances of its truth.'

Small-pox

The second section of the report deals with general epidemiology, and special attention is directed to the serious increase in the group of epidemic diseases of the central nervous system—poliomyelitis, poliomyelitis, encephalitis lethargica—to the recrudescence of influenza in the early part of the year, and to the continued increase in the prevalence of small-pox. The net total number of cases of small-pox notified in England (there were none in Wales) during 1924 (after revision of diagnosis) was 3,797, as compared with 2,504 in 1923. Eight cases were notified and verified in port sanitary districts. The number of deaths was 8, including one port case. A table is given showing that from 1911 to 1917 the number of cases diminished, but that from that year onward the number has increased: there were 7 in 1917, and 3,797 in 1924. In the first four months of 1925 the number (as yet unreviewed) was 2,214, with 3 deaths. The regional distribution was irregular. In London there were only 4 cases, in Derbyshire there were 1,351, in the North Riding of Yorkshire 539, in Nottinghamshire 536, in Northumberland 401, in Cumberland 186. Altogether, excluding the port sanitary districts, small-pox occurred in 119 out of a total of 169 sanitary ports in England. The general character of the disease since it began to increase in England has been mild and the mortality low. The occurrence of small-pox of a mild type has been a frequent feature in the history of the disease. Sir George Newman examines the suggestion that the mild type should be distinguished from true small-pox and given a separate name. He does not accept this view, and observes that the sound principle is "that notifiable specific disease should be notified as such, whether the attack be severe or mild," and whether it be scarlet fever, enteric fever, diphtheria, encephalitis lethargica, or small-pox. "or the control of small-pox the chief need is eradication, and, he says, "successful vaccination and re-vaccination constitute the only efficient protection against small-pox whether of the mild or severe form," he states further "that though early diagnosis, prompt isolation of small-pox patients in suitable hospitals, effective disinfection, supervision of 'contacts,' and other such public health methods are invaluable they are no substitute for vaccination."

(To be continued.)

Scotland.

EXTENSION OF ANTE-NATAL CLINICS IN EDINBURGH

At a meeting of the directors of the Edinburgh Royal Maternity and Simpson Memorial Hospital on June 26th it was intimated that the great popularity of the welfare clinics for mothers and children organized by the hospital had made it necessary for the directors to require additional accommodation. The pressure on the outpatient department had in recent months been very great and the clinics, which were at first held twice a week, were now open on five days a week. The total number of visits to the clinic had increased from 2,444 in 1920 to 6,073 in 1924. An adjoining house had been bought and was in process of being adapted for the purpose of the clinics, and when this was complete it was hoped that the department would be worthy adjunct to the Royal Maternity Hospital, which had been the pioneer institution in establishing clinics for the expectant mother.

ROYAL (DIET) VETERINARY COLLEGE, EDINBURGH

Sir Robert Greig, chairman of the Board of Agriculture for Scotland, distributed on July 1st the prizes at the Royal (Diet) Veterinary College, Edinburgh. Professor Hudson Beve, chairman of the board of governors, who presided, said that the college had been for some years in occupation of its present premises, but until recently, owing to lack of money, the fittings had been deficient. All the laboratories, classrooms, and lecture rooms were, however, now being fitted. The board of governors was making arrangements for an official opening in October, and he had no doubt that next session the amenities of the college would be vastly improved. It was hoped that it might in future rely upon the generosity of some of the wealthier citizens of Scotland to endow the college. Research was urgently needed in many directions—for example, in connexion with animal breeding and diseases and for improvement of the livestock. Sir Robert Greig, in his address to the students, said that if they expected to make a fortune out of their profession he feared they would be disappointed, but if they wanted a profession in which they could feel sure that they could put a great deal into their life, then they had been fortunate in their choice. More and more their profession was linking up with the medical profession, more and more preventive medicine involved the veterinary profession, and more and more did comparative pathology and physiology throw light upon human disease. In the last few years several institutions devoted to the study of the physiology and nutrition of animals had arisen in Scotland, and there were now more appointments for first-class investigators than there were first-class investigators to fill them. The public services of the veterinary profession became more extensive every year, and a further important extension would be brought about by the Milk and Dairies Acts which came into operation on September 1st next. He looked forward to still greater development of the status and usefulness of the veterinary profession.

ROYAL SANITARY INSTITUTE CONGRESS

The thirty-sixth congress and health exhibition at the Royal Sanitary Institute, which is to be held at Edinburgh from July 20th to 25th under the presidency of Sir John Gilmour, the Secretary for Scotland, will be attended by more than 800 delegates from public health bodies, departments of home and Dominion Governments, and representatives from foreign countries, including the United States, France, China, and Japan. The congress is divided into five sections—namely, sanitary science, under the presidency of Sir George Newman, engineering and architecture, maternity and child welfare, personal and domestic hygiene and industrial hygiene, under the presidency of Dr. W. E. Elliot, Parliamentary Under-Secretary of Health for Scotland. During the congress various conferences have been arranged for representatives of sanitary authorities, medical officers of health, engineers and surveyors, veterinary inspectors, and health visitors. The Lord Provost of Edinburgh will hold a reception for the

members and delegates on July 20th, and lectures to the congress will be delivered by Sir Leslie Mackenzie and Dr Charles Porter. In connexion with the congress a health exhibition will be held in the Watcley Market.

SCOTTISH OPTICIANS AND MEDICAL BENEFIT

At a meeting of the 1st of Scotland Branch of the British Optical Association on June 23rd the question of optical benefits under national health insurance was discussed. Mr Archibald Young presided, and a resolution was unanimously passed that the association should protest against the recommendations issued by the Insurance Department of the Ministry of Health in taking away the right of insured persons to consult opticians when needing glasses, and requiring instead the production of a medical certificate before a claim for optical treatment could be accepted by an approved society. In support of this resolution it was urged that the recommendations of the Insurance Department of the Ministry of Health were absurd, because of the inability of the general medical practitioner to estimate the refraction of the eye, and that they were extravagant because of the expense to approved societies if, as was suggested, insured persons from all over Scotland should be required to travel to one or other of the few centres where properly qualified ophthalmic medical practitioners or hospitals were to be found.

Ireland.

ROYAL MEDICAL BENEFICENT FUND SOCIETY OF IRELAND

In submitting the eighty-third annual report of the Royal Medical Benevolent Fund Society of Ireland the central committee states the number of grants awarded during the year was 86, an increase of 3 as compared with the preceding year. Of these 5 were made to medical men, 8 to orphans, and 73 to widows. The amount disbursed in grants was £1,755, as compared with £1,540 in 1923-24. The average amount of the grants has thus increased from £18 10s 7d in the former year to £20 8s in that now under review. In presenting the audited balance sheets of the general fund and of the Osborne fund the committee once again wishes to express its thanks to the honorary secretaries of the branches for their work, and to the individual subscribers for their support. The income of the general fund from all sources amounted to £2,097 1s 6d. In this is included the sum of £422 15s 10d, the amount of income tax refunded for two years, the receipts under this heading during the current year will be only about half of that amount. Dividends and interest yielded an increase of income of £48 19s 2d. Subscriptions paid through branches, including those of the Dublin area, show an increase of £21 9s 6d, while those paid through the central treasurer have increased by £20 5s. The British Medical Association is thanked for collecting £26 13s. Donations amounted to £21 10s, being a life-membership payment of £10 10s by the President of the Royal College of Surgeons, Mr R C B Maunsell, and £11, the "Thankoffering of a Widow" who at a time of dire need received a special grant from the fund. The Irish Medical Association sent £20 and the Dublin Clinical Club £5 5s. No legacies were received during the year, nor was any addition made to the invested capital of the fund. At the beginning of the year the Osborne fund stood indebted to the general fund to the amount of £220 18s 5d. On June 18th, 1924, the central committee, having reviewed the position, resolved to suspend charges on the Osborne fund until such time as it showed a credit balance. In accordance with this resolution all grants have been charged to the general fund, and at April 30th, 1925, the indebtedness of the Osborne fund had been reduced to £109 12s 8d. Looking to the future, there are some factors which cause the central committee anxiety. There has been a fall in the capital value of railway stocks, and the matter has been submitted to the trustees for consideration and such action as they deem fit. The country is passing through a period of financial stress, and in common with all classes of the community medical men have suffered, and that the subscription

list has shown some increase is felt to be a matter for congratulation. Those who subscribe do so generously and merit thanks, but the committee asks for the support of the many who have not hitherto helped the fund, to enable it to bring relief to those connected with the profession in Ireland who come to it in their time of need. Only by widening the field of support can the fund be maintained on a sound financial basis.

England and Wales.

ROYAL NATIONAL SANATORIUM, BOURNEMOUTH

VISCOUNT HAMBLETON, who has been elected president of the Royal National Sanatorium, Bournemouth, of which he had for many years been treasurer, presided over the annual meeting, when it was mentioned that the institution had been in existence for seventy years, and that Bournemouth was selected as the place at which it should be established after very full inquiries. The annual report submitted by Dr F G Penrose stated that 97 patients were in the institution on January 1st, 1924, that 350 (164 men and 186 women) were admitted during the year, that 342 (158 men and 184 women) had been discharged during the year, and that there had been 16 deaths. The daily average number of patients under treatment for the year was 94. A considerable number of patients when discharged were fit to resume their occupations with a reasonable expectation of permanent benefit from the treatment received. The financial position was satisfactory—the total ordinary income amounting to £11,555, and the ordinary expenditure to £10,163. A legacy had been bequeathed by Miss Julia Thomas to cover the expenses of the free treatment of poor patients who for a year previously had usually resided in the County of London. At the request of the Ministry of Health the charge for the treatment and maintenance of patients sent by local authorities had been reduced from £2 5s 6d to £2 3s a week, and this would thus reduce proportionately the annual income received from this source. A vote of thanks to the committee was passed on the motion of Mr F G Lefroy, seconded by Dr Hila Greaves, and the chairman then proposed a vote of thanks to the medical, surgical, and dental staffs, which was carried by acclamation. After a vote of thanks had been passed to the chairman those present made an inspection of the institution.

THE MIDDLESSEX HOSPITAL

Mr T R Feens of Hull has presented £20,000 to the medical school of the Middlesex Hospital to provide an institute of otology, with special facilities for research in connexion with the ear, nose, and throat. It is proposed at first to install the institute on the top floor of the reconstructed buildings in Cleveland Street, where patients are to be housed during the rebuilding of the hospital. A laboratory, museum, and library will be established, and facilities will be given for post-graduate and otological study and research. It is possible that studentships will be endowed subsequently if further financial support is obtained. The institute will enable post-graduate students from America and the Dominions to complete their studies in London, and English students will no longer find it necessary to visit the Continent for such work.

TRAINING OF HEALTH VISITORS

We referred on February 21st, 1925 (p. 384), to a memorandum (101/M C W) issued by the Ministry of Health detailing the conditions on which grants for the training of health visitors will be given, and stating that, as a condition of the payment of grant, students who take either of the courses of training specified in the memorandum will be required to enter for an examination to be conducted by a central examining body approved by the Minister for this purpose. The Minister has now approved the Royal Sanitary Institute as the central examining body to conduct the examinations for health visitors in accordance with the conditions prescribed in the memorandum, and to issue health visitor's

then functional position, and at the request of the Commission I give them my opinion (which they adopted) as to the best way of carrying it out.

I had no intention of occupying your columns by a discussion on the merits of this question. The college has always been perfectly ready to discuss them. They were fully before the meeting of the court of governors of the college last month, and not a voice was raised in favour of separation. My only object was to point out certain apparent misconceptions as to the present position of the question—I am, etc.,

Capetulo Penmaenmawr, July 6th

ISAIAH OWEN

REVERSE PERISTALSIS

SIR,—Cases like that described by Dr R E Lord (BRITISH MEDICAL JOURNAL, July 4th, p 13) are still discredited by many doctors, and even by many Roentgen-ray specialists. What the latter describe as "antiperistalsis" is something very much less in degree than the vomiting of formed faeces which have been passed upwards from the colon—probably from the descending colon—by reversed peristalsis, through the ileo-caecal valve (or what represents it) and the pylorus. I have taken considerable interest in the subject, especially since 1904, when I wrote a paper entitled "Faecal vomiting and reversed peristalsis in a functional nervous case." One of my conclusions then was

"Vomiting of formed faeces in the absence of malinger and gastro-colic fistula, practically only occurs in functional nervous cases. This may partly be accounted for by remembering that antiperistalsis, if it occurs at all, is likely to be more foreboding when the muscular walls of the gut have not been previously weakened by overdistension or gross organic disease."

I now believe that vomiting of formed faeces does not occur in cases of gastro-colic fistula. Malinger (that is, the swallowing of formed faeces and then vomiting them up again) can hardly ever be seriously entertained as an explanation. It appears also that vomiting of formed faeces (actual scybala) never occurs in any case of gross organic intestinal disease, but I would not now like to say that the presence of nervous disease (whether functional or not) is necessary for its occurrence. Surely, all cases of severe constipation in which relief, with vomiting, is obtained by the use of enemata suggest that antiperistalsis is called into play—I am, etc.,

F PARKES WEBER

London, W 1, July 4th.

RAW PANCREAS BY THE MOUTH IN THE TREATMENT OF DIABETES

SIR,—May I add the following experiment to that published in your issue of June 13th, to show that fresh raw pancreas by the mouth is useless in the treatment of any type of diabetes? Drs Harrison, Graham, and myself proved that raw pancreas is no substitute for insulin, a point which our opponents admit. But then claim that it is beneficial in non-insulin cases is apparently still maintained. The following two cases showed no benefit at all from raw pancreas by the mouth.

Case A, a woman aged 48, is a mild obese diabetic. Case B a woman aged 58, is moderately severe and there is retinitis. Both were suffering from marked glycosuria before admission to King's College Hospital, but a diet of 45 grams carbohydrate, 70 grams protein, and 135 grams fat in Case A and 35 grams carbohydrate, 50 grams protein, and 105 grams fat in Case B, rendered them aglycosuric with normal blood sugar after two weeks in hospital. A diabetic condition was then reproduced by the gradual addition of bread to the above fixed diets ultimately 9 oz a day to Case A and 6 oz to Case B. The total glucose excreted in the urine was estimated daily, and when constant 1 oz of fresh raw pancreas was added to the daily diet in the form of a sandwich which they disliked very much. This pancreas was supplied by the courtesy of the British Drug Houses in the same fresh frozen condition which they find yields the maximum of insulin and was eaten within half an hour of removal from the ice chest. All the conditions of the experiment were kept constant, and the figures are recorded in the following table. One ounce of pancreas was given for a week—these days are indicated by an asterisk. Only two days before and after the administration of pancreas are recorded.

Days	Grams of Glucose Excreted		Days	Grams of Glucose Excreted	
	Case A	Case B		Case A	Case B
1	15.2	70.2	6*	16.75	137.14
2	14.9	137.0	7*	23.4	123.88
3*	22.54	142.88	8*	17.5	130.03
4*	13.31	135.39	9	12.49	119.81
5*	17.75	126.2	10	14.82	133.48

1 oz pancreas given by the mouth

The amount of glucose excreted in both cases is very constant considering that over 100 grams is being lost in one case and the difficulty of collecting complete samples of urine in a busy general ward. The first figure in Case B is much lower than the rest because her preliminary stabilization had to be hurried on account of the retinitis, and because she threatened to leave hospital to attend a wedding. An extra 3 oz of bread had been added to her diet only three days previously, and the full effect of this was not manifested until the second figure recorded.

It seems clear from the figures that the administration of raw pancreas had no effect on the amount of glucose excreted, and did not enable these two diabetics either to store or burn more sugar. I find it difficult to avoid the conclusion that the beneficial effect of raw pancreas which has been recorded in your columns was obtained by concurrent dietetic treatment, and not by the virtue of pancreas by the mouth—I am, etc.,

R D LAWRENCE

King's College Hospital London July 3rd

BRITISH MEDICAL WOMEN FOR INDIA

SIR,—My experience may be of interest to "Medical Woman" who asked in the BRITISH MEDICAL JOURNAL of June 27th (p 1195) for information about work in India. I worked there for several years, chiefly in the mission field. I returned to England a few years ago, for private reasons, unconnected with health. I was always well while I was abroad, and stood a very hot climate much better than most Europeans (for example, I could walk six miles when the thermometer was 115° in the shade). I learnt two Indian languages well, and a little of others. I learnt languages quickly. I passed the examinations for those two in half the usual time, getting over 90 per cent marks. Recently I have taken up another language, quite different from any I have learnt before, and in a month have learnt enough to read the New Testament fairly easily.

As I am now entirely free, have no dependants, and wish to go somewhere where workers are needed, I have lately applied to several societies to be sent abroad again, anywhere. But so far I have not found any to do this. The reason given is that my age is over 35, and they have so many applicants, while funds are so low that they must stick to age limits. I have good testimonials, medical and otherwise. I am told that Government appointments in India are usually given to Indians. In South Africa a three years' preliminary residence is essential.

Private practice could probably be obtained in some parts by anyone who had capital enough to wait for it, and could learn languages and understand the people. I also should be grateful if those who talk so glibly about the East absorbing surplus medical women would explain clearly how and where—I am, etc.,

July 5th

ANOTHER MEDICAL WOMAN

SIR,—For nine months I have tried to get any sort of medical work abroad, in India or any colony, with the most complete success. I have an honours arts degree and the Diploma in Tropical Medicine, the latter the Colonial Office considers of sufficient value to warrant its paying the fees for the course for many of its men applicants.

An application to the Colonial Office brought a lugubrious reply, kindly letting me know the worst at once. While

¹ Brain London 1904 vol xxvii pp 170 178

² Aided by a grant from the Medical Research Council.

my application would be "carefully considered," there were very few posts open to women. An application to the Duffield Fund had no result whatever.

There remain the missionary societies and private practice. The former can be possible for relatively few people. In the first place, several societies put applicants through a theological mill which grinds exceedingly small. Secondly, there is a barrade of intimate religious questions which, to anyone with a quite ordinary amount of reserve, are very objectionable to answer, to a committee of strangers especially. Thirdly, while the problem of keeping body and soul is closely united as possible on £150 a year in a tropical country has quite a lot of intrinsic interest, considered as a puzzle of personal application it is unlikely to have much attraction for the ordinary mind.

In India (the native States excluded, where the native product is preferred) private practice presents the most hopeful prospect, but this is by no means so shining as some, usually non-medical, enthusiasts would have one believe. The intending practitioner must have sufficient capital to live on for a year, she will have to compete with not only an ever-increasing number of native women doctors, but with the many doctors, with the bazaar medicine men, who can tell by feeling a pulse whether it is the tibia or fibula which is fractured—but who have the confidence of the people, and with the missionaries who do private work. She will have to learn a new language or languages, to learn the quite intricate ropes of a strange country, to try to understand a strange and by no means simple type of mentality, and she must be able to carry on in the heat month after month. If one has not friends there, putting up one's plate in an Indian town is a somewhat grim vision.

The melancholy truth is that there are too many doctors, and far too many women doctors. This statement of a very obvious fact is naturally not popular with medical school authorities, but the students know all about it when they qualify and think that their troubles are over.

If I am wrong, perhaps these apparently mythical providers of lucrative or any other kind of jobs will take on flesh and blood, come out of the impenetrable darkness in which they are shrouded, and come down to brass tacks. Most important of all, perhaps they will give us their postal address.

The higher caste, too, who turn up periodically and is good enough to inform us, *ex cathedra*, that the reason why medical women cannot get work abroad is that they are unwilling to undertake the responsibility which the pioneers (*requiescant in pace*) undertook—perhaps she will tell us whether she ever had a job in the tropics, if so, how she managed to get it, if not, the adoption of a less lofty tone on her part would be more suitable.—I am, etc.,

July 4th

A WOMAN G.P.

BRITISH SOCIAL HYGIENE COUNCIL

SIR,—The real importance of the decision of the National Council for Combating Venereal Diseases to change its name to that of the British Social Hygiene Council lies in the intention to embark on a wider constructive and preventive effort, which will embrace not only venereal disease but all disease and inefficiency, in so far, that is, as voluntary effort in co-operation with Government action can render effective service in such a campaign.

The undertaking of this forward movement indicates some important facts. It illustrates the tardy but growing recognition by voluntary societies and by Government departments of the essential unity which underlies bodily, mental, and moral health. Further, it shows that we are beginning to realize that before we can establish a vigorous and healthy or a happy population in this or in any other country, we must individually and collectively appreciate and understand the intimate association which exists, not only between health and conduct, but also between conduct and health.

In the increasing complexity of our modern civilization, national well-being depends more and more on the conduct of the individual citizen. This fact stands out very clearly in the case of venereal disease in its relation to sexual

promiscuity, hence the urgent necessity for building up a "national health conscience," a real appreciation of the fact that it is "wrong to be ill" if the illness be preventable, just as it is "wrong to be ignorant" now that education is available for every citizen. It is even more important still to arouse in the minds of our people a "racial conscience," a pride of race which will enable an enlightened public opinion to focus attention on the great responsibility which rests on every individual to place the interests and the welfare of the young, and of the next and succeeding generations, in the very forefront of every progressive movement.

These and other considerations surely provide an abundant justification for the decision of the Council to aid to the utmost extent the movement for providing for the adolescent population sound instruction and wise advice in the principles which underlie the right living of the sex life, in short, in sex hygiene in its wider physical, mental, and moral aspects.

The outstanding feature of our present-day social life is the fact that parents are not giving such instruction to their children on any adequate scale. The churches and other religious bodies have so far failed to fill up the gap. Our scheme of national education has not devoted that attention to instruction in personal, sexual, and social hygiene, or to citizenship in the wider sense, which the vital importance to the nation of the subject demands. The causes of this educational failure are complex, but the consequences are apparent in the youthful life in our cities. But if we are to hold our own among the nations of the world this gap must be filled. Instruction and guidance in health and right living in every department of life, individual and communal must be given to the young, and it must be given to boys and girls at the right time and at an age when it can be of real use in building up character. The difficulty is that at present teachers are not available. It will be necessary to start with the training colleges and build up a body of teachers fitted, both by natural inclination and by special training, to instruct and advise the youthful population in sex hygiene, and to help the parents in teaching their children.

The great work which the British Social Hygiene Council under its old name has already done in opening up the field, and in building up a sounder public opinion in the matter of the sex relationships, will be of the greatest help in bringing about further progress.—I am, etc.,

C. J. BARN, CMG, FRCS.

Vice-Chairman, Medical Consultative Council, Ministry of Health.
Member of the Industrial Fatigue Research Board.
Vice-President, Leicester Royal Infirmary.

July 4th

DISEASES DUE TO FASHION IN CLOTHING

SIR,—I do not think that Dr. Parkes Weber and I differ very profoundly as to either of the two diseases under discussion. The erythema I was referring to was exactly the same as that exhibited by his cases. I am familiar with the reticulated mottling due to sitting before the fire seen so often in delicate persons and old people. What I am not sure about is that there are not other factors than mere dry cold determining the incidence of the erythema described by Dr. Parkes Weber. I question whether dry cold alone produces chilblains, and, as I stated, I believe this condition to be practically chilblain modified, in that the area affected is often very extensive, not the usual situation associated with chilblains, and not so much accompanied by itching. Chilblains are more common in some types of circulation, are most commonly seen on the feet, the hands, and the face, especially on the nose and ears, and I think that dampness as well as cold and frost has something to do with their production. Frequent changing of socks, so avoiding the slight dampness that results from the socks when worn any length of time, is a preventive. The dampness results from want of free evaporation of the moisture from the skin, such evaporation being prevented by the leather of the boot. Boots that are lined, and some kinds of leather, are better in this respect than others, because of being more pervious. The worst kind of leather for boots in cold weather is

patent leather Rubber overshoes have this disadvantage, but it is made up for by the fact that they keep moisture from getting into the foot, and they also keep the cold outside moisture or slush further away from the foot. Hands that are not put much in water are also more free from chilblains. When the nose and ears are affected it is often after being exposed to frosty, foggy weather, or sleet and snow. Exposure to heat before the fire after the chillings above referred to undoubtedly aggravates the condition. I believe the same conditions apply to the extremities of the legs.

The cases I have seen have been in girls wearing artificial silk stockings. Perhaps some chemist or physicist can say whether artificial silk is more likely to absorb and retain moisture as in frosty and foggy weather than natural silk or the fibre of wool. Wool certainly does not cling so closely to the skin, and the stockings are thicker than silk. But whether silk may actually retain moisture in damp, frosty, or foggy weather might be a point of interest. Whilst, therefore, cold is the initial cause, as Dr Weber states, dampness and exposure to a fire aggravate it.

As regards chlorosis, I believe Dr Weber is right in showing the important part taken by the tight corset in its causation, but there are some considerations that make it difficult to believe that it is the only cause.

Chlorosis has been known from the earliest times. I believe it was known to Hippocrates. It was described under its present name by Varicoll in 1620, Sydenham has a chapter on it about 1660-70. It was known to Willis, Boerhaave, and Cullen (seventeenth and eighteenth centuries), and was common in the nineteenth century. I am not familiar with the changes that have taken place in ladies' dress fashions, but is it a fact that ladies have worn tight corsets during all those periods? This is not the first time that corsets have been blamed for it.

I agree with Dr Prakes Weber that rest in bed for a short time and administration of iron was the best line of treatment, but as he has seen cases recover under rest and iron in a basement, so I have often seen cases recover under no other form of treatment than rest, plenty of fresh air, and mild laxatives, iron not being necessary if rest was combined with other hygienic conditions. The reason that rest was necessary—at least at the beginning of treatment—was that the oxygen-carrying haemoglobin in the blood was often so far reduced that it was too great a strain on the heart, digestion, and other parts of the system for the girl to indulge in any sort of exertion, especially when she was wearing tight corsets.

While the tight corset has been largely discarded in recent years, there has probably been a greater change in the life and habits of civilized girls during the last twenty years than there had been during the previous twenty centuries. As I stated in my previous letter, the cult of fresh air, along with free movements and exercises in the open air, have been welcome changes in the habits of girls. The tight corset, therefore, important as it was as a causative agent, was, I believe, only one cause amongst several—I am, etc.,

Leith, June 28th

WILLIAM ELDER

ULTRA-VIOLET LIGHT

SIR,—Mr A. Blakston, in your issue of June 20th (p. 1153), states that the cost of a tungsten arc lamp is £300 per 1,000 hours worked. A tungsten arc lamp of the "Dr. Percy Hall" type has been in use in a municipal clinic of this city for the past fifteen months. Careful records of the cost have been kept, and they work out as under:

	£	s	d
Electricity—1 unit per hour at 5d per unit for 1,000 hours	20	16	8
Tungsten electrodes cost 1s 0½d per hour for 1,000 hours	52	1	8
Total	£72	18	4

—I am, etc.,

W ALLEN DALEY M.D.

Health Department Guildhall,
Hull June 23rd.

MEDICAL MEN ON THE PIPE ROLLS

SIR,—I think that both your readers and Mr R. R. James (June 27th, p. 1189) will be interested to learn that the earliest Pipe Roll entry referring to a "Medicus" is to be found in the Roll for Notts and Derby of 1129-1130 (31 Henry I). It is as follows:

Gislebertus de Plesni medicus reddit compotum de 45 marcis argenti pro terra et filia Johannis de Monte Calvino. In thesauro £4 et debet £26.

This means that Gilbert paid the King £30 for a licence to marry the heiress of Monto Calvino. He paid £4 on account in 1129-1130, leaving a balance of £26 to be paid during the next financial year. To judge by the amount of the "fine" Johann must have been a wealthy bride—I am, etc.,

Clifton Bristol July 2nd

R S S STATHAM, M.D.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

THE House of Commons has this week given a second reading to the Unemployment Insurance Bill and has debated the trade outlook and the difficulties of the coal-mining industry. Speaking in the House of Lords, Lord Birkenhead, Secretary for India, said that the position of the civil services in India would be one of the subjects to be investigated by a Royal Commission on Indian Government. Until public servants in India could feel that unfair or capricious criticism would neither be voiced nor tolerated by Indian politicians the reservations made by the Montagu-Chelmsford scheme to protect civilians, even in transferred services, would remain necessary.

M. Spahlinger's Treatment for Tuberculosis

A special meeting of the Parliamentary Medical Committee, on Thursday, July 2nd, received a report from five members of its committee who, though not as representatives of the committee, had visited Geneva between June 19th and 25th to investigate the Spahlinger method of treatment for tuberculosis. The report, which was a full one, was discussed at length by the Medical Committee, and several members who had previously investigated the Spahlinger system compared the party's experiences with their own. The committee had prepared recommendations, but in view of the fact that M. Spahlinger was expected in London at an early date for a conference, these recommendations were not pressed, and it was decided not to publish them at present.

The report to the committee was signed by Dr Watts, Dr Selter, Dr Vernon Davies, Dr Drummond Shiels, and Dr J. H. Williams. They stated that one of their number had special experience in the conduct of a bacteriological laboratory, and several had years of clinical experience with large numbers of tuberculosis cases. They stated that all questions put to M. Spahlinger and his fellow workers had been answered without reserve, and that experimental and clinical records were placed at their disposal. Each of the party examined about fifty patients who had suffered or were suffering from tuberculosis and had been or were being treated by M. Spahlinger's methods. The party found M. Spahlinger to be a highly skilled bacteriologist, with great knowledge of electrical and physico-chemical apparatus. They were satisfied that he was not actuated by personal or selfish motives, and had refused to allow his discoveries to be commercialized. The equipment of the Spahlinger laboratories was as good as the party had seen at any university.

Description of Method

The report presented by the members of the party which went to Geneva was to the following effect:

M. Spahlinger had produced two types of remedial for tuberculosis: (1) antitoxic serum to give passive immunity and to act as a directly curative agent and (2) vaccines or antigens made from cultures of specially exalted strains of tubercle bacilli and fractionated by a method devised by himself. He had devised methods whereby the tubercle bacillus could be stimulated *in vitro* to produce quantities of virulent and differing acetoxins. He stated that the bacillus did not ordinarily produce toxins of this kind in culture media, and only threw these out when its life was threatened. At certain regular intervals he subjected the cultures to physico-chemical conditions which proved irritative or harassing to the organism. For example, a culture was maintained under ordinary laboratory conditions at 37° C. for twenty-one hours out of the twenty-four, and the temperature was then raised to 38° C. for the next three hours. During these three hours toxin was manufactured. At the end of the three hours period the temperature of the incubator reverted to 37° C., and continued at

that figure for another twenty-one hours. Analogous methods also used were lowering the temperature, freezing agitation and exposure to light. Spahlinger believed he had isolated at least 21 or 22 different toxins, obtained either as above (exotoxins) or derived indirectly from the bacillary bodies (endotoxins). One of these toxins produced erysipelatous nodules when injected into susceptible animals, another had a purely pyrogenic effect, and so on. He used each of these separately to immunize horses and to obtain a corresponding specific antitoxic serum. These serums he described as "partial" serums. A "complete" serum was one which contained a mixture of all the partial antitoxic serums, in addition to an antibrucella serum obtained by immunizing a horse with the micro-organisms which caused mixed infections and with massive cultures of tubercle bacilli killed by exposure to light. Spahlinger stated that cultures killed by heat or carbolic acid lost certain of their important specific qualities in the process. At present no complete serum existed, though there were still about eleven horses yielding partial serums. Vaccine or antigen preparations also were not obtainable in bulk, chiefly on account of insufficiency of staff, though a certain quantity could be got ready in six or eight months.

The treatment consisted of injecting antibodies subcutaneously two or three times a week, sometimes every day or even several times a day in very acute and advanced cases. The length of the treatment varied according to the gravity of the case. The particular class of serum used depended upon the type of case. For pulmonary tuberculosis there must be a preponderance of antituberculous. For surgical tuberculosis a preponderance of anti-endotoxin was found best and a mixture of serums prepared by the use of human and bovine strains of the bacillus was employed. Chronic and afebrile cases could be treated with vaccine and without antitoxins from the commencement. A complete clinical recovery could be brought about by the means of serum alone, but a relapse or a remission was probable until passive immunity had been converted into active immunity. In eliciting active immunity various antigenic solutions derived from bacillary protoplasm were injected separately into the patient. The total treatment extended over about six months though advanced cases might require a second course of treatment. Spahlinger stated that he had devised a method whereby repeated doses of serum up to 20 ccm could be given to cases without causing anaphylaxis.

Up to the present about 600 cases were known to have been dealt with by M. Spahlinger and at least 250 could be traced and examined. A number were Russian prisoners of war who were detained in Switzerland and had disappeared.

The party reported that they had examined about 50 patients, some cured and well, some partially cured and in process of recovery, and some who were just commencing treatment. Amongst the latter were several of the gravest severity, which by no means of treatment at present known to science could be expected to recover. The clinical records of certain cases showed that persons who now appeared perfectly fit and well were originally suffering from an advanced stage of consumption. When the party saw them the only evidence of their original condition detectable was some patchy dullness indicating where the lungs were healed by fibrosis. There were no moist or adventitious sounds of any kind and the temperature was normal. The sputum examined and reported upon by independent medical observers attached to hospitals etc. was negative. Some of these people were following unhealthily occupations in a very bad environment yet remained well. Scarcely any of the patients had been treated by Spahlinger's remedies under suitable hospital or sanatorium conditions. Many of them remained at work though their temperature was well above normal. Cases of healed surgical tuberculosis were also shown though the pulmonary cases were the more striking. A number of cases had been treated from eight to twelve years ago and had remained well without relapses during that time.

The party came to the conclusion that on the evidence presented a *prima facie* case had been made out for the Spahlinger treatment. They recommended that an exhaustive trial should be made under test conditions as soon as it was possible to obtain a sufficient quantity of the serum and of the vaccines. The report then referred to the financial difficulties of M. Spahlinger which were declared to be acute. Progress in manufacturing serum and the report of the party continued to be plainly understood by the public that there was no hope of securing treatment by Spahlinger's method at the present time and that it would be useless for patients to apply for treatment. The only method of facilitating the development of the treatment was by the immediate provision of funds followed in some months time by the distribution of enough of the remedy for a really satisfactory test to be made under the strictest conditions.

After a discussion, during which some members of the Parliamentary Medical Committee expressed the view that the matter lay outside its province, the following resolution was adopted:

That the Parliamentary Medical Committee has received with much interest the account of the visit to the Spahlinger establishment which the five members of the committee have drawn up not as a delegation from the committee but as private individuals. The committee are of opinion that a *prima facie* case has been made out for further investigation but the committee resolve that they cannot as a corporate body, take any action in the matter.

Indian Medical Service.—On July 6th Sir Pichay Luce asked the Under Secretary for India if the Government had yet arrived at

conclusions as to the future of the Indian Medical Service and whether it was its intention to carry out the proposals of the Lee Commission in this respect. Especially in the matter of establishing provincial medical services the members of what would not be under the control of the Secretary of State for War. Under Secretary for India replied that the Government of India's proposals were now under the consideration of the Secretary of State who hoped to arrive at early decisions and would make no further statement could be made.

The Harnett Case.—Lord H. Cavendish Bentinck asked the Minister of Health whether he would advise the Government to pay to Mr. William Smart Harnett an adequate sum in compensation for his detention in various mental hospitals in regard to the fact that Mr. Harnett had been found by a jury to have been sane when detained by Dr. Bond and for the rest of his detention and that this opinion had not been upheld by either the Court of Appeal or the House of Lords by which tribunal Mr. Harnett's case had been heard. Mr. Neville Chamberlain replied that he did not think that any claim for compensation out of public funds could be substantiated. No event of the Crown was involved other than Dr. Bond and as a new trial had been ordered against Dr. Bond the matter was still *sub judice*. The Lord Chancellor in his judgement dismissed Mr. Harnett's appeal expressly pointed out that it was not in fact proved at the trial nor found by the jury that the appellant was of sound mind between the date of his alleged detention by Dr. Bond and his subsequent escape from custody.

Insurrection in Foul.—On July 7th Sir Kingsley Wood informed Mr. A. Alexander that the Minister of Health hoped that the Public Health (Insects) Bill in Foul etc. for alterations would be submitted to Parliament before the summer adjournment. Considerable modifications had been made in the original draft and a full discussion between the officers of the Ministry and the interests involved. The coming into force of the regulations would be postponed to enable necessary adjustments to be made by the trades concerned and during that period a decision might be arranged in the House of Commons if there was a general election for it.

Rock Drilling.—On July 7th Colonel Lane-Fox (Secretary for Mines) informed Mr. D. Grenfell who asked a question as to the prevalence of phthis among men engaged in rock drilling by the use of compressed air machines that he was not in a position to give any general conclusions. The inquiry that had been made was confined to three mines. Its result was to support the apprehension that in the three mines rock drilling might be dangerous to health. He had arranged for a more extensive inquiry at once. The inspectors were taking up the question of precautionary measures at the three mines.

Ophthalmic Benefit.—Mr. Bennett asked the Minister of Health whether as a result of the new model scheme for the provision of ophthalmic benefit by approved societies the charge for ophthalmic examination of the applicant had been raised from 5s. the fee paid to qualified opticians to £1 1s., the fee charged by ophthalmic surgeons. Mr. Chamberlain said he was aware that the cost under the new scheme might in certain cases show the increase stated by Mr. Bennett but there would be no charge for the insurance doctor's recommendation, and the new arrangements had been generally accepted by the approved societies.

Medical Sanitary and Research Expenditure in Tanganyika.—Mr. Amey, the Colonial Secretary, on July 6th told Mr. Barclay Harvey who asked the amount spent on medical and sanitary services and research work by the Germans in Tanganyika in 1913 and the corresponding figures in 1923-24 that the amount provided in the German estimates for 1913 was approximately £99,000 converting the mark at 20 to the £. This did not include expenditure by certain local bodies to which grants were made for a variety of purposes including expenses connected with hospitals and sanitation which were not shown separately in the estimates. The amount provided for similar services in the estimates for 1923-24 was approximately £116,700, which included all expenditure on buildings.

Notes in Brief

Of fourteen local authorities mentioned by the Chief Medical Officer of the Ministry of Health in his report for 1923 as not providing medical inspection for visual defects in school children all save one are providing or have proposed to provide such treatment.

The Ministry of Health is aware of the pollution of the river Lea with sewage and is making efforts to obtain proper treatment and disposal of the sewage. Two of the local authorities are improving their disposal works and a bill is before Parliament for taking the sewage of two others into the London main drainage system.

It is not the intention of the Government to take any further steps with regard to the proposed International Convention for bidding night baking. Its decision not to ratify has been previously announced. Night baking has been prohibited in fifteen European countries.

The Admiralty has reduced the number of landing sick berth attendants by forty-nine as dental attendants in harbour establishments formerly rated as such are being replaced by civilians.

Sir Kingsley Wood announced that before sanctioning the setting up of institutions by local authorities for the use of artificial light the Minister of Health would satisfy himself that a doctor experienced in this work was available.

Obituary

T MARK HOVELL, F R C S D,

Consulting Aural Surgeon, London Hospital. Consulting Surgeon, Hospital for Diseases of the Throat, Golden Square

THE death of Mr Mark Hovell, on June 30th, severs another of the few remaining links with Morell Mackenzie and the beginnings of laryngology in this country. He was the son of Dr D de Beidt Hovell of Clapton, at one time president of the Hunterian Society, and received his medical education at the London Hospital. He took the diploma of M R C S Eng in 1875 and the F R C S Ed in 1880, and was appointed surgeon to the Hospital for Diseases of the Throat, Golden Square. He assisted Sir Morell Mackenzie in the preparation of his *Diseases of the Throat and Nose*, and in 1887 Mackenzie invited him to take medical charge of the Crown Prince Frederick. Mr Hovell remained in constant attendance on his illustrious patient after he became emperor, until his death in 1888, and was decorated at his accession with the Order of the Crown. On his return to London he was appointed aural surgeon and lecturer on diseases of the throat at the London Hospital. He was president of the Section of Laryngology and Otology at the Annual Meeting of the British Medical Association in 1901, and president of the Section of Laryngology of the Royal Society of Medicine in 1917. Mr Hovell was the author of a well known book on *Diseases of the Ear and Naso-pharynx*, which reached a second edition, and he published many articles on otolaryngological subjects in this and other medical journals. Last year he published an interesting and practical work on *Rats and How to Destroy Them*, founded on experience gained at his country house near Hatfield, this volume received high praise from the scientific and other journals at home and abroad, and is recognized as the standard work on the subject.

Although Mr Hovell's characteristically conservative views on the tonsil gave rise to a good deal of discussion more than once, he was admired by his colleagues as a surgeon of very wide experience and sound judgement, notable for his thoroughness and common sense.

He married in 1905 the Hon Margaret Cecilia Bateman-Hanbury, daughter of the second Lord Bateman, and leaves one son.

CHARLES F HARFORD, M A, M D Cantab

WE regret to announce the death of Dr C F Harford on July 4th at his home in Harpenden. He was well known for his practical interest in a variety of subjects—medical missionary work, temperance reform, tropical medicine, ophthalmology, and (during recent years) psychotherapy.

Charles Forbes Harford was born at Keswick in 1864, the youngest son of the Rev Canon Harford-Battersby. From Repton he went to Trinity College, Cambridge, and studied medicine at St Thomas's Hospital. In 1889 he obtained the diplomas of M R C S and L R C P Lond, and graduated M B, B Ch, proceeding M D in 1892. After acting as ophthalmic assistant at St Thomas's and Moorfields, he went out, in 1890, as a medical missionary to Lokoja, West Africa. Three years later he returned to England, and was appointed principal of Livingstone College, Leyton, which he had helped to found in order to supply elementary medical instruction for candidates for the mission field. He held that post until the outbreak of war, when he obtained a temporary commission in the R A M C. From 1914 to 1919 he served in France and England as ophthalmic specialist with the rank of captain, and after demobilization he carried out corresponding duties under the Ministry of Pensions. Since the war he had acted as oculist to school children under the London County Council and the Herts County Council, and as refraction assistant at St Bartholomew's Hospital.

For fifteen years Dr Harford was secretary to the medical committee of the Church Missionary Society, and advisory physician to the society, he had been joint secretary of the Royal Society of Tropical Medicine and

Hygiene, and instructor in health to the Royal Geographical Society, of which he was a Fellow.

Throughout his career he worked for the cause of national sobriety, and in 1919 he was secretary to the Church of England Temperance Society. He was a fluent writer, and many articles and letters from his pen appeared on this subject, as well as on psychotherapy and on psychology in its relation to problems of vision. His book, *Mind as a Force*, appeared last year, and was reviewed in our issue of November 29th, 1924. He served for a time as editor of *Climatic*.

Dr Harford married Adeline, daughter of Mr William Clapton, F R C S, and had one daughter. The funeral took place at East Hyde on July 7th. A memorial service will be held at Livingstone College, Leyton, on Tuesday, July 14th, at 4.30 p.m. The Bishop of Barking will officiate. Friends are invited to attend.

We are indebted to Mr W McADAM ECCLES for the following appreciation. My friendship with the late Dr Charles F Harford, known then as Charles Harford-Battersby, dates back to 1887, when, as a student at St Thomas's Hospital, he was a fine cross-country runner, out-distancing most of us from St Bartholomew's. He qualified in 1889, and in 1890, to the surprise of some, he went out as medical missionary for the Church Missionary Society to Lokoja, West Africa. It was his sojourn in this mission field which gave him his insight into the need of elementary but sound knowledge of health matters for those proceeding to spheres where lurked serious dangers to health, and he spent a large part of the rest of his life in seeking to remedy such a lack of knowledge. In 1893, in association with the late Dr Harry Guinness and myself, he founded Livingstone College and became its first principal. Here hundreds of men and women have received an elementary training in medicine, surgery, hygiene, nursing, and cooking which has stood them in good stead when alone in the outposts of empire, miles upon miles away from qualified medical aid. Later his work as secretary of the medical committee of the Church Missionary Society, and physician to the society, so thoroughly carried out, led to far-reaching improvements in many branches of the society's work abroad. Keenly interested also in social reform, particularly in the question of the abuse of alcohol, he acted for a while as secretary of the Church of England Temperance Society, and of the Native Race and Liquor Traffic United Committee, and was diocesan reader in London, St Albans, and Chelmsford dioceses. Fearless, apt at times to be dictatorial, but always because he felt that the right must be championed, and imbued with great energy, everyone who came in contact with him could not but feel that they had met a true and earnest man, keen to help where his knowledge was useful, ready to draw swords with those from whom he differed, but always as a Christian gentleman. With his work in ophthalmology and tropical medicine others more competent will doubtless deal. Working, writing, speaking, and active to the very day before his death, all his friends will say, "Well done, enter into rest."

R H SCANES SPICER, M D Lond,

Consulting Surgeon for Diseases of the Throat, St Mary's Hospital

WE regret to record the death, in his 69th year, of Dr Robert Henry Scanes Spicer, which took place on June 18th. He was the son of Dr Scanes Spicer of North Molton, Devon, and received his medical education at St Mary's Hospital, where he gained an entrance scholarship in natural science in 1877, and was demonstrator in anatomy in 1879. In 1877 he graduated B Sc in the University of London, and he took the diplomas of M R C S Eng and L S A in 1882. He took the degree of M B Lond, with honours, in 1882, and proceeded M D in 1885.

Dr Scanes Spicer held the post of medical superintendent of Fulham Poor Law Infirmary from 1884 to 1888. He studied in the leading throat clinics in Vienna, Berlin, and Paris, and was appointed surgeon for diseases of the

throat at St Mary's Hospital in 1888, an appointment which he held until 1908, when he was made consulting surgeon. He took a leading part in founding the Laryngological Society of London, and was jointly the first secretary, and subsequently vice-president, he was also one of the founders of the Otological Society of Great Britain. In the British Medical Association he was honorary secretary of the Section of Laryngology in 1890, vice-president in 1895, and president in 1900. He was also a Fellow of the Royal Society of Medicine.

He contributed an important original paper on cancer of the throat to this JOURNAL in 1909 and several other papers on the same subject were published in the *Proceedings of the Royal Society of Medicine*. He held interesting and original views on posture and respiration as causative factors, which, however, were not endorsed by his colleagues. Dr Scanes Spicer was an excellent laryngeal and nasal operator, in fact, the widely employed Caldwell-Luc operation for empyema of the antrum of Highmore might equally correctly have been called the Scanes Spicer operation, as he introduced it in London simultaneously with Caldwell in New York and Luc in Paris. He retired from practice in 1913 owing to impaired health, but returned to work under the Ministry of Pensions until a more serious breakdown in 1922. He leaves a son (who was head boy at Eton in 1917, and afterwards took a first class in the Classical Tripos at Cambridge) and two married daughters.

ERIC SINCLAIR, M.D.,

Inspector General of Mental Hospitals, New South Wales.

Dr. ERIC SINCLAIR, Inspector-General of Mental Hospitals in New South Wales, who died recently while on a tour of inspection, was born in Greenock in 1860, and received his medical education at Glasgow University, where he graduated M.B., Ch.M. in 1881 and M.D. in 1886. After serving as house surgeon and house-physician to the Western Infirmary, Glasgow, he entered the New South Wales State Public Service in 1882, and two years later assumed control as medical superintendent of the Gladstone institution. In 1898 he succeeded the late Dr. F. N. Manning as Inspector-General of Mental Hospitals, which post he continued to hold up to the time of his death. He took great interest in improvements in the treatment of insanity, and instituted a system of training of nurses and attendants. The establishment of a chair of psychiatry in Sydney University was largely due to Dr. Sinclair's continual advocacy. He further instituted in New South Wales the system of admission of voluntary patients to mental hospitals. He is survived by two sons, both of whom are members of the medical profession.

Dr. H. C. McDONNELL writes

Eric Sinclair, who passed away so dramatically in the train on May 19th—literally in harness, as he was on his way to inspect the new mental hospital at Orange—was a man of very exceptional character and attainments. He had for some twenty-seven years shouldered alone the whole of the organizing and development work, as well as the administration, of the Lunacy Department of New South Wales, and, in addition to this, during the later period of the great war took on the onerous and anxious work of principal medical officer of No. 2 Military District (New South Wales), with the rank of lieutenant-colonel.

He was a man with great capacity for detail, and he loved to plan out for himself the minutest specifications of the new buildings he was projecting. He was essentially an up-to-date man, and a desire for the amelioration of the lot of those suffering from mental illness with a clear view of possibilities of improvement in their treatment, especially in the direction of removal of restrictions, was an outstanding feature of his administration of an office which is at present constituted, necessitates great self-reliance and responsibility in the holder. Dr. Sinclair reached the compulsory retiring age early in the present year, and had contemplated giving up his office at the end of last year, as he suffered from some cardiac disability, but at the request of the Government he consented to

carry on for another twelve months, and it was while endeavouring to do so that death cut him off before he had even tasted any of the leisure his long and arduous service to his adopted country had earned for him, for he was a man who had never relinquished the reins of office to take a holiday since his appointment to his high position. It can be truthfully said that Eric Sinclair carried on, developed, and extended the great traditions of the Lunacy Department of New South Wales left by his predecessor in the office of Inspector General, the late Frederick Norton Manning.

THE LATE DR. W. J. J. STEWART

Dr. WILLIAM BUTLER writes. A kindly person, a humane doctor, unselfish, upright, and straightforward, Stewart was beloved of his friends, endeared to his patients, trusted and respected as an official. A loyal colleague, his sincerity impressed those who had the privilege of working with him, while his modesty, his unobtrusive strength of character and distastefulness of the loud and thrusting manners so much the vogue of seelers after place, singled him as one who came to his own in virtue of his innate fitness for the office. He so fully and satisfactorily filled the medical superintendent of the Wilkesdon Hospital he had scope for abilities naturally fitting for the position which a long experience in hospital administration and a wide knowledge in the diagnosis and treatment of infectious diseases enabled him to fill with exceptional success. In private life he was esteemed and loved no less than he was respected and admired as a public servant. He was a keen and good sportsman with wide and cultured sympathies, fond of outdoor pursuits, deeply interested in what is known as nature, and his varied appeals to those who were happy to be numbered among his friends will be missed by a privileged circle who will ever treasure his friendship. To his widow, left with a loving memory, the deepest sympathies are widely extended.

Medico-Legal.

ACTION FOR NEGLIGENCE AGAINST MEDICAL OFFICERS

THE jury disagreed in the action brought in the King's Bench Division by Mrs. Mary C. Venn of Thornton Heath, on behalf of herself and her children, against Dr. R. Veitch Clark, former medical officer of health for Croydon, and general medical superintendent of the Croydon Borough Hospital, Dr. J. M. Todesco, resident medical officer of the hospital, and Dr. G. W. Elder, formerly assistant resident medical officer of the hospital, for damages for alleged negligence in the treatment of her late husband, Mr. William E. Venn, a notary public practising in the City of London. The jury, however, unanimously exonerated Dr. Veitch Clark of any negligence.

The claim which was brought under the Poor Persons Rules came before the Lord Chief Justice on June 23rd and the hearing lasted five days. Sir Henry Maddocks, K.C., and Mr. B. M. Goodman appeared for the plaintiff, and Mr. A. Neilson, K.C., and Mr. T. Carthew appeared for the defendants.

The plaintiff alleged that when her husband was recovering from scarlet fever in 1922 he complained of pain in his leg, and his doctor diagnosed a deep-seated abscess. Mr. Venn was removed to the Croydon Borough Hospital on March 18th, where the plaintiff alleged his complaint was improperly diagnosed as scarlatinal rheumatism until April 25th when Dr. Clark ordered an operation. It was alleged that the operation was too late, and the patient died on June 15th.

The defendants denied negligence.

Sir Henry Maddocks, in opening the case, said that Dr. Milson of Thornton Heath diagnosed the complaint as a deep-seated abscess. The day after the patient was admitted to the isolation hospital Mrs. Venn told Dr. Elder this but Dr. Elder replied that in his opinion, Mr. Venn was only suffering from scarlatinal rheumatism. Mrs. Venn also told Dr. Todesco who said he thought it was a case of mind over matter, and that if Mr. Venn ceased to worry he would soon get better. On April 24th Mrs. Venn saw Dr. Clark, who examined her husband and ordered an operation, which was performed at the Croydon General Hospital on April 26th, a deep-seated abscess being found at the place where Dr. Milson had diagnosed it to exist a month previously.

Dr. E. G. D. Milson, in his evidence said there were medical means by which the presence and locality of a deep-seated abscess could be more or less definitely ascertained, and neglect of such an abscess might result in blood poisoning and death. It would take two or three weeks to produce an abscess of the size of that found when Mr. Venn was operated upon. Cross-examined, Dr. Milson said the hospital authorities appeared to have diagnosed

diphtheria in Mr Venn when he was admitted, and a septic throat might have accounted for his high temperature, but that would not relieve the medical attendant from considering the thigh rheumatic pain was very frequent after scarlet fever.

Mr Neilson K.C. in his opening, said Dr Milson had not suggested that an operation was necessary on March 18th. He sent Mr Venn into hospital for observation, and the reports showed that Mr Venn was carefully observed and that he made no complaint about his leg until April 16th. The trouble was then diagnosed as of a rheumatic nature and nobody could have said that the diagnosis was wrong. Later reports disclosed no complaint about pain in the leg, and on April 22nd inflammation first appeared.

Dr Veitch Clark, in his evidence, said he was not in charge of the patients at the hospital but visited them at the request of the resident medical officers. He was now medical officer at Manchester. When he saw Mr Venn on April 25th he found his leg swollen, red, and tender, and coming to the conclusion that there was an abscess he instructed the medical officers to call in a surgeon. He was of opinion that pus had not been present more than two days and that it could not have been discovered earlier than, possibly the evening of April 23th.

Dr Elder, now medical officer of the Manchester Corporation Sanatorium, said the day following Mr Venn's admission to the scarlet fever ward he examined him, and diagnosed diphtheria. He found Mr Venn suffering from a swelling on the right thigh and Mr Venn told him he was a martyr to rheumatism and that the rash over the swelling was caused by a hot water bottle. He was never told that Mr Venn was suffering from a disease of the leg.

Cross-examined he never diagnosed deep-seated inflammation, but the patient had such treatment as would relieve either a burn or deep-seated inflammation.

Dr Todesco, in his evidence, said on Mr Venn's admission he diagnosed scarlet fever and diphtheria. There was some redness on his right thigh but he (the witness) did not make a diagnosis of it. It was consistent with having been caused by a burn. Mrs Venn told him her husband had been treated for rheumatism, rheumatism was a common complication of scarlet fever. Mr Venn's condition on admission was not consistent with his having a deep-seated abscess.

Cross-examined he did not remember telling Mrs Venn that it was a case of mind over matter, and that if Mr Venn ceased to worry about his leg he would get better.

Dr F. L. Adams, of Croxson, said he saw Mr Venn on April 25th and found him suffering from a large fluctuating abscess. In his view, the formation of the abscess had only begun four or five days before.

Nurse Corney, who was in charge of the double infection ward at the Croxson Borough Hospital in March and April 1922, said on April 18th Mr Venn complained of pain in the leg but there was nothing to be seen. She first saw inflammation on April 20th and by April 22nd the leg had become very inflamed. On admission, Mr Venn told her he had had rheumatism, and that he had been burned with a hot water bottle.

Dr William Hunter, C.B., senior physician to the London Fever Hospital from 1880 to 1925, said he had carefully considered the Harris reports, and other documents relating to the case and he was of opinion that on Mr Venn's admission nothing surgical could have been done. He should have marked the case 'Queer, rheumatism or query something else.'

The jury disagreed.

The Lord Chief Justice asked Mr Neilson K.C., if he was willing to take a majority verdict, but Mr Neilson replied that he was for the defendants.

The Lord Chief Justice: Then you are not willing.

ALLEGED NEGLIGENCE AT CONFINEMENT

In the King's Bench Division, before Mr Justice Sinfrey on July 1st, the jury gave a verdict for the defendants Dr J. L. W. Kitching, Dr R. C. P. Whitcombe, and Dr J. Hale, who practise in partnership at Cobham, in an action brought by Mr A. E. Sherlock, an under gardener employed at Cobham on behalf of himself and his three children, for alleged negligence in the treatment of his late wife in childbirth.

Mr B. B. Stenham appeared for the plaintiff and Mr W. A. Jowitt K.C. and Mr T. Cartwright appeared for the defendants.

Mr Stenham in his opening said the deceased woman was strong and healthy and normal in every way. She had a baby 2 years old, and in 1923 she became aware that she was going to have another. The district nurse was communicated with and Dr Kitching was to be the doctor to attend her at the confinement which was expected on March 7th 1924 but actually occurred on March 12th. The plaintiff's employer Mrs de Jonge, a Dutch lady with some years of nursing experience, observed that the deceased had a certain amount of swelling above the ankles for some eight weeks prior to the confinement and she took tests of the deceased's water and found albumin. She told Dr Kitching who replied that he had found no albumin worth mentioning in his tests, and also that, in his opinion, the patient's physical condition was quite satisfactory but her mental condition was something different. Dr Kitching also declared that Mrs de Jonge had been carrying out tests in front of the patient and marking her beliefs she was ill. Later the patient became lethargic, and Dr Kitching caused her removal to Epsom Infirmary where she died on March 24th. Counsel said the deceased died of eclampsia but if her symptoms had been carefully watched at an earlier stage, and if Dr Kitching had not got a preconceived

notion of what was the matter, she would have had a proper diet and in - - - did not have died.

The - - - said he did not allege anything against Dr Whitcombe, but he alleged negligence against the other two partners. Mrs de Jonge did not prescribe diet for his wife but she out-nursed her with his consent.

Mrs de Jonge, cross-examined, admitted that as the result of another case in which she had interested herself she did not think much of Dr Kitching after that. She had put the plaintiff funds for that action, but she denied encouraging him in it. There was a time when he intended dropping it and she left him perfectly free to drop it. When Dr Kitching reprimanded her for interfering in the case she admitted that she cried and ran away.

Dr Robert Maxwell Trotter of London said, in his opinion Dr Kitching ought to have diagnosed eclampsia on March 17th, 1924. Cross-examined, he said, if Dr Kitching found no albumin before the confinement, in his opinion up to the 16th Dr Kitching had done nothing wrong. If no albumin was found on the Tuesday, he did not think it could be said the patient was suffering from eclampsia.

Dr W. G. Donald of Walthamstow said from the evidence he had no doubt whatever that the deceased died from puerperal eclampsia. Mrs de Jonge's tests of albumin appeared to him to have been normal and proper tests. He did not agree that the symptoms were such as were likely to be those of encephalitis.

Dr Guy M. Kendall, assistant medical officer at Epsom Infirmary, said he made a *post mortem* examination and found death to be due to eclampsia and cerebral.

Mr Jowitt K.C. in his - - - did not guarantee results and he submitted - - - for the jury to

say a case of negligence had been made out against defendants. Mrs de Jonge was interested in medicine and had that little knowledge which was such a dangerous thing. She was, no doubt, one of the most generous unselfish devoted persons one could wish to meet but he hoped the result of this case would be to hold up a finger of warning to persons against interfering in any way with a case in which a doctor was concerned. It was no part of his case to show that the cause of death was encephalitis lethargica but he would call eminent men who would say that in the light of what they now knew it was more likely to be encephalitis lethargica than eclampsia.

Dr Kitching cross-examined said Mrs de Jonge's tests were not of the slightest value. He thought she was a nuisance. She had no standing in the sick room at all. The deceased's symptoms pointed to a cerebral and mental condition. He, however, had not made up his mind to anything. He thought the deceased's condition entirely due to the atmosphere created about the house and that she was being harried into a mental state. One of the things he objected to was that Mrs de Jonge while discussing the patient's condition practically waved her test tube in the patient's face.

Dr Whitcombe in his evidence said the patient seemed upset and worried. There were several persons in the sick room and the noise was so great that one could scarcely hear oneself speak. There was no symptom of eclampsia.

Dr Hale in his evidence said he and Dr Kitching together examined a specimen of the deceased's urine and found no albumin. When the deceased was removed to the infirmary he wrote to the medical officer asking if he thought it was a case of encephalitis lethargica. He at no time agreed with Dr Kendall that death was due to eclampsia.

Mrs Wakefield, certified midwife who attended the deceased during and after the confinement, said she had had experience of eclampsia, but there were no symptoms in this case which led her to suspect the patient had eclampsia.

Dr J. P. Hedley, obstetric physician to St. Thomas's Hospital, London, said the case in no way resembled eclampsia.

The jury found for the defendants and judgement was entered accordingly.

Universities and Colleges

ROYAL COLLEGE OF SURGEONS OF ENGLAND

ELECTION TO THE COUNCIL

At a meeting of the Fellows on July 2nd for the election of three Fellows into the Council in the vacancies occasioned by the retirement in rotation of Mr V. Warren Low, Mr James Sherren, and Sir John Lynn Thomas, Mr Sherren and Sir John Lynn Thomas were re-elected and Mr Arthur Henry Burgess of Manchester was elected. 964 Fellows voted including 172 Fellows resident out of Great Britain and Ireland, 961 sent ballot papers through the post and 3 voted in person. The result of the poll was as follows:

Candidates	Votes	Plumbers
ARTHUR HENRY BURGESS	462	48
JAMES SHERREN	441	14
SIR JOHN LYNN THOMAS	406	7
Victor Bonney	361	19
Vincent Warren Low	332	12
John Percy Lockhart-Mummery	243	11
Herbert John Paterson	232	18

Three voting papers were found to be invalid, and in addition three voting papers were received too late.

DEATHS IN THE SERVICES
Lieut Colonel George Tucker Thomas Madras Medical Service (ret.) died in London on June 3rd. He was born on September 25th 1851 the son of the late Rev John Thomas of the Church Missionary Society, Tinnelly and after taking the M.R.C.S. and L.R.C.P. Lond in 1873 entered the I.M.S as surgeon on March 31st 1875. He reached the rank of lieutenant colonel after twenty years service and retired in 1905. Almost the whole of his service was spent in civil employment at first in Madras where when resident medical officer of the Madras General Hospital he came into collision with the Provincial Government in a case which created a good deal of stir and interest in India, some forty years ago, and afterwards in Burma.

Medical News.

THE publication by the Stationery Office of the volume of general tables comprising population, housing, institutions, ages and marital conditions, education, birthplace and nationality, and the Welsh language, completes the series of volumes of tabulated statistics derived from the census of June, 1921. This final volume contains the aggregated figures of the sixty county volumes that have already appeared, and so renders possible the study of the census from a national standpoint. A certain amount of new matter has been added relating to populations of county court circuits and districts, seamen and fishermen not enumerated with the general population on census night are included, also persons in vessels or establishments under naval, military, or air force discipline outside Great Britain. The price of the volume is 13s., and it may be obtained from H. V. Stationery Office.

A FORTNIGHT ago a leading article was published giving an account of the difficulties which had arisen with regard to reciprocity of medical practice with Italy, and stating that an agreement had been signed under which full freedom of practice in Italy was accorded to British practitioners, the country undertaking to admit medical practitioners possessing degrees from Italian universities to the Foreign List of the Medical Register of the United Kingdom. We learn from Mr. Norman C. King, registrar of the General Medical Council, that the Council has been officially informed that the Italian Embassy in London has communicated to all the consular offices under its orders the regulations concerning the admission of British registered practitioners to the privilege of practising medicine in Italy and its dependencies. The new arrangement comes into force from the date of its signature (May 21st, 1925) without need for further ratification or approval.

THE Fellowship of Medicine announces that a course in the diagnosis and treatment of common diseases of the nervous system has been arranged by the West End Hospital from July 27th to August 14th. A vacation course will be held at the Prince of Wales's General Hospital from August 4th to 15th, including lectures and demonstrations in medicine, surgery, and special subjects, including mental diseases and fevers. At the All Saints Hospital there will be a special course in urological diseases throughout the month. From August 24th to September 5th the Queen Mary's Hospital, Stratford, will give an intensive course in medicine, surgery, and the specialties. The following special courses are announced for September: diseases of the chest, infants' diseases, dermatology, electrotherapy, ophthalmology, and an intensive course at the Westminster Hospital. Copies of the syllabus of each course and the programme of the Fellowship of Medicine may be obtained from the Secretary at 1, Wimpole Street, W.1.

AN announcement appears in our advertisement columns inviting applications for the appointment of two assistant medical officers for the Mental Hospitals Department under the New Zealand Government. The commanding salary is £615 per annum. Particulars may be obtained by sending a foolscap envelope to the High Commissioner for New Zealand, 415, Strand, W.C.2.

THE National Baby Week Council has held during the present week an Imperial Baby Week at Wembley Exhibition. On July 6th Dr. Mary Scherke presented prizes and certificates won in various annual competitions, including the Astor challenge shield for the best local baby week campaign in 1924, awarded to infant welfare centres.

The week film displays and lectures

At the Climatological Congress to be held at Davos from August 17th to 22nd the topic for discussion will be the significance of climate in its physical, physiological, and therapeutic aspects. Those desirous of contributing papers on any branch of the subject, or requiring details of the arrangements, should communicate with the Secretary of the Congress, Dr. Vogel, Eysen, Davos Dorf.

THE German Society for the Promotion of Morality, which represents the German Branch of the International Abolitionist Federation, is bringing before the Reichstag a bill for placing under supervision all persons who are insane, mentally deficient, or who, in consequence of mental, physical, and moral defect, are incapable of looking after themselves and are a danger to others. The supervision will be arranged at the public expense by order of the county court in a suitable family, institution, or workmen's colony.

THE annual dinner of past and present students of St. Mary's Hospital Medical School will be held at the Connaught Rooms, Great Queen Street, W.C., on Monday, October 5th, at 7.30 p.m.

THE St. Bartholomew's old students' dinner will be held on Thursday, October 1st, in the Great Hall of the Hospital, at 7.30 p.m. The chairman will be Mr. John Adams, F.R.C.S. The honorary secretaries are Sir C. Gordon Watson and Mr. R. M. Vick.

SUBSCRIPTIONS received at the Mansion House for the Metropolitan Hospital Sunday Fund reached, on July 6th, a total of about £51,000.

A VACATION course of instruction for qualified practitioners will be given again this year at St. Bartholomew's Hospital, beginning on Monday, September 7th, and ending on Friday, September 18th. Inquiries should be addressed to the Dean of the Medical College, St. Bartholomew's Hospital, E.C.1.

DR. GEORGE P. ALDRIDGE of Luton Bolton, has been appointed to the Commission of the Peace for the County Palatine of Lancaster.

DR. MOURIQUAND has been nominated professor of children's diseases in the Lyons Faculty of Medicine in succession to the late Professor Weill. Professor Gott of Munich has succeeded Professor Salge in the chair of children's diseases at Bonn.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **BRITISH MEDICAL JOURNAL** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the **BRITISH MEDICAL JOURNAL** must communicate with the Financial Secretary and Business Manager, **British Medical Association House, Tavistock Square, W.C.1** on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager.

The TELEPHONE NUMBERS of the British Medical Association and the **BRITISH MEDICAL JOURNAL** are: **VESEUM 9361 9362 9363**, and **9364** (internal exchange four lines).

THE GRAPHIC ADDRESSES ARE:

EDITOR of the **BRITISH MEDICAL JOURNAL**, *Atiology Westcott London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc.), *Atiology Westcott London*

MEDICAL SECRETARY *Medicina Westcott London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Drumsheugh Gardens, Edinburgh (telegrams *Asociate, Edinburgh*, telephone 4361 Central).

QUERIES AND ANSWERS

UNCERTIFIED LUNATICS

"P. & D." writes to ask for enlightenment as to a doctor's position with regard to uncertified lunatics. Sometimes (he says) individuals evidently insane walk into one's surgery and sometimes one visits families where insane relatives are kept at home, the relatives refusing to allow certification although the individuals in question are clearly dangerous while at large. What should the doctor do in such cases?

'EUPARAL'

DR. A. H. SKINNER (Beckenham) writes: On page 888 of the **JOURNAL** of May 9th in a review of Jordan's *Textbook of Histology* mention is made of a new mounting medium 'euparal'. I find difficulty in obtaining this.

The method of preparation of this mounting medium is described by Shepherd in the *Transactions of the American Microscopical Society* vol. 37 (1918) p. 131. We understand that 'euparal' can be obtained in this country from Messrs. Parry and Tallock, 14, Cross Street, Hatton Garden, E.C.1.

STREPTOCOCCAL INFECTION OF TONGUE

"G. P." writes to suggest to 'Peppercod' (June 27th p. 1201) that a Wassermann test should be made. In a similar case he has found it positive greatly to the surprise of both the doctor and patient.

INCOME TAX

L. B. C. has received an inquiry from the local inspector of taxes with regard to the deductions made for domestic servants' wages; he has deducted the estimated cost of food, etc., of one maid at each of the two houses used for the practice.

Our correspondent does not say what staff is employed at each house and a good deal must depend on that—for example, if to take an extreme instance, the staff kept is one resident

maid and one day girl, with occasional assistance it would seem to be unreasonable to charge the whole cost of the maid as incurred in connection with the consulting room, answering the inquiries of callers, and other strictly professional work. A useful working rule is that where two maids, with occasional assistance, are kept, the cost of one maid is probably a reasonable charge but beyond this it is not possible to give general indications. Where it can conveniently be arranged, a personal discussion with the inspector is often the best means of settling this type of question.

Expenses Incurred by Locumtenent

"STELLA" did some locumtenent work last year and incurred £6 in travelling to the hospital where the work was done. The inspector refuses to allow this expense as a deduction from the inclusive fee received.

* * The difficulty seems to be that "Stella" is not in general practice, and therefore cannot assert that the fees in question were earned and the expenses in connection therewith were incurred as part of his ordinary medical work. The locumtenent work was apparently an isolated matter, and, if treated as such, the expense of going to and from was not earned in the performance of the duty but in order to put our correspondent into a position to perform it. At the same time the expense of travelling from place to place is so natural to the performance of locumtenent work that we should have thought that the inspector would have allowed it, rather than take up what is a very strict and somewhat harsh attitude on the strength of the peculiar features of an unusual case.

LETTERS, NOTES, ETC.

SUMMER TIME

THE secretary of the Early Closing Association writes to say that during the past four years resolutions in favour of the permanent adoption of a six months summer time period have been passed by 1,000 municipalities, trade organizations, chambers of trade or commerce, athletic and other associations. Resolutions have also been unanimously carried at two public meetings at the Mansion House held under the presidency of the Lord Mayor of London, and at large meetings in Birmingham, Bradford, Bristol and Manchester. Deputations have also presented evidence as to the urgency of this matter to the Home Secretary and the second reading of the Summer Time Bill was passed in the House of Commons on March 13th last by 289 votes against 63. Notwithstanding the strong public opinion in favour of this measure and the sympathetic support of the late and present Governments the bill is still in abeyance. Unless public opinion is aroused the summer time period this year will end abruptly in the middle of the holidays—namely, in the middle of September—and at a time when the additional hours daylight from work and business is so much needed.

* * The British Medical Association as most of our readers know is strongly in favour of the proposal to make summer time a permanent measure. The Representative Body in 1923 passed a resolution expressing regret that summer time had been curtailed that year as it is of the opinion that summer time is beneficial to the health of the nation and the Council in February 1924 voted 5 guineas to the Early Closing Association towards the costs of its campaign for the extension of summer time and its permanent adoption.

URINARY INFECTIONS

DR HAROLD H. SANGUINETTI (London W) writes. In criticizing my paper on urinary infections Dr Irwin (July 4th p. 37) seems to assume a greater ignorance on my part of such infections than I feel is warranted by anything I wrote. The fact that the paper represents a much abridged version of a thesis presented and accepted for the D.M.O. I do not doubt accounts for some misunderstanding but even then it is obvious I did not advocate vesical lavage for definitely descending infections where the seat of the infection remained in the kidney or renal pelvis. What, however, I have suggested is that descending infections are not so frequent as is now usually maintained or alternatively, that in descending infections the focus in the kidney and renal pelvis in many cases clears up some considerable time before the bladder becomes free from infection. The persistent infection of the bladder can be satisfactorily treated with injections of collargol. I am naturally aware that the majority of acute cases clear up rapidly without the use of vesical lavage although in no inconsiderable proportion of these cases the clearing up is confined to the clinical symptoms and organisms persisting in the urine and leading to subsequent relapse. It will be noted that the majority of my cases were chronic cases among whom were at least a few who had undergone in the acute stage just the treatment Dr Irwin advocates. The fact is these cases have patient and medical attendant much trouble and with the treatment usually adopted are difficult to cure. When at a meeting of the Hunterian Society in the discussion of Sir John Thomson Walker's Hunterian Lecture on urinary infections I claimed that with collargol one could get 50 per cent of cures the lecturer—while I think doubtful of my

claim—agreed that a treatment as such it was claimed would give such results as worth careful consideration. My percentage of cures for a certainly small number of cases is considerably higher. We may I think leave it at that. When I have convinced myself that a suitable dilution of silver nitrate is certain, and not only 'probably' just as effective as collargol I shall use it in place of the latter. Meanwhile, I shall, for routine purposes, continue to use collargol.

THE JACOMETER

AN ancient Scottish university is said to have invented a Calorimeter for testing its doctors of divinity but in spiritual affairs we have just a man sober who could clearly affirm that "British constitutional prescriptions arbitrarily proposed puzzle the scientific American consulting his barometer, could forecast the next day a flow of liquor over the bar, and from the thermometer give the exact number of its labours." Now as we learn from the British Empire number of one of those publications devoted to the gratuitous postgraduate education of British doctors the American has invented a "jacometer" which shows the "disposable index" of a suspect and when a "jacometer" attachment has been affixed records accurately the appropriate period of debilitation. The instrument looks like a gas apparatus and a British entomologist thus hums its superiority to our rule of thumb methods.

In epochs of dublety
Green heral confusion
We'd test a man's sobriety
By British Constitution
We'd stand him perpendicular
Ask him for truly rural
Give arbitrarily standard
In verbiage in the plural
Dry Yankee scientific men
Have found a way much subtler
To tell if chauffs or other men
Have visited the latrine
Has he had coffee, milk or tea
Is tested by the jacometer
For their thanks the meter
Will clap on the jacometer

Then as his breath comes sighing out
It disposes a dial
And should it come to trying out
The needle stand his trial
They have a radiant plate beside
Tells starker from a lamp
And if one try the blue to hide
Shows every lit or limp
The psycho-analyst left behind
And vitamin an hormone to find
There's nothing new for man to find
Outside the land of Mormon
What need we think the final pains
What need for someone thicker
All other folks as give up first
When the Yankee gives up drinking
R C B

HOLIDAYS

DR W. B. DUNN (Medical Superintendent, Baldovan Institution Dundee) writes. I should be glad to know whether there is any reciprocity between public hospitals institutions etc. with regard to the holidays of members of staff passing from one to another. For example if a nurse who has had six months continuous work in one hospital passes directly to a post in another hospital without a holiday is the latter supposed to grant her the usual full holiday at the end of three months service?

COPPER CITRATE IN THE TREATMENT OF LEPROSY

LIEUT. COLONEL F. T. PALMER (Assam) writes to point out an error in our abstract on May 9th (p. 88) of a paper read by him. In one sentence copper sulphate was erroneously substituted for copper citrate. Colonel Palmer adds that copper citrate is used for intravenous injection in doses of 15 grains for an adult and is rendered soluble in small bulk by 4 grains of sodium citrate. The bismuth salt used by him is bismuth sodium tartrate which is generally given in 3 gram doses. Intramuscular injections were only employed in the initial experiments, and would not be suitable in so chronic a disease as leprosy, which requires very prolonged treatment.

SLOW HEART

SURGEON COMMANDER W. H. EDGIR R.N. writes. In connection with the question of slow heart action in athletes it may be of interest to state that I have constantly found a subnormal rate in the best Marathon runners in ships on which I have served. Four instances are present in my mind without reference to notes. Three were officers and one a private of marines. All were noted runners and capable of long sustained exertion and in all the pulse rate was between 54 and 64. I have come to regard the normally slowly acting heart as indicating special suitability for such exercises as running and boxing.

A DISCUSSION

MIR H. J. PATTERSON (London, W) writes. My attention has been called to a report of my annual hospital tea party in the *Daily News*. Although I was aware that the occasion was to be used for giving publicity to the hospital building fund I had no knowledge that personal allusions were to be made to myself. I much regret that in the report references were made for which I am in no way responsible and which are both unnecessary and undesirable.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 37, 38, 39, 42 and 43 of our advertisement columns and advertisements as to partnerships, assistantships and locumtenancies at pages 40 and 41. A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 16.

THE BRITISH MEDICAL JOURNAL · COMMEMORATIVE NUMBER

An Address

ON

THE OVERGROWTH OF SPECIALISM

DELIVERED TO THE ACADEMY OF MEDICINE IN TORONTO

BY

J. BASIL HALL, MCH, F.R.C.S.

PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION, HO ORAPY CONSULTING SURGEON, BRADFORD ROYAL INFIRMARY

I APPRECIATE very deeply the honour of being the first representative of the British Medical Association, since the affiliation between the British and the Canadian Medical Associations became an accomplished fact, to bring you our fraternal greeting and good wishes, and to address the members of our honoured profession in the great Dominion of Canada.

As I approached these shores I endeavoured to analyse my feelings. I found it difficult to realize that Ontario alone must be three or four times the size of the British Isles. As schoolboys we looked at our atlas and saw a map of England upon one page, and a map of North America upon another, but failed to grasp that vast difference of area of the two countries. Perhaps this was an early indication of our tendency in the old country to overestimate our own importance. Nevertheless, we do realize when we arrive at years of discretion that we are too self-centred, and we feel the necessity of cultivating a broader outlook, and a contact with the vigorous youth and newer views of our younger brothers.

As an illustration of our insular habit of mind, I would quote a passage from the writings of one of your own countrymen, a writer of whom you may be justly proud—Robert Service. The extract in which he gives us the rebuke we truly deserve is from his book *The Trail of Ninety-Eight*. The scene is laid in Dawson City, Yukon. A tall slim Englishman talking to the hero of the story, says:

How my old dad would stare if I could have him in Dawson City for a day! He would never be able to get things just in focus any more. He would be knocked clean off the pivot on which he has revolved these thirty years! Seems to me everyone is travelling on a pivot in the old country! It's no use trying to hammer it into their heads that there are more points of view than one! If you don't see things just as they see them, you are troubled with astigmatism!

Here is the opportunity, in your vast and wonderful country to readjust our convictions, and I thank you for helping to pull me off my pivot, and giving me the opportunity of seeing things from a new viewpoint.

Just as I was leaving the old country, the Council of the Royal College of Surgeons of England conferred upon me the honour of electing me a Fellow of their College. It is an honour of which I feel very proud, and I am deeply sensible of the distinction which it gives to me. My pleasure, however, has been very especially enhanced by the fact that I am sharing that honour with a Canadian, Professor Primrose of Toronto. I wish to extend to him my very hearty congratulations upon this recognition of his professional career, and to you, also, because he is one of your representatives in the great field of surgical science. I am sure you will forgive my insular prejudice when I say that I believe that it is one of the greatest surgical honours which can fall to the lot of any one of us, and in the years to come I shall always remember with much pride that my name had been associated with his.

THE NARROW SPHERE

Your President has proposed to me that I should say something to-night about some views which I recently expressed in my Presidential Address at the Annual Meeting of the British Medical Association. On that occasion I suggested that the modern development of specialism is becoming so great and so absorbing that we are in danger of losing sight of the value of that wisdom which can only be obtained by a laborious study extended over much wider fields.

Specialism has become a necessity in our modern scheme of medical practice, but surely it behooves us to be careful lest our profession becomes nothing more than a community

of craftsmen, each in his own water-tight compartment with little or no general knowledge of the problems which lie outside it. There is a growing tendency—I am speaking of England—to think that special practice confines a man's usefulness in life to one narrow sphere. It is said not infrequently, that a specialist is an individual who knows everything about his own particular subject, but nothing about anything else. That definition may be only a cynical gibe, but I cannot help thinking that it might become a sober truth, and I would urge that the attainment of a high degree of any ability can only be reached by those who realize that wide general knowledge must be the foundation upon which all professional eminence can be built. To be content to learn one thing, and one thing only, is surely a poor ambition. It may bring wealth and worldly success, but it very rarely brings real greatness. "Everything of something but something of everything" is such a motto which all of us should adopt.

In military service or in a great hospital, where large numbers of patients have to be looked after, work is essential. The cure of the patients is a matter of mass production. It is the only method by which a great output can be accomplished. We have learned that lesson from the great commercial enterprises in the world. There are thousands of human beings to-day who spend their lives in producing one important particular detail in the mechanism of some machine, or some process of manufacture. I have personal acquaintance with a man who earns a very handsome living in such an occupation. He can measure his work by a thousandth of an inch, but take him away from his one special employment, and you find him the dullest creature imaginable.

In the great iron and steel works in the city in which I was born there is a small group of men who earn large salaries by controlling the steam hammers which forge the wheels of locomotives and so forth. It is a great specialism, a craft which only a few possess. There appears to be a peculiar genius for this work, and I am told that it sometimes descends from father to son. The craftsmanship which these men display is wonderful, but take them away from their narrow specialism and you will find them very ordinary beings devoid of any interest in the progress of knowledge outside their own sphere.

Not very long ago I met a personal acquaintance who is a great expert in the textile world. His name is known in America, Australia, and many other countries. He had been spending a fortnight away from home, and I asked him how he had enjoyed his holiday. He said it had been very dull. He had just wandered about looking into the shop windows and reckoning up the cost of production of the materials displayed!

Specialism may be a great art, but it may be very soul-destroying. It may bring great wealth and notoriety, but it is a poor thing to live for, itself alone.

JOHN HUNTER: A CONTRAST

A few months ago I enjoyed the privilege of attending the Hunterian Festival at the Royal College of Surgeons of England, and witnessed the large gathering of nobility, aristocracy and drink in solemn silence to the immortal memory of John Hunter—an annual tribute which has been paid to his name for a hundred years. John Hunter was the very antithesis of modern specialism, a man who never neglected the opportunity to study any single object in nature lest he might miss some fragment of useful knowledge. What a wonderful life his was! He was a great surgeon, but surgery was only a very small item in an existence devoted

to the study of every problem in nature. Hunter began his dissections and preparation of museum specimens when he was 30 years of age. He died when he was 65 years old but during those intervening, thirty-five years he dissected and mounted upwards of five hundred specimens, illustrating the anatomy of innumerable types of invertebrate and vertebrate life, and he wrote manuscript descriptions of most of what he had done. During those thirty-five years he worked unceasingly to solve every problem in the animal and vegetable world, and his classical operation for incision remains to this day as one of the most perfect deductions from scientific observation applied to a practical use.

Stephen Paget, in his *Life of John Hunter*, reproduces one of his letters, written to a friend in Africa a few months before his death:

"There could be no better example than this letter of the vehement energy of Hunter's life. In his old age, full of suffering, overworked, and close to death, he was yet writing, to Africa for swallows, ostrich eggs, a crane, cuckoos, a young lion, everything connected with the bee tribe, chameleons and any other beast or bird."

While he was thus intensely intrigued with a human desire for general knowledge, he was Surgeon General to the Army, Inspector-General of Hospitals, Surgeon to St. George's Hospital, Surgeon Extraordinary to the King, and busily engaged in a great consulting surgical practice in London.

THE WIDER OUTLOOK

At the same festival, when I listened to the speech of the President, Sir John Blund Sutton, a speech full of wit, and a versatility which betokened a lifelong devotion not merely to the specialism of abdominal surgery, but to the study of comparative anatomy and zoology and the whole life history of mankind, I realized that his specialism had only played a very small part in placing him in the proud position he occupies to day. A great surgeon undoubtedly, but something much more than that—a man of wide scientific general knowledge, acquired by an endless study of human and animal life.

Only a few weeks later I was present at the funeral service of Sir Thomas Clifford Allbutt, Regius Professor of Physic in the University of Cambridge who died in his eighty-ninth year, a great scholar, and full of honours. He began his career as a classical scholar at King's College, Cambridge, and subsequently obtained first-class honours in natural science. Throughout his long life he never ceased to interest himself in any subject which might promote general knowledge. He introduced the clinical thermometer, which is used to day throughout the whole world. In 1871 he emphasized the value of the ophthalmoscope in the diagnosis of cerebral and renal disease. In 1873 he read before the Royal Society his paper on the effects of exercise upon bodily temperature. He subsequently edited a *System of Medicine*, which is one of which the medical literature in any language might be justly proud, and his work upon blood pressure, and the effect of overstrain upon the heart, is of great scientific value. It has been truly said of him that he was a charming speaker and a graceful writer. Faults of literary expression and logical arrangement vexed his soul. Truly a great physician, but something much more than that—a great scholar and scientist, and a very perfect English gentleman.

Is there any need for me to recall the life-work of such scientific giants as Pasteur, Lord Lister, or Sir William MacEwen? Do we not remember them as great men, who toiled unceasingly to promote general knowledge? Great men who required profound wisdom in an unlimited field of study, never doubting that every fragment of general knowledge would find its place in our scientific progress. Not so very long before the late Sir William MacEwen's death I was talking to him about the growth and shedding of the antlers of deer, a subject in which we were both interested, and one upon which he wrote a most absorbing book. Long after it has been forgotten that MacEwen introduced osteotomy to cure genu valgum that book will remain as a record of truth scientific research. Do any of us to day know anything about Lord Lister as a surgical "specialist"? His work as an operating surgeon is forgotten in the light of his labours in the wider fields of his researches. As an artist he is already forgotten, but as a scientific worker his name lives for ever.

WISDOM OR TECHNIQUE?

Is the modern trend of medical practice likely to produce such men as I have mentioned—men who were not interested in specialism but who were interested in the whole of life, whose mental activities were directed towards the sciences of observation and research. Is it not possible that we are all specializing too much and reducing individual usefulness to very narrow limits. The human body is a complex structure composed of many organs, but there is a vital interdependence among them, which is essential for the maintenance of the whole. It is really desirable that every man should train himself to combine his knowledge to only one narrow branch of medicine or surgery, and believe that a perfect technique can accomplish everything.

The President of the Medical Society of London recently touched for the accuracy of the following anecdote:

A patient, worried with abdominal pain and obsessed with the popular dread of appendicitis, consulted a specialist who removed the appendix. The pain remained and she applied to a generalist who removed the right ovary. The pain remained and she applied to someone who had a great reputation for gastric surgery and she submitted to a gastro-enterostomy. But the pain remained. Nothing daunted she went to one whom I may describe as a general surgeon. He opened the abdomen but said that he felt so much which wanted rectifying that he closed it again without doing anything. She has now been restored to good health by a little more moral influence, and the sound knowledge of the nature of her doctor.

No man can become a good surgeon unless he is first a good physician. That saying is as true to day as when Sir William MacEwen first spoke it, and special knowledge and technique must always be subservient to the wisdom which can only be acquired by a wide study of human—yes, and animal—life. A man may be a perfect surgical artist, but never a great surgeon, unless he learns that even the most perfect technique is no excuse for bad judgement and lack of wisdom.

OPERATIONS OR SUCCESS?

At the risk of becoming unpopular amongst my younger brethren, I am going to say that I am afraid that we are producing a generation of operators, and not surgeons. With the advent of perfect asepsis the respect for operative intervention has almost ceased to exist. Moreover it has become the fashion to advocate the adoption of more and more radical procedures, in place of those which have given excellent results in the past. It is no longer sufficient to remove a patient's gall stones—his gall bladder must be removed as well. Gastro-enterostomy is being condemned as insufficient for simple gastric ulcer. A partial gastrectomy is now the operation of choice. If I remember rightly, this operation was first urged upon the ground that cancer is so often gift upon long standing simple ulcer, and I believe the risk of malignant incidence was placed at something more than 50 per cent. I have been at some pains to try to find a definite reason for this alarming statement, because I know that the occurrence of cancer after gastro-enterostomy for supposed simple ulcer is quite a rare event. Either the ulcers are only rarely malignant, therefore, or else gastro-enterostomy cures cancer. Latterly, however, the advocates of the more radical treatment have shifted their ground, and it is now stated that my lesser procedure than gastrectomy fails to cure. I suppose my experience of gastro-enterostomy may be regarded as small, because I have not to perform my thousands of operations. Nevertheless, I can lay claim to some hundreds. Perhaps I have been especially favoured by fortune, but I do know that gastro-enterostomy for simple ulcer has been very successful in my hands so much so that I could not possibly advocate the removal of half the stomach on account of a hypothetical risk of subsequent development of malignant disease. The same argument applies to cholecystectomy rather than cholecystotomy. I have performed some hundreds of the latter, but I cannot trace any case in which cancer developed subsequently, and I know from long observation that the risk of recurrence of gall stones is practically non-existent, so long as the cholecystotomy has been adequately performed. It has also been urged that total rather than subtotal hysterectomy should be practised for uterine fibroid, in order to prevent the possibility of the subsequent development of cancer in the cervix if it is left

behind. I recently inquired into the after-history of 250 cases of subtotal hysterectomy, but failed to find a single case of this unfortunate development. Incidentally, however, I learnt of a case of cancer in the vagina, which was said to have developed in the scar following a total hysterectomy. I commend that to all ardent advocates of extreme radical measures.

THE STRAM-HAMMER AND THE NUT

When I was a very small boy I was taken to a great exhibition in the Old Cloth Hall in Leeds. It was not long after Nasmyth had invented the steam-hammer and I still remember watching a man regulating a model of that wonderful invention. He was cricking Breckon nuts with it! I was too young at that time to appreciate the wonderful scientific accuracy of the machine, but I do remember thinking that I could crush them equally well with my teeth.

What is the real reason for this modern desire to adopt extreme measures? It is the love of something new, the love of a great idea, and—yes, I am afraid that I must also add—the ambition for the notoriety of specialism. Specialism is the lay public conceives it—a marvellous gift which enables a man to do something bigger, and incidentally more expensive, than his neighbour. The aseptic principle is a priceless asset in modern surgery, but I would ask you seriously to consider whether the modern ritual is not being overdone. It is not easy to draw the line between reasonable and extravagant methods, but such there is much in the surgical practice of to-day which is purely theatrical. Moreover, our concentration upon technique is deadening our sense of the supreme importance of cultivating clinical wisdom and judgement, the shrewd estimate of the vital capacity of our patient, and the great principle that we should never forget that the greatest artist is he who does the least possible to secure the desired end.

THE ART OF SURGERY

The art of painting and the art of surgery are very similar. There are artists who produce pictures by a few bold strokes of the brush or pencil. Their work captures the imagination and it lives. There is also the artist who produces a picture full of minute detail. It is very beautiful and perfect, but before long it begins to pall, and sooner or later it ceases to attract. So is it with the art of surgery. The surgeon who can grasp essentials, and who is gifted with "vision," because he has viewed Nature from a broad standpoint, lives in the memory of future generations. His work remains because he has studied the great essentials of life. The other obtains a passing notoriety on account of his perfect technique. It is all very pretty, and attracts the eye for the moment, but it lacks that sterling quality which marks real genius. Genius is not a heaven-sent gift. It is the infinite capacity for work—a capacity for using our brains in the study of everything which enters into our existence.

If I may make an appeal to the embryo surgeons of to-day, I would beg them not to be narrow in their ambitions. I would ask them not to be counting up the worldly wealth that specialism may bring, but remember that the passing of an examination, however high its standard may be, and a year or two of special experience will never relieve greatness. Theatrical display of elaborate technique, and the noisy advertisement of the latest methods, will obtain notoriety, but chain them to a life of comparatively joyless work. I would tell them that while it is a great thing to be able to do something better than anyone else, it is a much greater thing to be known as a great scientific worker, who can bring to bear upon his special craft a knowledge of human nature and all those attributes which make men truly great. I would ask them to realize that if they work for the love of working, in the first place, to work for the advancement of knowledge and the universal benefit of mankind they will obtain a great recognition and an ultimate worldly success. I would commend to them the words of Thoreau when he says: "If a man advances confidently in the direction of his dreams, and endeavours to live the life which he has imagined, he will meet with a success unexpected in common hours."

A MEMORY OF ST GEORGE'S DAY

As I came to you across the sea, little more than half-way I recollected that it was the eve of St George's Day—St George, the patron saint of England—and my mind went back ten years to that twenty-second day of April in the year 1915, when Falkenhayn, the German commander, launched on the battlefields of France, before Ypres, his first poison gas attack—that abomination which violated all moral codes, and to which our enemy resorted in order to break our line by torture when he could not break it by overcoming our courage. Ypres, the gateway to the northern coast of France, was in due danger of falling before the enemy. Great Britain was threatened with starvation, the British Empire with ruin and the whole world with catastrophe. When England was in such desperate straits, when the best French division of seasoned Africans, which formed part of the fighting line, broke and retreated in torture and terror, who was it who stood fast and held the enemy back for nearly two whole days under the most appalling conditions ever experienced by any fighting force? It was the First Division of Canadian Volunteers, consisting of the Second Brigade under Brigadier Currie and the Third Brigade under Brigadier Turner. Can the old country ever forget the debt she owes to those men, or to those under General Alderson? Can we possibly forget such individual heroes as Major Knipfpatrick, who led the Fighting Tenth of Toronto, or Captain Straight, who by his courage and self-sacrifice inspired heroes to still greater efforts? In the story as written by Edward Wright we read:

'For a whole week the Canadians held the line that saved the Empire! When the main British relief came up at last by forced marches and went through the German barrage to take over the Canadian position there were scarcely more than two thousand Canadians remaining out of the old division of twelve thousand strong! The British cheered themselves hoarse as they gripped the hands of those newly made veterans whenever they got in touch with them. Canadians! Canadians! That was the British greeting when the weary, staggering, ragged two thousand went back through the German barrage to their rest billets!'

Another writer says

England has a thousand years of heroes before her eyes and she thinks of them with pride. Canada has made her great tradition suddenly! Canada has become a great nation great in territory, great in the boundless wealth of her cornfields, she only needed one thing—the glow of a great tradition.

Now I quote again from your Canadian poet, Robert Service, some lines from "The Younger Son," written before the war:

If you leave the gloom of London and you seek a distant land
Where all except the flag is strange and new
There's a bronzed and stalwart fellow who will grip you by the hand

And greet you with a welcome warm and true
For he's your younger brother, the one you sent away
Because there wasn't room for him at home
And now he's quite contented and he's glad he didn't stay
And he's building Britain's greatness o'er the foam

You will find him toiling, toiling in the north and in the west
A child of nature, fearless, frank and free
And the warmest heart that beats for you is beating in his breast

And he sends you loyal greetings o'er the sea

Then with the voice of the prophet he loses his poem with the lines

You've a brother in the army and another in the Church
One of you is a diplomatic swell

You've had the pick of everything and left him in the lurch
And yet I think he's doing very well

I'm sure his life is happy and he doesn't envy yours

I know he loves the land his pluck has won

And I fancy in the years unborn while England's fame endures
She will come to bless with pride—THE YOUNGER SON!

Gentlemen, we have come to bless with pride the Younger Son. Canada has now a great tradition. The men of Canada, the brave men of Canada, who went out into the great spaces of the earth and made them fruitful, crossed the sea to us in our hour of need and brought with them to Europe that priceless thing which lifts men to the height of heroes, and brings them very near to God. Once, at least in the great war you saved the British Empire and its Allies, and you are bound to us for ever with bonds of gratitude and affection.

SOME MEDICAL ASPECTS OF HOLIDAYS*

BY

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The Need of a Holiday

THOUGH bank holidays are comparatively modern inventions, dating from Lord Aberg's Act of 1871, holidays and saints' days are very ancient institutions, so that in Plantagenet and Tudor times the routine of labour was probably more interrupted than in the nineteenth century. But the prolonged summer holiday has now become a much more established article of faith than it was fifty or sixty years ago—long after railways made travelling comparatively easy. Many causes for this change of custom have been suggested, such as mere fashion and imitation, the increased rate and stress of living, of which each successive generation rather boastfully grumbles, and, of course, the explanation, beloved of the *laudator temporis acti*, that the present race has become degenerate and less hardy than its predecessors.

In an interesting paper in the second volume (1924) of *Reports of the St Andrews Institute for Clinical Research*, Professor P T Herring explains "the Law of Fluctuation"—namely, that the constituent units of the body tissues are constantly varying between the two conditions of complete activity and complete rest, and that this mechanism prevents undue fatigue and its bad effects—this law being a necessary sequel to that of Keith Lucas's "all or nothing" response of nerve and muscle. Further, the graded response of a muscle as a whole is due to varying numbers of its units taking part in the response. What is true of the part is, *mutatis mutandis*, true of the whole, and the new law of fluctuation expresses in physiological terms the old ideas of rhythm and alternating phases of activity and repose. The momentary systoles and diastoles of the heart, the diurnal periods of wakefulness and sleep, and the annual holiday are illustrations of the same sequence. But just as the "all or nothing" law applies to units, so do the cardiac relaxations and the night's rest concern the shorter periods of man's life. The taking of holidays or relatively prolonged periods of cessation from work is on rather a different plane and is not of universal application, for those who do no work obviously cannot, by definition, have a holiday; work and holidays are the natural complements of each other, and there should not be any workers without their holidays, it has indeed, been said that overwork is no more meritorious than overeating or any other form of excess.

It would be interesting to attempt an estimate of the value of a reasonable yearly holiday in terms of health and longevity, by comparing those who have worked hard and taken an annual holiday with those who have toiled without a real break. General impression would unhesitatingly lead to the conclusion that constant work without a proper respite for repair must favour early senility. But in marshalling the evidence from individual examples of these two classes of workers other factors must be taken into account, long and healthy life depends to a great extent on a wise selection of parents for hereditary may counteract many sins against the laws of physiological righteousness; thus, as regards longevity, the average duration of life in one of a number of persons, both of whose parents reached the age of 80, was twenty years higher than in another series in which the parents died under 60 years of age (vide Raymond Pearl), a regular holiday may not be adopted until a warning of ill health or a nervous breakdown has made precautions imperative, and a complete life-history, especially the incidence of infectious diseases, must be available. Examples of teachers, colleagues, or others who have ordered their lives on one or other of these lines will no doubt occur to you, so I shall mention two examples only of former leaders of our profession. Sir James Paget

(1814-1899) did without a real holiday for fifteen years (1845-1860) during his hard struggle as a young surgeon-pathologist, this, of course, was long before he "learned the misery of making only £4,000 a year" (eventually he earned £10,000 for some years). He had pneumonia six times between 1851 and 1870, a severe illness from post-mortem infection in 1871, at the close of his long life became, as his philosophically recorded, less and less able to do what he would, and died with "signs of congestion of the lungs." He had the advantage of a long-lived family behind him. Sir Henry Holland (1788-1873), whose span of life was the same, early determined never to allow his income from practice to exceed £5,000 a year, and to spend two months every year in travel, this he did for nearly sixty years (1814-1873), and, like Sir Thomas Browne, died on his birthday, two days after attending the trial of Marshal Bazaine in Paris, being ill for three days in all.

It must sometimes happen that a holiday is unconsciously taken just in time to prevent a breakdown or the onset of an infection such as tuberculosis, and it would be interesting to speculate on the frequency of aborted disease. The lowered resistance which was just about to allow infection to occur is braced up by the good conditions, and infection either does not make a start, or, if it has already taken root, is nipped in the bud or becomes latent.

While fully endorsing the physical and psychical need for a holiday in others, some seniors must admit that they have lost the keen zest of their earlier days to be off for a complete change, and that they no longer count the days before its advent with the same pleasant anticipation as in the past. Age has added inertia, a clinging to the home comforts, and a dislike to face the ills they know not of in unfamiliar surroundings. They no longer have the desire

"To burst all links of habit—there to wander far away
On from island unto island at the gateways of the day"

Such men may no doubt plead that their lives are not like those of most other medical men, not confined to monotonous routine, but varied by different forms of mental activity and their professional occupations diversified by official and public duties. In fact, like some contributors to *Who's Who*, they would subscribe "Work" as their recreation. There may be much argument in this contention from the mental point of view, but it does not provide for hygienic repair and fortification.

Some people never take a holiday and yet seem to get on well. A medical man told me that for twenty years he had never left London, except for professional reasons, and that by walking five or more miles every day he kept in good health, and I know another member of our profession whose experience is the same after ten years. These are, of course, exceptions, and their example is not without danger for the rank and file. Years ago a physician whom I found ill in town in August quoted Sir James Paget's record as a reason for his own self-denial, it certainly seemed that his early death from pneumonia, a few years later, may have been due to lowered vitality induced by following too closely in the footsteps of the great. Comparison between those who "live" and take holidays, sometimes spent at spas undergoing "cures" on the one hand, and those who take exercise but no holidays, though otherwise obeying the dictates they preach, on the other hand, might show but little difference on the whole, and so account for the apparent success of the medical man who never left London for twenty years.

The physical requirements at different ages of life deserve some attention, the young especially when rapidly growing, need much more rest and holidays than is perhaps generally recognized, and certainly more than adults, this is a point which the harassed parent of a large family does

not in any gratefully acknowledge. It is, however, hard to find any physiological reason for the discrepancy between the length of the terms at Oxford and Cambridge and those of students in the medical schools of London. As age advances and habits gain a firmer hold, the demand for holidays becomes less obvious or at least less clamorous. But perhaps the best test as to the suitability of a holiday to the various ages is the simple therapeutic one, so to speak, and to conclude that as long as a person really enjoys a holiday, he or she is of the right age for that form of holiday.

The time of year for a holiday is for many of us largely determined by the general lull which accompanies the absence of others during August and September; it is true that the younger generation, who act as substitutes and pickers up of the rather elusive crumbs left by the absentees, go away earlier or later. But otherwise a holiday at unaccustomed times may be considered to favour of mild eccentricity or impaired health, neither of which is a recommendation or advertisement of solid worth. From the hygienic point of view there is much in favour of splitting up the annual holiday allowance into two or three parts, but each of these should be a complete holiday. Some people are slow starters and take about two weeks to get into the holiday frame of mind and body, and therefore need a more generous reaction than others.

There are the two alternatives (1) of returning year after year to the same favourite spot, which has become a second home with well proved sources of pleasure and satisfaction, and (2) of going to a new place every year so as to expand our limited knowledge of the world and to avoid the disappointment from less favourable circumstances than on the previous occasion. On general grounds it would appear that the plan of a fresh place each year is more suitable for the young and energetic, who are more able to find manifold outlets for their bursting vigour, and that those approaching "the sear, the yellow leaf" will be happier in the haven that they know suits them.

The length of a holiday, like its nature, varies with the individual, although six to eight weeks is the ideal; it may be suggested that just as the necessary hours of sleep show considerable variation, so do the holiday requirements of different individuals. Holidays may be divided into several categories, such as the complete, the partial, the educational, the therapeutic, and the failures. The conception of holidays includes two rather different aspects, which, however, overlap—first, that of recreation, and secondly, that of rest and repair.

1 Recreation consists in change, distraction, and activity of a pleasant nature in a direction other than that of ordinary routine life. It is mainly a psychological remedy, as shown by the good effect of switching off from one line of work to another, thus relieving one part of the mind while healthily exercising another, and possibly, though here we are on rather uncertain ground, exerting a beneficial influence on the corresponding areas of the subconscious. As Sir James Paget¹ pointed out, there is a remarkable contrast between man and other animals in the matter of recreation—for except in the case of young animals, man alone refreshes himself by seeking fresh forms of activity.

The methods of recreation are various: it may be intellectual or physical, indoor or outdoor, and must vary with the individual's temperament and tastes. Although recreation essentially produces a mental rather than a physical change, it may be effected by physical means; thus it is perhaps most rapidly attained by fast or active motion—for example, running, riding, motoring, or flying, though the last is a more or less intelligent anticipation of what will probably hold good for the future, walking, which, at any rate in streets, does not exclude the companionship of black cabs, is therefore far inferior to bicycling or lawn tennis. As a complete change from the strain of life, medical men not uncommonly seek a holiday in stinking, shooting, or fishing, while others, tired of percussing the chest, obtain relief in driving golf balls over or even into bunkers. "A doctor's holiday" was the subject of the late Dr. W. M. Ord's oration to the Medical Society of London in 1884, in which, while admitting a

diversity of tastes, he inclined, apparently from his own hobbies, to the distractions provided by natural history or literature. But though it would be attractive to formulate the most suitable forms of distraction for the various professions and vocations, it is probably wiser to be content with the conclusion that it should be so different from ordinary life that the individual forgets his occupation and habits in becoming a natural man. A sedentary worker's recreation should be muscular exercise in which the mental processes, though no longer the sole form of activity, are in quite a different line, exercise is therefore a specially valuable form of recreation, as it influences both the body and the mind. In a rather analogous sense reading or writing as a form of recreation for the manual worker, while altering the mental outlook, also provides bodily rest, but it should be noted that the total physical benefit must vary according as an open air worker rests in clean air or in a contaminated atmosphere, such as that of a cinema or concert hall, or, again, according as a worker in a badly ventilated workshop takes his time off in a garden or in a stuffy room. On the other hand, an intellectual worker who seeks recreation in bridge or the theatre is thus benefiting his mind without any accompanying physical advantage. An important factor in recreation is the faculty of keeping thought-tight compartments in the mind whereby attention can at once and completely be switched off from one subject to another—a faculty said to have been possessed by Gladstone and Kitchener. Recreation is of course fully recognized in the ordinary working life of everyone, and the degree to which it is put into practice no doubt has a bearing on the need for a prolonged holiday; some maniaacs have more will than recreation, and vice versa, and, other things being equal, the need for prolonged holiday will vary directly.

2 The factor of rest and repair is part of the rhythm of life—as shown in the frequent distoles of the heart and the night's sleep, but a holiday differs from these in being at much longer and often irregular intervals, and in being under the control of the individual's discretion or indiscretion. What should be, but is not invariably, a form of holiday occurring at short and regular intervals—one day in seven days holiday—is the weekly Sabbath ordained in the Scriptures which has been expanded into the modern week-end habit, thus enabling the conscientious week-ender to obtain 104 days of freedom during the 365 days or the year. A well arranged week-end habit may thus to some extent obviate a prolonged holiday of six to eight weeks in the year, in the now far-off eighties a friend of mine, who was often chided on account of his rather frequent disappearance from the hospital where he was house surgeon, retorted "It is all very fine for you to laugh at me, but I keep fit, whereas you get knocked up and then have to be away for two or three weeks." But the week-end is more often a diversion or distraction than a rest, and sometimes, though a change, is not devoid of fatigue. It is perhaps only a natural outcome of the cry of "the wear and tear of modern life" that the *Daily Mail* some years ago made the suggestion that if one day a week were spent in bed, the medical profession would have much less to do than is at present necessary. A few people indeed begin the regular summer holiday by going to bed for a week, but usually these are neurosisthenics and are or think that they are, on the verge of a breakdown when the date of their annual holiday comes round.

The rest factor in a holiday, ordinarily so called, nearly always concerns mental rather than physical activity—in fact increased exercise is usually recognized as an essential feature of holidays. An important point is to secure complete change of environment and mental atmosphere, to get away from him- or herself, to pass a sponge over the mental slate and so wash off the dust and irritants of ordinary existence; for this reason a holiday at home has distinct drawbacks. As a first step it may be necessary to have a cessation of activity before passing from one state of life to another however different, but this again had better, because more easily, be taken away from rather than at home.

In order to secure a more complete change of mental atmosphere there is much to be said for a holiday apart

from the family or usual associates, at any rate in the case of some persons. Sir Henry Holland, who probably got the most possible out of his long life, though he was not an epoch-making pioneer in medical science, went abroad alone yearly for two months during fifty years, and depended for social intercourse on chance meetings on his journey. Respite from soul-destroying routine and worry should be continuous and complete during the holiday, but often men who obey the call for fresh air, change of scene, and exercise, keep in touch with their profession or business while staying in this country. Again, men who live most of the year in town for the sake of their work may take a house in the country for the holiday months of August and September, and come to town once or twice a week to keep an eye on their work, they thus slack off but do not leave off their usual routine, while getting more into the fresh air, but they do not get an entirely new mental atmosphere—they change their physical but not their psychical environment, in fact, such a holiday is partial instead of being complete, it is more like a glorified and oft-repeated week-end and approaches the life of a stockbroker who lives at Brighton and comes up to Change so many days a week. The physical health may benefit, but the mental groove is still between the same lines. There is therefore an advantage in taking holidays abroad, where calls, consultations, and certificates are not so likely to reach their intended recipient and as a rule correspondents cease from troubling. Much wisdom lurks in the interesting announcement in the social columns of the press that "Mr. and Mrs. Chamber-Brown have gone abroad, and letters will not be forwarded." Foreign travel also involves a more complete change of scene and of mental attitude, whereby the individual loses sight of self among the innumerable new objects of interest, in spite of Horace's dictum, "Coelum non animus mutant qui trans mare eurrunt." A sea voyage has similar advantages, and further secures more isolation, which, however, is now not quite so complete as in the pre wireless days. In addition it has the virtue of enforcing rest, which may not be an accompaniment of foreign travel and the itch to see as many capitals, pictures, views, and sights in the least possible time. Such a Continental scramble may, indeed, leave the traveller with an indigestion of impressions and ideas, and more fatigued in body than when he started out, so that he really requires a lotus-eater's rest on his home coming. A holiday abroad has, of course, a wide application as an education, and its value may be augmented by careful preparation in acquiring a knowledge of the country, its history and its language, it thus forms what might be classified as the educational holiday.

The Educational and Utilitarian Holiday

While the health-bringing influence of a holiday depends on fresh air, sun, and change of environment, the good effects on the mind are due to occupation in new directions—such as natural history, science, literature, art, and archaeology. A holiday may therefore promote general culture and broader interests, and thus initiate a hobby, and so prove a valuable asset by providing recreation for the remainder of the year. This, indeed, is particularly true with regard to holidays spent abroad, with a foreign language, scenery, architecture, and manners to stimulate the visitor. Reference may be made to the question whether, as medical men, we should, when passing through great medical centres, be better advised to avoid a return, even for a short space to a professional atmosphere, or whether we should be wise to take an opportunity of widening our knowledge and sympathies by visiting the medical school and seeing the buildings, laboratories, libraries, clinics, hospital facilities, and the prominent professors and teachers. Acquaintance thus made with places, personalities, and ideas will help to correct the all too common tendency to insularity and a narrow outlook which unconsciously grows and gains on us with the passing years. Though to do so is certainly open to the condemnation of its resemblance to a business man's holiday, there is a distinct difference between a flying visit to a medical school while happening to pass through a large town and on the other hand, going abroad to do a definite piece of work.

Does not the benefit obtained from such an incidental visit more than counterbalance any drawbacks due to its shabby character? Medical congresses abroad may be regarded as in much the same category as the passing visit to a medical centre, for though professional in name the general atmosphere is in reality much of the holiday picnic, they are a means of obtaining a welcome change of surroundings and combining a medium of work with pleasant travel and the opportunity of making fresh friends.

Holiday Failures

Indian natives who have failed for but not succeeded in obtaining a B.A. degree sometimes advertise themselves as "failed B.A.s," and in like manner there are holidays that fail, though they are not correspondingly a matter for boasting. A man may go away to the seaside and uncomfortable lodgings to be cramped up with his family, whose healthy noise and motousness—especially when, as in some Augusts, "the moon is in the sky every day"—gets on his nerves the whole time, and from which he has no excuse, such as his work or real diversion, to justify his escape. In this plight a man may count the days to his release from the discomforts and boredom of a so-called holiday. A holiday without his family is sometimes the best for a man of the irritable genius type. As regards physical health, the conditions at home may be superior or inferior to those encountered on a holiday, especially abroad, and the adverse conditions when away may be little more than counteracted by the increased amount of time spent in the open air and healthy exercise.

The most serious failure is that of the perpetual holiday often anticipated vaguely without any thought, much less realization, of its actual contingencies throughout a strenuous career, a successful business man retires or a professional man is placed on the shelf by the age limit, and what does he find? Unless blessed with wide interests or mercifully aimed with some engrossing hobbies, the long-expected fruit of delight may turn to ashes on his lips, and he experiences what Bernard Shaw calls "the horror of the perpetual holiday," he will then itch for real work, and even go so far as to return in a subordinate position in his own business, or, if no deliverance in the form of public work comes to the rescue, proceeds to deteriorate both in body and mind.

An aspect of holidays that should be mentioned with due circumspection is the effect on some members of the family of the holidays of other members. In probably not very rare instances parents suffer from the strain entailed by the holidays and proper entertainment of their children, a quiet, orderly household, with plenty of elbow room for those of mature years, suddenly becomes crowded with exuberant youth, full of restless energy and not unaccompanied by audible signs of exuberant enjoyment or excessive expostulation. The middle-aged, already "set" in their habits and somewhat intolerant of noise, often find it hard, though it is undoubtedly salutary, to become young, and when there are extraneous sources of anxiety may abandon any such attempt and be left with nerves jangled and irritable.

Diseases due to Holidays

Although a thorough change is an essential part of a complete holiday, there are possible abuses in the method of making this change, and from the practical, not from the cynical, point of view, a few remarks may be devoted to 'the diseases due to holidays.' They may be divided into (1) those occurring during absence from home, and definitely due to the unusual conditions and manner of life, (2) those arising after the holiday, but traceable to its conditions or influence.

1. It is unnecessary to discuss constipation due to interrupted habits caused by the exigencies of travel, food poisoning resulting from experiments in unaccustomed articles of diet, water-borne diseases, such as enteric fever, or other endemic infections, such as malaria and Malta fever, except to intimate that due precautions should be taken with regard to diet and the choice of the foreign resort and to local conditions at the time of the visit, such as the endemic prevalence of influenza, of enteric fever—

which obviously suggests T A B vaccination before leaving home—the presence of mosquitos and of endemic malaria. Just as I was revising this paper I came on an article by V Y in the *New Statesman* (1925, vol. 529) entitled "DANGER!" and beginning, "Holidays are for the robust," and humorously exaggerating the risks. Accidents such as sprains do not need any reference, but the risk of cardiovascular strain must not be forgotten. Thus a middle-aged man after ten months or more of sedentary life suddenly, without any training, launches out into active exercise such as he was accustomed to take thirty years ago, for example, he at once starts climbing in the Alps, and may come seriously to grief by dilating his heart. Unwanted sea-bathing and swimming may prove too much for a man whose heart and arteries have insidiously undergone the changes of arteriosclerosis. Some of the bathing fatalities ascribed to cramp may really be angina pectoris.

2. *Diseases arising after the Holiday but traceable to its influence*—A drawback to travelling, especially for long distances abroad, is the risk of picking up infection—flu, influenza, catarrhal, or tonsillar—from railway carriages and sleeping cars. It is disappointing after an invigorating holiday, such as at a Swiss winter resort, to develop a cold or sore throat directly after return, and thus to realize that much of at least the physical benefit of the change has been neutralized. This is therefore an argument for motoring abroad, provided the weather is suitable, in preference to railway trains.

Another occasional sequence to a holiday is that the acquired immunity, due to unconscious intermittent vaccination with the micro-organisms of dirt, catarrhis, lapses in the pure air of a holiday, and that a cold or sore throat asserts its right to afflict the holiday-maker so soon after his return that the sunburn on his face has not as yet vanished, if the explanation of the lapse of acquired immunity is correct, it would be natural to expect that a long holiday would be more likely than a short one to be followed by this mishap. It has been thought that those engaged in post-nortem work are more prone after a holiday than at other times to become infected and suffer from boils or sores. Sir James Paget held this view, and in writing on a surgeon's freedom from infection while daily exposed to pus and his susceptibility when no longer thus protected, quotes E. Symes Thompson's experience that while engaged in doing necropsies he escaped infection, but on returning from a holiday to this work a scratch on his finger was followed by severe illness.

Advice to Patients

Where, when, and how to take a holiday to the best advantage is a subject on which most people feel that, as on a number of other subjects, they are authorities, and are more inclined to impart than to follow advice. Though medical help is commonly sought as to the best place to undergo a cure for some morbid condition or tendency, and a holiday or rest from their labours is often prescribed by medical practitioners as an essential of treatment, ordinary persons seldom take expert opinion about their holidays, except from travelling agencies. The healthy boy or young man regards a holiday as merely a return to a state of freedom from the toil and the restrictions of civilized and artificial life, and would consider it absurd to dream of taking advice or of making any special preparations for a return to a state of natural and simple existence. But however it may be with them, their elders would often gain by adopting the humble course of asking advice.

National health is attracting ever-increasing attention, and many improved methods have been instituted among the directions in which a useful advance might possibly be made is the more careful choice and arrangements for holiday-making. Those seeking advice should be impressed with the really serious importance of selecting the right kind of holiday and place, and further with the need for self-education in arriving at a proper decision. Just like any other course of action in life, a satisfactory holiday demands some trouble, though it might be urged that some of those who are in the position of advisers in this matter are themselves cranks and should practise in conformity with their preaching. The ordinary healthy person leaves the selection

of the place of his yearly holiday largely to chance, whereas skilled medical advice might effect a good deal in obviating failure in holidays. A sedentary worker often suddenly starts on active exercise at the very beginning of the holiday without any preparation in the way of training the heart and muscles for the increased strain thrown upon them. In the young there is so much reserve power that real harm seldom results from such rapid transition from solely intellectual to mainly physical activity, though not uncommonly after a holiday full of unwonted exertion there is on returning to work a feeling of lowness and fatigue which takes a week or so to wear off. It need hardly be mentioned that after an infection, such as influenza, a young patient must be cautioned against starting active exercise with too much enthusiasm, on account of the risk of myocardial strain. But as the years glide by and middle age becomes established, the margin of reserve narrows, and the holiday-maker is surprised to find himself suddenly pulled up by cardiac pain or distress on returning to the athletic habits of his youth. The risk of such an unpleasant experience should certainly be minimized by advice based on a medical stocktaking directed to consideration of the state of the blood pressure, heart, and arteries. A holiday should not be regarded in the light of an incident, such as an evening party, which can be embarked on without some measures of preparation, some time before setting off for a climbing expedition in Switzerland or stalling in Scotland, a course of walking, hopping, skipping, or training for the muscular and cardiovascular systems should be undertaken. Further, the week-ends might be utilized as trial trips. By such a course of training the risks of sudden strain should be eliminated. Patients with anaemia should be cautioned against taking much exercise, for clinically the importance of rest in bed for patients with grave anaemia is well recognized, and experimentally G. O. Brown found that after a long period of sedentary existence in cages, in which presumably little blood was being destroyed and made, dogs then exercised vigorously for several days showed temporarily a great decrease in the circulating haemoglobin and red blood corpuscles from increased mechanical haemolysis, the compensatory function of the bone marrow being caught napping. In dogs previously exercised, as in human athletes during training, no such anaemia results, and the general experience is that after short periods of exercise the haemoglobin and the red count are raised. In recommending a holiday to another attention must be directed to the physical condition and power, temperament, inclinations, and hobbies, and for successful advice personal knowledge of the individual and of place counts for much, for in unaccustomed holiday would be worse than useless. The worries attendant on a long journey, with the rush of getting off and the care of children and luggage, may be minimized if the anxious mother and the irritable father take a sedative dose of bromide to render them philosophic, cheerful, and less prone to a train headache.

Holidays are often taken at spas, and here the physical benefit which results, or should result, from the "cures" for some bodily disease or disorder, may be impeded or modified by the boredom and dislike of the place chosen by high authority for his victim. Therefore, in considering the course of action, the mental as well as the physical factors should be taken into account. The experienced knowledge of practitioners who, like the late Sir Hermann Weber, specialize in hyrology, climatology, and balneology, is a valuable supplement to the particular knowledge of the individual possessed by his medical attendant. A dance of over-fatigue and of overfeeding, which the stimulating air and interest may excite, should be insisted upon.

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A Lecture

ON

THE PSYCHOLOGY OF ANIMALS SWALLOWED ALIVE.

DELIVERED AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND ON JUNE 5TH

BY

SIR JOHN BLAND SUTTON, Bt.,

PRESIDENT

Many discoveries and observations made by naturalists are of little interest to the public but animal psychology and vagaries of the human mind are interesting to all

When sitting in quiet contemplation digesting after dinner, with beneficent microbes hard at work within me, I sometimes wonder if animals who swallow their prey alive are worried by the aerobiotic efforts of victims trying to escape

The same idea must have occurred to many boys after reading the curious experience of Jonah, swallowed alive by a big fish and subsequently vomited upon the shore for his adventure. In Matthew's Gospel the creature that swallowed Jonah is called a whale. Matthew may have

been a good evangelist but not a naturalist. This is not surprising, for he was a customs officer under Herod the Tetrarch. There is a tradition that Jonah was the son of the widow of Zephath, Eliah restored him to life, and delivered him to his mother, saying, See, thy son liveth.

The story of Jonah and the whale has been the source of many quips. There is a misericorde in the stalls of Ripon Cathedral representing the prophet in the act of being swallowed by a whale—the mouth of the beast is well furnished with teeth—and another representing him emerging from the mouth of the whale (Fig 1). The verger supplies this pun. When Jonah felt himself in the power of the whale, he was down in the mouth and felt he was going to blubber!

The open mouth of a big whale may measure 20 ft in length, 15 ft in height, and 9 ft in width. Such a chamber would easily accommodate twenty Jonahs standing upright.

Many believe that the story of Jonah and the whale stands by itself, but the *Boston Post Boy*, October 14th, 1771, reports upon undoubted authority that an Edgartown whaling vessel, after striking a whale, had one of her boats bitten in two by the whale, and Marshall Jenkins, one of the crew, had been taken into the mouth of the whale, which had then smelt with him. On returning to the surface, the whale had ejected him on to the wreckage of the broken boat, much bruised but not seriously injured. The whale concerned in this exploit must have been a big sperm whale.

In old pictures representing the Jonah Miraculous the creature which swallowed the prophet is usually a whale with teeth, but among the beautiful stained glass windows in the Church of St John at Gouda there is one in which Jonah is shown full and immaculately clothed, walking out of the mouth of a huge cod-fish.

Sharks

Sharks are well known as formidable tyrants of the ocean, and their voracity is almost beyond belief, and sometimes ends in their own destruction.

The diodon, a curious fish not uncommon in tropical seas, is furnished with strong teeth which enable it to break off and crunch big pieces of coral on which it feeds, and its skin is beset with sharp spines. This fish has the power of inflating itself until it assumes the shape and size of a big bill, when inflated, the spines stand out like the quills of a porcupine, hence the popular name of the diodon is porcupine fish.

Durbin, in 1832, was on the *Beagle* in the South Atlantic when he became acquainted with this curious fish. On the authority of Dr Allan of Lorient, he states that big sharks swallow the porcupine fish, and has frequently found

it floating alive and distended in the stomach of a shark. On one occasion a porcupine fish swallowed by a shark had eaten its way out not only through the coats of the stomach, but through the walls of the body, and thus destroyed its captor. Darwin asks, Who would ever have imagined that a little soft fish could have destroyed the great and savage shark? The diodon inflates itself with air and water, which it expels with some force when it deflates. The jets of water must cause some curious ticklings to a shark with a lively diodon in its stomach!

No one need be sceptical in regard to a shark's ability to swallow a porcupine fish, or of difficulty in accommodating the fish when it reaches the stomach. Some idea of the gastric capacity of a shark may be gathered from the following evidence. Sir William Turner dissected a Greenland shark (*Lacnæus borealis*) nearly 12 ft long. Its voraciousness was revealed by the contents of the stomach: one cod fish and two salmon averaging 3 ft in length, nine haddock, a small skate, the carcass of a small porpoise without its head, and bits of blubber.

A remarkable example of the voracity of the tiger shark was reported by F. A. Mitchell-Hedges. A party of explorers, engaged in deep sea research in the Caribbean Sea, killed one of these ocean tyrants. This shark measured 17 ft in length, 9 ft in circumference, and weighed nearly 2,000 lb. Its stomach contained eighteen deep sea eel-fishes (21 in length), each weighing between 4 and 5 lb. Every one had been swallowed whole. It seems a vicious taste on the part of the shark to swallow these extraordinary creatures. They resemble animated coal scuttles. The fish in this case is called a tiger shark, not on account of fierceness or

rapacity, but for the mottled appearance of its skin. Lockwood, an American naturalist, studied the habits of king crabs in 1870. In New Jersey they are used for feeding ponies and hogs, female crabs are preferred. A female king crab may contain half a pint of eggs, they are like mustard seed, but of an ash green line. There is a belief that this diet makes poultry lay, fattens

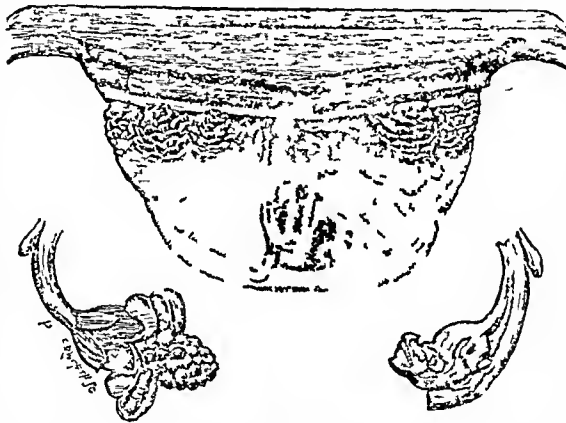


FIG 1—Miserere in the stalls of Ripon Cathedral representing Jonah emerging from the mouth of a whale

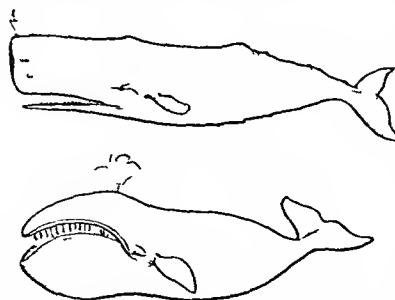


FIG 2—Sperm whale and whalebone whale in outline to show the peculiarities of their heads (F. B. Hart)

fowls and hogs, but gives a shocking flavour to the flesh of both.

Things more curious than fishes are sometimes found in the stomach of a shark. In 1779 Michael Fitton, in charge of the tender of H M S *Iberigenny*, cruising off

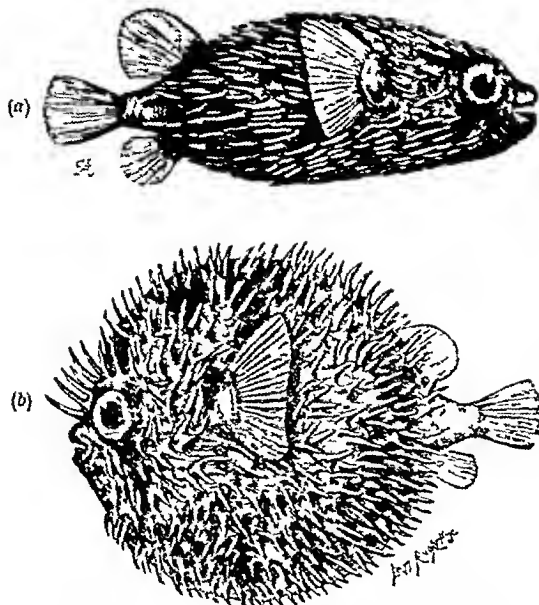


FIG. 3.—Showing porcupine fish (a) deflated and (b) inflated. When inflated it is as big as a coco-nut. (Günther)

St Domingo, caught a large shark, which was hoisted on board the tender. Some seamen cut the head off the fish and cleaned the jaws, and others opened its maw, it contained "a parcel of papers tied up with string." The letters were of recent date, and Fitton had them dried on deck and read them. One of the letters related to a brig called the *Nancy*, which had been seized as a prize. The captain and the crew of the *Nancy* were tried and convicted with the aid of this letter in the Old Court House, Kingston. How this packet got into such a curious post-box is a matter for conjecture.

Lat and be eaten is the rule among fishes in the sea. Fishes not only eat each other but even their own off-

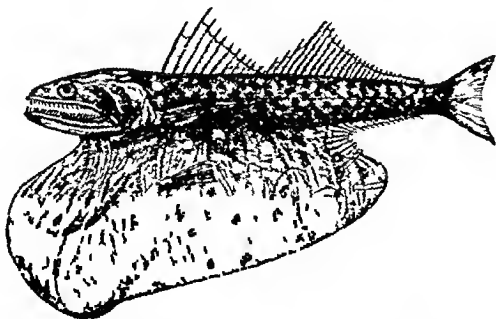


FIG. 4.—The black swallower (*Chasmodon nigrum*) a deep sea fish which swallowed a fish larger than itself. Half natural size. (Natural History Museum)

spring, and a few are so ravenous that they attack and swallow fishes bigger than themselves. The black-swallower (*Chasmodon nigrum*) lives at a great depth in the Atlantic Ocean, below 1,000 fathoms. There is an example in the Natural History Museum which was dredged at 1,500 fathoms, and it contains a dead fish bigger than itself (Fig. 4). The captured fish was clearly discernible through the tightly stretched belly when the fish came to hand. The black-swallower is clearly allied to cod-fishes, which are cannibalous, and is sometimes found floating dead on the surface of the ocean with a fish in its stomach. When a fish has been swallowed in such circumstances decompo-

sition outstrips digestion, and the generated gases cause the fish to rise so rapidly from the depths of the ocean that it is killed and floats on the surface. This may be regarded as a good example of post-mortem revenge.

In Ocean Crime

Most of the deep-sea fishes are pale green or blue when caught, but they turn rapidly black. Some are colourless and gelatinous, a few are silvery. In museums they are usually represented by models and these are usually black but their characters are blacker. The example of the

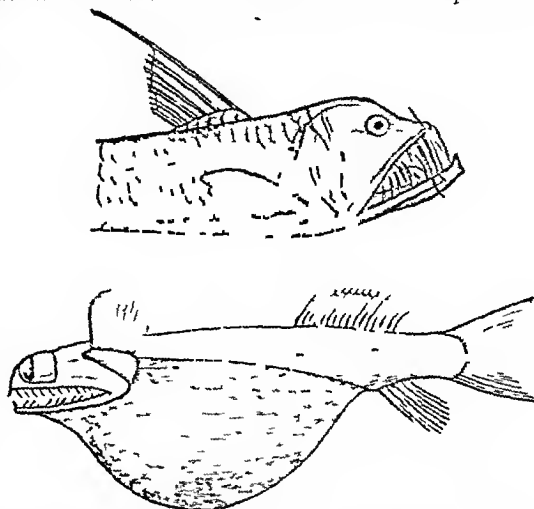


FIG. 5.—*Gigantura roxar* 80 mm. long with a *Chaulichodus* 1-2 mm. long in its stomach (C. T. Pagan) and the head of *Chaulichodus* to show its teeth.

black-swallower has been in a measure eclipsed by an exploit of a deep-sea fish, *Gigantura* (Fig. 5) obtained in the Atlantic by the Dana Expedition (1920-22), and carefully described by Mr. C. Tate Regan. This fish lives at a depth of 500 metres. Its eyes are telescopic closely packed together, and directed forwards. It has a formidable dental armature—the teeth are slender, sharp, and depressible. In each jaw a pair of anterior canines directed forward are followed by a series of strong spaced teeth, with smaller teeth between them. The fish is precocious, and has a very capricious stomach. It is probably a lurking fish that steals upon its prey, aided by powers of vision beyond the ordinary.

In the "Dana" specimen the fish was 80 mm. long but neatly picked in its stomach there was a deep-sea fish, *Chaulichodus*, 140 mm. in length. *Chaulichodus* has a formidable dentition, and the *Gigantura* must have been desperately hungry to attack a fish twice its length and formidably armed with teeth. After an examination of the body of

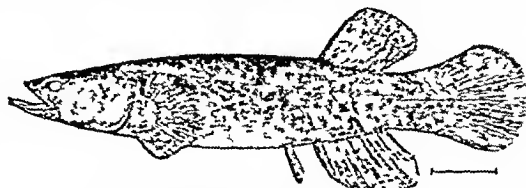


FIG. 6.—The black fish (*Dallia pretorialis*) a fish found in Alaska its vitality is astonishing. (Turner)

the victim, Regan reconstructs the crime in this way. The *Chaulichodus* was seized by the middle, and was swallowed double until it reached the posterior end of the stomach when its head and tail still protruded from the mouth of its captor. These were then taken in and bent back until the whole fish, now doubly folded, was in the stomach of *Gigantura*. Digestion affected the part first swallowed where the fish has quite disappeared, exposing the vertebral column for a length of 18 mm. It seems horrible to be slowly digested alive!

The pike is the most voracious of freshwater fishes and consumes large quantities of food. Big pike will seize

rats, voles, and it is said they attack foxes and small dogs. They gorge each other occasionally with extreme thoughtlessness for their own safety. In 1880 Dr Burton supplied Buckland with the following story. A boy saw in the Tweed near Kelso what he thought was a fish with a tail at each end of its body. He caught it and was astonished to find two pike, one of which was trying to gorge the other. They were alive, and he put them into a tub of water and parted them. As soon as they were separated the larger pike attempted to gorge the smaller. One weighed 3½ lb, the other 2½ lb (Fig 8).

Fishes are sometimes careful in what they attempt to swallow—probably from experience. A John Doiv, living in an aquarium with some fifteen spined sticklebacks, was foolish enough to swallow one. He swam around squirming as if he had gripes. After two minutes he vomited the spiny little fish, which seemed none the worse for its adventure and went back to the weeds apparently as unconcerned as if he had not been disturbed. Kingfishers are fond of the little fishes known as bull-heads, or miller's thumbs, but they are cautious in selecting their prey, for the big pectoral fins of these fishes may stick in their gullets. This is another form of retaliation. In musing on such events I think most will agree with Shakespeare

The sense of death is most in apprehension,
And the poor beetle that we tread upon,
In corporal sufferance feels a pang
As great as when a giant dies.

A live fish in an animal's stomach must cause some discomfort.

The black-fish (*Dallia pectoralis*, Fig 6), discovered by L. M. Turner, lives in the sphagnum ponds and swamps of Alaska. These fishes exist in enormous numbers and are the chief food of the natives; they are caught in specially made baskets. Between May and December many tons of these fishes are taken to the villages as they are exposed to severe temperatures and cold wind. The mass of fish in each basket is frozen in a few minutes. When required they are chopped out with an axe. The vitality of these fishes is astonishing. They will remain in the grass baskets for weeks and then brought into the house and thawed out. They are quite lively. Dogs swallow them eagerly. The heat of the dogs' stomach thaws the fish, and the movements of the revived fish soon cause the dog

to vomit it alive. The fish seems to be a long-suffering creature. What of the dog? We may say of our friend

—he got rid of an ill-considered meal in a sagacious manner. Several varieties of our freshwater fishes bury themselves in the mud during winter months. This is also true of frogs and toads, but they are not frozen.

In tropical countries some fishes bury themselves in the mud during the dry season. This summer aestivation is well illustrated by the mud fish of Uganda. The mud fish (*Protopterus*) abounds in the marshes around the Victoria Nyanza; it is a curious creature, and breathes by lungs and gills. This fish is eel-like in shape, and may attain a length of six feet. It is rapacious on worms, frogs, crustaceans, and its own kind. The cannibalistic instinct is so great that it is difficult to keep mud fishes in an aquarium, for they eat each other. In the hot season the marshes in which these fish live dry up, to meet this change they burrow into the mud, coil up at the bottom of the burrow, and surround themselves with a capsule of mucus secreted by the skin glands (Fig 7). Sequestered in this way the fish breathe entirely by their lungs, half the year, and remain secluded in the marshes until the return of the rain. When

mud fish adjusts itself to the cocoon, the flask-like cavity which contains it is closed by a perforated lid, the margin of the hole forms a funnel which leads to the lips of the fish. If a straw be gently passed down the funnel it will if alive utter a cry. The fish is so completely encased that it

may be dug up and transported anywhere. The Baganda call the mud fish, some natives regard it as a delicacy and keep it as a provision in elod. Some years ago a mud fish was brought in a elod to the Zoological Gardens, where it was released, and lived and thrived for three years.

Snakes and Frogs

As a rule people dislike snakes, but some snakes are harmless and can be easily tamed and allow themselves to be handled. Some snakes become affectionate in captivity but most are morose. Even a cobra may become a pet as in the case of the albino cobra caught by Mr. J. C. Roberts of Delhi. Albino snakes are rare, and in this instance Mr. Roberts is very

attached to this cobra, carrying it about everywhere with him and allowing it to careen him. The dislike to snakes may be in part due to the influence the

Barrow

Funnel
Mouth

Tail

Cocoon

Pectoral
limb

Clod

FIG 7—Mud fish torpid in its elod. (Newton Parker)



FIG 8—Pike occasionally attempt to gorge each other with extreme thoughtlessness for their own safety.

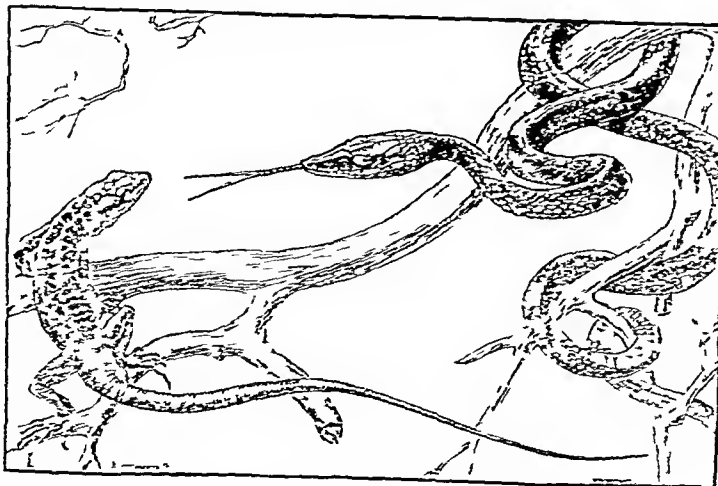


FIG 9—Silver tree snake swallowing a lizard.

serpent creased over his. The serpent in this instance must have been a tree-snake, because in Milton's description it climbed the apple-tree. It was a snake that

'Led his credulous mother, to the Tree
Of prohibition root of all our woe'

Snakes, especially cobras, are prominent in the Hindu Pantheon. There are many snake tales in Hindu religious writings, and Lama stories in which a prince accidentally swallows a snake which lives on his vitals.

It is impossible to comprehend reptilian psychology, Joan Procter has described a curious instance of a silver tree-snake fixating a lizard (Fig 9). The tongue of this snake is coloured in the same style as its head when the tongue is protruded through the rostral notch, with the lips closed, it appears to be a continuation of the snake's snout. She has seen a lizard watching the hovering tongue in perplexity, quite engrossed, and the snake staring at close range without stirring the usually swift and cautious prey. Miss Procter describes the effect of this "pulling faces" as really most arresting to witness.

It is easy to prove that the prey of constricting snakes are frequently swallowed alive and survive delivery by human agency.

Rudyard Kipling supplied me with the following incident. At Bateman's, in the county of Sussex, the gardener found a grass snake with a bulge in the belly, and promptly lapped off the snake's head, slit open its belly, and with a little help "a frog slid out head first, but alive." Rain was plentifully lubricated with silver, and on the ramp there were rails of two fangs. Otherwise no damage. The frog emitted a low croak as it was returned to a proper home among the lilies in the pond.

John Roscoe, missionary and ethnologist, while travelling from Uganda to Gondokoro, came across a snake engaged in swallowing a big frog. It was curious to watch the frog struggling to make its way down the snake's gullet, evidently thinking thus the way of escape. A native killed the snake. Roscoe opened it and released the frog which sat blinking as though astonished to see the light again, and then jumped among the grass.

Tree-frogs are favourite food of snakes. They have pads on the ends of their fingers and toes. The skin covering the pads contains glands which secrete an adhesive fluid which enables the frog to stick on a slippery surface such as a leaf, they adhere as much by the belly as by their digits. Tree-frogs can jump, when the artist was engaged sketching the frog (Fig 10) he suddenly missed it and began hunting around. In despair he sat down and looked at the drawing. Suddenly he was astonished to hear "Eep, eep, eep," close to his ear, and felt something cold on his neck. To his astonishment the frog was sitting on his shoulder croaking agreeably and—criticizing the drawing!

Gardow, whose interest in amphibians and reptiles leads him to keep and tame frogs and snakes, considers the grass frog "a jolly and intelligent fellow."

We know little, and can only surmise in relation to reptile psychology, but I have heard of a psychologist who made an excellent use of a frog in the following circumstances.

A thin and foolish woman believed she had accidentally swallowed a frog and that her thinness was due to the frog eating the food in her stomach. In order to dispel the illusion the doctor gave the patient an emetic and during the vomiting he slipped a small frog into the basin. When the patient saw the frog her joy was great, but in a few minutes her depression returned. "Oh!" she exclaimed,

"I am sure this frog has left some young creature in my stomach." The doctor looked wise, pulled out his magnifying glass, and after critically examining the frog said unto the patient, "Fear not this frog has not left any froglet inside you. Behold, it is a male!" The patient was quite satisfied, became happy and in a few months was pained again. She was not a naturalist, and therefore ignorant of the fact that it is difficult to tell the sex of frogs by mere inspection except at the breeding season.

Miss Kingsley knew a witch doctor at Kacongo West Africa, who treated bewitched persons, and was successful in removing the witch with rubbings and an emetic. In the vomit he always found several lucky young crocodiles. Magic and mystery worthy of a conjurer!

Snake swallowing Snake

Deglutition in snakes is a remarkable process. These reptiles are carnivorous and as a rule take living prey. Many swallow the victim alive, some kill by constriction. Poisonous snakes kill small mammals, birds, and fishes almost instantaneously and swallow the prey at leisure. The progress of deglutition is often slow and laborious, and can be watched in a menagerie. A python twenty feet long can swallow a goat or a pig. In some countries (Congo Territory) when the natives find a python gorged with a pig they kill the python, release the pig, and then eat both the python and the pig.

In reptile houses the fondness of snakes for frogs is cleverly utilized. The king cobra eats snakes and disdains frogs. In England it is difficult to obtain grass snakes in winter; the keeper gives the grass snake a frog and then passes the frog-containing snake to the king cobra, who thus gets the captive frog as well as the snake. Even snakes can be tamed.

Cannibalism signifies the eating of human flesh by human beings; the term "cannibal" is often applied to animals which eat their own species. It is true that snake swallows snake sometimes accidentally, sometimes intentionally. It occasionally happens in menageries that two snakes fasten on the prey and as neither is willing to let go its hold the stronger will engulf the prey and the snake which clings to it. Thus, in the well known case reported by Brittle, a big box eleven feet in length

fastened on a pigeon, a companion box nine feet in length also fastened on the pigeon. In the course of a night the larger box swallowed the pigeon and the box, and, what is more remarkable, it not only digested them but survived and twenty-eight days later took a pigeon. This was clearly an example of unintentional snake cannibalism.

The king-snakes (*Ophibolus*) common in the United States, Mexico, and Central America, are recognized cannibals. These pretty constricting snakes may attain a length of six feet; they are mild and inoffensive to man, allow themselves to be handled, and learn to recognize their keepers, and feed from their hands.

The king-snake is named from the fact that it is immune to snake poison, this reptile eats birds, lizards, and small mammals but prefers snakes, and even poisonous snakes. It is said that king-snakes will eat eels, probably mistaking them for snakes. They eat their own species. When animals are given them for food they get excited, and when several king-snakes live in the same compartment they are apt to attack and swallow each other. The liability to such accidents is well known, so that when king snakes, living in company, are supplied with frogs and mice, the keeper looks after them, because, if two snakes seize on the same prey,



FIG. 10.—Tree frog (*Hyla blanda*), Procter) showing pads on the tips of the fingers and toes. The first finger slightly longer than the second is used as a thumb in life.

Snake swallowing by snakes was well known to the ancient Egyptians. When Moses and Aaron met the magicians in Pharaoh's court they knew the trick of making serpents become stiff rods, and when cast upon the ground Aaron's rod swallowed up the Egyptians' rods (Exod. vii, 12). Meditations on the psychology of the swallowed suggest that the animal world may be divided into swallowers and the swallowed. A whale swallowed Jonah, but it is wiser for a man to swallow a whale than to swallow a heli

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DIFFICULTIES IN THE DIAGNOSIS
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same state. It has steadily enlarged and the diagnosis is undoubtedly correct. Since my last examination the kidney had increased considerably in size, and so altered in shape that it looked at first as if a splenic enlargement was superadded to that of the kidney. The converse of this case was supplied some time ago by a very uraemic woman with great digestive disturbance, who came to me with the diagnosis of cancer of the stomach. Her left kidney had been removed for pyonephrosis many years before, and the spleen, which was only moderately enlarged, did not come forward as usual, but, in the recumbent position, lay well back in the left flank and under the ribs, and had to be looked for in these cases when they first come under consideration. It is so typical that no error is caused by it.

But even then abnormal cells will thus
which will give the necessary indication, though
sometimes few in number

Radiation may apparently, however, sometimes produce

CHRONIC GRANULAR LEUKAEMIA

In the chronic granular leukaemias the disease is so insidious in onset that the first thing to attract attention, if the patient comes under observation before the anaemia is marked, is usually the enlarged spleen. It is surprising how often there seems to be difficulty in determining whether it is the spleen which is enlarged or some neighbouring organ. I remember a febrile leukaemia in a woman, many years ago, which was sent into a surgical ward as a cellulitis of the abdominal wall. The surgeon was clear that this was a wrong diagnosis, but thought the spleen was a tumour of one of the pelvic organs, and transferred the case to a gynaecologist, who was certain that the tumour was not pelvic, but refused to determine its nature. Of course a blood examination settled the matter. Enlarged spleens in leukaemia may and do wander all over the abdomen, and might be taken for any organ in turn, according to their temporary position. Comparatively small enlargements are often taken for tumours of the splenic flexure, and several times patients have come to me who had been x-rayed after barium meals and enemata. The true nature of the mass was only suspected when the passage was found normal. It often takes more than a momentary examination to settle whether a given enlargement is spleen or kidney. Neither organ, when enlarged, invariably retains its typical shape, the kidney may become very superficial, and the colon which crosses it may be loaded or empty and spastically contracted, and not easily made out, and there are many cases of kidney swelling with blocked ureters in which the urine gives no help. Some cases have required an enemata, intestinal catheterization, full blood examination, etc., before their nature was definitely determined.

To-day I saw a man whose right kidney was removed some years ago for calculi associated with constant pain and haemorrhage and the formation of a large tumour. At operation the kidney was found to be cystic in addition, and it was suspected that the left kidney was in the

a condition closely resembling myelocysthaemia. Some years ago, in November, I saw a lady whose breast had been removed for cancer a year before. She had been treated by x-rays from that time till August. She was anaemic—small ends of both clavicles, the liver was down to the umbilicus and apparently nodular, and the spleen was palpable. Cancerized encystomatosis was the probable diagnosis, but the examination of the blood introduced a doubt. The white cells were 12,800, there were numerous neutrophil myelocytes and some myeloblasts, and, further, there were nearly 7,000 nucleated red cells to the cubic millimetre, about half of which were normoblasts, the rest megaloblasts. A second count, a week later, gave 9,400 whites with the same picture as before and the same number and proportion of nucleated reds. The blood picture was that of an acute myelocysthaemia, the eosinophil and basophil excess at the chronic type was absent. The alternative diagnosis was widespread metastatic cancer in the bone marrow, which may produce a blood picture resembling leukaemia, and which was obviously more likely in this case. The lady returned to London and died in Westminster Hospital about six weeks later. Dr. Hildred Carhill kindly wrote to me about the subsequent history. A fortnight after I saw her the white count was 8,000—neutrophil polymorphs 59 per cent, lymphocytes of all forms 40 per cent, eosinophils 1 per cent, no myelocytes, and no nucleated reds. The spleen had returned to normal in size. A later count was almost exactly similar. At the post-mortem examination cancer was found in the liver and ovaries, but not in the bones examined, and indeed, in view of the later counts, it was not to be expected. One is almost driven to the conclusion that my findings represented an erythroblastic and leucoblastic crisis resulting from the prolonged anaemia.

CHRONIC LYMPHATIC LEUKAEMIA

Chronic non-granular or lymphatic leukaemia is much rarer than the granular form, and less dangerous to life as a whole. I have seen cases, ultimately fatal, in which the first glandular enlargement—which had never disappeared—had been noticed eighteen and twenty years either respectively. Both these patients had been in fair health until a year or two before the end. In such cases the process almost certainly starts in the lymphatic glands and gradually involves one group after another, as these the process almost certainly starts in the lymphatic glands and gradually involves one group after another, becomes completely involved. There is no reason why the process should not start in any bit of lymphatic tissue in the body but a start in such extraglandular lymphatic tissue as the follicles in the bronchi or the intestine would mean an almost immediate spread to glands, and an apparent glandular onset. In cases where the process starts outside the bone marrow, the chronicity or acuteness of the individual case seems to depend entirely on the period when the marrow becomes involved, and on the rate at which the marrow space is filled by lymphocytes. When this occurs the marrow is available for erythroblast proliferation and in anaemia which is practically aplastic in character the results are severe.

But this anaemia is rarely so severe as in the acute myeloblastic and lymphatic forms in which the starting point is in the marrow itself. Nor is the tendency to haemorrhage so great on the whole as in the chronic myelocysthaemias. The chronic lymphatic cases are much more apt to die from the pressure effects of the glands, which are so much more uniformly enlarged in this form than in any other from the tendency to thrombosis of veins, and from the interference with function due to the infiltration of vital organs. As internal glands may sometimes be the first affected, pressure effects may occur early, and may cause puzzling clinical pictures until the blood is examined. An interesting example of this difficulty presented itself about eighteen months ago.

A lady who had complained of shortness of breath for about six weeks developed pleurisy with effusion without rise of temperature, about a fortnight before I saw her. The effusion had to be tapped several times before it ultimately settled down. Her doctor, who had gone over all the usual possible causes without result, examined her blood and found a great excess of lymphocytes. My first count

was red cells 4,700,000, haemoglobin 75 per cent, white cells 55,800. Of the whites 91 per cent were lymphocytes, degenerated lymphocytes, and there were no myeloblasts, many was no enlargement of liver or spleen and enlarged gland could be felt above the umbilicus and the right clavicle from elsewhere, but the veins in front of the chest were unduly prominent. The single gland was evidently in offshoot from a nodular mass. During the next six months while she was under observation the white cells fluctuated between 35,000 and 85,000, the proportions remained much as in the original films. The left lung was slightly dull all over, with diminished expansion. This was evidently a pleurisy resulting from the presence of a mass of leucocytes in the mediastinum. The patient is now well symptomatically, except for some weakness and shortness of breath on exertion, no other glands have appeared.

As these cases advance the white count usually rises slowly, and may reach a very high figure. In March of this year a man was seen who had noticed some enlarged glands at the back of the neck in 1918, other groups were gradually involved, and at his first visit all the external glands were greatly enlarged and the spleen reached the umbilicus. A diagnosis of lymphadenoma had been made but the blood had never been examined until he gave up his work elsewhere and settled in Edinburgh. My first count gave red cells 2,680,000, haemoglobin 50 per cent, and in the counting chamber the white cells were so closely packed together that the ruled lines could not be seen. When I had drawn the blood up to the figure 1 in the pipette it gave the astonishing figure of 2,224,000, which, so far as I have been able to find, is the highest count of white cells recorded in any condition. The films bore out this count: the white cells seemed quite as numerous as the red, and were practically all small lymphocytes. The patient was treated with arsenic. Six weeks later the glands had gone down to about a quarter of their former size—very often a general improvement in health. He had thrombosis of the veins of the left leg and generalized oedema with pleural effusion, he ultimately died suddenly. On this occasion the red count and haemoglobin were rather better than before, the white cells had fallen to 1,132,000, and were again practically all small lymphocytes. One neutrophil polymorph was seen in counting 500 cells. Though he had never been robust he had been able to carry on office work until a few months before his death.

ACUTE MYELOBLASTIC AND LYMPHATIC LEUKAEMIAS

Every physician is familiar with the hopelessness and tragic rapidity of the acute myeloblastic and lymphatic leukaemias. It has happened to me to see a patient who was well until a certain Saturday to make the diagnosis on the following Tuesday when he had a count of 10,000 white cells, and to see him die on the Friday with a count of 20,000. Recently the opportunity presented itself of observing throughout a case very nearly as rapid. The first recognizable symptom was epistaxis on the 20th of the month, there was haemorrhage later into the skin and from the kidney and bowel, and the termination was profuse haematemesis on the 29th. The red count was at first 4,800,000, haemoglobin 65 per cent. It showed a steady fall and on the 29th was 2,400,000, haemoglobin 42 per cent. This is typical of these cases. The rule is a gradual drop in red cells with a rising colour index—in this case from 0.6 to 0.87. If the case lasts long enough it is not uncommon to get a colour index above unity, and to find normoblasts as well as normoblasts in the blood. Another point of importance is the progressive diminution in the number of blood plates. The white count ran 9,300, 6,400, 10,400, 15,700. At first the polymorphs were 30 per cent, and at the end 10 per cent, at first also there were some neutrophil myelocytes and some eosinophils and basophils. The percentage of non-granular cells was about 60 in the first films of which 48 were myeloblasts. At the end the non-granular percentage had risen to 88, of which 65 were myeloblasts.

On analysing my cases it is evident that the acuteness of

the disease is nearly proportional to the percentage of myeloblasts and to the rate at which the percentage increases. Cases in which the true lymphocyte proportion remains high last much longer. Most of the cases of acute leukaemia are easy to diagnose, because though the leucocyte increase is small, there is usually an increase, and, except for the foregoing consideration, it matters little whether the excess is lymphocyte, myeloblast, myelocyte, or promyelocyte, or a mixture. The important point is the diminution of polymorphs and the great excess of cells with a round nucleus. With an ordinary Jenner stain all the forms except the myelocytes look very much alike, and special staining methods have to be used to differentiate them. But there is a group of cases which are very doubtful. Two recent examples will illustrate it.

The first was a lady of 52 who had suffered from melancholia for ten months. For a fortnight the temperature had been high. No physical signs of any kind were present to account for this. The white reaction was negative to typhoid and the paratyphoid fevers, and no enteric bacilli were found in the stools. There was no enlargement of external glands, the spleen dullness reached the border of the ribs, but the spleen could not be felt definitely. The white count was only 1,900. Not a single polymorph was seen, about 35 per cent of the whites were myeloblasts, the remainder lymphocytes. She died two days later.

The second was a man of 50 who was first seen because of an irregular pneumonia which had lasted for about a week. The white cells were 16,300 with only 70 per cent of polymorphs and no glycogen reaction. The comparatively low polymorph percentage made me suspicious that there was some condition behind the pneumonia. A week later the lung had cleared up and the white count had fallen to 7,600: polymorphs 54 per cent, lymphocytes 40 per cent, eosinophils 3 per cent, myelocytes 2 per cent, myeloblasts 1 per cent and a few normoblasts fairly numerous blood plates. A week later he was definitely anaemic: red cells 3,250,000, haemoglobin 50 per cent, white cells 6,000—polymorphs 22 per cent, lymphocytes 66 per cent, myeloblasts 8 per cent, myelocytes 2 per cent, eosinophils 2 per cent, a few normoblasts, blood plates few and large. Three weeks later (intermediate counts are omitted) the red cells numbered 1,000,000, haemoglobin 18 per cent, white cells 5,900—polymorphs 18 per cent, lymphocytes 66 per cent, myeloblasts 12 per cent, myelocytes 4 per cent, with numerous normoblasts, there were no megakaryoblasts. There was no enlargement of spleen or glands throughout and no haemorrhages—only progressive weakness as the main symptom.

How are we to class these cases in the absence of *post-mortem* evidence? In spite of the low white counts I can only regard them as acute leukaemias—the first probably mainly myeloblastic, the second mainly lymphatic. The differential count must be the criterion. The whole question, however, depends on the significance of myeloblasts occurring in the circulating blood—a subject too large for discussion here. It is to be hoped that some better method of differentiating myeloblasts in films than either Jenner-Giemsa or the oxydase reaction will be discovered and that some haematologist will undertake the embryological studies necessary to clear up our views of the phylogenetic relationship of these cells.

In connexion with the type of case just described, it will be realized that difficulty will sometimes arise in the diagnosis from pernicious anaemia, and this for two reasons—first, the not infrequent occurrence of a colour index of unity or above it in myeloblastic leukaemia and secondly, the high non-granular percentage in the differential count of pernicious anaemias. The first difficulty only arises if we are to regard cases of the type quoted as leukaemias, for increase of the white count is the rule in myeloblastic leukaemias, but is very rare in pernicious anaemia, and when it does occur is always a polymorph leucocytosis, and not a non-granular increase. The second difficulty may be illustrated by the following recent case. A man of 65 who showed all the characteristic signs and symptoms of pernicious anaemia had a red count of 1,500,000, haemoglobin 35 per cent, white cells 3,500, of the latter 84 per cent were lymphocytes, the remainder polymorphs. There were no myeloblasts. At first sight such a percentage makes one think of an acute lymphatic leukaemia, especially if the whites have not been counted, but the actual number of lymphocytes in the cubic millimetre is not really greatly increased. If we assume that the normal number of white cells per cubic millimetre is 7,000, of which polymorphs are 70 and lymphocytes 30 per cent, the actual number of polymorphs in the cubic millimetre will be 4,900 and of lymphocytes 2,100, while in the case quoted the lymphocytes are 2,940—not an overwhelming increase.

We are far too apt to use the percentages of the differential count, it would be wiser and would avoid misconceptions if we always quoted the absolute numbers of the different cells in the cubic millimetre. One safeguard in this bit of diagnosis is that myeloblasts are rare in pernicious anaemia, though they do occasionally appear. I have never seen them in sufficient number to cause error.

The difficulty of diagnosis between lymphatic leukaemia and glandular fever may be a very real one. Most cases of the latter disease are of short duration and do not present much difficulty, but in a recent case the temperature lasted for eight weeks and the enlargement of the glands nearly as long. The patient was a woman of 22, the enlarged glands were widely distributed on both sides of the neck but not elsewhere, there was slight enlargement of the spleen. The red side of the blood was a mild chlorosis, the red cells dropped slightly as the disease progressed. The first white count taken by her doctor, about a fortnight after the onset, was 16,000—polymorphs 14 per cent, lymphocytes 86 per cent. My first count, a few days later, was 12,000—polymorphs 26 per cent, lymphocytes 74 per cent, but in addition there were a great many degenerated lymphocytes with smeared nuclei, practically all the lymphocytes were "large." No myeloblasts were seen. Thereafter the count gradually dropped as the temperature fell and the glands diminished in size, and it has now for some weeks run about 3,000, with such proportions: polymorphs 44 per cent, lymphocytes (almost all small) 54 per cent, eosinophils and basophils 1 per cent each—that is to say, the blood picture is now that of a chlorosis with the polymorph leucopenia so common in that condition. Before I saw the patient the doctor had given the diagnosis as lymphatic leukaemia—a very natural conclusion on the evidence. I have heard of glandular fevers lasting a longer time, but have never seen one.

"A SARCOMA OF THE LEUCOCYTES"

No more need be said about the essential nature of leukaemia than that I regard it as a sarcoma of the leucocytes. The assumption that the disease is a sarcomatosis, however, only removes the difficulty a stage further back, and the problem is bound up with the question of what influence it is which in health keeps the normal number of leucocytes in the blood within such narrow limits. We know that the action of parasites, using the term in its widest sense to include bacterial and other organisms, can powerfully alter the count in disease in both positive and negative directions, that the proteins of food and probably other proteins and many other substances have definite actions. Does the interference of an infinite variety of substances keep the balance in health, and, if so, does it act directly on the bone marrow and the blood, or through the medium of some other organ? These questions require a definite answer before we shall progress much further in the understanding of leucocyte problems.

It is very striking when one examines the marrow of a myeloblastic leukaemic patient who has died with a count of, say, 20,000, to find all the tissue one can examine packed with myeloblasts to the practical exclusion of every other type of cell. The wonder is, not that the leucocyte count is increased, but that it is not vastly higher. One cannot resist the feeling that the excess of cells in the blood is there rather as an overflow than in response to any active call upon the marrow cells. Obviously the condition is widely present in the marrow before there is any evidence in the blood of its existence. A leucocytosis responding to an organismal infection occurs practically at once, and the marrow gets under way immediately, but never goes beyond the amount of hypertrophy required in each special instance. A leukaemia progresses in the marrow more or less steadily, in the acute cases progressively till death occurs. We do not know whether the spontaneous remissions which sometimes occur in the blood picture of the chronic leukaemias correspond to a real alteration in the condition of the marrow, if they do they are not more frequent than the retrogressive changes that occur in some tumours. It is well to keep an open mind but until further research throws fresh light on the disease the neoplastic theory of its causation is the most logical and satisfying explanation.

Historical Notes

ON

THE SITE OF THE ASSOCIATION'S NEW HOUSE

BY

E. MUIRHEAD LITTLE, F.R.C.S.

THE British Medical Association is but following the example of the Dukes of Bedford in moving from the Strand to Bloomsbury, for in 1704 the Russells left their great house near Covent Garden, and occupied their new mansion on the north side of Bloomsbury, or, as it was then called, Southampton Square. At that time there was open country at the back of the new house, and the view of Hampstead and Highgate from the garden was much admired. Compared with the Strand, the northern part of Bloomsbury has but a short history, and even compared with the southern part, which includes Bloomsbury and Bedford Squares, it is modern Bloomsbury Square was inhabited by distinguished persons as long ago as the seventeenth century, whereas Russell Square and the streets and squares to the north and west of it were not built until the beginning of the nineteenth century. In the map of London and Westminster by John Lubbock, published in 1801, most of them are represented as planned but not yet built, and only a few buildings on the north eastern side of Tavistock Square are represented as already existing.* Among these was

Tavistock House, the site of which is now covered by the New House of the Association.

In the Crace collection of maps in the British Museum there is a "Plan of the Estate of the Duke of Bedford laid out for Building by James Burton, 1806," in which Tavistock House is indicated as already standing in its own grounds at the back of the Tavistock Square buildings already referred to (see Fig 1). Through the kindness of Lieut.-Colonel Evelyn Gordon, the present agent to the Duke of Bedford, we learn that this house was built by James Burton in the years 1795-96, and it appears in various maps published in the last

century as "Tavistock House." It faced north-west, having a road in front of it, which afterwards became known as Tavistock Place North. This road appears to have been at one time continuous with Crescent Place, which leads to the once notorious Burton Crescent, now called Cartwright Gardens. It was, however, never a thoroughfare, being blocked by railings and a strip of garden at the north eastern end, where Burton Street now is, and by railings and gates a short distance from the Tavistock Square frontage. The topography is shown with some approach to accuracy in Cruchley's New Plan of London (Fig 2). This is said to be "improved to 1833," though it is hardly up to date as regards Tavistock House, which was enlarged and divided in 1825, but it shows the garden ground at the back of the house which was coterminous, as it is to-day, with the garden of a detached house in Tavistock Place. This house (which, like Tavistock House, is given

an erroneous ground plan) was of some celebrity. To this dwelling that remarkable stockbroker and man of science, Francis Baily, four times President of the Royal Astronomical Society, removed when he retired from business, and here, during many years, he carried out numerous scientific experiments, culminating in 1841 in the determination of the density and weight of the earth. His public services in connexion with astronomy and exact mensuration were immense, and Sir John Herschel did not exaggerate when he stated that his revision of the star catalogues alone entitled him to rank amongst the greatest benefactors to astronomy. Baily died in 1844, without any royal recognition of his immense services, despite the fact that he had greatly benefited the navy by his successful efforts to reform the *Nautical Almanac*. The house was afterwards occupied, till 1877, by the well known architect, Sir Matthew Digby Wyatt.

The James Burton above mentioned was a very important and well known personage a hundred years ago, he was a speculative builder and contractor who built nearly all the newer streets and squares which cover the northern part of the Bedford Estate. Dobie quotes a statement to the effect that in forty years Burton had built 2,336 buildings in various parts of London, including Regent Street and the houses of Regent's Park, where he was associated with Nash. He became a very rich man, but in his later years he lost a great deal of his wealth in the development of St Leonards-on-Sea, to which new resort he ran a service of stage coaches. His son, Decimus Burton, is better known to fame as the designer of the arch at Constitution Hill (but not of the Duke of Wellington's statue, which once stood thereon), and of many country houses and villas. Burton's design for the arch included a quidring, perhaps such as that by another hand which has since been substituted for the equestrian statue of the Duke. He was so much chagrined by the erection of the latter that he made provision in his will for the payment of £2,000 to the Government if it would remove that monstrosity.

The original Tavistock House was occupied by various tenants, until in 1812 James Peery acquired and lived in it. He was a well known journalist and reformer, who was born at Aberdeen, and originally wrote his name Peire. Having failed as an actor he became a reporter and regular contributor to the *General Advertiser*. As such he reported the trials of Admirals Keppel and Palliser. He planned and edited the *European Magazine*, and afterwards, as editor of the *Gazetteer*, introduced the system of employing a succession of reporters for the parliamentary debates. In 1789 Peery and a friend bought the *Morning Chronicle*, which soon became the leading organ of the Whig party. Lamb, Hazlitt, Coleridge, and Campbell all contributed to it. Like other Liberal journalists in the days of revolution in France, Peery did not escape prosecutions and imprisonment, but he emerged from them triumphant and they only increased his fame. In 1792, for having printed an advertisement of the address passed at the meeting of the Society for Political Information, held at Derby five months before, he was charged with having printed and published a seditious libel. The proceedings dragged on for a year, but finally Peery was acquitted. Five years later he was in trouble with the House of Lords for sarcastically suggesting that "the dresses of the opera dancers are regulated there." For this awful crime he got three months in

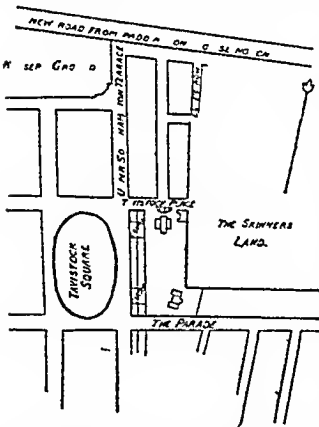


FIG 1—Part of the plan of the estate of the Duke of Bedford laid out for building by James Burton 1806. Baily's house is shown standing back from The Parade (now called Tavistock Place). The Skimmers Land is still held by the City company of that name as trustees for Tonbridge School. Crace Collection Portfolio A.V. No 18.

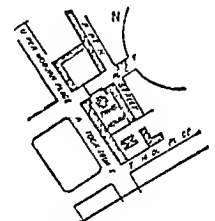


FIG 2—The neighbourhood of Tavistock House from Cruchley's New Plan of London Improved to 1833.

*Strictly speaking the Association's New House is not in Bloomsbury proper: it is in the Parish and Metropolitan Borough of St Pancras and not in the Borough of Holborn to which Bloomsbury belongs. The northern boundary of the ancient Manor or Burgh of the family of the 1st Lord later known as Bloomsbury and included in the old Parish of St Giles in the Fields lies to the south east of Tavistock Square and Place.

Newgate, where he held levees of his friends, and where presents of game and other luxuries poured in upon him. In 1809 he was once more in the dock charged with the heinous offence of reprinting the malicious suggestion of the Hunts in the *Examiner*, that the successor of George III would have "the finest opportunity of becoming nobly popular." This time he was quickly pronounced not guilty. Perry had a country house at Wimbledon, and his neighbour, Lord Nelson, stood godfather to his daughter George Robins (*vide infra*) drew up the catalogue for the sale of furniture at the Wimbledon house in 1822.

Perry died in December, 1821, and a few years later one Thomas Hill, who had acquired the lease, obtained permission from the Duke of Bedford to convert the main house into three separate residences, it appears from the plans that two wings were added to the original house, one westward and one eastward, at an approximate cost of £5,875. Thus it is seen that the original Tavistock House had become Bedford House, and the name of Tavistock was transferred to an entirely new house adjoining it on the south-west. In 1842 the executors of the late Thomas Hill assigned the remainder of their interest to George Henry Robins. This was the celebrated auctioneer whose name was a household word in the middle of the last century, and whose hyperbolic and flowery descriptions of the properties which he sold became proverbial. In the *Ingoldsby Legend*, "The Babes in the Wood," he who would ill treat children is wined.

Be sure he who does such base things
Will ne'er stuff Conscience's clown.
His riches will make themselves wings
And his property come to the humble!
Then He—and not those he deceives
Will have no cause for sighings and sobbings
When he finds him self smother'd with leaves
(Of fat catalogues) heap'd up by Robins!

Robins became very rich and gave much in charity, and thus he has a special interest for us as a supporter of hospitals. On one occasion at Newgate he made a collection for the Royal Sanatorium Infirmary, holding a plate in the street outside the church. For this act of begging he was taken into custody as a rogue and vagabond and this embryo flag dragged ended in his being prosecuted before the magistrates at Dover. But no evidence was offered and at Wandstone Assizes he brought in action against the magistrates and was awarded £50 damages.

His three houses were at this time mentioned in the *Standard* as being for 1857 they appear as Nos 1, 2 and 3 Tavistock Villas. They were also known in the estate lists as 1, 2 and 3 Tavistock Place North, but in 1845 the two end houses were there referred to as Tavistock and Russell House.

CHARLES DICKENS

In 1851 Charles Dickens took Tavistock House then and for many years previous to the residence of his friend Frank

Stone, A.R.A. "In 1852 the original lease was surrendered and new leases granted by the Duke, as follows. The most eastern house (afterwards called Russell House) to Frank Stone, the central one (afterwards Bedford House) to John Bate Cudde, and the most westward one (afterwards Tavistock House) to Charles Dickens."

Thus the once youthful reporter and contributor to the *Morning Chronicle* had come to live, not in the same house, but in one of the same name and next door to that in which the celebrated proprietor and editor of the paper had lived and entertained the men and women of light and leading

of his day. In the *Chronicle* most of the *Sketches by Boz* had first appeared, and Dickens always spoke in the most affectionate terms of Perry's successor, John Black, under whom he served.

There has been much confusion between the two Tavistock Houses, and it has been repeatedly stated that Dickens lived in the same house as Perry, or in "a moiety" of it. We believe that the mistake is now for the first time corrected.

Dickens was of a restless and nomadic nature, seldom satisfied to remain long in one locality, and the nine years of his tenancy of Tavistock House was a much longer time than that spent without interruption in any other house except Gadshill. Chance or choice seems to have attracted him to the north-west quarter of London. As a child he stayed with his parents in Norfolk Street (now Cleveland Street), near the Middlesex Hospital, and when they moved to London it was to Bayham Street, Camden.

Then his mother put up her brass plate and attempted to run a school in Gower Street North, at "Miss Dickens's Establishment," Little College Street, Camden Town, and Johnson Street, Somers Town, next received them, and at one time and another Charles lived with his father in the Polygon and in Bentinck Street, Marylebone. He went to a day school in Mornington Place, Hampstead Road. After his marriage he lived in Doughty Street for two years, returning to the north-west, to Devonshire Terrace at the top of Marylebone High Street. When he went to Lausanne to write *Dombey and Son* he sublet this house, and, returning before the subtenancy expired, he took a house in 1847 in Chester Terrace, Regent's Park. On finally leaving Devonshire Terrace he went for a time to Osnaugh Terrace, and then, in 1851, to Tavistock House. Here he remained till 1860, but after he took the house at Gadshill he spent much of his time in the country. After 1860 he had bachelor quarters at various places in London, one of which, at 5 Hanover Terrace, Regent's Park, should be included in our list. Besides these twelve addresses he had others in other parts of London and if the London County Council were to affix plaques to all his dwellings it would cost it a considerable sum.

Frank Stone, who occupied first Tavistock House and the Russell House was in A.R.A., the father of Marius Stone, R.A. and a great friend of Dickens. The latter, in a letter



Charles Dickens in 1859. After the portrait by W. L. With R.A. in the Victoria and Albert Museum, South Kensington. It was partly painted at Tavistock House. (Reproduced by permission of the Secretary and Director of the Museum.)

TAVISTOCK HOUSE IN THE TIME OF CHARLES DICKENS

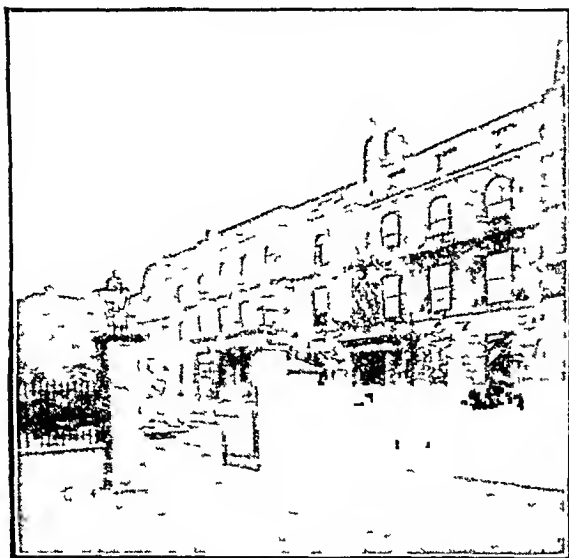


FIG 3—Tavistock Place North, showing Russell House (left), Bedford House (centre) and Tavistock House (right) with the entrance gate

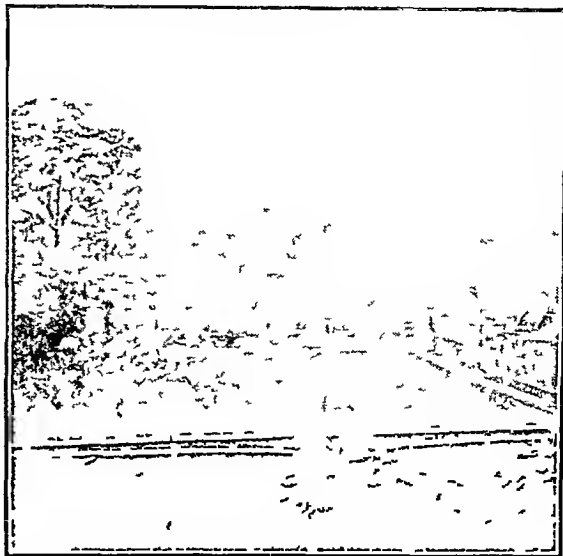


FIG 4—Garden in front of Tavistock, Bedford and Russell House (1900) showing the backs of the houses in Woburn Buildings

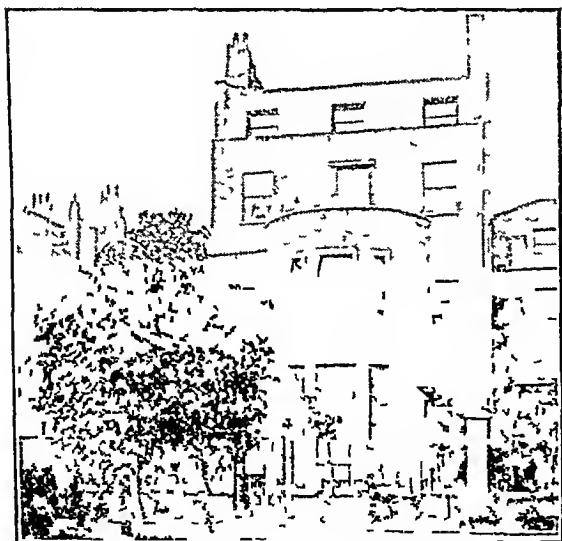


FIG 5—Rear view of Tavistock House. Charles Dickens's mulberry tree is seen on the left. The mulberry tree is still in existence

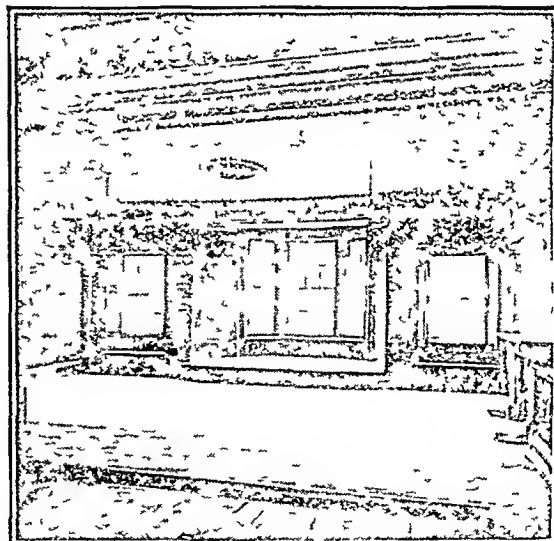


FIG 6—The back room on the first floor of Tavistock House in which Dickens gave his theatrical entertainments

to his brother-in-law Austin, writes about his plan of turning Stone's painting-room into a drawing-room.² According to Mr. Kutton, Stone temporarily occupied Dickens's late dwelling in Devonshire Terrace, while Dickens was making alterations in Tavistock House.

The great Danish writer Hans Christian Andersen was the guest of Dickens, and has thus described the house:

In Tavistock Square stands Tavistock House. This and the strip of garden in front of it are shut out from the thoroughfare by an iron railing. A large garden with a grass plot and high trees stretches behind the house and gives it a comfortable look in the midst of this coal and gas steaming London. In the passage from street to garden hung pictures and engravings. Here stood a marble bust of Dickens so like him so youthful and handsome, and over a bedroom door and a dining room door were inserted the bas-reliefs of Night and Day by Thorvaldsen. On the first floor was a rich library with a fireplace and a writing table looking out

on the garden, and here it was that in winter Dickens and his friends acted plays to the satisfaction of all parties. The kitchen was underground, and at the top of the house were the bedrooms. I had a snug room looking out on the garden, and over the tree-tops I saw the London towers and spires appear and disappear as the weather cleared or thickened.

In his difficulties in trying to find room for the audiences of these performances, Dickens was advised to consult Mr. Cooke of "Astley's," then the most celebrated of circus-men. In *Forster's Life* there is an amusing letter from Dickens which, as it alludes to the drive and gates, may fitly be quoted here:

One of the finest things I have ever seen in my life of that kind was the arrival of my friend Mr. Cooke one morning this week (18th October 1853) in an open phaeton drawn by two white ponies with black spots all over them (evidently stencilled) who came in at the gate with a little jolt and a

rattle exactly as they come into the ring when they draw anything and went round and round the centre bed of the front court apparently looking for the clown. A multi-side of boys who felt them to be no common ponies rushed up in a breath less as they twined themselves like ivy about the railings—and were only deterred from storming the enclosure by the glare of the Inimitable's eye. Some of these boys had evidently followed from Actley's.

After Dickens gave up the house in 1860 it was occupied by more or less distinguished, or at least notorious, people. It is said that it was at one time used as a Jewish college or school. Then it was the dwelling of a lady whom the medical profession has good cause to remember. This was the singer Miss Georgina Welldon, whose actions at law and whose ability in conducting her own cases made a good deal of stir in the late seventies and eighties. The great French musician Gounod lived some months with the Welltons at Tavistock House and gave singing lessons in the drawing-room. Here he composed the music of *The Maid of Athens*, which he presented to Miss Welldon. At some time or other Eliza Cook, a minor poetess now almost forgotten, lived here. She was the authoress of "The Old Arm Chair" and other sentimental and popular poems.

William Collins, R.A., whose pictures were very popular and often engraved in the last century, lived for a short time in Tavistock Square, and there, in 1824, his son William Wilkie Collins the novelist, was born. As well known, he became a close friend and collaborator of Dickens and was a frequent visitor at Tavistock House during the latter's tenancy of it, when it was the meeting place of many distinguished people. The numerous of Dickens's tenancy formed the most brilliant period of his career. He was in the prime of life and in the fullest enjoyment of his great gifts. He came to be known to

act drop for this was painted by Clarkson Stanfield, R.A., in two days, and afterwards framed and sold at the Gade hill sale for a thousand guineas.



Buildings in which Carlyle lodged in 1831

The accompanying photographs show that the three houses were very pleasantly situated, shut off from the street by railings and gate looking across the drive and shrubbery on an extensive garden or field, and having at the back each its private garden which joined the large garden at the back of the north-western side of Tavistock Place. Tavistock and Bedford Houses were pulled down in 1800, and Russell House in 1901. The photographs which have been received from the Bedford Office, show Fig 3, a view of the entrance gates and the houses from the south west, and Fig 4 the field or garden across the road extending to the backs of the houses in Woburn Buildings, in No 6 of which Thomas Carlyle lodged for two months in 1831 when he was vainly trying to find a publisher on satisfactory terms for *Sartor Resartus* (Fig 7). Of it he wrote

It is a very beautiful sitting room an inner bedroom above (and John sleeps with George) for which we are to pay 25s weekly. Quiet and airy and among known people.

From the back windows of this lodging Carlyle looked upon Tavistock House, in which in after years he was to be a frequent guest. The houses in Woburn Building which is but a court, are small and do not outwardly offer much prospect of immensity. When Mrs. Carlyle arrived to share the lodgings they were found to contain bugs, and the couple migrated to Ampton Street. In Fig 5 is shown the back of Tavistock House and "Charles Dickens's millberry tree", in Fig 6 the back room on the first floor of the house where Dickens gave his theatrical entertainment. These views no doubt represent the houses and gardens much as they were at the time Dickens first took Tavistock House although in the half century which had elapsed when the photographs were taken the shrubs and trees must have grown or been replaced.

I am much indebted to Mr. C. Fitzroy Doll, F.R.I.B.A., the architect and surveyor to the estate, who has very kindly had copies made from plans which he took when the three houses were demolished, and who had the plan (Fig 8) specially drawn to show the relation between Tavistock House and the new building of the British Medical Association. Another plan (not reproduced) of the ground floor of all three houses shows that the second Tavistock House was entirely an addition to the old house, not in lining the western wing of the latter, while the eastern wing formed part of Russell House. Fig 9

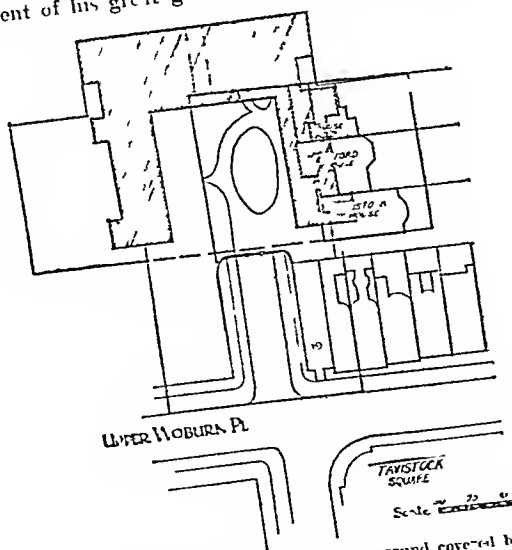


FIG 8—The hatched area shows the ground covered by the new building superimposed on the plan (in outline) of the old Bedford and Tavistock Houses.

the Medical House, *Hard Time*, *Little Dorrit*, *A Tale of Two Cities*, and *Great Expectations*. But the works were not enough for his restless energy. Beginning with the children's extracts on Twelfth Night, 1854, with the help of Mark Lemon and others, the smallest theatre in the world became celebrated and at every performance it was crowded with the leaders of literary and artistic London. The children of Dickens and of Mark Lemon seem to have displayed in natural drama powers and the song of Miss Widdows introduced (by desire) into Fielding's burlesque of *Tom Thum* so affected Thackeray that he rolled off his sea in a burst of laughter. *The Inghouse* by Wilkie Collins was the first of the adult plays to be given. The

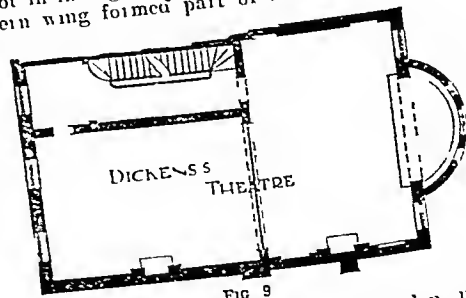


FIG 9

shows the first floor of Tavistock House in plan, including the theatre. In Fig 8 it will be seen that the end of the southern wing of the Association's new building covers part of the front portion of the house, including the staircase and a part of the theatre.

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- ⁸ *Dictionary of National Biography* vol. xi and first supplement.

THE BRITISH MEDICAL ASSOCIATION: ITS HOMES IN LONDON AND ITS SPREAD THROUGHOUT THE EMPIRE.

THE OLD HOUSES OF THE ASSOCIATION (1871 TO 1925).

THE new house of the British Medical Association, graciously opened by the King last Monday, is the fifth it has occupied since, in 1871, it established its headquarters in London. The reason for these changes was not restlessness or inconstancy, but steady growth.

The purpose of the Association has not changed in the ninety-three years of its existence though the means it uses to attain its purpose have developed and expanded. There can be no doubt that Charles Hastings and the provincial physicians and surgeons who gathered round him at Worcester in 1832 would have been in full sympathy with the aims and objects of the British Medical Association to-day.

For a period there was a risk that the Association might determine to remain provincial. Had that policy prevailed it could not have attained the position it holds to-day of the great all-embracing medical institution carrying its organization directly or indirectly, but for the most part directly, into every part of the British Empire.

The fortunes of the British Medical Association have been very closely interwoven with those of its journal. In 1844 the Provincial Medical and Surgical Association, as it was then called, took over the *Provincial Medical and Surgical Journal*, which had been established four years earlier by two members of the Association. In 1856, by a unanimous

vote, the names of the Association and of the journal were changed to the British Medical Association and the British Medical Journal respectively.

Though the Association had many strong supporters who believed in its future, and though the results were very encouraging in some respects (and in particular in the interest it was arousing in social questions having a medical aspect), its growth during the third quarter of the nineteenth century was slow, and its position was far from satisfactory from the financial point of view. In 1871 the members numbered 4,403, the

Plymouth) that the management of the Association was in an unsatisfactory state owing chiefly to defective organization and supervision, and recommended that a business man should be appointed secretary, that his office should be in London, that he should collect subscriptions, manage the Journal, and obtain advertisements for it, be responsible for all the preliminary arrangements for the Annual Meeting, and act as clerk to the Council and committees and at general business meetings. These recommendations were accepted, and Mr. Francis Fowke, then house governor and secretary of the General Hospital, Birmingham, was selected for the post. The Association at that time was particularly strong in Birmingham, and its policy was in large measure influenced by a few active members resident there. It required some faith and courage to give up an appointment which if not offering promise of distinction in the future, was capable of expansion and was at least a certainty. But Fowke was imbued with a very real respect for the profession of his father, who had been a well-known surgeon in Wolverhampton, and was fortunately possessed of some private means.

He found the business of the Association and the management of its Journal conducted in two rooms over a shop in Great Queen Street, a small thoroughfare running eastward out of Drury Lane. Hart, who was in practice as an ophthalmic surgeon, edited the Journal from his consulting room, first in Queen Anne Street and afterwards in Wimpole Street. The Metropolitan Counties Branch was at branches then went, large and active, so that Fowke came at once into a friendly atmosphere, and the honorary secretary of the Branch, the late Dr. Alexander Henry, became Assistant Editor. Henry did most of his work in his own small house in the North of London, paying short visits on one or two days in each week to the manager and the printer.

Mr. Fowke brought to the duties of his new office force and tenacity of purpose, and quickly introduced strict business methods into the management of the Association's affairs. With this combination of a Journal conducted with enterprise and constant attention to the needs of professional readers, and of efficient business management the finances of the Association were soon placed on a satisfactory

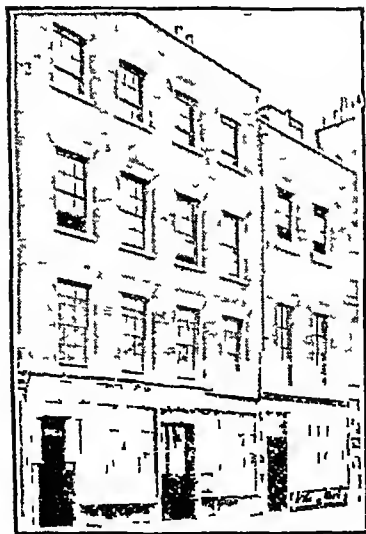


FIG 1—Offices in Great Queen Street. X shows one of the two rooms occupied by the Association from 1871 to 1878. The additional accommodation taken in 1874 was in the next house the ground floor window of which is seen to bear the name of the British Medical Journal.

total income of the Association was £5,261, and the balance of income over expenditure was £38.

The BRITISH MEDICAL JOURNAL had at that time been edited for several years by Mr. Ernest Hart, who had devoted his remarkable energy and abilities to its conduct with so much success that its circulation had risen to over 7,000 copies weekly. The unsatisfactory position of the finances of the Association was, therefore, all the more disappointing.

The Establishment of a Central Office in London

In 1871 the Committee of Council of which Mr. W. D. Hubbard of York was chairman, Dr. R. W. Falconer of Bath being treasurer, reported to the Annual Meeting (at

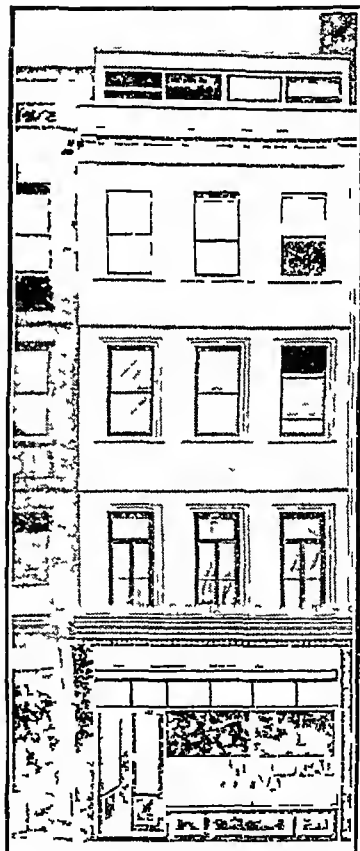


FIG 2—The house 1st Strand occupied by the Association from 1878 to 1885.

basis, and in 1874, when Mr George Southam of Manchester was Chairman of Council and Dr Paleoner still Treasurer, increasing business required, and the financial position justified, the taking of larger premises next door, at a rental of £30 a year. A photograph here reproduced (Fig 1) shows the offices in Great Queen Street at this time. Mr T Richards, whose name appears on the front of the shop, printed the JOURNAL from 1853 to 1878.

The Association's First House in London (1878-1886)

In that year the Association decided to undertake the printing of its JOURNAL, premises suitable for the purpose and to the then income of the Association were leased at 151, Strand. The Chairman of the Council when this first move was made was Dr Alfred Carpenter of Clowdon, and the Treasurer Mr W D Husband of York, upon whom and on Mr Powke the responsibility rested. The upper part of the new house (Fig 2) was occupied by the printing department, but the Committee of Council had a room for its meetings capable of seating thirty to forty persons, and a small room, stolen from a landing by the erection of a glazed wooden screen, was continued for the use on publishing days of the Assistant Editor, who was soon joined, as Sub-editor, by Mr Alban Doan, F R C S, who happily still lives and is engaged on the work of classifying and cataloguing the collection of instruments in the Royal College of Surgeons of England.

The Second House (1886-1907)

The membership of the Association the circulation of its JOURNAL and the receipts from advertisements all now began to show rapid expansion, and each year a substantial balance of income over expenditure, varying from £1 500 to £3 500, was shown on the year's working. In 1886 an opportunity occurred of acquiring the lease of the house 429 Strand formerly occupied by an insurance company. A sum of £4 500 was given for the lease and a little over £5 000 was expended on furniture and on the necessary alterations of the building. In 1888 the Association was able to purchase for the sum of £3 200 the lease of the two adjoining houses—Nos 2 and 3 Agar Street while in 1895 it acquired for £750 the lease of Nos 4 and 5 Agar Street. The aspect and extent of the offices occupied by the Association from 1888 to 1907 are indicated in the photograph (Fig 3) here reproduced. In 1894 the Association acquired in £4 640 the freehold of two small houses in a court immediately behind the front building and ultimately by an exchange with the neighbouring leaseholders obtained an L-shaped site upon which the building indicated was erected. Eventually the Association required the freehold of the houses in the Strand and Agar Street, the total amount expended in acquiring the

site and the buildings on it and putting them in order was £85,000.

The Third House (1908-1925)

The improvement of the accommodation provided in the several houses became an urgent matter in 1904. Various circumstances contributed to bring this about. The reorganization of the Association in 1902, leading to the election of a series of standing committees and the appointment of a Medical Secretary—who took up the full duties of his office in 1903—placed a great strain upon the resources of the old buildings, such provision as was possible was made for the committees and the Medical Secretary and his staff, but it had to be recognized that it was altogether inadequate for the proper conduct of the work. The Library had outgrown its accommodation, and the room in which it was arranged, though finely proportioned and not ill adapted for a reading room, was so completely unsuitable for the meetings of the Council, of conferences, or of large committees, that it was found desirable to accept the hospitality of the Metropolitan Asylums Board, which placed its spacious board room at the disposal of the Council for the quarterly and other meetings. Altogether the premises were found too small and it was realized that some change had become imperative. At first it was thought that it might be possible to

obtain the needed accommodation by remodelling the house in the Strand and rebuilding those in Agar Street, and in its own. The matter was very thoroughly investigated by the Premises and Library Committee appointed by the Council, under the chairmanship of Mr Andrew Clark, with the assistance of statements and estimates prepared by the General Secretary (Mr Elliston) the financial aspects of the questions involved were very fully considered. After several alternative schemes for partial rebuilding, the Council accepted the recommendation of the Committee that the wisest, and in the end the most prudent and economical course, would be to demolish the whole of the houses on the Strand and Agar Street site, and to erect on it a new building specially designed to meet the requirements of the business of the Association.

Preparations of the plans were thrown open to limited competition and on the advice of Mr William Henman, F R I B A, the task was eventually entrusted to Mr Percy Adams, F R I B A, who was instructed to plan the ground floor and basement so as to be suitable for letting for business premises, the Association reserving for its own use the five floors above the ground floor. The work of demolition was commenced at Easter, 1907. The old house was razed to the ground, and for nineteen months, during the rebuilding, the work of the Association was carried on in temporary premises in Catherine Street, Strand. Possession

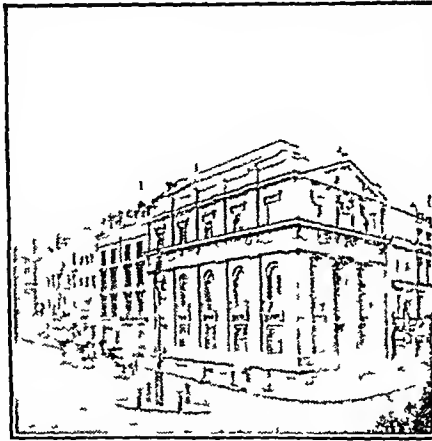


FIG 3—The buildings in the Strand and Agar Street occupied by the Association from 1886 to 1907.

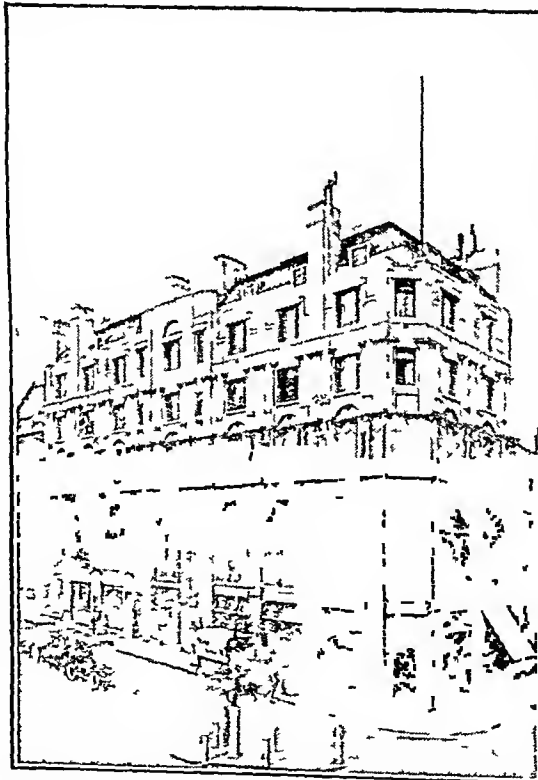


FIG 4—The building erected by the Association on the site at the corner of Agar Street and the Strand (429 Strand) and first occupied at the end of 1907.

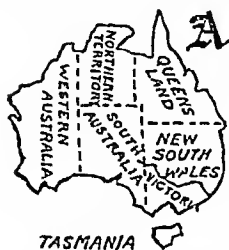
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was obtained of the new and enlarged premises in November, 1908, but the work of arranging the Library in the fine room provided for it was not completed until some months later. The General Office was established on the first floor, the Medical Secretary's on the second floor, and the Editorial Office on the fourth floor. The printing department was on the top story (fifth floor). The lofty Library gave an opportunity for a mezzanine between the first and second floors. This was used as an extension of the General Office, and the Medical Secretary's department eventually overflowed into the third floor. In this estimate of the space occupied by the Medical Secretary's department is included committee rooms. As the Association has twelve standing committees meeting in London, and as it is frequently necessary to appoint subcommittees or special committees, the strain upon the accommodation of the Medical Depart-

ment became increasingly great. This was one consideration which led to the search for a new site, another was that the house in the Strand provided no hall for large meetings such as a Representative Meeting, should one be called in London, nor for the conferences of representatives of Local Medical and Panel Committees, of which one at least is held every year, nor for large conferences between the Association and other bodies. Accordingly, the Council some years ago began to make inquiries, and after long search eventually found the site off Tavistock Square upon which there already existed a building, designed by Sir Edwin Lutyens, R.A., well adapted for the purposes of the Association, and including a large hall seating 500 people. The site had the further advantage of providing space for the erection of additional buildings should these become necessary in the future.

THE AUSTRALIAN BRANCHES AND THEIR HOMES

[Dr R. H. Todd, *Honorary Secretary of the Australian Federal Committee*, has been good enough to write for us the following account of the Australian Branches and their homes, and of the Federal organization in Australia.]



AUSTRALIA has six Branches of the British Medical Association one in each State of the Commonwealth. They are the New South Wales, the Queensland, the South Australian, the Tasmanian, the Victorian, and the Western Australian Branches. They are coordinated in their activities by the Federal Committee of the British Medical Association in Australia and have a medical

journal in common—namely, the *Medical Journal of Australia*. The Australian Medical Congress (British Medical Association) is constituted under the Federal Committee to hold sessions every year, every second year, or every third year as may from time to time be determined. The session is arranged for and undertaken by one or other of the several Branches in Australia or by the New Zealand Branch.

Four of the Australian Branches are the proud possessors of homes of their own, where they have their libraries and offices and hold their meetings, and the other two have their regular meeting places. The Branches are all vigorous institutions, alive to their responsibilities in promoting the medical and allied sciences, in maintaining the honour and interests of the medical profession and in carrying out the other objects of the British Medical Association in their own portions of the Empire. In all the public relations of the medical profession each Branch within its own State is recognized by the Government and the people as the organized body of the profession in the State and is competent to speak for the profession and in Commonwealth matters, the Federal Committee is looked to to act and speak for the whole profession in Australia.

The first three Branches to be formed were all recognized as Branches by the parent Association under its rules in the same year—namely, 1880. They were the Victorian, the New South Wales, and the South Australian Branches,

known respectively for some years after their formation as the Melbourne and Victorian Branch, the Sydney and New South Wales Branch, and the Adelaide and South Australian Branch. At that time the unit of the Association was the individual member, and not, as now, the Division or Division-Branch. There were in all the three Colonies in which the Branches were formed members of the Association who, for one reason or another, held aloof from the Branch. By the year 1902, however, when the Constitution was altered to provide that every member should be a member of the Branch in the area where he resided, not many members were affected by the alteration.

THE VICTORIAN BRANCH

The first Branch to be established in Australia was the Victorian and the following facts connected with its origin have been supplied by Dr A. L. Kenny. Early in the year 1879 Dr Louis Henry returned to Melbourne from Europe with letters from the President of the British Medical

Association empowering him to communicate with the members of the medical profession in the Australian Colonies with a view to the formation of Branches of the Association. The first provisional committee meeting was held at the house of Dr James Edward Nield, 165 Collins Street, Melbourne, on Thursday, September 11th, 1879. There were present Drs J. F. Neild, L. Henry, W. H. Cutts, J. Graham, M. Gillbee, Drs J. Jamieson, A. Morrison, McMillan, Mr J. Rudall and Dr Browning, all of whom are



FIG. 1—The House of the Victorian Branch.

now deceased. On September 25th, 1879, the first general meeting of the Branch was attended by thirty members and a Council was elected as follows: President, Mr Gillbee, Vice-President, Dr W. H. Cutts, Honorary Treasurer, Dr James Graham, Honorary Secretary, Dr Louis Henry, Drs Neild, McMillan, Jamieson, Browning and Morrison, and Mr Rudall. At its first meeting this Council at once put itself in communication with the medical profession in the other Colonies with a view to the formation of Branches of the Association in New South Wales, South Australia, Queensland, Tasmania, and New Zealand. The result was very gratifying so far as the first two of these Colonies were concerned. By the end of the year 1879 the Victorian Branch numbered sixty-two members.

The first Annual Meeting was held on August 6th, 1820, when the President, in his retiring address, disavowed any feeling of rivalry with the Medical Society of Victoria, members of which had furnished the bulk of the members of the Branch. Eighty-five members were on the roll at the second Annual Meeting on July 15th, 1881. It was pointed out that, without in any way hindering the progress or superseding the purposes of the older society (the Medical Society of Victoria), the Branch would take up subjects which, while strictly of a medical nature, had a more immediate relation to the general interest than those which were commonly discussed in medical societies, and, moreover, being in alliance with the Branches of the Association in the other Colonies, would be able to co-operate with them in the discussion of those broader questions with which purely local associations have less concern. The first Medical Society in Victoria was called the Port Phillip Medical Association. It came into existence in May, 1846, and was dissolved in 1857. The Victorian Medical Association was formed on May 7th, 1852, and the Medical-Chirurgical Society of Victoria on June 6th, 1854. These two bodies were amalgamated on June 18th, 1855, under the name of the Victorian Medical Society. This name was changed in the following year to the Medical Society of Victoria, and by it the society is known at the present day. The Victorian Branch of the British Medical Association and the Medical Society of Victoria, on January 4th, 1907, blended their constitutions in such a way that, to all intents and purposes, they became one body, membership of one implying membership of the other, and their councils and office-bearers being identical. Under this dual organization the Branch has the benefit of a grant of land, at the corner of Albert and Brunswick Streets, Melbourne, made to the Medical Society of Victoria in 1877, for the erection of a building for scientific purposes. A one-storied brick building was erected on the land, and the Medical Society of Victoria met there in its own "Medical Society Hall" for the first time on January 5th, 1878, when it celebrated its twenty-third annual meeting.

After the amalgamation of the two institutions, this building served as library, meeting-hall, and offices for the Victorian Branch of the Association until the present year, when it was demolished, and a handsome three-storied, well equipped modern concrete building has been constructed in its place. It contains on its ground floor a meeting hall capable of seating 350 persons, the library, 61 ft by 30 ft, is above the meeting-hall. A reading and writing room and council chamber and offices are also provided. On the ground floor is a large foyer, in which is placed the bronze memorial in memory of the members of the medical profession in Victoria who fell in the great war. On the third floor is a suite of rooms for the caretaker. The formal opening ceremony of the new home of the Victorian Branch took place on May 20th, 1925, reported in our issue of July 4th. The membership of the Victorian Branch is now approximately 1,200.

THE NEW SOUTH WALES BRANCH

The New South Wales Branch was recognized by the parent Association in the year 1880 at a time when there was no other medical society existing in the Colony. For several years previously the Medical Section of the Royal Society had served the purpose of the profession for the promotion of medical and allied sciences. In the first year

of its existence the New South Wales Branch had forty-two financial members. The numbers increased from year to year, and the activities of those members who had previously constituted the Medical Section of the Royal Society were transferred to the Branch. The membership of the Branch is now approximately 1,450. It is the largest Branch of the Association outside the United Kingdom. Of the original members the following still take an interest in its affairs: Dr. A. J. Brady, Dr. W. E. Warren, Sir Charles McKellar, Dr. T. H. Frischi, and Dr. William Clusholm.

For the first thirty years the meetings of the Association were held at the Royal Society's hall in Elizabeth Street, Sydney, and the Council for many years met in the library of the Editor of the *Australian Medical Gazette*, then the journal of the Branch, at 121, Bithurst Street, Sydney. In 1910 the Branch decided to have a building of its own. Land was purchased with a frontage of 64 ft to Elizabeth Street and a depth of 80 ft, and on it was erected the building of six stories which is known as the British Medical Association Building (30-34, Elizabeth Street, Sydney). The Branch went into occupation of its new home in March, 1911. The premises were so constructed that the first floor comprised a meeting-hall and library, together with reading rooms and offices for the Branch; the other floors were offices and business premises, which could be leased to suitable tenants. The purpose of the Branch in so constructing the building was that it should not only be a habitation for the Branch, but, in course of time, a source of revenue to enable it the better to carry out the objects of the Association in New South Wales. The names of Dr. W. H. Crago, now for thirty-six years the Honorary Treasurer of the Branch, and of Dr. G. H. Abbott, President for the year 1910-11 (the first graduate of an Australian university to fill that office), will always be associated with this building. It had its origin in their inspiration and foresight, and its successful completion was due to their enterprise. The management of the building has from its commencement been in the hands of Dr. Crago.



FIG. 2.—The House of the New South Wales Branch

THE QUEENSLAND BRANCH

In Queensland it was not until 1894 that success followed efforts made from time to time for the formation of a Branch of the British Medical Association. As in most of the Colonies, attempts had for many years been made to organize the profession by the formation of medical societies. The first society of which anything is known was the Queensland Medical Association, which was founded in 1871. It had eleven members and lasted for nine months. In 1882 the Medical Society of Queensland came into existence. Its activities also were short-lived. It was, however, revived in 1886, and became an energetic and vigorous institution holding regular meetings for scientific purposes for many years. The funds of the old Queensland Medical Association of 1871, which were in the hands of trustees and amounted to £11 11s 3d, were transferred to the Medical Society of Queensland and were utilized by it for the purchase of books which, in course of time, became the nucleus of the present library of the Queensland Branch of the Association.

The Queensland Branch was brought into existence in 1894 on the initiative of Dr. I. Sandford Jellison, who was prompted to take steps for the purpose by Dr. Fletcher Little of London, whose acquaintance he had made when visiting England a few years before. The rules of the

British Medical Association at that time required that twenty-five members of the Association should requisition the Council for the formation of a Branch. As there were only three members of the Association available in Queensland at the time, some organization work was needed to augment their numbers. This was undertaken and resulted in a meeting being convened, the necessary requisition was duly made by twenty-five members, and the Queensland Branch was recognized by the Council in 1894. The inaugural meeting of the Branch took the form of a convocation at which His Excellency the Governor of Queensland, Sir Henry White Norman, G C B, and other distinguished visitors were present. In 1899 most of the members of the Medical Society of Queensland were also members of the British Medical Association, and a fusion of the society with the Queensland Branch of the Association was brought about mainly by the enterprise of Dr A B Brockway, who was for many years the honorary secretary of the Branch.

The Branch at that time numbered 108 members. It soon began to grow too big and to be too active to be without a fixed abode, especially as it had a library which required housing. Being merely a collection of individuals, the Branch was not competent to own land, but the difficulty of procuring a home was overcome by arranging for a number of members to become incorporated as the Queensland Medical Land Investment Company, Limited. This company then purchased the premises which are now known as the British Medical Association Building, Adelaide Street, Brisbane. This building consists of three stories, the lower two of which



FIG 3—The House of the Queensland Branch

a company, called the B M A Hall Company, Limited, composed of members of the Branch, was formed, and a building, which previously belonged to the Y W C A, was purchased in 1913, situated on the west side of Hindmarsh Square, having a frontage of 40 ft to the square and a depth of 100 ft, and a rear frontage to Hyde Street. The building, which was erected in 1902, is constructed throughout of red brick with grey cement facings. It consists of a basement occupying the whole area and of two floors. On the upper floor are five rooms leased to tenants. The ground floor consists of a large meeting-hall and three rooms, one of which is let to a tenant. The other rooms are the offices and library of the Branch. The hall measures 40½ ft by 30½ ft. It is furnished with blackwood chairs having an extended right arm rest for writing purposes, and handsome blackwood bookcases along the walls. At the entrance of the hall is a large ante-room and at the rear is a gallery and two small sitting-rooms.

In 1913 an appeal had arrived from London for help in erecting memorials in England to the memory of the late Lord Lister, which suggested the desirability of making a local memorial and naming the hall of the new British Medical Association building the "Lister Hall." The new hall was opened on June 28th, 1914, when, at the invitation of the President of the Branch (Dr B Poulton), Sir Harry Allen, the Dean of the Faculty of Medicine of the University of Melbourne, formally dedicated the hall to the memory of Lord Lister on behalf of the members of the Branch, and, at the same time, unveiled a portrait in oils of Lord Lister which had been presented to the Branch by Dr H S Newland. Sir Harry Allen then delivered an address on Lord Lister and his work.

The membership of the South Australian Branch is now approximately 340.

THE WESTERN AUSTRALIAN BRANCH

The next Branch to be formed was the Western Australian Branch, it was founded in August, 1898, and was duly recognized as a Branch of the Association in 1899. In that year it had 47 members, ten years later the number had risen to 98. In 1919 the number was 136, it is now 180.

THE TASMANIAN BRANCH

The last of the Australian Branches to be formed was the Tasmanian Branch, which was formally recognized by the Council in 1911. It has its headquarters in Hobart, and its regular meetings have always been held at the Royal

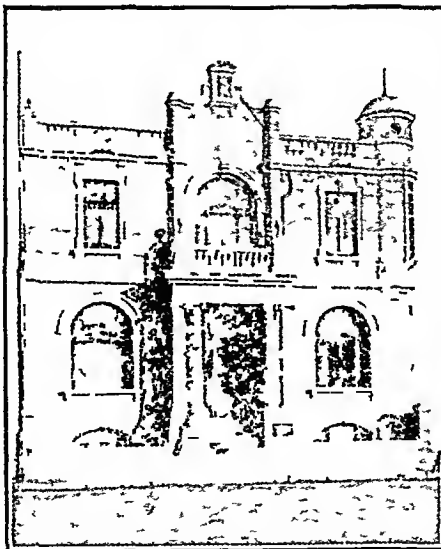


FIG 4—The House of the South Australian Branch

THE SOUTH AUSTRALIAN BRANCH

The South Australian Branch was formally recognized by the Council of the British Medical Association in 1880 at a time when there were a large number of medical men in Adelaide, especially those associated with Adelaide University, who were keenly interested in the progress of medical science. During the early years the meetings of the Branch were held first in the board room, and afterwards in the out-patient waiting-room, of the Adelaide Hospital. Later the University generously provided accommodation for the monthly and the annual meetings. In 1911, on the initiative of Dr W T Hayward, C M G, a movement was started to require a home for the Branch. As the result of his efforts and those of Dr H S Newland C B E, D S O, the then honorary secretary of the Branch,

Society's House in Macquarie Street, Hobart, which the members of the Branch regard as their home. Prior to the formation of the Branch, the members of the medical profession in Tasmania belonged to the Medical Section of the Royal Society of Tasmania, which was established in 1897 with the object of allowing members of the Royal Society who devoted their attention to particular branches of medical science fuller opportunities and facilities of

meeting and working together with fewer formal restrictions than were necessary at the general monthly meetings of the society, and also to guard the interests of the medical profession in Tasmania. The pivot of this Medical Section was Sir James Wilson Agnew, the President, Dr R S Bright, the Vice Presidents, Dr G H Butler and Dr L L Crowther, the Honorary Treasurer, Dr A H Clark, and the Honorary Secretary, Dr Gregory Spiatt. Dr Gregory Spiatt's name has been closely associated with the Branch since its inception, and he was its first President. He is the director of the Australasian Medical Publishing Company, Limited, representing the Tasmanian Branch and one of the Representatives of the Branch in the Federal Committee. Tasmania being by far the smallest of the Australian States, the Branch has the smallest number of members—namely, 100, which, however, is two thirds of the total number of medical practitioners resident within its area.

THE FEDERAL COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION IN AUSTRALIA

With the development of the several Branches in Australia and the growth of their activities, the necessity for their co-ordination became more apparent year by year. Under the constitution of the Association, they had no relation to one another except through the Council and the Representative Body of the Association. On the other hand, they had many interests in common which called for local consideration and community of action. Among their greatest needs was a common journal, but, greater still, was the necessity for a Representative Body of their own. Australia had recently become a Commonwealth in which all the States were federated. There was a strong wish that nothing should be done to weaken the ties with the parent Association. The most obvious and appropriate method of organization of the Branches as between themselves was, therefore, some form of federation. The main difficulty to be considered was the great distance separating the centres of activity of the several States. It was inappropriate also that there should be centralization of the profession in any one State. The principle, therefore, was evolved of having a small committee in which each of the Branches should be equally represented, to consider all questions of common necessity to the Branches, and to act for the Branches in all matters of common concern. The constitution for the Federal Committee of the British Medical Association in Australia was accordingly drafted. It was adopted by each of the Branches in turn in 1912-13. Each Branch elected two of its members to be members of the Committee, and the first meeting of the Committee was held in Melbourne on May 27th, 1912, when Dr W T Hayward, C M G, was appointed Chairman, Dr (now Sir) George A Syme Vice-Chairman, and Dr G H Abbott Honorary Secretary. Dr R H Todd as Assessor was associated with the Committee in its inaugural work. The constitution was approved by the Council of the British Medical Association by letter, dated May 8th, 1914. The Committee, in the ordinary course, meets regularly twice in each year, the meetings being alternately in Sydney and Melbourne. In 1920 a meeting was held in Brisbane during the course of the Australasian Medical Congress (eleventh session).

The first task undertaken by the Federal Committee was the institution of a common medical journal for the Australian Branches. Its action in this direction resulted in the establishment of the *Medical Journal of Australia* as a weekly publication, which made its first appearance on July 4th, 1914.

The value of the Federal Committee to the Branches in Australia and to the Association as a whole has been fully recognized, and advantage was taken of amendment of the Articles of Association at the Annual Representative Meeting in 1923 to provide for a Federal Council of the Branches in Australia as a body within the constitution of the British Medical Association.

Apart from the establishment of a common medical journal for the Branches, the most important develop-

mental work entrusted to the Federal Committee has probably been in connexion with the Australasian Medical Congress. This congress, from the time of its inception in 1886 in Adelaide, has been held at three year intervals in the several capital cities of Australia and New Zealand, without having any definite permanent constitution providing for the continuity of its existence. The fact that it is now controlled and regulated by the Federal Committee and recognized as a British Medical Association Congress gives it both stability and permanence.

Dr W I Hayward retired from the position of Chairman of the Committee in 1922. The present Chairman, Sir George Syme, held the position of President of the first session of the Australasian Medical Congress (British Medical Association) Melbourne, 1923. The present Vice-Chairman, Dr W N Robertson C B J, is now on a visit to England as the Representative of the Federal Committee to attend—the invitation of the Chairman of Council, Dr R A Bolam—the ceremony in connexion with the opening of the Association's New House in Tavistock Square, Bloomsbury.

MEDICAL JOURNALS IN AUSTRALIA

Medical journalism in Australia has a long history. It may be said to have commenced sixteen years after the arrival in 1788, of the first fleet under the command of Australia's first Governor, Captain Arthur Phillip, R N, when Dr T Jamison, one of the surgeons of the first fleet wrote for public information an article on small pox which was published in the *Sydney Gazette* on Sunday, October 14th, 1804. The history of medical journalism in Australia is related in an extremely interesting article by Dr J H L Cumpston, the present Director-General of Health for the Commonwealth published in the first issue of the *Medical Journal of Australia* (July 4th, 1914) at page 11. In it Dr Cumpston gives the following tabulated statement of the medical journals published in Australia—namely:

1	<i>Australian Medical Journal</i> N S W	1846-1847
2	<i>Australian Medical Journal</i> Victoria after wards <i>Intercolonial Medical Journal</i> after wards <i>Australian Medical Journal</i>	1855-1914
3	<i>Medical Record of Australia</i> Victoria Afterwards continued as <i>Melbourne Medical Record</i> Victoria	1861 1863 1875 1877
4	<i>Medical and Surgical Review</i> — Australasian Victorian	1863 1864 1873 1875
5	<i>Australian Medical Gazette</i> Victoria	1869 1871
6	<i>New South Wales Medical Gazette</i> N S W	1870 1875
7	<i>Australian Practitioner</i> N S W	1877 1878
8	<i>Australasian Medical Gazette</i> N S W	1881 1914
9	<i>Intercolonial Quarterly Journal of Medicine and Surgery</i> , Victoria	1894 1896
10	<i>Journal of the Sanitary Inspectors Association of Western Australia</i>	1908

Of the ten journals enumerated New South Wales produced four and Victoria five. It was not until 1914 that there was a common journal for all the Branches. That year saw the commencement of the *Medical Journal of Australia*, which is now in its twelfth year. As stated above, the establishment of a common journal was the first task of the Federal Committee of the British Medical Association in Australia. At the time the Committee took the matter in hand there were two medical journals. One was the *Australasian Medical Gazette*, which was owned and conducted by the New South Wales Branch and published in Sydney, and which was accepted by the other Branches (except the Victorian Branch) as their official organ, the other was the *Australian Medical Journal*, conducted by the Victorian Branch and published in Melbourne. The Committee was faced with the constitutional difficulty that, not being a corporate body, it could not itself own a journal. A company, therefore, was formed, called the Australasian Medical Publishing Company, Ltd., with a constitution providing that all the members of the company should be representatives of Branches duly nominated by

the several Branches for the purpose. The members elect the directors of the company in the usual way, and the directors conduct the journal—the *Medical Journal of Australia*. Before the company was formed the Victorian Branch and the New South Wales Branch had generously handed over their respective journals to the Committee with a view to the new common journal being a Federal journal free of competition.

The company was registered in 1913 at Sydney, the first chairman of directors being Dr W H Craig (New South Wales), who had so successfully managed the *Australasian Medical Gazette* for many years in association with the late Dr C I Rennie, its editor. The other directors were Dr W N Robertson (Queensland), Dr F S Hono (South Australia), Dr Gregory Spiott (Tasmania), Dr W Kent Hughes (Victoria), and Dr the Honourable A J H Saw MLC (Western Australia).

The directors decided that an editor and a manager should be appointed who would give their whole time to the services of the *Journal*. Applications for the position of Editor were invited in England and in Australia. The present distinguished editor, Dr H W Armit, was selected from the many candidates. He was then associated with the *BRITISH MEDICAL JOURNAL*, and was well known as an organizer and for his work in medical research. At very short notice he gave up his career in England and came with his family to make his home in Australia. Within a few weeks of his arrival he produced the first number of the *Journal*. Shortly afterwards the great war broke out, and all the consequent difficulties affecting journalism had to be contended with. Nevertheless, he succeeded in establishing a paper which has now for many years been recognized among the medical periodicals of the world. The *Journal* had for some years to be set up and printed by contract, but in 1921 so good was its progress that it was able to dispense with the services of contractors so far as the type setting and composing were concerned. Now it has its own printing house, with a complete and up to date equipment and plant, and is not only altogether independent of outside assistance, but is undertaking general printing on its own account, especially of scientific and technical publications. A full and interesting illustrated description of the printing house, which is situated at Glebe, Sydney, is given in the issue of the *Journal* of April 11th, 1925. A copy of the *Medical Journal of Australia* is supplied weekly to every member of the Association in Australia in virtue of his membership, in the same way as the *BRITISH MEDICAL JOURNAL* is supplied.

THE AUSTRALASIAN MEDICAL CONGRESS

The institution now known as the Australasian Medical Congress (British Medical Association) was established in the year 1886 under the title of "The Intercolonial Medical Congress," and, as such, organized scientific meetings in the several Colonies or States of Australia and in New Zealand

every third year until 1905, the sessions being held as follows: 1886, Adelaide, 1889, Melbourne, 1892, Sydney, 1896, Dunedin, 1899, Brisbane, 1902, Hobart, 1905, Adelaide. After the federation of the Australian States as a Commonwealth the name of the congress was altered to the Australasian Medical Congress, and sessions were held under the new title as follows: 1908, Melbourne, 1911, Sydney, 1914, Auckland and 1920, Brisbane. At the meeting held in the year 1920, a referendum of the members of the congress was taken on the following question:

Are you in favour of the abolition of the Australasian Medical Congress as at present constituted in order that opportunity may be given of establishing congresses of the Australian Branches of the British Medical Association?

The voting on the question being in the affirmative, the following resolution was passed unanimously:

That the executive of the congress be empowered to wind up the affairs of the eleventh session of the Australasian Medical Congress and hand over to the Federal Committee of the British Medical Association surplus funds (if any) after the expenses of the congress have been met such funds to be passed on for the use of the future congresses of the British Medical Association.

The Federal Committee, at its subsequent meeting in February, 1921, resolved to establish British Medical Association Medical Congresses and to invite the co-operation of the New Zealand Branch. In another resolution it was determined that the objects of the congress should conform generally, *mutatis mutandis*, to those of the Annual Scientific Meeting of the British Medical Association. The first session of the congress under the new auspices was held in Melbourne in November, 1923, the President being Sir George Sime, F.R.C.S., chairman of the Federal Committee. The congress was an unqualified success and, as could be judged from the reports published in the *BRITISH MEDICAL JOURNAL* at the time, set a high standard for future sessions.

The late Sir William MacEwen accepted the invitation of the executive to attend this first session, and his distinguished presence as the ambassador of the Association was greatly appreciated by all the members as being further evidence of the feeling of kinship existing between the parent Association and its Overseas Branches.

The second session is being arranged by the New Zealand Branch and will be held at Dunedin in February, 1927.

In regard to membership of congress, whereas, under the previous constitution, every intending member had to apply to the executive on a form provided for the purpose and to be elected, under the present constitution every member of any Branch of the British Medical Association in Australia or of the New Zealand Branch is entitled to hold a member without election, and every other member of the profession is entitled to apply for election.

NEW ZEALAND.

The New Zealand Branch of the British Medical Association was established in 1896, when 104 members were enrolled. Its headquarters were at Christchurch, and the first permanent honorary secretary, Dr C Graham Campbell, held office from 1897 to 1902. By 1907 the membership had trebled and it was resolved to form Divisions within the Branch. In 1915 the number of members was 591 and in 1925 it had risen to 765. The Branch has fourteen Divisions: the Auckland Division has the largest number of members (170), the next in magnitude is the Wellington Division (117 members), the next Canterbury (99), and then Otago with 88. In March, 1924, it was decided to form a medical agency in connexion with the Branch office, to deal with the transfer of practices, the supply of locumtenents and the general safeguarding of the interests of the members of the Branch.

The Branch holds an annual meeting and at that held

in Auckland last year the President, Mr Currie Robertson, surgeon to the Auckland Hospital, said in the course of his address that in New Zealand many doctors had to carry on their practice entirely isolated in sparsely populated districts. Normally the New Zealand doctor worked alone, only occasionally, chiefly in the cities, did partnerships exist. In these circumstances the Divisions of the Branch form a talking point for the scattered workers, and though the membership of some of the Divisions is small they are of great value in affording opportunities for medical men to come together for discussion and to make or renew acquaintance.

As mentioned above, the next session of the Australasian Medical Congress is to be held at Dunedin, New Zealand, in February 1927. The *New Zealand Medical Journal*, the organ of the Branch, is published every two months, and 120 numbers have now appeared.

THE BRITISH MEDICAL ASSOCIATION IN SOUTH AFRICA.

We are indebted to Dr. D. Campbell Watt of Pietermaritzburg, President of the South African Committee of the British Medical Association, for the following notes on the history and present position and prospects of the Association in South Africa.

In 1888, at a meeting of the South African Medical Association held at Cape Town, it was resolved that the local division of the South African Medical Association should merge itself in the British Medical Association and become a Branch thereof. This resolution was duly carried into effect, and the Branch was called the Western Province Branch (Cape of Good Hope).

Five years later the Eastern Province Division of the South African Medical Association also became a Branch of the British Medical Association. Shortly afterwards the Griqualand West Branch was formed at Kimberley, and in 1896 the Natal Branch followed suit. The Transvaal Branch was next added to the number, while the Border Branch was formed in 1906 as an offshoot from the Eastern Province Branch. The Transvaal Branch by a process of fission later on became the Witwatersrand Branch and the Pretoria Branch and in 1913 the Natal Branch was split into the Natal Coastal and the Natal Inland Branches.

In 1912 the Rhodesian Branch was formed, and the Orange Free State and Basutoland Branch came into being in 1913, at the time of writing a new Branch is being formed in Port Elizabeth and district.

The South African Branches, therefore, are now eleven in number, and in most cases they have been formed from antecedent societies.

THE SOUTH AFRICAN COMMITTEE

Although the various Branches of the Association in the different Colonies and States exercised a salutary influence within their own spheres, especially on the legislative bodies in matters of public health and other legislation, in addition to the ordinary activities common to medical societies, yet it was felt that it was essential that there should be some combined body representing the entire Association in South Africa, able and willing to voice the views of the profession as a whole.

In 1906 the Western Province Branch therefore moved in the matter, and in 1909 the Central Council approved of the scheme submitted by the Branches for the formation of a South African Committee, subject to certain amendments, and it delegated many of its powers over the South African Branches to the Committee.

The Branches set to work, and by 1912 the Regulations of the South African Committee had been adopted and approved by the Council of the Association and the first office bearers appointed, the late Sir Kendal Friels, C.B., being its first President, Dr. Matthew L. Hewitt Vice-President, and Dr. D. Campbell Watt Honorary Secretary and Treasurer. The Branches represented at the inauguration of the South African Committee were the Western Province Branch, the Eastern Province Branch, the Griqualand West Branch, the Border Branch, all of Cape Colony, the Transvaal Branch, and the Natal Branch.

The existence of the South African Committee has been fully justified. Many subjects of interest to South African practitioners have been taken up, and some success has attended its efforts.

MEDICAL CONGRESSES

Shortly after the formation of the Committee it was decided that in the future the medical congresses should be held annually in the auspices of the British Medical Association, and in 1913 regulations were adopted governing the congress and appointing the South African Committee of the Congress as the organizing committee of each congress.

The 1924 Annual Congress has been held in Pietermaritzburg, as recorded in our last issue, p. 79.

MEDICO POLITICAL ACTIVITIES

The Committee was consulted by the Union Minister of Defence regarding the regulations dealing with the Medical Department of the Citizen Defence Force, and many of the alterations proposed by it were adopted. The necessity of appointing school medical officers was urged upon the Government with success. The establishment of a separate Department of Public Health, with a Minister, was advocated, and when the present Public Health Act was before Parliament the then President of the South African Committee gave evidence before the Select Committee, and prior to the bill being drafted he was appointed a delegate to a public health conference dealing with the proposed legislation, and his efforts proved highly successful in moulding the bill on the lines advocated by the South African Committee.

A consolidating Medical, Dental, and Pharmacy Bill has been before Parliament several times, and last year a vigorous attempt was made by Christian Scientists, chiropodists, and other cult practitioners to obtain State recognition under the bill. Evidence was given by them on the one side, and by the President of the South African Committee and other representative medical practitioners on the other side, before a Select Committee. The bill is again before Parliament this session, and as it stands contains no recognition of these cults. The profession is hopeful that the bill will go through as drafted in this regard, although there is a surprisingly large element of sympathy for these cults both in and out of Parliament.

Evidence was given by the President of the Committee before the Government Hospitals Commission, when he advocated the proposals which had from time to time been adopted at various congresses and by the South African Committee. Many of the Branches also sent witnesses to give evidence before that Commission. The Western Province Branch Parliamentary Committee has on several occasions held a watching brief for the Association, and done much to inform members of Parliament with regard to measures affecting the profession.

It was deemed advisable by the Committee to draw up a *Guide to Medical Ethics*, and the guide has received commendation from the medical press, and proved itself useful.

A voluntary benevolent fund has been established by the Committee, and arrangements made with several insurance companies for the issue of medical defence policies to practitioners.

THE FUTURE

The Association in South Africa had the pleasure of the presence of Dr. J. A. Macdonald, a Vice President of the Association and lately Chairman of Council, at the Congress held in Durban in 1920, and he paid a visit to most of the local Branch headquarters during his stay in the country. His visit was productive of much good.

The career of the British Medical Association in South Africa has not gone unchallenged. Several attempts have been made to establish a South African Association, the latest and greatest being within recent years, but on that occasion, by a small majority of the members, it was resolved to adhere to the British Medical Association, although a large proportion of the entire profession was in favour of a local association, affiliated with the British Medical Association. As a sequel to this position the Council of the Association most generously offered substantial financial aid in the appointment of an Organizing Medical Secretary for South Africa, but as a corresponding sum could not at the time be guaranteed by the Branches the Council has kept the offer open for a year.

Meanwhile the South African Committee and the Branches are making special efforts to increase the membership of the Association by the issue of appeals to non-members and the appointment of Branch organizing secretaries. At the present time the Association embraces about one-half of the practitioners in South Africa.

CANADA.

The organization of the British Medical Association was extended to Canada a good many years ago. The first Branch—Halifax, in Nova Scotia—was recognized in 1867, in 1891 the Montreal Branch and the Manitoba and North-West of Canada Branch were recognized, and in 1894 the British Columbia Branch. Afterwards Branches were recognized in Toronto, Saskatchewan, and New Brunswick.

Two highly successful Annual Meetings of the Association have been held in Canada—the first in Montreal in 1897 under the presidency of Dr. (afterwards Sir) Thomas Roddick, and the second in 1906 in Toronto, when Dr. R. A. Reeve was President. At the time of the meeting in Montreal the profession was much concerned to obtain from the Canadian Parliament an Act to remove certain legislative anomalies which hindered the free practice of medicine throughout the Dominion and also full reciprocity with this country. Dr. Roddick, as the leader of the Canadian profession in this matter, he visited every province to explain his scheme, and from his place in the Canadian Parliament urged its advantages year after year. The Canadian Medical Act was passed in 1902, but the Provinces which had hitherto had control, each in its own area, were slow to relinquish their privileges, and it was not until 1912 that it was possible to constitute the Medical Council of Canada, of which Dr. Roddick was elected the first President. It is not, we think, too much to claim that the two Annual Meetings of the British Medical Association held in Canada did much to assist the reformers there and to convince others of the possibility and of the advantages of the unification of the profession in the Dominion. Both meetings were attended by a large number of members from this country, and this alone was sufficient to convince our Canadian brethren of the keen interest the home members took in their difficulties—difficulties which had been overcome here—and in their welfare generally. After the Canadian Medical Council was established and legal unification was in existence, there still remained the task of bringing about the voluntary organization of the profession in Canada. The Branches of the Association in the Dominion languished and the Canadian Medical Association formed in 1867, when the Provinces were federated and a Dominion Parliament established, did not flourish.

After the war, in which the Canadian Army and its medical officers took so fine a part, the position of the Canadian Medical Association was taken in hand and it became apparent that this association, extended to the

whole Dominion, was in the opinion of the profession there better adapted to its needs than any reorganization of Branches of the British Medical Association could be. Discussions took place between the Canadian Medical Association and the British Medical Association which ended in the elaboration of a scheme for the affiliation of the Canadian and British Medical Associations. The Council at home was able to induce Sir Jenner Veall and the Medical Secretary (Dr. Cox) to accept a cordial invitation to visit Canada in the spring of 1924, and then the details of affiliation were finally adjusted. That scheme is now in force. Arrangements were made for intercommunication and the exchange of information, and members of the Canadian Medical Association were given the right to attend the Annual Meeting of the British Medical Association in this country and its Sections, to make use of the British Medical Association house and library, and to command the help of the central staff of the Association there. The Canadian Medical Association in addition to giving similar facilities to members of the British Medical Association undertook to nominate persons to act at Annual Meetings of the British Medical Association in the British Isles.

These plans are now working. Information is already being exchanged and more and more members of the Canadian Medical Association are resorting to the headquarters staff in London for help and advice on various matters. The British Medical Association has been able to arrange for some of its prominent members to visit Canada and to take part in the annual meetings of the Canadian Medical Association. Quite recently, as we mentioned a few weeks ago, the President of the British Medical Association Mr. Basil Hall, visited Montreal, Toronto, Winnipeg, Ottawa and other parts of Canada as a representative of the British Medical Association. He received a very warm welcome everywhere, and the address he delivered to the Academy of Medicine in Toronto is published in this issue. Mr. H. W. Carson, by invitation, gave addresses on surgery at the Annual Meeting of the Canadian Medical Association at Regina in June last. Further evidence of the success of the new plans is afforded by the fact that the largest and most representative delegation of Canadian medical men which has ever attended a meeting of the Association in this country has been present this week at the opening of the New Building, and will take part in the Annual Meeting at Bath.

WEST INDIES

The British Medical Association has been active in the West Indian Islands for nearly half a century. The first Branch, that in Jamaica, was founded in 1877, and the number of its members has increased to 64. The second Branch to be recognized was in British Guiana (1883), it has steadily maintained its membership, and publishes

reports of its work in a volume entitled the *British Guiana Medical Annual*. The Bermuda Branch was founded in 1886, and the Barbados in 1889. In the following year the Leeward Islands Branch was recognized. In 1892 the Trinidad and Tobago Branch was founded. Grenada Branch followed in 1916, and the St. Lucia Branch in 1923.

INDIAN AND OTHER ASIATIC BRANCHES.

The first Branch of the British Medical Association founded in India, or in the East, was the Bengal Branch organized in 1863 by the late Surgeon-Major Norman Chevers. The Branch was at first well supported and had a numerous membership, both of service men and of private practitioners—European and Indian. In 1867 Dr. Mohendra Lal Sarkar, a leading Indian physician read a paper advocating homoeopathy, to which he had become a convert. The discussion caused by this paper practically broke up the Branch, though it lingered on for a few more years. In 1879 an attempt was made to reconstitute the Branch, but the profession in Calcutta preferred to start an independent society—the Calcutta Medical Society. This body had a

successful career of some fifteen years. It published a monthly fasciculus of proceedings. For over half a century Calcutta, the former capital of India, has been unrepresented in the Association.

In 1882 the late Surgeon-Major C. W. Shirley Deakin, an I.M.S. officer of great ability and energy, started the North-West Provinces and Oudh Branch. Deakin enlisted a large membership, nearly two hundred, chiefly officers of the A.M.D. and I.M.S. but with a fair sprinkling of European private practitioners. Its meetings were held at Allahabad, and Deakin, as editor, published a monthly periodical, at first under the name of *Transactions*, which in 1885 became the *Indian Medical Journal*. This Branch came to grief in

1885 over a paper read by the late Lieut-Colonel (then Surgeon) Andrew Duncan, entitled "The insurmountable tendencies of State sanitation," the language of which was both intemperate and insubordinate, though the views of the causation of cholera advanced by Duncan were opposed to the theories then in official favour, strongly supported by Surgeon General J. M. Cunningham, the then head of the I.M.S., they have been proved by time to be correct. Duncan published Duncan's paper in the *Indian Medical Journal*, and supported it in a strongly worded leader. Both Derkin and Duncan suffered. Derkin went on far enough, and on his return was relegated to military duty in the Punjab. With his departure from Allahabad the North-West Provinces Branch died out. On his return from furlough he resuscitated it as the Punjab Branch. Most of the members of the defunct North West Provinces Branch joined the new one, which lasted for some four years. Derkin died of enteric fever at Jhulam on November 17th, 1889. After his death the Branch came to an end, as also did the *Indian Medical Journal*. Both the North-West Provinces and the Punjab Branches, though named after the provinces which were then headquarters, had members all over India.

The third Indian Branch, in date, was the South Indian and Madras Branch, founded on October 4th, 1883, and recognized in 1884. This is not only the oldest existing, but has been the most successful Indian Branch. It has now lasted over forty years, and in membership stands second only to Bombay. It publishes its *Transactions* monthly. In fairly rapid succession followed the Bombay and the (second) Punjab Branch in 1889, the Burma Branch in 1891, and the Deccan Branch in 1894. The last died out, or was in a state of suspended animation for some years, but has been resuscitated as the Hyderabad Branch. Three other Branches have since been added—Assam in 1908, Baluchistan in 1910, and Northern Bengal in 1922.

In April last the Association mustered eight Branches and over a thousand members in India, as follows:

	Recognized	Members
South Indian and Madras	1884	143
Bombay	1889	193
Punjab	1889	88
Burma	1891	63
Hyderabad (Deccan)	1894	30
Assam	1908	55
Baluchistan	1910	13
Northern Bengal	1922	13
I.M.S. officers not attached to any Branch		288
Other members outside area of any Branch		140
Total		1,026

There are four other Branches in Asia, outside India: the Ceylon Branch, recognized in 1887, with 206 members, Hong Kong and China, 1891, 169 members, Malaya, 1894, 202 members, and Mesopotamia, 1921, 45 members. Though far beyond the geographical boundaries of India, the last might almost be considered an Indian Branch, its membership consisting chiefly of R.A.M.C. and I.M.S. officers of the Indian Army. The Hong Kong and China Branch is increasingly active in spite of its insular position and local transport difficulties. Two meetings were held in 1923, but in 1924 it was decided to hold monthly meetings. At the invitation of the Branch to the Chinese Medical Missionary Association, a very successful joint medical conference was held in Hong Kong in January, 1925. The Ceylon Branch has published a journal for the last twenty-two years. The annual meeting of the Malaya Branch are now held alternately in the Federated Malay States and the Straits Settlements. Dr. J. W. Schriiff, honorary secretary of the Branch, acted as secretary and treasurer of the fifth congress of the Far Eastern Association of Tropical Medicine at Singapore in September, 1923. More than 300 medical practitioners attended from fifteen different countries, and nearly sixty papers were submitted dealing with tropical diseases and the opium evil. The active co-operation of the Branch and the energetic work of Dr. Schriiff contributed very largely to the value and success of the congress.

The Association has always used its influence to press the just claims of the great public medical services, each of which has, in turn, had cause to be grateful for the support given to it by the full weight of the profession in Britain, exercised through the Association. On at least three occasions during the last half century has the I.M.S. been helped by it. The first was over the "unemployed pay" question, in the early eighties, when the service had been over-recruited, till its strength was quite out of proportion to the number of appointments available, and a large number of juniors were drawing what was called "unemployed pay" while on general duty. Some of them had little work to do, as superintendents, assistants to senior officers in regiments, others, on choicest duty or similar work, were really working harder than the men drawing full pay. The second time was when the pay of nearly all ranks was considerably increased, in 1902. And the third was when both pay and pensions were again raised, after the war. On such questions also as commuted pay, specialist pay, and study leave, help to press the claims of the service has been readily given.

medical service, including nursing, in the Highlands and Islands of Scotland and otherwise providing and improving the means for the prevention, treatment and alleviation of illness and suffering therein." The Board of Health, which is the counterpart in Scotland, as far as regards powers and duties, of the Ministry of Health in England, administers this Act and as a result of its operation conditions of practice in the Highlands have been very greatly improved. Grants are made to individual practitioners, and in some instances a minimum income is guaranteed in return for which practitioners undertake to visit dependents of insured persons and persons of the crofter class at a standard scale of charges. The adjustment of the scale and of the grants is no easy matter, and finality has not been reached, but a fairly satisfactory working arrangement has been come to. A Highlands and Islands Committee of the Scottish Committee has been set up, and through it practitioners serving under the Act can express their views collectively. The Board of Health now recognizes that committee as representing the practitioners and regularly consults with it on all matters pertaining to the conditions of service.

Even apart from the Highlands, Scottish health legislation and administration differ considerably from English. The Public Health Acts are different, as is also the Education Act. The Insurance Act is the same in essentials, but is administered separately from England and differs in detail of administration. In all of these various spheres the Scottish Committee and its subcommittees find scope for activity and useful work for the profession. Testimony to the value of that work was made by the Secretary for Scotland in a recent speech, when he said that he believed the relationship between the Association and the Board of Health in Scotland had been not only of a friendly but essentially of a useful nature.

In a more restricted but still important sphere good organizing work has been done—namely, in connexion with contract practice in colliery areas. The Colliery and Public Works Surgeons' Committee, which, though not a committee of the Association, is organically connected with the Scottish Committee, succeeded some years ago in establishing a national rate of payment in substitution for the various district agreements formerly in force, and has successfully maintained the rights of the profession to reasonable remuneration.

The scientific side of the Association's work is likewise well maintained. The clinical demonstrations arranged by the Edinburgh and the Glasgow and West of Scotland Branches, and the clinical and scientific meetings of the Fife Branch and the South-Eastern Counties Division and other Divisions, are specially noteworthy.

The successful Annual Meeting in Glasgow in 1922 had a markedly stimulating effect, and the Annual Meeting which is projected for Edinburgh in 1927, when the centenary of Lister will be celebrated, is already being looked forward to with pleasurable anticipation.

The new Scottish House of the Association, the auspicious opening of which in Edinburgh was recently reported in

our columns,¹ marks a new era in the development of the Association in Scotland. Providing as it does imple office and other accommodation for the immediate purposes of the Association, it promises also to fulfil the function of a medical centre for Edinburgh and for Scotland. That the Scottish Committee may be trusted to promote and uphold the high ideals of the Association is evidenced by the speech of the chairman, Dr C. C. Douglas at the opening ceremony. Prefacing his remarks with a note of the extension of the membership in Scotland, he went on to say: "Such extension is all to the good. We must expand. It is true that the doctor is essentially a born individualist, he, like the soldier, feels that in the last resort it is his own hand, his own brain, may I add perhaps his own wits, by which he stands or falls. But just as the soldier, brave though he may be, is as nothing without the organization of the modern army behind him, so in our day no man can be at his best living apart from our great organization of the British Medical Association. And we have thus to offer him, that if he will join us, to his fine ideal of individual enterprise and energy there shall be added that other great ideal of devotion to a good cause, the maintenance of the 'honour and respectability' of the profession to which he belongs. It is an interesting thing to note how a great ideal attracts to itself the best men, and we see this in the history of our Association. From Sir Charles Hastings, our founder, who I like to think was a graduate of Edinburgh University in 1818, on to Sir Victor Horsley himself, there were always fine men at the head of its affairs. We should never, in a gathering like this, forget to think of Horsley, the father of this modern, self-governing, democratic Association of ours. Since his time we have always had good men at our head, and even now I am struck with the quality of the men whom one meets in the Council. There are men—I may not name them as some of them are here—who for intelligence, for sagacity, for devotion to our proper interests, might find an honourable place on the directorate of any of the great industrial enterprises. They say that we are a trade union. To that I reply that, while we may act as much like a trade union as may be done by the members of a learned profession, we work under a maxim—the fine old Roman law, *Salus populi suprema lex*—the which, were it acted upon by the great trade unions of this country, many of the evils under which we suffer would disappear. I say—and our records are all open to examination—that never in the history of the Association has anything ever been carried that is opposed to the general good of the community, and I feel certain that it never will. We have other functions. You may have noticed that we have above us the Scottish Meteorological Office of the Air Ministry. It appears to me that we ourselves act as the medical meteorological office—always on the look-out for storms, with this advantage, that we do something about these same storms when they do arise—a useful function not yet attempted by the other office."

¹ BRITISH MEDICAL JOURNAL June 14th 1925 p 1031

IRELAND

THE IRISH FREE STATE

THE Dublin Branch of the British Medical Association was established in 1877, its area corresponded approximately with that now included in the Leinster Branch. In 1895 it consisted of 120 attached and 202 unattached members, making a total membership of 322. The majority of these members resided and practised in the city of Dublin and its adjoining townships. The Leinster Branch now includes the counties of Dublin, Kildare, King's, Longford, Louth, Meath, Queen's, West Meath, Wicklow, and Wexford, except a small portion adjoining County Wexford. The south-western portion of Wexford with County Kilkenny and the County, Carlow, although in the Province of Leinster are not included in the Leinster Branch, and form a portion of the

area included in the South-Eastern of Ireland Branch. The Dublin Branch during its existence was prominently identified with Irish medico-political questions, and its leading members took an active part in the promotion of public health legislation and in the improvement of the position of Poor Law medical officers in Ireland. The majority of the members of the Dublin Branch were engaged in private practice, as is the case to day. They became members of the Association in order that they might be in a position to help their colleagues who were less fortunately placed in the public services and to share in the scientific side of the Association, and especially to receive its JOURNAL. In 1905 the Leinster Branch had a membership of 329, which fell in 1915 to 164 as the result of the increased annual subscription and had times generally

for medical practitioners in Ireland arising out of the European war. To day the membership of the Leinster Branch stands at 252. It must be remembered that a very considerable number of the younger members of the Association, especially of the Leinster Branch, leave Ireland each year to practise in Great Britain, the Dominions, and Colonies. The East and South of Ireland Branch was recognized in 1893, and in 1895 it had 41 attached and 104 unattached members. This Branch, with the South-Eastern of Ireland Branch, included all the Munster area and the extreme southern portion of Leinster. The East and South of Ireland Branch is now known as the Munster Branch, and includes the counties of Clare, Cork, Kerry, Limerick, and the North Riding of Tipperary. The medical population in Munster is small and scattered, as the province is almost entirely agricultural. The Munster Branch in 1905 consisted of 99 members, but owing to cruises similar to those which operated in Leinster the number of members declined. It has since increased, and the Branch has at the present time a membership of 102, which is the highest since its formation. The South Eastern of Ireland Branch was also recognized in 1893. In 1895 it had 37 attached members and 24 unattached. In 1905 its membership was 65, in 1915 it was 45, and in 1925 it was also 45. The South Eastern of Ireland Branch includes in its area the counties of Carlow, Kilkenny, Tipperary (South Riding), Waterford, and the south western part of Wexford which it adjoins the County Waterford. The Connaught Branch includes the Province of Connaught, it was recognized in 1903. In 1915 it had 31 members, and in 1925 this had increased to 40. Thus there are in the Free State four complete Branches. The Irish Free State counties of Carlow, Donegal, and Monaghan are included in the Ulster Branch with the six counties under the Northern Parliament. The four entire Branches in the Free State consist of fourteen Divisions. Of these, there are six in the Leinster Branch, three in the Connaught Branch, three in the Munster Branch, and two in the South-Eastern of Ireland Branch. There is also in the Free State the Monaghan and Carrigrohilly Division, which belongs to the Ulster Branch. The County Donegal (Free State) members of the Association are attached to the Derry and County Fermanagh Divisions of the Ulster Branch.

Besides the Branches and the Divisions there is a Standing Committee—the Irish Committee. The President, Chairman of Representative Body, Chairman of Council, and Treasurer are members *ex officio* of this Committee. The additional *ex officio* members are the Secretary of each Irish Branch and the members of Council representing Irish Branches. In addition there is one member appointed by each Irish Branch, but, if the Secretary of the Branch is a member of the Council, two members appointed by each Branch. Any member specially appointed by the Leinster Branch or by the Ulster Branch must be a practitioner not resident in Dublin or Belfast. Three to eight members selected by the Irish Committee at its first meeting each year complete the full list of members of the Irish Committee. The Irish Committee considers all matters specially concerning Ireland. It has its own Medical Secretary (Dr T. Hennessy) and its own Irish Offices (16, South Frederick Street, Dublin), where it attends to all Irish medical questions.

THE ULSTER BRANCH

In 1877 a number of medical men met in Belfast and resolved to form a Branch of the British Medical Association. It was decided to call it the North of Ireland Branch. Dr. James Cuning was elected first president, and Dr. John Moore honorary secretary and treasurer. Three general meetings besides the annual meeting are held usually in Belfast, but occasionally in other towns, and the average attendance is about 35. The Branch has grown steadily, and at the annual meeting this year, with Professor McIlwaine as president, the honorary secretary, Mr. H. P. Mulholland, M.C., reported a membership of 440. The agenda contained a list of a score of members who showed patients and demonstrated specimens. The clinical side of the Belfast Medical School holds a position almost of the time, and recognizes with gratitude the ever ready help of the Association and Journals. The representatives of the Branch on the Council and central committees are diligent in attendance, despite the distance, and offer their contributions to the discussions of the business of the Association at the same time they take back to Northern Ireland much useful information. Many clinical papers of scientific interest have been published from time to time in the *Journal* and have served to ventilate the views and discoveries of medical practitioners in Ulster and of the teachers in the medical faculty of the Queen's University of Belfast.

In 1884 the Annual Meeting of the Association was held for the first time in Belfast, under the presidency of the late Dr. James Cuning, professor of medicine in the then Queen's College. This meeting, at which a large amount of professional work was done, served to widen the outlook of the medical men of the Province, and acted as a stimulus to the scientific work of the school. In 1901-2, when the constitution of the Association was being reorganized, and Dr. J. S. Darling (Lurgan) was president of the Branch, and Dr. W. Caldwell (Belfast) honorary secretary, one of the tasks that had to be undertaken was the adjustment of the boundaries of the Divisions. Some difficulties were encountered, but they were eventually overcome, and the arrangements then made have continued in force with a few minor alterations until the present time. The Ulster Branch is practically co-terminous with the geographical area of Northern Ireland, and is very active, especially in Belfast. The Association met again in Belfast in 1909. Sir William Whittham, M.D., was President, and over 1,500 members attended. The late Sir John Biers gave the address in Obstetrics, and much useful work was accomplished in the scientific sections. This meeting served again to bring the unity of the profession home to those in Ulster who did not attend the annual meetings in other towns, or indeed rarely the branch meetings, and acted as a stimulus to the scientific work of the school.

The Ulster Medical Society is an old local society, serving the clinical wants of Belfast itself, and many country Fellows are assiduous in attendance at its meetings, it is in a flourishing condition, and publishes annual *Transactions* of much clinical value. The society and the Branch are complementary to each other, the friendliest relations existing between them, most Belfast practitioners are members of both, and in any general question of moment a committee formed from the councils of both is appointed to voice the views of the profession.

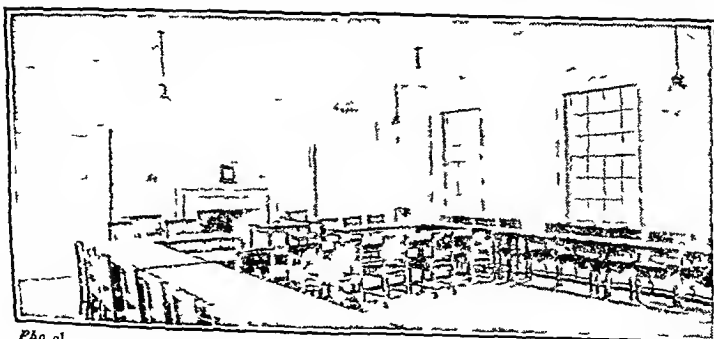


Photo of

COMMITTEE ROOM A IN SOUTH WING

Country Life

THE NEW HEADQUARTERS OF THE BRITISH MEDICAL ASSOCIATION

DESCRIPTION OF THE BUILDING



THE GREAT HALL FROM ONE OF THE AISLES

on its side Bloomsbury is a region rapidly coming into its own once more after many years of comparative neglect, and the direct route from Kingsway to King's Cross is one which will presently be of the first importance. It is towards the northern end of this route that the House stands.

The New Building had been completed up to a certain point when it was taken over by the Government during the war. It was acquired by the British Medical Association two years ago from the Disposals Board on advantageous terms, the lease from the trustees of the Duke of Bedford's estate is for 200 years. The outside had to be completed and a great deal of work was necessary to the interior before it could be fitted, under the direction of Sir Edwin Lutyens, R.A., to the purposes of the Association.

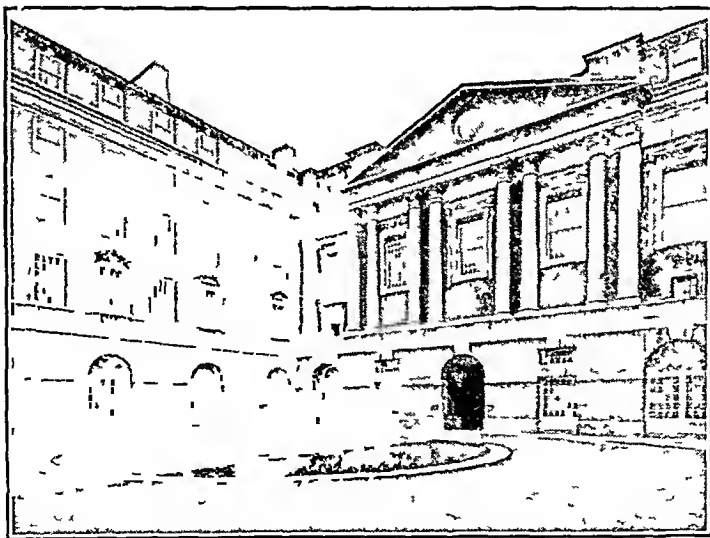
The building has as many qualities as the site. Its broad façades were drawn by Sir Edwin Lutyens in sober

and austere mood, they were originally designed to house a religious organization, which may have had something to do with it. The plan is of that delightful enclosing U-shape which is the principal charm of so many of our collegiate and other buildings in which a great many people live and work together. The open space of the U is, however, approached through a broad passage which separates the central Court of Honour from Tavistock Square.

THE MEMORIAL GATES

Entering through this roadway (flanked on each side by buildings which will one day yield place to extended wings of the new edifice), the first objects that strike the eye are the beautiful Memorial Gates opening into the Court of Honour, and beyond the Gates the façade of the main block with its stately windows. The Gates or Remembrance are of wrought iron, and their design is founded on the choicest examples of eighteenth century work. They are surmounted by a bronze shield bearing on either side a legend lettered in gold: in front "Memoria

and praise," behind "Faithful hath been your warfare." They have been made by the Birmingham Guild to the design of the architect leafwork and scroll form the main feature. The total width of the gate and railings is 60 feet, the height at the centre is 24 feet. They have been erected by the Association as a tribute to the 574 of its members who fell in the war and whose names are inscribed in the *Book of Honour*.



(Photo)

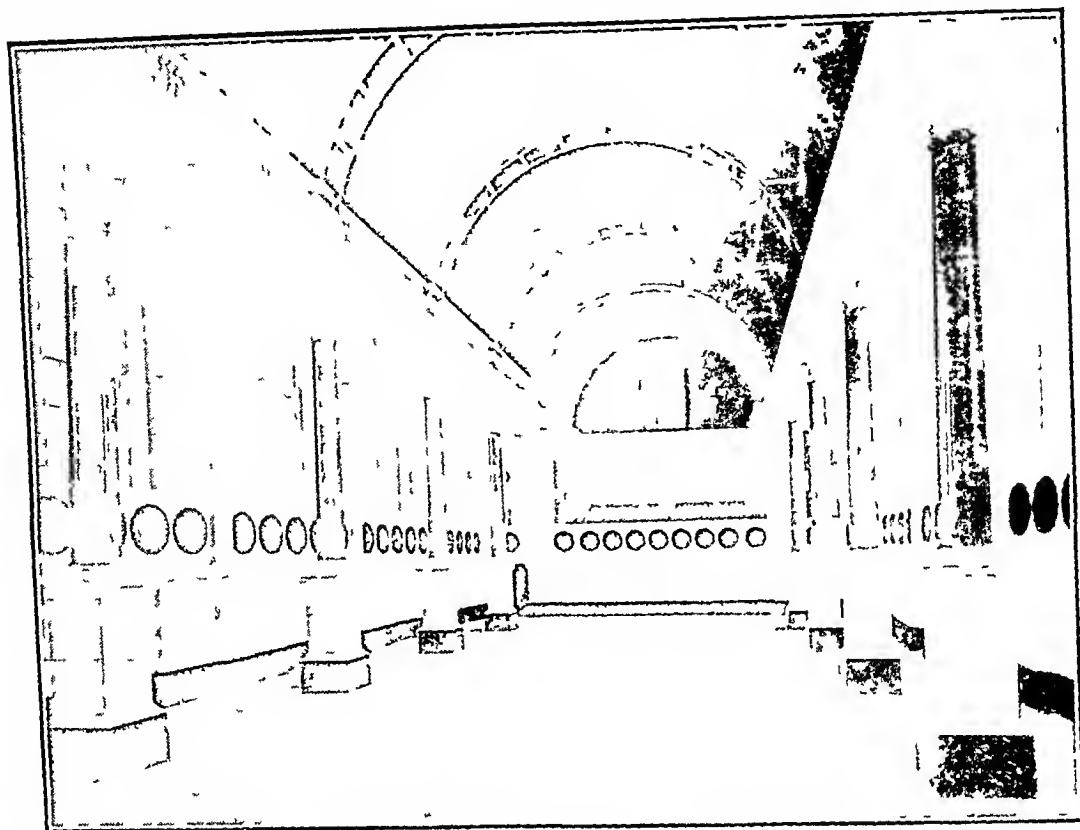
COURT OF HONOUR, FROM SOUTH WEST ANGLE

[Country Life]

the main block, which are the most conspicuous feature of the building itself, naturally suggest the existence of some apartment of great consequence, and in accepting their evidence we shall not be disappointed. The Great Hall into which they admit an abundance of light is an

THE GREAT HALL

The lofty windows of



Photo]

THE GREAT HALL

[Contd. 1 p.]

imposing room approximately a double cube one hundred and thirty feet long. The simplicity of the whole building is here very logically maintained. The roof above this hall is supported on semicircular ribs of light steel framing, which remains unadorned except at each end where one bay is surmounted by a painted vault moulded to the shape of the ribs behind it. Modern conditions demand that beauty should be continued directly out of the useful and inexpensive, and in his treatment of the roof and vault of the Great Hall Sir Edwin Lutyens has complied with this demand in an extremely skilful way. The inside of the roof itself together with the many subsidiary members of the framing that support it are painted a nocturnal green, if such a colour exists (which we doubt), and against this shadowy background the semicircular ribs appear in narrow ribs of gold. The whole is supported upon a row of Corinthian columns whose shafts appear as though turned out of some brilliant peacock blue marble. This remarkable effect appears, upon close inspection, to have been achieved by means of paint. At the north end of the hall is a door, and at the south a gallery, running from end to end at the lower level of the roof is an ambulatory connecting the third floors of the north and south wings of the building.

Library and Common Room

Centrally below the Great Hall there runs a vestibule which connects the Court of Honour entrance with that in Burton Street. Entering this vestibule from the courtyard, there will be found on the left the Library, panelled in rare Spanish mahogany turned from the old house of the Association. On the right is the Members' Common Room, a spacious apartment with long French windows overlooking the Court; its walls are finished in white and a delicate pearl grey—the lightest and most ethereal grey

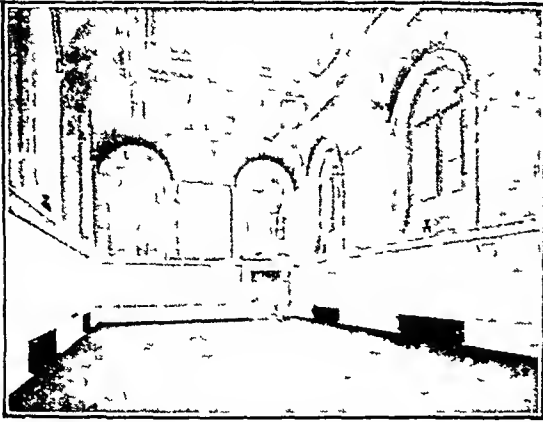
imaginable. A narrow black slitting helps to punctuate the subtle gradations of the walls. Below the rooms are large basement offices, containing the staff dining room and additional printing machine rooms, beside storage accommodation for the library.

Hastings Hall and Council Room

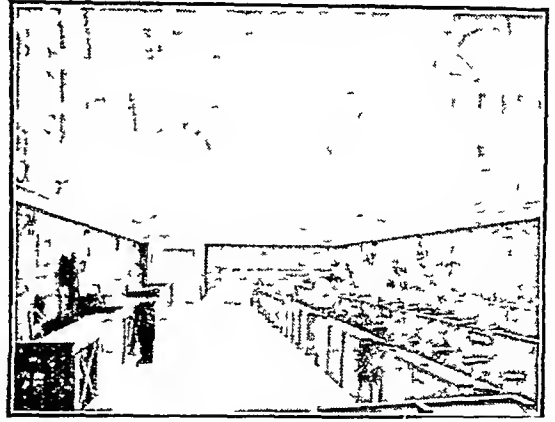
The windows of the Common Room and Library are repeated in the façade of the north and south wings, but the apartments lighted by them are several feet below ground floor, and are approached by flights of stairs and passenger lifts placed at each end of the wing. There are in the north wing, the Hastings Hall, capable of seating one hundred and fifty persons, and in the south wing the huge Council Chamber. Both halls are similar in shape and design, the ceiling springing from the walls in an ample concave entrenchment by the richly decorated over the window openings. The colour scheme in each hall is a combination of white with a pale ochreous yellow. Artificial illumination is provided by means of inverted bowls resting on little gilt pedestals of very interesting design. The floor of the Council room rises in tiers, and on these tiers are rows of comfortable seats upholstered in green leather. The walls are lined with oak panelling bearing the names of past Presidents, Chairmen, Gold Medalists, Editors, and other dignitaries and officials of the Association.

Court of Honour

The building covers eighteen thousand square feet, and has a total floor space of fifty thousand square feet. On its north it is flanked by a modern utilitarian garage, on its south by the Council's garden, whose pleasing sweep all springs from the old foundations of Tavistock House, where Charles Dickens lived and worked. Within the main courtyard the corners of the quadrangle are paved with



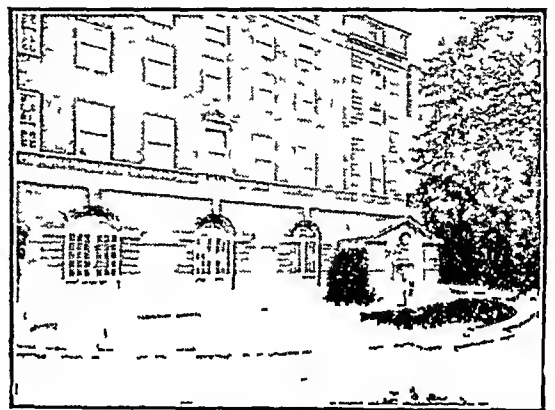
HASTINGS CONFERENCE HALL



COUNCIL CHAMBER

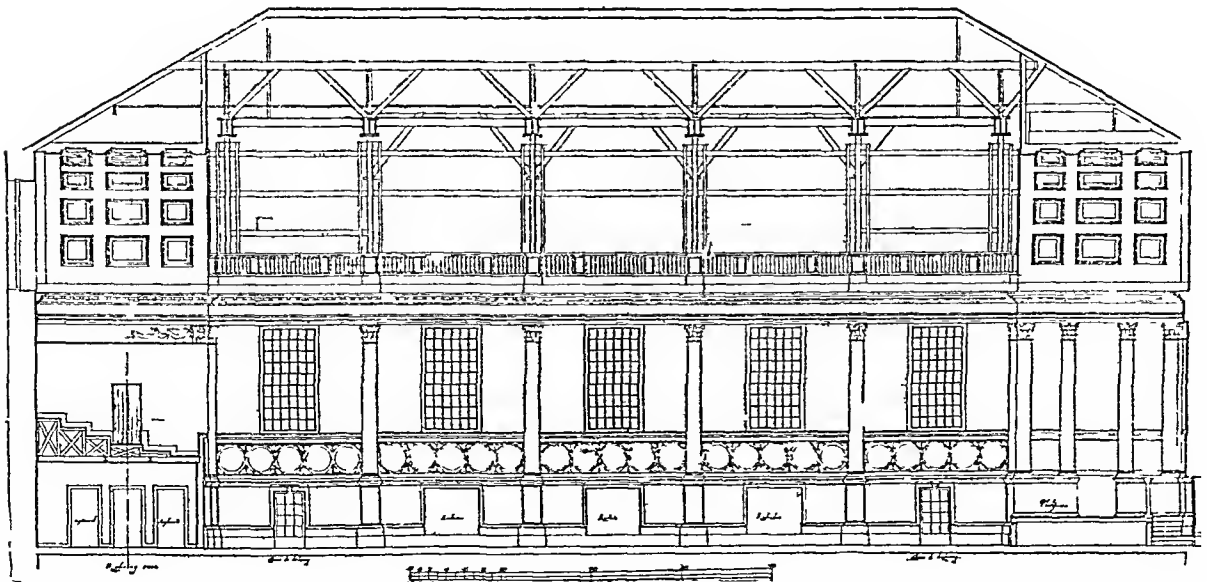


MEDICAL CONVOCATION ROOM



SOUTH WING FROM COUNCIL GARDEN

Photographs by Country Life



ELEVATION OF GREAT HALL (INTERIOR).

flagstones in a graceful curve, and the roadway leading from the Memorial Gates to the archway under the Great Hall surrounds a large circular grass plot with a wide kerb of white stone. A harmony in red, white, green, and grey is the result, with the delicate black tracery of the Gates in the foreground.

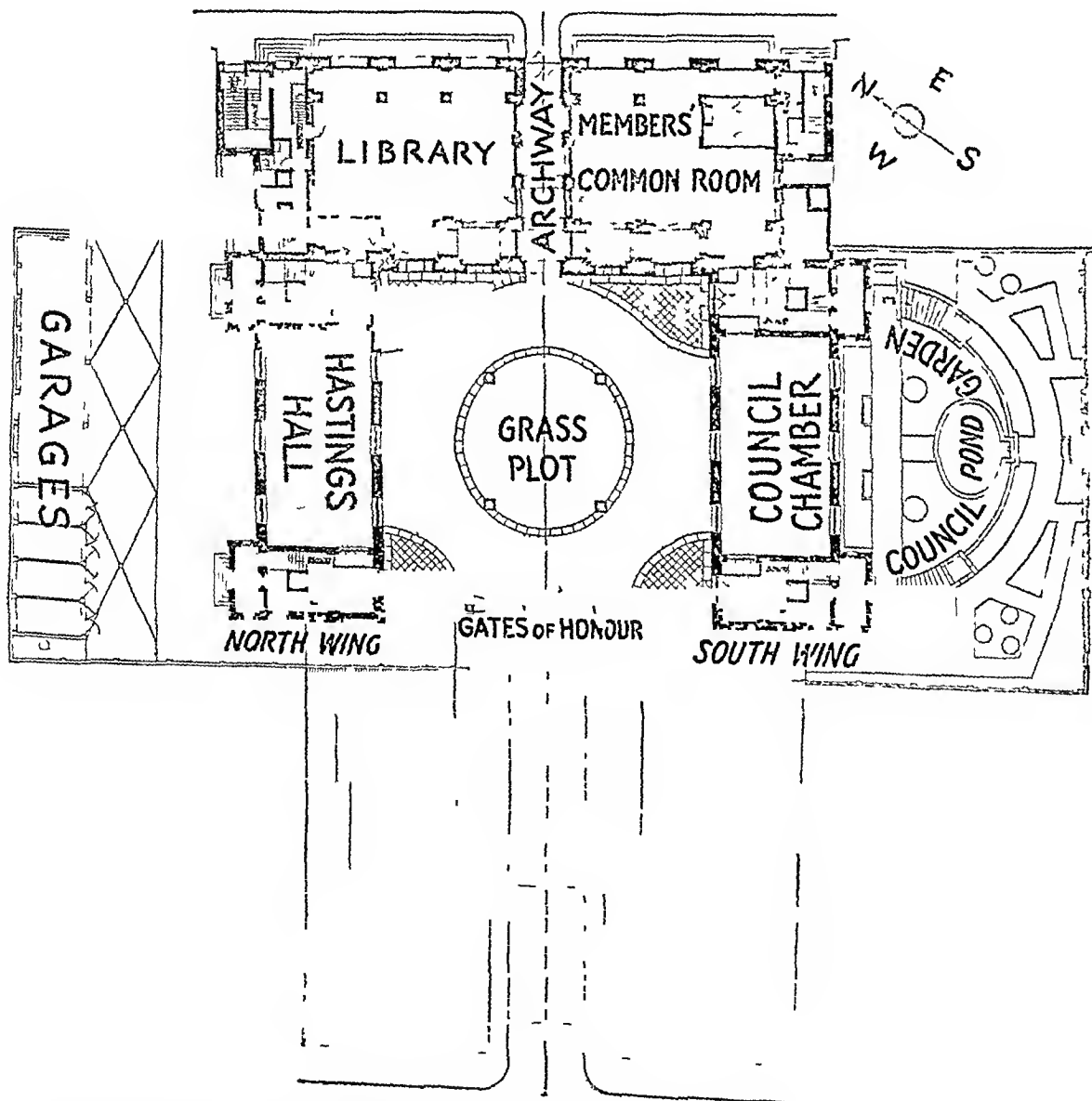
We may close this brief description of the new building with a note on the way in which the interior of the two wings has been laid out to take the various departments among which the central work of the Association is distributed.

Departmental Accommodation

On the first floor of the north wing, over the Hastings Conference Hall, are the general offices concerned with the business of publishing, subscriptions, and advertisements, on the second floor is further accommodation for the Finance Department, with rooms for the staff of the

Medical Insurance Agency. On the third floor is the Editorial Department, with rooms for the Editor, Assistant Editor, Sub-editor, and clerical staff. Above this, on the fourth floor, is the printing office, with type-setting machines, compositors' cases, and rooms for proof-readers.

The first floor of the south wing, over the Council Chamber, contains several fine committee rooms, and houses also the Intelligence Officer and her staff. The two floors above are allocated to the Medical Department. On the second floor are the rooms of the Medical Secretary, Deputy Medical Secretary, and Assistant Medical Secretaries, and the third floor accommodates the four committee clerks, the staff in charge of the card index and files, and the remainder of the clerical staff of this department. The fourth floor, arranged as a residential flat, is leased to the Financial Secretary, accommodation is also provided in the building for a resident medical officer.



GROUND PLAN OF SITE OF THE ASSOCIATION'S NEW HOUSE

The building as it stands is indicated by stippled shading; the sites of the proposed future extensions, on each side of the roadway from Tavistock Square, are shaded in vertical lines.

British Medical Journal.

SATURDAY, JULY 18TH, 1925

THE OPENING OF THE NEW HOUSE

ANOTHER chapter in the history of the British Medical Association began last Monday when the King, its Patron, visited the new site and formally opened the House in Bloomsbury which it has required and equipped. The members of the Association are deeply sensible of the honour paid to them, and to the profession they stand for, by this visit of their King and Queen. The close interest taken by Their Majesties in the progress of medical science and art, and their unflinching sympathy with the work of our profession for the relief of sickness and suffering, are matters of common knowledge. But this Royal Opening of the new House is so signal a compliment to our organization, its aims, and its work, that we make bold to describe it as a landmark in medical history. Physicians throughout the ages, and surgeons in later times, have had acknowledgement of their worth from State and Crown, but for the great body of general practitioners, who bear the heat and burden of the day, there has hitherto been little recognition. The British Medical Association, however, represents the profession as a whole, and in honouring this society our Sovereign honours us all.

Ever since it was founded in 1832 the British Medical Association has aimed at the integration of medicine for the common good, and this ideal is expressed in the Address presented to Their Majesties in the name of the Association on July 13th. During the past ninety three years specialization has spread far and wide and the conflict of material interests has threatened it times to split our ranks, but under the wise guidance of men of broad outlook the Association has continued to promote the advance of medical and allied sciences, and has gone far towards achieving its ideal of professional unity within these Islands and throughout the Empire. That its membership, now approaching 30,000, is world wide has been shown this week by the presence in our midst of leading medical representatives from Canada, Australia, New Zealand, South Africa, and India, and from distant Colonies and Dependencies, all bearing messages of loyalty and goodwill to the parent body. Moreover, hundred societies at home and abroad have sent delegates to join with us in celebrating this notable event in our annals. The position held by the British Medical Association in the public and professional life of this country is indicated by the fact that the Minister of Health accompanied Their Majesties as Minister in attendance, and that among those who awaited the Royal visitors, standing beside the principal officers of the Association, were the President of the General Medical Council, the Presidents of the two English Royal Colleges, Lord Dawson who represents medicine

at Court and in the House of Lords, and the Chief Medical Officer of the Ministry of Health and the Board of Education.

It was most fitting that these outward signs of the solidarity of our profession in this country and throughout the British Empire should have included the dedication and opening, by the Archbishop of Canterbury, of the beautiful Memorial Gates set up by the Association as a tribute to the 574 of its number who fell in the great war. In the minds of all who enter the new House for work or study or pleasure, the gates they pass through will "wake remembrance of these valiant dead."

The brilliant success of the ceremonies on July 13th was the reward of infinite care and attention to detail. Nothing that foresight could provide for was overlooked, and the gracious message of congratulation from the King and Queen, received on the following morning and printed at page 145, will be endorsed by all whose good fortune it was to witness the day's proceedings. The letter from Buckingham Palace expressing Their Majesties' admiration for this splendid building, their pleasure in opening it, and their appreciation of the excellence of all the arrangements, is one of those kindly and discriminating acts that round off a high compliment.

A PAGE OF HISTORY

THE account given elsewhere of the offices the Association has occupied since, in 1871, it established its headquarters in London is proof that the growth of its varied activities has been so rapid that the prudent anticipations of one generation have been found inadequate in the next. It has now a house amply providing for the administrative needs of to-day, and the control of a site which affords room for a great deal of expansion. The house now taken into use contains, in addition to offices for the three departments, a spacious Library, a members' conversation room, a fine Council Chamber, committee rooms, and a Hall capable of seating five hundred people, upon the design and decoration of which the architect, Sir Edwin Lutyens, has lavished his great powers.

Probably the most important decision the Association ever took was when in 1856, it resolved to take the name 'British Medical Association.' With its old name of 'Provincial Medical and Surgical Association' it could never have become the Empire wide institution it is. It had done a great deal of valuable work for the advancement of clinical medicine and the ancillary sciences, and also for the betterment of sanitary conditions, for the amendment of laws and regulations which in the new industrial era had become obsolete, and it had persistently sought for a reform of the Poor Law. This was work for the whole of Great Britain but without perhaps fully appreciating what it was about it had embarked on a still wider field. It had long been asking Parliament to establish a 'Medical Register' to which should be admitted only those who fulfilled certain conditions, the chief of which was that the applicant should produce evidence of having attained a certain standard of education by passing through a curriculum prescribed by the universities and medical colleges. This Register, during the transition period when the Dominions and Colonies were growing to nationhood, was Empire wide.

Later on the Association accomplished much for the public health and for social medicine generally, chiefly through the Parliamentary Bills Committee, which though it had a rather anomalous constitution was in effective body. But as the number of members grew the constitution of the Association itself got out of date. Its government was originally established on the representative principle by way of a large Council elected through the Branches, this Council met once a year and delegated its duties in the intervals to a Committee of Council. As the membership increased the constituents grew too big and a large proportion of members belonged to none. They were called 'unattached', they belonged to the Association in order to receive the *BRITISH MEDICAL JOURNAL* and to have the right to attend the Annual Meetings. In this way the organization came nearly to resemble that of a public company with an annual general business meeting open to every member, and a Council which, though not elected by the business meeting had functions very similar to those of a board of directors. This plan never worked well, and as the number of members grew it worked less well. The unattached members did not feel that they were responsible for the policy followed by the Association in medico-political matters and its influence with Parliament, with the Government, with the public, and with the profession itself, was thereby seriously impaired.

The main object of the alterations in the organization of the Association which were under discussion at the beginning of this century, and were embodied in the constitution which came into force in 1902, was to consolidate and extend the social and medico-political work the Association was doing and to establish its right to speak in the name of the whole profession. To attain the second purpose it was decided that every member of the Association should be a member of the Division within whose area he resided. In order that the work under the first head should be effectively done, a number of standing committees were set up, and a whole time Medical Secretary appointed to act as secretary of these committees, to prepare the business for them, and to carry out the instructions they might give. The work under this head very quickly increased, and the staff of the Medical Secretary's department had to be enlarged. There is now a Medical Secretary, a Deputy Medical Secretary, and two Assistant Medical Secretaries, besides a Secretary for Scotland and another for Ireland, with offices in Edinburgh and in Dublin respectively. At the present time there are fifteen standing committees concerned either with internal administration or with matters affecting the relation of the medical profession to public affairs. The standing committees work in consultation with the Council which meets seven times a year and is the executive of the Association. The Council reports its recommendations to the Representative Body, this body which contains representatives of all the Divisions both at home and overseas meets at least once a year and in it is vested the general control and direction of the policy and affairs of the Association. In this way the constitution of the Association has become strictly representative.

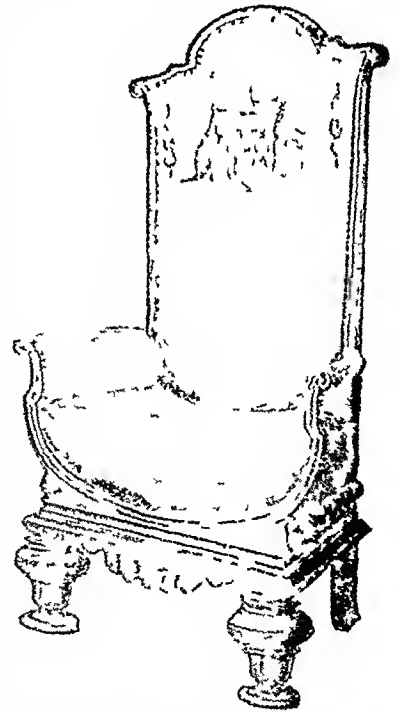
The attainment of this object was the second decision of supreme importance reached by the Association the first as has been said was that it should be an organization bounded in area only by the limits of the British Empire. In Australia it has six Branches one for each State they hold joint congresses periodically and are co-ordinated by a

Federal Committee, on which all the Branches are represented. In South Africa there are eleven Branches, and here is a committee (the South African) existence and joint congresses for scientific discussion are held. It is the great growth of the work of the Association in medico-political directions that has rendered imperative larger accommodation than was foreseen by those who were responsible for the erection of the house in the Strand which has just been vacated. The need was found for more committee rooms—the standing committees, of course, are empowered to appoint subcommittees, and sometimes the Council appoints special committees—and for larger rooms. The common room, originally provided for the use of members, was eaten up by the growth of the clerical staff and there was no large hall for meetings of the Representative Body, for conferences of representatives of Local Medical and Panel Committees, and for other largely attended conferences with other bodies—such, for example, as those that were held to discuss the policy the profession should follow with regard to voluntary hospitals. The new house in Tavistock Square provides for all these things, and the prudent course has been followed of acquiring the control of the sites at present occupied by the houses which lie between the building opened by the King last Monday and the main thoroughfare.

PRESIDENTIAL CHAIR GIFT FROM AUSTRALIA

At the Council meeting on January 18th last the Chairman stated that a letter had been received from Dr. R. H. Todd, Honorary Secretary of the Federal Committee of the British Medical Association in Australia, with regard to a proposal from the Australian Branches to present the parent Association with some gift for the New House, such as a chair, which should be made of Australian timber. On receipt of this letter a cablegram was sent to Australia saying that a President's Chair for the Great Hall would be most acceptable. The Federal Committee thereupon cabled £100, with a request that the chair be made in this country, and that the High

Commissioner for Australia, Sir Joseph Cook, and also Mr. Joseph Davis, formerly Director of Public Works in New South Wales, should be consulted with regard to material and emblems. Dr. Boland added that the High Commissioner and Mr. Davis had very willingly responded and made suggestions. The Council authorized a letter



to be sent to Austria conveying thanks for this welcome gift. The Presidential Chair has been carved and upholstered according to a sketch furnished by Sir Edwin Lutyens, the architect of the building. It is constructed of the Austrian wood known technically as black beech, and upholstered in red leather. The back of the chair bears, in front the Austrian coat of arms, and behind, stamped in gold lettering on a leather panel, the following inscription, in accordance with a suggestion by the Austrian Federal Committee:

BRITISH MEDICAL ASSOCIATION

PRESIDENT'S CHAIR

Presented by the Branches of the British Medical Association in Austria

to

the Parent Association in England

in token of

friendship, loyalty and goodwill,

to celebrate the Entry of the Association into its New House,

Travistock Square, London,

July, 1925

" thus which, though light as air, are as strong as links of iron

The quotation at the end of the inscription is taken from the famous speech of Edmund Burke in the House of Commons in 1775 on conciliation with America. At the reception in the Great Hall held on the evening of July 13th the chair was formally presented to the Association by Dr W. N. Robertson, C.B.E., as delegate from the Austrian Federal Committee, of which he is vice-chairman. The speeches at the presentation are reported in our account of Monday evening's ceremony (p. 146).

CONVENTION OF ENGLISH SPEAKING OPHTHALMOLOGICAL SOCIETIES

A CONVENTION of English speaking Ophthalmological Societies was held in London this week under the auspices of the Ophthalmological Society of the United Kingdom and its affiliated societies in the provinces, in Scotland, and in Ireland. A large and very representative number of members attended. On the eve of the opening of the convention some 700 names had been registered, the list included visitors from all parts of the Empire, from France, Holland, Switzerland, Austria, and China, and from the United States of America, which was represented by about 230 delegates, among whom were some of the best known in ophthalmic literature. On Monday evening, before the official opening of the convention, a reception was given by the President and Council of the Royal College of Surgeons of England. The guests, who included many ladies, were received by Sir John and Lady Bland Sutton. The whole of the museum of the College was thrown open, those sections bearing on ophthalmology, especially in the fine war collection, being particularly prominent. Members and their friends were entertained by a programme of music, and refreshments were provided in the library. The function, which was very well attended, provided a happy opportunity for introductions prior to the official opening of the convention. From mornings, three afternoons, and an evening were devoted to the scientific work of the convention, whose meetings were held in the University College buildings. During this time a heavy programme was gone through, which included two discussions, the Bowman Lecture by Sir John Parsons, and thirty-nine original papers, to which members from overseas contributed largely. The social aspect also of the meeting was well catered for: its items included a reception by the President of the convention, Mr. Tiercher Collins, a reception at the Royal Institution by its President and Council, a garden party given by Sir William and Lady Lister,

and excursions to institutions of ophthalmic interest in London, to Oxford, and to Cambridge. At University College an interesting and comprehensive museum had been prepared of drawings, instruments, and pathological and anatomical specimens, a feature of which was the number of sections illustrating much of the recent original work that has been done both in this country and in America. The official banquet which terminates the proceedings is being held in the Guildhall on Friday evening, July 17th, H.R.H. the Duke of Connaught is the guest of honour. One of the primary aims of the convention was the re-establishment of international congresses of ophthalmology on a pre-war footing. In taking the initiative in this the Ophthalmological Society of the United Kingdom is to be congratulated. The success and value of these meetings in the past, and the enthusiasm of the present convention, provide the strongest argument in favour of their continuance on the broadest possible basis.

SIR JOHN ROBERTSON MOH BIRMINGHAM

To celebrate the honours of knighthood recently conferred upon Sir John Robertson (MOH Birmingham), he and Lady Robertson were entertained at dinner on July 16th by the Midland Branch of the Society of Medical Officers of Health. There was a large attendance, and the President, Dr. R. Wolsey Stools, who was in the chair read letters of congratulation and apologies for absence from many others, including the Minister of Health (Mr. Neville Chamberlain), Sir George Newman, Professor Kenwood, Dr. Bolam (who conveyed the compliments of the Council of the British Medical Association), Professor Bostock Hill, and Professor Hope. In proposing the health of Sir John and Lady Robertson, Dr. G. F. Buchan, president-elect of the Society of Medical Officers of Health, professed congratulations on behalf of the society. He recalled Sir John's long service to Birmingham, and the singular value of his association with the university. Dr. Buchan said that he had first come under the influence of Sir John Robertson's energy and enthusiasm sixteen years ago. Research was the keynote of his policy—research for its own sake—and its practical application, this should be made the slogan of every medical officer of health, so lifting his work above politics and contemporary outside influence. Sir John had always been a great worker, and certain changes in the sphere of public health would always be intimately associated with his name: housing in relation to health, a pure food supply, especially milk, the campaign against tuberculosis, which he might be said to have initiated in Birmingham, maternal mortality, cancer research. Dr. Buchan expressed his pleasure that Sir John had been recognized and honoured during his lifetime. He had established an ideal of public health administration, and, great as he was to-day, he would appear still greater to posterity. Councillor Miss Bartlett (chairman of the Birmingham Health Committee) made a short and happy speech, paying tribute to Sir John's helpfulness and personal attributes. The toast was received with acclamation and musical honours. Sir John Robertson, in replying, spoke feelingly of the honour done to him by those gathered together that evening. His knighthood, he said, was a recognition of the public health service and of the work of medical officers of health generally, and he would carry it in their name. Public health work was happy work, though results were not immediate and could only be secured by pegging away. He had been consistently lucky all his life in being country bred, and thus early acquiring a knowledge of nature, in his masters at school, in his father, who sent him to Edinburgh, where he gained an intimate knowledge of natural history. Fiddles and music also played their part in his education, but in spite of these distractions he qualified. He was fortunate in

becoming associated with a good general practice, and regarded such experience as of the greatest value to a medical officer of health. His first appointment was at St. Helens, where he was lucky in his health committee, whose members helped in every possible way. Again at Sheffield he was no less happy, and looking back on his service in Birmingham he had no regrets. He recalled the names of Sir William Cooke, Mr. John Nettlefold (of town planning fame), Sir Ernest Hiley, and Mr. Neville Chamberlain as among those who had been greatly helpful. He closed with words of deep appreciation of the honour done to him. Mr. J. Furner Jordan, President of the Birmingham Branch of the British Medical Association, who proposed the toast of the Society of Medical Officers of Health, said that the profession as a whole was proud of the distinction conferred on Sir John Robertson. He looked upon the medical officer of health as something of a superman, for to the knowledge of the ordinary doctor he added that specialized knowledge that made him what he was. Mr. Jordan referred to the great reduction in the general mortality rate, and expressed the hope that with the more complete instruction now insisted on or in contemplation by the General Medical Council and the Central Midwives Board the perinatal mortality rate would show an equal diminution. The problem of cancer could only be solved by Sir John's method of "pegging away." Dr. R. A. Lister, President of the Society of Medical Officers of Health, responding, expressed the appreciation of the society at the honour done to Sir John Robertson, and said that it reflected on the whole public health service. The society endeavoured to secure the best and most brilliant men for preventive medicine.

ACTION OF LIVER EXTRACTS IN HIGH TENSION

The Canadian Medical Association Journal for July contains two articles relative to the action of liver extracts upon arterial hypertension. An editorial in the same issue states: "One of the papers is purely an experimental laboratory study, the other might be termed an experimental clinical study. The authors of both were associated for a period and exchanged ideas although at the time working from different hypotheses. What the ultimate benefit will be is a problem for the future, but it is gratifying to note in members of the Canadian profession not only the investigating mind but the generous co-operation with fellow workers." The shorter paper, that by A. A. James and V. B. Lughton of the University of Western Ontario Medical School describes experimental work upon rabbits, using intravenous injections of liver extracts after injection of such pressor substances as epinephrine (1 ccm of a 1 in 10,000 solution). The exact method of preparing these extracts is not stated. The authors conclude that: (1) Extracts of liver used in experimental animals effectually reduce the hypertension induced by certain pressor substances. (2) These extracts will reduce normal blood pressure to a low level (about 5 mm Hg) where it is maintained over long periods of time. (3) Large doses reduce the blood pressure to its lowest level and death ensues. (4) Preliminary work suggests strongly that the active substance is not choline or histamine. The other paper, by W. J. McDonald of St. Catharines, Ontario, accounts the results he and others who helped him obtained by injecting a solution of liver extracts into the veins of persons suffering from "essential hypertension." These results are illustrated by charts, and curves of changes induced in the normal blood pressure of rabbits are also given. The exact method of preparing the extracts is not stated. Dr. McDonald began his work by investigating the effect of liver extracts from the liver of mice acid in the blood of those suffering from carcinoma, for it had previously been shown that in such

patients there is generally a definite increase in the urea content of the blood. Later he found in one of his carcinomatous patients that injections of liver extract reduced the blood pressure so that he determined to test these extracts in a series of patients with essential hypertension. Shortly afterwards a change was made in the method of obtaining the liver extracts and Mr. W. M. McDonald, a biochemist of Hamilton, Ontario, succeeded in recovering from the extract what appeared to be the active principle in two fractions which were termed chemicals "A" and "B." Thirty-three clinical cases were studied in all, and extracts of varying dosage were injected intravenously. The usual dose seems to have been 2 ccm up to 4 ccm every two or three days. In twenty-five patients no disagreeable symptoms whatever were caused, but in another eight patients reactions followed which in varying degree resembled protein shock. In these eight cases the two chemicals "A" and "B" were combined in one injection. The age of the patients ranged from 42 to 67 years (average 61), the average duration of hypertension was six years, the average systolic blood pressure before injection 204 mm Hg, afterwards it was 142, the average diastolic pressure before treatment was 114, and this fell on the average to 86 mm Hg. Dr. McDonald states that the exact chemical nature of the liver extracts has not been ascertained, but this is being investigated in the University of Toronto. Dr. McDonald presents his results "without conclusions or deductions."

INDUSTRIAL FATIGUE

The fifth annual report of the Industrial Fatigue Research Board, which was published last month chronicles the progress of investigations covering a wide field, and includes some short papers by members of the research staff. Among subjects of inquiry having particular medical interest we note that at the request of a departmental committee appointed by the Home Secretary to consider and report upon the statutory regulations governing the use of artificial humidity in cotton factories, the Board has undertaken an inquiry into the relative incidence of sickness upon weavers in wet and dry sheds. The investigation will be carried out under the supervision of a special committee, of which Dr. Myron Greenwood is chairman and Professor I. E. Collis a member. Another research committee, of which Mr. C. J. Bond is chairman and Dr. Greenwood, Hield, Pembrey, and Pirnau members, is investigating telegraphists' cramp, and a committee, of which Dr. Leonard Hill is chairman and a majority of the members medical men, is studying the physiology of ventilation. In the last named field extensive use is being made of Dr. Hill's kymograph, a new method of measuring oscillations in air temperature by means of a delicate thermopile, invented by Mr. J. J. Manley and Dr. Vernon, is noted. It is remarkable that an increase in the oscillations of air movement has been found to cause a distinct increase of the subjective sensations of freshness, and that a simple method of increasing these oscillations, depending on intermittency in the running of the ventilating fan, has been tried. These observations may prove of much practical importance. Miss E. M. Newbold contributes an excellent paper on the pitfalls waiting the interpreter of industrial sickness statistics. She repeats the old but frequently forgotten caution that correlation does not necessarily imply causation, and culls the following excellent instances of high correlation—between the secular course of expenditure on the navy and the consumption of bananas, between ability to speak Dutch and a low rate of mortality from cancer of the breast, and between the amount of calcium in one's bone and

the number of nephews and nieces and his Miss May Smith writes on the psychological factors of industrial efficiency "It is not uncommon," she remarks, "to be told by a girl that she has nothing much wrong except that she suffers from nerves. Some employers, however, are seriously perturbed about the loss of efficiency involved in the form not only of sick leave but of inadequate work and of irritability affecting fellow workers as well. People of robust type scornfully dismiss the problem with the magic word 'hysteria,' but a label is neither soothing nor practical when the alternatives of dismissing the worker or of enduring the 'nerves' are confronted." Mr. L. Lerner contributes a very cautious note on methods of detecting liability to accidents. The report does not record any one arresting discovery but contains ample evidence of careful, routine work which is what is needed in this field.

BRITISH EMPIRE CANCER CAMPAIGN

The annual report of the Grand Council of the British Empire Cancer Campaign for the year ended May 31st, 1925, was presented at the meeting held at the House of Lords on Monday, July 13th. In his introduction the chairman, Viscount Cave, announced the receipt of subscriptions to the amount of just over £100,000. He pointed out that it has been the principal aim of the Grand Council to co-ordinate and encourage all deserving institutions and individuals engaged in cancer research work. Thanks to grants from this society, several laboratories which would otherwise have been restricted by lack of funds have been able to continue research work, and in some cases to open up new lines of investigation. Work is being carried out with radium and 2 rays under a committee appointed jointly with the Medical Research Council, £5,000 worth of radium was purchased in the early part of the year and put at the disposal of this joint committee. In addition a radon centre for the production of radium emanations was founded at the Middlesex Hospital and financed by the Campaign. The report contains a summary of the work of the various committees during the past year. The Scientific Advisory Committee meets each month to consider matters referred to it by the Preliminary Inquiry Committee and the Grand Council, together with various reports on investigations carried out at its instigation. The body of the report is taken up with statements from institutions in receipt of grants. The Cancer Research Department of the Middlesex Hospital has received £6,900, the Cancer Hospital Research Institute £5,000, the Medical Research Council (on behalf of the radon centre at Middlesex Hospital) £3,725, St. Bartholomew's Hospital £1,695, Christie Hospital, Manchester, £1,000, Tropical Disease Prevention Association £1,500, Cancer Research Laboratories of St. Mark's Hospital £600 and the Coombe Lying-in Hospital, Dublin, £200. The statement submitted by the Middlesex Hospital refers to general pathological investigations, experimental researches, diagnostic serological methods, and radiological researches. The report from the Cancer Hospital Research Institute goes very fully into the experiments Dr. Leitch and his co-workers have been carrying out on the experimental production of cancer by carcinogenic substances, as reported by Dr. Knapp in our columns a fortnight ago. Reports are submitted also on researches in clinical and surgical pathology, immunity experiments, experiments in chemotherapy, and statistical inquiries. Promising work is reported from the cancer research laboratories at St. Mark's Hospital, where a detailed investigation has been begun into the relation of simple and malignant tumours of the large intestine. Among the inquiries that are being carried out by individuals to whom grants have been made may be mentioned those of Dr. Thomas Lumsden at the Lister Institute. He is at present investigating the effects

of antisera in cancer and sarcoma, and results already obtained *in vivo* suggest that important knowledge may be gained by these researches.

THE AUTOMOBILE ASSOCIATION AND THE OFF SIDE RULE

At the twentieth annual meeting of the Automobile Association on July 8th it was announced that the membership now exceeds a quarter of a million. The annual report dealt with the activities of the association, in its parliamentary, legal, touring, and engineering departments. A paragraph of the report of interest to members of the British Medical Association is headed "Road safety—off-side rule." It is stated that the committee, after full consideration, has unanimously decided to recommend all members of the Automobile Association to adopt the "off-side rule." At present there is no standard rule for deciding at cross- and side-roads which vehicle should proceed and which should give way to other traffic. The report continues "The underlying principle of the 'off-side rule' is that every user of the street is made responsible primarily for avoiding collisions with any vehicle or person on his *right hand*. Applying this principle to cross-roads, a driver would wait for, and pass behind, any vehicle approaching from his right, and when a driver cuts in from his near side the onus would be upon him (presumably the near-side driver) to explain his reasons for so doing should an accident occur. Briefly stated, the rule means 'Watch for, and, other things being equal, give way to, traffic approaching from the right.'" The wording of the paragraph is not, perhaps, as clear as it might be, but this proposal was made many years ago by a medical motorist, Dr. Charles Buttar, whose argument was published in the *BRITISH MEDICAL JOURNAL* of February 21st, 1925 (p. 380). Later on the matter was raised at a meeting of the Metropolitan Counties Branch Council by Mr. Bishop Hayman, and again the proposal was approved unanimously. At that meeting it was suggested that the metropolitan police should be approached for the purpose of disensuring the rule in connexion with traffic regulation. It was decided to postpone acting on this suggestion and to communicate with the Automobile Association and other motoring organizations. But a joint discussion between the Automobile Association and the British Medical Association on the one hand, and the traffic authorities on the other, might well be of value, if only for the purpose of revealing any weak points in the argument. The proposed rule seems to be of sufficient value to merit such discussion.

THE ASSOCIATION'S INTELLIGENCE OFFICER

Miss A. L. LAWRENCE, who was appointed Intelligence Officer by the Council of the British Medical Association in 1919—after serving for four years on the staff of the Central Medical War Committee, for which she was awarded the M.B.E.—has lately qualified for the diploma conferring the title of LL.B. of the University of Cambridge. Miss Lawrence was Clothworkers' Scholar at Gt. St. Mary's College, 1910-14, and took honours in Part I of the Historical Tripos, 1912. In 1914 she gained first class honours in Part II, thus obtaining the Tripos Certificate which now entitles a woman to be styled B.A. Cantab. In the recent Law Tripos examination, Part II, she attained the standard for honours, this distinction, coupled with the honours previously gained in the Historical Tripos Part I, qualifies for the title of Bachelor of Laws. Miss Lawrence's colleagues, who have learnt by experience to respect her great abilities and wide acquaintance with social conditions, are glad to know that she has received these academic distinctions and feel sure that all members of the Association will join with them in congratulating her.

THE ARCHITECT OF THE ASSOCIATION'S NEW HOUSE.

SIR EDWIN LUTYENS, R.A.

SIR EDWIN LUTYENS, who designed the Association's New House, is one of the most distinguished of living architects. His works are to be found in almost every part of the British Empire. He was called in to advise the Government of India as to the laying out of the site of New Delhi; he is the architect of Government House and other buildings there, and of the great archway by which they are approached.

His name became a household word when he designed the Cenotaph in Whitehall, and he is one of the principal architects for the Imperial War Graves Commission. He has designed many war memorials both at home and overseas. At home we have from him the memorials at Leicester, Rochdale, York, Southend-on-Sea, Hove, Bury, Reading and Cuddah. He designed also the memorial of the Royal Naval Division in St. James's Park. Among the memorials overseas are those in Ceylon, Hong Kong, Bermuda, and Madras as well as British war memorials in France at St. Quentin, Itaples and Arras. He has built churches also, and as a domestic architect has been supremely successful both with exteriors and interiors. He is one of those who regard a garden, not as an excrescence but as part of the outline of the house and has given evidence of this

in the small but very perfect garden he has laid out at the south side of the South Wing of the Association's house. A very good example of his domestic style is to be seen in the small building of the Midland Bank in Piccadilly at the west corner of the courtyard of St. James's Church. To show his versatility it may be added that he has designed other business offices and also the house of the British School of Art at Rome and the picture gallery and South African war memorial at Johannesburg.

The Association's house was built before the war, but the internal decorations were never even begun; they have now been completed under his supervision, and it has been an education to watch the development of the

architect's conception through stages of apparent chaos to the final perfection. The Architectural Correspondent of the *Times* has described the exterior as "at once homely and dignified, scholarly and un-messy," and the whole building is suited to its purpose and becoming to its locality. In style, this writer continues, "it may be described as in the tradition of Wien, and slightly reminiscent of Hampton Court."

Another writer (in *Country Life*) has said of Sir Edwin Lutyens that "while the forms he uses are old he succeeds in combining them into highly original patterns. The advantage Sir Edwin Lutyens has over many of his architectural confidants is that he is content to say something new in an old language while they strain after a new language as well; this medium of expression, however, must consist of broken phrases, so their achievement has all the characteristics of immaturity." That his genius is appreciated by the members of his own profession is proved by the fact that he has received the gold medal of the Royal Institute of British Architects, and that only the other day he voyaged to America to receive the gold medal of the American Institute of Architects. He was born in 1869, was elected A.R.A. in 1913, and R.A. in 1920.

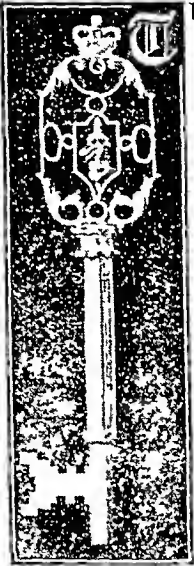


I finally, let us most gratefully say that he has shown the keenest interest in the work he has done for the Association, entering thoroughly into the special needs of its headquarters, that he gave attention to every room, conceived the bold scheme of decoration of the Great Hall, and designed the fine wrought iron screen of three gates which has been made by the Birmingham Guild and through which the King and Queen passed into the Courtyard on Monday. We will conclude by again quoting the Architectural Correspondent of the *Times*, who wrote "The best tribute to the building is to say that it is so well proportioned and so discreet in character that it gives the impression of always having been there."

Royal Opening of the New House.

HIS MAJESTY'S TRIBUTE TO THE MEDICAL PROFESSION.

THE CEREMONIES ON JULY 13TH.



WAS THE FIRST TO
HIS MAJESTY

THE New House of the British Medical Association in Tavistock Square was opened by His Majesty the King, who was accompanied by Her Majesty the Queen, on Monday afternoon, July 13th.

The opening took place with appropriate ceremonial and in the presence of perhaps the most representative gathering ever brought together in the name of British medicine. No circumstance which could give honour to the occasion was lacking. Even the one uncontrollable element, the weather, smiled upon the function, thereby relieving the minds of the organizers of their principal anxiety, for had the weather been wet the event would have been shorn of much of its spectacular effect and of a certain amount of its significance. The procession through the Court and would not have been possible, and the preliminary receptions, instead of being made at the end of the private roadway in front of the newly dedicated Gates of Honour, would have taken place in the Members' Common Room. It proved, however, to be a perfect July day, bright, but not oppressively hot—the temperature was 73° in the shade at three o'clock in the afternoon—and the red brick and white stone fittings of the New House looked then best under the blue sky, and the Gates of Honour had a particular delicacy and beauty as seen in the sunlight. The building which, with the Court, presented a scene of chaos only a few weeks or days ago, now stood finished—or at least whatever was unfinished was hidden from view—and the workmen had disappeared save for one of them who, elected for that honour by his fellows, was presented to Their Majesties. Very many of those who were present saw the New House for the first time, and expressions of admiration for one of the finest modern structures of London were heard on every hand.

The short avenue leading from Tavistock Square to the Memorial Gates was lined on each side by four Corinthian columns crowned with flowers, which gave a gay appearance to the approach. Members of the 28th London Regiment (the Artists' Rifles) formed a guard of honour under the command of Captain W. Campbell Smith, M.C. Behind them were parties of boys and girls from the Foundling Hospital for whom places had been reserved, and who greeted the Royal visitors with shrill cheers. To the south, just outside the Gates, stands had been erected for the accommodation of relatives of the members fallen in the war whose names are inscribed in the *Roll of Honour*. Some two hundred of these altogether were present at the dedication of the Memorial. In the Court and chairs were provided for about 100 members of the Association, and for representative students from every medical school in the country. By this arrangement the Court was not overcrowded, and everyone saw and heard in comfort. On the central grass plot in the centre the band of His Majesty's Grenadier Guards, by permission of Colonel B. N. Seigison Brooke, C.M.G., D.S.O., rendered a programme of music under the direction of Lieutenant G. N. Miller, L.R.A.M., and in the western ambulatory of the Great Hall a string orchestra composed of musicians from the same band also gave selections. The music, like the other proceedings, was transmitted by means of microphone and loud speakers from the Court to the Great Hall, while loud speakers outside the Great Hall enabled everybody within a big radius to hear what was going on within.

From one o'clock onwards a constant succession of motor cars entered from Tavistock Square bringing members and guests. Some of these came in academic dress or uniform, and others robed in the building on arrival. The interior of the Great Hall as it gradually filled presented a remarkable appearance. Almost every occupant of the seats in the body of the Hall wore academic costume, and the massing of the colours, scarlet predominating, toned well with Sir Edwin Lutyens's colour effects of the walls and the roof. The banners representing the cities in which Annual Meetings have been held and above these the flags of the Dominions, added to the brilliancy of the scene under the gilt steel arches. The dais, in the foreground of which two thrones had been placed, was decorated with hydangeas.

In sending out the invitations to the ceremony in the Great Hall the object had been to illustrate the solidarity of the medical profession and to bring together a representative gathering of members of the Association. Several veterans in the service and membership of the Association were present. One octogenarian was Dr. Michael Bevelley, who was secretary of the Annual Meeting of the Association at Norwich in 1874, and a member of Council for many years; another was Dr. James Stewart of Lambeth, a third who was presented to Their Majesties was Dr. G. W. Crowe of Worcester, secretary of the Jubilee Meeting held in that city (the birthplace of the Association) in 1882. Places were found for those who have held the highest offices in the Association in former years—secretaries of Annual Meetings, and former central officials of the Association. Others were present as members of the General Medical Council and the Dental Board, medical members of Parliament, representatives of universities, colleges, and medical corporations, representatives of medical and allied societies in the British Isles, the Dominions,

and foreign countries, also the heads of the Medical Departments of the Army Services. The non-medical persons present included representatives of Government departments with which the Association is frequently in contact, the High Commissioners for the Dominions, members of certain local authorities, including the City Corporation, the London County Council, the Bath City Council, and the Borough Council of St. Pancras, the borough in which the New House is situated. Certain ladies to whom the Association owes special consideration, such as Lady Horder, Mrs. Lord Trevelyan, and Mrs. G. H. Halsey, also had places assigned to them in the body of the Hall. The morning seats—some 260 in number—were filled by official representatives of Divisions and Branches in the United Kingdom, and by members of the Association who had been fortunate enough to secure places by ballot. The gallery at the south end was allotted to ladies—wives of members of the Reception Committee, of Chairmen of Standing Committees, and of other members of Council.

DEDICATION OF THE GATES

At five minutes to three the Most Reverend His Grace the Archbishop of Canterbury (Dr. Randall Davidson), who was wearing his Convocation robes and was accompanied by his chaplain, proceeded to the outer side of the Gates of Honour which were locked and a solemn but brief Service of Dedication was held.

Humphry Rolleston, Bt.) the President of the Royal College of Surgeons (Sir John Blund Sutton, Bt.), Lord Dawson of Penn, G.C.V.O., M.D., Sir George Newman, K.C.B., Sir Edwin Lutwens (the Architect of the building) and Mr. I. J. Wilton (the contractor). On the other side of the Gates other members of the Council were grouped. The embroidered gowns of the



[Photo]

[Central Press]

DEDICATION OF GATES OF MEMORANCE BY THE ARCHBISHOP OF CANTERBURY.
Behind the Archbishop are standing the Architect Sir Edwin Lutwens, the Chairman of the Representative Body, Dr. H. B. Brackenbury, the Chairman of Council, Dr. R. A. Bolam, and the President of the Royal College of Physicians, Sir Humphry Rolleston.

Those standing with the Archbishop were the President of the Association (Mr. J. Basil Hall, M.Chir., F.R.C.S.), the Chairman of Council (Dr. R. A. Bolam, M.D.), the Chairman of the Representative Body (Dr. H. B. Brackenbury), the Treasurer (Mr. A. Bishop Harman, F.R.C.S.), the President of the General Medical Council (Sir Donald MacAlister, Bt.), the President of the Royal College of Physicians and Regius Professor of Physic at Cambridge (Sir

Presidents of the two Royal Colleges in particular gave a vivid touch to the scene.

The service began with the hymn, 'O God, our help in ages past,' led by the band of the Grenadier Guards.

The CHAIRMAN OF COUNCIL then, addressing the Archbishop, said:

In the name of the British Medical Association I ask Your Grace to dedicate these Gates, which have been

made and placed here in memory of the Members of our Association who laid down their lives in the Great War



Photo]

OPENING OF THE GATES

[The Times

The Archbishop, before dedicating the Gates, offered the following prayer

O God and Father of us all, Who didst send Thy Son Jesus Christ to be the Great Physician of our souls and bodies, we praise and magnify Thy Holy Name for the work of the surgeons and doctors who in the Great War saved their fellows even unto death. As in thankfulness we dedicate to thee, to Thy glory and their memory, these Gates, so we pray that all who pass through them, both coming in and going out, may also remember that it is thine not to be ministered unto but to minister. Through the same Jesus Christ our Lord. Amen

The Archbishop, advancing to the Gates, said

To the glory of God and in memory of those Members of the British Medical Association who gave their lives in the Great War, we dedicate these Gates. In the name of the Father, and of the Son, and of the Holy Ghost. Amen

Sir Edwin Lutyens, the Architect, presented the key of the Gates to His Grace, who unlocked and opened them amid an impressive silence. The Gates being open, the Archbishop said

In gratitude and hope we open the Gates. *Dominus custodiat exitum et introitum*

The ceremony concluded with the singing of "Abide with me"

ARRIVAL OF THEIR MAJESTIES

After an interval of about five minutes cheers were heard in the distance, and punctually at ten minutes past three Their Majesties drove up in semi-state in an open landau drawn by four horses and preceded by outriders. Accompanying them was the Right Hon. Neville Chamberlain M.P. (Minister of Health). A second landau contained the Dowager Countess of Minto in waiting to Her Majesty, the Lord Somers, gentleman in waiting, Major the Hon. Richard Molyneux, groom in waiting, and Captain the Hon. Alexander Hardinge, equerry and assistant private secretary. The King pleased everyone by his appearance of health and vigour. The Queen was most becomingly dressed in pale mauve, with a lace scarf, and carried a sun shade the exact colour of her dress.

Immediately on Their Majesties' arrival the Royal Standard was broken at the mast above the main entrance, and the National Anthem was played by the band of the Artists' Rifles. The Minister of Health presented to Their Majesties the President of the Association and the Chairman of Council. The King then inspected the Guard of Honour of the Artists' Rifles, and while His Majesty was so engaged the Queen occupied the President and Dr. Bolam in conversation, obviously expressing her admiration for the external appearance of the building. Dr. Bolam indicated to Her Majesty, and also to the King, who had by this time returned from the inspection of the guard of honour, the structural developments which will take place in the course of time and the extensions which will be possible. Their Majesties then came to the centre of the roadway and spent some moments regarding the newly opened Memorial gates.

The Chairman of Council then presented to the King and Queen the Chairman of the Representative Body, the Treasurer of the Association, Sir Donald



Photo]

PRESENTATION OF THEIR MAJESTIES AT THE MEMORIAL GATES

[Typical Press

Left to right: The Queen, the President of the Central Medical Council, The King, the President of the Royal College of Physicians, the Chairman of Council, the President of the Royal College of Surgeons, the Archbishop of Canterbury.

MacAlister, Sir Humphry Rolleston, Sir John Bland Sutton, Lord Dawson, Sir George Newman,



Photo) PRESENTATION OF BOUQUET TO HER MAJESTY. [The Times.
Left to right: Chairman of Council Mrs. Loris Scott, the Archbishop, The Queen, The
King, the Minister of Health, the Dowager Countess of Mountbatten, the President, the Hon. A. H. L.
Bridgman, Lord Dawson of Penn.



1111

ENTRY OF THEIR MAJESTIES

Left to right: Chairman of Council, The King, The Queen, the President (Mr. Basil Hall)

[Central Press

Sir Edwin Lutens, and Mr. F. J. Walton, Miss
C. M. Loris Scott, the little daughter of the Finan-
cial Secretary, betraying no more than a becoming
mount of nervousness, presented a beautiful bouquet
of Malmaison carnations and lilies to Her Majesty,
who graciously received it, and shook hands with the
young giver.

A procession then formed in the following order,

proceeding through the County and to the vaulted
passage underneath the Great Hall.

The King, escorted by the Chairman of Council.

The Queen, escorted by the President of the Association.
The Minister of Health and Ladies and Gentlemen in
attendance.

The Archbishop of Canterbury.

The Chairman of the Representative Body and the other
gentlemen who had just been presented.



[1106]

ROYAL PROCESSION THROUGH THE COURT OF HONOUR

[Topical 1108]

The procession entered the Members Common Room on the right of the passage. Here the members of the Reception Committee were assembled, and the Chairman of Council made a number of other presentations to Their Majesties. It had been intended that the first of these should be Dr F G Thomson of Bath, the President Elect, but, to the great regret of all, Dr Thomson was unable to be present owing to a severe attack of pleurisy. The following presentations were made:

- Mr C P CHILDF, F R C S, Past President (Portsmouth)
- Dame LOUISA ALDRICH BLAKE, M S, M D, Dean of the London School of Medicine for Women
- Miss FRANCIS IVENS, M S, President of the Federation of Medical Women (Liverpool)
- Dr R WALLACE HENRY, Past Chairman of the Representative Body (Leicester)
- Dr C O HAWTHORNE, Deputy Chairman of the Representative Body (London)
- Dr J A MACDONALD, LL D, Chairman of the Journal Committee (Taunton)
- Mr JENNER VERRALL, LL D, Chairman of the Dominions Committee (Leatherhead)
- Dr R LONDON DOWNS, Chairman of the Central Ethical Committee (Teddington)
- Mr H S SOUTAR, F R C S, Chairman of the Hospitals Committee (London)
- Dr H G DAIN, Chairman of the Insurance Acts Committee (Birmingham)
- Mr J B TURNER, F R C S, Chairman of the Medical-Political Committee (London)
- Mr RICHARD LUTHER KCMG MP, Chairman of the Naval and Military Committee (Derby)
- Dr S MORTON MACKENZIE, Chairman of the Organization Committee (Dorling)

- Dr T RIDLEY BAILEY, Chairman of the Public Health Committee (Bilston)
- Dr JOHN STEVENS, Chairman of the Non Panel Committee (Edinburgh)
- Dr E K LE FLEMING, Chairman of the Conference of Local Medical and Panel Committees (Wimborne)
- Mr THOMAS HORDER, Bt M D, Chairman of the Post-Graduate Committee (London)
- Mr LEWIS J MACLEAN, M D, Chairman of the Puerperal Morbidity and Mortality Committee (Cardiff)
- Dr CHARLES BUTTAR, Member of the Reception Committee (Felstead)
- Mr COMINS BERKELEY, M Ch, President of the Metropolitan Counties Branch, the largest Branch of the Association (London)
- Mr G E STAPLES, General Foreman of the Building Operations
- Mr W REYNOLDS, Elected Representative of the Workmen
- Mr DAWSON WILLIAMS, LL D, Editor of the *British Medical Journal*
- Dr ALFRED COX, Medical Secretary of the Association
- Mr L FERRIS SCOTT, F C A, Financial Secretary and Business Manager of the Association
- Mr W E HEMPSON, Solicitor of the Association

The presentations over, Their Majesties ascended the stairs to the Great Hall, which they entered from the southern end, and walked the length of the central aisle to their places on the dais. Most of those who had been already presented took their places behind them.

The company being seated, the CHAIRMAN OF COUNCIL read the following loyal Address of the British Medical Association to Their Majesties, and the KING then read the Reply, also printed in full, the whole of those present standing.

Address of the Association

MAY IT PLEASE YOUR MAJESTIES —

On behalf of the members of the British Medical Association we offer our grateful thank to Your Majesties for graciously consenting to perform the opening ceremony of the new House of the Association. We recall with pride and pleasure that His Majesty King Edward the Seventh in 1900, when Prince of Wales, graciously accepted the Honorary Membership of the Association, that on succeeding to the Throne he further honoured us by becoming Patron of the Association, and that Your Majesty did graciously consent to occupy that office on your accession to the Throne.

The British Medical Association was founded at Worcester in 1832 by Sir Charles Hastings, an eminent and public spirited physician, whose memory we desire proudly to honour on this auspicious day. The Association from its beginning has had for its objects the promotion of the medical and allied sciences and the maintenance of the honour and interests of the medical profession. In pursuance of these aims the Association has striven to maintain the great traditions of the medical profession and to interest every one of its members in the advance of the science and art of medicine, having always in mind that the members of our profession are not only guardians of the interests of the individual patients committed to their charge, but, collectively, have a duty to the community in the promotion and protection of the public health.

In its work for the advancement of medical science the Association has for many years spent about £1,000 a year on scholarships and scientific grants which have been the means of encouraging many young doctors to pursue medical research. Our Annual Meetings, at which the progress of the various branches of medicine is reviewed, give opportunities to those who have made new discoveries or evolved new ideas to place them before their colleagues for discussion, and throughout the year in the length and breadth of the land, local units of the Association carry on the education of our members and provide for them, in some measure, that post-graduate study which is so essential for progress and which we regretfully recognize has not yet been organized and developed in this country as it ought to be. In addition, the Association publishes the *BRITISH MEDICAL JOURNAL*, which is recognized as among the leading medical journals of the world, has the widest circulation of any in the British Empire, and is one of the main instruments of the Association in the instruction of its members.

Not least among the activities of the Association are those which concern the relationships of the practitioner to his fellows and to the community, and the standard of ethics rightly to be observed in a liberal profession.

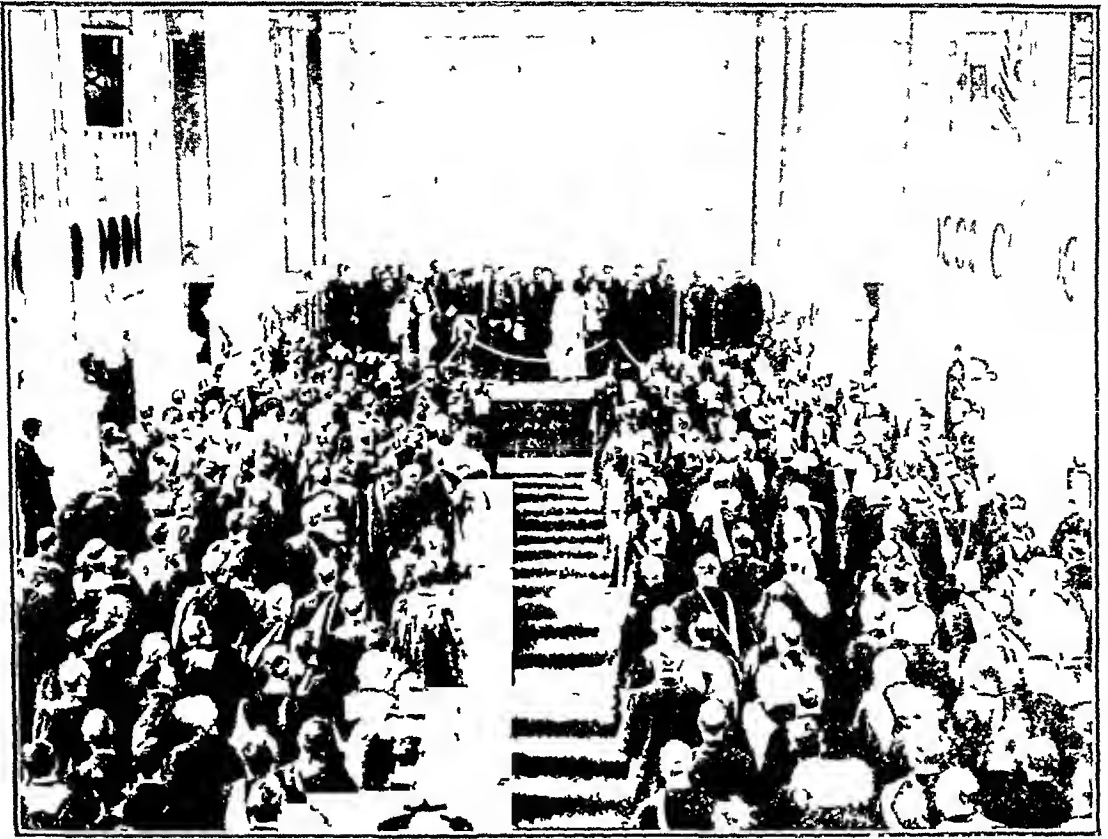
From the representative character of the gathering before Your Majesties to-day it may be seen how far the Association has succeeded in its efforts to enlist the support of all sections of the profession. Among its members, anxious to serve its great objects, there have always been, from its inception to the present day, the most eminent men and women in the profession. It is all embracing in its ranks are the general practitioner—the mainstay of the Association, as he is the first line of defence on which the public relies in accident and disease—the physician, the surgeon, the specialist, the teacher, the public health officer, the laboratory worker, and in all ranks the Association has no more loyal supporters than its women members, now numbering some 2,250. May we say on their behalf how greatly we appreciate the presence to-day of Her Majesty the Queen, who has shown in so many ways her interest in the education and special work of medical women.

We would point with pride to the fact that the Association's membership is world wide, that many of our most successful Branches are in Your Majesty's Dominions over the sea, and that we are favoured on this great day in the Association's history with the presence of eminent medical representatives of Canada, Australia, New Zealand, South Africa, and India, together with many from the Colonies and Dependencies. In recent years distinguished members of the Association have officially visited South Africa, Australia, and Canada and we are assured that these delegations have played an important part in cementing the bonds of union of the profession throughout the Empire. Our relations with kindred societies in this and other countries are cordial and mutually helpful, as is shown by the presence on this occasion of representatives of almost every medical organization in this country, of representatives of several great medical associations of European countries, and of an important delegation from the American Medical Association.

Your Majesties have seen at the entrance to this House the Gates we have erected to the glorious memory of the 574 members of the Association who gave their lives for their King and Country in the Great War, and it is hoped that you will graciously inspect the *Book of Honour* in which their names have been engrossed with loving care and artistic beauty by Mr. F. G. Hallett, O.B.E. The Association records with pride that by means of its organization in local units throughout the United Kingdom it was able during the Great War to serve the State in many ways, but chiefly by ensuring the supply of doctors for the Services, having due regard to the interests of the civil population at home.

The House which we now ask Your Majesty graciously to declare open is the work of Sir Edwin Lutyens, R.A., who designed it and after its use by the military authorities during the War, has adapted it to the use of our Association. In it we shall have greatly extended opportunities for usefulness to our members to the profession of medicine and to the community at large. It will be our endeavour so to use this House and these opportunities as to be worthy of the intentions of our Founder, of the past history of the Association, and of the encouragement which Your Majesties have given us by your presence here to-day.

In asking Your Majesty to declare this House open we desire to express the loyalty of our members to Your Majesties, and to utter the fervent hope that Your Majesty may long be spared in health and strength to preside over the destinies of our great Empire.



Photo]

VIEW OF GREAT HALL DURING HIS MAJESTY'S REPLY TO THE LOYAL ADDRESS OF THE ASSOCIATION

[Topical Press

His Majesty's Reply

I AM pleased to come here to day, accompanied by the Queen, to open the new and admirably designed House of the British Medical Association. We have always taken a sincere interest in the science and practice of medicine and surgery, and I am proud to have succeeded my Father, King Edward, as Patron of your Association.

Since its foundation, nearly a century ago, by Sir Charles Hastings, your Association has shown a remarkable increase both in membership and usefulness, and the well informed and constructive criticism that it brings to bear upon the evolution of your profession is of great value. The British Medical Acts wisely restrict admission to the *Medical Register* to those who have been trained in accordance with prescribed regulations and have passed the necessary qualifying examinations. At the same time vigilance must always be exercised in order that your profession may keep abreast with the advance of science, and also preserve a high standard of professional practice and ethics. The noble purpose, the character and the skill of those engaged in the art of healing, are your most precious traditions, and you do well jealously to watch over such attributes.

I am glad to notice your recognition of the advantages of post graduate study, in which my brother in law, Lord Athlone, a former Chairman of the Middlesex Hospital, has taken such a deep interest.

The reference in your Address to the ever widening scope of the medical practitioner in relation to the general health of the people is most satisfactory, and I have followed with sympathy the negotiations for securing smooth and effective co-operation between him and the public medical services. The welfare of my people at home and throughout the Empire largely depends upon an efficient and well organized health administration. The protection of maternity, the care of the child, a sanitary home and workshop, the safeguarding of the food supply, properly designed defences against infection and prevalent disease are all matters of vital importance. There is also an opportunity for the medical practitioner in his everyday practice to be a missionary and teacher of public hygiene and of personal health.

On behalf of the Queen, I thank you for your allusion to her interest in the education and work of medical women, and on this occasion we are both glad to express our appreciation of their activities in all branches of medicine.

I am especially pleased to learn of the close and friendly relations maintained between members of your profession in all parts of the Empire, and I heartily welcome here to day representatives from the Dominions beyond the Seas and also from European countries and from the American Medical Association.

At this point the King was handed by the Architect a Master Key in gold, and he concluded his reply with the words:

I have much pleasure in declaring open this House of the British Medical Association, and I congratulate its members upon the possession of their new and dignified home.

FURTHER PRESENTATIONS

The whole of the Address was heard by those in the grounds outside. The King's voice as transmitted by the loud speakers, was heard with astonishing clearness, and every syllable sounded out not only in the Court-yard but in the street beyond. Those outside the building joined with those within in the long-continued applause with which the Royal declaration that the building was open was greeted.



[Phot.]

HIS MAJESTY DECLARING THE NEW BUILDING OPEN

[Topical Press]

On the left behind the Chairman of Council is the Minister of Health. On the right behind the Queen are Sir Donald MacAlister, President of the General Medical Council, and the Chairman of the Representative Body.

Subsequently to these addresses some further presentations were made as follows:

- Dr G. W. CROWE of Worcester, one of the oldest Members of the Association who lives in the house formerly the residence of the Founder, Sir Charles Hastings
- Dr C. E. DOUGLAS, Chairman of the Scottish Committee
- Dr J. S. DAPLING, Acting Chairman of the Irish Committee
- Dr W. E. THOMAS, Chairman of the Welsh Committee.
- Dr W. A. ROBERTSON, Representative of the Australian Federal Committee
- Dr J. BANCROFT ANDERSON, Representative of the South African Committee
- Dr C. F. MACGRIPE, Representative of New Zealand
- Lieut.-Colonel L. W. C. BRADFIELD, I.M.S. Representative of the Indian Branches
- adapted to the use of the Chairman of Council of the Canadian Association
- endeavour so to use the Representative and Past President of the past history of the Association
- your presence here to day
- In asking Your Majesty to represent the Representative of France
- to Your Majesties and to u
- strength to preside over the
- Representative of Sweden
- Representative of Norway
- Representative of Denmark

INSPECTION OF THE ROLL OF HONOUR

Their Majesties, accompanied by the Archbishop of Canterbury, the Minister of Health, and the members of the Reception Committee then descended to the Library, where they inspected the Association's Roll of Honour. Mr I. G. Hallett, Secretary of the Examination Board of the Conjoint Royal Colleges, who has illuminated the Roll, was presented.

Their Majesties asked Mr Hallett how many hours he had spent on the task and were informed about 430. The King especially admired the gold work, and Mr Hallett explained that his talented assistant, Miss M. Baker, was responsible for that part of the decoration. Dr J. A. Macdonald, Chairman of the Journal Committee, then presented to Their Majesties a handsome copy of the Roll of Honour bound in purple levant morocco, and padded. The size of the pages was the same as that of the present Supplement, and every page was most carefully and beautifully reproduced by photo-mechanical means. The volume was graciously accepted and delivered into the charge of the Treasurer of the Association who undertook to convey it to the Palace.

THE LIBRARY

Mr Walter G. Spencer, M.S., F.R.C.S., the Honorary Librarian, and Mr Honcman Librarian, were also presented, and Mr Spencer pointed out to Their Majesties some of the more valuable books in the Library. The Queen showed great interest in the shelving arrangements.

In one corner of the Library Sir John Bland-Sutton, P.R.C.S., had arranged some interesting specimens which he had brought from the Museum of the Royal College of Surgeons.

The exhibits which took the King's attention most, and which Sir John Bland-Sutton explained, were the artificially shrivelled heads of three Indians from the dense forest region of the Amazon. The curious heads, contracted to perhaps one-fourth of the natural size, still had attached to them the masses of long black hair. Among other objects which caught the King's eye were the skull of a Bengalese child with a second imperfect skull attached to the anterior fontanelle, a portion of a tusk (presumably an elephant's) with a spear embedded in the pulp cavity and a layer of secondary dentine around the weapon, formed so as to wall it off from the remainder of the pulp, a human heart showing extensive laceration and loss of substance of walls of both ventricles about the apex, produced by an armour-piercing bullet used against aeroplanes, also the missile which did the mischief, a stuffed Japanese pheasant, a hen, twelve years of age, with partly assumed plumage of the male, the heart of a calf pierced by pins, thorns and twigs of witch-hazel, an example of sympathetic magic, two portions of the small intestine (probably of Napoleon I), with growth-projecting above the mucous membrane, the long blade of a bayonet which was removed from the erector spinae muscle some days after its introduction, and after the wound of entry had healed, and a complete cast of the stomach successfully removed by operation from a woman who was in the habit of eating the fibre of coco nut shells. When

he was shown a further exhibit of this kind—an immense human bill taken after death from the stomach of an alligator—the King remarked that he was familiar with the formation of these human bills. The King and Queen spent quite ten minutes over these specimens, and the King smiled at some of the zoological curiosities.

Before leaving the Library the King and Queen, using a quill pen, wrote their autographs on vellum in the Visitors Book, the signatures immediately following being those of the Minister of Health and Sir Donald MacAlister, and the Presidents of the two Royal Colleges.

VISIT TO GARDEN AND ADJOINING SCHOOL

An event which was not on the programme then took place, the King and Queen making their way through the South Wing of the building, where the Council Chamber is situated, and out into the pleasant Council Garden at the rear, with its semi-circular terrace and oval pool. In the grounds adjoining, some 120 boys and girls of the Mary Ward (Miss Humphry Ward) School in Tavistock Place, better known as the Passmore Edwards Settlement, were assembled. These are children whose physical (not mental) defects make it impossible for them to go to an ordinary elementary school, and they are brought from various parts of London in ambulances each day to receive instruction in these pleasant surroundings. Their Majesties asked many questions of the head teacher, Miss King, and spent five or ten minutes among the delighted children. Returning to the building, Their Majesties were reminded of the Dickensian associations of this particular part of the site, of which an interesting account is given elsewhere in this issue by Mr. Munhead Little.

DEPARTURE OF THEIR MAJESTIES

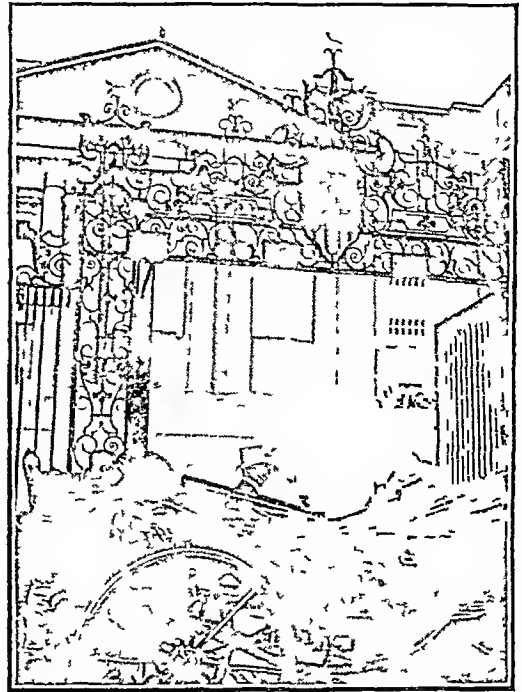
The King and Queen emerged from the South Wing at the western door and made their way to their carriage, which was drawn up in the Courtyard. The members of the Reception Committee and the various distinguished persons who had greeted Their Majesties on arrival assembled to give them a fitting send-off. Three hearty cheers were raised for the King, and three more for the Queen, and the National Anthem was again struck up as the procession made its way through the Gates of Honour.

Their Majesties left at five minutes past four, after a stay of fifty-five minutes.

The company in the Great Hall did not leave their places until after Their Majesties' departure. Afterwards there was a general inspection of the building and tea was taken in the Members' Common Room, while music was continued in the Courtyard and in the Great Hall for a further hour and a half.

A word should be said in praise of the police arrangements, which, under Inspector Cole, worked to perfection. Nowhere was there any crowding or jostling and the two ceremonies were carried through with entire success, thanks to the forethought of the committee in charge of the arrangements and to various officers and officials of the Association.

Acknowledgement should be made to Major E. W. Paget, C.B.E., Liaison Officer of the Home Ambulance Committee of the Order of St. John and the British Red Cross Society, for his courtesy in arranging for the provision of a detachment of nurses, who attended during the afternoon ceremonies.



Photo] [Central News
DEPARTURE OF THEIR MAJESTIES WITH THE MINISTER OF HEALTH

The following gracious message from Their Majesties was received by the Chairman of Council on the morning after the Opening Ceremony:

BUCKINGHAM PALACE

July 13th, 1925

DEAR DR. BOYD,

The King and Queen desire me to let you know what pleasure it gave Their Majesties to open the new home of the British Medical Association to-day, and to have an opportunity of inspecting this splendid building.

Their Majesties congratulate you on the excellence of all your arrangements, and thank you and all who co-operated with you for the trouble which you took to make the visit a success.

Yours sincerely,
A. H. L. HARDINGE

R. A. BOYD, Esq.,
M.D., F.R.C.P., O.B.E.

EVENING ENTERTAINMENT

PRESENTATION OF GIFTS

At night, from 8.30 to 12.30 a brilliant entertainment took place, for which invitations had been issued to one thousand guests. The grounds both the courtyard and the terraced garden behind the South Wing were illuminated with fairy electric lamps, and the House was open for inspection. Once again by means of loud speakers the whole neighbourhood shared to some extent in the festivities.

The guests were received at the top of the staircase of the South Wing leading to the Great Hall by the President and Mrs. Basil Hall. Invitations were sent to all who were present in the afternoon together with their ladies, and almost every notable person in the medical world appeared to be present. A bouquet was presented to Mrs. Basil Hall early in the proceedings. Musicians from the band of His Majesty's Grenadier Guards again gave selections, Mr. Hubert Eisdell and Mr. Harold Williams contributed songs,

and after the presentations Miss Maude Scott was permitted to sing.

Opportunity, which was not possible in the afternoon was taken for the conveyance of messages and gifts to the Association from Overseas Branches and other medical bodies.

MESSAGE TO PRESIDENT-ELECT

The PRESIDENT, before calling upon these delegates and ladies and gentlemen, I have some official duties to perform this evening, but before I enter upon them I ask you to allow me to move a vote of sympathy to Dr F. C. Thomson of Bath, who, as you know, is the President-elect, and who would have entered upon his duties as President next week. Dr Thomson, unfortunately, is suffering from pleurisy, and has telegraphed to us that it will be quite impossible for him to undertake the duties of incoming President at our Bath Meeting. I suggest therefore, that we send a vote of sympathy to him, saying how much we share his disappointment, and wishing him a speedy recovery. (Applause)

Dr BRIDGEMAN: I second the motion proposed by the President. It is, of course, a great disappointment that Dr Thomson has not been able to be with us to-day, and that he will not be with us at Bath. It must be a great disappointment to him also, but if I know anything of him I think the greatest disappointment to him will be that he has disappointed us. In these circumstances it will be a nice thing from us and a thing grateful to him if we send him a vote of sympathy, coupled with our highest hope that he will very soon recover his usual health.

The vote of sympathy was carried, and the PRESIDENT said that he would send it personally.

PRESENTATION OF DELEGATES

The PRESIDENT: My next duty is to welcome the many representatives who have come from across the seas—those from our Branches and from kindred societies throughout the civilized world. Although certain representatives of the Overseas Branches had the honour of being presented to Their Majesties this afternoon, those bring no news complete the total list of members of our great fraternity who have come across the seas to rejoice in this occasion. There are at the present moment in this room representatives of the great Dominions and of India of Ceylon, Egypt, British Guiana, the West Indies, Sierra Leone, Hong Kong and China, Mesopotamia, Natal, and Uganda. (Applause) Besides representatives of the Overseas Branches, we have with us Professor Primrose, of the Canadian Medical Association. (Applause) I have mentioned him separately, but I regard him as one of us, not only on account of our affiliation but also on account of the very kind hospitality our Canadian brethren have exhibited towards your President. (Applause) We have also representatives of the great American Medical Association. I am not sure whether Dr W. Haggard, the President has yet arrived, but we have with us Dr de Schweinitz who was President of that association in 1922-23 and Dr Howard Fox. (Applause) I can assure them that we thank them most sincerely for coming. We have also the privilege of welcoming representatives from France, Holland, Denmark, Norway, and Sweden. Norway sent to us two very welcome guests, Dr Petersen and Dr Koppang who represent the great Norwegian professional society. To each and all our guests I extend a most cordial and sincere welcome on behalf of the British Medical Association. We rejoice to have them with us and we hope that on their return they will convey to their brethren our very hearty good wishes. (Loud applause)

I will now read out a list of those Divisions which have already sent or are in course of sending a Divisional flag for the Great Hall. Some of these flags as you see have already been hung. Others are due to arrive very shortly. The Divisions are Worcester, Birmingham, Oxford, Manchester, Liverpool, York, Sheffield, Peterborough, Nottingham, Edinburgh, London, Newcastle-on-Tyne, Cardiff, Bournemouth, Carlisle, Montreal, Leicester, Toronto, Aberdeen, Glasgow and Bradford. (Applause)

The MEDICAL SECRETARY then referred to a number of messages of congratulation which had been received. One was from the Linnæan Medical Society offering sincerest

good wishes. The Académie de Médecine of Paris was unable to send a representative but added that its good wishes might be conveyed. That morning two cablegrams had come from Australia, one from the Australian Federal Committee, offering congratulations and congratulations, and the other from the Medical Journal of Australia.

CHIT OF PRESIDENT'S CHAIR FROM AUSTRALIAN BRANCHES

Dr W. N. ROBERTSON, C.B.E., Vice-Chairman of the Australian Federal Committee, said: I am very proud to have come 13,000 miles to carry the message of goodwill and affection from the Branches of the British Medical Association in Australia to the present Association at Bath. (Applause) When the Federal Committee, of which I have the privilege of being a member found that this important function was to take place they said, 'We must do something to commemorate this occasion and put up some established memorial.' We decided eventually to give the President's chair, which you now see on the platform and we wish it well and think sit upon at every meeting of the great Association here. (Loud applause) When the powers that be were good enough to cable over and invite some of us to be present to-day it unfortunately happened that Sir George Syme, who is President of our Federal Committee, was unable to come. He is presiding over a Royal Commission from which we expect great things in the way of the improvement of the health of the people of Australia. Therefore it fell to my happy lot to come over in his place. I feel very diffident about making a speech. Many and many a night I have more or less in dreams, made the most brilliant speeches for this present occasion. But as I stand here I have forgotten all those beautiful speeches. I can only express in my poor way the wonderful loyalty of the Branches of Australia. (Loud applause) We are far from you geographically, but very near you in spirit. (Applause) I come from the most distant State of all—Queensland—the most distant Branch of the British Medical Association in the world barring New Zealand. On my way here my ship called at every Australian port, and as we touched the various State capitals which are the headquarters of Branches I was made aware how strong and deep is the loyalty of Australia. They treated me like a royal envoy, not for my own sake, but because I was their messenger to you. All that wonderful kindness was then meant for me to convey to the Association at home. At Melbourne I asked Sir George Syme what I should say, and he said, "Stress the Imperial idea." That is exactly the spirit in which, in the hour of need, our boys rose up as one man to come to the help of the King and the Empire. That is the feeling which is manifest in the British Medical Association in Australia. The members of the Association out there, if I may dare to say so, are as loyal or even more loyal, to the Association than the men here at home. We are for ever loyal to this dear old parent Association which has set such glorious ideals before us. I am very proud to be here to-night, and I beg you to accept this gift from the Branches of Australia as a token of their goodwill, their affection, and their loyalty to the British Medical Association. (Loud applause)

Dr Robertson then handed over the chair, and read the inscription on the back, which is printed, together with a sketch of the chair, at pages 132-3.

The PRESIDENT, after taking his seat in the chair, said: We have yet another gift to receive from Australia, and I will reply for them both at once.

A GIFT FROM TASMANIA

Dr STODART BURN, representing Tasmania said: I have very great pleasure indeed, on behalf of the Tasmanian Branch, in offering to the President the gift of a chairman's mallet. It is a very small gift from a very small Branch, 12,000 miles away. I am privileged to be the first person to present anything to the President after he is seated in his chair. (Loud applause)

The PRESIDENT: Dr Robertson and Dr Barr, I will address you simultaneously, because there is one feature in common in both your gifts. We value them, not merely on account of their intrinsic worth, but on account of the spirit in which both have been given. It is just that sort

of spirit which binds—and I trust will always bind—the great English-speaking medical fraternity. In the presidential chair we have the emblem of dignity, in the wallet the emblem of discipline, and both must be preserved. We accept them as tokens of your very sincere goodwill towards us, and we are deeply grateful. I think we shall have to choose a rather bigger President than I am to uphold the dignity of this chair. It appears to have been arranged to seat the President and his wife. (Laughter.) We shall never forget or undervalue the spirit in which these gifts are given. (Applause.)

GREETINGS FROM SWEDEN

Dr GOTTFRID RASTEDT, representing the Swedish College of Physicians, conveyed to the Association the warmest congratulations of that body. Those for whom he spoke were sure that the scientific labours which would be carried on within the walls of the New House would be fully worthy of the brilliant traditions of British medicine. Great must be the feeling of responsibility entertained by the present generation of English physicians and surgeons when they recollect the contributions of their predecessors. Few nations could boast of such critical thinkers, such freedom from blind belief in authority. He mentioned the names of William Harvey, Thomas Sydenham, and Joseph Lister. These men and their successors had laid the whole world under a debt. Sweden had been happy more than once to confer upon British scientific men its Nobel Prize. As a slight token of admiration for the energy and scientific skill displayed in medicine as in so many other branches of learning by men of British race, he desired on behalf of the Swedish College of Physicians, the acceptance for the Association's Library of a volume containing the history of Swedish medicine during the last century. He handed the volume to the President amid applause.

The PRESIDENT said that it gave him very much pleasure to accept the volume on behalf of the Association. He deeply appreciated the spirit in which this gift and its accompanying greetings were brought.

This part of the proceedings concluded with the singing of "Auld lang syne," and three hearty cheers for the overseas brethren. Dining then began, and was kept up to a very late hour.

GUESTS OF THE ASSOCIATION

Among the many distinguished visitors present in the Great Hall during the opening ceremony, besides those whose names are printed above, were the Earl of Onslow, Chairman of the Voluntary Hospitals Commission, Sir Joseph Cook, High Commissioner for Australia, Sir Charles Sherrington, President of the Royal Society, Vice-Admiral Joseph Chambers, Medical Director-General, R.N., Lieutenant-General Sir William Leishman, Director-General, A.M.S., Air Commodore David Munro, Director of Medical Services, R.A.F., and Major-General J. B. Smith, Medical Adviser to the Secretary of State for India, Sir Archibald Garrod, Regius Professor of Medicine at Oxford, the Presidents of the Royal College of Physicians of Ireland and of the Royal Faculty of Physicians and Surgeons of Glasgow, and the Master of the Apothecaries' Society of London, the Presidents of the Royal Society of Medicine (Sir St. Clair Thomson), the Medical Society of London (Dr Callender), the Medical Psychological Association (Dr Nolan), and the Society of Medical Officers of Health (Dr Lyster). Dr W. D. Elliot, Parliamentary Under-Secretary for Health for Scotland, and the other medical members of the House of Commons, Sir Arthur Robinson, Secretary of the Ministry of Health, Sir Lisle Webb, Director-General of Medical Services, Ministry of Pensions, Sir Walter Fletcher, Secretary of the Medical Research Council, Dr E. F. Stephenson, Principal Medical Officer, Irish Free State, Professor C. J. Martin, Director of the Lister Institute, Dr C. Hubert Bond, Medical Commissioner of the Board of Control, and Dr J. G. Adams, Vice-Chancellor of the University of Liverpool, the Presidents of the British Dental Society, the Royal College of Veterinary Surgeons, the Pharmaceutical Society, and the College of Nursing. Dr Andrew Balfour, Director of the London School of Hygiene and Tropical Medicine, Brigadier-General Birkett McGill, University, Sir Lesho Mackenzie, medical member of the

Scottish Board of Health, Dr Mary Scharrlieb, President of the London School of Medicine for Women, Dr Christine Munnell, and Lady Burrett, Professor W. L. Dixon, Assessor to the Regius Professor of Physics at Cambridge, Mr George Mackay (Edinburgh), Sir John W. Moore (Dublin), Sir John Lynn-Thomas (Cardiff), Professor A. J. Hall (Sheffield), Sir Henry Crick and Sir Philip Magnus (both honorary members of the Association), Sir Charters Symonds, Treasurer of the Royal Medical Benevolent Fund, Sir Squire Sprague, Editor of the *Lancet*, Sir Holburn Waring, and Sir William Lister, the Deans of the Faculties of Medicine in the Universities, of the Medical Schools in Great Britain and Ireland, and of the Post-Graduate Colleges, together with members of Council and standing committees, official representatives of Divisions and Branches throughout the British Empire, the honorary local secretaries of past Annual Meetings, and the past and present headquarters officials of the Association in London, Edinburgh, and Dublin. The Lord Mayor of London was prevented from attending the afternoon ceremony but was present with the Lady Mayoress at the evening reception on July 13th.

ENTERTAINMENT BY THE METROPOLITAN COUNTIES BRANCH

A second entertainment took place at the New House on Tuesday evening, when the Metropolitan Counties Branch gave a reception which was even more numerously attended than the reception of the previous evening. The guests were received by Mr Comyns Berkeley, M.Chr., President of the Branch, and Mrs Berkeley. A concert was given in the Great Hall, to which Mr Hubert Lisdell (tenor) and Mr Harold Williams (baritone) contributed. This was followed by dancing to music by the band of His Majesty's Grenadier Guards. During an interval the Association prize-winners who are final-year students at medical schools within the area of the Metropolitan Counties Branch were presented with their certificates. The prizes had been awarded for essays on "The diagnosis and treatment of chronic intestinal obstruction, with illustrative cases." The prizes consisted of a cheque for £10, which had been already forwarded, and a parchment certificate which was now presented by the President of the Branch. The following students thereupon received their awards: Mr Harold Anonim (Christie Cross Hospital), Mr F. J. Immitoff (St Bartholomew's), Mr K. C. Smith (Middlesex), Mr L. Huxtable (London), Mr T. M. Ling (St Thomas's), Mr T. C. S. Webb (University College).

A number of distinguished Overseas Delegates were then presented and welcomed by the President. These were Dr P. G. Stock (South African Committee), Dr W. N. Robertson, C.B.E. (Australian Federal Committee), Dr E. G. Hutton (Grenadier Branch), Sir H. Marcus Fernando (Ceylon Branch), Professor S. W. G. Earle, M.C. (Hong-Kong and China Branch), Dr C. E. Maguire and Sir Donald McGavin (New Zealand Branch), Dr W. Milne Tough (Nyasaland Branch), Dr H. J. Holmes (Victorian Branch), and the following delegates from the Canadian Medical Association: Dr A. T. Bazin, Professor L. J. Austin, F.R.C.S., Dr H. B. Anderson, Dr F. A. G. Starr, Professor F. W. Marlow, M.D., F.R.C.S., Professor A. J. Primrose, C.B., F.R.C.S., and Dr A. D. Bickler, LL.D.

Later, in the Council Chamber, Mr E. Munhead Little, F.R.C.S., gave a short account of the historic and literary associations of the site of the New House. Mr Munhead Little's lecture appears in this number at page 111 in rather fuller detail than he delivered it. It was listened to by a large and most appreciative company. The lecture was illustrated by lantern slides, beginning with the portrait of Sir Charles Hastings, and including portraits of Dickens and other celebrities associated with the Tavistock neighbourhood. Views of the interesting houses and gardens of the locality were shown as well as a series of views of the old offices of the British Medical Association from the Great Queen Street days onwards, of which reproductions appear elsewhere in this issue.

The evening's entertainment was continued until a late hour. The great success of the function was largely due to Dr Howard Strickland, honorary secretary of the Branch, and his committee of helpers.

THE SCOTTISH BOARD OF HEALTH

ANNUAL REPORT

THE sixth annual report of the Scottish Board of Health, for the year 1924, has recently been issued. The report deals in sequence with the subjects of general hygiene, housing, tuberculosis, venereal diseases, other infectious diseases, maternity and child welfare, school health administration, supervision of food supply, national health insurance, the Poor Law, and the maintenance of aged and blind persons. In the introduction it is pointed out that, as the death rate for 1923 had been the lowest ever recorded, it was not surprising that for the year 1924 the rate had increased, the actual figure being 14.4 per 1,000. This increase was attributable, it is believed, to an epidemic of influenza which occurred in the early part of the year. It is satisfactory to note that the death rate from tuberculous diseases, and from pulmonary tuberculosis in particular, were both the lowest on record. The Board anticipates that the Milk and Dairies (Scotland) Act which comes into operation on September 1st next, will still further reduce the incidence of tuberculosis, as it will enable local authorities to control the milk supply and to effect a regular inspection of all dairy cows.

Smoke Abatement

With regard to pollution of the air by smoke, the report states that a good deal has been done during the last generation, in the Clyde Valley a decided improvement has been effected, partly through the evolution of methods of conservation and partly by means of smoke-consuming apparatus. It was agreed on all sides that there was a considerable amount of preventable pollution of the air, both by the use of small coal for the purpose of keeping down the cost of ordinary coal and also by domestic fires. It is expected that a Smoke Pollution Bill will be introduced into Parliament shortly giving powers to local authorities to make by-laws on the matter.

Disposal of Refuse

The report states that during the war the need for economy led local authorities to consider more closely whether costs could not be reduced by further utilization of waste materials and refuse, and much had been done in this respect. Reference is made to the utilization plant at Falkirk, which is providing satisfactory material in the form of screened dust for road making. Reference is made also to the fact that in Glasgow it has been decided to proceed with a large refuse disposal scheme in which electrical energy will be produced by the utilization of the heat generated from the refuse, amounting approximately to 1,000 tons a day. It is anticipated that this will result in a substantial annual revenue of £42,000, while from a plant introduced to deal with clinker it is expected that £11,000 per annum will be derived.

Housing Schemes

Attention is drawn to the important stage in housing legislation reached by the passing of the Housing Act of 1924, which contains the fifth form of Government assistance offered to aid the erection of houses. Under the various schemes of financial assistance 28,015 houses had been completed up to the end of 1924, while a total of 49,758 houses were either completed in course of erection, or immediately contemplated. This was a step towards the estimated shortage of over 180,000 houses which existed at the end of 1924. It is pointed out that during 1924 only some 4,384 houses were completed under State-aided schemes, this was far short of the desired programme of 20,000 per annum for the working classes. The building trade industry was, however, at the close of the year actively engaged in schemes for augmenting the supply of labour. The Government had set up a special committee to inquire and report on different methods of construction at present on the market. In the two previous years a fall in the cost of house building had been recorded but unfortunately, during the past year contracts have had to be placed in a market with rising prices owing chiefly to increase in the cost of labour and of certain material. With regard to slum clearance grant, thirty-four local authorities were proceeding with schemes for the improvement of insanitary

houses with the last time which the Scottish Board of Health offered them from the slum clearance grant, and the involved 6,573 reconstructed houses, of which 229 had been completed at the end of the year. The report states that a very general demand had been made by local authorities to be allowed to build a large proportion of two-part rent houses, and conference had been held on two occasions with representative of local authorities on the matter. It was decided however that in accordance with the Housing and Town Planning Act of 1919 no house of fewer than three apartments was to be erected save in exceptional circumstances. Subsequently in view of the delay that was taking place the Board had decided to relax its regulations so far as what. With regard to the provision of baths the Housing Act of 1924 had required the provision of a bath in a bathroom and in only a few cases in houses in which there was no water and drainage were multipurpose was or was not of a bath shown by the Board.

Tuberculosis

The section of the report dealing with tuberculosis is highly optimistic. It is pointed out that the death rate for pulmonary tuberculosis is at 80 per 100,000 and for pulmonary tuberculosis of 75 per 100,000 of the population in the year 1924 is the lowest yet recorded. These figures compare with only 104 and 58 respectively in the year 1914. During the decade there has been a steady decline except for a slight temporary setback during the war years. These figures show a decrease of 23 per cent in respect of pulmonary tuberculosis in ten years and a decrease of 33 per cent in non-pulmonary tuberculosis during the same period. It is pointed out that the tuberculosis movement in Scotland had its inception in the year 1887 with the institution in Edinburgh under voluntary management of the Royal Victoria Hospital for Consumption and the scheme of operations based upon it. The movement had been gradually adopted by public health authorities. By 1911 the provision for institutional treatment under tuberculosis schemes had provided 450 beds in hospitals and sanatoriums belonging to local authorities and 550 beds in voluntary institutions—a total provision equivalent to one bed per 4,622 of the population. At the end of the year 1924 there were in Scotland 111 sanatoriums, hospitals, and other residential institutions approved by the Board for the treatment of tuberculosis under the schemes by local authorities and these had provided in all 4,154 beds. In addition to these, 30 tuberculosis dispensaries had been in operation throughout the country at the end of 1924, and patients undergoing treatment at home or at a dispensary were supplied with necessary medicines and in special cases with extra nourishment at the cost of the local authority. With regard to non-pulmonary tuberculosis, local authorities are advised to relieve the pressure from general hospitals by taking over the convalescent treatment of surgical cases in sanatoriums or other suitable institutions under their control. Excellent results had been obtained also from newer methods of conservative treatment established by various local authorities. During the past few years efforts had been made by medical officers of institutions where cases of non-pulmonary tuberculosis were treated to practice heliotherapy, and lamps for the artificial production of ultra-violet rays had been installed in several sanatoriums and hospitals. General speaking the report received regarding the results from this method of treatment were very favourable, especially in the case of lupus and optic tuberculous sinuses.

Veneral Diseases

Veneral diseases centres have now been established in Glasgow (12), Edinburgh (6), Dundee (2), Aberdeen (2), Lanarkshire (6), Ayrshire (3), Fife (2) and at Stirling, Arbroath, Dumfries, Paisley, Greenock, Perth, Biff and Leith one each, to the number of 41 in all for the treatment of these diseases. The Board make suggestions for the establishment of clinics in other towns and remote areas. It is pointed out that an essential feature in each case for which a scheme had been adopted consisted in the provision of laboratory facilities, and that ten institutions had been approved in Scotland for this purpose. The question of what should be the next step in the treatment of these diseases is discussed. The report believes

that, as a number of the centres had been in operation for over six years, it might be felt that the time had come for reconsideration of the question of notification. It is pointed out that most of the bodies concerned in the matter were in favour of notification.

Other Infectious Diseases

Measles and whooping cough had been during 1924 both more prevalent and accompanied by a higher death rate in a number of Scottish towns than in 1923. The increase in cases of pneumonia (all forms) reported was very considerable, and for the whole year there were 14,698 cases as against 6,698 in 1923. In spite of the continuance of smallpox in parts of England, Scotland had remained remarkably free from this disease, and only 4 cases had been reported during the year, all being at ports. There were more cases of diphtheria in 1924 than in the previous year—4,856 as compared with 3,898—though the death rate remained constant. It had now become a regular procedure to test the staffs of various infectious diseases hospitals regarding their immunity to diphtheria by the Schell test, and in Aberdeen and Edinburgh a considerable amount of work had been done by the protective inoculation of children, both of school age and under it, against this disease. As diphtheria was most fatal amongst children between the ages of 3 and 5 years, it is pointed out that the most fruitful line of work seemed to be the immunization of children of pre-school age. Scarlet fever showed 10,809 cases in 1924, as compared with 9,504 in 1923. With regard to typhoid fever there had for many years been a very considerable fall in the death rate. During the past year several "carriers" had been discovered in mental hospitals. In the treatment of these the results of operation on the gall bladder appeared to be highly successful. In regard to acute infective jaundice, 16 cases had been reported, most of which occurred among nurses working in a wet pit of a pit where the roof slime had been found infected with leptospira, the slime being a favourable medium for its growth.

Maternity and Child Welfare

In the year 1924 the total number of births was 106,904, representing a birth rate of 21.9 per 1,000. The deaths of children under 1 year of age numbered 10,446. The infantile mortality rate was on the whole a decreasing one, but there was little indication that puerperal mortality was on the wane. Of the births in Scotland nearly 40 per cent were attended by midwives, although this did not apply to the larger towns. The effect of the measures taken against ophthalmia neonatorum was now becoming clear. Every case in which material impairment of vision occurs must be notified to the department, in 1924 twelve cases were reported to the department, and in only one of these was there complete loss of vision.

School Health Administration

With regard to school sanitation it is pointed out that the favourite school building was that known as the "central hall" type, which afforded great ease of supervision. The principles of school construction had now been entirely changed, and all new school buildings were being erected on the "pavilion" plan. The handicaps that defects of vision presented to education was very obvious, and during the past year 13,511 children were supplied with spectacles, the parents repaying, if possible, the whole or part of the cost. With regard to dental disease and treatment there was widespread evidence of awakened interest in the problem, due largely to the steady accumulation of figures in connexion with the work of school medical inspection. With regard to the prevalence of dental disease, in Edinburgh 73.5 per cent of the children were found to have decayed teeth, in Dundee 95 per cent, while Aberdeen and Glasgow occupied an intermediate position. In the counties the position was found to be scarcely less formidable, so that the total of school children in Scotland requiring urgent dental attention was about 405,000, and it is pointed out that these do not include every child with decayed teeth. To meet this there were, at the close of 1924, twenty-nine whole-time and fifty-one part-time dentists at work among the school children, the highest number employed by any one local authority being

six, in Larnarkshire, with a school population of about 101,000.

Supervision of the Food Supply

It is pointed out in the report that in regard to meat the system of inspection in Scotland had greatly improved within recent years, since the uniform standard of meat inspection was inaugurated in 1923. The Government had decided that a preventive measure of considerable importance in connexion with milk—namely, the Milk and Dairies (Scotland) Act, 1914—was to be put in operation on September 1st, 1925, while the grading of milk, for which amended regulations were issued in 1923, was now in working order and making definite progress. A departmental committee on preservatives in food issued its report last year. Its report made it plain that chemical preservatives were to be found in meat, butter, cream, margarine, sausages, bacon, potted meats, jams, mince, jellies, liquid eggs, wines, and even biscuits. The chemical preservatives in most common use were boron derivatives, sulphites, benzoates, and salicylic acid. The committee considered it undesirable that material not of the nature of food should be added to food if it could be dispensed with. Acute poisoning or possibly injury was not to be expected from the amounts of preservatives used, but there were insidious effects noticeable after prolonged use, such as dyspepsia, colic, diarrhoea, wasting, and general impairment of health. It is further pointed out that in many cases cold storage and other methods of preparing and handling food obviated the necessity for using preservatives. The committee regarded benzoates and sulphurous acid as among the least harmful of preservatives, but it recommended that if an article of food was preserved the fact should be stated on the label. During the year ten outbreaks of food poisoning had been reported, the most serious of which occurred in Dundee, and resulted in 703 persons being affected with gastro-enteritis due to the *Bacillus subtilis*.

National Health Insurance Unemployment

The annual income from this scheme from all sources amounted in Scotland to £4,200,000, and the yearly expenditure to £3,400,000. The department of National Health Insurance since 1911 is dealt with. It is stated that for the past two years a portion of the grant made to meet special needs of medical service had been utilized in enabling practitioners to take a post-graduate course of study at a medical school in cases where the nature of the practice precluded the practitioner from taking such a course unaided, and it is added that the success of this experiment had been gratifying. The valuation of approved societies and the question of proposed additional benefits are discussed. Various miscellaneous insurance questions and questions affecting insurance conditions are also treated. During 1924 there was a slight improvement in the unemployment position in Scotland as compared with the preceding two years. The average number of persons registered as unemployed for the whole year was 156,117, representing 12 per cent of the total insured population, as compared with 181,491, or almost 14 per cent, in 1923.

Welfare of the Blind

The welfare of the blind first became a function of the department in 1918, following the report in 1917 of the Departmental Committee on the Welfare of the Blind that the condition of the blind called for more active intervention by the State to secure control and assistance for the existing voluntary agencies. The Blind Persons Act, 1920, required local authorities to submit schemes for the exercise of their duty under the Act to promote the welfare of the blind. The approved schemes provided that these duties were to be carried out through the voluntary agencies for the blind. A register of blind persons was compiled and afforded valuable statistical information in regard to education, training, and employment. On April 1st, 1924, there were on the register 6,054 blind persons in Scotland, of these, 3,650 were unemployed or unemployable, but the remainder were employed or under training. Effect had been given to recommendations that technical training should be confined to that afforded by the four large institutions in Scotland which had now been recognized for the purpose by the Scottish Education Department.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

THE House of Commons this week completed the committee stage of the Widows, Orphans and Old Age Contributory Pensions Bill, discussed the Navy and devoted Friday to the concluding stages of the Summer Time Bill, to which the Government had allotted a day. The publication of a letter from the Medical Secretary of the British Medical Association officially announcing that the medical profession supported the bill was a point stressed by its advocates. In Grand Committee the Minister of Health announced concessions to the critics of the Rating and Valuation Bill which improve its chance of becoming law this year, and also the chance that the Ministry of Health will follow up rating reform by proposing next session a reform of the Poor Law.

In the House of Lords the Public Health Bill which has already passed the House of Commons was read a second time without a division.

At the House of Commons, on July 13th the Parliamentary Medical Committee was addressed by Sir William Hatcher KBE, the Secretary of the Medical Research Council, who spoke on the work the Council had initiated and its relation to other bodies. He alluded specially to the successful determination of filter passing viruses first of trench fever later of influenza, and of that associated with chicken pox. As the House divided several times during this conference discussion was brief. One member of the Committee suggested that it should endeavour to initiate a debate in the House of Commons on the work of the Medical Research Council in order to increase the interest of lay members of Parliament in medical research, but no decision was taken.

The medical members of Parliament who made the journey to Geneva have since then twice met Mr. Sprüngli at the House of Commons. At the first meeting they asked him whether he could guarantee the supply of serums and vaccines sufficient for the treatment of 100 tuberculous cases in England, the possibility of appealing to the public for financial aid to ensure the production of these remedies was also mentioned. Mr. Sprüngli asked for time to consider the question but at the second meeting between him and certain of the medical members of Parliament on July 14th no decision was reached.

Indian Medical Service

During the debate on the India Office vote Sir Richard Luce raised certain points with regard to the future of medicine in India. The Lee Commission had decided that for various reasons it was necessary in each of the provincial services to have a fixed proportion of European medical officers to carry on the work. The reasons were first that a proportion of trained European medical officers was necessary for efficiency and secondly that European members of the other services of India considered that they had a right to the services of European doctors for themselves and their families. He had experience of working very closely with eminent Indian doctors in this country who were doing excellent work but the Lee Commission stated that it was almost universally represented to be vital to have European medical officers to look after the Europeans resident in India. It was also deemed necessary to have European medical officers in the provinces to ensure a reserve for the Indian Army. Difficulties arose because the Indian Medical Service had for some considerable time been far from popular in the medical schools of this country. From being as it was from fifteen to twenty years ago one of the finest and most popular medical services of any country in the world gradually from various causes it ceased to have that popularity. Even before the war it was not attracting the best recently qualified men in England and it had been extremely difficult in the last two or three years to get enough medical men to fill vacancies. The difficulty began with the great increase in the cost of living in India and no corresponding increase in pay more than half—22 per cent—were before the war seconded for civil work and were granted the right of doing private civil practice. That had diminished to some extent before the war and in recent times had ceased to a very large extent.

It was not only the Indian Medical Service which was suffering but the Army and Navy medical services and other Imperial services had suffered from the fact that in war time relatively few qualified. Moreover India was not now so agreeable for Europeans to live in as it was in years gone by. It had only been possible to fill up vacancies in the Indian Medical Service during the last year by instituting a system of short time service under which men could go out at the end of five years with a good gratuity. That plan would be a source of welcome and expense if continued. The question arose whether the services would become still more unpopular if they were placed entirely under the Provincial Governments. He gathered that the Governor-General of India was all considering the question and Lord Curzon in his recent speech in the House of Lords indicated that it was the intention entirely to remove the control of the service from the Government and to transfer the control of the service to the Provincial Governments. If that were so the transfer might not make much difference to the popularity of the service. Sir Richard Luce went on to call attention to the

condition of the army in medical service in India. There were two separate services for troops working side by side. It seemed that a suitable time had come to introduce some method of uniting the R.A.M.C. officers and personnel who were sent out to India on a tour of duty with the Indian Medical Service which looked after the Indian Army. Many of the difficulties in the war and the scandal in Mesopotamia were out of the fact that there were dual services in India with different standards of efficiency and of equipment. There should be a united service—something on the lines of an Indian Army Medical Corps—in which the officers of the corps should be made up of Indian and British officers, and the men should consist partly of British Royal Army Medical Corps men and noncommissioned officers, attached to and united into the corps for the time they served in India, but going back when their tour of service in India was over and taking their ordinary places in the Royal Army Medical Corps. The problem was difficult but not insoluble as during the war the two services were successfully combined.

Whether the whole control of medicine in India should be passed from the State to the provinces without any reservation at all seemed a doubtful point. Medicine was a service which required control from a centre more perhaps than any other. In this country it was necessary to have control in India over such matters as education, research, quarantine and the appointment to the higher medical posts in the universities and perhaps even the hospitals. It was not safe to leave that work to so many Provincial Governments.

Earl Winterston, Under Secretary for India, in the course of his reply on the debate expressed his regret that he was not in a position to answer with regard to the medical services.

Bethlem Hospital Site.—At the Ministry of Health on July 13th representatives of the Bethlem Hospital of the Corporation of the City and of the borough of Southwark together with Dr. Halsey Guest met officials of the Ministry with regard to the bill before Parliament which proposes to authorise the transfer of the Bethlem Hospital and the sale of its present site in South London. A committee of six representing the hospital, the City and the borough of Southwark was set up in the hope that it would amicably settle the question of the disposal of the old site.

On account of the pressure of special matter in this issue we are constrained to omit some topics of medical interest which would otherwise have found a place here.

Universities and Colleges

UNIVERSITY OF LONDON

The Departmental Committee

THE London County Council is one of the bodies invited to give evidence before the departmental committee appointed to consider the final report of the Royal Commission on University Education in London and to indicate what are the principal changes which are now most needed in the existing conditions of the University and on what basis a statutory commission could be set up to frame new statutes.

The Council has expressed the view that the financial arrangements between the University and the Council should provide that the total grant fixed by the Council in aid of university education in London should be given as a block grant to the Senate while the constitution and powers of the Senate remain as at present; however the Council does not feel it possible to adopt this arrangement. It believes that the University should have a Senate in whose hands the Council could place the expenditure and distribution of any grants which it might decide to make for university education subject to any particular conditions which the Council might think it advisable to impose but it is confirmed in its attitude by the statement of the University Grants Committee that 'until the central authority of the University has become a reality it will be impossible for Parliament the London County Council and the general public to feel certain that the fullest and most economical use is made of the vast aggregation of teaching power contained in its numerous constituent bodies'. The Council has also instructed those of its members who give evidence before the departmental committee to state the Council's opinion—first expressed in 1912 when some felt that the Haldane Commission might recommend the discontinuance of the external degree—that the University of London should continue to confer external degrees.

UNIVERSITY OF LIVERPOOL

THE following candidates have been approved at the examinations in heat 1:

MD—S B Head Elizabeth Hunt C W Ibbill D Riding
MB—Ch B (with Hon. M.D.) J Gwynne H Griffiths J G McNichol
J A A Leachman J C Ross S C I Unsworth J A T H
C P Allen A T Ashcroft H M Boston C I Copeland
N L Cook H J Donnelly L E Latham S G L O'Driscoll
W Emdin M Fisher C J S Garton M Goldstein I Gordon
J Graham I Rances M Greenhalgh D J
Beril M Hawthorn J C Heat F C
S Howard J F Howie F Hughes I
Johnstone R C Jones D Katz
Lloyd W J Lloyd T R L Linton
D J T
Irene M
I W
I W
I W
PART A
G. DOUGLAS A M Cobban W J Crawford W A

DAVIES W I HURRICANES S I
J R Howlands I S
J H Bonhôte L Clerk
duffo A H LONJOS J A Galloy
Clinton L S Goldmann G Garland
G Henry Mary Hope Simpson G E
B S Jarvis A Jermis A N Jones
Pauling J C McFarland

Wilson

VI
DI II—J G L Jones Dorothy G L Lottel Frances Wolghman
D A Woodson

- | | |
|-----------------------------|------------------------------------|
| 1 With first-class honours | 6 Distinction in medicine |
| 2 With second-class honours | 6 Distinction in public health |
| 3 Distinction in surgery | 7 Distinction in forensic medicine |
| 4 Distinction in obstetrics | and toxicology |
| | 8 Distinction in pathology |

VICTORIA UNIVERSITY OF MANCHESTER

Dr W M Roberts has been appointed director of the new laboratory instituted by the board of management of the Manchester Royal Infirmary.

The following appointments are also announced: *Lecturer in Anatomy* Dr David Stewart, *Lecturer in Applied Anatomy*, Dr R S Paterson, *Lecturer in Systematic Medicine*, Dr T H Oliver, *Lecturer in Medicine for Dental Students*, Dr C H Melland, *Demonstrator in Anatomy*, Dr A O Kelly.

The following candidates have been approved at the examinations indicated:

FINAL M.B. CH.B.—F H Smirk W Bolton G H H Booth
A R Adley Redfern S Bernstein Lilian Bond G Coope
T A Dauby A A T
Madge L Edwards M
E A Gerard Mary
son Barbara M Lush
shall E A Marson E

Forensic Medicine and Hygiene and Preventive Medicine O H Bamford Frances H Bowden J Crook W F Evans Agnes G Smiley J O Wilson *Medicine* Frances H Bowden *Hygiene and Preventive Medicine* H H Bullough I H Fiedlander R M Pearce A D Shubsachs *Obstetrics and Surgery* Louis Aroon vich Marion L Bainbridge A R Barber J R Beal P Bester R H Blackburn Florence M Blades Agnes Bodoano Lillie M Burton S J Firth T S Hanlin
R L Holt J Hunt T J Kny H
R J Owen R Shaffer W S Slater G
Turner E J Warburton *Obstetrics*
H Pigott

CH.V.—J A Panon

DIPLOMA IN BACTERIOLOGY—Marion H Black G E Shaw

DIPLOMA IN PSYCHOLOGICAL MEDICINE—W G Thomson C B V Walker

- | | |
|------------------------|------------------------------------|
| * First-class honours | † Distinction in medicine |
| † Second-class honours | † Distinction in forensic medicine |
| | ‡ Distinction in obstetrics |

UNIVERSITY OF ABERDEEN

At the graduation ceremony on July 9th the following degrees were conferred:

LL.D. (*honoris causa*)—Dr J J R Macleod (Professor of Physiology at the University of Toronto).

M.D.—R Cruckshank *J B Duguid †C B Hogg A A Heaine A C Irvine

M.B. CH.B.—D Archibald H A Barker Catharine H Baxter A Brool's W B Brown W Binch H MacL N Calder H Mack Crombie A Cruckshank Williamina Cruckshank Marjorie J M Dow

H Fine W Gavin H Gow D C Henderson W I Ingram C MacFarlane G R Mackay Mathieson G M Menzies

W Menzies J Murray A D Rankin A C Reid H L Rennie J M Ritchie Grace M Robinson D Seals L R D Smith Williamina Stephen G Thow A N S Watt End M O Will

D Wilson Edith B Wilson J Wright

Sc—Edith J McRae M B Ch B

* Awarded highest honours for thesis

† Awarded commendation for the

Completed final medical professional examination with distinction

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A QUARTERLY Council was held on July 9th when the President Sir John Bland Sutton was in the chair. The successful candidates at the recent election to the Council—Mr A H Burgess (Manchester) Mr James Sheiaren (London) and Sir John Lynd Thomas (Wales) as reported in our issue of July 11th (p. 93)—were introduced to the Council.

Sir John Bland Sutton was re-elected President and Mr W G Spencer and Mr J Sheiaren were elected Vice Presidents.

Mr Graham Simpson was admitted a member of the Court of Examiners.

Licences in dental surgery were granted to 57 candidates. Diplomas were granted jointly with the Royal College of Physicians in psychological medicine to 11 candidates and in laryngology and otology to 7 candidates.

Mr T W P Lawrence was reappointed for the ensuing year to advise during the work of revision of the pathological catalogue and Mr C I Beadles was appointed pathological Curator of the Museum for the ensuing year. Mr H B Burne was re-elected Physiological Curator and Sir Frank Colver was appointed Honorary Curator of the Odontological Collection.

VACANCIES

BATH ROYAL MINERAL WATER HOSPITAL—Resident Medical Officer Salary at the rate of £130 per annum

BIRMINGHAM UNION—Resident Assistant Medical Officer at the Union Infirmary Salary £300 per annum

BIRMINGHAM CHILDREN'S HOSPITAL—Resident Medical Officer Salary £125 per annum plus £52 for specific work

BIRMINGHAM CRIPPLES UNION AND ROYAL ORTHOPAEDIC AND SPINAL HOSPITAL—Junior House Surgeon for the Woodland Open Air Orthopaedic Hospital Salary £150 per annum

BIRMINGHAM QUEEN'S HOSPITAL—Assistant Obstetric Officer Honorarium £50 per annum

BIRMINGHAM UNIVERSITY—Junior Demonstrator of Anatomy Stipend £300 per annum

CARDIFF CITY MENTAL HOSPITAL Whitechurch—Resident Clinical Assistant (male) Honorarium 50 guineas for six months

COUNTY MENTAL HOSPITAL Whittingham, Preston—Temporary Medical Officer (unmarried) Salary £7 a week

CLIMBERLAND AND WESTMORLAND MENTAL HOSPITAL Garlands Carlisle—Junior Assistant Medical Officer (male) Salary £350 per annum rising to £400

EXETER ROYAL EASTBOURNE EYE HOSPITAL—Honorary Ophthalmic Surgeon

EGYPTIAN GOVERNMENT SCHOOL OF DENTAL SURGERY—(1) Superintendent and Lecturer in Metallurgy and Materia Medica salary £2900 a year, increasing to £3140 (2) Lecturer in Surgery and Pathology salary £2480 a year (3) Assistant Lecturer in Surgery and Pathology salary £2360 a year (4) Lecturer in Mechanics and Orthodontia salary £2480 a year (5) Mechanic salary £2560 a year

EXETER HOSPITAL FOR CHILDREN Southwark S E 1—House Surgeon (male) Salary £120 per annum

GLOUCESTER BAPY LOD HOUSE HOSPITAL FOR MENTAL DISORDERS—Junior Assistant Medical Officer (male) Salary £350 per annum

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION—Assistant House Surgeon (male) Salary £150 per annum

HAMPSTEAD GENERAL AND NORTH WEST LONDON HOSPITAL Haverstock Hill W 3—Radiologist Honorarium £100 per annum in addition to share of fees from special departments

HARTFORD COUNTY HOSPITAL—House Surgeon (male) Salary £150 per annum

HONG KONG UNIVERSITY—Reader in Biology Salary £600 per annum rising to £750

LIVERPOOL UNIVERSITY—Dutton Memorial Chair of Entomology Stipend £800 per annum

MANCHESTER ANCOATS HOSPITAL—(1) Anaesthetist fee 10s. 6d. per attendance (2) Assistant House Physician salary at rate of £100 per annum

MARGATE ROYAL SEA BATHING HOSPITAL—House Surgeon Salary at the rate of £200 per annum

NORTHAMPTON GENERAL HOSPITAL—Honorary Assistant Surgeon

NORWICH JENNY LIND HOSPITAL FOR CHILDREN—Resident Medical Officer (male) Salary £150 per annum

ORANIE—Resident Doctor for the Island of North Ronaldsay Income approximately £470

PIETERMARITZBURG GREYS HOSPITAL—House Surgeon Salary £500 per annum

QUEEN'S HOSPITAL FOR CHILDREN Hackney Road E 2—Assistant Casualty House Surgeon Salary at the rate of £100 per annum

ST MARKS CITY HOSPITAL FOR CANCER, FISTULA AND OTHER DISEASES OF THE RECTUM City Road E C 1—(1) Honorary Surgeon (2) Honorary Assistant Surgeon

ST PAULS HOSPITAL FOR SKIN AND GENITO URINARY DISEASES Endell Street W C 2—Honorary Anaesthetist

SARATWY FREE HOSPITAL FOR WOMEN Marylebone Road W 1—House Surgeon Salary £100 per annum

SOUTHAMPTON ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL—Junior House Surgeon (male unmarried) Salary £150 per annum

STOCKTON UNION—Locumtenent for twenty eight days £8 s a week

TAVISTOCK TAVISTOCK AND SOMERSET HOSPITAL—Members of the Honorary Surgical Staff

WILLEDEX GENERAL HOSPITAL—Honorary Anaesthetist

CERTIFYING FACTORY SURGEON—The following vacant appointments are announced: Smith (York) Hoddesdon (Hertford) Applications to the Chief Inspector of Factories

This list of vacancies is compiled from our advertisement columns where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

DIARY OF SOCIETIES AND LECTURES

BIOCHEMICAL SOCIETY—University College Reading (Joint Meeting with the Agricultural Education Association) Sat. at 5 p.m. Communications—(i) R H A Plimmer Action of Nitrous Acid on Amides and Amino Compounds (ii) W J N Burch Esters of Phosphoric Acid (iii) A Mattick and W Wright Influence of Salts on Inorganic Constituents of Milk (iv) E Ponder and W W Taylor Conductivity of Cell suspensions (v) G D Threlker and J R Marrack Calcium in Body Fluids

POST GRADUATE COURSES AND LECTURES

HOSPITAL FOR SICK CHILDREN Great Ormond Street W C 1—Thurs. 4 p.m., Cerebrospinal Fluid in Health and Disease

WEST LONDON HOSPITAL POST GRADUATE COLLEGE Hammersmith W 6—Mon. 12 noon Applied Anatomy Tues. 12 noon Chest Cases Wed. 2 p.m. Skin Department Thurs. 10 a.m. Neurological Department Fri. 2 p.m. Throat Nose and Ear Department Sat. 10 a.m. Medical Diseases of Children Daily 10 a.m. to 6 p.m. Sat. 10 a.m. to 1 p.m. In and Out patient Operations Special Departments

GLASGOW POST GRADUATE MEDICAL ASSOCIATION—At Royal Hospital for Sick Children Daily 9.15 to 11 a.m., Diseases of Children.

BIRTHS, MARRIAGES AND DEATHS

The charge for inserting announcement of Births, Marriages and Deaths is 9s. which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

BIRTHS

APPEL — At 59 Denon Road Victoria Park Manchester on July 9th to Dr. and Mrs. G. E. Archer a son.
BATHFORD — On July 5th at Cologne to Thelma wife of Captain D. T. Bathford FRCS R.M.C. a son.
BRYAN — At the Palmouth Nursing Home on July 8th last to Dr. and Mrs. H. A. Bryman of 1 Clive Place Edinboro a son.
PETER — On July 12th at a nursing home to Mary wife of Tom George Rickett of 118 Harley Street and 3 Hanover Terrace a daughter.
SCOFFER — At 13 Victoria Street Aberdeen on July 11th the wife of H. Ross Scoffer M.A. M.D. a daughter.

DEATHS

CLIFFORD — On July 8th at his residence 15 St. John Street Manchester Harold Clifford M.D. FRCS Ed. Honorary Consultant and Surgeon to St. Mary's Hospitals Manchester and the Clifford Royal Hospital.
REDDIE — On July 12th at 137 King Street Edinburgh the late Thomas younger son of Dr. and Mrs. J. E. Reddie. Interment at Pukefinch Cemetery on Wednesday at 1 o'clock.
MURPHY — On July 6th at 70 Dagger Lane West Bromwich William Maule Smith M.D. FRCS Ed. Medical Superintendent at Infirmary West Bromwich aged 51.

Medical News.

The Founder's Day celebrations of Ipswich College on July 25th will include a service in the chapel at midday, presentation of prizes by Earl Beuchamp at 2.45 p.m. and a performance of *The Midado* by the College musical society at 8 p.m.

DETAILS of the annual luncheon at Bath of the Irish Medical Schools and Graduates Association will be found in the Reception Room at the Banqueting Hall, Guildhall, Bath.

SIR ST. CLAIR THOMSON, M.D. 1 R.C.P., F.R.C.S. has been re-elected President of the Royal Society of Medicine.

The fourth Congress of Military Medicine and Pharmacy will be held at Warsaw in 1927.

The French Congress of Stomatology will be held in Paris under the presidency of M. Jules Leffler from October 19th to 24th.

The Fellowship of Medicine announces that from July 27th to August 14th there will be a five afternoon course in the diagnosis and treatment of the more common diseases of the nervous system at the West End Hospital. A vacation course will be held at the Prince of Wales's General Hospital from August 3rd to 15th, with morning and afternoon sessions from 10.30 a.m. to 5.30 p.m. devoted to demonstrations of modern clinical and laboratory methods, lectures, and the general hospital routine. The Queen Mary's Hospital, Stratford, will also hold an intensive course on similar lines from August 24th to September 5th, with special facilities for the study of gynaecology and obstetrics. Throughout the month a special course will be given at the All Saints' Hospital for Genito-Urinary Diseases with daily clinical demonstrations and a special lecture each Wednesday. Copies of each syllabus may be obtained from the Secretary at No. 1, Wimpole Street, W.1.

The London Office of the Italian State Tourist Department (12, Waterloo Place Regent Street, London, S.W.1) informs us that there are still a few vacancies in the tour arranged for British medical men in September, of which a note appeared in our issue of April 18th (p. 764). Applications should be made without delay. The party will travel by special trains in Italy and among the places to be visited are San Pellegrino, Aequi, Alatri, San Remo, Ospedaletti, Bolognara, Pogliano, Rapallo, Santa Margherita, Portofino, Viareggio, Leghorn, Montecatini, Perugia, Rome.

The Church of England Temperance Society will open in September at Caldecote Hall near Nuneaton, an institution for the study and treatment of alcoholism and drug addiction in men. In order that the treatment may be available for poor patients the society is prepared to help those unable to defray the cost. The minimum fee under this scheme will be 25s. a week. Inquiries should be addressed to the Secretary, C.E.T.S., 40 Marsham Street, Westminster, S.W.1.

The fifteenth annual report of the Mission to Lepers, founded by Mr. Wellesley C. Bailey, contains an account of the jubilee celebrations of the Mission in 1924 in different parts of the world. The yearly reports show the number of lepers under treatment in the institutions of the Mission or those aided by it to be 7,961 while 774 uninfected children of lepers are being cared for in specially provided homes. The report which is freely illustrated includes an account of recent progress in the treatment of leprosy is published at 61 and may be obtained from the editorial secretary of the Mission 33 Henrietta Street, W.C.2.

Letters, Notes, and Answers.

All communication in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

OFFICIAL ARTICLES and LETTERS to ward 1 for publication are understood to be offered to the British Medical Journal alone and the contract is entered into with the Editor. Notice to be taken of their communication should authorise them with their names not necessarily for publication.

Authors of original ARTICLES of their articles published in the British Medical Journal must communicate with the Editor, Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1 on receipt of proofs.

All communications with reference to ADVERTISEMENTS should be sent to the Editor for copy of the Journal should be addressed to the Financial Secretary and Business Manager.

The TELEPHONE NUMBERS of the British Medical Association and the British Medical Journal are: LONDON: 157, 158, 159, 160, and 161 (interchangeable four lines).

The TELEGRAPHIC ADDRESSES are:

EDITOR of the British Medical Journal: Antology, Westcott, London.

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc.): Antology, Westcott, London.

MEDICAL SECRETARY: Medical Association, Westcott, London.

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams: *Bacillus Dublin*). Telephone: 1757 (Dublin) and of the Scottish Office: 6 Drumshelton, Edinburgh (telegrams: *Associate, Edinburgh*). Telephone: 4331 (Central).

QUERIES AND ANSWERS

INCOME TAX

Proportion of Income Tax Deductible

"A J" uses a portion of his residence for professional purposes and claims to deduct two-thirds of the rent as a professional expense. The Inspector of Taxes declines to allow more than one-half.

"A J" It is difficult to advise on this question because so much must depend on the exact circumstances—for example how many rooms are used mainly or solely for professional purposes whether they are on the ground floor front or elsewhere whether the rent includes large accommodation how far the rent paid is specially affected by the suitability of the premises for professional or business as distinct from residential purposes and lastly whether the balance of the rent applicable to private expenditure (one third or one half) would be a reasonable charge for the private accommodation afforded by the premises. If "A J" will send particulars on these points with a note as to the gross and net earnings of the practice we will endeavour to advise him as to whether he would have a reasonable prospect of appealing successfully from the Inspector's decision to the Commissioner of Taxes.

LETTERS, NOTES, ETC.

POWER OF ENTRY BY LOCAL AUTHORITIES

DR T. G. AARIS (MOH Greenwich) writes: I note the reply to R.P." (July 4th p. 46) respecting power of entry by local authorities. May I refer you to Sections 123 and 124 of the Housing Act, 1915 which gives wide powers with respect to entry by local authorities and their officers.

CORRECTION

Our attention has been called to a *lapsus calami* in the article on Places of Interest around Bath published in the Journal of July 11th. It is stated (p. 83) that the Cabot Tower stands on Clifton Downs. As all who are acquainted with Bristol know the tower is on Brandon Hill whence a magnificent view of the city may be obtained.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 78, 79 and 80 of our advertisement columns and advertisements as to partnerships, assistantships and locum tenencies at pages 79 and 77. A short summary of vacant posts notified in the advertisement columns appears at page 151.

British Medical Association.

NINETY-THIRD ANNUAL MEETING, BATH, 1925.

President's Address

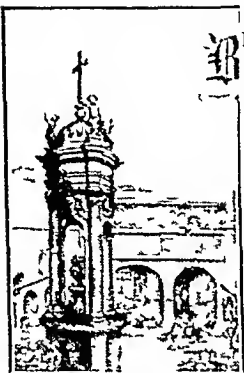
ON

THE EVOLUTION OF A HEALTH RESORT.

BY

F. G. THOMSON, M.A. CANTAB., M.D., M.R.C.P. LOND.,

PHYSICIAN, ROYAL UNITED HOSPITAL, BATH, CONSULTING PHYSICIAN, MINERAL WATER HOSPITAL, BATH.



Cross erected in Cross Bath to commemorate the birth of Prince James Francis Stuart (the Pretender) son of Queen Mary, of Modena.

BEFORE commencing the subject of my address, I hope you will allow me, on behalf of my colleagues and myself, to extend to all members of the British Medical Association a very hearty welcome to Bath. It is, I know, the earnest hope, not only of the members of the local Division of the Association, but of all the citizens of Bath, that this Annual Meeting may be in every way as instructive, pleasant, and generally successful as it is possible to make it.

The history of a town that has been closely associated with the treatment of disease for nearly two thousand years, and probably longer, naturally possesses many features of medical interest, and it may not be out of place to night, at the commencement of this meeting, to refer to certain phases of the evolution of Bath as a health resort, and to certain of the characters, medical and otherwise, who have played their part in its medical history.

Though the hot springs have been used in the treatment of disease ever since the Roman occupation, it was not till the middle of the sixteenth century that their therapeutic properties engaged the serious attention of the medical profession, and our knowledge of the actual practice of medicine in Bath remains very fragmentary till about the time of Queen Elizabeth, when its reputation as a resort for visiting patients first became established.

The primitive conditions, however, which obtained in the time of the late Tudors and early Stuarts were such that one imagines nothing but dire necessity would have caused anyone to visit Bath at that time. The town itself was one of the meanest in England, and the streets are said to have been a succession of dungbills, pigsties, and slaughterhouses. The baths themselves consisted of dilapidated, ill kept, dirty pools, open to the air, and surrounded only by a low parapet, over which the more idle and inquisitive of the inhabitants were accustomed to view the proceedings at their ease and leisure. Men and women bathed together, naked, at nearly all times of the day and night, and disorder of all kinds was rampant. The baths are said to have resembled a veritable bear garden, and cats, dogs, and even human bodies to have been hauled into the bath while people were bathing in it.

The complacency with which these conditions were viewed at the time is well illustrated by Harrison's account of the Cross Bath in his *Description of England in Shalpsere's*

Youth, in which he says "This bath is much frequented by such as are diseased with leprosy, pox, scabs, and great aches, yet of itself it is very temperate and pleasant." Considering the bath measured only some 19 by 20 feet, one would imagine that in the circumstances it was hardly as pleasant as Harrison suggests. Fortunately for all concerned, there was a superstition that it was highly dangerous to enter the bath for some hours before and after noon and midnight, when the water was said to "boil very ferventlie," and the baths to "punge themselves of all such filth as the diseased do leave in them"—a process which, in the circumstances, must have been highly desirable.

In spite of all the discomforts and positive dangers associated with such a procedure, Queen Anne of Denmark, the wife of James I., decided to take a course of baths in the bath known as the King's Bath. Unfortunately, Her Majesty had a somewhat alarming experience, as a ball of fire is said to have risen from her feet and spread out all over the surface of the bath. This remarkable phenomenon, which one can only suppose was an ebullition of marsh-gas rising from the mud, which was disturbed by the lady's feet, so alarmed the Queen that she refused to bathe there any more, and was with difficulty persuaded to finish her course of treatment in an adjoining bath, since known as the Queen's Bath, where she was assured such cataclysmic disturbances were never known to occur.

The reign of Charles II., however, marked the commencement of an entirely new phase in the history of the town. Whereas people had hitherto come solely for reasons of health, they now began to come for pleasure. A community which lived the gay and frivolous life associated with the

restoration of the Monarchy lost all interest in country pursuits, and when the Court left London in the summer the fashionable world preferred to migrate en masse to one or other of the provincial watering-places where the amenities of town life could still to some extent be enjoyed.

In 1663 Charles II. formally removed his Court to Bath, and the concourse of people was so great that not only the town, but the surrounding villages also, were crowded with visitors. Though certain improvements had been effected in the conduct of the baths, and

though quite a number of Bath physicians had by this time written more or less learned books on the action of the waters, the scene depicted in the print of the King's Bath in 1667 hardly suggests that balneological treatment was as yet regarded by the public with that respect which it deserved.

The proceedings appear to have been looked upon more as a popular entertainment than as a remedy for disease, and the antics of children diving for pennies, and of their elders indulging in fancy forms of swimming, appear to have afforded more amusement to the onlookers than to the



King's and Queen's Bath About 1760 (From picture by Robino)

James Francis Stuart), though born heir to the throne, was never destined to succeed to it, James II being deposed in favour of William of Orange during the ensuing year. As the Pretender, however, he was responsible for the rebellion of 1715, and his son, Prince Charles Edward, known as the Young Pretender, was the head of the much

more serious rebellion in 1745. So if no occasion had arisen for placing this cross in the Cross Bath, we should never have heard of Bonnie Prince Charlie or Flora MacDonald, and one of the most romantic pages of Scottish history would never have been written.

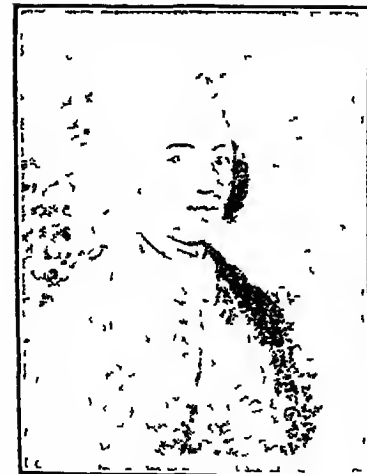
Long before these events took place, however, the city had reached the apex of its fame, not only as the resort of the sick and ailing, but as the periodical visiting place of all who aspired to take any position whatever in



William Oliver M.D.

the world of fashion. During the reign of Queen Anne, Bath became a sort of general casino for the whole kingdom. The Queen herself, who is said to have been such a martyr to gout that she was unable to stand during her coronation service, paid several visits, and for the next 120 years or more there is hardly a single person of distinction, from Royalty downwards, whose name is not in some way or another connected with visits to Bath, either for health or pleasure.

Thanks to the numerous authors and dramatists, such as Steele, Defoe, Goldsmith, Sheridan, Anstey, and others, who habitually visited Bath in the eighteenth century, the social habits and customs of this picturesque period are peculiarly well known to us. Whatever their other predilections may have been, we learn that the first and chief preoccupation of the majority of the company was the daily visit to the bath.



Tobias Smollett M.D.

In addition to those who took their baths under medical orders, many others bathed for diversion. The bath became a sort of fashionable parade which few cared to miss. The simple bathing dresses in vogue at the end of the seventeenth century were gradually replaced by more

elaborate costumes, till eventually both men and women took to the water arrayed in the height of fashion. Ladies of distinction bathed in state, and were attended by the daughters of prominent citizens. Those who desired them were supplied with small floating trays, on which they placed nosegays, sweetmeats, snuff, and such trifles as face powder and patches, to replace those dislodged by the moisture.

The rule that the gentlemen should remain at one side

of the bath and the ladies at the other seems to have been honoured more in the breach than in the observance. Thus Defoe, in his *Tour through Great Britain*, says:

"At the Cross Bath the ladies and gentlemen pretend to keep some distance each to their proper side but frequently mingle here too as in the King's and Queen's Bath, but not so often, and the place being narrow they converse freely and talk, rally, make vows and sometimes loves, and having thus amused themselves for an hour or two, they call their chais and return to their lodgings."

The patients were conveyed to and from the bath in sedan chais, which in the case of the ladies were, to use the words of a contemporary French writer, "hermetically sealed when the occupants were old, ugly, or prudish, but artistically penetrable when they were finely formed."

Water drinking, which by this time had become an established part of the treatment, took place later in the morning at the old Pump Room, which was replaced at the



Caleb Miller M.D. F.R.S.

end of the century by the present structure. It was here that, to the accompaniment of a prodigious amount of gossip, scandal, and general disturbance, the prototypes of Lady Teazle, Lady Candour, and Mrs. Malaprop were to be found daily, drinking their quantum of water, and at the same time unsuspectingly providing Sheridan with the material for his plays.

The general regimine and amusements of the patients, which after all constitute an important factor in their "cure," need only very brief reference. Fortunately, we are able to get some idea of them, even if it is somewhat distorted, from the caricatures of Rowlandson and other cartoonists of the period. Following the parade in the Pump Room, public breakfasts formed an important feature. Later on in the day, after promenading in the parades, or adjoining to the various coffee-houses to hear the latest news, gambling, which in the time of the Georges was an almost universal passion, occupied the attention of the majority.

Music, the drama, and art occupied the attention of the more

intellectual of the company. Concerts were held daily, and it was while singing at one of those that the beautiful Miss Linley engaged the affection of the youthful and impetuous Sheridan.

The presence of such a large number of invalids from all parts of the country naturally attracted a great many doctors, many of whom practised in Bath during the season and in London or elsewhere during the rest of the year. As



Edward Barlow M.D.

early as 1709 Steele published a jesting article in the *Tatler*, which he edited under the pseudonym of Isaac Bickerstaff, demanding that the number of doctors should be reduced. He writes

Letters have been sent to Mr Bickerstaff relating to the present state of the town of Bath, wherein the people of that place have desired him to call home the physicians. All gentlemen therefore of that profession are hereby directed to return forthwith to their places of practice, and the stage coaches are required to take them in before other passengers till there be a certificate signed by the Mayor that there are but two doctors to one patient left in the town."

Amongst all these numerous doctors there were probably a good many whose professional reputation and standard of ethics left something to be desired, and it is not surprising that in an age when wit, satire, and caricature were the predominant features in the literary world, these came in for their full share of ridicule and criticism. Thus Steele, writing in the *Guardian* a few years later, relates what he alleges to have been his own experience of the methods adopted for soliciting practice, saying

"The physicians here are very numerous, but very good natured. To these charitable gentlemen I owe that I was cured in a week's time of more distemper than I ever had in my life: they had almost killed me with their humanity. A learned fellow lodger presented me a little something on my first coming to keep up my spirits, and the next morning I was so much enlivened by another, as to have an order to bleed me for my fever. I was proffered a cure for the scurvy by a third and had a recipe for the dropsy gratis before night. In vain did I modestly decline the favours, for I was awakened early in the morning by an apothecary, who brought me a dose from one of my well-wishers. I paid him but withal told him severely that I never took physic. My landlord hereupon took me for an Italian merchant that suspected poison, but the apothecary, with more sagacity, guessed that I was certainly a physician myself."

The most bitter criticism of the local doctors comes from Smollett, the author of *Peregrine Pickle* and *Roderick Random*, both of which deal largely with the social life of Bath. Smollett himself was a doctor of medicine, and at one time essayed to practise in the town, and actually wrote a book on the external use of Bath waters. His lack of success appears to have roused feelings of intense bitterness against his more fortunate rivals, whom he describes as "a class of animals who live in the place, like so many ravens hovering round a carcass, and even ply for employment like scullers at Hungerford Stairs." In the circumstances, however, Smollett's virulent attacks on his own profession need hardly be taken too seriously, more especially as he shows a sordid tendency to paint all his characters in the most unfavourable light.

A more humorous parody on the ways of some at least of the Bath physicians of the eighteenth century is contained in Anstey's *New Bath Guide*, which, in a series of letters, relates the adventures of a somewhat unsophisticated family during a visit to Bath for the sake of their health. In a letter to his mother, written on his arrival, Mr Simpkin Blunderhead writes

"When I came here to Bath not a bit could I eat,
Tho' the man at the Bear had provided a treat
And so I went quite out of spirits to bed
With wind in my stomach and noise in my head
As we all came for health (as a body may say)
I sent for the doctor the very next day,
And the doctor was pleased tho' so short was the warning,
To come to our lodgings the very next morning,
He looked very thoughtful and grave to be sure,
And I said to myself—There's no hope of a cure
But I thought I should faint when I saw him dear mother,
Feel my pulse with one hand when I saw him dear mother,
No token of death that is heard in the night
Could ever have put me so much in a fright
Thinks I—tis all over—my sentence is past
And now he is counting how long I may last,

He determined our cases at length (God preserve us)
I'm bilious I find and the women are nervous,
Their systems relax'd and all turned topsy-turvy,
With humors, and acrid humors, and curvy
And I know the whole on, and colon
For I

So plenty of medicines each day does he send,
Pest singularis liquidas sedes sumend
Ad crepitum vesper, and man promovend
The same to continue for three weeks at least,
Before we may venture the waters to taste
And without any doubt I shall find myself stronger
When I've took the same phy for a week or two longer

He gives little Tabby a great many doses
For he says the poor creature has got the Colic
Or a rancour like so brought on the vapours
By allowing stuff she had read in the papers
And often I've marvelled she spent so much money
In Wat' Dock, I once, and half an of Honey
Such tinctures, chairs, such pills I have seen
I never could wonder her face was so green
Yet he thinks he can very soon put her to right,
With Testic I quinn that she takes every night,
And when to his spirits and strength he has brought her,
He thinks she may venture to bathe in the water."

According to Anstey, none of the doctors indulged in all baths they so freely prescribed for their patients, thus

"And to dry, many persons of rank and condition,
Were hold'd by command of an able physician
Dern Spain, Dern Manger, and Doctor Dr Squirt
Were all sent from Cambridge to rub off their dirt,
Judge Bane, and the worthy old Counsellor Pe,
Join'd I was at once and went in with the rest
And thus they all said 'twas exceedingly good
For strengthening the spirits and mending the blood.
But, what is surprising, no mortal ever view'd
Any one of the physician gentlemen stew'd
I thought many a skillful and learned phisic an
With candour, good sense, and profound erudition,
Obliges the world with the fruit of his brain,
Their nature and hidden effects to explain,
Not one of the faculty ever has try'd
The excellent waters to cure his own hide."

Though the criticisms of Steele, Smollett, and Anstey were probably thoroughly well deserved by those to whom they were directed, it must not be supposed that all the physicians in Bath were tarred with the same brush. On the contrary, many of them were men of the highest standing and repute, hardly to be distinguished, as Barbeau says, from the best of their colleagues in London. Among them may be specially mentioned Dr Hurdley, ranked by Coleridge with Milton, Newton, and Priestley, Dr Cherne, of whom Popo said there was no honester man or truer philosopher, Dr William Oliver, a founder, and the first physician to the Mineral Water Hospital, Henry Harrington, renowned for his literary ability as well as for his knowledge of medicine, William Falconer, the physician to Pitt, who shares with Priestley the distinction of being the discoverer of oxygen. Last, but not least, of the eighteenth century physicians, we have Caleb Hillier Parr, who practised in Bath from 1780 to 1816, and whose contributions to medical literature, no less than his skill in practice, entitle him to rank as one of the most eminent physicians of his day.

Though time will not allow of any references to the many distinguished Bath patients in the eighteenth century, one may specially mention John Hunter, who paid visits in 1777 and 1778 for the relief of pain associated with the aortic aneurysm, which eventually caused his death. His condition being much worse in 1785, he hastened back to Bath, but became progressively worse, and died in London some months later.

Though the vogue of Bath remained undiminished during the earlier years of the nineteenth century, important changes were gradually taking place in its fortunes, both from a social and medical point of view. Increasing facilities for travel and the wider diffusion of wealth began to lead people further afield, and Bath gradually lost its unique position as the chief, and in fact the only, resort of fashion in this country. On the medical side changes no less striking were also in progress. Balneological treatment began to be carried out on much more serious and rational lines. The promiscuous treatment of all types of patient in a common bathing pool, open to the gaze of an idle and inquisitive public, ceased with the erection, in 1798, of private suites of baths, which were the forerunners of the present installation, and in which various forms of treatment could be given to suit individual cases. The study of hydrology was being actively taken up, both in this country and on the continent of Europe.

The work of Dr Cunniff of Liverpool, and later of Priessnitz in Silesia, called attention, in the first place, to the possibilities of effective treatment by the hot and cold application of ordinary water. Side by side with this development of hydrotherapy the study of the specific therapeutic properties of the various natural waters

steadily advanced, till eventually that branch of therapeutics now known as medical hydrology may be said to have gradually emerged from a form of empiricism, based largely on tradition and superstitious belief, to a recognized branch of scientific medicine.

I think we may justly claim that the work of this Association, in stimulating the study of medicine and the allied sciences, has contributed largely to the remarkable advances made in the treatment of disease during the last century. It is interesting to note that of the eleven names mentioned of those present at the original meeting at Worcester, when the Association was first founded, two are those of Dr Edward Bailow and Mr Soden, both of Bath, who that Bath supplied no fewer than six members of the original Council of the Association. It is further recorded that at the first Annual Meeting, held in Bristol on July 19th, 1833, Dr Bailow, who became President in 1838, gave "an address of a retrospective nature", so that ninety-two years ago, almost to this day, the original members of this Association were probably listening to an address given on almost the same lines as that which I have ventured to deliver to you to night.

A Lecture

ON

SOME INVESTIGATIONS OF SENSATION.*

BY

JOHN S B STOPFORD, M.D.,

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the University of Manchester

Of all the many research workers upon sensation, none have made such valuable and extensive contributions to our knowledge as Dr Henry Head, who has not only provided us with a new vision of the loss of sensibility following division of a peripheral nerve, but has demonstrated the whole sensory pathway from the end organs to the optic thalamus and sensory cortex. By devising measurable tests and employing these for study of each individual element of sensation, he has shown that such terms as "diminished sensibility" have no meaning, and if we examine accurately the sensory disturbances in cases where such terms have been used we commonly find that one or more elements of sensation are lost and others retained. The latter information, in the light of our present knowledge of the sensory pathway, is of value and primary importance for the purposes of diagnosis and treatment.

The classical experiment upon Head's own arm constituted the crucial test of his views upon peripheral sensation and established the existence of the two systems, epicritic and protopathic, in cutaneous sensibility. There appears to be ample evidence that these two systems are independent and do not depend simply upon a modification of the same system of nerve fibres and end organs. The most striking support appears in the reverse dissociations of the two systems which were discovered in his own hand. At the periphery of the area of sensory disturbance was found a strip where epicritic sensation was lost and protopathic retained, whilst a small triangular portion was also discovered where the condition was complementary, epicritic sensation being intact and protopathic lost. In my own investigations of sensation I have encountered the same complementary dissociations of the two systems. Further proof of the existence of the two systems is to be observed during the recovery after suture of a peripheral nerve, invariably recovery of the elements constituting protopathic sensibility occurs first and most completely, while epicritic sensibility returns at a later period, and as a rule makes a less perfect recovery.

To these two systems found in cutaneous sensation Head added a third—deep sensibility—which was capable of

responding to pressure, passive movement of joints, and pain caused by excessive pressure. He found that a patient endowed solely with deep sensibility possessed not only the ability to recognize a pressure stimulus, but also the power to localize it with remarkable accuracy. Furthermore, it was decided that "the fibres subserving this form of sensation run mainly with the motor nerves, and are not destroyed by division of all the sensory nerves to the skin." Our knowledge of deep sensibility is based almost entirely upon an investigation of the residual sensation in the experiment upon Head's own arm, and less attention has been given to it than to cutaneous sensation, only scanty information proportionately being available concerning its recovery after nerve suture. It has become almost the rule in clinical work to test only one element of sensation (recognition of contact of pressure) in order to discover whether deep sensibility is disturbed, and this has probably delayed advance in our knowledge of this important division. Owing to certain observations which I made in the course of routine examinations of patients with peripheral nerve injuries, it appeared advisable to make a full investigation of deep sensibility, following the fundamental principles enunciated by Head. In the time at my disposal it is only possible to set out very briefly some of the results of this research, and I shall therefore confine myself to three aspects of the subject.

I Residual Sensation after Division of a Purely Cutaneous Nerve

Head selected the radial and musculo-cutaneous nerves for his experiments because they are described by anatomists as purely cutaneous in distribution, and his investigation was primarily concerned with cutaneous sensation. From a careful study of the sensory loss after division of the musculo-spiral or radial, I have found that the distribution exhibited in Head's hand was exceptional, and that usually the radial nerve does innervate subcutaneous tissues. This was easily demonstrated in respect of recognition of passive movement, which element of deep sensibility was clearly defective in 12 out of 14 patients suffering from division of the musculo-spiral or radial nerves. Confirmation of this observation was obtained by a study of the residual sensation in four patients with division of both the median and ulnar nerves. These and similar investigations of the sensory loss consequent upon the division of other nerves seem to make it clear that no nerve of sufficient size to be of clinical interest, or to be selected for experimental work upon sensation, is distributed exclusively to skin. This makes it almost impossible to isolate cutaneous or deep sensibility, and complicates seriously investigations upon peripheral sensation. Furthermore, it is advisable for anatomists to delete in future the misleading qualifications "purely" or "solely" of such nerves as the radial.

II Innervation of the Deep Tissues

Head's work led us to believe that the subcutaneous tissues were mainly innervated by fibres which run with the motor nerves and reached such structures as the joints by following the tendons. Such a view appears to be true if we depend for our knowledge of deep sensibility upon the results of testing the recognition of pressure alone, since we find no loss of this element of sensation after division of the median or ulnar nerves at the wrist. If we investigate all the elements of deep sensibility under such conditions we discover that deep sensibility is grossly affected. After division of the median or ulnar nerve at the wrist it is found that the recognition of passive movements of the metacarpophalangeal and interphalangeal joints of the digits supplied by the nerve is as seriously disturbed as when the nerve is divided in the forearm or arm. Measurable tests also demonstrate that the power of localization is defective in the field of distribution of the nerve under investigation. It is probable that the other two elements of deep sensibility are also dependent to a considerable extent upon branches which pass directly from the nerve trunks to the tissues. There seems to be no doubt that deep sensibility is affected seriously by division of the median or ulnar nerves in the neighbourhood of the wrist, and Dr O M Dutrie, working in the anatomy department

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of this university, in a study of the loss of sensation in twenty patients suffering from division of tendons (uncomplicated by any nerve lesion), has recently confirmed this observation.

III Recovery of Deep Sensibility

From the study of the recovery of the deep sensibility after nerve suture in a large number of patients it has become evident that deep and cutaneous sensations are strikingly comparable. Just as Head found two stages in the recovery of cutaneous sensation, two similar ones have been found in the study of deep sensation. Two elements of deep sensibility (recognition of contact and pressure pain) recover early and very completely, as a rule during the stage of protopathic recovery, while the other two elements (localization of pressure and recognition of passive movement) recover later and less perfectly, as in the case of epicritic sensation.

When we notice the elements of sensation in both cutaneous and deep sensibility, which recover early and late, in connexion with Head's researches on the sensory cortex, we seem to get some light upon the problem as to why two stages in recovery are found. It has been suggested that protopathic sensibility recovers earlier than epicritic because the former is more primitive and regenerates at a more rapid rate. Such an explanation supposes some structural difference in the two systems, but Adrian has shown that it is highly improbable that there is any definite structural difference in the fibres concerned with protopathic and epicritic sensation. A simpler and more effective explanation is suggested when we take into consideration all the forms of sensation, in both skin and the subcutaneous tissues, which return during the later stage of recovery. The forms appearing late, and which more frequently exhibit imperfect recovery, are those which Head has proved to have cortical representation, while the forms which recover early and more completely and constantly are those which may be expected to persist after destruction of the sensory cortex. Therefore it appears more reasonable to discover an explanation of the two stages of recovery in the central nervous system, rather than to find it due to a different rate of regeneration of two sets of fibres which anatomically appear to be identical. After suture and regeneration of a peripheral nerve a much longer period must be expected to elapse before the fibres subserving cortical forms of sensation function correctly than in the case of the fibres conducting thalamic aspects of sensation, since a very much more complex readjustment and reeducation is necessary after regeneration in the former case than in the latter. This central explanation of the two stages in recovery also offers obvious reasons for the more perfect and complete recovery after nerve suture, of those elements of sensation which have thalamic representation.

Summary

To summarize the more important results of these investigations of deep sensibility, I would suggest

1 No nerve of sufficient size to be of clinical interest is distributed solely to skin, and in consequence it is practically impossible to isolate cutaneous and deep sensibility.

2 The principal innervation of the deep tissues is by nerve fibres which arise from the main nerve trunks and pass directly to the end-organs. The supply by fibres which accompany the motor branches and pass to their final distribution along tendons seems to be only supplementary.

3 It is necessary to divide deep sensibility into two systems, comparable to Head's subdivision of cutaneous sensation. Recognition of the contact of pressure and the appreciation of pressure pain recover early, while the recognition of passive movement of joints and the localization of a pressure stimulus recover late and less perfectly.

4 A more satisfactory explanation of the reason for the two stages of recovery in both cutaneous and deep sensibility is to be found in the central nervous system, from a study of those forms of sensation which are dependent upon the sensory cortex and the thalamus.

5 For a classification of the elements of sensation affected by division of a peripheral nerve the following scheme may prove serviceable.

I Cutaneous Sensibility

Thalamic (early recovery)—Discrimination of wider differences of temperature. Cutaneous pain.

Cortical (late and less perfect recovery)—Appreciation of minute forms of touch. Localization of light forms of touch. Discrimination of finer differences of temperature. Recognition of a compass point, etc. ultimately applied, as to.

II Deep Sensibility

Thalamic (early recovery)—Appreciation of contact of pressure. Pressure pain.

Cortical (late and less perfect recovery)—Recognition of passive movement of a joint. Localization of pressure.

A British Medical Association Lecture

ON

THE NERVOUS CHILD AS SEEN IN MEDICAL PRACTICE.*

BY

BIRNARD MALLS, C.M.G., M.D., M.R.C.P.,
PHYSICIAN TO INFANTS IN THE FOYAL WATELOO HOSPITAL

The nervous child may be defined as one who is capable of intense emotions which can be quickly aroused and over which he has insufficient control. His nervous system is unstable. This is made very manifest in sickness, and certain symptoms thus noticed may long act as a reminder. Guthrie states that individual instability may be shown in defective control of the lower nerve centres by the higher.

There are two types of the nervous child, which were called by Leonard Guthrie (1) the unrestrained emotional type, and (2) the restrained emotional type.

In the first type the child is as a rule thin and of slight build. The face is not infrequently pale, yellow complexioned, and dark lines may be visible beneath the eyes. Cameron has called attention to the nervous steeple which so many of these children adopt, in which the abdomen is very prominent, the shoulders thrown well back and the head slightly forward, lordosis is not infrequent, and winging of the scapulae is sometimes seen.

Although the nervous child appears to be a mass of animation and is possessed of restless energy, he tires easily. The vasomotor nervous system would seem to be a source of trouble in many cases, as instanced by the dusky looking hands and feet, and sometimes chilblains or even Raynaud's disease, and the quick changes of colour which may occur in the cheeks and lips. Tachycardia, precordial pain, tachycardia of a functional nature, abdominal pains, mucous diarrhoea, constipation, headache, and migraine, may be all due to vasomotor disturbance. Hyper-sensitiveness of taste, hearing, sight, smell, and touch are usually present, and especially the last named. No wonder that as babies they are difficult to feed. The intelligence may be normal or above, but occasionally it is below the normal average.

The nervous child is filled with restless energy, but unfortunately determination is not commensurate with his energy, and it is not difficult for him to be discouraged from his purpose. Difficulties seem to him to be greater than they really are. He may often enter into things with enthusiasm if the impulse so moves him, but he works with almost fierce energy for a short period and is only too ready upon the least feeling of exhaustion to leave his purpose uncompleted. It is strange, but this child, so often clever, is apt to be rather amiss in judgement and common sense. Trifles worry him, and yet he does not always appear to have it in him to do what is necessary to overcome the difficulties which cross his path. The child is generally timid, and in the majority of cases he will not protect himself if attacked by another child. Nearly every neurotic child is imaginative, fearful of trouble, and rather apt to believe in that which is superstitious. Many

Abstract of a lecture delivered to the Bournemouth Division of the British Medical Association on December 17th 1924.

The first raids were made between 8 and 9 years. In several cases the children were first terrified by screaming fits, frightful night terrors, sleeplessness, and unduly afraid of animals.

Of the 82 children whose symptoms were noted on the special nervous forms the following points were observed: Excitable 77, frightful 69, cried easily 63, timid 49, shy 48, emotional 63, sensitive to scoldings 73, dainty ways 43, considered delicate 34, dark lines under eyes 48, love of sympathy 47, impressionable 56, imitative 42, weak will power 14, jealous of the baby 16, likes to be the centre of attraction 41, love of attracting attention 44, egoism 25, ungovernable temper 31, stubborn 42, likes liberty of action 65, appears anemic 24, appetite *plus* 35, appetite *minus* 47, constipation 22, diarrhoea 7, vomiting 10, sucking difficulty (babies) 2, gastric pain and discomfort 32, grimaces and habit spasms 30, arithmomania 16, twitching and convulsions 17, spasmodic 5, stammering 7, thumb sucking 7, nail biting 29, nervous cough 25, feverish attacks 34, rheumatism 24, faintness 12, cardiac irregularity 5, fatigued easily 40, flushing and blushing 49, restless at night 53, dreams 53, teeth grinding 42, night terrors 39, day terrors 6, somnambulism 14, enuresis 14, afraid of people 11, fear of being animals 29, afraid of horses 28, afraid of the dark 39, afraid of alone 37, learns easily 61, slow intelligence 15, pica 3, katatonia 3, hysteria 1, nervous stance 3 (it is probable that the nervous stance is more frequent than stated here), air-swallowers 6, No tongue-chewing thigh friction etc. or stigmata of degeneration were noted in a certain number but the mothers are likely to be present in some of these things. Negativism is a prominent feature in some of these children.

Examination of the

In the medical

Examination of the Nervous Child

Examination of the Nervous Child

In the medical examination of the nervous child it is advisable for the doctor to make a point of taking as little obvious notice of the child as possible, although he should closely scan the little patient to observe the smallest points of interest. If the child thinks that he is being made the subject of a close investigation he is apt to become an obstructionist, cry, or go off into a fit of temper. The more he is ignored the more natural he will

be and the more easy the examination becomes, therefore the more that can be learnt. A few explanatory words to the mother beforehand will be sufficient for her to understand the method of procedure. This method also teaches the mother in object lesson in that she will see that instead of promising the child a chocolate or some treat for being good the child is simply ignored, promised nothing, and expected to be good because it is his duty to be so. Nothing should be said in front of him except that which is desirable and mentioned on purpose for his edification. The real talk to the mother should proceed only when the child is taken out of earshot by the nurse.

In Sickness

Probably no child is a greater source of trial to medical men than the nervous one in sickness. If unrestricted and always given in to his will, unless severely ill or too weak to make himself heard, indulge in the antics of the pronounced obstructionist. Things will not be made easier if the mother or nurse has been in the habit of stringing the child at not infrequent intervals that should it not do as it has been told she will send for the doctor. It is a matter of great importance to enter the sick room of a nervous child without taking any special notice of him and quietly and gradually proceed to examine his organs while ignoring any protests which may be manifested, as if the child was really not in any degree refractory. One can definitely state that this method practically always succeeds.

Some nervous children get active delirium upon any marked rise of temperature. No prescription should be written to please the mother because she is overanxious. Such a matter needs a little sound common sense talk from the doctor as to the method of procedure. Whether a nervous child be well or sick it can be made to do almost anything and submit to treatment if it be represented to him as a game and a privilege. If a nervous child be seriously ill he will readily enough submit to treatment. No matter how often a nervous child may have slight illnesses or pyrexia, it is necessary to exclude every likely possibility whenever he is sick, lest the cry of wolf be made once too often.

In the nursing of such a child it is wise to have a nurse who is a stranger and not one of the family. She should be a well-bred and regenerated member of a quiet democratic, upper middle class family with a good, trained, sensible children's nurse of middle age, quick understanding, and common sense, a sufficiency of determination interwoven with firmness, sportsmanship, and absolute self-control. The lesson taught by such a nurse bears good fruit and augurs well for the future if the same method be persevered in after recovery.

At School

The question often arises, Should the nervous child be sent to school? and unless the child in some way be mentally affected, physically unfit, or if a suitable school be not available, I think the answer should always be yes. Where a suitable school, schoolmaster (or schoolmistress in the case of girls), and staff are available there is no question that the nervous child is much better off there. He should be sent as a boarder at the age of about 8 to 10 years. He needs plenty of fresh air, hygienic surroundings, good light to read by, a sufficiency of exercise without being allowed to become exhausted, adequate sleep, not too much mental work, but the usual amount is generally well within his powers as he works quietly. It is necessary that he have a sufficiency of good food, which he must be taught to eat slowly and not to bolt, and, perhaps one of the most important things of all—suitable manly boys in the one case, and fine sensible quiet type of girls in the other. Undesirable companions must be kept away from this type of child as he is so impressionable, more especially when he is reaching the age of puberty. Well trained, with a little encouragement and with the knowledge that he can approach the schoolmaster for a heart-to-heart talk whenever it seems desirable, such a child can be made into a fine creditable specimen and gain that self-control which is essential to the evolution of the manly boy or the sensible, mentally balanced girl.

Defects of sight and hearing, should be efficiently treated, the memory should not be overtaxed nor the mind bored by too much of one subject. Children probably learn with little effort those subjects for which they have talent, but nervous children should not be allowed to work for too long at a time. Indeed, these children should neither be encouraged nor allowed to overwork. Mental overstrain may be accentuated by overwork, failure with its disappointments, or apprehension of failure. Ambition thwarted may also lay bare undesirable traits, such as hatred and jealousy of rivals. There may be severe headache which would require treatment.

He learns "to play the game" at school, to speak the truth fearlessly, to be absolutely honest, to perform services for others, to play for his side and school and forget his own interests when they are opposed to those of the school, self-sacrifice, manliness, self-control, and *esprit de corps*. No child needs more to learn "the other man's point of view" and all these wholesome lessons than the neurotic child. The games, the outdoor life, the boy's excursions, and good companionship will make a man of him. Neurotic girls can safely be sent to a suitable boarding school at the age of 12 to 14 years. Previous to this arrangement it is wise in some cases for the girl to go to a day school, more especially where the Montessori system obtains and in others to have a governess of the right type at home.

General Lines of Treatment

We must keep in mind here that wherever we cannot change the neurotic disposition of the nervous child for a placid one, we can teach the child self-control. As the mother is practically always neurotic, she should carry out self-control upon herself in order that her child, full of imagination, and very impressionable, may copy from her that absolute requisite—self-control. Should the environment be impossible, it is wise either to place the child under a suitable nurse or person in the home, or send the child away to a relative or friend in the country who possesses the necessary qualities to bring him up. Later on a suitable school is selected to carry on the good work.

Corporal punishment is not likely to be successful in the case of neurotic children, as they are sensitive, impressionable, and often very aware of their own peculiarities or shortcomings, gentler ways are conducive to much greater success, and save much heart-breaking. Confidential chats with the right person and good example are much more beneficial. Let us repeat here that suitable companionship is essential in order to produce the best effect, an undesirable companion to a neurotic boy or girl spells great danger.

During infancy a neurotic baby is apt to be awkward in taking the breast. He should be handled little, kept quiet in a room without a too strong light in it, and encouraged to sleep peacefully in a warm cot free from draughts, from whence he should be brought to the breast before he is fully awake. Digestive difficulties are apt to appear early, as their taste is very sensitive, and therefore much caution and care are required to get and keep the infant on breast milk, and, failing that, on a milk mixture which does not vary in taste. It is best to accustom nervous babies from the first to an exact well regulated routine if possible. For sleep the room should be made dark and the cot warm. Quietness is essential. I am convinced that from a very early age a baby takes its cue from its mother's face as to who is to be master. It must not be the baby.

After 2 years of age discipline is essential, and is chiefly attained by good example, fairness, firmness, honesty, sportsmanship, and understanding. We bring up and educate our children with the intention of making them worthy citizens, and in time good husbands and wives, fathers and mothers. In this we must fail to a certain extent, for by no means all fathers and mothers, perhaps especially the latter, are fit to bring up their children. We do not desire the severe discipline dear to our grandparents, nor the laxity and sporting too frequent to day. It is well not to be always on the outlook for faults, better sometimes to pretend not to see them. These children should always be taken quietly and without getting angry, or they will be only too apt to lose respect for their instructors, even if they be the parents. Commence the right methods early,

so as not to lose the most impressionable time of their lives. Should you have to break your promise to a child tell him frankly the reasons which made it necessary, and he will understand and appreciate the confidence. Never give away or scold a nervous child in public, always have heart-to-heart talks when no one else is present. A little encouragement is essential, and credit for good qualities should be given wisely.

Mens sana in corpore sano is a motto specially suited to the nervous child, for generally speaking the fine physical condition of the athlete is a help to the building up of a well trained mind upon which to inculcate that priceless quality most necessary to the neurotic child—self-control. On such a child it will not be difficult to impress moral lessons and good example.

Every child should be instructed in the meaning of sex so that the subject is learned in a clean and wholesome manner from the parent and not picked up in an objectionable form from another child or other source. The great danger is ignorance and pollution. The subject should be gently approached and shown by biological references to be one of the utmost purity. A beginning will probably be made at about the age of 8, the subject will again be referred to occasionally from time to time, and then if at puberty high ideals and good example be shown there will be little likelihood of foul thoughts, masturbation, and other objectionable things worrying the child. It is the neurotic that particularly needs instruction and example.

There can be no doubt that infinite harm resulted from the one-time popular methods of placing neurotic children in a dark room, in which they were semi-starved, threatened, shouted at, and whipped. Such methods were barbarous.

Treatment of Certain Conditions

In treating vasomotor symptoms potassium bromide and streptamine are invaluable, especially for headache. Sometimes it is advisable to add small doses of liquor arsenicalis. For an actual attack of migraine a dark room, quietness, and phenazonum or aspirin are invaluable. Tics should be treated by creating a quiet environment, pretending not to notice the movements unless occasionally in a kindly way, and the administration of bromides and valerian. Any source of worry should be removed. Tonsils and adenoids needing treatment should be attended to at once.

Sleep.—Many nervous children are light sleepers. They may be restless on going to bed, and the activity of their brains is only too apt to prevent deep sleep. Avoidance, as far as possible, of disturbing and distressing scenes during the day, more especially the latter part, the carrying out of a healthy regime, a well ventilated night nursery with dull dark blue walls, are things of importance. Everything should be done to prevent mental worries or torments occurring during the day at school or at home. The child must be taught to forget himself in the street and learn to observe closely and be interested in his immediate environment. It may be advisable to remove him from school for a week or two. The child ought to be quietly put to bed at night in a night nursery with the window partly open, and at least two hours after tea. This should consist of digestible food only. Nothing tight must be placed around him, and sufficient but not too much clothing over him. If a night-light can be done without all the better. Holding the child's hands while it goes to sleep is not called for and is a waste of time. No one should stay in the room with him, but he should be aware that someone is in an adjoining room. If a child should dream or have night terrors a soothing hand placed on the child and a few words of assurance should be wakened up will tranquillize his mind, and he will soon fall asleep again. Sometimes a dose of bromide is advisable at bedtime for a few nights.

Somnambulism occurs in an appreciable number of neurotic children. The food, the bowels, the daily routine need inquiring into and adjusting if necessary. It may be advisable to tie a bandage or cord to a belt secured at the back of the child, the cord being then fastened to the foot of the bed.

Anorexia nervosa is quite easily cured if the right person adopts the right methods. The child often acts the part, and knows that by refusing food it causes consternation to his mother and nurse, if satisfaction to himself. It is advisable for the mother or nurse to speak to the child alone and agree to have "a secret" with him, by which "he is to eat as much as he can at every meal for a whole week and give everyone a surprise." He loves the secret and the performance of something which will call forth surprise and praise at his achievement. Once successful, he feels that he must live up to his new reputation. If for some reason success is not realized, it is well to arrange for the child to be removed to a suitable nursing home with the right nurse in charge of him. Digestible food should be daintily served. The mother will be surprised at the good result.

High Temperatures.—These may be due to a serious condition, a slight one, or to no discoverable cause. The last mentioned is not infrequent, but in a number of such cases slight tonsillitis is present. Pylitis, otitis media, throat affections, chest trouble, an oncoming illness, etc., must always be first excluded. Causeless temperatures are likely to recur. They can be treated by rest in bed, milk of magnesia, and small doses of bromide and salicylate.

Mental and physical fatigue are easily produced but soon recovered from after a short period of rest, when once again the child feels full of energy. As little as possible should be made of this in his presence, or indeed of any symptoms from which the child may suffer.

Enuresis.—Before treating as neurotic it is necessary to eliminate all other likely causes, such as diabetes mellitus or insipidus, chronic interstitial nephritis, pyelitis, affections of the bladder and urethra, epilepsy, drinking too much water, worms, endocrine deficiency, certain diseases of the nervous system, etc. The urine should always be carefully analysed and microscopically examined. Should the enuresis be due to the neurotic condition of the child the following procedure is useful irrespective of whether or no drug treatment be adopted. Suppose a child is passing urine at half-hour intervals during the day, he should be encouraged to hold his urine for longer periods, at first for three-quarters of an hour, then one hour, gradually lengthened until the intervals reach two to three hours. The bladder will become accustomed to retain urine for longer periods, and the habit of nocturnal enuresis will be greatly lessened. In addition, it is a good plan for the child to repeat to himself deliberately three times immediately after saying his prayers "Willie (or Mary)—will—not—wet—the—bed—to-night." Whether the child gains confidence from this or an effect is produced on the higher controlling centre over the lower I do not know, but it is certainly often successful. Scolding is harmful and encouragement most helpful. It is well considerably to restrict the amount of fluids drunk after tea. Waking up the child to pass urine half an hour before the accident occurs is often a useful procedure for a week or two. Obviously any abnormal condition present would receive appropriate treatment.

Headache and Migraine.—Every likely cause, such as errors of refraction, enlarged tonsils and adenoids, constipation, etc., must first be looked for and, if present, treated. Then the environment, school conditions, and daily routine need careful consideration, and must, if necessary, be regulated to suit the case. For a bad attack bromide or phenazonum with rest in a quiet darkened room is a valuable procedure.

Finally, let us bear in mind again that we desire to bring up our neurotic children in such a way that their best and most desirable qualities are accentuated in order to obtain the results conducive to success in life, while eliminating, diminishing, or keeping in check undesirable traits. Once a neurotic probably always a neurotic, but when the neurotic child has obtained full self-control not much fear need be entertained in the vast majority of cases as to his future. Hence the tremendous responsibility of parents, guardians, and schoolmasters.

During the late war a certain British general, after talking to an officer in charge of a battery of artillery, walked away to a spot about 150 yards distant. As soon as he

arrived there a shell fell at the feet of the artillery officer, literally blowing him to pieces. So great was the immediate shock produced on the general that he felt an almost overwhelming desire to bolt for his life. His nerve had completely left him for the moment. However, it so happened that he had been brought up from early childhood to have complete control of himself. It then flashed through his mind that, if he acted according to his first impulse, he would suffer severely from shell shock and be of no further use during the war. He therefore determined to remain, and, pulling himself together, quietly walked over to the spot where he and his brother officer had stood a few minutes previously. He stood at attention for five minutes, regained his nerve, and fought to the end of the war without suffering from shell shock. It is this self control and sense of duty which we must endeavour to inculcate into every nervous child.

THE INCIDENCE OF ARTERIO-SCLEROSIS IN THE ARTERIES OF THE BODY

BY

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THE following investigation was undertaken to ascertain which vessels in the body were most frequently and most extensively affected with arterial degeneration. The material examined was obtained from the dissecting rooms in the University of St. Andrews. The bodies were in an excellent state of preservation, and each was over 50 years of age. The method adopted was to dissect the arteries free from surrounding tissues, and to make a naked eye examination in both longitudinal and transverse section. It is not possible to conduct an examination of this nature in the post-mortem room. Complete records of the incidence of arterio-sclerosis have not hitherto been published from dissecting rooms.

The pathological changes of which I took note were hardness and thickness of the vessel wall, the result of fatty or calcareous degeneration, a state which rendered the artery less capable of performing its proper functions.

With the naked eye there were seen projections of the inner coat, oval or circular, of a more opaque or yellow colour than the surrounding tissue. The patches, which were sometimes raised, varied in size from a hempseed to a shilling. In a few of the vessels the earliest naked eye change was linear streaking. In many the intima was quite smooth, but on peeling it off a thickening of the media (with calcareous degeneration) was found. I did not make any distinction between sclerosis which commenced in the media or intima, as the established disease in either coat was almost invariably associated with secondary changes in the other. The changes which I took note of were observed by inspection and palpation, and included arterial decay of any form and from any cause.

Rokitansky and Lobstein, Thoma, Bellinger, and Clifford Allbutt have all conducted a similar investigation, but for certain reasons a complete examination of the body was not carried out. Clifford Allbutt reported, in his *System of Medicine*, that he examined 1,600 cases in the post-mortem rooms of Charing Cross Hospital, but only 380 were found to exhibit arterio-sclerosis, but then, "for some reason or other in 1,200 complete examination was not made."

I carefully made a naked eye examination of all the arteries in eight bodies with the following results:

ABDOMEN

The Abdominal Aorta (seven examined).—Atheroma was extensively present in six of the seven arteries examined, and the changes were more advanced in this vessel than in any other in the body. Only one did not show atheroma.

The Superior Iliac Arteries (fourteen examined).—Ten of them and markedly atheromatous, especially in their upper schoolmaster (remaining four were not involved).

desirable, such *the Hypogastric Arteries* (fourteen examined).—The specimen and girl were more subject to atheroma than the to the involvement of the fourteen examined were markedly balanced girl. is on both sides we are affected to much

the same degree. In one of them the orifice was very much narrowed, and there was an aneurysm and dilatation of the vessel just beyond. I am not sure that I have seen any other changes.

The External Iliac Arteries (fourteen examined).—Only one of these showed a well marked atheroma. Five showed a few small patches, and six were quite free.

The Coeliac Artery (seven examined).—Three of these showed patches of atheroma, with consequent narrowing of the orifices of the branch vessels. Four did not show any atheroma.

The Superior Mesenteric Artery (seven examined).—In four specimens the artery was narrowed at its origin by sclerosis, but a very prominent feature in my analysis was the comparative freedom from atheroma of the greater part of the main stem of the vessel, and the branches into which it divided. Only in one ramus did I find a single patch of atheroma, and only in one subject was the main stem markedly affected.

The Inferior Mesenteric Artery (seven examined).—Except in one case the artery was absolutely free.

The Hepatic Artery (seven examined).—This vessel was extensively atheromatous in one case only, and in all the others it appeared to be healthy.

The Renal Arteries (fourteen examined).—Ten of these showed a moderate degree of degeneration. Four were not involved.

The Splenic Artery (seven examined).—Four showed fairly extensive atheroma in the main stem of the vessel. The orifices of the pancreatic branches were involved.

The Pudendal Arteries (fourteen examined).—Eleven of these showed atheroma in an extensive degree in the pelvic part of their course.

The Superior Gluteal Arteries (twelve examined).—None of these were very markedly affected. Their walls were extensively sclerosed, and the affection was usually bilateral.

The Inferior Gluteal Arteries (ten examined).—Six of these showed patches of atheroma, but they were not so much affected as the superior gluteal arteries. The remaining four were not involved.

HEAD AND NECK

The Common Carotid Arteries (sixteen examined).—Just as the aorta was markedly atheromatous at its bifurcation so the common carotid was extensively involved in the region where it divides into internal and external carotid branches. At its origin on the right side from the unominate patches were plentiful. The main trunk was found to be patchy, but in a much less degree. Location of the sixteen arteries examined showed atheromatous changes.

The External Carotid Arteries (sixteen examined).—Only three of these showed atheroma to a moderate extent, the remaining thirteen did not show any.

The Internal Carotid Arteries (sixteen examined).—This vessel in the neck and carotid canal was subject to a very small amount of atheroma. The part of it which lay in the cavernous sinus was affected extensively. In eleven of the sixteen arteries examined this part of the vessel was affected with dense plates of calcareous degeneration and was frequently sacculated.

The Subclavian Arteries (sixteen examined).—In eight of these atheroma was very marked. Usually the first part was more involved than the second or third part. Four vessels did not show any.

The Superficial Temporal Arteries (fourteen examined).—Contrary to my expectation this vessel was affected on the scalp in only two of fourteen examined.

The Internal Maxillary Arteries (eight examined).—Only two of these showed small deposits of atheroma.

The External Maxillary Arteries (ten examined).—Two of these on the face showed atheroma, and all the others were free.

The Vertebral Arteries (eight examined).—Two of these showed a large patch near their termination. Four were not affected.

The Basilar Artery (four examined).—In two of these atheroma was very well marked, two were not affected.

The Anterior Cerebral Arteries (eight examined).—Two of these showed atheroma, and six did not.

The Middle Cerebral Arteries (eight examined).—Four of these showed atheroma, and four did not.

The Posterior Cerebral Arteries (six examined).—Two of these showed atheroma, and four did not.

THE EXTREMITIES

Lower Limb

The Femoral Arteries (eight examined).—All showed well marked atheroma both in the femoral triangle and in Hunter's canal.

The Profunda Femoris Arteries (eight examined).—In one the artery was extensively involved, in five moderately, and in two it was healthy.

The Popliteal Arteries (eight examined).—All showed well marked atheroma, which extended to the termination of each vessel and involved the origin of the tibial vessels. In two

cases the popliteal artery was more severely affected than the femoral.

The Posterior Tibial Arteries (six examined).—Five of these were affected, three of them very extensively throughout their whole course, causing great narrowing and almost complete occlusion in some parts of the vessel. Only one was healthy.

The Peroneal Arteries (five examined).—Four of these were affected, two extensively, and the other two to a less extent. They were involved in the same bodies as the posterior tibial.

The Anterior Tibial Arteries (four examined).—Two were affected and two were free. These vessels are not so much involved as the arteries in the posterior crural region.

The Plantar Arteries (eight examined).—Beyond slight involvement of one lateral plantar at its origin from the posterior tibial artery, the vessels in the sole of the foot appeared healthy.

The Dorsales Pedis Arteries (four examined).—Two of them were extensively sclerosed, and two were not involved. The affection was most marked at the origin of the artery in front of the ankle joint.

The Medial Circumflex Arteries (seven examined).—These arteries were moderately affected in five of the seven examined.

The Lateral Circumflex Arteries (five examined).—This vessel was much less involved than the former. There was a small patch in one artery only.

Upper Limb

The Axillary Arteries (twelve examined).—Only one was extensively affected, two were moderately involved, there were small patches in three others.

The Brachial Arteries (twelve examined).—Beyond a small patch in one they all appeared quite healthy.

The Radial Arteries (eleven examined).—Only in two was the artery affected, and it was limited to a part three inches long just above the wrist joint. Eight were unaffected.

The Ulnar Arteries (twelve examined).—Only one of them had patches of atheroma, and it was limited to a part two inches long, just proximal to the wrist joint.

The Palmar Arch was not affected in any of the twelve specimens examined.

THORAX

The Pulmonary Artery (four examined).—I did not find atheroma in these vessels.

The Ascending Aorta (four examined).—Only one moderately affected, three were not involved.

The Arch of Aorta (four examined).—Three were involved to a small extent.

The Descending Aorta (four examined).—Three showed atheroma, one of these being very badly affected.

The Innominate Artery (six examined).—Four were markedly sclerosed, and two were not involved.

The Right Coronary Artery (four examined).—Three of these were affected to a moderate extent.

The Left Coronary Artery (four examined).—One was very badly affected, two were slightly involved and one was free.

The Mitral Valve (four examined).—Three were affected, one extensively on both cusps.

The Tricuspid Valve (four examined).—I did not find any signs of atheroma on this valve.

Medium sized arteries such as the lingual, external maxillary, superior thyroid, inferior epigastric, palmar, and plantar, did not present signs of degeneration which could be seen with the naked eye.

SUMMARY

In any one body the distribution of arterio-sclerosis was variable. Its presence in one artery was no indication that arteries in other regions would be involved.

The abdominal aorta, common iliac, femoral, and popliteal arteries were more frequently and more extensively affected than any other vessels in the body.

The internal iliac arteries were more commonly involved than the external iliac arteries.

It was a striking fact that the mesenteric arteries were seldom the seat of degeneration. In one instance only was the inferior mesenteric artery affected.

The prietral vessels in the pelvis, especially the gluteal and pudendal arteries, were affected to a very marked degree. They offered a comparison with the visceral branches in the pelvis, which were seldom involved.

The portion of the internal carotid artery which lay in the cavernous sinuses, and the part involving its bifurcation into anterior and middle cerebral arteries, frequently presented arterial degeneration of a very advanced degree. The vessel wall in this region was usually sacculated. Compare that with the cervical portion of the internal

carotid, which was subject to a very small amount of degeneration.

The vessels of the lower limb were more frequently and more extensively affected with arterio-sclerosis than those of the upper limb. In one specimen only was the axillary artery markedly involved, and only in one brachial artery was a small patch of degeneration present. A very different condition was found in arteries of approximately the same calibre in the lower limb, where the femoral and popliteal arteries were extensively affected.

The radial arteries (when involved) showed degenerative changes just above the wrist-joint, but were not affected higher up.

The tricuspid valve and pulmonary artery were not implicated in any of the specimens which I examined. They offer a striking comparison with the mitral valve and thoracic aorta, both of which were found to be a frequent site of degeneration.

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Reviews.

DISEASES OF THE PANCREAS

GROSS and GULEK, in a treatise on the diseases of the pancreas,¹ have endeavoured to present a complete account, both from the medical and the surgical point of view, of our knowledge of the subject at the present time. Although based on the authors' own experience, the book gives consideration to the views of others, and, apart from being a storehouse of facts, indicates the present movement of thought in this branch of pathology. Comparing our knowledge to-day with that of twenty years ago, the authors have to confess that progress has been slow as compared with the advances made in some other branches of medical science, and the nature and treatment of many diseases of the pancreas still remain as obscure as they were at that time. In dealing with the subject of acute haemorrhagic pancreatitis, or acute necrosis of the pancreas, as the authors consider it would be more accurately termed, the various theories of the cause of death in that disease are discussed, and the view is adopted that it is due to poisoning by absorption of the pancreatic secretion. It has been shown that the implantation of sufficiently large portions of pancreas into the peritoneal cavity leads to death accompanied with all the symptoms of acute haemorrhagic pancreatitis, and a similar result is obtained if, by section and reimplantation of one of the ducts, part of the pancreatic secretion is diverted into the peritoneal cavity. Some further observations of Gross and Bergmann, to whom this view is due, tend to confirm it, for they discovered that an active immunity could be established by preliminary injection of increasing doses of typsin, the fatal issue and the necrosis of the organ being thereby prevented. With regard to the treatment of acute haemorrhagic pancreatitis, although slight cases may recover while severe cases without operation are almost always fatal, it is unfortunately impossible to distinguish between them with any degree of certainty, or to be sure that a mild case will not have fatal sequelae. The authors therefore make it a rule to operate in all cases, and to operate as early as possible, irrespective of the existence of shock, which, in cases of any severity, persists till death. The aim of the operation being to relieve the tension in the pancreas and to drain off the exudates, a median incision in the epigastrium is recommended as leading most directly to the organ and permitting a survey of it and its surroundings in their entirety. Stress is laid on the importance of relieving the tension in all parts of the organ, and not merely in the obviously diseased portions, and of draining through the small omentum as well as through the omental sac and transverse mesocolon. During the last ten years the mortality after operation has declined from 60 to 56 6

¹ *Die Erkrankungen des Pankreas* Von Dr. O. Gross und Dr. N. Gulek. Enzyklopaedie der klinischen Medizin. Berlin J. Springer 1923 (Sup. pp. 8vo pp. viii + 385 66 figures. Paper cover 6 45 dollars bound 7 90 dollars.)

per cent, and further reduction can only be looked for in the direction of an earlier diagnosis of the disease.

With regard to carcinoma of the pancreas, Culcke has collected records of twenty-four cases of partial or "total" resection. The mortality after these operations amounted to 50 per cent, and of the patients who survived none lived longer than six months. The only defect to be detected in the book is the somewhat brief reference to the insulin treatment of pancreatic diabetes, excuses for this are offered in the text.

PREPARATION OF THE PATIENT FOR OPERATION

"To lessen the risk of operation" is a literal translation of the title of a small work written by DETAIL in LANSBURG under the conviction that the failure of operations is more often attributable to a lack of attention in the examination and preparation of the patient than is generally supposed. If the primary responsibility for the success of an operation rests on the surgeon, the duty of the physician is by no means merely subsidiary. The author points out that the operative risk depends more or less upon him, he is responsible for having examined and ascertained the condition of the patient, and it is by his collaboration with the surgeon that the resistance of the patient, upon which in the majority of cases the success of the operation depends, is sufficiently sustained. The author has accordingly collected together, in a small compass and in a convenient form, directions on all those matters which are accessory to the operation itself, and which, if neglected, lead to failure.

The first part of the work deals with the methods of estimating the patient's power of resistance. Details are given of the means of gauging the functional efficiency of the liver, kidneys, circulatory system and blood, and of the measures to be applied to correct functional derangements. The second part deals with the choice of the anaesthetic and the technical details of its administration, the third with the preliminary treatment of infected patients. In this the objective is stated to be the promotion of the defensive reactions of the organism and the measures recommended are the stimulation of phagocytosis by the injection of colloids, the sensibilization of the phagocytes by injections of vaccines, the neutralization of toxins by means of specific serums, and the promotion of their elimination by means of the administration of uroformine (hexamine). As an adjunct to local disinfection after the operation, discontinuous irrigation by Cajal's method as applied to various regions and organs of the body is described. After a chapter dealing with the sterilization of dressings and instruments, the prophylaxis and treatment of operative shock and haemorrhage are considered in part four, which is almost entirely devoted to the technical details of blood transfusion. The book is illustrated with numerous figures.

THE CHILD AND HIS PROBLEMS

In a little book, *The Child and his Problems*,³ Dr ALICE HURCHISON discusses a few of the difficulties which parents must face. Dr Crichton Miller in a foreword praises the avoidance of theories and technicalities in the text, thereby commending it to people who have no training in psychology. The opening chapter deals with sunshine, air, water, bodily functions, diet, digestion, and sleep, as they affect the growing child, and the importance of habit formation with regard to them is insisted upon. The author holds that, especially in dealing with children, example is better than precept, she expresses the belief that in the majority of us the child remains very slightly modified, and that it is only the minority who grow up. It follows, if we accept this statement, that if we wish to know and understand the child it is helpful to study ourselves, and, conversely, a study of the child will teach us much about ourselves.

Four Diminuer la Risque Opératoire Par Dupuy de Frenelle Paris
A. Maloine et Fils 1924 (Cr. 8vo pp. 338 51 figures Fr. 15)
The Child and his Problems By Alice M. Hutchison M.D. Edin
W. F. C. Laidlaw With a Foreword by Dr Crichton Miller London
Williams and Norgate Ltd 1925 (Cr. 8vo pp. viii + 168 2s net)

The abnormal child is dealt with under the headings of "difficult," "only," and "nervous." The doctor's advice may be sought in dealing with children who fall into these categories, yet it is the parent who have to deal with them daily, and on whom they must depend for help in overcoming their difficulties. Meaning in discipline and the value of punishment are dealt with at some length. I may be asked whether, in the dictum of some paedagogues and child psychologists, "a child must never be punished in anger," there may not lurk a danger. Most children are exasperating at times, and is there not such a thing as a "righteous anger"? Parents get angry at times, being human is no credit to be given to the child for his love and understanding of his parents. One of the most beautiful things to be observed in children is the way they forgive their parents. The author does not discuss this side of the question. One chapter is on the banishment of fear, which may become a great handicap in life, and another on the formation of habits, a few words are said on the vexed question of religious education of the young.

The study of childhood has advanced by leaps and bounds since the early Victorian days, when almost every childish impulse was repressed, and such impulses as unconsciously their elders very severely so. Now, it is recognized that harm may be done to the child by repressing impulses in the wrong way and at the wrong time. So much is talked and written of the possibility of causing hidden complexes that parents anxious to do their utmost for their children may well feel that omniscience is demanded of them. Those who feel this anxiety would do well to read Dr Hutchison's book, for therein they will find help and guidance.

NOTES ON BOOKS

KLEMMER's work on bacteriological and serological technique⁴ is designed as a *tabulae inveniendi* to be placed on the laboratory table as a book of reference. It professes to furnish information on every technical detail, from the most simple to the most complicated. It will be of use, therefore, to the general practitioner who has little experience, as well as to the research worker who requires information on recent developments and improvements. In a book intended for reference the arrangement of the subject matter is of prime importance, and the author has taken pains to present the subject in a form which renders any required detail rapidly accessible. In this connection a good index is indispensable, but in addition to this a very well prepared table of contents has been provided, which gives the geography, as it were, of the book at a glance, not merely as regards chapters and sections, but also as to paragraphs. This table facilitates reference to a notable degree. With regard to modern improvements, the author has selected from the enormous literature of the subject such methods as appear to him to be of fundamental importance, and has in most cases given a reference to the original papers. The descriptions are terse and theoretical discussions are omitted. The book is adequately furnished with good illustrations.

⁴ *Technik und Methodik der Bakteriologie und Serologie* Von Professor Dr. M. Klemmer Berlin J. Springer 1923 (Med. 8vo, pp. vi + 520 223 figures 11s. 6d.)

MEDICAL AND SURGICAL APPLIANCES

X Ray Generators and Accessories
MESSRS. WATSON AND SOXS (Electro Medical), Limited (43, Parker Street, Kingsway, London), have sent us a copy of their general catalogue covering the whole field of x ray generators and accessories. We note in one section the formidable list of items in a complete installation for a radiological department, with apparatus and materials for diagnosis, dental radiography, and superficial and deep therapy. The total cost is £2,255, the shipping and delivery in London is £266 10s. Among the newer pieces of apparatus listed is a hospital transformer outfit for generating x rays, a portable x ray outfit, which although it reaches as high a figure as 90,000 peak volts can be connected up with the ordinary domestic lighting circuit and a constant tension apparatus for include a new form of barium meal said to be indistinguishable from blance mange and a new pattern of Potter Bucky diaphragm in which the travel of the grid during exposure is so arranged that but interesting section dealing with radium.

CONVENTION OF ENGLISH-SPEAKING OPHTHALMOLOGICAL SOCIETIES

OPENING CEREMONIES

THE Convention of English-speaking Ophthalmological Societies, under the presidency of Mr THURGOOD COLLINS, to the assembly of which in London last week reference has already been made, was formally opened in the Memorial Hall, University College, on July 14th, by the Right Hon NEVILLE CHAMBERLAIN, Minister of Health, who offered to all the delegates from overseas a cordial welcome, and congratulated the profession in this country upon the energy with which it was organizing upon a national scale for the preservation of the most precious of all the special senses.

The AMERICAN AMBASSADOR, on behalf of the visitors, thanked the English organizers for their cordial welcome and their warm hospitality. Delegates from the various ophthalmological societies taking part in the congress were then presented to the Minister.

After the presentation of the Nettleship Prize to Professor Whitnall of Montreal for his classic work on the anatomy of the orbit, and the investiture of the President by Mr W T Holmes Spicer with the new Crichton Memorial Badge, Mr TREACHER COLLINS delivered his presidential address on the elimination of eye disease. He drew a hopeful picture of progress in the past, but much remained to be done. He made many interesting and arresting suggestions for the future, and pointed out that prophylactic endeavour should not only be national but international, for disease was the common foe of all nations, and active co-operation on the part of all of them was required to build up a healthier, more moral, and more intellectual man.

THE BOWMAN LECTURE *Foundations of Vision*

The Bowman Lecture, which was delivered by Sir JOHN PANSONS, C B E, F R S, formed the outstanding contribution to the proceedings of the convention. Choosing as his subject the foundations of vision, the lecturer evolved and elaborated the thesis that the physiological processes concerned in vision, the anatomical basis of these processes, and their psychological counterparts, could be divided into two great groups—protopathic and eperitic, and, further, that the conception was not limited to vision and to ophthalmology, but embraced the whole domain of the physiology of the senses, and the psychology which is the conscious expression of that physiology.

The protopathic response was the more primitive and undifferentiated, of essentially utilitarian, vital import (that is, concerned with processes on which survival and existence depended), and possessed that potential plasticity which permitted of differentiation along many lines. The eperitic was differentiated and evolved from the cruder protopathic. It was of gnostic import, and while retaining many of the characteristics of the protopathic response, provided an active dynamic plasticity in a narrower field, inasmuch as it was endowed with a richer and more sharply defined cognition. This conception of a dual mechanism was supported by anatomical observations and physiological experiment on man and the lower animals, and by clinical observations. Very low down in the animal scale the most primitive visual organ, a single receptor cell, responded to incident radiation by one primitive indubitable response—a motor, directional one. This, the fundamental protopathic response to light, was traced in its evolution to the elaborately co-ordinated photostatic mechanism for equilibration and co-ordination met with in man, a system whose reflexes were centred in the mid-brain and differentiated and integrated in the cerebellum. The eperitic system at

this level was represented by the fibres concerned in stereognostic perception. The same duality obtained in the sensory functions of vision. The protopathic light sense was represented by scotopic vision (the vision of dark adaptation), and, as such, was vague, crude, and undifferentiated, lacking localization and discrimination. Photopic vision had the characteristics of eperitic sensibility, with its meticulous exactitude of localization and discrimination, and its qualitative differentiation in the perception of colour.

In the retina the protopathic mechanism was represented by the rods, the eperitic by the cones. The appreciation of movement, a function largely of the former, was a primitive biological feature on which depended the preservation of life (that is, of vital import), it was therefore protopathic in nature. Colour vision, a function of the latter, was the highest differentiation reached by eperitic sensibility. Phenomena of fatigue, discrimination of depth, etc., could well be explained physiologically on the basis of induction. In the central nervous system the optic fibres to the superior colliculus and their connexions were the most primitive phylogenetically, their function was photostatic, then nature was therefore protopathic. The fibres to the geniculate body were largely eperitic, those to the thalamus, concerned with vision and stereognosis, belonged also to the eperitic system.

The lecturer concluded by expressing the opinion that ophthalmology had too long been content to apply past knowledge, and that future advances would not depend, as heretofore, on refinements of operative technique, but would rather depend on and be revolutionized by an increased knowledge of the biochemistry of the eye and the physiology of vision.

SYMPOSIUM ON THE EVOLUTION OF BINOCULAR VISION

Professor ELLIOT SMITH opened a discussion on the evolution of binocular vision from the point of view of comparative anatomy. The change from monocular to binocular, and from binocular to true stereoscopic vision, with the consequent acquisition of a wider field and an appreciation of detail, was the predominant factor in the evolutionary development of man, and formed the substratum whereon his intellectual supremacy was built. The increased reliance on vision instead of smell as the predominant sense, first evolved in the early Eocene period, when the basal stock of the true primates first made their appearance. Man's ocular outfit was thus older than man himself, and depended, at the first, on the conditions of arboreal life. The progeny of this stock had evolved to different degrees, leaving a series of intermediate forms, which represented stages in the evolutionary progress, and served as clues to the study of their complete development in man. A particularly useful clue was found in *Tarsius*, a very early primate which had completely escaped further specialization. By the use of such intermediate surviving forms an evolutionary history of the full stereoscopic vision of man could be built up. The speaker outlined the evolution of the eye and orbit, laying stress on the recession of the snout, a process which rendered a binocular field possible, the growth of the dominating occipital cortex, and the late appearance of the mires, whose acquisition allowed the appreciation of detail, and the evolution of the motor centres in the mid-brain and prefrontal cortex, which controlled involuntary automatic movement of the eyes. This, replacing the voluntary monocular method of lower animals, permitted concentration of attention on the object seen instead of on the muscular effort of focusing. It was a prepotent factor in the development of skilled movements and the power of experimentation, and consequently of intellectual advance.

Sir FREDERICK MOTT dealt with the cerebral part of the subject. Referring to his work with Sharpey-Schafer on the simultaneous stimulation of the frontal and occipital centres, he showed how the former overcame the latter. Experimental work on monkeys and observations on man demonstrated the development of the agranular motor area in the frontal lobe, which served as the coordinating centre for the muscular and reflex systems of head, neck,

and eyes. This was reinforced by fronto-pontine cerebellar impulses, and was linked up with cerebral processes of association in the highest level, where syntheses of retinal and kinaesthetic images occur.

Professor WHITWALL traced the evolution of the muscular apparatus subserving the need of binocular vision. The lower animals moved their heads, not their eyes. The more an animal felt the need to increase its visual fields, the more developed its eye muscles became. He followed their evolution in the gradual movement of the eyes from the side position on the head to the front. The process could be divided into two stages: the attainment of parallelism in the visual axes in place of divergence, and the further development from this into convergence. In each stage the changes in the muscular mechanism followed very definite laws.

Sir ARTHUR KEITH summed up the conclusions of the previous speakers, and outlined the main modifications undergone by the orbit and skull in the evolution of binocular vision. He suggested as a more scientific term bivoceate or bimacular vision, since "binocular" vision was widely distributed in the mammalian orders. The primates possessing this form of vision might well be called Bivoceates. In the speaker's opinion the development of bivoceate vision had nothing to do with the reduction in the size of snout or any skull changes, nor was it a necessary result of arboreal life. Rather was it closely linked with the means of locomotion, which was the dominant factor in the evolution of true primates. All bivoceate primates were jumpers or springers. As such they must be able to judge the distance from branch to branch, to estimate the safety of the support offered, and to see and appreciate beyond the first steps a succeeding series of footholds, having no leisure to take cognizance of the individual movements of foot, hand, or eye. In the language of the jungle the old golfing axiom read "Keep your eye on the branch." Supported by comparative evidence, he expressed the opinion that the true source of the superiority of man's vision lay, not in the kind of eye or skull with which he had been provided, but in the brain which had grown up behind his eyes. The evolutionary machinery which had thus transformed the visual world was exceedingly complicated. It involved not only all the parts which went to make up a perfect eye, but all the parts concerned, peripherally and centrally, in eye movements, and the connection of these centres with other sensory, motor, and psychical centres. When they had explained how man came by his vision, they would have explained the most difficult part of the whole problem of evolution, the most likely clue to which would appear to be in the study of development, especially through the light obtained by experimental embryology.

THE OFFICIAL BANQUET

The official banquet which terminated the proceedings of the convention took place in the Guildhall on the evening of July 17th, Mr TREACHER COLLINS being in the chair. H. R. H. the DUKE OF CONNAUGHT, in replying to the Royal toasts, expressed his gratification and pleasure at meeting so many distinguished ophthalmologists. remarking on the constitution of the convention, he said that the more the English speaking peoples co-operated, and the closer their union, the greater the prospect of peace and prosperity for the whole world. The PRESIDENT, in proposing the toast of the English-speaking ophthalmological societies, emphasized the common origin and the common inspiration of the peoples represented, and the common purpose of their gathering—the love of ophthalmology. Sir JOHN H. PARSONS, in replying for the Ophthalmological Society of the United Kingdom, spoke of the debt which America owed to English ophthalmology. Their American brethren were now repaying that debt, unlike the Greeks, they did not repay in gold, but rather in the coinage of inspiration returned. Dr DE SCHWENITZ, on behalf of America, and Dr GORDON BYERS on behalf of the Colonies, paid a warm tribute to English hospitality, and expressed appreciation of English inspiration.

Mr J. H. FISHER proposed the toast of the guests, which was responded to by Sir GEORGE WYATT TRUSCOTT, Sir HUMPHRY ROLLESTON, and Sir JOHN BLAND-SUTTON.

THE BRITISH SOCIAL HYGIENE COUNCIL

The body which has been known for the past eleven years as the National Council for Combating Venereal Diseases has changed its name to the British Social Hygiene Council, and under that description held its first annual meeting on July 9th, when the Right Hon. Sir ARTHUR GIBBS presided. In a statement circulated at the meeting it was emphasized that the alteration of name means an extension of the attack on venereal diseases, which now is to be waged on social as well as on medical grounds. Increased prominence is to be given to "the elimination of those conditions of life which tend to foster promiscuous intercourse and the spread of disease"—a quote one of the recommendations in the report of the Committee of Inquiry on Venereal Diseases—and efforts are to be made to foster character training in the young and to uphold the integrity of family life.

Sir ALCKLAND GIBBS pointed to the definite diminution in the number of new cases of infection recorded at the clinics as an evidence of the great work which the Council had accomplished. On the medical side the attack on venereal diseases had made distinct progress, but the medical side, although of vast importance, did not fill the whole of the picture. Individual and social measures must be kept in view, leading especially to the preservation and strengthening of the family as the basic social unit and the promotion of a high and equal standard of conduct for men and women.

Viscount WILLINGDON spoke briefly on his experience of the campaign against venereal diseases in India, and Mr. GARLICK SPENCER, a member of the board of directors of the American Social Hygiene Association, brought the greetings of that body, and gave an outline of the history of the American movement.

In the evening a dinner was held at the Hotel Cecil, when the toast to the Social Hygiene Council was proposed by Lord MURRAY, President of the Divorce Court. He said that while ordinarily he was suspicious of changes of name, which generally meant that there was something to conceal, he felt that in this instance the change did really correspond to a widening of ideas and policy. He was conscious of the magnitude of the task to which the Council had set itself. Until recent years the subject of the social evil had been avoided, and it was a striking change to see people both of his own and of the younger generation now earnestly and candidly grappling with the problem. The old taboo was partly due to the natural illiness of the human mind, and partly to a perverted sense of right and wrong, but it had been discovered that it was not possible to inculcate virtue by taboo.

Sir ALCKLAND GIBBS, in responding, remarked how vividly aware he had been made, during the time that he took a part in the government of the country, of the way in which venereal diseases were eating into the health and vitality of the nation. It was in those days of the war, when the national stocktaking was close and accurate, that it was realized how far the social evils cut into the national efficiency. Mr. GNEVES-LORD, K.C., M.P., proposed the health of "The Guests," to which Surgeon Vice-Admiral CHAMBERS, Director-General of the Navy Medical Service, responded, and Miss SEVERIDGE, C.B.E., proposed the health of the sister organizations, the Social Hygiene Associations in the United States, Canada, South Africa, and Australia, and the one which was shortly coming into existence in New Zealand. All these bodies worked in hearty co-operation with the British organization, and shared one another's literature and films. Brief replies were made by the representatives of some of these overseas societies. Mr. E. B. TUNNEN proposed the health of Sir Auckland Geddes.

Among those present at the dinner, in addition to the speakers, were Sir Arthur and Lady Newsholme, Lady Emmott, Lady Sydenham, Bishop Weldon, Sir Graham Stewart, and Dame Louise Aldrich-Blake.

It appears that the Society for the Prevention of Venereal Disease also has Sir Auckland Geddes for its president. This identity of presidents signifies that the old controversies have lapsed, although fusion of the two bodies has not been attained.

SOCIETY FOR THE PREVENTION OF VENEREAL DISEASE

THE sixth annual general meeting of the Society for the Prevention of Venereal Disease was held at 12, Stratford Place on July 8th, with the president of the society, the Right Hon SIR AUCKLAND GEDDES, G C M G, M D, in the chair.

The President, in the course of his address, said there had been a very great reduction in venereal disease amounting to nearly 50 per cent, within the last five years. He did not think any one organization could claim that this reduction was the result of its labours alone, but that all who had taken part in attempting to educate the people as to the importance and dangers of venereal disease and in teaching the public how to prevent the disease might say they had contributed to this great improvement. He believed that fusion between the British Social Hygiene Council and the Society for the Prevention of Venereal Disease was undesirable, because, although both the societies had accepted the Trevethin Report, they had accepted it with quite different emphasis laid upon the different recommendations. He thought that when dealing with such a subject as venereal disease it was inevitable that those at the one extreme of thought would find it practically impossible to understand the point of view of those at the other extreme of thought, although both extremes and those between them were working for the same end. He considered that the Society for the Prevention of Venereal Disease had got hold of a very important part of the work which had to be done. What they desired to see was that the causal organisms of the different diseases should be destroyed whenever and wherever they might be found, and that this matter should be dealt with without an infusion of sentiment, which was out of place in respect to the attack upon the organisms. He thought there was a wide field for co-operation with those who laid the emphasis on the moral and emotional side, and he considered that an attempt to get all who were working for the prevention of venereal disease into one society would result in a great loss. In the belief that the continuance of the two organizations was good, and that it was really better than fusion, he had, after careful consideration, accepted the position of President not only of this society, but of the other society, believing that in that way, although the societies continued as separate and independent bodies, it would be possible to present a united front to the Government of the day or the department of State concerned with the health of the people. It must be obvious to anyone who understood the parliamentary situation that all Ministers, including the Minister of Health, were extremely busy, and it would be wise for the society to make up its mind to concentrate upon getting a definite reply from the Ministry of Health in the autumn months of this year and not before.

The President then proposed that the following resolution should be laid before the Government in the autumn:

That this meeting with great respect urges the Government to give effect without further delay to the recommendations contained in the Trevethin Report which the Minister of Health has stated have been accepted in principle and further begs to call the attention of the Minister of Health to the resolution submitted to the Ministry of Health at the annual general meeting of the society in July 1924 requesting the allocation to the Society for the Prevention of Venereal Disease of an equitable proportion of any sum set aside for the education of the public regarding venereal disease and its prevention to which no reply has yet been received.

Mr WANSEY BAYLY, the honorary secretary, reported the work of the society during the past year. A new situation, he said, had arisen owing to Sir Auckland Geddes having accepted the presidency of the British Social Hygiene Council, and, therefore, the Society for the Prevention of Venereal Disease must do its best to help Sir Auckland to make the most of this new situation. Although the society consisted chiefly of scientists, practical idealists and reformers, they must endeavor to look at the matter from the political point of view, even if this aspect of the case would not appeal to them all. Important progress had been gained during the last year by the acceptance of the principle of immediate self disinfection

by the British Social Hygiene Council, by the appointment of Sir Auckland Geddes to the leadership of the British Social Hygiene Council, and by the acknowledgement of the Ministry of Health that the evidence of witnesses before the Trevethin Committee was available for reference or publication.

Mr HARRY MACHIN, in the absence of Sir Arbuthnot Lane, joint treasurer, presented the financial report and annual audit.

Lady ASKWITH, in seconding the resolution, said she thought many of the members of the society would agree that Sir Auckland Geddes was right in maintaining that fusion between the two societies was not possible or desirable, and she was also sure that there would be nobody who did not feel that they were perfectly safe in the hands of Sir Auckland Geddes as President of both organizations. It was impossible to do much propaganda work without money, and that as they were the only society teaching that particular point of view it was important that they should be supported by Government money.

Mr BASIL PETO, M P, in supporting the resolution, expressed his pleasure in hearing that the President had also taken the position of President of the other society. He entirely agreed with the conclusion reached that fusion would not have been a source of strength, but would have been a weakness to the cause about which they were all so keen, and he thought the best possible liaison between the two societies was to have one head of the two societies, because then the members of either society need not change the views they hold. He considered the present position unsatisfactory, as it was now over two years since the committee presided over by Lord Trevethin reported, and no steps had been taken to carry out what the society regarded as the most important part of the report—that which dealt with the sale of the necessarily simple preventive disinfectants at chemists' shops. While the present hesitation was deplorable, he fully realized that the Ministry was absolutely snowed under with work at the present time, and that in such circumstances even a small addition to the Government programme could not be expected. He thought the question should be raised when the vote for the Ministry of Health came before the House of Commons.

Mr A J BENNETT, M P, said that the society could not expect to obtain all its revenue from a very limited number of persons, and that it was only right they should try to get funds from the public.

The resolution was put to the meeting and carried unanimously.

ROYAL MEDICAL BENEVOLENT FUND

At the last meeting of the Committee twenty-four cases were considered and £386 16s voted to twenty-three applicants. The following is a summary of the new cases relieved:

M D Edin 1890 aged 71 who at one time practised in South Africa. He is bedridden and cannot stand. He has also chronic bronchitis. Two brothers meet the nursing home fees. Voted £5.

Daughter aged 48 of L R C P Edin who died in 1924. She is mentally not able to support herself and her only income from investments amounts to £48 a year. A brother in Canada gave £20. Voted £15 in twelve monthly instalments.

Daughter aged 58 of M R C S 1843 who died in 1877. Applicant lost most of her money through untrustworthy friends. She is now left with capital which brings in 15s a week but she has had to draw upon this capital at the rate of 32s 6d a week to meet expenses. She lives with an adopted sister. Voted £18 in twelve instalments and referred to the Guild for clothing.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, K B E, C B, M S, at 11, Chandos Street, Cavendish Square, London, W 1.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and gals holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 58, Great Marlborough Street, W 1.

British Medical Journal.

SATURDAY, JULY 25TH, 1925

BATH

THE ninety-third Annual Meeting of the British Medical Association has opened in the pleasantest and most favourable circumstances in every respect save one—the deeply regretted illness of the new President. A few days before the opening of the Association's new house in London news came that Dr F G Thomson was in bed with a severe attack of pleurisy, and, as recorded in our last issue, he was unable to attend to be presented, as President Elect, to the King on July 13th. Although Dr Thomson's strength is maintained and his progress is satisfactory, his condition has made it impossible for him to take any part in the work or social activities of the Annual Meeting this year. The Local Executive met only last week and unanimously agreed to appoint Mr W G Mumford, F.R.C.S. (who has earned out, with Dr R G Gordon, the duties of Honorary Local General Secretary), to act as deputy for the incoming President.

In the Presidential Address printed on the first pages of this issue Dr Thomson has given a masterly summary of the history of this ancient Somerset city as a health resort. The Address was read to a large audience in the Palace Theatre by the President's son, Mr Malcolm Thomson, B.A., of Sidney Sussex College, Cambridge. In some respects Bath stands alone among the cities of Great Britain, for only in it do the works of the Romans still exist in some completeness, and may almost be said to be still in use. It owes this distinction probably to the circumstance that it possesses the only really hot springs in the British Isles. To these springs the permanent use and occupation of the site is most likely due, for without them Bath would almost certainly have shared the fate of many another Roman city over which the sheep and cattle now graze or the plough passes. Nothing is more tantalizing to the curious student of history than the completeness of the curtain which descended on British history after the Saxon conquest only to be lifted bit by bit as Anglo-Saxon civilization slowly developed.

Of Bath as a health resort we know from the buildings as yet discovered that it had a great vogue as a watering place. The Romans so highly valued the advantages of a constant flow of hot water that it may be said that wherever in the Roman Empire there were hot springs—in Europe, Asia, or Africa—there also may be found traces of Roman occupation. Although these traces were less completely obliterated on the continent of Europe than in Britain yet the story of Bath in the Middle Ages and the early Renaissance, as told so well by Dr Thomson, is not very different from the story of such hot springs as those of Aix les Bains, which was so well told by Gabriel Perouse in a book which was reviewed in this JOURNAL two years ago.¹ There was the same squalor and lack of decency and sanitation and very much the same amusements seem to have been popular in the two places, particularly gambling.

Perhaps Bath in the eighteenth century was more of a place of pleasure than Aix. Dr Thomson gives

a lively account of the visit of Charles II and what can hardly be called his harem, for its far number were by no means secluded, nor did they always reserve their favours for their swarthy master. Perhaps, as Dr Thomson hints, the object of the journey would have been nearer achievement had they stayed behind in London leaving the King to restrict his attentions to his lawful spouse. Ever since the 17th century Bath has not been wanting in skilful and learned physicians whose advice and treatment have probably had therapeutic value equal at least to that of the waters. Much also may justly be credited to the charm of the neighbouring country, helped by the beautiful and diversified architecture of John Wood, combining to produce an aesthetic effect healing and soothing to the troubled mind. The Bath physicians of to-day, however, have at their disposal a knowledge of the radio-active and other properties of the water, which their predecessors did not possess, and which enables them to prescribe in a more scientific and less empirical manner.

The literary associations of Bath are many, and are touched upon by Dr Thomson, yet there are some which no doubt want of time made him omit but which we cannot help recalling. Whether or not we accept either of the legends as to the origin and discovery of the waters, the records of which Mr Pickwick found conveniently forgotten in a lodging house bedroom, Dickens's description of the place in its state of temporary eclipse is amusing and instructive. The only comment we would make on the later legend, which attributes the waters to the miraculous and perpetual flow of the tears of Prince Bladud, is that if that were the origin a greater degree of salinity would be expected. To many of us Bath of the late eighteenth and early nineteenth centuries is indissolubly associated with Jane Austen, and we cannot read or hear the names of Malmoe and Gay Street without conjuring up visions of Anne Elliot and Captain Wentworth, or Pulteney Street without thoughts of Catherine Morland and her real and false friends. Nor can we omit from the list of names of those who have made Bath famous that of the great novelist, criminologist, and chairman of quarter sessions—Henry Fielding, who was long and in various ways associated with the city and its neighbourhood. He suffered from gout and was ordered to Bath for the treatment of jaundice, "in which case the Bath waters are generally reputed to be almost infallible." This is a tribute from a great man which should not be forgotten.

Since the days of the first establishment of Aquæ Sulis Bath has had its violent ups and downs of fortune, but we may now safely assume that its position is secure as a thermal water cure, and that future changes will only be for the better.

ANNUAL MEETING NOTES

THE ANNUAL REPRESENTATIVE MEETING

Friday, July 17th

FULL reports of the first two days' proceedings of the Representative Body will be found in this week's SUPPLEMENT. The brief informal notes that follow are meant to serve merely as fingerposts to some of the debates and decisions.

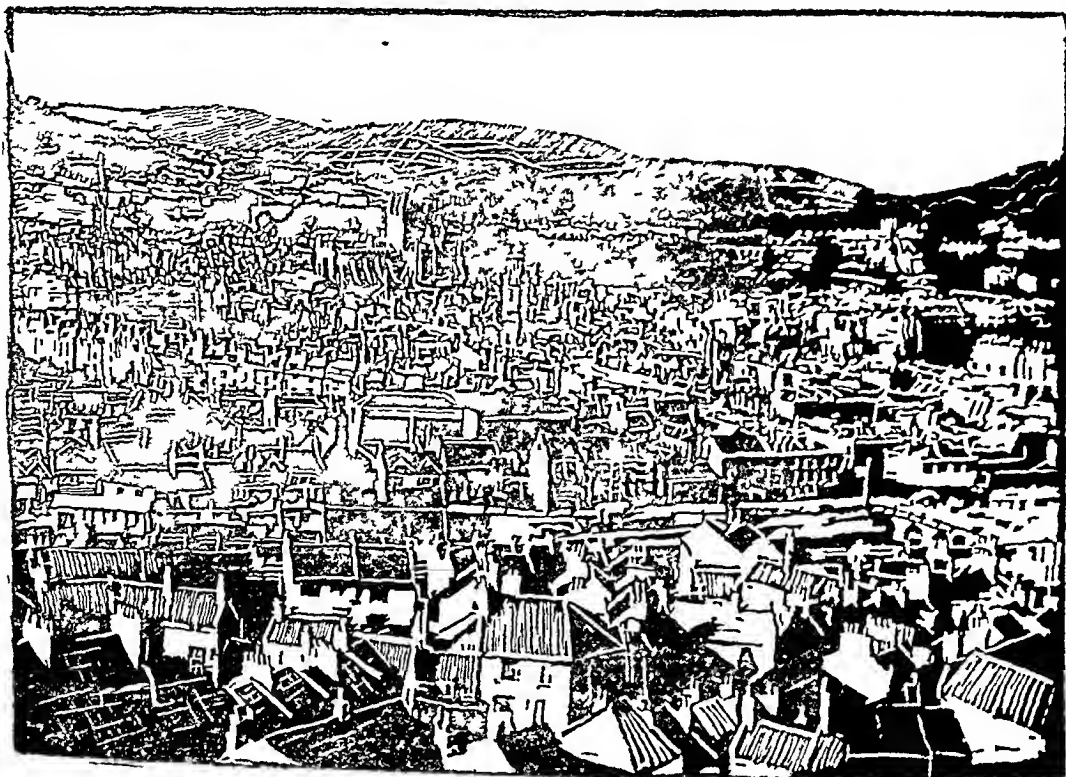
The first session was distinguished by an unusual absence of controversial matter. The loss of Dr Haslip and the absence through illness of the President-Elect, Dr F G Thomson, were the only sources of regret in proceedings marked by a sense of gratitude for past work and confi-

¹ BRITISH MEDICAL JOURNAL, June 30th 1923 p 1101

dence in the future of the Association. The election of Mr. Childe, President of the Association in 1923-24, and of two members of the Canadian Medical Association to be Vice-Presidents, with that of Mr. Hallett as an honorary member of the Association, followed by Mr. McAdam. Mr. Liddle's motion to tender the thanks of the Representative Body to those chiefly concerned in the transfer to the New House, gave a welcome opportunity for free and generous expression of these sentiments. In proceedings of such a nature the Mayor's welcome to the Association was an agreeable incident, and his obviously sincere offer of unlimited hospitality was warmly received. In the final stage of the proceedings for the affiliation of the Canadian Medical Association, in the report on the New House, and even in the finance report, the meeting found occasion for the expression of congratulation rather than criticism, and such discussion as took place showed only that the representatives' confidence in the Council as the executive of the Association was based upon consideration of the Annual Report, and not on failure to appreciate the responsibilities involved in its acceptance. The response to Dr. Bolam's hint about future developments was unmistakable. A like spirit was shown in the reception of the Journal and Science Committees' reports. The project for the *Journal of Pediatrics* was warmly welcomed, and readiness for an extension of the work of the Science Committee (and incidentally of its expenditure) was sufficiently indicated. An estimate of the relative space allotted in the *Journal* to science and to other matters, including medical politics, reminded the meeting that things are not always what they seem. In this connexion the motion for publication of fuller reports of committee work was useful, if only as directing attention to the means of publicity already available. The agenda for the afternoon covered medical ethics and national health insurance. Under these heads the relative absence of controversy was even more noticeable. The Ethical Committee is to be congratulated on the acceptance of the revised report on indirect advertising, though the final test will obviously be the measure of its practical application by the profession. The first active debate was based on the Dartford motion to amend Ethical Rules 5 and 6. As so often happens, the motion was based on a misapprehension of the possibilities of action under the existing rules, but the discussion was useful as clearing up points actually in doubt in many Divisions. The motion for consideration of certain aspects of the practice of psychoanalysis raised a point of difficulty which the Representative Body clearly felt was beyond its competence. The general feeling seemed to be that there are cases in which it is best to let ill alone, for fear that worse may follow, but Dr. Bolam's suggestion to transfer the onus of consideration to the Council was welcomed by all, including Dr. Parry, with whose motives in speaking to the motion formally proposed by Dr. Lyndon there was general sympathy. The Insurance Acts discussion was not without interest, for it showed clearly enough the growth of confidence in the Council's method of taking the measure of professional opinion without exceeding its mandate from the Association. When the strongest protest on an alleged unconstitutional action is found to be that of one who, in Mr. Turner's words of himself, "doesn't want to move any motion or anything," but feels it his duty to lodge a protest, no particular effort to justify the action of the Council seemed necessary. The Clchester and Worthing and Bolton motions afforded a useful opportunity for reassuring the profession as to the activity of the Insurance Acts Committee in a matter of real significance, and the spirit in which they were discussed was encouraging. The Durlington motion on the action of co-operative societies in connexion with prescriptions under the Insurance Acts also showed healthy local activity.

Saturday, July 18th

The atmosphere of the meeting on Saturday was far more "normal" than on Friday. Points of order or disorder were raised more freely, and feeling was sufficiently strong to demand one vote by roll call. Three points of major importance were under dispute: the extension of the activities of the Association to the provision of locum-tenent bureaux, the vexed question of individual medical defence, and the definition of the constitutional relationship between the policy of the Association as laid down by the Representative Body and that of the Divisions as formulated locally. As regards the first of these, cordial support was extended to the Council's proposals. The discussion turned mainly on the method of securing for the Association effective control of the policy and practice of the proposed new company, the upshot was the endorsement of the point of principle and expression of confidence in the Council's conduct of the necessary organization. Dr. Davies, of South-West Wales, made an interesting maiden speech, raising a question as to the future effect of a policy which may establish a monopoly of agency work under the regis of the Association, on the formulation of minimum rates for assistants and locum-tenents. The discussion showed a growing appreciation by representatives of the responsibilities of the Association towards its newly qualified members. The outstanding feature of the day was undoubtedly Dr. Morton Mackenzie's opening of the discussion on individual medical defence. It was a model of clear and impartial exposition, setting out the facts of the case, distinguishing the points at issue, and summarizing the advantages and disadvantages of the several possible methods of dealing with them. Throughout the debate which followed it was unusually difficult to estimate the feeling of the meeting and forecast its decision. The speaking was well balanced, the applause impartial. Almost every member who spoke addressed himself clearly to the particular point he had selected, and while Dr. D'Ewart gave his accustomed and appreciated display of vigour, the only personal feeling shown was occasioned by Dr. James Neal's contribution to the debate. Dr. Neal, in his twofold capacity as representative of the Hendon Division and secretary of one of the medical defence societies, had a difficult part to play, he clearly played it with sincerity, and in the main with effect, though certain of his remarks might have come with greater force from any other speaker. It was unfortunate that the motion on which the debate was based in the first instance should have been one raising the issue of unconstitutional action on the part of the Council. That charge was fully rebutted before it was made, and the Representative Body clearly felt that Dr. Lyndon had no case, though he made the best of a poor opportunity. The disadvantage involved in this procedure was fortunately minimized by the attitude of the representatives, who declined to discuss anything but the real issue. On the other hand, it was noteworthy that they also declined, in the main, to discuss the point raised by the form of the organization report—namely, further inquiry. They applied themselves (with certain exceptions) to the one point, Shall the Association undertake this work? This attitude presumably accounts for the voting, which showed a measure of support for Dr. D'Ewart's following almost identical with that on the occasion of the last discussion, at Bradford. The third question—that of the relationship of the Divisions to the policy of the Association—is one good to debate but dangerous to settle. It was plain that the practical difficulties of the situation were appreciated by the representatives. Sir Jenner Verrall expressed the general feeling when he pointed out the danger of seeking the logical conclusion in a matter where the responsibility and vitality of central deliberations on the one hand, and the reality of local autonomy on the



BATH FROM BEECHEN CLIFF (From a wood engraving by Horace Gerrard)

other, are at risk. It may perhaps be said that Dr Fothergill's motion is one which might usefully reappear on the agenda of the Representative Body at decent intervals, as providing an opportunity for exposition of the constitution of the Association, its law and custom, such as was elicited from Dr Blackenbury, Mr Hempson, and Dr Bolam. The representatives showed an adequate appreciation of the position as thus explained. Apart from these three points the organization report served a most useful purpose in emphasizing the desire of the Representative Body for a forward move in the matter of post-graduate education. The strength of the sentiment on this matter, which is of great importance, may be estimated by the fact that, even under so vigilant a chairman as Dr Blackenbury, Dr John Stevens succeeded in mentioning the subject under the heading of chairman's hedges! The session closed with suggestions for using the unexpended balance of the subscription for the badge of office with which the Chairman of the Representative Body was invested earlier in the afternoon, by Dr W Douglas, supported by Dr Milner Moore, both veterans in the service of the Association.

"THE BOOK OF BATH"

The Book of Bath, of which a copy has been given to every member attending the Annual Meeting this year, is in every way a beautiful volume, and the sort of thing that Bath alone could produce for the entertainment and instruction of specially honoured guests on a very special occasion. The articles, twenty-four in number, have been written by recognized authorities in their several subjects under the editorial direction of a committee consisting of Dr A E Norburn (Chairman), Dr Vincent Coates, Mr A Leonard Fuller, FRCSI, and Mr John Hatton (Director of the Baths). Mr Hatton's share in this charming gift book is far from being his only service to members of the British Medical Association, for he con-

tributed the series of descriptive and historical notes on Bath and its neighbourhood which have appeared lately in our columns, and in all the arrangements for the success of the meeting he has taken an active part. The get up of the volume is entirely worthy of the contents. Binding, paper, typography, and illustrations testify alike to the fine taste of the editorial committee and the care bestowed upon this work by the Ballantyne Press. It is impossible in a brief notice to do justice either to the letterpress or the pictures with which *The Book of Bath* is so lavishly adorned. Its aim, as stated in the preface, is to give visitors a glimpse of the various conditions and of the succession of events which have affected both the City of Bath and the realm of England during past centuries. "The history of this city represents in miniature the history of England from the earliest known times to the present day, while around it are found the remains of the dwellings and implements of the prehistoric inhabitants of this island." Some idea of the scope of the work and the manner in which the material has been handled may be given by a bare enumeration of the chapters and their authors. The geology of the Bath district is discussed by F S Walms, Ph.D., the erosion of the Avon valley by P E Martineau, and vestiges of prehistoric man around Bath by Arthur Bulleid, F.S.A. Bath in the Roman period is sketched very ingeniously by C H B Quennell, FRIBA, and Alfred J Taylor, FRIBA, under the title of "A visit to the thermae." The story of Bath in Saxon and in Norman times is told by Reginald W M Wright, director of the Art Gallery and Libraries, and that of mediæval and Elizabethan Bath by the Rev J Byrnhmore. A chapter by Christopher Hussey gives us glimpses of men and manners at Bath in the eighteenth century, and the many-sided activities of present-day Bath are described by A E Norburn, M.D. An account of the geology of the mineral springs by R H Rastall, Sc.D., is followed by historical notes by John Hatton on the Baths

and other medical institutions of Bath, with the exception of the Royal Mineral Water Hospital, whose 190 years of service to the country are recorded in brief by T Kirby "Bath in literature," by George Stuntshury, is a paper from the pen of the eminent writer who maintains the scholarly traditions of the city. A survey of the delightful eighteenth century architecture of Bath is given by Mowbray A Green, F R I B A, and W H Devenish contributes a sketch of ecclesiastical Bath to the Reformation, with a postscript on later ecclesiastical history by "A E N." After the Rev P H Ditchfield's chapter on the villages around Bath comes a note on houses of the fifteenth century in the Avon valley, by Harold Bialsperr, F S A. The sister city of Bristol is described in outline by George Parker, M D, Wells by R B Reid, and Glastonbury by F Bligh Bond, F R I B A, the Mendip country by Dom Ethelbert Horno, F S A, and picturesque Bradford-on-Avon by C E S Flemming, M R C S. The closing chapter gives short biographical notes on famous Bath residents of the past. The many illustrations, as we have indicated, form a notable feature of this sumptuous volume. They comprise a number of admirable reproductions of water-colour drawings, aquatints, and old prints and portraits from various collections, and thirty-one wood engravings by Horace Gerrard, specially cut for this book during the present year. It is peculiarly appropriate that wood engraving should be chosen as a means of interpreting the old world charm of the buildings and scenery around Bath, and the editorial committee is to be congratulated on securing (to quote its own words) the co-operation of an artist whose work is doing much to revive the growing interest in this old method. Readers who have appreciated examples of Mr Gerrard's art in our pages will find in the *Book of Bath* ample opportunities for studying a treatment of architectural subjects which combines subtlety of insight with breadth and holdness of execution. An exhibition of his work is on view at the Pump Room, on the Roman Promenade Terrace, until July 30th.

LUNCHEON TO OVERSEA REPRESENTATIVES

Following their hospitable custom of the past few years, the officers of the Association and the Chairmen of the Organization and Dominions Committees gave a luncheon party at Fort's Restaurant on the first day of the Annual Representative Meeting in honour of the Oversea representatives who have come to this country to take part in the proceedings in Bath and London. Dr H B Brackenbury, Chairman of the Representative Body, presided, and beside him were Dr W N Robertson, C B D, Vice-Chairman of the Australian Federal Committee (Queensland), Dr J Barcroft Anderson (Representative on the Council for the African group of Branches), Dr R A Bolam (Chairman of Council), Mr N Bishop Harman (Treasurer), Dr S Morton Mackenzie (Chairman of the Organization Committee), Sir Jenner Veirall (Chairman of the Dominions Committee), Dr J A Macdonald (Chairman of the Journal Committee), Dr T D Greenlees (past Representative on the Council of the African group of Branches), Mr W G Mumford (Acting President-Elect), Dr R G Gordon (Honorary Local General Secretary), Alderman Cedric Chivers (Mayor of Bath), Dr A de V Blathwayt (Honorary Secretary of the Dinner Committee), Mr R G Hogarth, C B D (President-Elect for the Nottingham Annual Meeting, 1926), Dr F J Gomez and Lieut Colonel Rait (Representatives on the Council of the West Indian and the Indian Branches), together with the senior officials of the Association and the Solicitor, Mr Hempson. Dr Brackenbury, in proposing the health of the guests, said that these informal occasions helped to get over the difficulty of making personal contact with

Oversea representatives, whom year by year those at home were more and more glad to meet. He compiled with the toast the names of Dr Robertson and Dr Barcroft Anderson, Dr A Davidson (New South Wales), Dr J P Major (Victorian Branch), Dr H Bell Walker (Cape of Good Hope Eastern Province), Dr Murray (Western Province), Mr F C Madden, O B E (Egyptian Branch), Major T J Hallman, O B E, R A M O (Mesopotamia Branch), Dr C E P Forsyth (Assam Branch), and Dr E F Hatton (Grenada Branch). At the Chairman's suggestion each guest rose for a moment in his place at the mention of his name. Dr Robertson, in response, expressed his pleasure in voicing the loyalty of the Oversea Branches, and spoke of the enthusiasm and devotion for the British Medical Association at home manifested by the profession in every place he called at on his journey through Australia this year. He paid a special tribute to Dr R H Todd, whom he described as a tower of strength to the Association in Australia, and a very large factor in its strength and success. He wished also to thank Dr Cox and Dr Anderson for their kindness to himself in this country. As a newcomer to Representative Meetings he admired the excellence of the arrangements and the freedom of discussion. He looked forward to the time when London would take its proper place as the great post-graduate centre of the empire and the world. Dr Barcroft Anderson added his tribute to the central work of the Association. Efficiency on the frontiers of the empire, he said, depended on two things—on the sending out of efficient men from home, and on loyal support at home—and he gave illustrations of the advantage thus derived by the South African medical profession. Dr Davidson and Major Hallman also expressed the most cordial appreciation of their hospitable welcome that day, and of the help given by the parent Association to the Branches abroad. Before the company returned to their labours Dr Brackenbury remarked how gratifying it was to hear by word of mouth from those concerned that the Association was giving real help in the practical work and the day-to-day problems of its members overseas.

THE ANNUAL EXHIBITION

The Annual Exhibition of surgical instruments, appliances, drugs, and foods was held in the Market, High Street, Bath, adjoining the Guildhall. This is roughly a circular building, around which the exhibitors' stalls, to the number of more than eighty, were arranged in three concentric rings. A fountain in the middle, a flower-decked entrance, and other decorative effects completed the transformation of what is ordinarily a bare market hall. The exhibition was opened on Tuesday morning, in the presence of the Mayor of Bath (Alderman Cedric Chivers, J P), by Mr W G Mumford, O B E, F R C S, Honorary Secretary and Acting President-Elect. The Mayor offered his congratulations to the Association on having so vastly improved the City Market, which for some years had been an eyesore. Mr Mumford said that the duty of opening the exhibition devolved upon him owing to the fact that Dr Thomson, the President-Elect, was suffering from illness. Many factors contributed to the success of an Annual Meeting of the British Medical Association, and one of the most important was that of providing a comprehensive exhibition. It should give an epitome of everything up to date in the way of surgical and medical appliances and therapeutic material. The value of such an exhibition was, in the first place, commercial but it was also educational. In the catalogue there were represented the principal makers of surgical instruments and of drugs in the kingdom. He extended a hearty welcome to the exhibitors, who had made so wonderful a transformation of what was a dilapidated old shack, and he thought it

would be a good thing for Bath if the Association could see its way to leave behind the fittings! He expressed thanks to the City Council and the Markets Committee for placing the space at the Association's disposal. The advance of medical science had made such an exhibition a much more complicated matter than it would have been a hundred years ago. At that time, he supposed, the equipment of a medical man could have been placed on a single shelf of one of the stalls. It was a matter for congratulation that the number of stalls—eighty-six—is larger than last year. He reminded the exhibitors, finally, that the value of such an exhibition measured even in commercial returns, was continued for long after the medical visitors had returned to their homes. Among those present at the opening ceremony were the Chairman of the Representative Body and the Chairman and most of the members of Council. The hour of the re-emption of the Representative Meeting was put back in order to permit its members inspecting the exhibits.

There is a very good attendance at the Annual Meeting at Bath, down to midday on Wednesday the number registered was 999.

A CLEAN MILK EXPERIMENT

THE third clean milk competition organized by the Kent Education Committee extended from the middle of January to the middle of April. There were forty-five competitors. Each competitor submitted six samples of milk at fortnightly intervals, and the inspecting judge paid two surprise visits to each herd, taking samples of evening milk on each occasion. The results of the competition showed that a very considerable improvement had occurred in these milk samples as compared with those of the first competition, of which an account was given in our issue of November 3rd, 1923 (p. 831). Thus, while in the first competition 32.4 per cent samples reached the Certified standard and 63.6 per cent the Grade A standard, in the 1925 competition 73.1 per cent samples were classified as Certified and 88.1 per cent as Grade A. Moreover, an increase in the keeping quality of the milk was manifest, the average time before tainting occurred being three days and ten and a half hours in the present competition, and two days and twelve and a half hours in that of 1923. Since the commencement of these competitions several farmers have improved their cowsheds by putting in new windows and providing artificial light, the ventilation arrangements and the floors have also received attention, and the sterilization of the utensils used is now very much more thorough. The inspecting judge in his report drew attention to the great improvement in many farms during the three years. The practical utility of these competitions has been fully demonstrated, they are obviously of no little value as showing the high standard of purity that can be attained in actual practice.

SCIATICA

SCIATICA, the old enemy that lays so many of us by the leg as the years increase, has for long been regarded as generally due to neuritis of the sciatic nerve. The existence of such a sciatic neuritis has always been assumed rather than proved, and where signs of involvement of the sciatic nerve or its sheath have been found absent sciatica has, as a last resort, been attributed to a "neuralgic condition" of the nerve. According to Dr Helweg¹ of Copenhagen, sciatica is not a disease of the nervous system at all but is a myopathy of the posterior region of the leg due to overwork, a functional myopathy. In the vast majority of patients sciatica is due, he thinks to an affec-

tion of the muscles at the back of the leg and in the gluteal and lumbar regions, and is caused by excessive use of the muscles in question. This muscular lesion is the cause of the pain and other symptoms described clinically as sciatica. Dr Helweg would have us dismiss from our minds all ideas of "neuritis" and "neuralgia" when investigating other cases with pains similar to those of sciatica—cases of lumbago, for example, or of muscular rheumatism, myalgia and so on. This novel conception of sciatica is based by Dr Helweg on the results of special methods of palpating the muscle in and about the affected region, the patient lies on his front, care is taken to obtain the best possible muscular relaxation, the surface of the skin is well oiled, and the physician palpates both legs at the same time so as to be able to compare the diseased side with the sound at every point. Both patient and physician must be placed symmetrically and stress is laid on the importance of practice in the art of palpation of the muscles, repeated examinations are often necessary before a positive opinion can be expressed. In all cases of sciatica Dr Helweg finds that larger or smaller sections of the muscles in the gluteal region and the back of the leg feel firm in the affected than they do in the sound leg. As the patient gets better these palpable changes in consistency lessen and tend to vanish, often, however, they have not disappeared completely months after the subjective and the other objective signs of the disease have passed away. Discussing the three cardinal signs of sciatica—namely, pain along the back of the leg, tenderness to pressure along the back of the leg (Valleix's sign), and pain on flexing at the hip the leg already extended at the knee (Lasegue's sign)—Dr Helweg brings forward experimental proofs for his view that they are all best explained as evidences of myopathy rather than sciatic neuritis or neuralgia. It is he says, the affected or hardened muscles that are painful and tender on pressure or extension rather than the sciatic nerve itself. If, for example a tender "Valleix's point" is detected at the neck of the fibula it will be found that the part of the peroneus longus muscle that springs from the head of the fibula feels harder on the affected than on the sound side. The palpatory technique for determining exactly which tissue (skin, muscle, nerve, etc.) is tender in a case of sciatica is set out in detail. Dr Helweg further argues in favour of his view that the muscular wasting and changes in the reflexes of patients with sciatica are satisfactorily explained by the existence of the idiopathic myopathy, a labor to which he attributes the disease. The changes in cutaneous sensibility he puts down to the compression of the sensory nerve branches by the local myopathy, or to the compression exerted on the sensory nerve terminations in the skin by the toughening of the subcutaneous tissues that may be found in connexion with the primary myopathy. The scoliosis often seen in cases of sciatica is described as the result of the instinctive effort to avoid using the affected muscles. Describing cases of the rare so-called "radicular sciatica" recorded mainly by French neurologists, and going through the literature of the subject, Dr Helweg concludes that the term covers a fortuitous association of two different and independent neurological entities in the same patient—namely, a meningo-radculitis and a myopathy both placed so that the sites of their clinical manifestations are the same. Summing up the results of his investigations, Dr Helweg states that in at least 90 per cent of the cases diagnosed as sciatica a myopathy (such as is described above) is the pathological basis of the disease. Sciatica should not be diagnosed in patients who have pain in the regions traversed and innervated by the sciatic nerve but do not show the myopathy or Valleix's or Lasegue's sign. Dr Helweg is perhaps rather too dogmatic, but it would seem to be worth while to remember and test his theory.

¹ *Sciatica or Myopathy of the Posterior Region of the Leg* By J. Helweg. Acta Medica Scandinavica Supplementum A. Copenhagen. A. B. G. Lund & H. K. Lewis and Co. Ltd. 1925. (Ed. 8vo pp. 237 + ix. 7s. 6d. n.)

A CURATIVE SERUM FOR SYPHILIS FROM THE LLAMA
 The llama, which is used as a beast of burden in South America, is known generally outside its country of origin only as a zoological curiosity. Great scientific interest, however, has recently been directed towards this animal, which alone among the domestic animals has been found to be a carrier of syphilis. *Dr. Jamnaghi and Lamedotti of Buenos Aires* have recently been able to show that the organism in the llama is identical with the treponema of man. Female llamas have been successfully infected from a human sore, while a laboratory accident showed that the llama spirochaete was virulent for man. Syphilis has been endemic in Peru since the days of the Incas, in prehistoric times. A question of great historical interest is thus raised. Was man the infecter of the llama, or was he infected by that animal? The disease in the llama is etiologically and pathologically analogous with human syphilis, but the course is in general shorter. The llama shows all the symptoms that man does, including the cerebral, but the tertiary period usually occurs in about two or three years after the original inoculation. A point of more than academic importance, however, is the discovery of a curative serum for the llama. An animal is given ten to fifteen inoculations with an attenuated culture. The resulting serum has been injected into syphilitic llamas, and has beyond doubt cured them. Animals treated on the appearance of the primary lesions have lived for three to ten years, while the controls have all died from general paralysis in less than three years. In the treated animals the biological reaction remained negative, and their progeny showed no taint of the disease. Remarkable results have also been obtained in the secondary phase. The use of the serum in man has produced results more rapidly favourable than those which have been obtained with the usual chemotherapeutic methods, the serum, moreover, is absolutely harmless. It is too early yet to say how permanent are the results in man and that an absolute cure is obtained, that is a matter for years of experimentation and clinical observation, as *Dr. Jeanselme* pointed out to the Académie de Médecine on March 10th (see *JOURNAL*, March 28th, p. 628). Llamas are now being obtained by the Pasteur Institute for these investigations.

PREDISPOSITION TO INFECTIOUS DISEASES

A PAPER by *Drs. Selma Meyer and Erich Burghard* of the children's clinic of the Düsseldorf Medical Academy on familial attacks of scarlet fever raises the wider question of the susceptibility of the human organism to infectious diseases in general. Every person is a member of a family, a tribe, and a race. As a result of his inheritance he belongs to a family, and owing to the possession of definite characteristics in common with others he belongs to a group of similarly constituted individuals. By use of the method of iso agglutination of the red corpuscles by definite human serums a classification of mankind can be made into four groups, the members of which resemble each other by the possession of this biological feature. This uniformity exists in the case of constitutional anomalies, such as an inferiority of whole groups of tissues, as is exemplified in weakness of the skeletal and connective tissues, and the liability of certain organs to be attacked. A familial predisposition for diseases of certain organs has been rendered probable, not only as regards purely endogenous diseases, but also as regards the character of the reaction to infection. It is alleged that the localization of tuberculosis, syphilis, and diphtheria, the peculiarity of the measles eruption, and the nature of the attack in typhoid fever, tend to be similar in members of one family. The character of the resistance to disease, the supply of immune bodies, and the local

immunity of the portals of entry of infection also, it is said, show the same tendency. In diphtheria the familial predisposition is thought to be exemplified by the simultaneous occurrence and equal severity of the attack, particularly as regards the susceptibility of the nervous system and cardiac muscle to the diphtherial toxin. In this disease the results of the Schick test are usually identical in the parents and children, and so also are those of the Dick test as regards immunity to scarlet fever. It may be mentioned in passing that *Hinszfeld and Brokmann* have recently asserted that susceptibility or immunity to diphtheria, as evidenced by the reaction to the Schick test, is correlated with the particular blood group. *Meyer and Burghard* have made a careful analysis of the cases of scarlet fever in the Düsseldorf children's clinic during the last five years, and conclude that there is not so much a familial predisposition to the disease as a predisposition among members of the same family for certain organs to be attacked. Many families, it is stated, show a high incidence of nephritis, otitis, and other complications of scarlet fever, as well as a similar temperature chart.

GIFT FOR RESEARCH BY THE DUNN TRUSTEES

THE trustees of the late Sir William Dunn have made a donation to the Medical Research Council of £2,000 per annum for a period of five years to be used for the promotion of research work in medicine at the discretion of the Council. The Medical Research Council, in accepting this generous benefaction, has intimated that for the present it will apply this special Dunn Fund in chief part to the furtherance of the organized studies of filterable viruses which it is supporting, and in particular to the recent developments of this work in relation to cancer. *Mr. Barnard, Dr. Gye, and their colleagues*. The Dunn Trustees have made important previous benefactions to the advancement of medicine. They have endowed a chair of pathology at Guy's Hospital, erected a school of biochemistry at Cambridge, and endowed a chair in biochemistry there, now held by *Sir Frederick Hopkins*, they have given a new building for the school of pathology at Oxford, now being erected, and have provided equipment for the school of pharmacology there. They have also built and equipped laboratories for the university medical clinics at St. Bartholomew's Hospital, St. Thomas's Hospital, and the London Hospital.

THE KING has appointed *Sir Thomas Jeeves Horder, Bt.*, to be a Knight Commander of the Royal Victorian Order. *Sir Thomas Horder*, who was knighted in 1918 and created a baronet in 1923, has been physician-in-ordinary to the Prince of Wales since 1923. *Dr. Russell Facey Wilkinson*, who is physician to Prince and Princess Arthur of Connaught, to whom he was medical officer in South Africa, has been appointed a member of the fourth class of the Royal Victorian Order.

THE annual meeting of the Canadian Medical Association at Regina from June 22nd to 26th was most successful, and in connexion with it the annual meeting of the Canadian Medical Protective Association and a meeting of the Canadian Radiological Society were held. *Mr. H. W. Carson, F.R.C.S.*, President of the Hunterian Society of London, who was specially invited through the British Medical Association as the guest of the Canadian Medical Association, delivered addresses on the surgical treatment of gastric and duodenal ulcers and on cancer of the colon. *Mr. Carson*, who has returned to London, tells us that he has come back with the most agreeable recollections of the cordiality of his reception at Regina.

VIRUSES AND CANCER

[At our request Dr Archibald Leitch has written the following article on the report published in the "Lancet" last week (July 18th, p 101), in which Dr Gye has described the present results of his highly interesting researches into certain aspects of the cancer problem]

PYRSON ROUS of the Rockefeller Institute in 1911 reported the discovery in a fowl of a pathological condition in many respects similar to a malignant neoplasm, and by him classified as a spindle cell sarcoma. Thus he was able to transfer to other fowls of the same sort by inoculation of portions of the diseased tissue, by such tissue desiccated, or by filtered extracts from it. The fact that it could be propagated by cell free filtrates placed it in a separate category from tumours proper. In subsequent years Rous found two further examples of the condition, one classified as osteochondrosarcoma, and the other a spindle cell sarcoma of peculiar intracanalicular pattern, both being capable of propagation by filtrates. Other tumours of fowls, recognized as sarcomata, have been described which were not propagable by similar means. Experiments with the Rous-sarcoma, especially the first, have been conducted in various laboratories throughout the world, and controversy has raged from time to time as to the nature of the condition. Many of the controversialists, and chiefly those who had no direct practical knowledge of the experiments, refused to believe that the lesions were sarcomata, or, indeed, tumours at all. In this country one of the tumours, Rous No 1, was studied at the Lister Institute, and for a period of six or seven years at the Cancer Hospital Research Institute by my predecessor, Dr Alexander Paine. The malignancy of the tumour, or (as some would prefer to put it) the virulence of the infecting agent, has increased considerably during the intervening years. The inoculation of the tumour filtrate containing what Rous has simply termed the "agent," produces in fowls a tumour-like condition at the site of inoculation of a rapidly progressive nature, accompanied by the formation in various organs of similar lesions ("metastases"), unattended by any rise in temperature, and bringing about the death of the fowls usually within a month, sometimes within a fortnight. The histological appearances are peculiar and characteristic. Without going into details, I may say that from what I have seen of the disease, clinically and microscopically, I have never been able to convince myself that the thing was a sarcoma. I was not concerned to deny it, I was merely unconvinced. That attitude of suspended judgement is, or was, the attitude of many others. To call it an infectious granuloma did not give us greater consolation. The position was very unsatisfactory.

Now comes the very remarkable and extraordinarily interesting work of Dr W E Gye published in the *Lancet* of July 18th. The Rous-sarcoma No 1 is minced, ground with sterile sand in a mortar, mixed with saline or Ringer's solution in the proportion of 1 gram of tumour to 100 ccm of fluid and filtered through sand and paper pulp. The "sand filtrate" is passed through a close-pored filter and a clear cell free fluid (the "candle filtrate") is obtained, which, when tested on chickens, gives rise to the characteristic disease. In a protocol of one of his experiments he shows that a small dose of the filtrate—for example, 0.01 ccm—produces nothing, a larger dose, 0.25 ccm, slowly produces a tumour whilst 1 ccm brings about a rapid formation. Thus the result corresponds generally with the quantity injected. A certain minimal quantity, possibly varying with different samples, is necessary. Another method of obtaining the active agent—and this is where Dr Gye breaks new ground—is to place a fragment of Rous-sarcoma in a test tube containing 5 ccm of Huxley's bouillon with 0.2 per cent of potassium chloride and 1 ccm of fresh rabbit serum. This is incubated under either aerobic or anaerobic conditions, and the medium is found to be infective returning its infectivity in favourable circumstances, such as the use of a large fragment of tissue and strict anaerobiosis for a week. In less favourable circumstances the infectivity may be lost in two days. We may call this the "primary culture" without for the moment, com-

mitting ourselves to the idea that something has actually proliferated in the serum broth rather than diffused into it from the fragment of tissue. There are thus two ways of obtaining the infective agent.

The "agent," whatever it is, can be rendered innocuous by treating it with chloroform, as Rous showed. Dr Gye's technique is as follows. He grinds up Rous sarcoma with sand as before, adds 100 ccm of Ringer's solution to sand is before, adds 100 ccm of Ringer's solution to 5 grams of tumour tissue—that is, five times the concentration of what is stated above—and filters through paper pulp and sand. Of the clear filtrate so obtained 10 ccm is placed by means of a pipette at the bottom of a tube, taking care not to wet the sides. The tube is slanted and a few drops of chloroform are allowed to run down the sides, some of the chloroform remaining temporarily as a film on the surface of the fluid and the rest sinking to the bottom. The tube is placed in a beaker of water already heated to 37° and incubated for half an hour. Then with a pipette the chloroform globules are repeatedly sucked up and expelled in order to produce a thorough saturation of the fluid with the chloroform. It is again incubated for three hours and the chloroform is pumped off. I confess I do not see the rationale of this particular technique in preference to shaking with chloroform, but doubtless Dr Gye has a very good practical reason for it. A filtrate which was treated with saline instead of chloroform produced Rous sarcoma in doses of 0.2 ccm, whereas another portion of the same fluid treated with chloroform in the manner described failed to infect in doses of 2 ccm—that is, ten times the quantity. Stress is laid on the importance of the temperature and the complete saturation of the filtrate with chloroform for the "destruction of the virus," and Dr Gye cites experiments to show that treatment with chloroform at room temperature or incomplete saturation with chloroform may fail to render the filtrate innocuous. In other words the test, and the only test there can be, of the innocuousness of the fluid is the fact that it fails to produce tumours when injected into the fowls. This it seems to me, is very important.

The "primary cultures," as we have seen, lost their activity—of their own accord, so to speak—in from two to seven days. The explanation of this given by Dr Gye is most ingenious, and on its acceptance and proof depends the value of his subsequent wonderful work. Here give me leave to say that if it be proved beyond doubt to be true as I trust it will be, it will not be merely the extra bit of luck such as in most cases enables a man of science building on the work of his predecessors, to achieve an outstanding success: it will have been a stroke of pure genius. To quote Dr Gye's own words: "From the beginning of this work on the Rous sarcoma I suspected that this loss of infectivity does not depend upon the death of a virus, but upon the disappearance of an accessory chemical factor which governs infection of cells." He inoculated fowls with 1 ccm of a "primary culture" that after three days' incubation had lost its infectivity as shown by the negative results. He inoculated fowls with a similar quantity of the sand filtrate rendered innocuous by chloroform also with negative results. But when he injected a mixture of half the quantities of these two separately inactive materials, Rous sarcoma was produced. The conclusion was that two things are necessary: (1) a virus, and (2) a labile chemical substance, present in the chloroformed filtrate, which in some unknown way renders the cells of the fowl susceptible to the infection by the virus.

Another piece of evidence in favour of the thesis that two separable factors were at work was obtained by taking infective "primary cultures" and subjecting them to centrifugalization for two hours at a speed of 9,000 revolutions a minute. Under favourable conditions, capable of being controlled, the fluid could be divided into two parts, the upper layers containing the accessory factor—a non-particulate chemical substance—and the lower, especially the deposit, containing the virus, which therefore was presumably particulate. It was found to be possible to wash this deposit free from the other factor, so that by itself it produced no lesion on injection, but when recombined with the upper virus-free fluid it gave rise to Rous sarcoma. The experiment was performed on fifteen occasions. Putting aside two of these, as contamination

runned the experiments, Dr Gye succeeded in thirteen cases in obtaining by the washing of the centrifuged deposit a material (the "virus") free from admixture with the accessory chemical substance. This is the obvious result obtained by treating the sand filtrate with chloroform there he obtained, according to his conception, the chemical factor free from virus, here he obtained the virus free from chemical factor. However, in two of the latter experiments, the washed deposit was still infective, though the infectivity was diminished.

In order to obtain a virus which could be thoroughly relied upon as being free from the chemical factor (all the indications, of course, pointing to the existence of a particular virus), he endeavored to cultivate the virus by bacteriological methods. In this he was successful, and by itself it is a great achievement. By successive subculturing from the "primary culture" he could be sure that anything that was propagated in the later subcultures would be a living thing capable of proliferation, for any purely chemical substance would be lost by the successive dilutions. Thus, in the fifth subculture the virus alone would be present. On inoculation into fowls it, of course, produced no lesion, but when added to the necessary chemical factor obtained either by treating the sand-filtrate with chloroform or by taking the meat upper layers of a centrifuged "primary culture" (for both methods were used), the Rous-sarcoma resulted.

Up to this point the work dealt entirely with the analysis of the agent of Rous-sarcoma, and, as I have said, the nature of this disease has been a matter of dispute. Attempts had been made, though lately recorded, by those engaged in cancer research, to obtain from undisputed mammalian cancers something corresponding to the Rous agent, but they had met with no success. Dr Gye, proceeding at first on similar lines, also failed. He employed four transplantable tumours—a sarcoma and a carcinoma of the mouse, and a sarcoma and a carcinoma of the rat—and treating them in the same way as he did when preparing the extract of the Rous sarcoma he was unable to produce a tumour in the appropriate animals with the cell free filtrates. He then tried his second method of obtaining the virus—the "primary culture." Let it be remembered that, in the "primary cultures" previously, both the virus and the accessory chemical factor were present together for a day or two, and only after that the second factor disappeared. Taking the mouse sarcoma (the others were not refested) he placed large portions of it in tubes of his serum broth medium and incubated these under very strict anaerobic conditions. After twenty-four hours' incubation the fluid in the tubes was pipetted off and centrifuged. The upper layers were inoculated into mice, and sarcomata were produced with the same characteristic structure and growth as the original mouse tumour. It is unlikely that any tumour cells remained in the fluid so treated and gave rise to the tumours on inoculation, but to make assurance doubly sure Dr Gye filtered similar "primary cultures" through a close-pored filter and still was able to induce tumour formations. The proof that two factors—a virus and an accessory chemical factor—are concerned here also is reserved for a later communication. Dr Gye suggests that the failure to produce the mouse sarcoma by the direct tumour filtrates is due to the oxidation of the chemical factor when it is being ground up with sand. This is of particular interest to me. In the spring of last year, in searching for the evidence of a "growth substance," which we imagined was produced by our carcinogenic agents, and which possibly corresponds with Dr Gye's "specific factor," I ground up in a mortar mouse tumours of the identical strain (as well as the rat sarcoma) after having frozen the minced tissue with liquid oxygen. I injected the ground up material, in which the cells had been thoroughly disintegrated, intradermally thrice weekly for two months, hoping that this excessive amount of growth substance in addition to the repeated trauma with the needle would induce a neoplastic response on the part of the cells. All the experiments were negative but I concluded that nothing in the nature of a virus could have existed in the tumours, seeing that the whole tumour cells can be subjected to the

temperatures of liquid oxygen and yet give rise to tumours on inoculation. In view of what Dr Gye says, I must have done the very thing necessary to destroy the specific factor. It is probable, however, that the virus remained unaltered and was injected over that long period. It may be mentioned that when, after an interval, I tested the animals with an inoculation of tumour cells, tumours grew in them just as in the controls. There was neither immunity nor increased susceptibility induced. My colleagues, Kennaway and Fry, tried similar experiments with human tumour material, and, in one series, tri-planting was done concurrently with the injections, but the production of optheloma was not accelerated.

Dr Gye's experiments with the mouse sarcoma seem to me to be of the utmost importance. I cannot think of any possible flaw which would vitiate his results. The nature of that particular tumour has never been doubted by any competent observer. It is probably true that no pathologist of experience feels quite so certain of his diagnosis in sarcoma as he does in the case of carcinoma, but here there is little room for doubt.

With the other three rat and mouse cancers mentioned, direct reproduction by cell-free fluids has not been accomplished. Dr Gye adopts an indirect method of demonstrating the virus in them: he substitutes "primary cultures" of them for the Rous sarcoma virus, and by combining these with the accessory chemical factor obtained from the chloroformed filtrate of the Rous-sarcoma, he produces typical Rous-sarcoma in fowls. Finally, a similar procedure was adopted in the case of three human malignant tumours—two carcinomata of the breast and a sarcoma of the thigh. Two of these afforded no evidence of a virus, but the third, a carcinoma, yielded a virus which, along with the chloroformed filtrate of the Rous sarcoma, produced a Rous-sarcoma in fowls. It is remarkable that the chemical factor should be responsible not only for the pattern and characteristics invariably produced. It is not merely a spindle-cell sarcoma of the fowl that is produced, not merely a Rous sarcoma, but a particular variety—namely, "Rous-sarcoma No 1."

We thus have evidence that all these tumours have a common factor—the virus which is probably identical in all cases—and a specific factor peculiar to every tumour—the accessory chemical substance which has such unexpected properties. Under experimental conditions the virus cannot act without the second factor, and this factor so far has been obtained only from existing tumours. But how is this essential factor produced in the animal body? Its formation must precede the formation of any tumour which it helps to originate. There must be some other source for it, and so the greater problem remains. Do our carcinogenic agents bring about the formation of the accessory chemical factor? Hosts of questions arise in our minds, but we must wait the answers in the future. At the present time it is difficult to see how the observations can be put in line with many already known facts.

The paper under consideration is obviously only an instalment. Dr Gye's researches have probably gone much further, and what may seem to be lacunae in the argument may be already filled up. The evidence here given in favour of the presence of a virus in all the mammalian tumours tested, with the exception of the mouse sarcoma, is indirect, and, therefore, not wholly satisfying. Carcinomata have not been produced. Probably the proof of the identity of the viruses will soon be strengthened by demonstration of their unity might be further emphasized, for example, by using the accessory chemical factor from a rat carcinoma, combining it with the virus from a human cancer, and producing a sarcoma in the rat. We shall have to wait in patience for the developments that are possible, but we have had such appetizing fare that we are clamouring for more. In particular, I should like to see more certain that the method adopted by Dr Gye for destroying the virus in the filtrate of the Rous sarcoma is effective beyond doubt. Practically everything else hangs on that. Suppose for a moment that the treatment of the filtrate with chloroform weakened, but did not wholly destroy, the infective agent: what then? It would require

on each and every occasion on which it was used a fairly large number of fowls for its detection, and perhaps only one unusually susceptible bird would show the effect even with a greatly increased dose. Equally, to prove beyond doubt that the infective agent was destroyed, a large number of controls would have to be employed, for it would be too risky on any occasion to depend upon a few. If the destruction of the infective agent is not always assured, then the thesis of the presence of the two factors is considerably weakened: there would be no convincing proof of the actuality of an accessory chemical factor, and the indirect evidence of the presence of a virus in the mouse carcinoma, in both rat tumours, and in the human cancer, which depends entirely on the complete destruction of the Rous agent, might fall to the ground. This is so evident that I cannot imagine it would be overlooked by Dr Gyo, though the point is not considered in his paper. I am very far from feeling that such possible criticism is worth entertaining, in view of the brilliant work that Dr Gyo has accomplished and the merited recognition he has attained.

Scotland.

EDINBURGH CIVIL SERVICE NURSING HOME

AN interesting experiment with regard to the problem of the "pay hospital" has recently been begun in Edinburgh. Many causes have contributed to make the position of hospitals in Scotland unsatisfactory, and the report by the Scottish departmental committee which recently sat to investigate hospital inadequacy is expected with general interest. Many persons are of opinion that there is a great deal of general hospital abuse, both the accommodation of the hospitals and the gratuitous service of their staffs being used by persons who are quite able, individually or collectively, to pay for both. The new experiment is a nursing home which has been acquired by the Civil Service Association, a regular staff has been appointed with retaining salaries, and a schedule of fees has been drawn up, consulting fees and fees for minor operations range from 1 to 2 guineas according to the income of the patient, and the fee for major operations runs up to 10 guineas. It appears to be anticipated that the home will supply the needs of persons with an income up to £800 a year or over. The undertaking has arisen out of a discussion which has been going on in the Civil Service Association for a year or two as to the best means of providing for sickness among the members of civil service societies in the East of Scotland, who altogether number about 6,000. A serious problem which menaces the financial position of the civil servant of the middle or lower grades of the service is that of making provision against the contingency of serious illness occurring in his family. This may involve prolonged residence in a private nursing home, or a surgical operation, and it is felt that it may frequently result in financial embarrassment from which the junior civil servant may suffer for many years. A committee of medical and other experts was brought together to investigate the various possibilities, and found itself faced with the problem of establishing a special hospital. A surgical home of some twenty years' standing came into the market, and seemed to fit perfectly the objects in view, it will be ready for occupation shortly. The general management of the home is to be conducted by a limited company, and members have been enrolled, subscriptions fixed and the necessary capital raised. The company will not work for profit and no portion of the income or property will be paid or transferred by way of dividend or bonus to the members. The entrance fee has been fixed at 10s for men and 5s for women, with an annual subscription of 12s for men and 8s for women. An arrangement has been made with H. M. Treasury by which the annual subscription is deducted quarterly from salaries. Provision is made not only for the reception, maintenance, and treatment of members and their dependants, but the home is to offer similar facilities to "any other person or persons whatsoever." The first meeting was held in Edinburgh on July 16th, when the chairman (Mr H. L. Fraser) announced

that the home had been opened for the reception of patients on the previous day. He spoke for some 1,500 members and other prospective members when he said that the principle of transferring risks of sickness from the financially weak individual salaried member to the broad back of a large membership was sound. It would prove commercially sound in surgery just as it had proved itself to be in fire, life, and other forms of insurance. The dietetic, nursing, and medical services would be of a high standard. A medical team had been selected which, co-operating with the family practitioner, would achieve a very high medical standard, and the scheme would be of value as regarded both consultation and treatment. The plan of providing a definite specialist staff had been criticized, but as a rule the specialist employed for surgery, etc., was not the "free choice" of the patient, but was chosen by the family practitioner. The scheme did not, however, preclude any patient from calling in a specialist not on the staff of the home, provided he paid the specialist's fee. It was no part of the scheme to criticize the fees charged for surgical or nursing home services, for it must be kept in view that specialists had to live, and that a very large part of surgical work was unremunerative or indeed unpaid. Competent authorities had put the proportion of this work done in Edinburgh as high as nineteen cases out of twenty, so that the unfortunate twentieth case must pay not only for himself but for the other nineteen cases. Many nursing homes were handicapped by heavy initial costs and a low rate of bed occupation. It was hoped that this scheme might assist in the solution of both difficulties.

NURSING COUNCIL EXAMINATION

The written preliminary examination for the General Nursing Council for Scotland was held on June 2nd. Candidates to the number of 75 presented themselves for examination in Edinburgh, 277 in Glasgow, 19 in Dundee, 47 in Aberdeen, and 2 in Inverness. The oral and practical part of the examination was held a fortnight later in Aberdeen, Dundee, Edinburgh, and Glasgow, the Inverness candidates attending at Aberdeen for this part of the examination. The results were as follows: elementary anatomy and physiology, 392 entered, of whom 319 passed, hygiene, 374 entered, of whom 329 passed, elementary theory and practice of nursing, 386 entered, of whom 359 passed.

England and Wales.

WORKPLACES

A census volume entitled *Workplaces* has been issued. It is believed to be the first occasion in any country on which statistics of workplaces have been obtained and presented. The inquiry was instituted at the 1921 census for the purpose, as then announced, of furnishing assistance in connexion with the problems of improving the transport facilities (bus, tram, and train) for the working public, of housing, and of continuation schools. The analysis of the daily tides of population between one area and another also provides materials for inferences in regard to the day populations and the limits within which individual populations regularly expand and contract. The statistical equipment hitherto at the disposal of local authorities has been limited to an inadequate knowledge of the sleeping or resident population. The desirability of adopting "workplace" as a basis of a real classification alternative to that of place of enumeration or residence was recognized in the census volume relating to industries published a short time ago. The present volume consists of three tables—the first showing for each urban and each rural area of England and Wales its total population and the number of occupied persons over twelve enumerated in the district, the number of those who work outside the district, and the number of persons travelling to work into the district, the second table carries the analysis further and shows for the more important movements the districts to and from which the latter persons travel, while the third table shows for towns with a population over 20,000 the aggregate of the inward and outward

movement, the net balance of the two movements, and a comparison of the night and day populations of the several towns. As would be expected, the largest total movements are towards the centre of London, the night population of the City of London being raised from 13,709 by a net inward movement of 423,006 persons to 436,715 during the day, the City of Westminster receives a net inward movement of 244,406 persons, the Borough of Finsbury of 65,334, Holborn of 58,513, and St Marylebone of 51,500. Most of the boroughs on the outer boundary show a net outward movement, and the same is true of all the larger towns of Middlesex (except Acton) and of the portion of the other home counties that are nearest London. The effect of these movements results in the City of London having a day population nearly 32 times its night population, while the corresponding ratios for Westminster and Holborn metropolitan boroughs are 2½ and 2½ respectively. Amongst towns with more than 20,000 inhabitants (outside London) the following show large daily changes, the increases being associated generally with industrial and mining centres and the decreases mainly with areas of a residential character.

Increases during the Day		Decreases during the Day	
	Per cent		Per cent
Wallsend	24	Leyton	25
Stretford	22	Hornsey	25
Rugby	17	East Ham	24
Eston	17	Hanwell	23
Hebburn	17	Walthamstow	22
Bedwellty	16	Sutton in Ashfield	21
Chelmsford	14	Edmonton	20
Chadderton	13	Southgate	20
Manchester	10	Newcastle under Lyme	20
Newcastle upon Tyne	8	Castleford	19
Luton	7	Mansfield	15
Derby	6	Eccles	14
Coventry	5	Salford	12

There are even greater percentage variations in smaller towns, though on account of their size the numbers involved are of less significance.

The volume has been prepared in the General Register Office and has been published by H M Stationery Office, price 16s. It can be obtained from booksellers. It is to be regretted that the price is so high.

ARTIFICIAL SUNLIGHT TREATMENT AT HULL

In April, 1924, an experimental municipal clinic for treatment by artificial sunlight was opened at Hull, a tungsten arc lamp having been presented by Dr Percy Hall, a member of the city council, and during the following twelve months 110 patients received treatment. Of 31 patients with severe rickets so treated 19 were much improved and 10 were benefited, in 20 out of 22 cases of slight rickets there was definite improvement. Six wasting babies were treated, all except one being much improved. The medical officer of health reports that the clinic has fully justified its establishment, he now recommends the appointment of a whole-time medical officer and the provision of two rooms for carbon arc treatment, and either two large rooms or a number of smaller rooms for treatment by the tungsten arc and mercury vapour lamps. It is estimated that the cost of the electrical apparatus and of running the fully developed clinic would approximate £1,000, and that an additional £1,000 would be required for furnishing. Last April the Hull Royal Infirmary acquired a lamp for this treatment.

Correspondence.

FOCAL SEPSIS AS A CAUSE OF NEURASTHENIA AND INSANITY

SIR,—The importance of the subject raised by the four papers on focal infection, in your issue of July 4th, as a cause of neurasthenia and insanity cannot be exaggerated.

There is one aspect of the problem that was not referred to and which deserves emphasis. In cases of toxic neurasthenia and early toxic psychosis the treatment of focal infection frequently induces an immediate exacerbation of symptoms which tends to be proportionate to the degree to which treatment causes a temporary increase of the toxins circulating in the blood. Thus no exacerbation need be

anticipated in the treatment of infection of the urinary passages by *B. coli*, little need be expected from the removal of an appendix with a localized abscess, in the case of teeth or infection of accessory sinuses the reaction is generally severe. Enucleation of the tonsils skilfully performed causes very much less disturbance than amputation by the guillotine.

I mention this because I have seen two cases of suicide occur within forty eight hours of dental extractions when a number of teeth were dealt with at one sitting. In such cases the correct procedure is either to extract the teeth at intervals, or, better still, to immunize the patient by an autogenous vaccine beforehand.

This phenomenon of exacerbation of symptoms when a septic focus is attacked is in marked contrast to the effect of other surgical interference or of trauma. Thus a neurasthenic woman may temporarily improve after the removal of a simple fibroid. An early psychotic may appear better after he has broken his leg. The substitution of physical disorder for mental conflict tends to be palliative, except when the degree of shock is severe, or, as I have said, when additional toxins are released into the system.

Another point that was not referred to in any of the papers was the effect of chronic toxæmia through impairment of the endocrine function, notably that of the thyroid. The dullness of the child with septic tonsils and adenoids is largely the dullness of subthyroidism, and there are many similar examples of the effect of focal sepsis on mental function through endocrine disturbance.

Professor Nixon ends his paper with this sentence: "A careful and thorough physical examination is more likely to be fruitful than investigation of the origin of the mental state along psycho-analytical lines." Surely this is an unfortunate way of contrasting the two methods of treatment? It suggests that we must either pursue one course or the other. The truth is that the man who psycho-analyses a patient that requires detoxication is blind in one eye, and the man who thinks that all functional cases are either toxic or incurable is blind in the other eye—I am, etc.,

London W 1 July 7th

H. CRICHTON-MILLER

THE ETIOLOGY OF MALIGNANT NEW GROWTHS

SIR,—There are probably few pathologists in this country who have not already read the most interesting papers on cancer and the ultramicroscopic viruses by Dr Gye and Mr Barnard. The work, moreover, has been widely discussed, and the results and conclusions appear to be accepted as correct by many pathologists.

All, however, who wish well for the reputation of British medical science will be anxious lest an over-enthusiastic reception should blind workers to any possible sources of error which a more considered judgement might suggest ought to be thoroughly probed before a work of this nature is accepted as having been proved to be correct. Nothing could do greater harm to the reputation of British scientists than that they should be shown to be in error, possibly in a year's time, by some worker in a foreign laboratory.

I feel sure, therefore, that both Dr Gye and Mr Barnard will appreciate the desire of some workers to be given a little more information on several crucial points, a satisfactory answer to which would go a long way towards convincing those whose critical analysis of the results leaves them in some little doubt.

In view of the fact that ultramicroscopic viruses will tolerate pure glycerol and to a certain extent ether, is Dr Gye convinced that his chloroform treated filtrate is quite free from the virus or contagion? Might not a small amount of specific contagion be left and be made active by non-specific products, including acids, present in what he believes to be his cultures, in the same way that toxins affect the virulence of bacteria? Can he give us some experiments conclusively disproving this possibility?

How many times has the experiment given in Chart 5 been made and has the result always been the same? Have large quantities of the same treated filtrate only been inoculated, as controls, with negative results?

Have entimes of non cancerous tissue been tested side by side with cultures of cancerous tissue when the same treated filtrate was added in each case?

In making subcultures from his primary cultures have any comparative experiments been carried out with subcultures made after heating the primary culture to such a temperature that any virus would certainly be destroyed? Would a fifth subculture from this fail to be made active by a chloroform treated filtrate which for certain made active the fifth subculture derived from the unheated primary culture? Such experiments giving clear cut results would, I suggest, be considered weighty evidence by most pathologists who may not be quite convinced by the result given in Chart 11.

This investigation of Dr Gye and Mr. Bunnard must have a considerable effect on all investigations at present being carried out on the ultra-microscopic viruses, and it is of great importance to other workers that their own investigations shall be carried along the right lines. I am sure if Dr Gye is in a position to give us the information I have suggested it will be of great assistance to and will be appreciated by those working in other laboratories—I am, etc.,

F. W. TROTTER,

The Brown Institution, University of London.

July 22nd

* * A note by Dr. Leitch stating the nature of Dr. Gyo's inquiry will be found at page 174.

THE SEPARATION OF THE PLACENTA

SIR,—In the JOURNALS of April 4th and 18th the subject of separation of the placenta is discussed by some correspondents. The practice of leaving the placental side of the cord untied is referred to as if the idea was a new one. But reference to Smellie's *Midwifery*, published in 1784, shows that it the practice was recommended by him.

In these days of "meddlesome midwifery" some further remarks of his on the subject of separation of the placenta are well worth quoting.

I find that amongst the ancients and moderns there have been different opinions and directions about delivering the placenta: some alleging that it should be delivered slowly, or left to come of itself; others that the hand should be immediately introduced into the uterus to separate and bring it away. Before we run heifer tails in the case. We find in the common course of labour that not once in fifty nor an hundred times there is any danger more to be done than to receive the child. Some of the ancients have alleged that no danger happens on this account the most part sufficient of itself in such cases it is very rare, perhaps not once in twenty or thirty times that I have occasion to separate as it generally comes down by the common assistance of pulling gently at the funis and the efforts of the woman. I also find that the mouth of the womb is as easily dilated some hours after delivery as at any other time so in my opinion, no ought to go in the middle way, never to assist but when we find it necessary on the one hand not to torture nature when it is self sufficient nor delay it too long, because it is possible that the placenta may sometimes though seldom, be retained several days, for if the uterus should be inflamed from any accident and after birth behind the operator will be blamed for leaving the placenta.

—I am, etc.,

Wellington N.Z. June 1st

WILLIAM YOUNG

DEATH CERTIFICATION

SIR,—In the face of an alteration in the giving of death certificates and the terrifying announcements with regard to premature burial published from time to time, not only in the lay press but also in medical textbooks, would it not be well to lay the subject before the profession for consideration with a view to restoring the public confidence, and for our own reassurance, now rendered somewhat unstable when we reflect upon the fact that death of the whole body is a gradual process occupying a definite lapse of time although the suspension of the vital faculties may appear to be sudden and complete?

For my own part I now find myself to be in a precarious position respecting the certifying of deaths. Some years ago I steadily refused to write a death certificate within twenty-four hours of the patient's death, but in these days of hustle I am generally called upon to certify within a few hours of the demise, and meet with indignant protests if I suggest its being deferred.

Seeing the difficulties connected with the confirmation of

Lancet July 18th

absolute death, I wish to propose that, unless there are reasons to the contrary, the doctor shall inspect the naked body of the deceased the day after the death when more manifest signs will have had time to develop, and, being satisfied, shall certify accordingly.

This arrangement would relieve my own feelings as to unpleasant possibilities and help to abolish the increasing dread that calls for extreme measures to establish the proof of death, otherwise a *post mortem* examination should become the invariable rule in order to still all medical and social doubts and perplexities—and thus I am sure the public will not submit to—I am, etc.,

London July 7th.

JOHN GOOD, M.R.C.S.

* * * Bearing on Dr. Good's reference with regard to tests of the fact of death, a recent communication we have had from Dr. J. William Cook is very much to the point. He wrote: "I am glad to see the new Death Certification Bill compels personal inspection of the corpse by the doctor. I never gave a death certificate, even when the patient had died in my presence, until twenty-four hours had elapsed. When I was in practice I came into contact with two cases of trance. On looking through my cases I find that I had cut through the radial artery about thirty times, yet I have several times met with men in large practices who had never seen this done, and were much obliged by being taught the little manoeuvre which means so much to anxious relatives." In response to our request Dr. Cook has given the following particulars: "Straighten the arm, pull back the hand, feel the outer edge of the tendon of the flexor carpi radialis. Make a narrow bladed sharp scalpel, put the point into the skin edge towards fingers, push home to the bone, cut towards the fingers for about an inch, turn the edge outwards keeping the point on the bone, cut upwards and outwards, the gaping mouth of the cut artery should appear at the bottom of the incision. There are generally a few drops of thin venous blood from the venae comites. Dry with a swab of absorbent wool. Place a double layer of lint over the incision and put a band of 1" wide white rubber plaster round the wrist over this. It takes a minute and leaves the body tidy. If the sleeve of the shroud is pulled down nothing is to be seen. It is by taking pains, even in small matters, that one keeps that confidence without which one can do but little with patients. I specially is this necessary in the circumstance of death and of its possibly being only apparent."

ROYAL NAVAL VOLUNTARY RESERVE

SIR,—May I ask your assistance in calling the attention of the younger members of the profession to the attractions offered by service in the Royal Naval Volunteer Reserve?

The R.N.V.R. consists of seven divisions—London, Scottish, Tyne, Mersey, Bristol, Sussex, and Ulster. The establishment provides for 205 medical officers, of whom 50 are on List I and the remainder on List II, and in addition 28 dental surgeons. Each category has to serve twenty-eight days at sea during its first year of service, and subsequently fourteen days biennially, either afloat in one of His Majesty's ships or in a naval hospital or depot. Those on List I have, in addition, to attend periodically at the headquarters of the division to which they are attached for the examination of recruits and other medical duties. The age of entry is from 21 to 32 years. Provision is also made for the entry as surgeon subalternants of students from 19 to 26 years who have passed their intermediate examination in anatomy and physiology. Promotion is on the same basis as in the Royal Navy, except that no examinations are held. During training medical officers receive the naval pay of their rank, and £50 is provided for the expenses of uniform on joining, or, in the case of probationary officers, on confirmation in rank.

The service affords a unique opportunity for seeing the life of the Royal Navy, as well as providing every two years a most interesting experienced free of all expense and well paid for the duties required, whether afloat or ashore. Applications for commissions should be addressed to the Commanding Officer at the headquarters of the nearest division, from whom full particulars can be obtained—I am, etc.,

H.M.S. President Victoria Embankment EC 4 July 13th

J. BRUCE ROBERTSON,
Surgeon Commander R.N.V.R.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

THE House of Commons has this week taken the report stage of the Widows', Orphans', and Old Age Contributory Pensions Bill and has debated the Estimates for the Post Office and for education. On Friday the House was asked to advance a long list of smaller bills, including the Therapeutic Substances Bill and the Diseases of Animals Bill, but the Public Health (Scotland) Bill will probably not be taken till the autumn.

The second reading of the Bethlehem Hospital Bill was down for July 21st, and a compromise between its promoters and the local authorities had almost been reached on that day. Legal difficulties supervened, however, and the bill was put back till July 24th. It has already passed the House of Lords.

The medical members of Parliament who went to Switzerland to examine M. Spruhler's methods resumed their conversations with him on July 22nd at the House of Commons. Down to that date their negotiations had no definite result.

Mr H. A. L. Fisher has been chosen chairman of the Select Committee on the Nursing Council, which was summoned to meet and hear evidence on July 22nd.

Bovine Tuberculosis Compensation for Slaughter

Moving a resolution authorizing the payment of money by Parliament towards the compensation of local authorities for slaughtered cattle when tuberculous or suspected of tuberculous, the Minister of Agriculture, Mr Wood, said the Milk and Dairies Act, which prohibited the sale of tuberculous milk and indirectly compelled the slaughter of tuberculous cattle, would come into operation on September 1st. It was impossible for it to operate unless accompanied by a Compensation Order. It was estimated that the gross compensation would be about £67,500 and the Exchequer's share £50,000. The cost of administration would be offset by salvage. Power was being taken to exclude cattle from Ireland which were tuberculous. Great progress had been made in the last few years in getting rid of the tuberculous cow. Nearly 200 herds of dairy cattle in England were completely free from tuberculous. The problem must be tackled on national lines. Many large municipalities spent money in tracing tuberculous among the dairy cows which supplied those areas with milk. But municipal expenditure was largely wasted because when a tuberculous cow had been traced the owner often sold the animal, with the result that tuberculous meat might pass into human consumption, or else the animal was passed to other dairy farmers and all traces of it was lost. The new policy of compulsory slaughter and compensation had been approved by the National Farmers' Union.

Mr A. V. Alexander promised the support of the Labour party for any efforts to reduce bovine tuberculous. Some members were very concerned about the use for human consumption of carcasses of animals which had been condemned for tuberculous. The butchers were concerned because the Order did not arrange to compensate them for any animals which might be condemned after slaughter.

Mr Wood, replying, said it was estimated that 12,000 cattle a year would be slaughtered under the new Order. He could safely say that at present no meat liable to prejudice the health of the consumer was allowed to be sold, but infection could be carried by hides, offal, and other parts of the carcasses used for purposes other than food.

The resolution authorizing payment of compensation was approved.

On the report stage, the Minister of Agriculture said that the carcasses of animals killed under this Tuberculosis Order would be submitted to the public health authorities, as were all other carcasses of animals intended for human consumption. The meat inspection service was in charge of the medical officers of health who were solely concerned with the consideration of human health. No meat that had been inspected and found unfit for human consumption would ever be passed.

The resolution was carried and the second reading of the Diseases of Animals Bill was subsequently taken. Dr Vernon Davies asked the Minister of Agriculture what evidence he required before slaughtering cattle that the case was one of tuberculous.

Mr A. V. Alexander said the Labour party was not satisfied with the Minister of Agriculture's assurance that no actually tuberculous meat unfit for human consumption would ever be passed. They had evidence that in many places the remains of carcasses which had been condemned reached certain classes of the population for human consumption. They were told that there was difference of opinion among medical men as to whether it was actually harmful to the human body to eat of a carcass which had not shown on the post-mortem examination of tuberculous.

Sir Richard Luce said the form of tuberculous which might be absolutely local. The muscle of the body was rarely infected with tubercle. Cows suffering from tuberculous of the udder were the class of animal which it was most important to destroy because they were the most potent source of tubercle to children, but the rest of their carcasses might be entirely free from tubercle and innocuous.

Dr Fremantle thought the danger pointed out by Mr Alexander was serious because of the backward state of butcher's marketing, and veterinary inspection. Although he believed the

bill necessary, he thought the Ministry of Health should go forward at the same time with the control of butchering animals and better veterinary inspection. It was possible that tubercle would show itself in one or two glands only. Those who wished to sail near the wind would strip the meat from near the gland and sell the carcass as sound. Under the present system of scattered little slaughterhouses, proper inspection was not possible. If the consumption of meat slaughtered in the circumstances he had mentioned were allowed at all it should be under the strictest regulations.

Mr Palin said that although the carcass might be free from infection in a case of tuberculous of the udder, the animal was very emaciated. He had frequently known cases where the veterinary inspectors had prevented the sale of this meat in Bradford, and it had been immediately taken to some other place for sale.

The Minister of Agriculture said he did not doubt that the local authorities did their duty. If there were any chance of meat prejudicial to health passing into human consumption he would be willing to try in conjunction with the Minister of Health to take effective steps to stop it. Pigs were not covered by the bill, but could be slaughtered under Meat Inspection Orders.

The bill was read a second time.

Therapeutic Substances Bill Second Reading

Mr Neville Chamberlain moved the second reading of the Therapeutic Substances Bill sent down from the House of Lords, and dealing with the standardizing of vaccines, serums, toxins, antitoxins, antigens, and particularly of insulin. These substances could not be tested chemically, and practically all other civilized countries had an official standardization of their purity and potency, but we had no standardization for our own manufactures, and preparations which had failed to pass the test in foreign countries might be imported here. The Ministry of Health proposed that no one should be allowed to manufacture these substances without a licence and that the import of these substances should not be permitted except under proper standardization or compliance with conditions laid down. A joint committee would be set up to make regulations and to prescribe standards and tests.

Sir Richard Luce said that in accepting the bill the House would have medical and scientific opinion behind it. The bill proposed an Advisory Committee of representatives of scientific and other bodies, but not comprising a representative of the body of general practitioners. He hoped at least one representative of them would be added possibly to be nominated by the British Medical Association. It was desirable that the bill should permit substances to be admitted to this country which were recognized in foreign countries as being of a proper standard without necessarily a complicated standardizing of the substances in this country.

Colonel Sinclair noted that the bill would apply to Northern Ireland, and said it was very important that extracts of organic glands should be subjected to physiological or chemical tests by recognized authorities. Pituitrin for instance was a very potent substance, and it was possible that a practitioner using a particular brand might be accustomed to its effects, but might in an emergency have to use an inadequately standardized brand which was stronger than the brand with which he was familiar. The use of pituitrin of unknown strength might cause the rupture of a wound through overstimulation. Similarly, preparations of insulin might be altogether too strong for ordinary use.

Dr Vernon Davies thought that the bill would have to be altered in committee so that a serum which might be produced abroad and have certain special qualities could be brought in under licence, but not with all the restrictions imposed by the bill. He had in mind one special serum which would not be allowed into this country if the bill became law. Another remedy which might be called a secret remedy, had been largely used for asthma, he was told it was almost impossible to analyse it.

Mr Alexander said the Labour party approved the bill and would help to expedite its passage.

The bill was read a second time and sent to a committee of the whole House.

Mr Baldwin announced that the Government would ask the House to take the committee stage of the bill on July 24th.

Summer Time Bill.—On the report stage of the Summer Time Bill, Dr Graham Little said that the British Medical Association in 1923, and the Society of Medical Officers of Health in 1921, 1923, and 1924 had passed resolutions declaring that summer time was beneficial. He appealed strongly for full six months of summer time and emphasized the importance of additional fresh air in the lives of the people. Mr Cooper Rawson said they could not shut their eyes to the fact that the British Medical Association and its branches all over the country were strongly in favour of the six months period. Teachers all over the country also testified that summer time had been of inestimable value to the children's health. Eventually an amendment was accepted postponing the commencement of summer time to the third Saturday in April, and the bill was then read a third time without a division.

Unregistered Midwives.—In reply to Mr Bennett, Mr Neville Chamberlain, Minister of Health, said that he had received many representations from local supervising authorities and other bodies in favour of the elimination of unregistered midwives, and was himself in favour of it. He did not anticipate difficulty in obtaining an adequate number of registered midwives. He had it in mind to deal with the matter in a bill to amend the Midwives Act which he proposed to introduce as soon as other commitments allowed.

National Health Insurance—Answering Sir Henry Cautley, Mr Neville Chamberlain said that in accordance with a decision of the National Health Insurance Joint Committee, approved societies had been recommended not to allot out of their surpluses on a valuation extra cash benefits in excess of 5s a week for sickness benefit unless they were also making reasonably adequate provision for treatment benefits. In reply to Colonel England Mr Chamberlain said that the proposal that maternity benefit should be administered by local public health authorities was within the purview of the Royal Commission on National Health Insurance whose report he proposed to wait. In reply to Colonel Day, Mr Neville Chamberlain said that an approved society under the National Health Insurance Act was entitled to devote part of its disposable surplus on valuation to making payments towards the cost of providing nursing for its members and might also make subscriptions or donations from its benefit fund for the support of district nurses. There was not, however, any provision in the Act for making payments for the specific purpose of securing the attendance of midwives on insured women at confinement and before considering the desirability of amending legislation in this direction he must wait the report of the Royal Commission on National Health Insurance. On July 20th, Sir King ley Wood (Parliamentary Secretary Ministry of Health) informed Mr T Williams that for the purposes of the second valuation approved societies and branches were divided into two groups to be valued respectively at December 31st, 1922, and December 31st 1923. These arrangements were agreed to by the Consultative Council and were found to be necessary to avoid either a considerable increase in the number of the valuers and their staffs or alternatively a prolongation of the period between the date of valuation and the commencement of the additional benefits.

Ophthalmic Benefit—Asked to explain the difference between the optical treatment previously allowed as an additional benefit under the Health Insurance Acts and the ophthalmic treatment now allowed Mr Neville Chamberlain said an insured person was now able to obtain the advice of an ophthalmic specialist when his medical practitioner thought it was required. Previously there was a doubt whether this could be done.

Doctors and the Telephone—During the debate on the Post Office Estimates on July 20th references were made to the desirability of better telephone facilities for summoning doctors. Sir Robert Hamilton said it would be of inestimable advantage if the inhabitants of such islands as Papa Westray with over 150 inhabitants but no doctor, were able to communicate by telephone with a doctor not necessarily that he should cross but that he should send by telephone instructions as to how the patient should be treated. Major Price said that in a village in North Pembrokeshire two accidents occurred when the telephone wire was down. The nearest doctor was eight miles away and there was a lapsed of eleven or twelve hours before the doctor could get to the county hospital to which the patients had been taken. Mr Buchanan suggested that telephone kiosks in the working-class districts of towns would be of value for getting into touch with the doctor, especially in maternity cases. Colonel Henegge said that in many Lincolnshire villages the only way of summoning a doctor was by sending a cyclist for him, and a great deal of unnecessary suffering was caused. The Postmaster General Sir William Mitchell Thomson said new rural telephone exchanges were being opened at the rate of twenty a month. It might later be possible to provide communication by wireless telephony between the islands in the Orkneys and Shetlands.

University of London—On July 20th Mr Guinness told Dr Little that the Senate of the University of London had declined the offer of April 1920 made by the then President of the Board of Education, of the Bloomsbury site. The Treasury had already informed the Senate of its willingness to consider any preferable alternative proposal for an increase without undue cost of the accommodation for the central offices of the University which the Senate felt able to suggest.

Notes in Brief
No precise information is available of the number of employed persons in Great Britain who are not insured under the National Health Insurance Acts, but 1,300,000 is suggested as a rough approximation.

The Royal Commission on National Health Insurance is considering whether dental benefit should be made statutory under the Health Insurance Act.

At an early date the Home Secretary intends to introduce legislation to remedy defects in coroners' inquiries in murder cases.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE

The following medical degrees have been conferred

M.Ch.—V D Doherty
M.B.—B.Ch.—A C Ansley C G Ainsworth W S C Copeman
J V Cuthbert C H C Dalton N M Goodman M H Webb Peplow
M.P.—F C Morris
B.Ch.—H A Coverdale J E D Crozier J L Edwards P M D
Har—A F T Mills

UNIVERSITY OF LONDON CONVOCAION

Was published on July 11th (p. 91) particulars of an amendment of the statute by which persons holding a bachelor's degree could be entitled to be registered as members of Convocation on attaining the age of 21 years. Dr Charles A H Frankham (Blackheath) writes to point out that while under the old statute a bachelor in certain faculties might enter Convocation six years after matriculation, graduates in the medical faculty were compelled to wait eight and a half to nine years.

GUY'S HOSPITAL MEDICAL SCHOOL.

The following scholarships in arts and science have been awarded

Entrance Scholarship in Arts (value £100)—H A Conyngham
Entrance Scholarship in Science (value £100)—D J Leitch W H Allen and I H Stevenson
Commonwealth Scholarship in Science (value £100)—W J Ferron

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The following students have since July passed the school examination at the termination of the seventy-eighth session (April-July, 1925)

* McKenzie (winner of Duncan medal) H T Meen
* A T Martin I A Sagar W F Carter T J
Sheehan G S Noble C H Philip W Scofield M
Bald W Wilkinson H D C Rice Hans Raj J L
Buchanan I W Hill C Surton Misa C Sagar A Raw
Trishman J M Halliwell J C Harper M C Lowe
D J Dale Under on M Burn L Corry J S Armstrong
D Hale I H King R Mackay I M Rillo J S Rieker
Miss J Key I G H Layne J A Yim W Noel C Wilton
C J Maclean A Mahood H O Wilkin J H Paquet
J I O D Burke Gaffner I A Wilmon W K McCarroll
G W Harley W J Moir J R Davies Miss D Dime
J A Ahlquist M S J Dunn J S Weller M W D (and)
J J Warren Hanna J L Orl M M V Chandra H T Chian
C B Macleod H A Lammch A L J Dove M J Rodrique
L G Solomon.

* With a tinclan

The following have been received as teachers of the University of the subjects and at the institution indicated

St. Bartholomew's Hospital Medical School—Dr G Graham (medicine)
Mr H J G Boyle (anatomy)
Westminster Hospital Medical School—Mr Donald H Interson (lecturer of children) Mr Stanley Dodd (obstetrics and gynaecology) Mr Stanford Cado (surgery)

St. James's Hospital—Dr James S Collier (neurology) Dr Robert H Cole (psychological medicine) Dr William H B. Soddart (psychiatry)

The annual report of the Superintendent of the Brown Animal Sanitary Institution for 1924 showed that the number of animals brought to the institution was 4,855. Five lectures on modern bacteriological technique had been delivered by the Superintendent at the Royal College of Surgeons in December 1924 as required under the will of the late Mr Brown. During the year Dr J W used the laboratories to carry out a histological investigation of tuberculous tissues and Dr Shaw did some experimental work on immunizing a sheep to cancer. Mr Ivor who has been reappointed superintendent of the institution for one year from June 1st 1925 had continued his work on ultramicroscopic virus-matter.

reappointed Director

has been elected

Applications for the William Julius Noel Fellowship must be sent to the Principal Officer by October 1st. It is of the value of at least £200, and is awarded annually by the Senate to a graduate of the University who in its opinion has done most to advance medical art and science within the preceding five years and therein shown conspicuous merit.

UNIVERSITY OF BRISTOL

The following candidates have been approved at the examination indicated

Second M.B. Ch.B. (Part I)—J S Adamson A C Price N L Price

MANCHESTER

The Dickinson Travelling Research Scholarship in Medicine has been awarded by the trustees of the Manchester Royal Infirmary to Dr Raymond Williamson and Dr Leslie J Wits of Manchester.

NATIONAL UNIVERSITY OF IRELAND

At a meeting of the Senate on July 10th resolutions of condolence with the relatives were passed on the deaths of Professors Edmund J McWeeney and Henry Corby.

The results of the recent summer examinations were considered and passes honours etc. were awarded in connection therewith. A report from Dr Denis J Coffey, representative of the University on the General Medical Council upon the proceedings of the session of the Council (summer, 1925) was considered and approved.

A new statute (Stat. XXX NUI) was made instituting a lectureship in obstetrics and a lectureship in gynaecology.

Obituary

HAMILTON DRUMMOND, M B, B S Durr
FRCS Ed., MAJOR R A M C (T),
Honorary Surgeon, Royal Victoria Infirmary
Newcastle upon Tyne

The tragic death of Hamilton Drummond, on Saturday, June 27th, as the result of a motor-car accident, came as a profound shock to everyone, for up to the time of its occurrence he was in his usual good health and overflowing with buoyant spirits. For a week he had been in training with the Northumberland Yeomanry, his old regiment, and those who knew him best will realize that he entered whole-heartedly into both the work and the play of the camp, taking his sick parade every day at 6 a.m. and enjoying all the evening functions to the full. On the day of the accident he set out to drive a motor into Newcastle in the early afternoon, accompanied by a couple of orderlies, who occupied the rear seats. There can be no doubt that he was very, very tired when he started on that fatal journey, and somehow the car swerved, ran into the ditch and overturned, and he was pinned beneath. When extricated he was quite conscious, but was obviously seriously injured. The left leg was almost torn off just below the knee, and there were also injuries to the head and trunk. Very soon after the accident he was seen by one of his own colleagues who happened to be driving that way. Though suffering profoundly from shock his first inquiry was for the orderlies who were with him in the car, and next some instructions about his dogs left behind at the camp. He insisted on looking at his leg, and at once recognized that amputation would be necessary. As promptly as possible he was brought to Newcastle to his own private hospital, but his condition became rapidly worse. He was just able to recognize his father before unconsciousness came over him, and death occurred the same evening.

Hamilton Drummond was just 43 years of age. He was the son of Sir David Drummond, CBE, MD, Pro-Vice-Chancellor of Durham University, President of the University of Durham College of Medicine, and a Past-President of the British Medical Association, and brother of Dr Hensley Drummond, one of the honorary physicians to the Newcastle-upon-Tyne Infirmary. He received his early education at Charterhouse, and was a student in medicine in the Newcastle school and at the London Hospital. He graduated MB, BS Durham in 1906, and took the Fellowship of the Royal College of Surgeons of Edinburgh in 1912.

As a medical student he was recognized as a steady worker who acquired knowledge not too easily but always surely, and faced examinations as uncomfortable ordeals. In consequence he started with a thoroughly sound knowledge of his profession. After obtaining his degree he acted as house surgeon and house physician at the Royal Infirmary, Newcastle. After holding these house appointments he went to London, where he acted as clinical assistant and later as house-surgeon to St Mark's Hospital for rectal diseases, and then as clinical assistant to the Great Ormond Street Hospital for Sick Children. While in London he found time to visit most of the great hospitals and the important museums. On returning to Newcastle he was appointed surgical registrar at the Royal Infirmary, and he revelled in the opportunity which this post gave him for clinical work and for the study of morbid anatomy and pathology. Though not gifted with a capacity for artistic representation, he made great use of rough drawings for elucidating his notes,

and the case records of that period are replete with striking diagrams which will always recall Hamilton Drummond to those who knew him as registrar. His house surgery in Newcastle was in the service of Professor Rutherford Morrison, and he subsequently became one of Professor Morrison's private assistants, thus continuing an association which had a notable influence on his career and which was undoubtedly of great mutual advantage.

At the outbreak of the European war Hamilton Drummond held a commission as a combatant officer in the Northumberland Yeomanry, but was at the time actually in the United States, where he had been visiting some of the American hospitals in company with Professor Rutherford Morrison and Mr D'Oyly Grange, now of Harrogate. During the trip Hamilton had been seized with appendicitis and was operated upon by Professor Morrison. After a rather exciting Atlantic crossing he reached home safely and was very soon with his regiment in France helping to uphold the fine traditions of the Northumberland Hussars. He was present at the first battle of Ypres and at Neuve Chapelle, and saw much severe fighting, being several times mentioned in dispatches.

After a time it was recognized that the services of such a competent surgeon could be ill spared, and he was transferred to the R A M C. From then onwards he was always in a forward hospital, and did excellent service, especially in the early treatment of abdominal wounds. It was while thus occupied that he carried out much important experimental work on animals, and, apart from the results, this in itself was a wonderful achievement considering the distractions and embarrassments of that anxious time. The results of this experience were embodied in a series of papers—"A clinical and experimental study of three hundred wounds of the abdomen," written in conjunction with Captain (now Professor) John Fraser, "Ulceration of the colon in the neighbourhood of gunshot wounds," with Captain J S Dunn, "Rupture of the small intestine into the mesentery, the result of indirect violence of a missile," and several others. In addition to his abdominal work he took part in developing the conservative treatment of early gas gangrene by the resection



HAMILTON DRUMMOND
(Photograph by James Bacon and Sons, Newcastle upon Tyne)

of infected muscles, and reported a series of cases jointly with Lieut Colonel C H S Frankham and Captain G E Neligan in the BRITISH MEDICAL JOURNAL. He also reported on the treatment of recent gunshot wounds with bipp, which had just been introduced by his old teacher Professor Rutherford Morrison, and on the treatment of a series of recently inflicted war wounds treated with flurine, and another series in which proflurine was used. This and much other work was cheerfully undertaken in addition to the often very heavy routine. With all this he kept up a constant correspondence with many friends at home, and when on leave was one of the most cheerful men that anyone ever met. Towards the end of the struggle his health gave out and he was invalided home, but after many months on his back he gradually recovered, and was apparently completely restored.

It is a source of gratification to his very many friends to know that the value of his work was fully appreciated by the consulting surgeons, who often expressed their high opinion of his ability both as a practical surgeon and as an investigator.

After the war he was appointed assistant surgeon to the Royal Infirmary, Newcastle, and for five years he served in this capacity, being attached to the wards of Mr A M Martin, who always found him a valuable, loyal, and stimulating colleague. Only three weeks before his death he was unanimously appointed full surgeon to the Newcastle

Royal Infirmary, and his trip to the annual camp was so to speak, his way of a holiday before taking up the full charge of his new work.

At the time of his death he held multitudinous appointments, for he was consulting surgeon to the War Memorial Hospital at Haltwhistle, to the Tyne-mouth Victoria Jubilee Infirmary at North Shields, to the Princess Mary Maternity Hospital, to the Poor Law Hospital at Cateshead, and was also surgeon to the Cripples' Home at Gosforth. These appointments were no sinecure, for he made regular visits, which often involved long journeys into the country. In addition he was demonstrator of surgical pathology and of operative surgery at the Durham University College of Medicine. With all this work in hand he found time to take an active interest in the work of the medical societies, and especially in the Proctological Subsection of the Royal Society of Medicine, and he frequently took part in discussions, both at home and in London, so recently as last May, together with Dr Gilbert Scott, he introduced a discussion on the value of x rays in the diagnosis of diseases of the colon. He was also secretary to the honorary staff of the infirmary, and took his share of committee work of various kinds. Gross pathology always interested him, and in its study he wandered into many fields, and he was often at his best in the informal surroundings of our pathological club when demonstrating some specimen which he had obtained from a post-mortem examination, perhaps on a favourite dog, or a find made during the dissection of an otter or a stray pigeon!

Though writing was never easy for him, his habit of recording and storing his observations gave him ample material on which to draw, and of this he made good use, as his numerous publications show. His first paper was a little note on "Gall-stone formation round a catgut suture," which was published in the *Lancet* in 1908, it was very characteristic, and showed his inquiring nature. The patient had been operated upon previously, and when subsequently a large stone was removed Hamilton bisected it and found the remains of a catgut suture. One can picture him saying, "I wonder what's inside that stone, just let us have a look," and that was his invariable attitude. Altogether he was responsible for some forty-five papers, some of them jointly with his brother officers, and two or three with Professor Putherford Morison. He collaborated with Chad Woodward in writing the excellent article on "Burns and scalds" in Choyce's *System of Surgery*, second edition, and he himself was responsible for those on "Vascular surgery" and "Operations for stricture of the rectum (non-malignant), haemorrhoids, fistula in ano, prolapse" in Carson's *Modern Operative Surgery*.

The main characteristic of Hamilton Drummond was the sportsmanlike way in which he enjoyed both his work and his play. He was full of spirits, and in whatever he did, however arduous or disagreeable the task, his good nature would show itself unfailingly. Though he often appeared to be a little shy and retiring, he was of a most lovable disposition, and whoever came in contact with him could not fail to notice this side of his character. The human side of his work was of great interest to him, doubtless an inherited characteristic, as those who know his father will recognize. The affairs of his patients were his affairs, and if the patient happened to be a gamekeeper or a countryman of any sort, that in itself was a claim to his particular consideration, and before long they would be fast friends. It will never be known how many little acts of kindness and attention he was really responsible.

He loved the country, and no part appealed to him more than his own Northumberland. In field sports he was an adept, and there were none, from deer-stalking to falconry, that he had not essayed. At one time he kept a falcon, and attempted to train it to strike its quarry, and often and often have I seen him gaze for long on those wonderful hawking pictures by Ansdell. Even on active service every opportunity for healthy sport was utilized, and a brother officer writes "I shall never forget the days we spent together hunting the hare close behind the line." Though a good shot, I think above all he most enjoyed a day with the foxhounds, and not long before he died and when contemplating amputation, he

said, "Well, I suppose this means no more hunting." But it was really the life of the open air and the felt that attracted him, for he was a true naturalist, and would study animal life with infinite patience.

When in London he often used to pay a visit to the Zoo, and it was a great treat to accompany him, for he always pointed out something not generally noticed. All the shops where animal skins for sale appeared led a detour in order to pay by a taxidermist. He was a delightful travelling companion, and fellow members of the Club will cherish the memory of the visits to Italy, to Holland, and in the spring of this year to Paris in his company, just as the three friends who accompanied him to and from the meetings of the Association of Surgeons in Dublin will treasure the recollection. Though Hamilton Drummond could not be looked upon as robust, he was very wiry and full of energy, but there can be no doubt he frequently overtaxed his strength.

He was a careful diagnostician, possessed of sound judgement, and a good operator, while he was always painstaking about the after-care and after-history of his cases. In surgical practice he had already made a great reputation, and his service were much sought after, so that his death is a serious loss to the people of the North of England among whom he lived and worked. As a teacher he concentrated on the essential, and was painstaking and impressive.

The funeral was a fitting tribute to this happy boy who off in the full tide of a useful and joyous life, and with the prospect of a wonderful future before him. Seldom has so large a gathering been seen, and seldom too has there been such an admixture of young and old among the mourners. The day was brilliantly fine, and one could not help picturing Hamilton remarking on the "topping" day with that firm look in his eyes that took him to the Northumberland moors he loved so well. The interment took place at Jesmond Old Cemetery. Canon Wilkison, who had known him all his life, and the Rev J. S. C. Farquhar, chaplain to the Northumberland Hussars, and an old schoolfellow, conducted the burial service. None who were present will ever likely to forget the extreme pathos of that last parting at the graveside.

Hamilton Drummond was unmarried and was devoted to his parents. All will share in the most sincere sympathy for Sir David and Lady Drummond and for his brother, Dr Horsley Drummond, and the other members of the family. His numerous colleagues are also to be pitted in that they have lost a most loyal member of the hospital staff who was never known to say an unkind word of anyone.

G. G. T.

We are indebted to Mr. Rutherford Morison, consulting surgeon to the Royal Infirmary, Newcastle-upon-Tyne, for the following tribute to Mr. Hamilton Drummond.

The tragic death of Hamilton Drummond consequent on a motor-car accident on June 27th is an irreparable loss to the infirmary and medical school of Newcastle-upon-Tyne. He was an all-round sportsman with surgical genius.

Tall, thin, and of a strikingly refined appearance, he could not fail to attract attention in any gathering, but was at his best in the country or in the operating theatre. In the country he roamed, shot, fished, played tennis or golf, or cricket, or danced, and did all well. His love for and understanding of animals and of natural history seemed to have been born with him, because even as a boy he was an interesting and instructive companion on any country walk.

In the operating theatre he was an original and thoughtful surgeon, enthusiastic in all his work, a skilful, unflinching operator, and a distinguished pathologist. Shortly before his death, at the age of 41, he was appointed, in opposition to the Royal Victoria Infirmary, and was universally recognized as one of the leading young surgeons of this country.

To superficial observers he often gave the impression of being casual or possessed of a genial cynical humour, but these were chiefly cloaks for his natural shyness and modesty. I now very well that the only thing he would have wished me to say of him is that he "played the game." He did.

Medical News.

The Fellowship of Medicine announces that a vacation post-graduate course will be given at the Prince of Wales's General Hospital, Tottenham, from August 31st to 15th. Sessions will be held each day from 10.30 a.m. to 5.30 p.m., including morning and afternoon demonstrations, and at 4.30 p.m. daily a clinical lecture. On Saturday mornings demonstrations will be given at the North Eastern Fever Hospital and the L.C.C. Mental Hospital, respectively. A similar intensive course has been arranged at the Queen Mary's Hospital, Stratford, from August 24th to September 5th, a special lecture being given on gynaecology and obstetrics. Courses have also been arranged at the West End Hospital for Nervous Diseases from July 27th to August 15th, with special lectures and clinical demonstrations daily at 5 p.m., and in urology at the St. James's Hospital throughout August. Further information may be obtained from the Secretary at No. 1, Whinpoole Street, W.1.

ARRANGEMENTS are being made to hold an international medical congress of industrial accidents and trade diseases at Amsterdam, from September 7th to 12th. The subjects introduced by British delegates include the legal aspects of accidents and sickness, pneumoconiosis, and work in hot and damp atmospheres. Visits will be paid to Rotterdam, Scheveningen, and Leyden, and excursions are being arranged. The honorary president of the British Executive Committee is Sir R. Do Marces van Swinderen, Netherlands Minister to Great Britain, the president is Sir Thomas Oliver, who is contributing a paper on the achievements of industrial legislation and hygiene, and the honorary secretary is Dr. H. Winko, 2, Grosvenor Gardens, Cricklewood, N.W.2, from whom a fully detailed programme may be obtained.

HIS MAJESTY THE KING has graciously consented to accept a copy of the *Iconography of Andreas Vesalius*, by Mr. M. H. Spielmann, F.S.A., which, written to celebrate the quarter centenary of the great Belgian anatomist, at the invitation of the great academic institutions of Belgium, is dedicated by permission to the King of the Belgians, and is published from the Wellcome Historical Medical Museum as No. 3 of the Research Studies in Medical History.

The report of the Shanghai Christian University Medical School for the year ending June 30th, 1924, includes an account of the amalgamation with it of the North China Union Medical College for Women, co-education is resulting in economy of administration and in increased teaching efficiency. Twelve missions now co-operate in the school, and more Chinese proportionately than foreigners have been added to the teaching staff since 1916. It is hoped to increase soon the size of the hospital from 110 beds to 200 or more, and to erect a special building for lepers.

The annual report of the Council of the Royal Society of Medicine states that the number of members is now 4,000 or 400 more than in the first year of the war. Some 20,000 readers were of the library during the year, and 13,000 books were borrowed. About 3,000 books are added to the library yearly. The financial position is stated to be satisfactory, and a committee has been appointed to study the printing and publishing of the *Proceedings*.

The Council of the Chartered Society of Massage and Medical Gymnastics has decided that after the examination for certificates in June to July, 1927, examination in massage as a separate subject shall cease, exception being made in the case of blind candidates and candidates from the services, the present conjoint examination, including medical gymnastics, will be substituted. A new register of members of the society, containing over 5,400 names, has been published (price 4s. 6d.) and may be obtained from the Secretary at 157, Great Portland Street, W.1. The certificate of the society is only awarded after the candidates have received definite courses of instruction, and have passed an examination of which part is always conducted by registered medical practitioners. Members of the society are pledged to work only under medical direction.

The house and library of the Royal Society of Medicine will be closed during the month of August for cleaning and repairs.

FIVE fellowships in neuro-psychiatry, each of the approximate value of £440 per annum, are available in the graduate school of medicine of the University of Pennsylvania, tenable for the period of three years from October 12th. The first year will be devoted to laboratory studies and instruction in clinics, the second to practical work, and the third to research. Further information may be obtained from the Dean of the Graduate School of Medicine, the University of Pennsylvania, Philadelphia.

On July 9th the President of the French Republic opened an Institute founded by Emile and Louise Deutsch de la Meurthe, which will provide furnished apartments at reduced prices to a large number of men and women students in the University of Paris.

An account of the proceedings of the National Conference of Mental Hospital Authorities, which was held on April 21st, and was reported in our issue of April 25th, 1925 (p. 807), has been published in a pamphlet entitled *The Nursing Service in Mental Hospitals*, it may be obtained from H.M. Stationery Office, price 9s.

AFTER forty-seven years unintermitted work Professor Charles Richet of Paris recently delivered his last lecture in the presence of the dean of the faculty of medicine and a large audience of professors and students.

THE American Red Cross has presented 10,000 dollars to the French Red Cross for the assistance of the wounded in Morocco.

The first international congress on malaria will be held at Rome from October 4th to 6th under the presidency of Professor Marchiafava. The subjects to be discussed are the alkaloids of quinine, the biology of the malarial parasites, the epidemiology and statistics of malaria, further information can be obtained from the general secretary, Professor Bastroni, Via XXIV Maggio 14, Rome.

A CONGRESS on infant welfare will be held at Geneva from August 25th to 28th. It will consist of three sections, the first concerned with hygiene and medicine under the presidency of Professor Clemens Paquet of Vienna, the second concerned with social and preventive work under the presidency of Georges Scle, professor of international law at Dijon, and the third section, under the presidency of the Marquis de Aberdeen, will consider education and propaganda work.

A RÖNTGEN society for South West Germany has recently been formed at Heidelberg, consisting of members from Baden, Württemberg, Baden, Hesse, Hesse Nassau, the Saar, Rhineland, and Westphalia. The first meeting of the society will be held at Heidelberg in the beginning of October under the presidency of Professor von Weizsäcker, Medical Superintendent of the Samariterhaus Heidelberg.

DR. LUGENIO MESONERO ROMANOS, director of the *Ida Medica* of Madrid, is organizing a salon in which Spanish medical men can exhibit their paintings, sculptures, and other works of art.

THE Ausha Hospital in Northern Tanganyika has received through Sir Milsom Rees a gift of £2,000.

THE annual meeting of the German Pediatric Society will be held at Carlsbad from September 20th to 23rd, when the following subjects will be discussed: (1) Orthopaedics and pediatrics, by Dr. Spitz of Vienna; (2) transfusion of blood in pediatrics, by Drs. Opitz of Berlin and Morawitz of Würzburg.

THE fee for the identity card which must be obtained by foreigners staying in France for a period exceeding two months has been fixed at 68 francs. It will be valid for two years. The fee is reduced to 10 francs for students and workers.

THE June issue of the *Wiener Archiv für innere Medizin* consists of a *Festschrift* in honour of Professor Jakob Wartenhorst, formerly known as von Jaksch, of the German Medical Faculty of Prague on the occasion of his seventieth birthday and his imminent retirement.

THE eighteenth international post-graduate course at Vienna will be held from September 14th to 27th, and be followed by a week of special clinical instruction. The course deals with therapeutics in all branches of medical practice. Medical practitioners wishing to attend should communicate in writing with the Secretary of the international course, Schlosselgasse 22, Vienna VIII, from whom a detailed syllabus may be obtained. The fee for the course is 600,000 kronen.

A COURSE in dermatology and venereology will be held at Strasbourg from September 12th to November 7th, under the direction of Professor Prunier. The fee is 200 francs, and application should be made to him (2, quai Saint Nicolas, Strasbourg). Arrangements are being made for the reception of foreign students, and pension accommodation will be available at about 30 francs a day.

AN Italian Psychoanalytic Society has been founded with the *Archivio Generale di Neurologia, Psichiatria e Psicoanalisi* as its organ. All communications should be addressed to Professor M. Levi Bianchini, Direttore del Manicomio Provinciale, Teramo, Abruzzi.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **British Medical Journal** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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All communications with reference to ADVERTISEMENTS as well as orders for copies of the **Journal**, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the **British Medical Journal** are **MUSLUM 9861, 9862, 9863, and 9864** (internal exchange, four lines).

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QUERIES AND ANSWERS

VEGETABLE TARS AND CANCER

Dr BRUCE C KELLY (Buckland Newton Dorset) asks us whether any carcinogenic properties have been proved to exist in vegetable tars—in for example, those from pines. Many people he continues, use these on the same patch of skin for many years.

From inquiries we have made it appears that no vegetable tar has so far been experimented with in this connexion, except the tar prepared from hain by a Japanese observer. It yielded positive evidence.

SOLIDS OF MILK

Mr. T. D. HARPIS (R.C.S. (Abercrombyth)) asks (1) whether genuine milk from a herd of cows has been known to yield as little as 8.07 of non fatty solids (2) whether the refractometer is reliable as a means of determining the absence or presence of water in milk.

SUBNORMAL TEMPERATURE

"P. X. D." asks for advice as to the treatment of an habitual subnormal temperature. Does this he asks, necessarily mean a subnormal basal metabolism and does it require treatment with thyroid extract? Is any pathological significance to be attached to it or is it to be regarded as a mere meaningless anomaly? The patient concerned has a temperature of 97.2° and is otherwise fairly fit.

INCOME TAX.

Succession to Practice. Ownership of Books.

"F. C. V. T." has succeeded to a practice as from April 1st. The inspector of taxes asks for accounts for the three years 1922-1923 and 1924. They can be prepared on the basis of gross bookings from the books left behind by his predecessor—who however retained the cash book—but is the predecessor's permission necessary before the books be used in that way?

Assuming that there is no written agreement on the point, we are of opinion that the ledger was handed over to be used by "F. C. V. T." for any proper purpose in connexion with the practice and that his predecessor could not object to accounts being prepared therefrom for income tax purposes, at the same time it might be an act of courtesy to give him the opportunity of stating his views. There are however two points to which we might refer: first that gross bookings are misleading unless the figures are modified by a reasonable deduction for bad and doubtful debts and as "F. C. V. T." does not hold the cash book the means of making a calculated claim is missing; second if the profits of the practice should fall short from some specific cause since or by reason of the succession, "F. C. V. T." will be entitled to throw the three years' average overhead and claim to subdivide the profit of the year of assessment. We suggest therefore, that the inspector might be approached with the

suggestion that having regard to the insufficiency of the data in "F. C. V. T.'s" hands and the likelihood that the change in proprietorship will cause a temporary falling off in the earnings he should agree to the making of an assessment on the same figure as before. It being understood that a detailed account will be forthcoming in due course for 1925-26, with a view to an adjustment of the assessment before payment of the second instalment of tax.

Request for Detailed Accounts

"A. P. L." has been asked by his local inspector of taxes to supply a copy of his accounts for each of the past three years. Can the inspector properly make this demand?

Assessments in respect of professional profits are made by commissioners (district or special) and not by the inspector and the latter has no statutory authority to demand accounts in support of a return. At the same time he is probably in a position to point out to the commissioners responsible for making the assessment that his request has not been met and the result might be the raising of an estimated assessment for the reduction of which our correspondent would have to produce the accounts. So that so long as the inspector's request is reasonable it may be advisable to comply with it. In this case "A. P. L." has the figures available, and we advise him to prepare a copy for the inspector and send it in, saying that he would call and discuss any point of doubt with him. The result will probably be satisfactory. To reduce the clerical labour involved the account might be drawn up showing the three years' figures separately in three columns in the one account. The employment of a firm of accountants is frequently resorted to by practitioners but hardly seems necessary having regard to the careful manner in which "A. P. L." appears to have prepared his calculations and statements.

Annual Payments from Gross Receipts

"W. C. H." has acquired a panel practice, covenanting to pay "for four years quarterly 20 per cent of all payments which he receives as a panel doctor" after deducting £175 from such receipts. Is he entitled to deduct income tax from such payments?

This is a question which materially affects the vendor of the practice and we have some hesitation in expressing a definite opinion without fuller knowledge of the course of negotiation and of the contentions based on the particular facts of the case which might be put forward on behalf of the vendor. It may be sufficient, however to explain the principle involved. In *Chadwick v. Pearl Life Assurance Company*, [1905] 2 K.B. 507, Walton, J., said: "It is obvious that there will be cases in which it will be very difficult to distinguish between an agreement to pay a debt by instalments and an agreement for a loan consideration to make certain annual payments for a fixed number of years. The distinction is a fine one and seems to depend on whether the agreement between the parties involves an obligation to pay a fixed gross sum. In my judgment the annual payments (in the case under consideration) were not paid as instalments of a debt, but were amounts payable and receivable as income." The trend of this judgment is in favour of the contention that tax can be deducted by "W. C. H." from the payments for which he is liable. It may be, however, that the fact that the capital value of a practice is usually computed by reference to the gross income would be held to constitute a distinguishing feature.

Cessation of Work

"B. G." gave up all professional work in January 1925 owing to ill health. What does he return (if anything) as his earnings for 1925-26?

He should return nil. His professional work had ceased before April 5th, 1925, and, assuming that he does not resume during 1925-26 he will have had no source of earnings for that year and will not be assessable for professional work. Any odd sums he may receive for past work will relate to earnings of years for which his liability has already been accounted for on the statutory basis of the three years' average.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments in hospitals will be found at pages 32, 33, 35, 36 and 37 of our advertisement columns and advertisements as to partnerships, assistantships and locum tenencies at pages 34 and 35.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 48.

An Address ON EXPERIMENTAL POLYURIA

SIR I. SHARPPY-SCHAFER, Hon M.D., F.R.S.,
PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF EDINBURGH

Since experimental polyuria depends upon injury or disease of the pituitary body, or, as some hold, of the nervous system in the immediate neighbourhood of the pituitary, it will be well first of all to draw attention to the main features of structure of the pituitary which might have a bearing on the subject.

ANATOMICAL CONSIDERATIONS

The pituitary lies at the base of the brain in the sella turcica and is connected with the third ventricle by a stalk, which is hollow as far as the gland, the hollow extending in some animals far into the interior. This hollow stalk is the infundibulum. Its wall is formed by a prolongation of the nervous tissue of the floor of the ventricle. This tissue expands into the posterior part of the gland, forming a solid mass of neuroglia—the pars nervosa or pars infundibularis. Nerve cells are absent. It is composed mainly of neuroglia with a few nerve fibres. Surrounding and enclosing the stalk is a cross-section of the stalk substance, which spreads from the stalk over the neighbouring part of the brain, especially over the tuber cinereum. This forms the pars tuberalis. Anterior to and higher than the pars tuberalis, the pituitary is formed of a mass of epithelium cells of granular appearance. This mass constitutes what is known as the pars anterior. It is the most vascular part of the gland, and when exposed in the living animal is conspicuous by its pronounced yellowish red colour. In most mammals there is a cleft in the middle of the gland which separates the organ into two lobes, a larger anterior and a smaller posterior. In the adult human subject the cleft is generally obliterated. In front of the cleft is the pars anterior, which forms the anterior lobe of the gland behind it is the pars nervosa, but this part is covered by an epithelium layer which is intimately adherent to it, termed the pars intermedia. The pars nervosa plus the pars intermedia together form the posterior lobe. The organ is easily separable into the two lobes by splitting it across in the line of the cleft. The cleft is the remains of the original tube which is formed in the early embryo from an outgrowth of the buccal ectoderm. The tube communicates at first with the buccal cavity, although the communication becomes obliterated later.

Pars Anterior

This composes by far the larger portion of the gland, and is formed of epithelium separated by connective tissue stroma. The epithelium is arranged in cord like or isolated masses of cells. These masses are usually solid, but sometimes the cells surround a vesicle filled with "colloid," which is no doubt secreted by the cells. Very numerous thin walled sinus-like blood vessels traverse this part of the gland. They lie in intimate relation to the cells, the secretion of which is probably pressed directly into them. The great vascularity of the pars anterior is very apparent in a photograph of an injected gland.

Pars Tuberalis

The larger portion of this forms an extension of the gland forward over the tuber cinereum. This portion corresponds with what was termed by Herring the "tongue like process." He described it as an extension of the pars intermedia but alike in structure and development it is distinct both from the pars intermedia and pars anterior. Its cells are basophil not oxyphil they are for the most part

arranged around colloid-containing vesicles somewhat like those of the thyroid. In vascularity the pars tuberalis closely resembles the pars anterior, so that in a photograph from an injected specimen the two parts are almost indistinguishable. Moreover, its capillaries have a sinusoid character like those of the pars anterior. This extensive vascularity renders it probable that it has an important function to fulfil. As we have seen, the pars tuberalis extends around the stalk of the pituitary in the form of a ring, which spreads over the adjacent part of the base of the brain, especially over the tuber cinereum.

Pars Intermedia

The pars intermedia lies immediately behind the intra-glandular cleft, covering the anterior surface of the pars nervosa, around which in many animals it sends a sheath-like prolongation for a variable distance. Here and there it extends into the substance of the pars nervosa. These extensions may become cut off from the rest and appear as islets of pars intermedia in the thickness of the pars nervosa.

The cells of the pars intermedia are smaller than those of the pars anterior. They resemble the cells of the pars tuberalis in being devoid of the coarse oxyphil and basophil granules which characterize those of the pars anterior. Here and there they may be seen surrounded by vesicles occupied by colloid. Occasionally this is considerable quantity and the vesicles are correspondingly large, on the other hand, it is sometimes absent. Besides such colloid as is contained within the vesicles the pars intermedia often exhibits globular masses of a similar substance of varying size not enclosed within vesicles (Herring's bodies). Some of these masses contain the remains of a nucleus, and have evidently been produced by a chemical transformation of the protoplasm of some of the epithelium cells. They are traceable into and through the pars nervosa, and can even be seen passing into the infundibulum of the third ventricle owing to its extension into the pars nervosa. It appears that they may undergo a further chemical transformation in the passage, for, according to Herring, extracts of pure pars intermedia and of pure pars nervosa show profound differences in their physiological effects.

The passage of colloid masses from the pars intermedia into and through the pars nervosa to be ultimately discharged into the third ventricle and thus into the cerebro-spinal fluid was discovered by Herring. He concluded that the substance of these masses represents the secretion of the pars intermedia, which is thus pressed into the ventricle. Herring's observations have been abundantly corroborated by subsequent workers who have used the same methods of fixation and staining. It is probable that the pars nervosa owes the physiological activity of its extracts to this material.

Confirmatory evidence that the active principles of the pituitary body can pass into the cerebro-spinal fluid has been furnished by various observers. Harvey Cushing and Goetsch found that the cerebro-spinal fluid when reduced in amount by evaporation will produce some of the characteristic effects of extracts of these extracts—that, namely, of producing extreme contraction of uterine muscle—was unknown at the time of their experiments. More recently this uterus-contracting or oxytocic principle in cerebro-spinal fluid Douglas Cow, working with Dixon at Cambridge was the first to show that duodenal extract if injected into the blood will produce after a certain interval unmistakable evidence, is tested with a certain cornu of the presence of the oxytocic principle in the cerebro-spinal fluid. More recently Dixon and Marshall of Cambridge have shown that ovarian extract is also a powerful stimulator for the pituitary, causing the oxytocic principle to be passed into the cerebro-spinal fluid. This only occurs in the absence of the corpus luteum from the ovary. Extracts which are made from an ovary during the greater part of pregnancy do not produce this effect,

* Address to the Inter State Post Graduate Assembly of America, Friday June 19th 1925

We have seen that the pars nervosa contains the colloid masses of Herring which are passed into it from the pars intermedia. There can be observed to make their escape into the extension of the third ventricle towards the pituitary, and, as Herring has shown, the greatly increased in number after thyroidectomy. Mott has made a similar observation in a case of myxoedema occurring in man.

Vascular Supply

With regard to the vascular supply of the pituitary, Goetsch has shown that in the dog it is supplied by a large number of arterioles derived from the circle of Willis and from a communicating branch uniting the internal carotids. The arterioles converge towards the infundibulum and are conveyed to the gland along its stalk. Most of the blood is distributed to the pars anterior. The venules of the blood are also very numerous, pass at first to the stalk and then diverge and form small veins radiating outwards to enter a venous circle roughly corresponding with the arterial circle. It is evident from this description that severance of the stalk would entail cutting off the main blood supply of the gland. There appears to be no true lymph vessels in the gland. Lymph which is formed within it must find its way through the space between the neuroglial fibres into the third ventricle or its extension.

Venous Supply

Very little is known of the venous supply of the pituitary. It is known that the venous supply of the infundibulum is made up of a similar system of veins occurring in man.

Very little is known about the nerve supply of the pituitary. Fibres have been described as passing along the stalk from sympathetic branches on the internal carotids. Such nerves are doubtless derived from the superior cervical ganglion. They are non-myelinated and are probably mainly distributed to the blood vessels. But myelinated nerve fibres have also been seen ending in ramifications amongst the cells of the pars anterior. Apparently there are no nerve cells in the pars nervosa.

PHYSIOLOGY

It is not necessary to describe all the physiological effects which are produced by extracts of the posterior lobe of the pituitary body but in connexion with experimental physiology it is important that certain facts should be pointed out. The first is that extracts of the posterior lobe of the pituitary when injected into the vascular system cause a great rise of blood pressure with contraction of arterioles and increased force of the heart beats. Sometimes the pressor effect is preceded by a fall of blood pressure and in a second dose is administered there is always a fall and no subsequent rise. This appears to be due to the fact that there are two antagonistic principles in such extracts, one causing elevation of blood pressure and the other depression. The principle which causes fall of blood pressure is if not identical with at any rate closely allied to histamine. This is shown not only by the effect on the ordinary pressure but also by that which is produced upon the extract of posterior lobe of pituitary body is apt to cause along with the raising of the aortic pressure, a lowering of pulmonary pressure. But we have found that if the histamine-like substance is first completely extracted by absolute alcohol only a pressor effect is obtained, in both aortic and pulmonary systems. The rise of blood pressure is due to general contraction of arteries, but those of the kidney, in place of being contracted are relaxed by the extract.

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Diuretic Action

For our present subject this exception is of great importance since the dilatation is correlated with an increase of secretion of urine, often very marked. This effect may be preceded by a slight contraction and the increase of urine by a temporary diminution. The increased secretion might be explained by the increased flow of blood through the kidney vessels due to the circumstances that they undergo dilatation while the other systemic arteries are contracting so that the blood pressure in the glomeruli is raised but that it is to a certain extent caused by a specific effect of one of the pituitary principles, and is not merely a mechanical result of increased blood pressure, is probably obvious from the fact that it may occur in the absence of any rise in blood pressure. Moreover, if there is at first a rise in blood pressure the increased rate of flow of urine is maintained even after the blood pressure has come back to its original level. And the effect of a second dose of the extract is again to produce an increase in the flow of urine, although the blood pressure no longer rises but falls, and although the kidney volume may now be unaffected. This would seem to indicate that the active principle affects not only the blood vessels of the kidneys but also its secretory cells, which it renders more permeable and the effect must be looked upon as caused by a chemical action on the renal cells similar to that of secretion on the cells of the pancreas. In this respect the action of the diuretic principle is comparable to that of those drugs which act as specific diuretics, the diuretic action of the pituitary is not antagonized by anæsthetics by merely increasing the general blood pressure. This may be taken as a sign that it does not act through nerves or nerve endings but directly upon the renal cells. In this respect also it resembles the action of the ordinary extracts of the posterior pituitary body, which we are now considering.

Indiurmic Action

Besides the diuretic action of extracts of posterior lobe, these are found in certain circumstances to bring about exactly the opposite condition. When intravenous injections of pituitary extract are made, there is, as we have seen at once, a very temporary diminution of flow of urine followed by a prolonged increase. On the other hand, with subcutaneous or intramuscular injection, especially if polyuria is already present, a great diminution in the secretion is produced. The anti-diuretic action was first noticed in clinical cases of diabetes insipidus, in which it has a remarkable, indeed specific, action in controlling the excretion of water by the kidneys and bringing it down to a normal level. To keep it at that the injections require to be repeated from time to time. In normal individuals the effect is less striking.

Most experiments on the anti-diuretic action of pituitary extracts have been made on water diuresis—that is, the polyuria which is produced by drinking large quantities of water. If pituitary extract is administered previously to taking large quantities of water, a considerable delay of the water diuresis occurs, and during this there are nervous symptoms, due doubtless to the accumulation of water in the system, which are sometimes of a serious character. Molitor and Pick find that the toxic effects which may be caused by pituitary when a large excess of water is administered can be at once removed by the administration of mercuric iodine, which probably acts by removing the excess of water from the tissues in which it has been stored and causing its rapid excretion by the kidneys. They conclude that the anti-diuretic effect has nothing to do with the renal vessels or with the renal cells but is an effect

on the tissues, perhaps also on the capillaries, and that one of the main functions of the pituitary is to determine the amount of water the tissues can hold.

Polymuria as a Result of Pituitary Lesions

A very common effect of experimental injury of the pituitary is polymuria. Considering that extracts of the posterior lobe of the pituitary produce diuresis when injected into the blood, it seems possible that injury of the lobe without removal may produce irritation either of the pars intermedia or of the pars tuberalis, and thus cause the outpouring of an increased secretion from these parts of the gland. The polymuria which is often found to accompany fractures of the base of the skull may be due to a concomitant injury of the pituitary. Meticulous manipulation of the posterior lobe without causing any obvious lesion will produce polymuria, but exposure of the gland by literal operation without manipulation or injury has no such effect. In one experiment on a dog of injury of the posterior lobe by a touch with the electric cautery I found the amount of urine secreted to rise from 40 c.c. a day to 220 c.c. For nineteen days it showed an average of 119 c.c. In another experiment the amount of urine rose from 110 c.c., the average for the preceding eleven normal days, to 182 c.c. for the eleven days immediately subsequent to the operation, and on some of these days it reached much more than this, attaining as much as 266 c.c. Many others have recorded cases of temporary or permanent polymuria produced by an injury to the pituitary body or to its stalk. It is true that in some of these there were injuries to the adjacent part of the brain, but this was not the case with all of them. Cushing obtained diuresis by stimulation of the cervical sympathetic or of its superior ganglion, and, according to him and his fellow workers, puncture of the pituitary may give as definite results regarding glycosuria and polymuria as Bernard's puncture of the fourth ventricle.

Most of the experiments the results of which in causing polymuria, with or without glycosuria, have been recorded have taken no account of the pars tuberalis. This part cannot easily be studied separately by reason of the fact that it is intimately united with the base of the brain, over which it spreads for some little distance. It may be that this portion of the pituitary is responsible for the polymuria which is frequently associated with injury of the gland, and either injury to the pars tuberalis or interference with the blood supply of the gland may be accountable for the results which have been recorded by Camus and Roussy. These observers have obtained in the dog, cat, and rabbit, but not with the same facility in all, polymuria and glycosuria from injuries by puncture or cautery to the floor of the third ventricle (tuber cinereum) in the immediate vicinity of the pituitary—apparently, as they state, without injury to the gland itself. They consider that in all cases the polymuria is due to the brain lesion and not to any effect on or through the pituitary, which, even, they state, be removed previously without affecting the results. But it may be stated that it is not possible to remove the pars tuberalis without injuring the base of the brain. Camus and Roussy even ascribe the dystrophia adiposo-genitalis and all the other effects which have been put down to lesions of the pituitary to injuries of the tuber cinereum.

Similar results have been recorded by Bailey and Bremner as being produced in the dog by a puncture by a probe in the base of the brain in the neighbourhood of the pituitary, without in any way directly injuring the gland, the integrity of which was verified histologically (although the pars tuberalis is not mentioned). Polymuria resulted from even the smallest puncture. It is significant that it began, not immediately, but within the first two days and lasted six to eight days or longer. When it was persistent the symptoms known as diabetes hypophyseoparva, general atrophy, and adiposity were also manifested, all suggestive of pituitary insufficiency. The persistent polymuria when it occurred had all the characteristics of diabetes insipidus in man, such as concentration of urine when intake of water was restricted, excessive polymuria when chlorides were injected, diminution of urine when posterior lobe extract

was injected, etc. According to these authors polymuria is never produced by lesions outside the pars infundibular region, but nevertheless in their opinion it is not caused by the agency of the pituitary directly or indirectly.

Although there can be no question as to the facts recorded by the above mentioned authors, it is difficult in view of the numerous observations on the effects of lesion confined to the gland and of the administration of extracts of the gland, to believe that most, if not all, of the symptoms described have not been produced through the agency of the pituitary. It is difficult to believe that a minute lesion of the floor of the third ventricle, very different in structure and nerve connexions from the floor of the fourth ventricle (in fact of simpler structure and with fewer nerve connexions than any other part of the brain and having no trace of glandular structure except that which is derived from the subjacent pituitary body) should produce *per se* such far-reaching results as these described, and hitherto attributed to disturbances in the activity of the pituitary itself. It seems a more rational conclusion that the perihypophyseal lesions effected by Camus and Roussy and by Bailey and Bremner produce their effects by disturbing the normal functions of the gland, either through its vascular supply or perhaps through hitherto unrecognized nervous connexions, or by interfering with the passage of products of the secretion of the pars intermedia into the ventricle, rather than by direct nervous action.

Most of the discussion has turned on the question of the production of polymuria from lesions of the base of the brain in the perihypophyseal region. The fact that polymuria is produced by such lesions even when the kidneys are completely denervated is a clear indication that the cause of the polymuria is humoral rather than nervous. This and the fact that it does not make its appearance until the next day or the day after are suggestive of an indirect action through the pituitary rather than of a direct effect from the brain lesion, which, as in the case of Bernard's puncture of the fourth ventricle, would produce its effects immediately.

THE PRESENCE POST MORTEM OF NITRIC-OXIDE-HAEMOGLOBIN

ITS CLINICAL AND MEDICO-LEGAL SIGNIFICANCE

BY

H. A. L. BANHAM, L.R.C.P., J. S. HALDANE, M.D.,
F.R.S., AND THOMAS SAVAGE, M.B.

THE case on which the present paper is mainly founded was one in which there is every reason for believing that *post mortem* appearances which simulated very closely those of carbon monoxide poisoning were due to the formation of nitric oxide-haemoglobin after death.

A man employed at a colliery in stoking the boiler furnaces became ill on his way home after a full day's work. He became faint and unable to stand. Even after a rest he was unable to walk more than a few yards, and he was brought home in a car. His skin was very cold and he was very feeble. During the night he was bringing up blood-stained sputum. He was seen next day by his doctor who found that his pulse was feeble, his breathing heavy, his temperature normal, and that he was complaining of a feeling of compression in the chest. Carbon monoxide poisoning was suspected and he was kept in bed, but the symptoms continued including the blood-stained sputum. On the ninth day after his illness began he was getting worse and was sent in a taxi to the Beckett Hospital, Barnsley, with a view to treatment by transfusion of blood. When seen on arrival by one of us (T.S.) he was very cyanosed and evidently moribund, and he died within ten minutes.

A *post mortem* examination (by T.S.) was made within a few hours. The only signs pointing to the cause of death were as follows. The lungs contained much frothy blood-stained liquid and showed patches of pneumonia though they floated in water. There was also a good deal of fluid in the pleural and pericardial cavities and the heart muscle showed signs of fatty degeneration. The whole of the blood, in whatever part of the body, including heart, spleen, kidneys, muscles and lungs, had a red or pink colour entirely different from the dark colour normally seen at first on cutting into these organs in *post mortem* examinations.

This appearance was thus identical with that in a case where death from carbon monoxide poisoning had occurred while the victim was breathing the poisonous air or directly afterwards. On dilution with water the blood gave a pink

precipitate with tannic acid solution, and on addition of caustic soda to the diluted blood the red colour remained. These are well known tests for the presence of carbon monoxide. As no spectroscopic test was applicable but there is every reason to believe that if it had been applied it would have confirmed the apparent presence of carbon monoxide. No existing textbook gives correctly the distinguishing test for nitric oxide haemoglobin and this substance has never hitherto been recognized *post mortem* in man, so that the possibility of its presence was not suspected at the time.

In view of the difficulty in assuming that carbon monoxide in large amount could have entered the living body for many days, it was suggested at the request that the poisoning had occurred in the conveyance which brought the patient to hospital or at his home. It is known that during the war a number of cases of carbon monoxide poisoning occurred in unbalanced cars through exhaust fumes being carefully sucked into the cars. These possibilities were carefully sifted by the coroner and definitely excluded. He thus found himself forced to conclude that not only was carbon monoxide the cause of death but the gas had been absorbed at the colliery nine days before death.

To the management and advisers of the colliery company (who had consulted the Birmingham University Mining Research Laboratory, of which one of us is director) it seemed, however, almost impossible that the carbon monoxide poisoning could have occurred there. The place where the man was working was in a current of fresh air passing into the furnaces. A man who was working beside him was not affected, and tests made afterwards by a very delicate method showed no trace of carbon monoxide in the air. Had the man absorbed any considerable amount of carbon monoxide during his work he would certainly have been affected at the time and not merely afterwards. The onset of his symptoms suggested something of the nature of a rigor, and then continued afterwards with the stunted sputum and other respiratory symptoms suggested some form of pneumonia. In my case the *post mortem* appearances were such as are only present when the blood is so highly saturated with carbon monoxide as to produce loss of consciousness. All experimental evidence and evidence from actual cases of carbon monoxide poisoning in man shows that carbon monoxide is expelled so rapidly when present in the blood that within a very few hours the presence of the gas in the blood cannot be detected. The mitter came into court on a claim against the company for compensation, and after evidence was heard the claim was dismissed.

The only cause which is known to be capable of producing the red colour of the blood and the other reactions which were found is the presence of nitric oxide haemoglobin. This compound, discovered by Hermann in 1865, is formed when nitric oxide is brought into contact with reduced blood. The colour of the blood changes at once from dark purple to the bright scarlet shown also by blood saturated with oxygen or carbon monoxide. A double banded spectrum, similar to that of oxyhaemoglobin but broader, is formed. However, much less sharply defined than those of oxyhaemoglobin, and somewhat less than those of CO haemoglobin. The NO haemoglobin band in the yellow extends, also, to a slight distance on the red side of the D line. On great dilution with water oxyhaemoglobin appears yellow in daylight, while CO haemoglobin and most delicate means of detecting the presence of carbon monoxide in blood. NO haemoglobin gives a tint which is pinker than that of oxyhaemoglobin, but not nearly so pink as that of CO haemoglobin. The solution of NO haemoglobin can be distinguished at once by boiling, since it gives a pink coagulum while oxyhaemoglobin and CO haemoglobin being stable in the boiling water and of a red colour. In other respects, NO haemoglobin gives similar reactions, including spectroscopic ones. It is only formed when nitric oxide comes into contact with reduced haemoglobin, NO haemoglobin would be only a chemical curiosity. In actual fact, however,

NO haemoglobin and its products are very familiar. It was shown by one of us that the red colour of raw salted meat is due to the presence of NO haemoglobin, while the corresponding pink colour of cooked salt meat is due to NO haemochromogen. The nitric acid in salting the meat becomes reduced in the meat to nitrite, and in presence of the reduced haemoglobin, which is also there, the nitrite becomes further reduced and the resulting NO combines with the reduced haemoglobin to form NO haemoglobin. It had already been shown by Haldane, Milgall, and Muriogordito that in animals which have been killed after receiving a dose of nitrite the blood becomes bright red after death and the possibility of this being the formation of NO haemoglobin was pointed out at the time.

When nitrite is given to a living animal methaemoglobin is formed. Not only, however, is this the case, but a certain amount of NO haemoglobin is also formed, as was shown by the above named authors. The colour of the blood solution treated with nitrite is therefore reddish brown in contrast to the dull brown of pure methaemoglobin. The contrast in both colour and spectroscopic appearance becomes much more evident on making the solution faintly acid by shaking it with expired air. On reducing the methaemoglobin with ammonium sulphide the whole of the haemoglobin pieces very gradually into NO haemoglobin or on boiling the whole passes rapidly into methaemoglobin so that the coagulum is pink. Nitrite poisons an animal by depriving the haemoglobin of its oxygen carrying power just as CO does, but the animal has a very marked appearance contrasting with the red colour in poisoning by CO. The cyanosis is not due to the presence of reduced haemoglobin, but to that of methaemoglobin.

In a quite recent paper Auer and Mirsky draw the conclusion that NO haemoglobin is a compound of NO with methaemoglobin. There appears to be no real grounds for this inference. When NO is added to a solution of oxyhaemoglobin or of CO haemoglobin when free oxygen is also present the first effect is that the NO combines with the available oxygen and turns nitrite in the solution. This in its turn produces methaemoglobin and turns the liquid brown. Only on further addition of NO is the methaemoglobin reduced and then converted into NO haemoglobin but this does not show that NO haemoglobin (which is formed directly if no oxygen was present) is a compound of methaemoglobin. Both the colour and the spectrum of NO haemoglobin indicate that it is a compound analogous to oxyhaemoglobin and CO haemoglobin. It will now be evident that provided an infective micro-organism produces nitrite within the body we can easily account for the presence of NO haemoglobin *post mortem*. The presence as well as the immense importance of nitrite from organisms in the soil has been a familiar fact for long, but hitherto no knowledge has accumulated with regard to nitriding organisms. The present case, if a nitriding organism was accumulated with might therefore be regarded as quite exceptional. That it is by no means exceptional is however indicated by observations made by one of us (H. A. J. B.) while he was in command of the medical section at the military hospital at Cannoek Chase during the great epidemic of influenza in 1918. During this epidemic there were many deaths from influenza pneumonia, and it was noticed again and again that the bodies had a red colour, and the blood when first exposed had a red or cherry red colour, just as in CO poisoning, though actual CO poisoning could not have occurred. He made a special military report on this remarkable fact, although at the time the possibility of NO haemoglobin being formed had not been considered. He found that at least two other officers serving in the R. A. M. C. at the time had made similar observations— one being Dr. David Smith now of Glasgow, who was a colleague at the Cannoek Chase Hospital, and the other Professor Connell of Sheffield University. The case it is he was watching the case on behalf of these observations, and him to doubt whether the red colour found was due to carbon monoxide.

We think that there can be little doubt that the colour

found was actually due to NO haemoglobin, and that the pathogenic organism which was present in this case, and probably in many other cases accompanied by dangerous bronchopneumonia, is a nitrifying organism. In cases of infective bronchopneumonia the lips have often a bluish or lavender colour and it seems to be impossible to restore their normal colour by adding oxygen to the inspired air, though in other types of cyanosis accompanying lung affections—for instance, in lobar pneumonia or phosgene poisoning—the oxygen is effective. This may be due to the fact that in the former case the pulmonary circulation continues through the blocked areas, so that the oxygen cannot reach the present blood while in lobar pneumonia the pulmonary circulation through the consolidated lung ceases. If, however, a nitrifying organism producing nitrites is present, it seems probable that the cyanosis or part of it may be due to the presence of methaemoglobin in the arterial blood, as in poisoning by nitrite. This might have an important bearing on both prognosis and treatment, but until further observations are available the matter need hardly be discussed further. Very marked cyanosis was observed in the present case. This shows that the red colour was produced

after death. In all probability the cyanosis was largely due to methaemoglobin.

Methaemoglobin and other coloured products of decomposition of haemoglobin can be detected most easily by diluting a drop of the suspected blood till the colour becomes yellow, diluting to an equal colour strength a drop of normal blood and then saturating both solutions with coal gas or carbon monoxide. The presence of abnormal pigment is indicated by the fact that the corresponding solution is less pink.

It is evident that from a medico-legal standpoint the possible presence of NO haemoglobin must now always be considered in cases of suspected CO poisoning. The distinction can be made with great ease by boiling a watery solution of the blood. If the red colour and other corresponding chemical reactions or spectroscopic appearances are due to NO haemoglobin the coagulum will be pink. No other simple test at present known appears to be reliable for distinguishing CO haemoglobin from NO haemoglobin.

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NINETY-THIRD ANNUAL MEETING, BATH, 1925.

SECTION OF PATHOLOGY AND BACTERIOLOGY

Professor J C G LEVINCHAM, C M G, D Sc, M B, F R C P, F R S, President

DISCUSSION ON FILTER-PASSING VIRUSES AND CANCER

[Dr Gye had prepared the following paper as an introduction to the discussion, it was not read, as he devoted his time to giving a brief account of his researches into the virus of malignant new growths. The paper is printed here owing to its intrinsic interest and its bearing on the general question of filter-passing viruses.]

I

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I HAVE no wish to take up time in a general review of the subject of "filterable viruses", this has been done so often in the larger textbooks of bacteriology and in special monographs as to make the repetition of the history of the subject wearisome. We are all compelled, clinician and bacteriologist alike, to take an active interest in the subject because of the importance of the diseases which are with reason attributed to the activity of the very small, invisible microbes. It is my wish rather to discuss the subject from the standpoint of the working bacteriologist, and especially to lay before you those parts of my experience which seem to me to have a general value.

Before embarking upon this, I should like to say a few words upon the term "filterable viruses," and to offer some comments upon the various attempts which have been made to classify the viruses on the basis of their pathological action.

The term "filterable virus" implies that the common property of the ultramicroscopic organisms is filterability through a candle already proved to be impervious to ordinary small microbes. When the vesicular fluid of a vesicle in foot-and-mouth disease is taken and largely diluted—for example, 0.2 ccm with 30 to 50 ccm of saline—and the mixture is filtered through a candle, the infective agent passes through apparently without loss. This fact, discovered by Loeffler and Frosch twenty-seven years ago was the first definite "filterable" virus, it still influences the bacteriologist to such an extent that filterability is regarded as the final test of an invisible virus

The contents of a herpetic vesicle may be diluted with saline, filtered, and the filtrate is infective, as is determined by its power to cause pathological changes in the brain of the rabbit. If, however, infective brain tissue be taken from a rabbit ill with, or dead of, herpetic encephalitis, and the tissue be ground thoroughly with sand, diluted with saline, filtered through sand (or spun) to remove coarse particles, and then passed through a fine candle, the final filtrate is non-infective. Here we can only conclude that the virus has become so firmly attached to brain tissue that it is not possible to separate them by ordinary mechanical processes. Filtration, in other words, breaks down. Again, calf lymph which undoubtedly contains the virus of vaccinia may be filtered, but the filtrate does not contain the virus. It is possible that the virus may be attached to the contaminating cocci usually present or it may be that it has the property of being adsorbed on to the surface of the filter. These, of course, are mere speculations, but the fact is, in spite of Borrel's reported success, that the virus in calf lymph does not pass a fine filter.

My own experience in the filtration of a virus has been particularly with the Rous chicken sarcoma. Here, if one takes tumour tissue and grinds it thoroughly with sand and then dilutes with an adequate quantity of saline or Ringer's fluid removes the coarse particles by preliminary filtration through sand and paper pulp, and then passes the fluid through a candle—for example, a Chamberland L2 or a Mandrel—the cell-free filtrate is found to be sterile in the ordinary sense but will cause the formation of a sarcoma, identical in structure and biological properties with the tumour from which the filtrate was obtained, when injected in a dose of 1/2 to 1 ccm in a chicken. If the tumour emulsion be insufficiently diluted, or if distilled water be employed instead of saline, the filtration is much more difficult and it is seldom that an infective filtrate is obtained. The reason for this is as follows. By using a small volume of saline or by using distilled water as a diluent, one obtains a viscous solution of nuclei and nucleo-protein which will not pass the filter readily. The hydrogen ion concentration of the liquid also affects the rate of filtration, within limits, not yet

tubes of medium containing fresh tissue always causes, sometimes rapidly, the formation of colloidal protein complexes, and it is possible that the virus is spun down on these. In other words I do not think it is a clean proof that the virus is particulate. The influence which the acidity has upon the result can be indicated by another experiment. It has already been mentioned that alkaline candle filtrates are unsuitable for spinning experiments. If, however, the pH of such a filtrate be altered by the addition of K_2HPO_4 , the acidity being adjusted to about 5.0, then such an acidified filtrate when spun will show an obvious difference in the infectivity of the uppermost and lowest layers. This experiment I accept as a demonstration of the coprecipitation character of the virus. If the centrifuge tube be lined with a thin layer of nutrient agar filled with an acid culture, and then spun, the spread may be reduced to about 6,000 and the time to forty minutes in order to lower the infectivity of the fluid. It is relatively easy in this way to make a fluid, which in a dose of 1/2 c.c. will cause a tumour, ineffective in a dose of 1.5 c.c. What the agar does beyond providing a sticky surface for particles to adhere to I do not know.

(2) Almost every dye has been tested in attempts to stain filterable viruses. Cameron's stain has found most favour though polychrome methylene blue has had a good deal of support especially from those who have studied influenza. I have tried these stains and many others in the course of my work on the Rous chicken sarcoma, without any success. The physicists tell us that an organism smaller than 0.2 μ cannot be resolved under direct illumination by the best lenses available. This may be so, but the hope which sustains us in attempting to examine stained preparations of a virus is that by the prolonged application of stains we may selectively "paint" the virus so that it becomes larger and visible. The hope, however, so far as the sarcoma virus is concerned, is illusory. The staining, to begin with, is not selective, the particles which are formed by the disintegration of tissue are stained also and it is impossible to distinguish them from virus. Moreover, colloidal particles apparently form on the slide in drying films and they stain pink with Giemsa's fluid. This can be illustrated by the following experiment.

A culture of the sarcoma virus was taken and a thin film made on a clean slide. A chicken was then inoculated. The culture was then spun in an agar lined tube at 8,000 for forty minutes. A second film was now made from the surface of the spun fluid and a second chicken was inoculated with 1 c.c. of the uppermost layer. The first chicken developed a tumour which was fatal in twenty days no tumour developed in the second chicken. It may therefore be presumed that the culture contained virus which was deposited by spinning. But the two films, the one taken before spinning and the second after dried in the same desiccator fixed together and stained together with Giemsa's stain, both showed pink particles at about the limit of resolution.

For a long time before this experiment was done I had believed such particles to be the stained virus. This experiment showed clearly that I had been in error. Possibly others have been deceived in the same way.

(3) The only value which the microscope has had in this research has been in revealing the presence of contaminating microbes. Contaminations have been interpreted differently, however, by other authors, to some, especially in the field of cancer research, they represent an interesting phenomenon. The filterable virus is regarded as mere, a phase in the life history of an organism, the contaminant constituting a second phase. Taking this view and disregarding classical doctrine of the fixity of form of bacteria—on at least straining beyond justification the fact that variations in size and form occur—such authors are not deterred from lumping together as one organism a mixture of virus cocci and bacilli. The view seems to me to be fantastic. My experience however is confined to two viruses—that of pleuropneumonia and the chicken sarcoma virus. The first is easily cultivated on serum agar or in serum broth and never in my experience shows any extraordinary variation in form or size. It is an organism on the border line of visibility. It may be stained and examined in the usual way though of course, the technical difficulties are greater than with ordinary cocci. Examination of stained films reveals a coccoid form which is constant in the morphology of

the organism is, of course, completely obscured by staining, but it is certain that larger forms, coccoid or bacillary, never appear in the cultures. The second virus is, as I have already pointed out, too small for direct microscopic observation, but cultures which become contaminated with recognizable microbes are ineffective in attempts to produce tumours. It is very probable that, with increasing knowledge of the ultramicroscopic organisms, we shall find that the doctrine of fixity of form holds here as well as with ordinary microbes.

(4) It has already been pointed out that each virus must be considered by itself. The organism of pleuropneumonia grows very readily on artificial media, it is apparently the only one which does so. It may be remarked that when the organism was first grown recourse was had to the method of cultivation in a collagen sac placed in the peritoneal cavity of a rabbit. Now that the virus is better known and more easily recognized, this procedure appears to be unnecessary. It is quite possible that the organism had often been grown, but not recognized because of the small size of the colonies before the first admitted cultivation in a collagen sac. The virus of the Rous chicken sarcoma may be grown in Huxley's broth to which is added 0.2 per cent potassium chloride, 1 c.c. of sterile rabbit serum to each 5 c.c. of broth, and a fragment of chicken embryo. The only proof that the virus has grown is the production of a tumour following inoculation into a chicken. It is not possible to judge growth by the appearance of cloudiness in the medium, this, indeed, is so often caused by the small growth of a contamination that it is advisable to discard such cultures. The production of cloudiness in Noguchi tubes has been put forward as a proof of culture, I have found that, so far as chicken sarcoma virus is concerned this is entirely erroneous.

(5) I have put this question forward because I wish particularly to stress one aspect of the search for the invisible viruses, and that is that the animal test is the final proof of the presence of the organism in an inoculum. The uselessness of the ordinary microscope is very disconcerting, as everybody who has worked at a filterable virus will testify. It certainly teaches us how much we owe to the microscope in our ordinary work. But here, in searching for the invisible organisms, we fall back in a very special way upon animal experimentation. It is because of this, and because ordinary laboratory animals are not susceptible, or only slightly so to human filterable diseases such as measles and influenza, that such small progress has been made. We shall be compelled to work at animal diseases if we wish to discover a method of handling and identifying the very small microbes. This, however, will involve large expenses and is open only to those who have ample funds behind them.

At the unanimous desire of the meeting Dr Gye did not read the above paper, but gave an account of his recent researches into the etiology of cancer. He began by pointing out that hitherto they had been satisfied with the general conception that all that was necessary in order to originate disease was that host and parasite should be brought together. Although this held for many contagious diseases, laboratory research had shown that the conception broke down when applied, for instance, to certain diseases due to anaerobic bacteria. Thus tetanus bacilli washed free from toxin were harmless for laboratory animals but a fatal disease ensued if sufficient toxin was also present. Although they had no definite knowledge with regard to other bacterial diseases there was much to suggest that a similar kind of force operated with them. Thus during the war, in some outbreaks of cerebro-spinal meningitis 50 per cent of the population were found to be carriers of the germ without contracting the disease. Similarly about 10 per cent of the population of this country harboured the cysts of amoebic dysentery, yet no great epidemic occurred. Clearly the meeting of host and parasite often failed to be marked by disease. Turning to cancer Dr Gye dealt first with the question of specificity. All species of animals suffered from cancer but until recently a tumour arising in one animal could only be transmitted to another animal of the same species, and this only by the

injection of living cells. This specificity and faithful reproduction of the parent tumour were often quoted by pathologists as evidence against the germ theory of cancer. But there remained one exception—namely, the chicken sarcoma discovered by Peyton Rous in 1911, which could be passed from one bird to another of the same breed by the injection of a cell free filtrate of the sarcoma. Subsequently two other tumours were discovered which could be handled in the same way. Each of the three filtrates from these tumours gave rise to a different variety of sarcoma imitating always the original tumour from which the filtrate was derived. Thus, the first was an embryonic type of sarcoma the second an osteochondrosarcoma, and the third a spindle celled sarcoma. Each of these could be ground up and diluted in saline and filtered in each case the filtrate reproducing in injected animals a like type of malignant growth. It seemed that each type of tumour must be caused by a specific type of virus and the opposite of the germ theory of cancer were quick to point out that a theory that necessitated a belief in a separate type of virus for each separate type of growth imposed considerable strain on scientific credulity.

Dr. Gye's explanation of the specificity of tumours has already been published, and he referred only briefly to some of his experiments which had led him to the conclusion that two agencies were necessary for the successful transmission of tumours—namely, a living virus and a specific substance derived from the tumour tissue. He described how, by rapid and prolonged centrifuging, he had divided up the filtrate from a chicken sarcoma into two elements—the washed deposit and the non-particulate supernatant fluid. Each of these alone was incapable of giving rise to malignant growth, but when both were injected sarcoma followed. He recounted how he had succeeded in producing tumours in mammals also with a cell free filtrate, thereby proving that mammalian tumours did not differ essentially from the filterable and infective tumours described by Rous.

II

Mr J E BURROUGHS, F.R.S. followed with an account of the microscopic examination of ultramicroscopic viruses. He defined the limitations of existing microscopes and described apparatus he had constructed which enabled him to photograph by means of ultra-violet light objects less than a fifth of a micron in diameter.

III

M H GORDON, CMG, MD, F.R.S., Consulting Bacteriologist St Bartholomew's Hospital

AFTER offering congratulations to Dr Gye on his success in cultivating a filter-passing virus *in vitro* and the brilliant application that he had made of it, and to Mr Burroughs on his wonderful development of the microscope for the present purpose, Dr Gordon remarked that his own work on another group of these viruses was complementary to theirs because he had employed neither culture *in vitro* nor the microscope.

Three years ago he had the honour of introducing a discussion in that Section on the subject of the etiology of influenza, when evidence was adduced that this disease was due to a pathogenic agent belonging to the filter passing group. In attempting to define further the characters of the minute anaerobic organism recovered from influenza patients he was baffled—partly by the irregular supply of material, partly by lack of knowledge of how to handle such organisms, but chiefly by the difficulty in deciding whether an animal that became ill after infection with this organism had true influenza or not. Similarly, there was no means of determining whether the animals that escaped owed their immunity to a previous attack naturally acquired.

It was determined, therefore, to drop influenza for the time being and to concentrate on a filter-passing virus that would produce an unmistakable specific lesion in a laboratory animal in the hope that information thus obtained would prove useful hereafter when handling influenza or other more difficult viruses.

The indicator selected was vaccinia, a virus which could always be obtained produced a perfectly typical lesion on the skin of the rabbit and had the great advantage that multiple inoculations could be made at the same time. Since then he had spent three years in an attempt to define the characters of vaccinia virus, a work latterly having been included in a report to the Medical Research Council, which was now in the press. He could not possibly describe the whole of this investigation in the time allotted, and must refer only to some of the more important results.

As regards the filterability of vaccinia virus Dr Gye had reminded that in ordinary circumstances this virus failed to pass the filter. Now as regards this point a great deal of work had been done. The positive evidence was as follows: Bath Raulinger and Nouri and Rouget had shown that by taking sufficient of the filtrate the presence of the virus in it could be proved. Nouri also had shown that if the supernatant in the cold store before filtering, the virus could succeed in passing it through the Berkefeld filter after liberating the virus from the cells by trypsinization. Finally Levaditi and Nicolin showed that vaccinia virus is readily adsorbed by substances analogous to those that compose the Berkefeld and other filters, and further that when filtered through a cellophane membrane the pores of which were exceedingly fine vaccinia virus passed through more readily than did the viruses of rabies, herpes, and encephalitis. In face of this wealth of positive evidence there could be no reasonable doubt that vaccinia belonged to the filterable viruses.

In the present investigation the ordinary microscope was only used to exclude contamination from bacteria. No attempt had been made to cultivate the virus *in vitro*. Animal experiment and ordinary immunological and serological methods alone were employed. As vaccinia virus produced a typical and specific lesion on the shaved and scarified skin of the rabbit, this had been made use of to study some of the chief characters of the virus. The work had been as far as possible quantitative throughout. In submitting the virus containing material to a known degree of dilution before inoculation the amount of active virus present had been accurately determined and the result expressed in minimal vaccination doses, or MVD. Similarly, the degree of immunity obtained by various prophylactic measures had been measured by applying falling doses of virus to the rabbit's skin and thus ascertaining the number of MVD to which the animal was immune. When preparing antivaccinia serum pulp was made from the vaccinia lesions on the rabbit's skin, and the suspension of virus thus obtained free of foreign protein was injected into further rabbits. The antiserum prepared by this method only contained antibodies to the virus.

The remainder of the communication was illustrated by tables thrown on the screen by lantern slides. The virus contained by seven different specimens of calf lymph in MVD to 5000 MVD per cubic centimetre, and the same brands tested two years later gave a result similar to that given before. The effect of various disinfectants on the vaccinia virus was next shown and attention drawn to the very strong "virucidal" effect of potassium permanganate which considerably exceeded even mercury. A pronounced virucidal capacity of permanganate pointed to a fundamental weakness of the virus to oxidation, a point emphasized by Repin of the Pasteur Institute in 1909 in course of a study of the biology of vaccinia virus. The effect of heat upon the virus was next determined, and exposure to 55°C for thirty minutes either destroyed the virus or almost entirely destroyed it, a comparison was made of the prophylactic value of the raw virus with the same virus heated in this way. It was found that by raising the dose of this heated virus, a point was reached at which the immunity produced by it was as substantial as that produced by the raw virus. Provided that this critical or effective dose was given, the im-

munity was equally good whether the route by which it was administered was intracutaneous, subcutaneous, intravenous, or intratracheal. If the lymph was heated above 55° C. however—for instance, to 65° C. or over—its prophylactic value was greatly reduced. The time of advent of the immunity was much the same with the heated virus as with the raw virus.

By immunizing rabbits over a considerable period with increasing doses of the virus, immune serum had been prepared of which 1 ccm. protected against 100 M.V.D. of virus. This antivaccinia serum contained specific antibodies to the virus of vaccinia—namely complement-fixing antibodies, agglutinins, and a fixic antibody that destroyed the virus *in vitro*. Attention so far had been mainly confined to the first two of these antibodies which had been found to be equally specific for the viruses of vaccinia and variola, both of the severe and of the mild type sometimes known as *variolina*. The agglutinin present in this serum produced visible flocculi in suspensions of vaccinia or of variola virus that could be seen with the naked eye or with a hand glass if the tubes were exposed for twenty to twenty-four hours at 55° C. Thus the presence of either vaccinia or variola virus could be detected by a macroscopic agglutination test that appeared to be quite specific, and the complement fixation test could be used to check the result. As controls with varicella and other material had proved negative this reaction appeared to be quite specific, and was available for the diagnosis of variola by detecting the presence of that virus in material from the pustules. [Photographs of tubes showing this agglutination reaction with both vaccinia and variola (Clouster) viruses were shown on the screen.] When examined under the dark-field microscope these flocculi thrown down from vaccinia or variola virus by the agglutinating serum were found to consist of oval bodies closely resembling those described by Mr. Brunard in the case of Dr. Gie's cultures of cancer virus.

Some experiments made to determine the effect of gravity and of centrifugalization on the vaccinia virus indicated that it was particulate. The virulence test was far more delicate for revealing this action than the complement fixation test. The Berkefeld filter caused both these reactions to become negative, but in some later experiments evidence had been obtained occasionally of the passage of both vaccinia and variola virus through the filter after the suspension had been kept for several weeks in the cold store before being filtered.

As variola virus reacted specifically with antiovaccinia serum in the complement fixation and agglutination tests, there was good reason to believe that both tests could be employed to assist in the diagnosis of variola.

The final part of the communication dealt with the relative permeability of various surfaces of the rabbit to the virus of vaccinia. Evidence was adduced to show that under natural conditions and in the entire absence of trauma the nasal mucosa was more permeable than the other surfaces by which test was made. The ocular conjunctiva and the external auditory canal were also permeable, but far less so than the nasal mucosa.

The procedure used to determine these points was to administer falling doses of virus to these surfaces, and after an interval of ten days to determine the degree of immunity to vaccinia. On application of vaccinia virus to the nasal mucosa the rabbit after an incubation period of six to eight days developed an acute nasal catarrh with mucopurulent discharge, which during the first day contained the virus of vaccinia in large quantity. This observation seemed to link up vaccinia virus with the causative agent of influenza.

As the nasal mucosa was so permeable to the virus, the value of this route was tested for prophylactic purposes. It appeared that when the effective dose of virus heated to 55° C. was applied intranasally, immunity of a substantial degree followed.

In some subsequent remarks Dr. Gordon said that bodies somewhat resembling those described by Mr. Brunard had been seen by him in the case of flocculi thrown down by the action of precipitins. But whether this was merely a superficial resemblance or not he could not say.

The following is a summary of this contribution to the discussion.

Routine Method followed

- (1) No ordinary microscope used, except to exclude contamination from bacteria (for dark background microscope see later)
- (2) No attempt at culture *in vitro*
- (3) Animal experiment and immunological methods only used so far, and both in quantitative manner throughout

Procedure employed

- (a) The method of dilution of virus 1 in 10, 1 in 100, etc., and titration of rabbit's skin to find end-point described
- (b) The method of preparing suspension of virus from rabbit's skin for use as antigen when preparing antiovaccinia serum was also described. As rabbits were also used to provide antiovaccinia serum, only virus antibodies appeared in their serum when prepared with this antigen.

The contribution was illustrated by lantern slides as follows:

- 1 Relative potency of various specimens of calf lymph M.V.D. comparison
- 2 Disinfectants. Potassium permanganate has a very powerful destructive action on the virus
- 3 Effect of heat. The virus attenuated by thirty minutes at 55° C.
- 4 Active immunity. Comparison of raw and attenuated viruses, for prophylactic purposes. Importance of giving a certain critical dose of attenuated virus in order to produce a substantial degree of immunity. Effect of this dose by various routes. Time of advent, and duration of the immunity.
- 5 Passive immunity
- 6 Specific antibodies formed against vaccinia virus comprise (1) Complement fixing bodies (2) Agglutinin (3) Lysin. This last at present not adequately studied.
- 7 Application of these antibodies—that is, complement fixing—and agglutinin (also of virulence) to determine abundance of vaccinia virus in suspension and thus to determine the effect thereon of—

Grav. %	} Virus is particulate and mostly retained by filter	Result
Centrifuge		
Filter		

Variola

- 8 Antiovaccinia serum reacts as well with variola virus as with vaccinia (complement fixing and agglutinin). Therefore, this antiovaccinia serum can be applied to diagnose variola by detecting the presence of this virus in a suspension of the contents of the pustules or of scabs (employing both complement fixing and agglutinin tests). Confirmed by material from altogether five variola outbreaks. It is specific (vide negative results from six varicella outbreaks, etc.).
- 9 Result of saturation of agglutinin of antiovaccinia serum by vaccinia virus, variola virus, and varicella virus, respectively shown. Vaccinia and variola viruses absorb both vaccinia and variola agglutinins. Varicella absorbs neither of these agglutinins.
- 10 Natural permeability (that is, without trauma) of various surfaces of the rabbit to vaccinia virus, as proved by subsequent immunity. The nasal mucosa is the most permeable of the surfaces. On nasal infection the rabbit after an incubation period of six to eight days, develops a condition of catarrh with a mucopurulent nasal discharge which during the first day contains the virus of vaccinia in great abundance.

Conclusions

- 1 Vaccinia and variola viruses are both particulate, and largely held up by the Berkefeld filter
- 2 Their presence and abundance can be measured, within limits, by the quantitative virulence tests, also by quantitative serological methods—that is, complement-fixing and agglutination tests—with antiovaccinia serum
- 3 Active immunity can be produced to vaccinia with either attenuated or killed virus, provided the dose is sufficient

- 4 A fair degree of passive immunity is possible.
- 5 The capacity of vaccine to excite acute catarrhitis up to the virus with that of influenza.
- 6 Flocculi derived from suspensions of virus or variously prepared agglutinated and composed, and dark-background microscope, of spheroidal bodies closely resembling Barnard's found in cancer cultures. Apparently similar bodies, however, have been found in flocculi from precipitation action—that is, in flocculi thrown down from serum of man or of horse when these are brought in contact with homologous antiserum prepared from the rabbit. The resemblance, however, may be only superficial. Further investigation has not yet been made, the immunity and serological side has been the chief line of research so far, and macroscopic agglutination has fulfilled the requirements so well and behaved quite specifically.

IV

J. F. MCCARTHY, M.D., D.Sc. (Ed.),

Director of Research and Pathological Services, Metropolitan Asylums Board

Dr. Gyr's paper is of great interest to me because he has given expression to thoughts that have occurred to me while working at filterable virus. Dr. Gyr is extremely fortunate in being able to work at animal diseases, in which the natural infection can be studied under experimental conditions in its proper host. The urgent need for definite information as to the biology of the so-called filterable viruses has been frequently emphasized, and Oltshy, realizing the difficulties attending the investigation of human diseases, turned to the vegetable kingdom and studied the virus of mosaic disease of tobacco and tomatoes. He eventually succeeded in culturing the virus in an infusion of tomato leaves. Our future knowledge of the ultra-microscopic viruses will not come from the investigation of human diseases but from an experimental study of animal infections.

I have recently been working on four diseases the incitants of which have been classed as filterable viruses—namely, influenza, measles, common colds, and febrile herpes—and I must confess that the results of my labours on the first two have been disappointing. Typical clinical influenza cannot be reproduced in the rabbit, although there is a reaction in this animal akin to the human disease which may be interpreted as an experimental infection. Measles has been disappointing, and I have not yet satisfied myself that I have produced any definite criterion of the experimental disease in animals. Oltshy and I, working at common colds, were fortunate in obtaining human volunteers, but this is not possible with exanthematous diseases such as measles, rubella, and chicken-pox, as the susceptible individuals are not adults but young children.

I am glad Dr. Gyr has emphasized that filtration does not depend on the actual size of the pores of the candle. Filtration appears to be a problem in colloidal chemistry, in which case the hydrogen-ion concentration would be an important factor.

With regard to the failure of the filtration of brain tissue from rabbits dead from herpetic encephalitis, I ascribe that, not to the virus being attached to the brain tissue, but to the fact that the host material from the brain is in a state of colloidal suspension and the pores of the filter are clogged by it. If, however, a small piece of the infected brain be placed in a tube of 2 per cent glucose broth and incubated for forty-eight hours at 37° C., the virus passes out of the brain tissue into the surrounding broth. If this clear broth be now filtered through a Berkefeld candle, it is found that the virus passes through quite easily with apparently no loss in its infective power. I was unable to detect any difference in the infectivity of different layers of the virus-containing broth by centrifuging, but I did not employ such high speeds as Dr. Gyr, and, moreover, the infective dose of the fluid was very small, 0.001 c.c.m. in some cases being sufficient to bring about a fatal issue when injected intracerebrally into a rabbit. Examination of the sediment after prolonged centrifuging of the broth containing the virus failed to reveal any forms which could be identified as organisms.

The difficulty of obtaining artificial growths of the filter-

able viruses is very great. The infective dose is often small and there are many failures to become immune before it can be titrated that there is any definite multiplication of the virus. I have a uninfected herpes virus in the third subculture in a medium the basis of which is malted barley in extract and kept it alive outside the body in the medium at 37° C. for so many days, a longer without culture, the virus does not survive in broth at 37° C. for more than six days. In one instance the fourth subculture was infective (twenty-one days outside the body). These experiments do not necessarily mean that the virus actually multiplied. Probably the conditions for survival were favourable, and the infective material in the subcultures was merely carried over from one to another in each medium. The results indicate, however, that it may soon be possible to cultivate the virus of febrile herpes in artificial media.

Cultures in Smith-Noguchi medium does not necessarily mean growth, as this is frequently seen in sterile un inoculated control tubes. The occurrence of clodders depends on the amount of aseptic fluid—the higher the aseptic gravity the more likely it is to occur. As the clodders show its just above the surface fragment, the character of the layer of concentration around the tissue is probably responsible for its occurrence. Personally, I feel that Smith-Noguchi medium except for the growth of "globoid bodies" of poliomyelitis and *Bacterium paratyphosus* is unsuitable for the cultivation of filterable viruses. I do not often find the virus disappear more rapidly from a tube than from a saline or broth control.

I agree with Dr. Gyr as to the difficulties of examining sterile filtrates microscopically for organisms on the limits of clarity, and particularly films made from media containing just a small amount of fluid, and stained by Gram's method. I have found well ripened methylene blue more reliable. This was particularly noticed in attempts to cultivate the virus of common colds in Smith-Noguchi medium. Filtered nasal washings were used and proved to be infective by inoculating a human volunteer at the same time as the Noguchi cultures. After seven to ten days incubation, films were made and stained by Gram's method. In some preparations minute round bodies were noted, just visible, they had a definite contour and appeared to possess a definite morphology. Subcultures of these bodies in Noguchi medium frequently showed similar forms, but appeared as though these bodies were organismal and capable of cultivation. The examination of incubated but un inoculated control tubes, however, showed similar appearances. These minute bodies were thought by Foster to be the crucial organism of common colds, but the fact that identical appearances can be found in uninoculated culture tubes proves these small "globoid bodies" to be artefacts.

As animal experiment is the only reliable test for the presence of filterable viruses the importance of adequate controls cannot be overestimated. Not only is it necessary to cultivate the filtrate on various enriched media both aerobically and anaerobically, but it is essential that the type of receptors which the animal shows is due to the presence of the inoculated virus. This is particularly important in attempting to transmit diseases peculiar to the human race to experimental animals. Rivers and Tillett in attempting to produce experimental chicken pox, Miller when working on acute rheumatic fever, and myself when searching for a filterable virus in scarlet fever, all obtained by continued intratesticular passage what is now considered to be a hitherto unknown rabbit virus, the virulence of which has been enhanced by continuous passage. When the virus obtained by the injection into rabbits of blood from scarlet fever patients failed to exhibit any serological relationship with the disease, the experiments were repeated, using normal human blood. A similar virus showed itself at the third testicular passage, showing that in the previous experiments the virus was not, as it was thought to be, etiologically connected with scarlet fever. This experience demonstrates that when animals are inoculated with material from a disease from which they do not normally suffer, a reaction on the part of the animal is not necessarily due to an infective agent introduced in that material, and one should be cautious in drawing any conclusions from such experiments until full and complete controls have been made.

Work on filterable viruses is technically difficult, full of pitfalls, and fraught with disappointment, and where the disease cannot be communicated satisfactorily to lower animals progress must be necessarily slow.

Dr GYE is to be congratulated on the valuable facts he has obtained and for the advancement he has made in this obscure field of work.

GENERAL DISCUSSION

Dr J S MINSON remarked that Dr GYE said that there were two factors in the causation of malignant growths (1) a primary factor—a filterable virus, and (2) a secondary factor—specific. Dr Minson asked whether this secondary factor was a reaction of the animal to the primary virus, and, if so, how did this become a primary cause, and how did this affect the development of benign growths as distinguished from malignant growths?

Dr GYE answered that he did not know.

Dr J G STEPHENS asked Mr BRINDLEY if he had ever noticed any response by Dr GYE's virus to the ultra-violet radiation employed in microscopy. The wave length used, of the order of 257μ , was well within the region to which living organisms were susceptible. If the present virus reacted similarly it might perhaps be possible to influence a tumour by means of fluorescent ultra-violet light excited in a tungsten salt, say, by means of x-rays. Similar effects with other organisms and other fluorescent substances—for example, quinine and cosine—were, of course, well known.

Mr BRINDLEY said, in reply to Dr STEPHENS, that the question of the influence of ultra-violet light on the organism was dealt with by him in the recent paper he had published in the *Lancet*. Changes certainly occurred in morphology as the result of exposure to ultra-violet light, but his whole method was designed to avoid such errors by a very short exposure.

Dr J BARROET ANDERSON inquired whether it was not now accepted that the infection of human tuberculosis was a filter-passer, and that the shed granules of the bacillus (which gave the bacillus its bearded appearance) were infective and filter-passers. Because, if this were accepted, it was obvious that not every culture of that micro-organism would contain these granules, and therefore not every culture contained the filter-passing infection. Dr BRINDLEY ANDERSON inquired further whether it was not accepted that cancer was a combination of two different pathological cell conditions, both of which were recognized as due to the presence of micro-organisms: first, cell multiplication, the most common instance of which was the granulation tissue formation in septic wounds; secondly, phagocytosis, common instances of which were the macrophages of the lymphatic system, and the analogous phagocytic bodies arising from the endothelial cells detached from the lining walls of blood vessels when the blood was heavily infected. He asked whether the cancer problem was not that of discovering what micro-organism or organisms could produce this combined result of cell multiplication with phagocytosis, and whether such a micro-organism might not be both a filter-passer and detectable under the microscope, as in the human tubercle bacillus.

Dr GANROW asked if Dr GORDON had found any immunological evidence of difference between the virus of classical small pox and of the mild variety called alastrim.

Dr GORDON replied that this question was answered in his report to the Medical Research Council (now in the press).

Dr JOHN MENTON said that as Dr GORDON stated that vaccinia virus became more easily filterable after several days' keeping in cold storage, he would be glad to know what in Dr GORDON's opinion were the factors influencing this.

Dr GORDON stated that probably the answer was that the cells were autolysed and the virus was liberated from the cells.

Dr MARK CORIANS said I have been engaged upon the question of the filterability of the virus of vaccinia for some years, and I confess that my attempts have invariably ended in failure: the filtrate has always proved to be virus free. For these experiments potent glycerinated calf lymph has been employed, the filtration being through baked porcelain or siliceous earth candles. The action of such filters is by no means simple: the nature of the filtrate yielded depends upon several factors. A recently baked candle displays marked adsorptive properties and is capable of removing many substances including dyestuffs and toxins, from the passing fluid: if the candle be reduced to fine powder and simply shaken with the liquid the same properties are seen. In addition, the gelatinous layer of material which sometimes forms upon the external surface of the candle is of itself capable of acting as a filtering agent: arresting not only visible particles but also colloidal substances. At this stage the act of filtration is slowed and pressure filtration much aggravates the situation: devices become necessary to clean the clogged surface. Such a gelatinous layer is of advantage in industrial processes, in which filtration is essential and it is utilized in the beer and mill industries. We are all of us familiar with the fact that the constant reponing of a turbid fluid after filtration through the same filter paper in a funnel eventually leads to considerable clarification of the filtrate. It ought to be more widely appreciated that filter candles vary in texture and efficiency, not only between one another, but also with regard to each individual candle. Filter candles are by no means of uniform texture. This is due to the process of manufacture, the candles being baked in batches in a furnace with flames playing upon the exposed surfaces of the batch. The flame-exposed surface of the candle is scorched and becomes more brittle than the portions not so exposed. This unevenness in texture can be readily appreciated by connecting up a bicycle hand pump to the interior of a candle which is immersed in water. You have only to pump and to watch the variations in size and rate of escape of the bubbles of air. Judged by this standard the proportion of irregular and defective filter candles is high. Most workers will agree with me that filter candles can be very treacherous and disappointing as laboratory instruments, particularly when used for the purpose of advanced research, and it would be a help to all laboratory workers if standards as to texture and constitution of filter candles were laid down.

The President of the Section, Dr LEDINGHAM, expressed his appreciation of the serological work carried out by Dr GORDON with the virus of vaccinia, and asked for further information with regard to the infection of animals through the nasal mucosa, especially in view of the belief that small-pox entered the system by the respiratory route. He referred to his own researches, which had shown that the viruses of vaccinia and of virus molluscum did not attack primarily the Malpighian elements of epidermis or epiblastic tissue generally, but exerted their primary and main action on the reticulo-endothelial tissues wherever situated. Even in the cornea, though the origin of the so-called Guarnieri bodies was still in dispute, the main action of vaccinia virus was on the mesoblastic elements in that region represented by polynuclear cells coming from the vascular region at the corneo-scleral junction, and the endothelial cells lining the lymph spaces of the cornea. Further, not only could the vaccinia virus be recovered from testicle or brain, but also from organs such as the spleen. For example, five or six days after direct intrasplenic inoculation of virus, in emulsion of spleen tissue proved highly virulent. His attempts to filter the virus had consistently failed so far. He was now testing the oedema fluid which could be readily collected in a capillary pipette from intracutaneous lesions at the height of the reaction after blebbing the animal to death under ether. As much as 0.5 c.c. could be collected from two or three well developed intracutaneous lesions after incision with razor blade and slight pressure with forceps. The fluid so obtained was highly potent and lent itself readily to filtration experiments which were now under way. With reference to Dr GORDON's experiments with heated vaccinia virus, the President remarked that the use of vaccine entirely free from contaminating organisms would doubtless be desirable provided it was efficient as an immunizing agent. So far he

understood that heated lymph were poor antigens and very inferior to the live virus. Tevdtit and Nicolai's live vaccinia virus prepared from rabbit brain was an important advance and some recently reported trials had shown a very high percentage of takes in primary vaccination of children.

In reply to a question by Dr. C. Snow with reference to material from cases of the prevailing mild small pox, the PRESIDENT said he had succeeded in transferring three samples of such material sent by Dr. C. Snow direct to rabbits by intracutaneous inoculation. These reactions were always annulled when the small pox virus was digested previously to inoculation, with virucidal serum prepared from rabbit hyperimmunized with vaccinia.

THE SECTIONS

BRIEF SUMMARY OF PROCEEDINGS

ARRANGEMENTS have been made to publish, during the next few months, full reports of the discussions in the Sections of the Annual Meeting at Bath, Maine, the notes printed below will enable members who were not present to gain a general view of the proceedings. Any errors to which attention may be drawn will be corrected in the full reports.

SECTION OF MEDICINE

Wednesday, July 22nd

RHEUMATOID ARTHRITIS

AFTER some opening remarks by the Chairman, Lord Dawson, Sir Humphry Rolleston opened a discussion on rheumatoid arthritis, its causation and treatment. For the purpose of the discussion rheumatoid arthritis was taken to cover the group of chronic joint infections of uncertain origin, excluding advanced osteoarthritis. Dealing first with etiology, Sir Humphry Rolleston discussed the possibility that disordered metabolism might be the sole cause of at least one group of these cases, as was suggested by Sir Archibald Garrod. Various metabolic disturbances had been suggested—a lowering of the sugar tolerance, a thyroid, ovarian, or pluriglandular inefficiency, and recently H. K. Thompson had described two types of arthritis associated with hypo- and hyper-thyroidism. It was, however, difficult to exclude the possibility that a chronic infection might be the underlying factor both of the endocrine and the arthritis disorder. Turning to an infective origin, Sir Humphry Rolleston mentioned the various forms of oral sepsis, teeth, gums, and tonsils had all been incriminated. In pyorrhea the infective agents were discharged into the alimentary canal and so set up secondary infection in the tonsils, gall bladder, intestines, and appendix, whereas apical infection of the teeth in which absorption by the blood occurred was more likely to result in joint infection. Intestinal auto-infection had been urged as a cause of chronic arthritis by Sir Archibald Lane, and Mitchell had developed this view on bacteriological lines, finding a long-cultured streptococcus of characteristic glycolytic character—a fact of great interest in connexion with Pemberton's successful results in restricting carbohydrate intake. Some observers had associated achylia gastrica with chronic rheumatoid arthritis, suggesting that the absence of gastric hydrochloric acid favored a bacterial infection. Infections of the genito-urinary tract did not play any prominent part, and infection of the respiratory tract had attracted little attention in this connection, but Potter and Lenche's view that the commonest form of chronic infective arthritis was due to toxaria and start tuberculous foci acting on the joints, though receiving no support in this country, was widely accepted in France. In considering the criticism that sources of chronic sepsis were frequently present without producing rheumatoid arthritis, it was necessary to remember that like, as in other infections, the soil as well as the seed must be an important factor. Defects of constitution of the individual, or an acquired susceptibility, was the result of disease or trauma, might well provide the other necessary factor for joint infection. On the other hand, in many cases no source of sepsis could be found, but the infective focus might easily be in some closed situation so deeply hidden as to defy detection. Another point for

discussion was how far the clinical phenomena could be explained on anaphylactic ground. Might a joint once infected acquire a hypersensitivity and then give an anaphylactic response to a toxin reaching it from a subsequent infection elsewhere? Various microorganisms had been isolated and held it possible for the disease, and the would be in that the condition was not a specific one, but was due to a number of disease clinically much alike. Frequent but primarily preventive possible sources of sepsis must be removed; antitoxins, not stored vaccines should be used. Thyroid and parathyroid extracts both had their advocates and a remedy had been employed. Pemberton advised the restriction of carbohydrate in the diet as a great assistance to other methods. Hydrotherapy and ultra-violet radiation had given gratifying results probably by raising the resistance to infection or by speeding up metabolism. Protein shock therapy had also been employed with some success. Mr. W. R. Adland said that it was important to realize that pyorrhea did not ever entirely drain and open sepsis seemed to be tolerated for years without apparent harm. The gastric juice did not always defeat the harmful effects of bacteria from the mouth, it might liberate an endotoxin. With regard to treatment, bridge crows and dead teeth were all to be condemned. Dr. Rupert Watkinson observed that from his experience at Bath the percentage of cases cured by removal of septal foci was small, and when the foci had been dealt with, splint treatment would nearly always give very definite and useful improvement. Sir Robert Jones confined his remarks to the prevention and correction of deformities, and he stressed on the fact that if practitioners would use the simple measures for preventing deformity in the early stages they would remove all need for operation by the orthopaedic surgeon.

Professor Osgood (Harvard) said he was looking for some link between the toxic and metabolic factors, and suggested that it might be found in allergy. He ended with a plea for co-operation with the orthopaedic surgeon, so that deformities might be prevented. Professor Cavendish (Athens) gave the results of his work on the excretion of sulphur in the urine in rheumatoid arthritis. The increase of neutral sulphur found was not due to increased protein metabolism, nor was it due to destruction of cartilage. It appeared to be the result of an inability of these patients to oxidize sulphur. Dr. J. M. H. Munro said that the blood picture indicated a general infection in 85 per cent of cases, and that serological tests confirmed to some extent the streptococcal origin. Mr. A. G. Timbrell Fisher classified chronic arthritis on lines of morbid anatomy, and emphasized the need for considering the physiology of the nutrition of the joints. Sir William Wilcock supported the view that the vast majority of cases had an infective origin. Sir James H. said that the immediate cause of rheumatoid arthritis was acid, due to acid fermentation in an enlarged stomach and consequent decalcification. Lord Dawson, in concluding the discussion, said that infection clearly played some part in the etiology of the disease, how great was that part? He thought that much further information might be obtained along the lines mentioned by Professor Cavendish by investigating the individual's power of resistance.

Thursday, July 23rd

HYPERTENSION

The second session was held with Professor T. R. Elliott, F.R.S., in the chair, and the discussion was on hypertension. Professor Stirling in his opening paper dealt with the physiological factors that must be taken into consideration in discussing a permanently raised blood pressure. The most essential factor must be the control exercised by the vasomotor centre. The vasomotor centre regulated its own blood supply by increasing or diminishing the amount supplied to other parts. In hypertension there was a permanent setting of the blood pressure at a higher level, and that must mean that at the normal pressure in the circle of Willis the vasomotor centre was not receiving sufficient blood for its requirement. There were several ways in which such a state of things might arise—for example, loss of elasticity in the arteries, constriction of the vessels supplying the vaso-

molar centre, spasm of the arterial wall, changes in the capillary wall affecting the flow, or an altered permeability. Alteration in the capillary wall with consequent effusion into the pericapillary lamellae might well explain the toxic condition seen in mæmia and the toxæmia of pregnancy. It was impossible to exclude the question of the part played by the kidneys, and there was considerable evidence that progressive occlusion of the renal vessels might give rise to progressively increasing arterial blood pressure. It must be remembered, too, in this connexion that complete obstruction of the renal circulation would not by itself cause a rise of blood pressure, it could only do it by the indirect results of the occlusion in the vasomotor centre, possibly the retention of substances which should be excreted with the urine had a direct effect on the vasomotor mechanism.

Lord Dawson assumed that hypertension was a disease *suæ generis*, and he approached the subject through the avenue of youth. The systolic blood pressure between the ages of 20 and 45 was 115 to 130 mm, the diastolic 75 to 80. A systolic pressure of 140, or a diastolic pressure of 90, between these ages were to be considered with umbræ. The normal blood pressure, however, varied in the healthy body within comparatively wide limits, and the higher civilization went the broader these limits would become. Hypertension might be merely an exaggeration of a quality normal for the individual. He had investigated a series of 650 school children between the ages of 10 and 17. Of these, 52 (8 per cent) had a systolic blood pressure of over 130. This hypertension was not associated with any particular type of child, examinations alone did not send the blood pressure up, but in one group of children who were entered for the higher examinations the numbers with high blood pressure were two and a half times greater than in the other groups, this he considered to be due to a continued state of intentness and anxiety, or an existing state of mind intensified by striving. In some temperaments the anxiety would relax in the intervals, in others it would not. Here was the opportunity of preventive medicine, evidence of persisting vasoconstriction being a danger signal. Lord Dawson gave further details of some of this group of 52 children, showing that they were passing into the realm of disease, the most definite change being cardiac hypertrophy. With cases so mild no confirmatory pathological evidence was available, but he concluded with a description of one case in which such evidence was forthcoming.

Dr McGee (Philadelphia) pleaded for the help of the general practitioner: the early and continued study of the blood pressure was essential, and only the general practitioner was in a position to make it. He raised the question of organic causes in all cases, and discussed the effect of endocrine disturbance, noting the variation in blood pressure sometimes seen at puberty and the menopause. Dr Betty Shaw asked, Was high tension an affair of the arteries or not? Arterial disease was certainly a frequent accompaniment of these cases, but there was also so much that was toxic that he thought the time had come to abandon the arterial view, and that there was sufficient clinical evidence of the toxic origin of permanent high tension. The toxic bodies with pressor action that were known to them were very few, a pressor substance had been obtained from the cortex of the kidney, but in many cases of hypertension the cortex of the kidney was quite undamaged. He concluded with the clinical details of a case illustrating hypertension of toxic origin.

Dr Otto May gave the statistics obtained by a large assurance company as to the relation of high systolic blood pressure and expected mortality, they confirmed the view that high blood pressure was unfavourable to longevity. But it was very rash to apply these statistical findings to individual cases. Dr Geoffrey Evans said that structural changes in the medulla were insufficient to account for the condition. He described the morbid anatomy which was quite characteristic and enabled the disease to be diagnosed in the post-mortem room. It was therefore a definite entity. Dr Humphris emphasized the value of electrical treatment, and Dr Salisbury Shupe gave particulars of a series of 500 cases observed in the seventh decade of life.

Friday, July 24th

ENDOCRINE THERAPY: ITS USES AND ABUSES

Dr W Langdon Brown, opening a discussion on the uses and abuses of endocrine therapy, said that rational endocrine therapy must be based on three criteria: (1) the gland must form an internal secretion, (2) the active principle of this secretion must be capable of extraction, (3) a method of administering this extract must be found which will admit of its utilization in the body. In only a few instances were these criteria fulfilled, so that clinicians had been compelled to resort to empirical methods. In the case of thyroid extract all three criteria were satisfied. The efficacy of thyroid medication was universally accepted and needed no further emphasis. Parathyroid extract increased the calcium content of the blood with a sedative effect on nervous tissues, and it promoted healing from the effects of chronic sepsis: it was useful in tetany, and sometimes had proved helpful in chronic gastric ulcer, spine, and varicose ulcers. The medulla of the adrenals undoubtedly produced a very active extract, and although there were some who declined to connect the effects of a hormone with those of stimulation of the post-ganglionic fibres, Dr Langdon Brown preferred to accept the mass of evidence pointing to adrenalin as a general sympathetic stimulant which could be drawn upon in an emergency. It was of little, if any, use as a substitute for the chronic adrenal lack in Addison's disease. The pituitary gland was composed of various parts: the anterior lobe was concerned with growth and sexual development, the posterior lobe had a marked effect on plain muscle and on the excretion of water from the kidney. Dr Langdon Brown then put the question: Was the administration of pituitrin merely the exhibition of a drug of known pharmacological properties, or was it an attempt to replace or reinforce the normal functions of the posterior lobe? This question went to the root of the controversy on endocrine therapy. The clinician believed that the pituitary had an important association with the reproductive processes, and he brought forward a number of clinical and experimental observations in support of the clinician's view. Intramuscular injection of 1/2 to 1 c.c. of pituitrin stimulated the muscles of the heart, intestine, and uterus, and controlled polymyria. With regard to pancreatic extracts, the efficacy of insulin was beyond doubt, unfortunately much prejudice had been aroused amongst the general public against it, but it was emphatically untrue that a patient who had once started it would be worse off than before if it were discontinued later. As to the value of other extracts Dr Langdon Brown was sceptical, but he was hopeful that an active ovarian extract might soon be available.

Professor Sæle Vincent remarked that in spite of repeated attacks on the uncritical employment of animal products as drugs, the sale of worthless preparations went on apace. The expression 'endocrine therapy' was only rightly used when it was possible artificially to replace the internal secretion of some ductless gland. In discussing the value of endocrine therapy there were two difficulties: first there was the difficulty, common to all branches of therapeutics, of distinguishing between *post hoc* and *propter hoc*—rigid controls must be instituted, the second difficulty lay in the fact that endocrine therapy rested largely on a priori or on theoretical considerations. It was based on the view that all organs manufacture and pour into the circulation an internal secretion whose function it was to influence the metabolic activities of the body, but there was no reliable evidence to support such a view. Although extracts from most organs and tissues produced no noticeable physiological effect when given by the mouth, yet when given subcutaneously or intravenously some influence might be produced. Intravenous injection of tissue extracts in general might in particular produce lowering of the blood pressure. These effects, however, were not specific and had nothing to do with any internal secretion. Thyroid preparations were universally recognized as among the most valuable of drugs: dried thyroid substance was probably the surest, and when there was a low basal metabolism there was an intelligent reason for its administration. They were ignorant as to the functions of the parathyroids, and the results of parathyroid medication were very uncertain, but Collip claimed to have

that came to operation during the last five or ten years, although the missed statistics from seven hospitals presented by Mr. Souttar showed that the mortality for all forms of acute intestinal obstruction was still deplorably high, ranging from 51 per cent in volvulus down to 16 per cent in cases of inguinal hernia, whereas the mortality for the operation of radical cure of strangulated hernia was less than 1 per cent. The question of anaesthesia received attention, and local anaesthesia, which largely did away with the risks of lung complications, was advocated. On the question of the education of the public, in order to induce them to present themselves at an earlier stage of this disease, there was some difference of opinion, since it was held by Mr. Grey Turner that the medical profession itself was at least as much to blame for the reluctance and tardiness with which they came to a diagnosis, as were patients themselves. An instance of the value of the education of the profession was provided by the speaker in his reply, when he explained that the striking success he had obtained in the operation for intussusception, in which his mortality was but 3.7 per cent (as against 2 per cent in the missed statistics), was due to his special interest in the subject and his continued efforts to instruct the practitioners with whom he came in contact.

SECTION OF OBSTETRICS AND GYNAECOLOGY

Wednesday, July 22nd

PELVIC CANCER

THE proceedings of this Section were opened by the President, Lady Barrett, who claimed that they could seriously have chosen a more important subject to discuss than that of pelvic cancer in view of the steadily increasing mortality from malignant disease, whereas the mortality rate of practically all other diseases had been steadily diminishing. The opening paper, on the problem of uterine cancer, was then read by Professor B. P. Watson (Edinburgh). Professor Watson explained that though nothing new could be said on the subject, nevertheless constant reiteration was necessary if the public and the profession were to be thoroughly convinced of the responsibility which rested upon doctor and patient alike in the effort to diminish the great loss of life resulting from this disease. The proper education would result in such a diminution had long been realized. The fact that it had not done so was justification for his paper. Professor Watson then quoted statistics from England, Scotland, and America to show the frequency of the disease and its high mortality rate. In seeking to effect a diminished incidence of the disease they should not be discouraged by the fact that the ultimate cause was not yet known. It was often possible to reduce the incidence of a disease by controlling one factor which appeared to play a part in causation. There was one factor in cancer that was so constant that it must be recognized as one of the etiological factors, and that was irritation, and this was a factor which could be controlled. Local irritation could be reduced, first, by abstention from all procedures which might tend to produce deep lacerations, and secondly, by the thorough treatment and repair of existing lesions. Professor Watson entered a strong plea for the more frequent and thorough operative treatment of cervical lacerations. In addition, two other things were necessary to bring about a diminution in the mortality from pelvic cancer—the education of the public in the early signs and symptoms, and the education of individual members of the profession in the importance of a most thorough investigation of any woman seeking advice on account of these symptoms and signs. Along with a publicity campaign for the information of women regarding the symptoms, emphasis should be placed on the fact that cancer, if detected early, was a curable disease. Professor Watson quoted statistics of the percentage of operable cases seen in various clinics at home and abroad, and claimed that propaganda, especially in France and Germany, had led to a far greater number of early cases to present themselves for treatment abroad than did so at home. Professor Watson touched upon the symptomatology of cancer of the cervix, especially in relation to the duration of symptoms and the age incidence. He emphasized that what the student had to be taught was the

recognition of the early case, and he explained his own practice in this respect. The early cases showed a high percentage of cures, whether operation or treatment by radium was the method of choice. He reviewed some of the recent statistics, and expressed the opinion that for border-line and advanced cases radium treatment was the only one to hold out any hope, but in regard to cancer of the body operation appeared to give a better chance than radium. Professor Watson spoke strongly in favour of educating the female public more fully in the knowledge of their own anatomy and physiology. He had found nothing but good had come of this knowledge on the other side of the Atlantic.

Mr. Victor Bonney (London) dealt with the surgical treatment of malignant disease of the pelvic organs. He had no doubt that surgical treatment remained the treatment of election for the majority of cases, and he would limit his remarks to a review of his own experience and results. If the spread of cancer were by tissue infiltration only, a local excision just outside the limits of the growing edge would be all that was required. Lymphatic permeation was very much more rapid, so that in these regions the line of excision must be carried as far outwards as the anatomy of the parts and the endurance of the patient would permit. The operation which fulfilled these requirements they owed to Wertheim, whose services to humanity he did not think had been properly recognized. He personally had performed this operation 300 times, but in order to obtain figures based on a five years freedom from recurrence he intended to quote from the first 192 cases only. He estimated his operability rate—that is, the ratio borne by the number of cases operated upon to the total number of cases seen in the same period—at 63 per cent. He had operated upon every patient in whom there appeared the slightest chance of being able to remove the growth. Amongst his series were many cases which had been sent away as inoperable from institutions of the highest repute. In general the only basis to the accomplishment of the operation he had recognized had been deep and extensive involvement of the bladder or bowel or involvement of both ineters to the extent of producing bilateral hydronephrosis. It was often impossible to judge whether a case was operable or not until the abdomen was opened. Cystoscopy would help to establish whether the bladder was involved or not. Another important point was pain. Cases without pain were almost invariably operable, for pain was nearly always due to involvement of the extracervical tissues, and its absence would indicate that the growth had not spread beyond the cervix. The operation he performed was as drastic as he thought it was possible to perform and yet give the patient a good chance of recovery. In addition to the uterus and appendages together with the parametric and paravaginal tissue, the glands and cellular tissue occupying the obturator foramen and the glands along the external iliac vessels he now removed the whole of the vagina in most cases. His results in 192 cases were as follows: Died of the operation, 32; died of recurrent growth, 70; died of other disease, 5; lost sight of, 7; well after five years, 78. Mr. Bonney then considered these figures in more detail. Of 60 patients with carcinomatous glands who recovered from the operation, 33 per cent were well five years afterwards, while of 100 patients whose glands were not carcinomatous and who recovered from the operation, 58 per cent were well five years afterwards. In addition he had prolonged the lives of 87 or 60 per cent of the 160 patients who survived the operation. In regard to pre-operative irradiation Mr. Bonney insisted that the preliminary treatment made the operation far more formidable on account of the intense fibrosis set up. Neither did he advise post-operative irradiation. The results of surgical treatment would be greatly improved if performance of this very extensive operation was confined to those only whose opportunities had allowed them to become expert at the operation. Mr. Bonney then referred to carcinoma of the corpus uteri and the difficulties in making a correct diagnosis of this condition. He advised a free total hysterectomy except in cases where secondary growth might be present in the cervix or vagina when a Wertheim or a "super-Wertheim" would be necessary. He did not advocate vaginal hysterectomy in these cases.

Mr S J Cameron (Glasgow) limited his remarks to malignant disease of the ovaries and tubes. He said that both conditions were comparatively rare and little could be gleaned from the literature about them. It might be very easy to overlook the true nature of cystic ovarian disease unless all specimens were submitted to microscopic examination. The presence of free fluid in the peritoneal cavity definitely indicated malignancy, and a deterioration of the patient's general condition for a short time previous to examination should arouse suspicions as to the nature of the tumour. In 31 out of 94 cases the ovarian disease was secondary to a primary growth elsewhere, but the size of the secondary growth bore no relation to the size of the primary condition. Carcinoma of the ovary was much more common than sarcoma. Mr Cameron classified his cases into a series of five yearly age groups and constructed a table of symptoms from these—namely, pain, haemorrhage, ascites, general ill health. The statistics of ovarian carcinoma compared badly with those of cervical cancer, and the difficulty of making an early diagnosis was even greater. Perhaps in future early diagnosis might be made possible by means of a biochemical or serological test. Carcinoma of the Fallopian tubes was very seldom met with. Mr H J D Smythe (Bristol) agreed with Mr Bonney that the most radical operation for cervical cancer was absolutely necessary. He did not favour either pre- or post-operative irradiation. He spoke in favour of panhysterectomy in cases of cervical laceration or hypertrophic erosion. Professor W C Swayne (Bristol) agreed that the most extensive operation possible held out the brightest prospects, but a very expert operator and a very expert assistant were required to ensure success. He agreed that the female public must be educated, but he was a little doubtful about the educability of many women. Students must be thoroughly drilled in the elements of gynaecology and must be taught to regard any deviation from the physiological normal of any given woman as a possible danger signal. Mr Sidney Forsdike (London) did not think that many surgeons could or would undertake the cases which Mr Bonney dealt with. Neither did he think that Mr Bonney's figures would give either patient or surgeon complete confidence that everything was for the best. The risks were too great. Mr Bonney had not told them how he applied irradiation. It was useless to educate the public in the importance of early diagnosis until medical practitioners had educated themselves.

Mr C P Childe (Portsmouth) emphatically agreed with the importance of educating the public and the student. With earlier diagnosis a less severe operation with less primary risk might be possible. Mr Leith Murray (Liverpool) urged that midwives should be better instructed as many women applied to them in the first instance. While not agreeing with pre-operative irradiation, he spoke strongly in favour of post-operative treatment. Another speaker referred to the cost of irradiation to poor-class patients, who would rarely continue treatment on this account. Mr Malcolm Donaldson (London) deprecated either too optimistic or too pessimistic expressions of opinion as to the value of irradiation. Let them confine themselves to facts. Mr Paramore (Rugby) advocated panhysterectomy rather than subtotal in all cases except when the feebleness of the patient contraindicated the more severe measure. Another speaker inquired as to the frequency of the occurrence of carcinoma in the cervical stump after subtotal hysterectomy. Mr Marlow (Toronto) expressed the view that propaganda in Canada was beginning to bear fruit in the greater number of early cases coming under treatment. He spoke in favour of extensive cauterization of the diseased part as a preliminary to radical operation. He urged the importance of thoroughly treating cervical lesions as a prophylactic measure. Dr Larquhar Murray (Newcastle) thought Mr Bonney's results showed the extreme limits to which surgery could go. He agreed with the importance of educating the public, and could not see why much more could not be done on the same lines as had been done already with venereal disease.

Thursday, July 23rd

The subject for discussion was the treatment of inoperable carcinoma of the pelvic organs, and the opening paper

was read by Dr June Heyman (Stockholm). Dr Heyman thanked the members of the Section for the honour shown to him and to his Swedish colleagues in inviting him to address them that day. Ten years ago he said, in speaking of uterine cancer, the word "inoperable" was synonymous with "incurable." It was not until the advent of the method of treatment by radium that real interest was aroused in the cases. Treatment of inoperable cancer of the pelvic organs now meant radium. He proposed to lay before them his natural experience derived from fifteen years' work at the Radiumhemmet, Stockholm. The cases under his care comprised cancer of the uterus, ovaries, vagina, urethra, and vulva. Nearly all the cases they treated had been referred to them from other hospitals, and they had confined their treatment strictly to inoperable cases to gain experience before they had attempted radium treatment upon operable cases. This applied to all cases except cancer of the cervix where the results set out in their last published report had been so striking that their leading surgeons and gynaecologists had given up operating for this condition. They had had in total of 243 cases under observation for five years or longer, in the majority the results were palliative only. Dr Heyman showed a series of tables giving the results of treatment as regards the improvement of symptoms. Two thirds of their cases had regained strength sufficiently to enable them to resume work after undergoing treatment, and 16.7 per cent had remained free from symptoms for five years or more and might be regarded as permanent cures. These cases would have been regarded as hopeless and left untreated without radium. In carcinoma of the corpus the inoperable cases were comparatively few though a number might be clinically, though not technically, inoperable on account of old age, pulmonary disease, adiposity, diabetes. Out of 17 such cases treated by them 10 had remained cured for five years. In regard to ovarian cancer, their results were not good. They had found that cases where an incomplete operation had been performed did better than those in which no operation had been attempted, so that they now advised removal of the ovarian tumour and subsequent irradiation shortly after operation. Cancer of the urethra was very rare, and did not do well with radiation. Cancer of the vulva also gave most disappointing results, cancer tissue in this region being biologically only slightly susceptible to radium, while the parts were nearly always badly infected and subject to chronic irritation. Dr Heyman then reviewed the technique employed in each variety of case. Mr Percival P Cole (London) followed with a review of his experience gained from the Cancer Hospital, London. He assessed the general inoperability rate at about 62 per cent. The mortality rate of operation was about 20 per cent, and the percentage of five-year cures after operation about 28 per cent. Metastases in cervical carcinoma were uncommon, and fully 60 per cent of deaths occurred as the result of effects determined by what remained to the last a local lesion. He personally had no experience of cases treated with radium with a view to rendering them operable, practically all the cases were decidedly inoperable on admission. Mr Cole then quoted statistics of the cases treated at the Cancer Hospital, remarking that 40 per cent were so advanced that no treatment could be given at all. He detailed the technique which they had adopted, and referred to the outstanding contraindications to radium treatment—namely infection, cachexia, and anaemia. Proctitis, cystitis, and fistula formation might follow radium treatment, and such intense fibrosis might be excited as almost totally to occlude the vagina. With improved technique the sequelae were seen much less frequently. Mr Cole tabulated the results they had obtained with radium. Owing to the risk of haemorrhage, he had opened the abdomen, tied the iliac vessels, and applied radium within the peritoneal cavity, and he had been astonished at the good results obtained. The most satisfactory method of applying radium from within the abdomen had not yet been evolved. He commented favourably on the use of x-ray after radium, but had found injections of colloidal copper, platinum, and electro-selenium of no use whatever. He spoke favourably of the extirpative operation followed by the insertion of radium as a means of alleviating distressing

symptoms. Judging their results as a whole, the number of cases which had not benefited to any material extent by radium treatment was large, and their experience at the Cancer Hospital in the treatment of inoperable cases did not warrant them in adapting them to operable cases. Mr Malcolm Donaldson (London) followed Mr Cole, and pleaded earnestly to the whole profession to combine in working out to the utmost the radium treatment of inoperable cancer of the pelvic organs. He referred to the 5,000 deaths yearly from this cause alone, and urged the importance of educating the public so that cases might be recognized in the early stages. Cancer of the cervix remained local for a considerable time, and thus made it extremely suitable for treatment on research lines. Mr Donaldson detailed the technique employed at St Bartholomew's. His conclusions were that the time had not yet come when they could be dogmatic as to the exact technique, but recent work suggested that the ideal to be aimed at was to distribute the radium as uniformly as possible throughout the growth and to expose the tissues for at least twenty-four hours, possibly much longer. He thought that as a palliative measure radium treatment had already more than justified itself, as a curative agent it was still too early to make any dogmatic statement. Mr Donaldson had observed that the vulva would not stand anything like the intensity of dosage with radium such as could be safely employed in the cervix or corpus uteri. He could not report favourably on a indication for inoperable carcinoma of the ovaries. Mr Donaldson hoped that at no very distant date centres for radiological treatment might be set up in different parts of the country. In the discussion which followed, Mr Tinsdale (London) described the technique he had adopted and the precautions that must be taken before radium was applied. Mr Strachan (Cardiff) referred to the risk of applying radium if promoters were present. He described the methods and results obtained so far at Cardiff. Miss Frances Ivens (Liverpool) referred to the excellent palliative results obtained by the use of radium emanations. A paper was then read by Dr D C Hue (London), embodying a preliminary investigation into the circulatory changes in normal pregnancy. Dr Hue described how she had noted the pulse rates of women at the different stages of their pregnancy, and how these were affected by change of position and exercise tests. She had also noted the blood pressures in each case. Her results on the whole showed that the condition of the cardio-vascular system in the pregnant woman compared very favourably with that of other women.

Friday, July 24th

OPERATION FOR BACKWARD DISPLACEMENT

The Section met on the final day to discuss the role of surgery in the treatment of backward displacement of the uterus. The opening paper was read by Miss Frances Ivens (Liverpool). Dr Ivens directed her remarks particularly to the group of cases which she described as the immobile, non-adherent, backward displacement, and she included in this group both retroversions and retroflexions. She wished to exclude cases of prolapse as outside the scope of her paper. She had stated in 1912 that one did not often find a definite retroversion which was not giving rise to symptoms, and she had not changed this opinion. She thought it would be useful if statistics could be collected with a view to ascertaining the frequency of congenital backward displacement. She combated the view that backward displacement in unmarried women caused no symptoms, or that if present these symptoms were due to neurosis. In a large number of cases remedy of the lesion caused the symptoms to disappear. A neurosthenic condition might be caused by displacement, and if the displacement were corrected in time the neurosthenia would clear up. It was difficult to trace strain as a cause, but it was a fact that this condition was more commonly met with in women leading a life involving hard and heavy work. In the acquired cases the commonest causes were pregnancy, fibromyoma, ovarian tumours, dorsal decubitus during a long illness or during the puerperium. Dr Ivens then described the pathological changes which occurred as the result of the displacement both in the

uterus itself and in adjacent structures. After outlining the principal signs and symptoms she cited a number of cases to illustrate the results obtained by operative treatment. Operation was rarely necessary when backward displacement occurred and was corrected early in pregnancy or the puerperium, and the presence of grave organic disease was a definite contraindication, otherwise she did not agree with trying pessary treatment first to see whether any improvement would result. The operation she favoured was Mayo's modification of Gilliam's method. She had operated upon more than a thousand cases, with five deaths. Of 200 cases subsequently traced, 68 per cent were cured of all symptoms, 14.5 per cent improved, and 15.5 per cent derived no permanent benefit. Her results had been rather better in single women than in married. Dr Russell Andrews (London), who followed, remarked that the uterus was frequently accused of being fixed in the backward position on insufficient grounds. It was very remarkable how practices differed in the types of cases seen. He very rarely saw a case of retroversion in a young girl which called for treatment. In many of Dr Ivens's cases other measures, such as emetting and dilatation, had been done in addition to fixation of the uterus. He agreed entirely that it was absurd to say that pain with retroversion was purely due to neurosis. He found it difficult to accept all the changes which, it had been said, might take place in the ovary. He also could not imagine a non-pregnant uterus causing retention of urine or pressure effects on the rectum. The only cases in which he advocated operation were those in which dyspareunia, severe backache associated with premenstrual pain and excessive bleeding, and abortions occurred. Dilatation and curetting was frequently all that was required. He had never come across a case of pyometra arising solely from this condition. Dr Andrews explained the technique of the operation he practised when he found it necessary to do an abdominal operation.

In the discussion which followed, Mr Parmore (Rugby) gave a brief history of the operative treatment of backward displacement, and referred to the role of intra-abdominal stitches and the importance of a well developed muscular abdominal wall in returning the viscera in position. Professor Swayne (Bristol) referred to the necessity of restoring the anatomical condition of the parts when operative measures were undertaken. Professor Marlow (Toronto) emphasized the importance of thorough repair of the pelvic floor. This was of greater importance than mere fixation of the uterus. Dr Farquhar Murray (Newcastle) spoke against operation being done except in very well defined cases. Dr Anderson (New Zealand) asked for information as to the operative measures most favoured in this country. Mr Leith Murray (Liverpool) only operated in cases of dyspareunia, sterility, or prolapse. Colonel Green-Armstrong (Calcutta) thought that there was far too much operating on the abdomen. In the East women only came for treatment for retroversion when it was complicated by either sterility, dyspareunia or prolapse. Mr Chisholm (Dundee) pleaded for the more frequent performance of the operation of interposition in women past child-bearing age. Miss Stallard (Hereford) claimed that exercises to strengthen the muscles of the abdomen and pelvic floor were far superior to any form of artificial support. Mr Rayner, Vice President (Bristol), closed the discussion, and Dr Ivens replied to her critics. Dr Strachan (Cardiff) then read a paper on the pathology and treatment of cervical erosion, which was followed by a brief discussion, in which Mr Parmore (Rugby) and another speaker took part.

SECTION OF PATHOLOGY AND BACTERIOLOGY

Thursday, July 23rd

PATHOLOGICAL BASIS OF TREATMENT BY RADIATION

The discussion was opened by Professor Sidney Russ, who pointed out that, in spite of the extreme antiquity of heliotherapy, little was known of its essential processes, and hence its pathological basis was not so well defined as was the case with x-rays and radium. Pathological researches had shown that cellular degeneration was a frequent sequel

to irradiation of tissues, the degeneration consisted in various abnormal features appearing among the cells at different times after irradiation. These changes might be due either to a direct action of the radiation upon the internal constituents of the cell, or to a direct action of the radiation upon the interface of the cell or to an indirect action which irradiation initiated. Various tissues responded differently to a dose of radiation ($Q \times t$) according to whether the time of exposure was short Q being large, or long Q being short. Izumi and Barlow found that in order to eliminate undesirable damage it was better to keep the quantity of radium low and prolong the time of irradiation when dealing with quiescent cells, while the reverse held good with dividing cells. It was still obscure why there should be a difference in the reaction of the tissues when the actual dose was constant, the only variation being in the conditions of exposure. Certainly during a long exposure more cells would come under irradiation in a state of division in which condition many cells were known to be more vulnerable than in the other stages of growth. Before accepting this basis of explanation they required proof that the intensity of radiation used was enough for a lethal dose to be given during the actual time taken for division, and that the period of radiation extended over a period equal, or nearly equal, to the time for the cell cycle.

Dr T S P Strangeways gave a description of the effect of irradiation by x rays on cells undergoing division in tissue cultures of the embryonic fox and on the embryo while in the unopened shell. The effects were observed during experiments which were being carried on by himself and his co-workers, Drs Canti, Donaldson, Hopwood, and Spear. These experiments indicated that even small doses had a pronounced inhibitory effect on cell division, and that it prevented new cells from coming into mitosis. Such small doses caused a definite retardation of the different phases of mitosis in those cells which had already begun to divide before the commencement of irradiation. It was found that there was no definite evidence that cells in actual mitosis were more vulnerable than those in a vegetative state. It was further found that within the limits of the experiments variation in the quality of the incident dose of x rays as measured by a Friedrich ionizationmeter had no appreciable influence on the dose required to prevent mitosis. Miss M E Hume read a paper on the action of ultra-violet light upon the growth of rats. She described experiment 11 work which proved that light cannot substitute cod-liver oil indefinitely for the growth and well-being of the rat. Although calcification might be promoted by the light, yet the set of symptoms due to injury to the mucous membrane eventually occurred. It seemed that some reserve was gradually used up. Possibly this other limiting factor was the original vitamin A, though how far this was completely independent of the light or antirachitic factor was unknown. Antirachitic properties had been given to various inactive substances by exposing them to ultra-violet radiation, and when fed to rats they produced the same effect as direct irradiation. Dr A Pincus declared that the effects of radiation on the bone marrow were essentially destructive in character, shown by nuclear degeneration of cells without disappearance of adipose tissue. In the lymphatic glands the results of radiation resembled those due to inanition, but occurred much more rapidly. X rays caused rapid and extreme involution of the thymus. The changes in the spleen were difficult to interpret because considerable variations occurred in response to different doses. In the blood most investigators had shown that there was a distinct reduction in the number of leucocytes, depending mainly upon decrease of neutrophils, with consequent relative lymphocytosis. The nature of the changes occurring in the blood was still a controversial question.

Dr R A Smith and F G Spear discussed the biological effects of radium irradiation on tissue cultures. The effects were undertaken as a result of certain observations on cases treated by Mr Malcolm Donaldson. Among these observations was the absence of the effects observed as soon as the radium was removed. Twenty-four hours *in situ*. The pre-

liminary observations on tissue cultures were purely qualitative. Tissue cells were examined in the thin section for prolonged periods under the microscope, and under the influence of radium. The following conclusions were reached. Cells in mitosis divided in vitro appeared to be normal in form and the daughter cells developed into fully developed apparently normal vegetative cells and did not pass into mitosis. For a certain period, the length of which depended on the intensity of irradiation, cells continued to come into mitosis without irradiation but at the end of this period no more cells came into mitosis. Being satisfied that radium irradiation brought about no definite change in the culture, quantitative experiments were undertaken with a view to determining whether the same amount of irradiated energy brought about the same biological effects irrespective of the time over which the energy was radiated—but if the radium was removed further from the tissue culture to a distance whereby the incident intensity was halved, then would double the time be required to produce the same biological effect. The physical measurement of intensity of irradiation at various distances were made by a photographic method, and curves were drawn up comparing the physical effects with the biological effects as determined by the time taken at various distances to cause cessation of mitosis. These curves showed that when the radium was near the tissue culture there was no observed departure from the physical readings, but that at a greater distance a long time was required to bring about the same effect than would be interpreted from pure physical laws. Further, the shape of the biological curve suggested that beyond a certain critical distance from the radium no biological effect might be expected. At this stage of the investigation this course of events could not necessarily be translated into conditions when radium is applied to eucromion in vivo.

Dr Helen MacLay and Dr H L Shaw read a paper on foodstuffs irradiated with ultra-violet light—their effect on the bone lesions of rachitic children. They showed that the effect of direct exposure to ultra-violet light on the bone lesions of a rachitic patient appeared to depend upon the power of light to produce in certain substances the so-called antirachitic factor. Dried milk irradiated with ultra-violet light from the mercury arc brought about rapid healing of the bone lesions in children, and thus antirachitic properties of the milk withstood ten minutes' boiling. It seemed probable that the action of a foodstuff artificially rendered antirachitic by irradiation with ultra-violet light was identical with the action of a naturally occurring foodstuff containing the antirachitic factor. When cod liver oil could not satisfactorily be given to a patient, then possibly an irradiated substance might in the future be of considerable value.

Friday, July 24th

PATHOLOGY IN RELATION TO RESEARCH

The third meeting of the Section of Pathology and Bacteriology was devoted to a discussion on the subject of the present position of pathology and bacteriology in this country, with special reference to research. Professor Ledingham, the President of the Section, opened the discussion. He referred to the statements made in the last annual report of the Medical Research Council, which suggested that whereas notable advances had been made during the last five years in other branches of medical science, notably physiology, yet little could be found to place to the credit of pathology. A general review of the work done by pathologists and bacteriologists did not in his opinion justify this generalization. No doubt pathology and bacteriology had suffered from an undue concentration in the purely practical and didactic aspects of these subjects, both in the matter of undergraduate teaching and in their application to practical medicine. Unlike physiology, which had remained largely aloof from practical medicine, pathology and bacteriology had given to practical medicine an unstinted and largely unrequited service which had entailed a considerable sacrifice of time and brain that might otherwise have been given to research. To return under university supervision the best features of routine diagnostic service, whether from hospitals or municipal health departments would demand a greater expenditure

for extra staff, equipment, and accommodation, but he declared it to be his conviction that the university association was worth preserving in some reconstructed form in the best interests of the existing race of pathologists and bacteriologists and of the particular health or hospital authority enjoying the university connexion. Dr Ledingham then went on to speak of the position of research institutes, and pointed out that experience showed that experimental pathology and bacteriology, comparative pathology, research in serum therapy and specific disease prevention, supplied under the conditions of the research institute a constant stream of problems the solution of which might or might not have their immediate echo in practical medicine. Undoubtedly it was a great advantage to have a research hospital attached to the institute. Research hospitals had been established in connexion with the Rockefeller Institute and the Pasteur Institute. The Lister Institute would follow their example if sufficient funds were at hand. Professor Stewart (Leeds) found himself in full agreement with the views expressed by Dr Ledingham. He spoke of the problem of training pathologists and discussed the qualifications a candidate for laboratory work should possess. Turning to the criticisms expressed in the last annual report of the Medical Research Council he said he did not agree, among other points with the wholesale ban on routine work therein pronounced. He emphasized the value of morbid anatomy, and referred to the invaluable and almost inexhaustible field for original research presented by the *post-mortem* material.

Professor Cul Browning (Glasgow) spoke on the training of research workers, and pointed to the advantage of a preliminary whole-time research fellowship. On the subject of facilities for research, he considered it to be not excessive if every member of the staff of every pathological department had at least half of his working time free to devote to research work. He deplored the neglect of the facilities which exist at fever hospitals for the study of infectious disease, and appealed for a closer association of research in animal and human pathology. He thought that endowments for research ought not to be limited to the investigation of some particular specified problem or disease. Dr Buxton Hicks (London) said one difficulty pathologists had in London was the inadequate accommodation for experimental animals in their laboratories. A pathologist was often expected to teach all day from 10 a.m. to 5 p.m. and do his research at night. Speaking of the training for research, he said that a research investigator must first be trained in ordinary routine work. He thought that pathologists ought not to be dependent on outside work for their support, but should be adequately paid by the universities or hospitals they served. Drs. Atkright, Okell, and Dukes took part in the subsequent discussion. In his reply, Dr Ledingham said he was sorry that Dr Buxton had not been able to contribute to the discussion. He remarked that the meeting appeared to be unanimous that certain grave abuses, whereby university chairs were supported by work done for outside bodies, should be removed. But he thought it inadvisable that some connexion should be maintained between university and public health authorities. There seemed no evidence to prove that routine work sterilized research, but a research worker must have leisure and often complete freedom from routine duties. He hoped that steps might be taken to bring the views of this Section of the British Medical Association to the notice of universities and hospitals throughout the country.

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE

Wednesday, July 22nd

MULTIPLE NEURITIS

The first day's proceedings were devoted to an interesting discussion on the causation and symptomatology of multiple neuritis. Dr T. Grainger Stewart, in opening, said that he proposed to include under the term "multiple neuritis" all those cases in which, as the result of a general cause—toxic, infectious, or metabolic—the symptoms pointed to a more or less simultaneous affection of many of the peripheral nerves or of their associated neurones. He considered

that in the present state of our knowledge it was impracticable to classify "multiple neuritis" on any other than an etiological basis. From this standpoint he divided the cases into four main groups: (1) Exogenous poisons (lead, arsenic, alcohol, etc.), (2) endogenous toxins (metabolic—such as diabetes and beri-beri, cachectic and infective the latter including the infectious fevers), (3) multiple neuritis of obscure origin—the so-called rheumatic form, and (4) local infections of nerves (leprosy, interstitial hypertrophic neuritis, etc.). The two factors which determined the mode of onset and the distribution of the lesions in multiple neuritis were: (1) the selective action of the poison, and (2) the distribution of the poison within the nervous system. They knew that the nervous system had the property of fixing certain toxins—for example those of tubercle, diphtheria, and tetanus. Toxins and bacteria might enter the central nervous system either by way of the blood stream or by the perineural lymphatics. The speaker then proceeded to describe in detail the pathogenesis and symptoms of the different forms of multiple neuritis, and concluded by summarizing the features of the symptomatology of multiple neuritis as follows: (1) the spontaneous onset of the symptoms, (2) the evolution, in time and stages, of the clinical picture—(a) motor, (b) sensory, and (c) reflex—(3) the symmetrical and bilateral nature of the symptoms.

Dr Wilfred Harris (London) was commenting on Dr Grainger Stewart's classification, and said that he considered the third and fourth groups were unnecessary and that the forms included therein would fall in either the exogenous or endogenous toxin group. He disagreed with the speaker that lead neuritis was segmental in distribution, while in many forms of toxic polyneuritis sensory changes were absent. Dr W. Johnson (Liverpool) referred to certain atypical types of lead neuritis which appeared to flout the theory of the selective action of the toxin. But, he considered, might be a contributory factor in determining the site of the lesion. The speaker concluded by describing two interesting cases of acute infective polyneuritis under his care. Dr F. J. Nuttall (Newcastle-on-Tyne) referred to the hypertrophy and thickening of the peripheral nerves which sometimes occurred in multiple neuritis. He had examined such nerves microscopically usually with negative results, but one specimen had shown perineurial cell infiltration. Dr S. A. Kimber Wilson (London) considered the term "neuritis" was onerous in many cases of multiple neuritis, since changes occurred in the anterior horn cells and muscles as well as in the nerve trunks. It would be more correct to term such cases "neuronal" or "polyneuronal." He also mentioned the condition known as "central neuritis." Dr C. Weisberg-Drought (London) referred to the occurrence of myasthenia in multiple neuritis, especially the alcoholic form. He also described a case of recurrent multiple neuritis in which three recurrences had taken place in three years, each being ushered in with acute gastric symptoms. Dr A. T. Hurst (London) discussed the question of latent peripheral neuritis and considered that absent ankle-jerks were sometimes the only indication of alcoholism. Such cases should not be confused with tabes dorsalis, in which the reflexes were abolished whereas in alcoholic neuritis they were tend. Cirrhosis of the liver and neuritis appeared to be mutually exclusive; the alcoholic might develop one or the other, but never both. In the unavoidable absence of Dr J. S. Collier (London), his paper was read by Dr E. Mapother. Dr Collier considered it peculiarly fitting that Dr Grainger Stewart should open this discussion on multiple neuritis, for it was his father, Sir Thomas Grainger Stewart, who, forty-five years ago, wrote the first monograph on this subject in the English language. Dr Collier then described cases of alcoholic neuritis, with Korsakow's syndrome, in which he considered the cerebral neurone were involved.

The President Sir Maurice Craig, after congratulating Dr Grainger Stewart on his opening paper, said that in many cases of multiple neuritis mental symptoms were present and might even prelude the motor. He pleaded for an examination of the mental functions with just as much care as that with which the motor and sensory systems were investigated. Dr E. Mapother (London) said that in alcoholism, as with cirrhosis and neuritis in alcoholic psychosis and cirrhosis of the liver were seldom or never

found together Professor Edwin Binnwell (Edinburgh) considered that in many cases of multiple neuritis the cause was most obscure and could not be traced. He also referred to the occurrence of multiple neuritis and even Korsakow's syndrome in association with hyperemesis gravidarum.

Thursday, July 23rd

INSOMNIA

In this Section, on the second day, the proceedings were devoted to a discussion on the treatment of insomnia, which was opened by Dr. Robert Hutchison (London). The meeting was exceptionally well attended, and the observations of different speakers revealed considerable divergence of opinion as to the treatment of sleeplessness. For purposes of treatment Dr. Hutchison divided cases of insomnia into two groups: (1) the secondary, and (2) the primary. In the secondary group the insomnia was the result of physical discomfort, such as pain, dyspnoea, flatulence, etc., while the primary cases arose either from some physical discomfort (worry, anxiety, etc.), or were originally secondary cases, in which the physical cause having disappeared, the insomnia had persisted as a result of auto-suggestion. The treatment of secondary insomnia was primarily that of the associated disease. Dr. Hutchison thought it would be generally agreed that there was no objection to the use of hypnotics from fear of establishing a habit, as the disease was usually one of short duration, and sleep was essential for the maintenance of the patient's strength. In the dyspnoea of cardiac cases he thought there was no need to equal morphine, but in dyspnoea of pulmonary origin it was usually contraindicated. In such cases Dover's powder was often useful. For the sleeplessness of infancy, he considered that morphine was most effective, and that the common prejudice against its use in infant cases was unjustified. In apparent primary insomnia it was always as well to make sure that the case was not really one of secondary insomnia, as dyspepsia and constipation might cause sleeplessness. Although the patient was hardly aware of their existence. In primary insomnia the practitioner's first duty was to inquire into causes of mental discomfort (anxieties, etc.) and to try and persuade the patient to adopt the right mental attitude towards his symptom. Excepting in the rare cases in which insomnia resulted from overwork, he believed it better to attempt a cure in the environment in which it arose. Lastly, Dr. Hutchison dealt with the question of drugs, and stated that in his opinion the fear of establishing a "habit" was a bugbear. As one could not afford to fail without making the patient worse, it was wise to begin with a dose rather more powerful than really necessary. The hypnotics he favoured were bromial, radlin, and medural.

Dr. Harry Campbell (London) defined insomnia as the inability to enjoy a sufficiency of sleep under satisfactory conditions. In all cases it was essential to raise the level of the patient's general health. Dr. Henry Devine (Portsmouth) dealt with the difficult question of insomnia in the acute psychoses. Hydrotherapeutic measures were of great value. The aim should be to treat the condition responsible for the insomnia rather than the insomnia itself. Dr. C. P. Symonds (London) discussed the physiological mechanism of sleep, and mentioned the different ways in which it might be disturbed. Dr. L. I. Spriggs (Ruthin Castle) mentioned the importance of a certain daily allowance of flesh and also described how the reading for a definite time of prescribed literature might assist the onset of sleep. Dr. Stone (Northampton), speaking from thirty years' experience of general practice, laid great stress upon the presence of a certain amount of food in the stomach, and also the patient's posture. Dr. W. Johnson Smyth (Bournemouth) referred to his experiences with hyosine in asylum practice. He had found medural the best all-round hypnotic. Dr. W. A. Potts (Birmingham) drew attention to the value of combining hyosine with morphine in ecstacy cases, while simple drugs, such as "blue pill" and alcohol, were often useful. Dr. Moritlock-Brown (Braunton) pleaded for further research into the physiology of sleep, and deprecated the use of hypnotics. Dr. McKenzie Wallis (London), in dealing with the question

of the relative toxicity of hypnotics, stated that experimentally he had found that sulphonal, veronal, and medural had no effect on the liver, kidneys, or general metabolism. The discussion was terminated by the President, Sir Murray Craig, who stated very emphatically that experience had taught him to treat sleeplessness in its earliest stage, even in children, and that he had no fear of the use of hypnotic.

Friday, July 24th

PREVENTION OF MENTAL DISORDER

On the third day in this Section the President of the Royal College of Physicians, Sir Humphry Rolleston, opened a discussion on the prophylaxis of mental disorder. Although in a special Section, Sir Humphry considered that a discussion should be on very broad lines, as it dealt with the highest reactions of the human organism, in fact with its reaction as a whole whereas in other branches of medicine one organ or system of organs chiefly attracted their attention. It was right that the discussion should be opened on general grounds, and it would have an educational value for those interested in general medicine rather than in psychological medicine. The public, as well as the medical man, required education as to the manner in which mental abnormalities should be regarded and should be impressed with the similarity of mental and bodily disorders, and with the commonplace that prevention was better than cure. A regard to etiology, the multiplicity of causes of mental disorder—heredity, environment, physical or bodily, and purely psychological—complicated the problem of prevention. Heredity and environment were closely interwoven as etiological factors. The special form of nervous disorder was not indicated as such, and a low state of vitality was handed down. Environmental conditions could be improved by all that was included under the term "mental hygiene." Half the cases of mental disorder had been ascribed to the influence of heredity. This factor carried with it as means of prevention the difficult subject of eugenics, sterilization of defectives, and birth control. Care was necessary, however, as if eugenics were carried to their logical conclusion a dead level of standardized men might result. Sir Humphry Rolleston then proceeded to deal with the various forms of stress—physical and psychical—which might act as the exciting factor on a psychopathic disposition. Among these were trauma, infection, toxic factors, unsuitable diet, worry, emotional strain, and overwork. Chronic infective foci appeared to play an important part in some cases of mental disorder. It was reported that at the New Jersey State Hospital, Trenton, the discharges increased from 37 to 85 per cent after removal of oral and tonsillar infections. The effects of alcoholism and syphilis were well recognized. Endocrine deficiency was an interesting and possible responsibility. When of congenital origin (for example, cretinism) ante-natal treatment and environmental precautions might be helpful. Educational dangers at school—the overpressure often brought to bear on clever boys—the importance of sufficient sleep, and finally early treatment in psychiatric clinics attached to general hospitals, were further factors presented by the opener in his admirable paper.

Dr. Helen Boyle (Hove) pointed out that, as regards eugenics, there was no definite model at which to aim. Physical perfection did not necessarily mean good mental development. She also dealt with the correct upbringing of children. Dr. Bernard Hart (London) maintained that there were no disease entities in mental disorder—that what occurred was a reaction of the whole organism to its internal and external stresses. While they clung to the disease entity idea it was difficult to harmonize the different etiological factors. He pleaded for more tolerance between the various schools of psychological thought. Dr. L. Mapother (London) deplored their lack of information as to prophylaxis. They needed some test of susceptibility to mental disorder—a test analogous to the Schick test in diphtheria. Dr. T. A. Ross (Penshurst) said that the medical student was not taught to interest himself in mental disorder, very few general hospitals had psychiatric clinics, and the majority of psycho-neurotics were allowed to drift owing to lack of suitable treatment. It was the general practitioner who should really be in a position to help these patients. Dr. W. A.

Potts (Birmingham) considered that the places for the prevention of mental disorder were the ante-natal clinic and the nursery. Dr P. Watson-Williams (Bristol) dealt with the importance of the removal of chronic infective foci in the teeth, tonsils, or accessory nasal sinuses. Dr H. Crichton-Miller supported him, and added observations on the blood examinations of psycho-neurotics. Dr R. M. Craig described the psychiatric clinic attached to a general hospital with which he was associated, and Dr Davidson, Montpelier-Brown, and Madgson also spoke. The discussion was then brought to a close by the President (Sir Maurice Craig), who added a further plea for the establishment of psychiatric clinics in connexion with all general hospitals, and also for recognition of the importance of avoiding overstimulation and fatigue.

SECTION OF THERAPEUTICS (INCLUDING BALNEOLOGY AND RADIOTHERAPY)

Wednesday, July 22nd

ASTHMA

In opening the discussion on asthma, the President, Professor R. B. Wild, reminded the audience how modern many of their methods of treatment were. He had read his first paper before the Section in 1887, when Professor Lieberich, the discoverer of chloral-hydrate, had also spoken. He congratulated the Section on meeting in the historic city of Bath, where so much was done for the science of therapeutics. The results of organized research begun in 1911 with the establishment of the Medical Research Committee (now Council), were now being reaped. It was time to take stock of their knowledge.

Dr W. Langdon Brown (London), in opening the discussion, said that the treatment of asthma summarized in itself the chief trends of modern therapy. Successful treatment involved a consideration of psychotherapy, sensitivity to foreign proteins, vagotonia, and endocrine balance. Asthma was due to an unstable or irritable condition of the bronchomotor or vasomotor portions of the vagus nucleus which then reacted unduly to psychical or peripheral stimuli or to foreign proteins in the blood. Immunity to certain foreign proteins was congenital, there were others to which immunity might be required. But to some foreign proteins immunity was never required and they could not be assimilated. Such proteins exerted anaphylaxis in varying degrees. The asthmatic showed a sensitiveness towards proteins which were not toxic to others. As a rule they had difficulty in dealing with a number of foreign proteins. They would give a strongly positive reaction to one at one time and to another at another time. Only occasionally was there a high degree of sensitiveness to a particular one. For this reason the skin test was reliable in only a small number (2 to 3 per cent) of cases. Asthma depended largely on an upset in the balance between the parasympathetic and sympathetic branches of the visceral nervous system. Asthmatics were vagotones. The vagus preponderance might be relative and due to depression of the sympathetic, or to drugs or any condition exerting the sympathetic relief of asthma. In summarizing the treatment of asthma the speaker recommended an all-round attack on the disease. He would consider the psychical aspects of the case, remove sources of peripheral irritation, employ exercises for chest development, desensitize where practicable, restore the balance in favour of the sympathetic, or attend to the general hygiene.

Dr F. P. Poulton said that it was important to distinguish between idiopathic asthma from that due to infection. It seemed also certain that cardiac asthma in the elderly was not true asthma. Patients of this type were benefited by morphine or oxygen inhalation. Skin reactions were of no value for the diagnosis of particular substances, but they served to distinguish between cases of the allergic and infective groups. For this purpose he used an extract of human dander injected intracutaneously. Asthma was not due to anaphylaxis any more than histamine shock was due to anaphylaxis. Allergic individuals were often sensitive to drugs such as aspirin. Treatment should be directed to the allergic condition, and might be specific or non-specific, as by injections of milk or peptone, to keeping the patient away from the specific exciting substance to

altering the receiving mucous membrane, as by touching certain points with the ear, or to relaxing the bronchial muscle, as by injection of adrenaline, of caffeine or by oxygen inhalations.

Dr Philip Hamill emphasized the importance of history in eliciting a substance to which the patient was sensitive. Six reactions had a certain value, but there were practical difficulties in carrying out a complete series of tests. If a specific precipitating factor could be determined—for example, horse, feathers, etc.—(1) remove or avoid it, (2) immunize against it either specifically by injection of minute doses, or non-specifically by peptone. Chronic bronchitis, so often associated with asthma, made the patient more sensitive, it was therefore important to treat the bronchitis. Vaccine therapy was a valuable adjunct. Dusty regions and occupations should be avoided. During an attack adrenaline was of great value if given early, and pituitary extracts assisted. Between attacks every endeavour should be made to build up the strength and resistance of the patient, undoubtedly attacks were much less liable to occur when the general condition of the patient was good.

Dr Alexander Roberts said that the chief aim in the treatment of asthma was to stabilize the vasomotor system. The problem of asthma would be found in the vagus and sympathetic nerves and their effects on the circulation. He was supposed to advocate indiscriminate cauterization of the nose, but much damage might be done by excessive cauterizing. He gently touched certain spots on the mucosa while watching the effects of treatment on the blood pressure. Ordinarily cases responded well, but when nasal polyps were present the use of the cautery was contraindicated, and the cases were much more difficult to treat. Dr A. F. Hurst said he had himself suffered with asthma for thirty years. The condition might be alleviated, in favourable circumstances the attacks might even cease, but there was no cure. An asthmatic was always liable to recurrence of attacks. The best treatment was avoidance of fatigue and sufficient holidays in places where the attacks did not occur. Mr Frank Cole classified the types of asthma. He believed strongly in the importance of skin tests. If the offending protein could not be avoided desensitization should be tried and was often extremely successful. He also recommended auto-hemotherapy. Dr Baker described an apparatus for administering adrenalin in oxygen gas. Dr Birch said he had been incapacitated for two years by asthmatic attacks, but was now cured, thanks to Mr Coke's method. The President spoke of the relation between asthma and eczema.

Thursday, July 23rd

TREATMENT OF CHRONIC ARTHRITIS

A discussion on the treatment of chronic arthritis was opened by Sir Thomas Horde. He said that drainage or other appropriate treatment of the area of focal infection was the first step in treatment. If teeth and tonsils or teeth and gastro-intestinal tract were both involved the teeth should receive thorough attention, and an interval be allowed before drastic measures were employed with regard to the tonsils or the bowel. So with the throat and nose on the one hand and the rest of the respiratory tract on the other. Antigen therapy should be supplementary to drainage of the infected area, not a substitute for it. In the great majority of cases chronic arthritis was part of a general disease, and the patient required treatment as much as, and sometimes more than, the joints. He discussed the various forms of treatment, general and local, and concluded with some remarks on the treatment of chronic arthritis by protein shock. Dr Preston King (Bath) discussed the hydrotherapeutic treatment of this condition. He believed that the thermal waters, in the external and internal use, were to be regarded as one of the constituents of the pharmacopoeia, and, like any other remedy, had then proper use in appropriate cases. In treating chronic arthritis by hydrotherapeutic methods, it was results, not causes, which were being treated, and although the later stages of disorganized joints with eroded cartilage, irregular bone formation and fibrosis, or even bone ankylosis, came up for cure, it was obvious that no

benefit, beyond perhaps some alleviation of pain, was possible. He described the treatment followed at Bath, and stressed the advantages of a spa where a thorough course of baths could be taken together with electrical and heat treatment and massage. Dr. A. Mutch (Guy's Hospital) approached the subject from the bacteriological point of view, and mentioned some work which he had carried out on cases of chronic arthritis due to *B. foliaceus*, a little known microbe studied in the past chiefly in connexion with war wounds. In certain insidious cases it had appeared to be the primary bacteriological factor, but it probably played an equally important part as secondary invader, keeping up residual inflammation in joints thereby damaged by infective cocci. Dr. C. B. Heald described certain types of this condition which were recognized when special examinations for pilots were instituted when there were a cardio-vascular debility type, a nervous instability type, and a malnutrition type. As a further guide to the selection of treatment he had formulated for himself certain rough working rules, as for example that there was, not seldom, some deformity due to the causative disease to be found from the actual joints affected, or from the order in which they became affected, and that the less a joint was free to move the less was electrical treatment likely to be effective unless this could be directed to some central focus or unless the focus had already been discovered and received adequate treatment. He went on to discuss the treatment of chronic arthritis from the electrotherapeutic point of view. Dr. J. P. Chamberlitch explained the advantages of diathermy, which he thought could be regarded as a specific for gonococcal arthritis, and in some cases of rheumatoid arthritis with no evidence of gonococcal infection diathermy had apparently cured the condition. Dr. Warren Crowe thought that in arthritis and non-articular rheumatism—which might be classed together—vacuums ought to do well, yet in practice the bilmer of opinion was unfavorable to this method of treatment. This was partly the fault of bacterial technique but not mainly so. The chief fault was with the clinician, whose technique of administration was wrong. Dr. P. Watson Williams stressed the importance of excluding sources of infection in the upper air tracts. He also reminded upon the frequency with which neurasthenic symptoms were associated with rheumatoid arthritis cases, and there was no manner of doubt that the neurasthenic syndrome in these cases was due to the focal infection. Dr. David Campbell deplored rigid splinting, from the beginning the patient should be encouraged to move the affected joint, if this were done many disastrous sequelae would be prevented or minimized. The President of the Section (Professor Wild) remarked upon the way in which sufferers from this condition experienced an exacerbation just before the advent of damp weather. He attributed this to the accumulation of carbonic acid in the body. Dr. P. Hannell confessed himself unopinioned as to the use of splints in moderation, though he agreed that exercise and massage were important. Dr. Thomson was of opinion that if the general condition of these cases was poor they should be sent to a spa, if the general condition was good the most valuable thing for practical purposes was intravenous shock. Sir Thomas Horder, replying on the discussion, said that he had no intention of depriving the bacteriologist in some remarks he had made earlier, he was only anxious to 'ginger' the bacteriologist so that he might afford more reliable help. Nor did he wish it to be understood that he advised protein shock for the patient who was improving by any other method. The discussion had strengthened his main thesis, which was that arthritis was a general disease with local manifestations.

Friday, July 24th

THERAPEUTICS OR LIGHT

A discussion on the therapeutic value of light was opened by Professor W. E. Dixon, F.R.S., who said that besides the local and general action of light, in which it did not differ from the action of other agents, there was a specific action peculiar to light itself. This was shown by the capacity of light to alter the percentage of carotene and phosphorus in the tissues. However much calcium or

potash was taken by the mouth the percentage of the salt in the body could no more be altered than the gravity of the blood could be changed by drinking tea, but light was able to produce this effect, and consequently could prevent and cure rickets. The action was by way of a chemical change of the cholesterin in food or in the skin. It was not connected with the no-tolerance mind, it was simply a chemical change, which could be produced equally in the test tube. Dr. C. L. M. Jones (Alton) said that the two conditions in which light treatment had proved most beneficial were rickets and pulmonary tuberculosis. A very important indication in treatment was the capacity of the individual to absorb pigment. A patient who had a higher resistance to diseases than a non-pigmented one. His psychological condition of light was also worthy of study. Let us turn next to physically defective children in London schools, treated with children at Alton of the same age and suffering from the same condition showed the latter to be approximately one year ahead in mental activity as compared to the exposure at Alton to sunlight and air. With regard to artificial light sources, he preferred the carbon arc for general treatment and the mercury vapour lamp for local treatment. The tungsten arc is very useful in small glands of the neck. Contraindications for light treatment were non-pigmentation, feeble conditions, neuritic disease, and in very young and very old patients. Dr. G. H. Francis described the technique and results of phototherapy at the Skin Hospital in Manchester. Here the artificial sunlight treatment had been reserved for tuberculous skin cases, mostly lupus vulgaris and the results had exceeded expectations. He had used the tungsten arc mainly in the treatment of alopecia. In recent publications many skin complaints were stated to be curable by phototherapy. He trusted that a good cure would not be spoiled by too wide a claim. He was inclined on theoretical grounds to doubt the efficacy of local phototherapy on the deeper-seated psoriasis and skin affection. Although the value of phototherapy, local and general, was abundantly proved for tuberculous skin disease, more experience was required to establish its real worth in other departments of dermatology. Dr. W. Mitchell (Bridford) said that tuberculous glands responded well to light treatment, though this treatment was useless if an abscess was present. In cases of lupus a preliminary drainage of filtered air was a great help. Professor Hofferma referred to the incidence of endemic gonorrhea among populations in narrow mountain valleys, where the horizon was limited and a great deal of direct sunlight factors to account for the difference between the action of light on pigmenters and non-pigmenters might be racial type. The Mediterranean type understood the risk of tuberculosis much better than the purely Nordic type. Dr. E. P. Chamberlitch suggested that there might be advantages in using carbon arcs which had been impregnated with various metallic salts. Dr. Helen Mackay had found the dose was cut down with some children's sleep until dismissed posture in bronchial drainage. In order to diminish position that the bifurcation of the trachea was lower than both the bronchi, and this result might be obtained in three practicable positions which he described in detail, and indicated modifications which were useful with a view to efficiency and comfort should drainage be required frequently or over a long period.

SECTION OF LARYNGOLOGY, OTOTOLOGY, AND RHINOLOGY

Wednesday, July 22nd

The proceedings of the Section opened on the first morning when Mr. Arthur H. Cheate, the President, welcomed the visitors. Professor Cheate, Professor Thomas McCre, and Dr. Tucker of Philadelphia, Professor Burger of Amsterdam, Professor Birkett of Montreal and Dr. J.

Stoddart Barr of Tasmania Professor Chevalier Jackson opened a discussion on overlooked cases of foreign body in the air and food passages, and for two hours captivated a crowded meeting of over two hundred members with a brilliant summary of the subject, lavishly illustrated with lantern slides. Professor Jackson first emphasized the importance of the overlooked foreign body, its seriousness varied, for while some foreign bodies might remain for long in the lung without giving trouble, others foreign bodies might prove fatal in from one to three weeks in a young child. Foreign bodies were not irritating unless they were obstructive, and provided there was no obstruction they might be tolerated by the tissues for a long time. In discussing the causes of overlooking the foreign body, Professor Jackson said that one of the commonest was that the history of the foreign body was excluded. It was very important that teachers of medicine should impress their students that, in every acute or chronic case of pulmonary disease, foreign body must be considered. The attitude of the general practitioner and the general physician was often apathetic, and a definite history of foreign body given by the patient was frequently ignored or even ridiculed. Close cross-questioning would often elicit a history of foreign body which might otherwise be overlooked. The fact that a child was known to have been sitting on the floor (where children often picked up fruit stones and other small objects), and had had an attack of coughing and choking, was an initial symptom of the first importance, such a child should be deemed to have a foreign body until proved guiltless. If symptoms promptly followed the swallowing of a foreign body they would not be so often overlooked. Foreign body often simulated a symptomless interval. Foreign body often simulated common diseases, such as tuberculosis, emphysema, pneumonia, asthma, and diphtheria, but a careful examination should exclude these diseases. X rays were the most valuable means of diagnosis, but careful examination of physical signs should always be made by an expert. The lungs should be x-rayed both before and after the extraction of the foreign body, as sometimes there was more than one present. Professor Thomas McCrue regarded it as necessary that there should be team work—a radiologist and a bronchoscopist as well as the physician. He emphasized the importance of education, which was needed chiefly by the general practitioner and the physician, and he said that they had a right to demand increased skill and technique on the part of the bronchoscopist. In the ensuing discussion there took part Sir StClair Thomson, Sir William Milligan (Manchester), Dr Tucker (Philadelphia), Dr William Hill, Dr Irwin Moore Mr Herbert Tilley, Mr E B Waggett, Mr D A Crow (Brighton), Mr G Lwart Martin (Edinburgh), who emphasized the importance of having the intubation laws modified, so that the passing of bronchoscopic tubes could be practised on dogs anesthetized by morphine only, as in America, Mr Musgrave Woodman (Birmingham), Sir James Dundas Grant and Dr P Watson-Williams (Bristol). Professor Chevalier Jackson thereafter gave a practical demonstration on the manikin of mechanical problems of the bronchoscopy and oesophagoscopy extraction of foreign bodies from the air and food passages. He followed this with a cinematographic demonstration of bronchoscopic aspiration for suppurative diseases of the lung of other than foreign body origin. It was interesting to see boys jump on to the operating table, he down live the bronchoscope passed without any anaesthetic, and sit up again smiling.

Thursday, July 23rd

On the morning of the second day Mr G J Jenkins opened a discussion, before over eighty members on the operative treatment of chronic middle ear suppuration. He said that in recent years otologists in all parts of the world had been experimenting with methods that were something between the Schwartze and the radical mastoid operations, and which were termed conservative mastoid or modified radical mastoid operations. This endeavor to find something better than the latter had been found to be

insufficient or defective in some respects. Whatever the operation done, its objects should be to remove all foci of potential danger, to return the maximum hearing, and to leave a state of affairs that would necessitate the least possible after-attention. He had been led to employ an extended Schwartze operation, with removal of the middle ear, and to obliterate the antrum and mastoid cavity by means of a flap of periosteum, in cases of chronic otorrhoea in which he believed the disease was confined to the antrum, middle ear, and middle ear. The discussion was continued by Mr Sydney Scott, Mr J Bowring Horgan (Cork), Mr Aldington Gibb (Maidstone), Sir James Dundas-Grant, Mr W S Syme (Glasgow), and Mr Norman Barnett (Bath).

The next discussion, on the same morning, was on the treatment of chronic non-suppurative middle-ear deafness, and was opened by Sir William Milligan, who said that as his experience went, advanced chronic catarrhal otitis media was an incurable disease, and one in which all that could be done in their present state of knowledge was to endeavor to stem its progress and to prepare the patient for the advent of a severe degree of loss of hearing. The sheet-anchor of treatment was unquestionably inflation by means of either the bag or the Eustachian catheter. The existence of a genuinely stenosed Eustachian tube called for a preliminary course of bougienage, and to be effective this should be done through the tympanic membrane after a preliminary priacntesis, and preferably under a general anaesthetic. The presence of creeping sepsis was the underlying factor in the establishment of chronicity, and all obstructive or septic lesions in the throat, nose, and naso-pharynx should be carefully excluded. The education of the auditory centres should be systematized, and, if possible, simplified. In the somewhat unexpected optimistic discussion which followed there took part Dr J Kerr Love (Glasgow), Mr Neil Melny (Newcastle-on-Tyne), Mr Norman Barnett (Bath), Dr George Cathcart, Sir James Dundas Grant, Dr W S Syme (Glasgow), Mr Herbert Tilley, Mr Arthur Cheate, Professor Burger (Amsterdam) and Mr Sydney Scott.

Friday, July 24th

On the morning of the third day of the proceedings Mr F H Westmacott opened a discussion on occupational diseases of the ear, nose, and throat. He first discussed the occupational diseases which were scheduled under the Workmen's Compensation Acts, though in the majority of cases the disease or injury was not limited to the ear, nose, or throat but affected in even a wider degree the skin surface of the body, or the lungs or other organs, and the incapacity in most cases was not produced by the local affection but by its wider extent. These diseases included anthrax, lead poisoning and its sequelae, and mercury poisoning by nitrous fumes or its sequelae, ulceration of the mucous membrane of the nose or mouth produced by dust, chronic ulceration or its sequelae, compression of the ear included inflammation of the middle ear, inflammation and necrosis of the middle ear followed by rupture of the tympanic membrane in mining workers and blinding, etc. The deafness attributed to continuous noises due not so much to damage of the sound conducting mechanism as to destruction of the sensitive nerve ending which constituted the sound-receiving apparatus. The discussion was continued by Surgeon Commander J. Grimwade, R.N. (representing the Royal Navy), Wing Commander D Ranken, R.A.F.M.S. (representing the Royal Air Force), Major T Jefferson Gaulder, R.A.M.C. T.F. (who spoke on the subject as it affected the soldier), Mr T Ritchie Rodger (Hull), Mr E B Waggett Dr J Keir Love (Glasgow), Mr T B Johnson (Guildford), Mr H Norman Barnett (Bath), and others.

DEMONSTRATIONS

On the afternoon of each day demonstrations were given at the Bath Bar, Nose, and Throat Hospital. Mr V I Negus read a paper there on evolutionary factors in the causation of pharyngeal diverticula, illustrated by specimens and lantern views, and showed specimens illustrating the comparative anatomy of the nose and throat. Mr Irwin Moore read a paper on the history of endoscopy and demonstrated a number of specimens from the special endoscopic museum, for the formation of which he had made himself responsible, and which was one of the most striking features of the Pathological Museum of the Annual Meeting. Mr G J Jenkins exhibited specimens showing destruction of the tonsils as mentioned in his paper. Mr H Norman Brunett demonstrated a large number of cases illustrative of the excellent results he had obtained in the conservative method of operative treatment of chronic middle ear suppuration, and of the treatment of chronic non-suppurative middle ear deafness. Dr P Watson-Williams, assisted by Mr Eric Watson Williams, gave a demonstration, on patients under local and general anaesthesia, of his method of investigation of the nasal accessory sinuses.

SECTIONS OF DISEASES OF CHILDREN AND PUBLIC MEDICINE

Wednesday, July 22nd

PREVENTION OF RHEUMATIC INFECTION

Dr ROBERT HUTCHINSON presided over a joint meeting of these two Sections held to discuss rheumatic infection in childhood, its early diagnosis and preventive treatment. The opening paper was read by Dr T J Poynton, who first emphasized the importance of such infections, especially in its bearing on heart disease, as a cause of suffering and early death. All who were familiar with such cases were impressed by the recuperative power of the heart in early life, if it were rested and protected. The prevalence of chorea among school children, he thought, suggested some discoverable factor that was straining their nervous system. He hoped that by more careful organization and supervision they might prevent much of the harm that this disease was causing. With regard to prevention, it was wise to deal first with cases which promised a good chance of useful recovery, rather than those which were seriously damaged. Dr Poynton then gave a brief summary of the work recently carried out at the Hutfeld Hospital in Sussex, established by the Invalid Children's Aid Association. There, out of 123 rheumatic children admitted, only two at the end of a year, and after a period of much cold and rain, developed fever and rheumatic pains. During the same period in London he was seeing numerous cases of active rheumatism, some with general pericarditis. He was often asked if these measures would prevent relapses in the future, but could only say that by giving time to consolidate the heart and allowing Nature to build up the resistance of the tissues they would certainly help to repel future attacks. The ideal hospital for this purpose would have to be specially provided, and the problem confronting them in this matter was the question whether the public would be justified in spending the necessary funds. Dealing with the chief manifestations of rheumatism in childhood, he said that in 1108 cases 673 showed endocarditis, 626 arthritis, 617 chorea, 344 sore throat, and 94 had nodules. The earliest evidence lesion was usually dilatation. He was largely responsible, with Dr Price, for establishing the theory of a local focus of infection, and in this connexion was convinced of the importance of the emulcation of infected tonsils as a prophylactic measure in spite of exceptions. In regard to treatment he deprecated the routine use of salicylates. Their value in adult arthritis and for relief of pain he did not dispute, but for evidence cases in children he preferred the ethyl ester of para methyl cinchonic acid.

Dr R A Askins described some of the work that had recently been done in this connexion by the School Medical Department of Bristol. Accurate statistics as to the extent of the evil were not available, but, assuming that half the fatal cases of heart disease in the country were rheumatic in origin, they were losing over 18,000 lives a year from this

can. The disease was undoubtedly due to micro-organisms of the streptococcus group, but its incidence could be reduced if it was probably communicated by means of and prolonged infection. The school medical department gave the best opportunity for early diagnosis, and he advocated the establishment of special cardiac clinics and the utilization for these patients of beds in existing cripple hospitals. Dr Carey Coombs (Bristol) emphasized the necessity of collaboration between the clinician and the administrator. He hoped that future research would provide them with biochemical or other reactions which would facilitate early diagnosis. Any hospital for this purpose must provide open air and occupation. Dr R Miller mentioned the work which had been done by the Committee of the Association appointed as a result of the discussion at the Portsmouth Meeting. Its report would soon be issued, and he believed it would prove a very valuable document. Early cases of rheumatic infection were often mistaken for tuberculosis and the presence of pallor, dyspnoea, fatigue, with enlarged tonsils and a cough should always lead to a suspicion of rheumatism. The nervous and unstable condition of such children was a sign of nervous instability which had not developed into chorea. He thought the condition was associated with poverty and mentioned that at least situated as it was in the Thames Valley, there had been no case of the kind ever in a period of years. Dr Glover of the Ministry of Health thought the most important preventive measures were town planning, concreting of foundations to prevent dampness, and the avoidance of over-crowding in both homes and schools. He would like to see acute rheumatism made notifiable in certain areas for a period of years, and a completely equipped unit for the investigation and treatment of cases. Dr Vincent Court pointed out the frequency with which nodules could be detected in these cases, and then extreme importance in early diagnosis, enabling the physician to anticipate cardiac mischief. Dr R L Thomas did not regard rheumatism as a disease of poverty, but thought it affected rather the children of the better skilled artisan class—people who were succeeding in life but living under conditions of extreme strain. Dr Thompson called attention to the value of detection of hindwings as an early sign of the disease. In Birmingham they found that cases followed closely the course of the two streams which flowed through the city. He thought the establishment of special clinics would be very mischievous. These cases required not the cardiologist but the experienced general physician. Dr Nay Scott said that in rural districts where children had to walk long distances in all weathers to get to school, compulsory school attendance was a potent factor in causing rheumatism. Dr Justice Hill, Dr Price, Professor Wynne, Dr Leonard Tees, and Dr Semfield also took part in the discussion.

The Chairman, Dr Robert Hutchinson, said if it were not for the prevalence of rheumatism they could close at least fifty beds in the London Hospital alone. He also distinguished the provision of special clinics. He had learned to distrust the expert, especially the tuberculosis expert. Much more knowledge was needed before they could recommend the expenditure of large sums of money at a time when the country was already impoverished. With regard to the relation of the disease to poverty, his experience was that it was not a slum disease but a disease of elementary school children. Mental strain was an important factor in the development of chorea.

SECTION OF DISEASES OF CHILDREN

Thursday, July 23rd

TREATMENT OF EMPYEMA

The second day's discussion with Dr Carey Coombs in the chair was on the treatment of empyema. Dr H C Cameron said that the mortality from empyema was very high in the first two years of life. It was always a favourable feature when the rise of temperature due to the pneumonia was separated from that due to empyema by an interval of time (metapneumonic empyema). Conversely, the prognosis was unfavourable when pyrexia due to empyema was superimposed on that due to pneumonia (sympneumonic empyema). The latter was the prevailing type in pneumonias of infants, because at that age pneumonias tended to be of long duration. After the second

veal metapneumonic empyema was the rule and the prognosis was much better. An exception was influenzal empyema, which was generally suppurative. The treatment of the two forms of empyema was different. Cases of metapneumonic empyema recovered after rib resection, suppurative cases almost always died. In suppurative empyema paracentesis should be practised as a temporary measure, followed by rib resection at the termination of the pneumonia. Besides saving life, restoration of the function of the lung must be considered. Failure of the cavity to close was due to delay in the establishment of satisfactory drainage, insufficient drainage, and secondary infection. Mr H S Souttar said that the incidence of pneumonia was greatest between the ages of 1 and 7, and the mortality was highest in the earlier years. The mode of onset of the disease had a vital bearing on the mortality and method of treatment. The outlook was bad when empyema occurred as part of a general infection, or where the whole cavity was suddenly involved, as in a violent streptococcal infection. Immediate operation was apt to be fatal in these cases. When, however, the empyema was due to extension from subsidiary pneumonia the prognosis was good and radical treatment was indicated. From the point of view of operation empyemas fell into two groups—the adherent and the non-adherent. The former were usually pneumococcal, the latter streptococcal. In the first the speaker advocated opening the cavity freely, clearing out all solid masses of fibrin, and draining by a closed method, in the second to open the pleural cavity freely was to invite disaster. Pressure must be relieved by repeated aspiration. Later operation might be attempted. Closed drainage was preferable to open drainage for many reasons. Primary closure after emptying the cavity had proved disappointing. Post-operative treatment was as important as the operation. Its aim was sterilization of the cavity and expansion of the lung. The speaker recommended siphon drainage and in some cases injection of Dakin's fluid. With due care chronic empyema should never result.

Dr F G Chandler classified types of empyema into ordinary empyema following pneumonia, acute fulminating, chronic, or tuberculous empyema. In treatment four things had to be kept in mind—the evacuation of the pus, the expansion of the lung, the speediest convalescence, and the comfort of the patient. Rib resection in young children was unjustifiable, aspiration or simple incision and drainage gave better results. If the lung did not expand it meant either disease within the organ or thickened pleura and adhesions. The latter could be dealt with mechanically or by irrigation with Dakin's solution. Fulminating empyema should be treated by gentle aspiration, if necessary with an replacement to prevent too sudden emptying of the cavity. Mr W H C Romanis laid stress on the complications of empyema, such as sinus formation, fibrosis of lung, and bronchiectasis. It was important to identify the infecting organism. Pneumococcal infection was associated with masses of fibrin in the pleural cavity which often altered the physical signs. In pneumococcal empyema operation was not urgent. Young children might be cured by aspiration alone. In the streptococcal form the pus must be removed without delay. Aspiration should not be persisted in if the child did not improve in a day or two, but recourse should be had to operation. Mr T Twinstington Higgins said that the treatment of empyema must be guided by ordinary surgical principles. The important points were early and accurate diagnosis and efficient operative and post-operative treatment. The operative procedure would depend on the age and condition of the child, the character of the pus, and the size of the empyema. In his experience a knowledge of the bacteriology of the pus was not of much assistance in treatment. He advocated suction drainage and in suitable cases the aspiration method of Poynton and Reynolds. Dr Clarke gave his experience of primary closure of empyema. Out of twenty-one cases primary union occurred in two. In the others the wound broke down and a tube had to be inserted, but all did well. Dr L A Parris (Brighton) agreed with previous speakers on the main points. He thought primary suture hardly worth attempting. Rib resection was necessary in all cases to secure good drainage. Dr R A Ramsay pointed out that the cavity in empyema was often obliterated by the rising of the

diaphragm and the falling in of the chest wall after the pus had been evacuated. For this reason high incision and drainage were necessary. Dr J Willie Scott discussed the difficulties met with in dealing with very chronic cases of empyema. Mr Crymble (Belfast) agreed with Mr Ramsay that high drainage was necessary in many cases. Dr Crieve Coombs (Bristol) said that the discussion was evidence of the increased sense of responsibility in dealing with empyema and of the necessity for co-operation between physicians and surgeons.

SECTION OF OPHTHALMOLOGY

Wednesday, July 22nd

EYE INJURIES AND INTERSTITIAL KERATITIS

The President of the Section, Mr W Maillon Beaumont (Bath), in welcoming the members of the Section to Bath, referred especially to the number of American ophthalmologists visiting them, to whom also he offered a welcome. Mr W T Holmes Spicer (London) read a paper on eye injuries and interstitial keratitis. These cases, he said, involved complicated medico-legal issues. Most of the injuries alleged to be the determining causes were trivial—for example, from foreign bodies, slight abrasions—many of well planned operative procedures. Apart from the evidence of the stigmata of congenital syphilis, the eye symptoms might be perplexing. Where there was the predisposing diathesis a most trifling disturbance, even the administration of drops, had been held to precipitate attacks of typical interstitial keratitis, even in the untouched eye. Injuries occurred daily in large numbers in manufacturing towns, but the sequence of interstitial keratitis was rare. The occurrence of an attack in the untouched eye he held to throw doubt upon the true sequence of events, in some of these there were evidence of pre-existing ocular disease, in such a relapse was possible at any time. The alleged determining injury was probably only coincident with the time of likelihood of the manifestation of ocular syphilitic inflammation which would have become active, injury or no injury. If the characteristic signs of congenital syphilis were present even in infants were certain to appear at some time of life, dependent on the ripening of the organism, and the disease was syphilitic and not traumatic. The injury would not have given rise to the involvement of the eye unless the spirochaete was present in the eye. Mr Inglis Pollock (Glasgow) stressed the importance of exact clinical diagnosis. Mr A W Ormond (London) recalled the experience of war ophthalmic surgery. He thought that some 10 per cent of cases of corneal ulcers said to arise from injury were proved to be interstitial keratitis. Mr Freeland Fergus (Glasgow) said that the injury might be an exciting cause, but not the determining cause, of interstitial keratitis. Mr Bishop Harman (London) said all hinged on the question whether or not the attack of interstitial keratitis was in the balance or was certain to come at some date, injury or no injury. Mr C H Walker (Bristol) said he had seen cases of injury where the typical reactions of the trauma had almost cleared up when interstitial keratitis supervened. Dr E J Primrose (Glasgow) thought that if the injury and the onset of the interstitial keratitis were merely coincident, then the keratitis should be as frequent in the uninjured eye as in the injured eye, but this was not so, the majority appeared in the injured eye. Dr Wallace Henry (Leicester) referred to the alleged sequence of interstitial keratitis to general anaesthesia. Dr de Schweinitz (Philadelphia) thought that lowered resistance would be a determining influence in dating an attack. Dr R Kerry (Montreal) made some comments on treatment, and Mr Holmes Spicer replied.

Mr A W Ormond (London) read a paper on visual hallucinations of sane people, which was discussed by Dr Wallace Henry, Mr P G Dove (London), Dr A L Davis (New York), Dr Webster Fox (Philadelphia), and Mr Cyril Walker. Mr Bishop Harman (London) made a communication on phlyctenular conjunctivitis and keratitis, causes and prevention, which was discussed by Mr T H Breckerton (Liverpool). Dr Wallace Henry demonstrated an instrument for recording light minimum and light difference, and Mr A C Perreval (Newcastle-on-Tyne) discussed results obtained. Mr R Colley (Bath) gave notes

of a case of perforating wound of the eye with retention of a piece of glass, discussed by Mr. Cyril Walker, Dr. Chalmers Jameson (Bristol), Mr. T. H. Bickerton, and Dr. A. E. Davis.

Thursday July 2nd

Ocular Pain

Mr. A. Freeland Feigis (Glasgow) opened the discussion on ocular pain. These pains were mainly neuralgic in origin about the eye. Uncorrected errors of refraction were the cause of much pain. Drugs were disastrous, glasses were imperative. A defective image of positive convergence amongst varieties of muscular imbalance was a common cause of eye pain, and its correction was followed by speedy relief. A very large amount of ocular pain was briefly included in the word "sepsis," and these cases necessitated the most careful scrutiny of every factor. Itis and eyelitis were always septic in origin, their painfulness was in proportion to the septic reaction. An ordinary wound might cause a fair amount of pain, but that soon passed off, and as a rule caused no more uneasiness. In septic conditions the reverse was found. After a normal cataract operation the patient was soon comfortable, but sepsis was heralded by increasing pain. The pain of iritis was excruciating. Relief followed the use of opiates, atropine, and even hot applications. But permanent relief could only be secured by the accurate diagnosis and treatment of the cause. Corneal ulceration was a very painful affliction. Cocaine should never be used in these cases, it did not relieve deep pain, and had a most disastrous effect on the corneal tissue. Atropine was almost as bad. Bandages were bad, because they retained the septic discharges. Corneal drainage was to be promoted for this reason was invaluable, combined with free irrigation and protection by eyeshades. The secret of success in the relief of ocular pain lay in the discovery of its primary cause without this the most extensive medical equipment in drugs was ineffective. Mr. A. W. Ormond said that they might also consider the immediate relief of pain. What could they do to relieve the distress of the patient who would not and could not wait the scientific recovery of the primary cause of his trouble? Dr. Wallace Henry (Leicester) dealt with reflex pain, especially from dental troubles. Mr. Bishop Humm said that in his experience there was no better means for the immediate relief of pain than heat. Mr. Cyril Walker (Bristol) agreed, and described many ingenious and simple means for the application of steam. Mr. Lindsay Rea instructed the distress of psychical pain. Mr. A. S. Percival (Newcastle) remarked on the strange variable effect of diuretic in some cases it was wonderful, in others useless, and he could not discover the reason. Dr. Webster Fox (Philadelphia) said leeches had not been mentioned, they were old-fashioned but undoubtedly useful as adjuncts. Colonel Lister said he had never known leeches to fail, they were invariably used in India. Dr. Freeland Feigis replied that the immediate relief of pain was easy, its permanent relief was the point at issue and that depended on the primary cause.

Mr. Lindsay Rea (London) read a paper on the treatment of ocular syphilis which was discussed by Mr. Bishop Humm, Dr. E. J. Primrose, Colonel A. E. J. Lister, I.M.S. and Dr. C. B. F. Tilly. Mr. C. H. Walker (Bristol) read some notes on a case of amaurosis, and also showed an improved form of portable operating table. Mr. T. H. Bickerton (Liverpool) commented on the superior value of operating on the patient when in his or her own bed. Mr. A. S. Percival (Newcastle) read a paper entitled "Some of the things I don't know." In this he dealt with the puzzles exhibited in allied clinical disorders. Comments were made by Dr. Hugh Pollock, Mr. Bishop Humm, Dr. Peter Macdonald, Dr. Wallace Henry, Mr. T. H. Bickerton, Dr. J. W. Tudor Thomas, Mr. Freeland Feigis and Mr. Percival replied and gave a demonstration of tension and pressure as affecting an artificial eye. Mr. J. Burdon-Cooper read a paper on conservative treatment of glaucoma. He made no plea for non-operative treatment, he had no doubt of the necessity of operation but primary conservative treatment advanced the prospects of success of operation. Rise of general blood pressure, defects of metabolic processes, psychic disturbances un-

doubtedly necessitated a symptomatic change. The operation delayed them. Acute glaucoma could be reduced by the warm body bath and nitroglycerin administered by the mouth with local heat to the eye, and eserine. There was definite reduction of tension and operation was easier.

SECTION OF ORTHOPAEDICS

Thursday, July 2nd

THE TUBERCULOUS SPINE

In the absence of Prof. J. Calve, owing to ill health, the duty of opening the discussion on tuberculous disease of the spine was undertaken on short notice by Sir Henry Gairdner (Alton) who referred to the disease which he had known of his years noticed in the severity of the deformity at the time of admission, no doubt the result of early diagnosis. The bulk of the tuberculous cases were infected by the bovine bacillus, and this was especially true of pueri do so. The chief principle of treatment apart from general hygiene and heliotherapy, were fixation, dorsal recumbency, and hyperextension of the spine. These principles were recognized and acted upon the detail of method was comparatively unimportant. He showed by means of lantern slides some of the types of splint in use at Alton, namely the bed, don't the wholebarrow, the Marion and the push and pull plants, the latter some of the full names being applied to various ingenious contrivances for carrying out the principles of treatment. The advantage of extension besides the correction of deformity was that it increased the expansion of the chest. Besides, as he did mostly with children, he was not in favour of Albee's operation. Relapse sometimes occurred if it failed, and when that happened correction was impossible. Albee's cases should be treated by aspiration repeated often is necessary. Mr. C. R. Endlestone (Oxford) thought better of Albee's operation for it was capable of supporting the spine when the lesion was so situated that no apparatus could fix it. It was, however, difficult or impossible to use when the deformity was very great. In such cases he preferred the operation of Hibbs, which, however, he found difficult. He had adopted the method of using osteo-periosteal grafts from the fibula placed over the side of the spine after doing Hibbs's operation. As showing the fatal results of septic psoas abscess in the adult he stated that of 9 cases admitted to the Wingfield Hospital 8 had died, whereas of 21 non-septic cases 16 were well some years afterwards. He thought that general hygiene to treatment was more important than heliotherapy. Mr. W. I. C. Pugh would restrict Albee's operation to adult cases. He criticized the theory of the procedure on mechanical and anatomical grounds as tending to throw pressure on to the intervertebral processes and then joints which were ill adapted to bear it, and yielded under it. If abscess persisted after Albee's operation it was difficult to treat, because it was not possible to allow the bodies of the affected vertebrae further to come together. He deprecated attempts to straighten out the kyphosis and separate the bodies of the diseased vertebrae. He made no such attempt, but put pressure above and below the kyphosis so as to produce compensatory curves, rather encouraging persistence of the kyphosis itself than not. Mr. Maurice Aitken (London) rather severely criticized Sir Henry Gairdner. He said that the splints shown by Sir Henry were dangerous in other hands than his, and that no man with less experience had a right to use them. One could not tell when the disease was really quiescent, and, therefore, in inexperienced hands such appliances were not safe. Mr. Aitken used bone grafts to prevent lateral movements, and found them most useful for cases of the cervical region. It was his routine method for cases over 14 years of age although it could not altogether replace support by appliances. He agreed with Sir Henry Gairdner that correction should be applied at the seat of deformity, and not above and below it. Mr. Pugh (Newcastle) realized the need for special hospitals and specialists, and commented on the long time during which treatment must be continued. Any evidence of the collapse and fusion of the vertebrae was indispensable to form an opinion of decided cure. As regards psoas abscess, when conservative

treatment was no longer of avail, clearing out of the contents and sewing up the wound had given him good results. Mr. ALVIN SMITH (Cardiff) had had bad results from opening and sewing up abscesses in adults. When priapism occurred, lumpectomy was necessary in cases which did not improve with prolonged rest.

Mr. R. C. ELMSHE (London) agreed with Sir Henry GUYAR that the type of cases now seen was less severe than formerly. Collapse of the diseased vertebrae was necessary—the opposite was harmful. As to Albee's operation, he would not do it before the age of 14 years, but in some cases it might be advisable earlier. Mr. FRANK (London) referred to the differential diagnosis of curvatures and showed prints illustrating the value of stereoscopic radiographs. Some doubtful cases proved to be of congenital or developmental abnormalities or of malignant disease, and some of these showed multiple lesions. Mr. McMURRAY (Liverpool) referred to cases of psoas abscess with discharging sinuses which showed no signs of healing until the patients were got upon their feet, when the sinuses closed. He would not use a bone graft under adult age. Dr. R. OSGOOD (Boston, U.S.A.) believed that the best results were to be obtained by recumbency for five to seven years, but as this was often impossible in practice the fusion operation of Hibbs or that of Albee was advisable, but not in the early stages or in young children. He referred to the value of x-rays in diagnosis and the importance of recognizing multiple foci. In adults the possibility of syphilis and new growths had to be remembered. Calve's operation was not dangerous, but it only succeeded if the pressure on the spine was caused by fluid. Mr. DAW (Leeds) said that in correction small compensatory curves should be aimed at. He used two lateral bone grafts—one on each side of the deformed spinous processes—instead of splitting the processes. Mr. HUTLEY MARTIN advocated correction of the kyphos itself. He believed that the gap filled up with fibrous tissue, which afterwards calcified. There was no great difficulty in doing Calve's aspiration through an intervertebral foramen and no danger to the cord. Sir William WHEELER (Dublin) would confine a modified Albee's operation to adults only. He regarded it as no cure but a means of splintage only. In one case he found six months *post mortem* that the graft was well fixed by new bone. In some cases of psoas abscess he had good results from a method of temporary stuffing with iodoform gauze, which he described. Sir Henry GUYAR briefly replied.

Mr. R. OLLERENSHAW (Manchester) read a paper on the Osgood-Schlatter disease. He showed, and illustrated his remarks with lantern slides, that all of some fifty cases were due to violence, similar to that which produced fracture of the patella in the adult. Avulsion of the tibial tubercle generally occurred in this injury. Dr. R. OSGOOD (Boston, U.S.A.) agreed with Mr. OLLERENSHAW as to the pathology of the lesion. He found that treatment with strapping was generally sufficient without the use of a plaster splint. A dead horse experiment showed that the tubercle could be detached by a violent strain on the ligamentum patellae without detachment of the ligament, the action of which was only slightly impaired.

SECTIONS OF SURGERY AND ORTHOPAEDICS

Friday, July 24th

JOINT DISCUSSION ON FRACTURES

On the third day the Section of Surgery held a combined discussion with the Orthopaedics Section on the treatment of fractures, with special reference to its organization and teaching. The debate on this subject resolved itself practically into a discussion of the merits and disadvantages of the system of segregation of fracture cases from all other types of surgical cases. The opener, Professor G. E. GASH, held that, while all was not well with the treatment of fractures as at present carried out in the general surgical wards of the big hospitals, the disadvantages of segregation, from the point of view of the teaching of students, more than outweighed any occasional advantage to an individual patient. He expressed himself as being against the growing tide of specialism, which first began when surgery was divorced from medicine, and now was proceeding to such

an extreme degree that many subdivisions of the surgical course of a student had already to be made. There was a danger that the student's teaching would be split up into numerous small water-tight compartments, in each of which he would have a smattering of knowledge, without being at any time during his surgical training properly instructed in the broad principles of surgery in all its branches. Sir ROBERT JONES followed with his now familiar plea and argument in favour of segregation and the adoption of the "fracture service" already in successful operation in many American and a few English hospitals. He did not agree that the teaching of students need suffer by this change, and pointed out that the welfare of the patient should in any case be the first and only consideration. The vastly improved results obtained in the latter part of the war by those who were specially trained in the treatment of fractures was in itself a sufficient indication for his proposal. It was not suggested that the head of the fracture service should necessarily be an orthopaedic surgeon, but much that the surgeon to whose care fracture cases were entrusted should be specially interested in the treatment of fractures. In many general surgeons were competent and willing to fulfil this role and thus relieve their professional brethren of the responsibility for a type of case in which they took little interest—for it could not be denied that in many hospitals the fracture case occupying a bed in a general surgical ward was regarded as an incubus to be got rid of at the earliest possible opportunity. Mr. S. W. DAW gave some details of the working of a scheme of the type advocated by Sir ROBERT JONES at Leeds, and he pointed out that the efficiency of the teaching of students necessarily varied with the efficiency of treatment, and Dr. OSGOOD of Boston gave details of the working of his own fracture service, which was supplementary to, and in no way interfered with, the treatment of fractures by those general surgeons of the hospital who cared to undertake this type of work. Mr. H. WADE, Mr. H. PLATT, Mr. H. A. T. FRANK, Mr. R. C. ELMSHE, Mr. W. R. BISTON, and Dr. BRAIN of Montreal all spoke in support of the segregation scheme, while Mr. MAY PAGE, Mr. H. H. SUMPSON, Mr. GWYNNE WILLIAMS, and Mr. McADAM LEECE all pointed out various difficulties, in some cases local, which they foresaw in the working of the scheme. Professor A. W. SHIEN advocated a large surgical team at each big general hospital, to include amongst other experts a fracture expert whose services could be called upon when necessary, without establishing a separate fracture service. Professor A. FULLERTON described the admirable results obtained in his own general surgical wards at Belfast, but Sir ROBERT JONES, in his reply, pointed out that Professor FULLERTON held all the necessary qualifications, including enthusiasm for the work, which he had laid down for the head of a fracture department.

SECTION OF PUBLIC MEDICINE

Thursday, July 23rd

HYGIENE OF FOOD MANIPULATION

THE discussion on food manipulation in relation to health was opened by Dr. W. G. SAVAGE, with the President, Dr. EUSTACE HILL, in the chair. Dr. SAVAGE said he was not satisfied that there was evidence to justify the view that had been expressed by some writers as to the deterioration of the nutritive qualities of foodstuffs as a result of manipulation, especially as a result of canning and other methods of preservation. Preservation of food was also intensely necessary, and it was important to consider carefully what methods were admissible and what kind and degree of control should be exercised. With regard to bacterial contamination, of course, the risk of contamination was strictly proportional to the amount of handling, and his experience led him to believe that dust and other forms of air-borne contamination were less important than actual contact with human hands. It was of the utmost importance that the food should be initially sound, and it was known that the *Bacillus botulinus* only attacked fruit which was already damaged. Food could be classified according to its liability to bacterial infection as follows: (a) Food which is a non-multiplying medium for bacteria and is subsequently cooked, such as ordinary cereals, this is the least dangerous form (b) Food which is a non-multiplying medium, but is not

Professor Leonard Hill gave a very valuable address on the influence of sunlight and artificial light on health. He described the measurement of wave lengths and specified the wave lengths that influenced the human body. Visible heat rays were capable of penetrating the skin and warming the blood but dark heat warmed the surface only whence the importance of open fires. The action of light and ultra-violet rays was assisted by heat but it was essential to avoid heat in the treatment of febrile cases of tuberculosis. Ultra-violet rays were derived from blue sky and white clouds as well as from direct sunlight and Professor Hill described the method of measuring such radiation by the bleaching of a solution of methylene blue in acetone. Observations of this kind showed that the amount of radiation at Kingsway was on an average only about one-third of that in the country. By means of coal smoke glass windows, and clothes they deprived themselves almost entirely of ultra-violet radiation and all their brick-built hospitals were out of date. The way to eliminate tuberculosis in cattle was, not to kill the affected animals but to give them fresh air and light treatment as they did to human sufferers. Dr Dixon gave his experience of heliotherapy in tuberculosis, and Dr Doris Colebrook described the work now being done with light treatment at the Islington Child Welfare Centre.

The author tells us in his preface that his book is intended to be a companion volume to textbooks on forensic medicine, that it does not cover the whole subject and merely represents some of the cases and specimens with which he has been accustomed to illustrate the lectures given in Edinburgh.

University. But it is exactly these features that make the book so valuable and will assuredly place it among the standard works on the subject. It is the difference between reading about the signs and symptoms of some disease or injury and standing by the bedside having these facts pointed out and learning the conclusions to be drawn from them. We have nothing but admiration for this excellent manual. It is worthy of the distinguished author and the great school to which he belongs.

ADMINISTRATIVE AND ECONOMIC PROBLEMS IN TUBERCULOSIS

In the small compass of the sixty-three pages of *Papworth, Administrative and Economic Problems in Tuberculosis*, the late Sir GERMAN SIMS WOODHEAD, the late Sir CLIFFORD ALBERT and Dr VARRIOR-JONES provide thought for much fruit-searching as to the efficiency of the existing system of tuberculosis dispensaries and sanatoriums. The weakness of the dispensary system is shown with unflinching candour, the patients are commonly seen rapidly at the dispensary, which is thus apt to become a field for little more than "an out-patient department stocked with drugs which are mostly placebos or an annex of an office for compilation of statistics." Sanatoriums are designed for early cases, but they are, we are told, seldom or never put to this use properly. 90 per cent or more of the inmates are past the early stage, and the sanatorium is in danger of becoming a hospital for incurables. Sanatorium patients are not cured by their residence, and it is more accurate to say that sanatorium treatment slows the progress of tuberculosis rather than that it arrests the disease. When a patient goes home and has to face competition against healthy workers, a relapse is very prone to result. It is difficult to get hold of the early cases, for, as Sir JAMES FOWLER epigrammatically says in the preface, "the working man has no time to be an early case of tuberculosis."

Most people are fascinated by the hope of a cure and both individuals and public bodies unfortunately are left quite cold by prevention. On leaving a sanatorium the patients should live in a settlement where they can earn their living by a properly restricted activity suited to their diminished strength, that this can be done has been shown by the village settlement known as Papworth. The book has been admirably and entirely printed at Papworth by the Papworth Press, an achievement described as probably unique in the annals of printing.

HUMAN CONSTITUTION AND DISEASE

Dr GEORGE DRAPER's monograph *Human Constitution and its Relation to Disease*¹ is the first of a series planned to deal with the whole subject, and is the outcome of five years' intensive work at the Presbyterian Hospital, New York. As the word "constitution" has been rather vaguely used in different senses it may be well to quote the meaning that the author attaches to it. "The aggregate of hereditary characters influenced more or less by environment which determines the individual's reaction, successful or unsuccessful to the stress of environment." The influence of the subject's constitution in rendering him susceptible to disease is present to the mind of Hippocrates, and was studied by John Hunter, Addison, Laycock and Jonathan Hutchinson, but the rise of bacteriology diverted attention from the internal to the external factors of disease. Now however interest has been recalled to the influence of the constitution as a factor in the incidence of disease and in this swing of the pendulum the increasing knowledge of the endocrine glands has played a part, Dr Draper indeed considers it certain

that no method of studying constitution is complete or even possible which on its consideration of the endocrine glands.

The hereditary characters which make up an individual's constitution have been grouped for convenience into four main categories or, as they are called, "panels"—namely, the anatomical, physiological, psychological, and immunological. The headings of the investigations to be undertaken in each of these divisions are set out, but this volume is devoted to the anatomical panel which is dealt with in great detail. Anthropometric measurements in the past have been used in order to obtain the characteristics of the races of mankind, but in this research they have been applied to certain diseases—namely affections of the gall bladder, gastric and duodenal ulcer, nephritis and high blood pressure, pernicious anaemia, asthma, tuberculosis, and acromegaly. The most modern anthropometric technique has been employed on a uniform plan and the data thus obtained have been analysed on biometric lines by specially qualified collaborators. Thus instead of investigating geographical races disease races are studied, and charts of the various indices, constructed for males and females, in each disease are analysed and the results are discussed, and provide points of interest. There is as much discrepancy in the cephalic index between some of the disease groups as there is between some geographical races. The numerous tables and charts prove, if evidence were wanting the enormous amount of work that Dr Draper and his fellow workers have carried out, and raise important issues.

The need felt in other quarters for information about a uniform method of investigation has been responsible for the publication of this instalment of a series which cannot fail to be of great interest to all medical workers.

SURGICAL TREATMENT OF BRONCHIECTASIS

GUIBAL's book on the surgical treatment of bronchiectasis forms one of a series of monographs which is being published by Masson and Co. to supplement the larger textbooks. The series will deal exclusively with matters of practical medical and surgical interest. When any particular branch of technique has made such progress as to render the ordinary textbook account out of date in certain particulars, it is proposed in this series to issue a review of the subject, including not merely what is new, but, in concise and systematic form, the whole practical aspect of the subject. Each volume, therefore, will contain a summary of the views current at the moment of publication, and, being of small size and limited scope, will be readily brought up to date. If placed in efficient hands the realization of the project should supply a genuine need in these days of rapid advance.

The present volume, dealing with the surgery of bronchiectasis, carries out the intention of the publishers very successfully. After defining the types of bronchial dilatation which come within the scope of surgery, Guibal classifies and describes the various surgical measures that are employed at the present time. Under the general headings of operations for compressing the lung, operations for drainage, operations for producing atrophy of the lung, and operations for the removal of the diseased lung tissue, the several surgical procedures are described in full practical detail, with diagrams and illustrations necessary to render the accounts intelligible. In this way are described artificial pneumothorax, pleuro-pneumal decollement, extrapleural thoracoplasty, pneumotomy, ligature of branches of the pulmonary artery, and partial pneumectomy. The technical directions for each operation are carefully laid down, in locations and contraindications are discussed, and possible complications and their treatment considered. Due attention is given to the after-treatment, and the results of the several operations are shown by a reference to the experience of surgeons who have worked in this branch of the subject. As a general survey of present-day surgical possibilities in bronchiectasis the book should be welcome.

¹ *Traité sur l'Étiologie et le Traitement Chirurgical de la Dilatation Bronchique*. Par le Dr G. Guibal (1. Bevezers). Méd. et Chir. et Pratiques. Paris: Masson et Cie. 1921. (Cr. 80 p. pp. 173. 2 figures. Fr. 10.)

¹ *Papworth, Administrative and Economic Problems in Tuberculosis*. By the late Sir GERMAN SIMS WOODHEAD, KBE, MD, etc. and the late Sir CLIFFORD ALBERT, 1 CB, MD, FRS, etc. and Dr VARRIOR-JONES, 2 A Camb. M.R.C.S. L.R.C.P. Lond. with an Introductory Chapter by Sir James Kingston Fowler, 1 CB, O. CMG, MA, MD. Cambridge: The University Press, 1925. (Cr. 80 pp. 63. 1 cloth, 6d net; paper bound 2. 6d net.)

² *Human Constitution and its Relation to Disease*. By George Draper, MD. Foreword by Sir Arthur Keith. Philadelphia: W. B. Saunders Company, 1921. (Med. 80 pp. vi + 375. 63 figures. 37. 6d.)

³ The mention of quotations is not in itself a responsibility for the work which we believe to be new and is certainly unneeded.

LIVING MATTER

KUNSTLER and PREVOST's work *La Matière vivante* contains a lucid account, following Dujardin (1835) rather than Purkinje (1840), of present views on the structure of protoplasm or sarcodae, as the authors prefer to call it. In the opinion of many, living protoplasm is a simple chemical substance of colloidal nature, composed of a fluid basis containing minute granules. Others consider that this conception is insufficient to explain the phenomena of life. They argue that the properties of simple matter exhibit a uniformity that is not observed in the phenomena of life, that the peculiar property of living matter is function, and that there can be no function without organization. They hold that although inert matter may be made to subserve function, it can only do so through the intermediary of man, whereas in living matter the organization is natural. A simple illustration is given to render this clear. A balloon is composed of material possessing definite properties, but its power of ascending depends not on any inherent property, but is a new fact resulting from structural organization. The authors, therefore, hold that protoplasm has a definite organic structure, and their book is devoted to a demonstration of the anatomical appearances, as seen under the microscope, which lend support to this view.

The first observations were made in 1880 on *Flagella oxyuris*, the protoplasm of which was found to consist of regular parallel lines of dark staining points embedded in a clear substance. Studied in the unstained living cell the protoplasm appeared to consist of a fundamental substance enclosing innumerable minute cavities (vacuoloids). Further analysis showed that the fundamental substance consisted of minute globules arranged in lines (fibrilloids) and that the chromophil bodies lay in the interstices between the fibrilloids, sending out processes at their periphery and possessing a form somewhat comparable to that of minute amoebae. The chromophil bodies could not therefore be regarded as mere granules, but formed part of the organized structure of the protoplasm. In a great number of organisms the cells exhibit the stable and compact structure described, but in many of the protozoa the central part of the protoplasm consists of a fluid containing a number of spherules, isolated or grouped into masses. According to the authors this form of protoplasm arises from a fluid infiltration which has the effect of isolating the vacuoloids with their contained chromophil bodies, which then float freely in the liquid. To the isolated bodies, consisting of a single chromophil body with its surrounding zone of fundamental substance, the authors have given the name "spherules," and they appear to regard them as the units of structure of the protoplasm. The book is illustrated by numerous good photomicrographs, and these certainly convey the impression of a definite organized structure, although the finer details are difficult to follow.

Having described the two fundamental forms of protoplasm, the compact and the fluid, the authors proceed to indicate the various changes of form which the units of structure undergo under varying conditions, and also the evidences of organization within the cell pointing to a differentiation of function among the units. The latter is best seen in the unicellular glands of Hippelina. These glands exhibit a well marked physiological division of labour within the protoplasmic mass, the primordial, undifferentiated part of the protoplasm is displaced to the periphery, while the functional part is connected with the excretory duct by numerous canaliculi which traverse the protoplasm and terminate in a common reservoir. The authors state that the details they describe are readily observed and require no special histological aptitude. The account they give is of much interest and deserves the attention of all who are occupied in cytological problems.

NOTES ON BOOKS

WE always welcome a book from the pen of Dr CABANES, for his enthusiasm and industry take him into the by paths of medical history which save for his researches, would remain unexplored. Only a few months ago we had the pleasure of reviewing his book *Au Chevet de l'Empereur*, and

now we have before us, another volume dealing with the inexhaustible subject of the career of the great Napoleon. In this volume Dr Cabanes gives an account of the intimate life of Napoleon which but for the paramount place occupied by him in the minds of men could have had only a passing interest. With Dr Cabanes as our experienced guide we are shown in the way in which Napoleon ate his food, how he worked in his cabinet, how he slept, and how he loved. In all the various small routine events of Napoleon's life the psychology underlying each operation is fully considered, and this perhaps allows us to understand more fully the peculiarities of that mighty brain. Of more interest to medical readers are the chapters dealing with the attitude of Napoleon towards medicine, physiology, and science. The exact brain of Napoleon had not much sympathy with physicians, who perforce were practising an inexact art and science, and perhaps his view concerning physicians might be summed up in the words of Voltaire, who said that "Doctors were people who poured into bottles of which they knew little, things of which they knew less." But Napoleon's attitude to science was far different, and no great ruler ever gave to it more encouragement. Indeed his foresight in fostering science is the best evidence of his great ability as a statesman, and is ably set forth in this book. Dr Cabanes has also begun the publication of a new edition of his book issued first some five and twenty years ago *Les Curieuses de la Médecine*. It is, he announces, practically a new book and there are to be three volumes. It is a sort of commonplace book consisting of notes and anecdotes thrown loosely together under sub headings. The first volume, now before us, deals with the skeleton the second is to be concerned with the organs of sense, and the third with the functions of the body—locomotion, speech, the organs of nutrition, and so on.

Dr MAURICE TOTTIER has produced a small volume containing a history of gastric secretion from the time of Hippocrates to the present day. Six main periods are recognized. The first extends from the dawn of medical history to the time of Paracelsus, this is the Cerebral period in which the physiology of Galen dominated medical thought. It includes such writers as Orribasius, Paulus Aegineta the Arabians, and those connected with the school of Salerno. The second or chemical period is that in which Paracelsus, van Helmont, and Sylvius Du Bois (or DeBooe) flourished. They were the pioneers of the chemistry of gastric digestion. In the third or mechanical period putrefaction, fermentation, and trituration were emphasized, and the chemical aspect ignored, it is notable for the researches of Harvey, who had a profound influence on his contemporaries especially Borelli, Baglivi, Bellini, Redi, Cole, and Descartes, who were all more or less directly his disciples. In the fourth period, which is that of gastric acidity, Rammur, Spallanzani, and John Hunter revolutionized the current theories of digestion by substituting an idea of chemical dissolution by an undissolved acid in place of that of fermentation and putrefaction. In the fifth period Beaumont's classical researches on Saint Martin showed that an acid was produced by the gastric mucous membrane, and that this acid was hydrochloric acid. Finally, the sixth period, which is that of pepsine and experimental fistula, is remarkable for the work of Schwann, Blondlot, Claude Bernard, and Pavlov. The work is attractively written and interspersed with numerous portraits and other illustrations.

It is not at all clear why Mr J. ANGUS PARSONS, consulting surgeon to the Chelsea Hospital for Women, has selected the title *Evolution Explained* for the little book he has recently written. Actually it consists of a domestic presentation of the doctrines of evolution followed by a general survey of a number of unrelated subjects, such as future existence, religious toleration, socialism, fatalism, and inventions. Nothing is explained, not even the progress of which we are told in Chapter XVI where we read, "Man has slowly improved and developed from the animals and is now in the image of the anthropoid apes. It is a blasphemous idea to think that this can be the image of God." We suggest that "Evolution Affirmed and Other Subjects Commented On" would have been a more accurate, though more emblematic, title. Some sceptical readers also might have been more easily convinced by the hygienic and sociological arguments of the later chapters of the book had they been persuaded in earlier pages that the laws said to govern the physical life of plants and animals can fittingly be applied to the mental life of man. Though generally in agreement

¹ Dans l'intimité de l'Empereur. Par le Dr Cabanes. Paris. Albin Michel. 1924. (Extra post 8vo pp 501 illustrated Fr 15)

² Histoire de la Sécrétion (a l'origine). Par M. Loeper. Paris. Masson et Cie. 1924. (Demy 8vo pp 120 25 figures Fr 10)

³ Evolution Explained. By J. Angus Parsons. London. J. Bale Sons and Danielson Ltd. 1925. (Cr 8vo pp 274 76d net)

La Matière vivante. Par J. Kunstler et Fred Prevost. Paris. Masson et Cie. 1923. (Demy 8vo pp 252 85 figures Fr 18)

with the author's conclusions, we have looked in vain for evidence which less sympathetic readers might justifiably have demanded.

In his little work entitled *A Study of Masturbation and its Reputed Sequelae* Dr JOHN F. W. McLAGHER, neurologist to St Mary's Hospital, Brooklyn, agrees with the majority of modern scientific investigators that most of the so-called dangers and sequelae of the habit are exaggerations or myths which have been handed down to us from the writings of Tissot and his contemporaries in the last quarter of the eighteenth century. Most of the cases designated "masturbational insanity" by earlier writers are, as Brill has shown, really examples of dementia praecox. Dr McLAGHER, however, points out that while masturbation is almost a normal phenomenon in the child and adolescent, it is not to be so regarded in the adult inasmuch as it indicates a failure of psychosexual development. In discussing treatment the writer, who has little faith in drugs and still less in surgical measures, deals with the subject chiefly from the standpoint of the psycho-pathologist recommending sympathy and encouragement rather than censure and punishment.

Internal evidence would lead one to believe that while the singer of *Blue and Other Verses* lives in the Antipodes he was not born there, for time and again we have memories of the old country tugging at his heart strings.

I saw once more the oak tree gaunt
The blackened hedge same
Inhaled the scent of daisy leaves—
The breath of a sunny time
It's strange that for such simple things
One's heart should seem to care
But—Home is ever there!

The poem which gives the title to his volume is not his most successful effort in rhyme. After descending on various blues the singer finishes

All this is naught to that divinest hue
When all the hues of earth melt into Blue

which seems somewhat more obscure than Browning's famous—

Hobbs hints blue—straight he turtles' eat
Hobbs prints blue—claret crowns his cup
Aokes on daisies Stokes in azure seats—
Both gorge Who'll heet the murex up?
What puridge had John Keats?

But, as a rule, Mr EDGBASTON is easily understandable, and is at his best perhaps in his London "The Pipes of Pan."

The pipes of Pan! I hear them yet!
When in the city's roar I lie
My fancy has unbridled rein
I hear through voice of mist and dream
The sweet lilac note I once forgot

¹⁰ *A Study of Masturbation and its Reputed Sequelae* By John F. W. McLAGHER, M.D., F.A.C.P. London: Baillière Tindall and Cox, 1924 (Demy, 8vo, pp. 69, 6s net).
¹¹ *Blue and Other Verses* By Charles Edgbaston. London: Heath Cranton Ltd. 8 D. (Post 8vo, pp. 56, 4s 6d).

MEDICAL AND SURGICAL APPLIANCES

A Metal X-Ray Tube

ONE of the exhibits which excited interest at the recent International Congress of Radiology in London was an x-ray tube representing a very considerable departure from the usual construction, inasmuch as it took the form of a metal cylinder or large electric torch about two and a half inches in diameter the beam coming through the window at the end. This tube called the Philips Metalux is manufactured by Philips Glow Lamp Works Limited (Eindhoven, Holland) represented in this country by Philips Lamps Limited (60 Wilson Street, Finsbury Square, E.C.2). The tube is declared to be protected so completely by its own lead sheet that no x-rays emerge except by way of the primary beam which is automatically centred at the window. The advantages claimed are that a tube of this construction renders superfluous a protective bowl that only a small clip for fixing the tube on its support is necessary and that its fragility is much less than that of glass tubes. The tube which is produced in several types for diagnosis and therapy, claims also to be able to support heavier currents than glass tubes by reason of the special construction of the anticathode.

Ultra Violet Lamps

Various types of lamps for use in light therapy have been placed on the market by Kelvin Bottomley and Band, Limited (51-52 Fenchurch Street, London, E.C.3). The light source in each case is a quartz mercury vapour lamp working at atmospheric pressure and the construction varies according to whether general light bath treatment, local treatment in conjunction with quartz transmitters and compressors or the irradiation of a number of patients simultaneously is desired. In one form the lamp is made for suspension from the ceiling to give a general irradiation; this is designed for the use of public health authorities in children's welfare clinics. All the lamps are of British manufacture throughout and they have many little adjustments and conveniences which make for ease and efficiency in manipulation. The running costs also would seem to be comparatively small.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

London County Council

THE Royal Commission resumed on July 10th, when evidence was tendered by the Hon. W. SIDNEY, J.P., and Mrs. DUNN GARDNER, J.P., respectively chairman and vice chairman of the Mental Hospitals Committee of the London County Council.

The witnesses stated that in the opinion of their committee which had been endorsed by the Council it was very desirable that the duty of providing for temporary treatment without certification (the principle embodied in the Mental Treatment Bill, which the Council had supported) should be undertaken by the same authority and the same branch of administration as that which was responsible for the mental hospitals themselves. They also thought it desirable that any legislation providing for early treatment of mental disease should authorize the reception into institutions of patients incapable of volition as well as those—the voluntary patients proper—who were willing to submit to treatment. The London County Council had also endorsed the view that in every case in which an order for compulsory detention of a person of unsound mind was made two medical certificates should be necessary for presentation to the judicial authority who was asked to make the order, and that one of these certificates should be given by a practitioner who had been approved specially for that purpose.

The witnesses went on to give some particulars with regard to medical treatment in the mental hospitals of the London County Council. They said that much more attention was paid now to actual treatment than was the case formerly. The number of medical officers had been considerably increased in recent years. In institutions with 2,000 or more patients eight assistant medical officers were allowed. Every inducement was given to young medical officers joining the service to qualify specially in the knowledge of psychological medicine by obtaining a diploma in that subject. The Council had arranged courses of lectures—seven courses had already been held, and the eighth was in progress—at the Maudsley Hospital for post graduate students in connexion with the diploma. Leave was also given for medical officers—not exceeding four at a time—to attend for a three months course of clinical and pathological work at Maudsley with a view to their being better acquainted with the latest methods of treatment in mental disease.

The chief pathological laboratory in connexion with the London County mental hospitals was at Maudsley. Its director was Dr. Golla who had succeeded Sir Frederick Mott. Medical officers from the mental hospitals of London were seconded to work at this central laboratory with a view to their undertaking special research. A local laboratory suitably established was provided at each mental hospital, and recently it had been arranged for Dr. Golla from time to time to inspect the laboratories and report on the work done.

In the case of nurses employed by the Council, every effort was made to assist them to qualify by gaining a diploma in mental nursing. The Council had improved the pay and hours of duty of the nursing staff in acknowledgement of the onerous and often distasteful tasks they had to perform and with the hope of obtaining a satisfied as well as satisfactory staff. One of the greatest difficulties which the Council had to contend with was the recruiting of a sufficient number of suitable women for positions on the nursing staff.

The Association of Municipal Corporations

On July 11th Sir LEWIS BEARD, town clerk of Blackburn, gave evidence on behalf of the Association of Municipal Corporations.

The witness pointed out that the net yearly increase in patients requiring accommodation in mental hospitals in England and Wales from 1920 to 1923 was 3,565, and it was evident that this growing demand would soon overtake all the ordinary resources in the way of accommodation. His corporation therefore wished to suggest, as a palliative measure until building costs became less burdensome for local authorities, that use should be made of vacant residential accommodation at institutions now maintained by the Poor Law guardians. Such accommodation was quite suitable for housing the more chronic type of case under proper supervision, and thus spare mental hospitals would be released for cases in which treatment was likely to prove remedial. The selection of old chronic cases which should be transferred into these erstwhile Poor Law institutions would have to be undertaken with great care and of course would have to be in the hands of medical officers, if hardship in individual instances was to be avoided. Sir David Drummond asked if there would not be a competition between mental hospitals and voluntary hospitals, many

of which latter also desired to utilize the accommodation available in Poor Law institutions but the witness said that what he had in mind was not the infirmary wards but the ordinary residential wards, which were quite suitable for the reception of patients who were not physically ill, but who were senile or suffered from chronic mental disorder.

Passing to another matter he said that his association supported the Mental Treatment Bill and was of opinion that there ought to be provision for the treatment of incipient cases without certification. Speaking on his own behalf he suggested that local authorities might usefully undertake the course of instruction for the public in the nature of mental disorder and the need for early treatment just in the same way as they already undertook a certain amount of health propaganda. This would help to dispel the fantastic and morbid notions which many people held with regard to insanity and would help to break down that sharp division in the public mind between mental and other illness. The Chairman (Mr H. P. Macmillan) remarked that this was a new and interesting suggestion.

The witness also spoke out of his experience of visiting committees, the name of which he wanted altered to mental hospital committees because visiting committees suggested a casual inspection when their actual duties were much more important. Asked whether in his experience of visiting committees patients had been discharged by the committees although the medical superintendent had not recommended such discharge he said that he had known this occur but not frequently. He was opposed to the view that certain functions of the Board of Control at present advisory should be made mandatory because he wanted local authorities to have freedom of action in matters of detail. If they were not overweighed by official regulations they might make interesting experiments which in course of time, being of proved value would be embodied in the general system of administration. That was the way in which many things, now universal and obligatory had come about.

The Commission adjourned to a date subsequently to be announced.

THE STATE OF THE PUBLIC HEALTH

SIR GEORGE NEWMAN'S REPORT FOR 1924

ENGLAND AND WALES

[Second Notice*]

THE INSURANCE MEDICAL SERVICE

MORE space than usual is devoted to the insurance medical service, and an excellent summary is given of the working of medical benefit. This section of the report begins with the statement that ever since the inception of medical benefit twelve years ago the service has laboured under many disadvantages, and has been obscured by a cloud of misconceptions and misunderstandings, especially as regards the position of the panel practitioners. Reference is made to the serious effects of the war, which interrupted all progress at the very beginning but it is claimed that with the end of the war, followed by the constitution of the Ministry of Health and the revision of the terms of service, conditions have steadily improved.

Among other improvements are noted the new method of calculating medical remuneration, the new scale of remuneration arrived at as the result of arbitration, the new system of medical records, the increased efficiency of the service due to the work of the Regional Medical Staff, the granting to insured persons of the right to change doctors at any time with fewer formalities, the reduction of the maximum number of insured persons which an insurance doctor may accept from 3,000 to 2,500, and the more satisfactory definition of the range of services that may be required from the doctors. The services now required are defined to comprise "all proper and necessary medical services other than those involving the application of special skill and experience of a degree or kind which general practitioners as a class cannot reasonably be expected to possess." Broadly, the service works on the lines of private medical practice and while the panel doctor is "the family

doctor to the insured," his more intimate relation to the State and the public health service make him a most important part of the State organization in medical

Numbers Entitled to Medical Benefit

The total population of England and Wales in 1924 was 38,690,000 and the number of insured persons entitled to medical benefit was 13,672,000—that is, rather more than a third of the total population. Insured persons may obtain medical treatment in one of three ways: (1) from a general practitioner who has on their list 12,629,650; (2) from approved medical institutions which existed when the Act of 1911 was passed and which now treat 162,100 persons; and (3) under arrangements for medical treatment made with the consent of the Local Insurance Committee by individuals who receive from the committee a contribution towards the cost of treatment actually obtained. These numbered in 1924 about 37,100.

The number of insurance practitioners in 1924 was 13,157, and the average number of insured persons on their lists was 980. The approximate number of chemists' shops for the supply of medicines and appliances was 9,650 and the number of prescriptions dispensed was about 43,793,000. The total cost of medical benefit was £8,200,000 of which approximately £6,475,000 was for the remuneration of the doctors and £1,725,000 for medicines and appliances.

The insurance doctors are not a selected class of practitioners as any medical man or woman who comes on the *Medical Register* has a statutory right to enter the insurance medical service and it is specially noted that the relation of the panel doctor to the Insurance Committee is in no sense that of employer and employee.

Returns and Documents

Referring to some criticisms of the service, the report says it is necessary for the insurance doctor to furnish certain returns to the committees, but it has been one of the chief objects of the department to reduce these formalities to a minimum. We are reminded that some of these formalities are necessary, not least in the interests of doctors themselves. Doctors may not be heard from the early days of the insurance system that it is bound up with red tape, that the doctors are overwhelmed with clerical work and run grave risk of having substantial sums withheld from their remuneration for what they call "technical breaches" of the regulations. Dealing with the documents required from the doctors, mention is made of the medical prescriptions for medicines and appliances, certificates of incapacity, and the records of patients' illnesses and of attendance and services given. Nothing need be said of the prescription but it is observed that the form, size and management of the certificates of incapacity were arrived at in consultation with representatives of the doctors so as to reduce the clerical work to a minimum essential.

The report deals at considerable length with the form of medical records and its requirements. This was devised by a departmental committee under the chairmanship of Sir Humphry Rolleston, which included representatives of the insurance doctors, and a protest is made against the idea that the record-keeping is an unnecessary waste of time in clerical work required in the alleged interests of bureaucratic red tape. It is asserted, so far from that being the case the record-keeping is a procedure which every careful and methodical practitioner would, and in fact does, adopt in his practice. We are told that the records are not only of statistical value, but are essentially clinical documents, serving not only to save the doctor from "the pitfalls of forgetfulness" as to his patients' illnesses, but useful for the guidance of other practitioners who may follow him, and the "illuminating effect of the late Sir James MacLennan" is held up as a model to panel doctors, presumably in part because he kept records of his cases when he was a general practitioner. In the case of many panel doctors with 1,500 to 2,500 persons on their lists, one cannot help wondering whether the record ends, as they are kept or are ever likely to be kept, or indeed as they could with the best intentions, possibly be kept, on any form a reliable basis for statistics or be of anything beyond trivial use in the future. For one

* First notice, BRITISH MEDICAL JOURNAL July 11th p. 83

thing, it is doubtful whether in busy times more than a fraction of the visits and attendances rendered are entered on the cards even though there is a possibility that the number of attendances may be taken into consideration in fixing the doctors' remuneration.

In addition to the records, there are mentioned the supplementary forms used when a doctor accepts an insured person on his list, the receipts on the special forms for payments by persons whose right to medical benefit is in doubt, the form to be sent to the Committee when it is proposed to charge a fee for operation or other special service, the reports to the regional medical officer when a patient is referred for examination, and the reports to the tuberculosis officer about tuberculous patients. All these records and reports form a cumulative total of clerical work which appears to be greatly underestimated by the insurance department and by Sir George Newman, and his apology in the report is not likely to be wholly satisfactory to many panel doctors.

Disciplinary Procedure

A good deal of attention is given to the various disciplinary measures in use in case of breach of the terms of service, failure to provide proper treatment, or conduct possibly calling for removal from the medical list, and the procedure in each case is explained. Questions of this kind may arise in three different connections.

First, the Insurance Committees have the responsibility of dealing with any question between insurance doctors and insured persons, or questions raised by approved societies as to the action of doctors with regard to medical certificates, all these questions are referred to the Medical Service Subcommittee, which may also deal with any matter relating to the administration of medical benefit. Secondly, where an insurance doctor is shown after investigation by the Medical Service Subcommittee or otherwise to have failed to carry out his terms of service, the Minister may withhold from the doctor's remuneration such sums as he thinks fit. In the third place, the Minister may remove from the medical list, after such inquiry as is prescribed in the regulations, any practitioner whose continuance on the list would be prejudicial to the efficiency of the service.

The constitution of the Medical Service Subcommittee is discussed, and the types of cases dealt with by the subcommittees are broadly grouped under three heads: (1) neglect of patients, (2) fee charging, and (3) defective certification. In 1924 these subcommittees dealt with 404 cases, as compared with 500 in 1923, and the Minister decided to withhold varying amounts of money in 119 cases. In addition monies were withheld in 17 cases where practitioners had failed to keep the medical records, and in 14 cases where there had been failure to furnish information required by the regional medical officer. In 23 cases doctors appealed against decisions of the Insurance Committees, and in 9 of these the appeal was allowed, in 11 it was dismissed, and in 3 withdrawn. There were also five appeals by doctors against decisions of the Insurance Committees that they had been guilty of excessive prescribing, in two of these the appeal was dismissed, in one it was allowed, and in two the amount surcharged by the committee was reduced.

In 1924 representations were made that the continuance of nine practitioners on the medical list would be prejudicial to the medical service of the insured. In one of these the Minister refused even to hold an inquiry. In the other eight an inquiry was held, and as a result the Minister decided to remove four practitioners from the list and not to remove the other four.

Regional Medical Staff

The Regional Medical Staff is next dealt with, and it appears that in 1924 there were 183,846 insured persons referred to the staff for examination where there was some doubt as to incapacity for work. Of these, 181,990 were referred by approved societies, 581 by Insurance Committees, and 1,275 by the panel doctors themselves. In all such cases the practitioner concerned receives notice of the time and place of the examination so that he may be present if he so desires, and is required to send to the regional medical

officer before the examination a concise statement in writing of the history and condition of the patient. In addition to these "incapacity cases" the staff dealt with 2,270 "consultation cases"—that is, cases where the question of incapacity did not arise but where it was simply desired to obtain a second medical opinion. Of these, 1,803 were sent by approved societies, 4 by Insurance Committees, and 465 by practitioners. Thus the total number of insured persons referred to the staff has increased every year since its inception, and in 1924 was 185,116.

Another important duty of the staff is the examination of the medical records, and the number of visits made for this purpose was 4,357. It is stated that the regional officers have found a growing appreciation among practitioners of the clinical value of the records and the standard of record-keeping continues to improve.

The staff is also responsible for the inspection of the records required under the Dangerous Drugs Act, and for this purpose 4,302 doctors and 68 hospitals have been visited. In addition, 24 doctors who appeared to have prescribed or supplied these drugs in excessive quantities were visited at the request of the Home Office to obtain an explanation.

Attention is drawn to an inquiry now proceeding as to the great rise in the cost of insurance prescribing since 1920, but no definite conclusions have yet been obtained.

Additional Benefits

It is mentioned that in 1924 approximately £800,000 was spent in "additional benefits" by approved societies who had a disposable surplus, as compared with £500,000 in 1923, the increase being largely due to the growing popularity of dental benefit. Substantial sums were also paid by the societies to hospitals or convalescent homes in respect of the in-patient treatment of their members.

In conclusion, Sir George Newman lays emphasis on the public importance of the insurance medical service and his profound belief in its value. He thinks that one of the most pressing needs is the inclusion of consultant services, and not until that is accomplished will the full capacity of the insurance medical service for public usefulness be made manifest.

THE POOR LAW MEDICAL SERVICE

Turning next to the Poor Law medical service, the report points out that medical assistance is provided for the poor in the form of either domiciliary or institutional treatment, that the responsibility for providing this falls on some 650 boards of guardians, and that the definition of what is meant by "the poor" in this connexion was laid down in 1910 by the Local Government Board as follows:

A person who is not destitute in the sense that he is entirely devoid of the means of subsistence may yet be destitute in that he is unable to provide for himself a particular form of medical attendance or treatment of which he is in urgent need.

Domiciliary treatment is given by the district medical officers, who number in England and Wales about 3,500, most of these being salaried part-time general practitioners, though in a few populous districts the guardians have provided whole-time officers.

For institutional treatment there are something like 715 institutions and infirmaries, with accommodation for about 132,000 cases, but as changes are constantly being made these figures are only approximate. As regards tuberculous cases, it is stated that the majority of the pulmonary cases under treatment by the guardians are in the advanced stage. Early cases do not appear to enter the Poor Law institutions in any great numbers, and there are in fact few institutions under the guardians so designed or situated as to offer reasonable facilities for the sanatorium treatment required in early cases of pulmonary tuberculosis. Regret is expressed that arrangements for co-ordination with the local health authorities are not as complete as is desirable. Attention too is directed to the scanty records of cases kept by the medical officers of the Poor Law institutions, and it is recalled that a scheme is now in hand for drawing up a model form of annual report, as has already been done in the case of medical officers of health.

British Medical Journal.

SATURDAY, AUGUST 1st, 1925

THE BATH MEETING

ALL who were fortunate enough to attend the Annual Meeting of the British Medical Association at Bath are agreed that from beginning to end and in every respect it was one of the most successful that has ever been held, and this notwithstanding the enforced absence, through illness, of the President (Dr I. G. Thomson), who had entered heart and soul into all the arrangements. Though unable to take his part in the week's proceedings, Dr Thomson had the satisfaction of knowing that the Acting President, his friend Mr W. G. Mumford (who with Dr R. G. Gordon had shared with him the chief labours of organization beforehand), was worthily upholding the traditions of Bath as a medical centre and as a city famous for its hospitality. Placed by a sudden stroke of fate in the middle limelight of a great public event, Mr Mumford rose to the occasion with untiring devotion and conspicuous grace. The unanimous choice of his colleagues was thus abundantly justified, and the ninety-third Annual Meeting of the British Medical Association proceeded smoothly in an atmosphere of the utmost good fellowship and friendly enjoyment. If only from the point of view of numbers, the meeting must be judged a great success, for by luncheon time on Wednesday more than 1,000 names had been registered, and by Friday this total was exceeded.

The scientific and clinical work of the meeting was carried out, as at Bradford last year, in twelve Sections—a manageable number tending to the concentration of interest. Many of the papers and discussions ranged over matters of much importance in everyday practice. The practical nature of the sectional programmes will be gathered from the summaries printed elsewhere in the present issue, and it was fitting that some of the debates should have been planned with a special eye to those diseases with whose treatment Bath is traditionally associated—for example, rheumatoid arthritis and hyperpiesia, discussed by the Section of Medicine, insomnia by the Neurological Section, and chronic arthritis by the Section of Therapeutics. A combined discussion between the Sections of Surgery and Orthopaedics on the treatment of fractures, with special reference to its organization and teaching, was one of the features of the meeting, and another subject of great importance—rheumatic infection in childhood: its early diagnosis and prevention—was debated jointly by the Sections of Public Medicine and Diseases of Children. The circumstance that the first morning session of the Pathological Section (reported in full at page 189) had been allocated to a discussion on filter passing viruses, gave members working in many departments of medicine an early opportunity of hearing some account from their own lips of the recent investigations of Dr Gye and Dr Murray Gordon, and of the technical achievements of Mr Barnard. Supplementary to the main work of the Sections there was a well planned pathological museum on an upper floor in the Technical College the specimens there shown and the demonstrations there given added considerably to the scientific value of the Bath meeting.

Before the Sections began to meet four days had,

as usual, been spent by the Representative Body of the Association in the transaction of medico-political business and the discussion of such internal affairs as finance, organization and administration. A full report of the proceedings of the first two days appeared in last week's *STANDARD*, and the conclusion of the Annual Representative Meeting is recorded in this issue. From these accounts and from the short informal notes printed in the *JOURNAL* under the heading of *Annual Meeting Notes*, it will be seen that each of the four days was fully occupied and that while many matters of professional importance came under review and opinion here and there (notably on the question of individual medical defence) was sharply divided, the debates proceeded on the whole with urbanity. This may have been due to the relatively quiet nature of the business before the meeting or perhaps to a growing mellowness of temper, but whatever the reason it may faithfully be said of the Chairman, Dr Brackenbury, that he handled his first Representative Meeting with that combination of firmness, vigilance and tact without which the conduct of public business in a limited time is impossible.

Before closing this brief note on the work of the Representative Body we would like to mention a few striking figures which came to mind when the Treasurer presented his financial statement and the Chairman of the Organization Committee spoke of the remarkable growth in membership. At the Annual Meeting held in Bath in 1848 there were fewer than 1,800 members, and the income of the Association was barely £1,400 when the Association met again in Bath in 1878 the membership was 7,500 and the income £11,500; the membership has now reached 29,680, and the current financial report shows an income of £122,840. In 1878 Dr Jackson, in his Presidential Address, spoke of the strides made by the Association during the thirty years that had passed since the previous meeting at Bath, and in particular pointed with pride to the fact that a Colonial Branch had just come into existence. Since 1878 there have been added to the Jamaica Branch no fewer than fifty-two Branches of the Association overseas and in the past fortnight many of these have sent delegates to the Royal Opening at Tavistock Square and to the Annual Meeting at Bath, some bearing gifts for the parent body's new house, and all bringing messages of loyalty, affection, and good will.

For the social side of the Bath meeting no praise could be too high. Hospitality was showered upon the guests in princely abundance, every afternoon had its programme of excursions and amusements, and every evening at least one brilliant function. Such entertainments do not fall like manna from the sky, nor can they be improvised in a few days or weeks; their success is the outcome of infinite care and whole-hearted generosity. Among the many who worked to this end with the leaders of the local profession, one or two must be named. Alderman Cedric Chivers, who accepted again the office of Mayor for the year of this meeting, devoted himself day and night to the comfort and pleasure of the city's guests. From the moment of his visit to the Representative Body on July 17th until the closing day (and, it might truly be said, for many months beforehand) the Mayor seemed to have but one wish—to ensure the success of this medical meeting. His generosity reached its acme on the evening of his reception in the Grand Pump Room and its precincts, when, in company with the Mayoress Madame Sarah Gird, he received some 2,500 guests. Tributes to the hospitality of Alderman

CHURCH, to the tireless and self-effacing work of Mr John Hutton, Director of the Hot Mineral Baths, and to the friendly interest of the Lord Lieutenant of Somerset, the Marquess of Bath, will be found in our report of the Annual Dinner. We would only add that in his graceful words about the beauties and healing virtues of Bath and the hospitality of its citizens, Lord Dawson spoke for all who shared with him in the delights of the Annual Meeting of 1925.

RELIGION, SCIENCE, AND SUPERSTITION

THE Bishop of Birmingham's sermon at the service at Bath Abbey on July 21st will be memorable. Dr Barnes is a man of science and emphasized the fact by wearing in the pulpit the academic gown of a Doctor of Science. He is a Fellow of the Royal Society and won that coveted distinction by his contributions to mathematical science. It would serve no good purpose to attempt to paraphrase his sermon, the report at page 225 should be read—it is not long. It will be found to contain one of the most pregnant utterances which the British Medical Association has heard or read for many a day. It was so because, leaving aside all the banal stuff about the conflict between religion and science, he went to the root of the matter and put into words what many of us have vaguely felt. This is that both are suffering from the same movement or tendency, which for the one shows itself in the recrudescence of thinly disguised magic in worship, and for the other in 'faith healers, osteopaths, and children psychoanalysts'. Both medicine and science are in fact, subject to the same pressure of irrational belief. This conclusion will not be disputed by us: the explanation he suggests is that the scientific temper which trusts to reason is a recent acquisition of humanity, so that its place in our mental make up is as yet insecure: therefore the critical faculty is easily inhibited. There are thousands of educated people—educated up to the standard of the public school and university—and some dozens at least of well known men of science who boast that this is so with them. Superstition—that is, belief that does not rest on a basis of accurate investigation—is the bane of medicine, and threatens religion.

We are forced, then, to consider the very serious question Dr Barnes raised. We are accustomed to speak glibly of the progress of science, but can we confidently assume that the influence of science and scientific methods on the public mind will continue to increase? We are forced, indeed, to ask whether we can preserve what we have won. There is, to make no hesitate the fact that Graeco-Roman civilization was finally ruined by the intellectual degeneration with which the peoples of Europe became afflicted with that civilization disappeared nearly all that the Greek school of science had won for medicine.

Though during the last century accurate clinical observation and patient research had caused medical science first to reach, and then to surpass the level of the great age of Greece, we have the Bishop sad to ask whether 'an understanding of its value is safely rooted in popular esteem. The great triumphs of Greek medicine were gradually lost and medicine ceased to be scientific as it was slowly brainized by the new vitality acquired by folk beliefs. Old wives lost magical charms, visits to healing shrines—all the paraphernalia of primitive health cults—renewed their ascendancy and the recrudescence of magic and superstition which infected medicine found expression also in religious extravagance.

There are not wanting signs that something of the same kind may happen again. It will be said that the modern world will not lightly discard the material advantages chemistry and engineering science have placed at its disposal, but medicine is in a rather different position, and we already see not a few members of the public—not necessarily the most uneducated—resorting once more to what is little better than magic and witchcraft. It will not do to be overconfident.

The strange trial in Tennessee about which public opinion in America has been worked up to an extraordinary pitch of excitement is evidence that the battle for freedom in thought is not won. In Tennessee, and we believe in all other of the American States, the teaching of religion in the public schools and the State universities is forbidden by law. It has proved not difficult to lead the people of Tennessee to believe that the teaching of the doctrine of evolution is anti-religious, and they have therefore easily accepted the view that to teach evolution in the schools while the teaching of religion is forbidden is not fair. Accordingly Tennessee adopted a law forbidding any teacher in a school wholly or partially supported out of State funds to teach any theory which denies the story of the Divine creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals. The defendant was indicted for unlawfully and wilfully teaching in a school supported by public funds certain theories denying the story of the Divine creation of man as taught in the Bible, and instead teaching that man was descended from a lower order of animals. After the court had held that the Tennessee Act did not violate the constitution either of the United States or of Tennessee, the result appeared to the onlooker to be irrefutable, and the verdict did in fact go against the defendant, who was fined 100 dollars. Notice of appeal to the Supreme Court of Tennessee was given, and it has been assumed by many writers in America that if this court refuses to reverse the verdict there will be an appeal to the Supreme Court of the United States. It seems, however, by no means certain that the constitution of the United States renders this possible. If not, there would then remain only an amendment of the constitution, and for this thirty-six of the forty-eight States would have to agree. So far from this being probable Mr W. J. Bryan, who made himself the leader of the fundamentalists, believed that he might succeed in bringing a sufficient number of States to the opposite opinion, and already, it is reported, bills similar to the Tennessee statute have been introduced into several State legislatures. Mr Bryan's sudden death immediately after the trial in the first Tennessee court may possibly diminish the impetus of the movement he was guiding, but there is talk of introducing a bill modelled on the Tennessee statute into the Federal Congress, and in this way the controversy might be kept alive, whatever the final decision in Tennessee may be. If this happens it may very well drag on for years and the issue is uncertain.

Dr Barnes while giving his warning of the gloomy possibilities the future contains is still optimistic. After recalling the historical fact that in the thought and conduct of men progress and reaction alternate, he did not hesitate to add: 'After all, man is a reasoning animal and therefore in the long run reason will prevail. But it may be a very long run. Meanwhile the medical profession will welcome so closely reasoned a review of the situation as was presented to us by the Bishop of Birmingham in his sermon to the British Medical Association this year.'

ANNUAL MEETING NOTES

THE POPULAR LECTURE

Sir William H. Bragg on the Carbon Atom

A very large audience, lay and medical, gathered at the Palace Theatre, Bath, on Friday evening, when Sir William H. Bragg, KBE, FRS, delivered the Popular Lecture. His subject, illustrated by lantern views and some fascinating experiments with soap bubbles, was "The carbon atom as seen in organic structures by x rays." Mr. Wilfrid Mumford, FRC S, Acting President, was in the chair. Sir William Bragg said that the world was constructed of some ninety kinds of atoms assembled in molecules of innumerable sorts, just as the limited number of letters of the alphabet were combined to form an infinite variety of words. Some atoms were much more common than others, oxygen, for instance, made up half the known world, and silicon half the remainder. Compared with these the carbon atom was rare—only about 1/700 part of the world was made of carbon—but it was a very important constituent of living organisms and slipped to a very large extent the processes of life. Two well known substances made of carbon were the diamond and black lead. These substances, as the x rays had proved, differed only in the way in which their atoms were arranged. The accident of atomic arrangement alone separated the most brilliant and precious thing in nature from the most dull, commonplace, and unconsidered. The world of matter thus depended not merely upon the choice of atoms but of arrangements of atoms. The molecules of organic substances contained other kinds of atoms as well, generally oxygen, hydrogen, and nitrogen. Most of the atoms were built on to two different designs. One design was based on the construction of these atoms into a ring—the famous benzene ring—which was the unit of construction of dyes, explosives, many drugs, and other well known substances. Upon this ring and its combinations some of the greatest industries depended. The other was a chain of carbon atoms which might have any length, and which was fringed along its sides by hydrogen atoms and finished off at either end by terminal groups of atoms of various kinds. If the ends as well as the sides were of oxygen the result was a paraffin, the addition of oxygen at one end made an alcohol, when this was exchanged for a slightly more complicated grouping of atoms the result was a fat, a soap, or an oil. The shape, design, and arrangement of a molecule, therefore, were of first-rate importance. A certain complicated molecule, for example, containing several benzene rings, furnished the colour of the rose, and a very small change in the design converted the molecule into the colouring matter of the cornflower. The long molecules that formed the oils and soaps tended to spread quickly and thinly over a watery surface because the special group which terminated one end of the chain had an affinity for water and rooted itself therein. The molecules of oil, thrown on water, spread all over it, and stood upright, like corn in the field, so did the long molecules of soap in a soap solution. Both inside and out the soap bubble was lined with layers which not only held it together but also gave it a slippery surface. The delicate colours of the soap bubble were due to the extreme thinness of the film, and, in fact, the degree of thinness was estimated by the absorption of the colours. He showed some lovely experiments illustrating the gradation of colours in the soap bubble as the film thinned, how at first the cruder bands of colour appeared, and then—each different thickness having its own colour—how these were succeeded by the rich purples and other colours until finally the black spot appeared which presaged the bursting of the film. It was estimated that where the purple appeared in the soap bubble the thickness of film was a 250 millionth of an inch, and that at the black spot the thickness was one-fiftieth

even of this, indeed, at the black spot in the soap bubble only a double row of molecules remained. In showing the lines of the bubble and its sensitiveness even to the clapping of hands of the audience, Sir William Bragg remarked that no one could have a proper theory of life until he had some understanding of the soap bubble. He went on to show how when grease was spread on a surface the molecules formed themselves into layers like pile carpets laid one upon another. Water would not wet a glass that was, even in the scientific sense of the term, dirty, because such glass was covered with a thin film of grease, otherwise glass particles would attract the water particles and the glass be thoroughly wetted. The fact that water would wet some substances and not others—it would not wet substances with pure hydrogen terminations, for instance—was really at the basis of the new method of separating ores. Finally the lecturer alluded to the new light which had been thrown on all these investigations into molecular structure by spectroscopic study with the x rays. These rays themselves a light ten thousand times more delicate than ordinary light, had provided a means of measuring wavelengths directly and far more accurately than before. The chemist was thereby helped to estimate the actual positions and dispositions of atoms, and the length of a molecule, which might be a 10 millionth of an inch. A new vision so keen and delicate as that afforded by the x rays might be expected to be of great assistance in understanding the form and behaviour of these molecules. These molecules of various shapes and forms were at the bottom of all structure, and as chemistry has hitherto thriven on the endeavours of chemists to elucidate these matters by the old methods it might be hoped that with the new weapon of the x rays fresh fields of knowledge would be opened up. These molecules were at the bottom of all structure, they played a great part in the processes of life, and an understanding of them would bring us nearer to an appreciation of the workmanship of the human body, which was part of the general pattern of organic structure. Sir Percy Stothert proposed a vote of thanks for an enthralling lecture, this was seconded by Dr. Alfred Cox, who said that the romance of the subject must have appealed even to those to whom its science was a closed book.

THE PATHOLOGICAL MUSEUM

An extensive collection of museum specimens and microscopic preparations was assembled in the Pathological Museum. The museum, opened by the President on July 21st, was arranged in the Chemical Laboratory of the Municipal Technical College, in a well lit room where the numerous exhibits were displayed to advantage. In arranging the museum the committee followed the anatomical plan of grouping together the exhibits as far as possible according to the different systems of the body. Thus, on entering the museum, the visitor found collected in Section A ten exhibits illustrating diseases of the circulatory system. Most of the specimens in this section were sent from the museum of the General Hospital, Bristol, and were prepared and annotated by Dr. Carey I. Coombs and Dr. Geoffrey Hadfield. They illustrated the more common varieties of cardiac disease by means of museum specimens, photomicrographs, drawings, and electro-cardiograms. The first exhibit of specimens and photomicrographs, illustrating the histopathological evolution of cardiac rheumatism, attracted considerable attention. The specimens were arranged in a series displaying the evolution of the disease from the initial pancarditis, characterized by a specific myocardial lesion, to the late stages of the disease, the result of repeated and prolonged infection and reinfection. A separate series of exhibits illustrated the histopathology of the subcutaneous nodule of acute rheumatic infection. Included in this series was

a demonstration of the recent research of Cortes and Thomas, who have shown that careful examination will reveal the presence of such nodules in the majority of albuminuric children. Amongst the specimens and microphotographs illustrating some features in the pathology of chronic infective endocarditis were collected specimens which demonstrated the liability of congenitally defective and previously damaged hearts to infection by oral and faecal streptococci, the mode of invasion of the endocardium, a type of endocarditis occurring in pigs following the chronic bacteraemia of some erysipelas, and fatal heart-block in two cases of endocarditis lenta, in which the infection involved the pars conchinnacea septi.

Section B contained three specimens illustrating respiratory diseases. Amongst the fourteen exhibits of Section C devoted to the digestive system, Dr G. Hadfield showed a series of microphotographs from a case of pancreatic atrophy in a child, reproducing the lesion found in animals after experimental ligation of the duct and not accompanied by glycosuria, designed to illustrate the independence of the glandular tissue and the cell islets of Langerhans. Eleven exhibits of diseases of the genito-urinary system were assembled in Section D. Section E (ductless glands) contained a series of about fifty specimens accompanied by microphotographs, diagrams, and microscopic preparations illustrating the anatomy, physiology, and pathology of the thyroid gland. These illustrated work carried out in the Dunn Laboratories, St. Bartholomew's Hospital by Dr. Scott Williamson and Dr. Innes Pearce. Section F contained four exhibits of disease of the nervous system, Section G eleven exhibits of diseases of bones and joints, and Section H a number of tumours and unclassified specimens. A unique feature of the museum was found in the laryngological section (Section J), which contained a collection of about 250 foreign bodies removed from or found post mortem in the upper respiratory passages. This collection had been assembled to illustrate the discussion in the Laryngological Section on bronchoscopy and oesophagoscopy. Next by were a number of specimens lent by Mr. V. E. Negus, illustrative of evolutionary factors in the causation of pharyngeal diverticula. The museum contained also four special exhibits. The first of these was an exhibit from the Institute of Anatomy, University College, London. Here were displayed a number of anatomical specimens cleared by the Spitzholz method and stereoscopic photographs of embryos and a number of other anatomical preparations. A second special exhibit was a collection from the Wellcome Historical Medical Museum to illustrate the historical evolution of spectacles. A third was a series of plates and books showing the technical process by which reproductions in colour are prepared from pathological specimens. A fourth, an old operation lantern, circa 1766, lent from the General Infirmary, Salisbury, by Dr. L. S. Luckham.

Each afternoon demonstrations were given in the museum in accordance with the following programme.—*Tuesday* Dr. G. Hadfield, diseases of the pulmonary artery, Mr. M. Crichtley, Kufs's reaction in the cerebro-spinal fluid, Dr. Bayon, some unusual neoplasms. *Wednesday* Dr. C. F. Coombs and Dr. G. Hadfield, pathology of cardiac infection, Dr. Hadfield, specimens of pancreatic disease. *Thursday* Dr. G. Scott Williamson and Dr. Innes Pearce, the thyroid gland, Dr. G. Hadfield, hepatocellular degeneration. *Friday* Dr. G. Scott Williamson and Dr. Innes Pearce, experimental gastric ulcer, Dr. C. F. Coombs, rheumatic heart disease.

THE REPRESENTATIVE MEETING

In the SUPPLEMENT this week we conclude publication of the full report of the Annual Representative Meeting at Bath. The short notes printed below are intended to give

an outline of the course of the discussions on Monday and Tuesday, July 20th and 21st.

The greater part of Monday's session was devoted to the reports of the Medico-Political and Public Health Committees, and the matters under review were of obvious importance. The debate on the revised policy on coroners' law and death certification and registration might, perhaps, have been shortened and simplified if a clearer view had been obtained of the real objects of the revising subcommittee, and the reason for the modifications recommended. The chief amendment, that put forward by Maylebone, would have involved a return to the existing policy of the Association, as opposed to modifications adopted by the subcommittee, after protracted discussion, on grounds of expediency. The point at issue was one of substance, but some misapprehension seemed to arise. Sir Jenner Veinall, however, was able to put the matter straight, and the risk of abandoning the confidential scientific certification, whether explicitly or by the indirect method of making the confidential report optional, was averted. The rest of the debate turned on questions of remuneration or of detail, and Dr. Hawthorne and Dr. Mothesole contributed some useful verbal amendments. On the whole the judgement of the revising subcommittee was fully vindicated, though it may be doubted whether its full import was grasped by all. Possibly the amendment by North-East Essex might have been discussed and adopted had it been moved otherwise than formally from the chair. The failure to amend the paragraph of the report dealing with the issue of supplementary death certificates, after considerable discussion, illustrated the usual difficulty of giving adequate expression to principles on which the great majority were in cordial agreement from the outset.

The decision of the Council against taking any steps to obtain a larger number of direct representatives on the General Medical Council was supported by a sufficient majority (84 to 53), though that majority was possibly due rather to appreciation of the general indifference of the profession on this point than to motives of policy, and Dr. Scott put the Willesden amendment with considerable force. The discussion on the amendment in connexion with payment for health certificates for elementary school children served to inform representatives of the local practice in well organized areas, and the action taken was a useful example of constitutional procedure for the rectification of initial mistakes.

For the rest, the only substantial amendment adopted was the Manchester motion to refer back the portion of the report on factory medical service dealing with the transfer of administration of the work of occupational hygiene to local authorities, and the provision for a complete service. The adoption of the remainder of the report marks a distinct step in the development of a policy to meet changing industrial conditions. It was unfortunate that so important and controversial a matter as the report or the Committee on Drug Addiction should have come forward so late as Monday morning. In these circumstances the discussion was necessarily inadequate, and it was left to Dr. Bone to put forward the most controversial point of all as a personal motion, he had an extraordinarily difficult task manfully carried through, in explaining not only the somewhat anomalous position created by the necessity of tendering evidence to the departmental committee in advance of the Council's approval of that evidence, but also the issues involved in his motion for empowering a special medical tribunal to advise the Home Office as to restricting the right of registered medical practitioners to prescribe dangerous drugs in certain circumstances. It was a wise suggestion on the part of Dr. McCutcheon to defer the final vote on this

point until the representatives should have had the opportunity of considering a written report.

Of the more important motions from Divisions, that from St. Helens and Warrington on unqualified practice was dealt with on sound lines on Dr. Hawthorne's lead, while the Brighton motion on the question of registration of nursing homes, as elucidated by the general discussion and expanded by Mr. Bishop Huxman, may be a useful weapon in the near future. The presentation of a going to the Representative Body by Dr. C. J. Marsh, representative of the West Dorset Division, helped to expedite proceedings which had already proved unexpectedly protracted.

On the Public Health and Poor Law Report two matters of major importance and several of considerable interest came under discussion. Of these the first—namely, the approval of the amended scale of salaries for public health appointments—was in the hands of the Chairman of Council. The withdrawal of the several amendments, except that from North Glamorgan and Brecknock, and the lines followed by the discussion prior to the adoption of the scale, showed the measure of the support secured in the course of some five years' laborious work and delicate negotiations conducted under Dr. Bolam's leadership. It was clear from the debate that, with a full appreciation of the hard cases which occur, and all the difficulties involved in loyal adherence to the scale, the representatives were now prepared to endorse his policy without reservation, in confident anticipation of its final success. The second point for notice was the cordial approval of the four recommendations of Council in respect of the use of preservatives in food. Whatever the obvious deficiencies of the preamble to the report considered by the Council that morning, it was clear that the representatives endorsed to the full the policy of restriction set out and the statement of its importance in the interests of public health. The Hendon motion for the standardization of calf vaccine lymph referred to Council without opposition, showed that the Divisions, even the most recently organized, are not prepared to leave measures for the protection of public health entirely to the initiative of the Council. The session closed with Dr. Hawthorne's introduction of the report on medical benevolence procedure, which tended to seem more adequate discussion of the subject than would have been likely had this statement been debated the same evening.

Tuesday's agenda was unexpectedly heavy. After three days devoted to the less controversial reports the representatives were faced with the necessity of dealing with the dangerous drugs question, the medical benevolence question, the Dominions Report, the Naval and Military Report, and the Hospitals Report, between 10.30 a.m. and 4.30 p.m., with an interval between those hours for the statutory Annual General Meeting of the Association. Accordingly a meeting which had begun by enjoying protracted discussions on uncontroversial matters dealt with a number of controversial points with unexpected vigour and dispatch. There could be no doubt that Dr. Waller's vigorous attack on the administration and policy of existing medical charities, and his contention in favour of a medical benevolence scheme to be conducted by the Association as a benefit for its own members, expressed the feeling of a considerable section of the membership. It was equally clear that when Dr. Daviden, with the weight of Manchester behind him, and speaking as the prime supporter of the demand for reform put forward at Portsmouth and Bradford, lent cordial assent to the Council's scheme that scheme would be accepted. By the unopposed nomination of Dr. Waite to the new committee, the zeal and sincerity of the leader of the opposition were by a happy stroke secured for the scheme. On the report of the Dominions Committee, in spite of the need for dispatch, time was found to welcome the overseas delegates' appreciation of

the work of the Association. That some men in England, as elsewhere, in the words of Dr. Roberts in "get up and talk piffle" men have established another bond of sympathy between the parent Association and its overseas branches. That the work of the parent Association is effective overseas as well as in the United Kingdom is best demonstrated by personal testimony of the overseas representatives. There was no difference of opinion as to either the gravity or the necessity of the action recommended by the Council in respect of the situation in the R.A.M.C., and further reference to this is made elsewhere.

In presenting the report of the Hospitals Committee, Mr. Souttar was greeted with a warmth which testified to the regret of the Representative Body for its oversight in failing to re-elect him to the Council on Saturday. That the repentance was to be fruitful for the future was subsequently shown on Dr. Jaggle's motion for the amendment of procedure. Mr. Souttar at least had the satisfaction of securing the two-thirds majority necessary to leave the hospitals policy of the Association a complete and logical statement, a sufficient instrument for the scheme of gradual education of the profession and the public already projected. The debate showed outstanding differences as to matters of fact and of sentiment. It showed also a progress, definite if slow, towards unanimity. The attitude of Birmingham in proposing compromise and modification rather than rejection was significant. The matter was eventually referred to the Council for consideration.

SECRETARIES' CONFERENCE

The Secretaries' Conference on Wednesday met under conditions which might well have rendered any conference futile, for it was held on the hottest day of the meeting in the hottest room in Bath, and many secretaries had already done four days' work as representatives. Moreover, the function of this particular body is to confer rather than to take definite decisions on points of policy or methods of action, and the atmosphere in which it meets is therefore of particular importance. In spite of difficulties it was a successful meeting. It was well attended, and its members showed a lively appreciation of the opportunity it offered for a comparison of experience and mutual encouragement. The opening papers by Dr. Brown of Sheffield and Dr. Buchan of Lewisham were cordially received and showed a record of good work which should encourage less experienced workers for the Association. The general discussion of propaganda showed that many views are finding the appointment of special local propaganda committees an effective stimulus to organization, that on medical benevolence augured well for the future of the new committee provided for by the resolution of the Representative Body on the Medical Charities Report earlier in the week. The important question of medical golf was raised by Dr. Anderson, and received the careful consideration undoubtedly its due, before it was remitted to the care of the new committee, to which the conference elected Dr. McCutcheon, Dr. Kirk, and Dr. Le Fleming. The outstanding features of the meeting were the unusual absence of criticism of the central office, illustrated by the gentleness with which the usually vexed questions of notification of resignations and non-member lists were handled, and the discussion of the relationship of the Association to other medical organizations, more particularly to local medical societies and Local Medical and Panel Committees. The debate on the latter point opened by Mr. Russell Coombe showed that the majority of the secretaries fully realized the difficulties and even the real danger of the position, and Dr. Blackburn's warning did not fall on deaf ears. It showed also that adequate steps can be taken, and in many cases have already been taken, to deal with that position. The only definite expression of dissatisfaction with the

general conduct of the Association's affairs came from Dr Parry, and it was clear that his misapprehension as to the relationship between the Council, the representatives, and the Divisions was by no means general, although the conference fully sympathized with his contention as to the desirability of initiative in the Divisions on questions of policy. In general the impression left by the conference might be summed up in Dr Willer's remark early in the afternoon, to the effect that successful propaganda is largely a question of the personality of the local executive, and more especially of the honorary secretary. If this is a fair statement of the position, the conference showed grounds for full confidence in the future. That the business was conducted with such dispatch must be attributed to the able chairmanship of Dr Mun Smith, and the general habit of mind which enables an Association secretary to do two hours' work in one.

THE BATHING ESTABLISHMENT

On each day of the meeting the bathing establishment was thrown open for inspection, and several hundreds of the members availed themselves of the opportunity of seeing how modern are the uses which Bath makes of its waters. The visitors were conducted round the baths by Mr John Hatton, the director, or by the million or other members of the staff, and the various treatments were carefully explained. Models were hired—it may be taken for granted that no one supposed them to be actual patients—on whom the applications were demonstrated for the visitors' benefit. The principal part of the bathing establishment consists of three buildings in close proximity—the Old and New Royal Baths, and the Queen's Baths. The New Royal Baths were entirely rebuilt in 1916, and have had some wings added since. The Queen's Baths were opened in 1889. The Old Royal Baths are being converted into a suite for the Plombières treatment, and this will enable certain rooms in the newer establishment to be released for vapour treatment, which is at present being given on the lower floor of the Queen's Baths. It would be tedious to recite all the varied forms of baths, douches, sprays, and inhalations which the visitors saw administered. The immersion baths, for instance, include deep baths, in which the patients are subjected to varying temperatures under considerable pressure of water, and reclining baths, with less pressure. These deep and reclining baths are the oldest forms of the Bath cure, upon these treatments the reputation of Bath was first founded, and they are still its peculiar speciality. Then there are the Bouillon-Lancy baths, with a submerged fan douche, the Nauheim baths, in which carbon dioxide is liberated in a nascent form, and the whirlpool baths, in which a rapid circulating movement of the water is made. The Air and Vichy douches, with massage, are well known, streams of water are directed on to the patient, who sits in a chair in the Air system, or lies on a padded table in the Vichy. The Scottish douche is also a feature of this department, jets are directed at high pressure from two hose pipes, and a hyperthermic application (104° to 112° F) for a few minutes is followed by a cold application for as many seconds. Other treatments consist of vapour baths, hot-packs, mud packs, needle sprays, and so forth. There are two large swimming baths in which the water from the hot springs (rising at 117° to 120° F) is cooled to about 84°. These warm swimming baths have been found useful for encouraging and re-educating movement in patients suffering from forms of chronic arthritis. A visit was paid to the department of electrotherapy, which has all the approved light and heat treatments, including radiant heat by the Greville and the Dowson systems, ionization, diathermy, and high frequency. The most recent addition

here is a room for general ultra-violet irradiation. Adjoining the Royal Baths is a department of mechanotherapy—described by someone as having the appearance of a cross between a gymnasium and a torture chamber—where machines on the Zander (Swedish) principle are used for inducing passive or active movements. The Pump Room, where the waters are available for internal use, was largely given over during the week to the meetings of the Association. Many of the visitors also went to the Royal Mineral Water Hospital, a few hundred yards away from the bathing establishment, where there are departments of medical hydrology and other forms of physiotherapy, as well as a school of massage. Altogether the modern bathing establishment, which is estimated at a capital value of well over £200,000, does not lose by comparison with the adjacent Roman Thermae, although the latter may have or may have had greater architectural glories. In decorative skill, in regard for the nuances of spa treatment, the Romans can hardly have beaten the baths committee of the present city council. One has only to look at the appropriate colourings of the walls, the tessellated pavements, and the ceilings of some of the chambers which have a delicate suggestion of sky, with cloud and sun, to realize how subtle are some of the factors which enter into balneotherapy. A medical handbook to the bathing establishment, compiled originally for the Bath Division of the British Medical Association, is handed to every visitor. Lastly, we should mention the pleasure and refreshment which many of those attending the meeting obtained from morning and afternoon baths in one or other of the excellent thermal swimming baths referred to above.

MEMORIAL TO "PARRY OF BATH"

One of the minor events of the Annual Meeting at Bath was the unveiling at No. 27, The Circus (next door to the house of the President, Dr Thomson), of a memorial tablet to Caleb Hillier Parry, M.D., F.R.S., of whom a brief eulogium appeared in the President's Address in the last issue, together with a portrait (pp. 155-56). Parry was born in 1755 and died in 1822, after practising in Bath for thirty-six years. A large company assembled around the doorway of the house he occupied in The Circus, including some members of the Parry family, one of whom was the Most Rev. Dr Oswald Parry, Archbishop of the Province of the West Indies. The Mayor of Bath called upon Sir Humphry Rolleston to unveil the tablet, and Sir Humphry, having done so, gave a brief account of this ununsided and distinguished man. Parry, he said, was the son of a literary divine and the father of Sir William Edward Parry, the Arctic explorer, and of Charles Henry Parry, another noteworthy figure in Bath medicine. Like so many men distinguished in after-life, he was President of the Medical Society of Edinburgh. In 1779 he settled down in Bath, and hardly ever left it even for a day. He was a life-long friend of Edward Jenner, who dedicated to him his famous 'Inquiry into the causes and effects of the variolæ vaccine, a disease discovered in some parts of the western counties of England, particularly Gloucestershire, and known by the name of the cowpox' (1790). Both these men were active members of a small medical society in Gloucestershire and were much interested in the morbid anatomy of angina pectoris, on which, in 1799, Parry published "An inquiry into the symptoms and causes of the syncope anginosa, commonly called angina pectoris, illustrated by dissection." Sir Humphry Rolleston went on to say that though it would appear appropriate and, from their common friendship with Jenner, not improbable that Parry should have attended John Hunter when in Bath, there was no evidence to confirm this anticipation. Parry was one of the first to observe the disease

exophthalmic goitre now commonly called Graves's disease, but, to quote the late Sir William Osler, who spoke of it as "Pari's disease," if any man's name was to be thus associated "undoubtedly it should be that of the distinguished old Bath physician" Pari's broad outlook on life was reflected in his activities, he wrote much and wrote well on many branches of medicine, as an experimental physiologist he investigated the mechanism of the circulation, he was a geologist, and also did pioneer work in agriculture, especially by proving that the valuable merino sheep could be bred as well in this country as abroad. Struck down by paralysis and loss of speech in October, 1816, six years before his death, he bore this affliction with wonderful fortitude and continued to work, though unable to carry on his medical practice. This was not the least of the many lessons that might be learnt from this great man—Pari of Bath. Dr. Rupert Waterhouse, another medical tenant of the famous Circus, proposed a vote of thanks to Sir Humphry Rolleston, and made many complimentary references to his distinctions and qualities, and especially to the esteem in which he was held by the medical profession at large. Alderman Preston King, M.D., seconded the vote of thanks, with some humorous comments at the expense of Bristol, whose university the previous day had done Sir Humphry Rolleston honour. Bath, he said, was the more ancient city, and there was a time when the postal address of Bristol was "near Bath." Archbishop Pari, who said that although he had been twenty-five years in the West Indies, until lately as Bishop of Grenada, he always regarded himself as a Bath citizen, associated himself on behalf of the Pari family with the vote of thanks.

ORTHOPAEDIC HOSPITALS

At the close of the joint meeting with the Section of Surgery on Friday, July 24th, the members of the Orthopaedic Section were entertained at the Grand Pump Room Hotel to lunch, on the invitation of Mr. W. G. Mumford, I.R.C.S., and were afterwards conveyed in motor cars to Combe Park, on a visit to the Ministry of Pensions and the Children's Orthopaedic Hospitals. A number of interesting cases were demonstrated by Mr. Hey Groves, Dr. Forrester-Brown, and others, and the company then enjoyed tea and refreshments in the grounds of the Children's Hospital, where they were the guests of Lady Stothert. The buildings of this hospital were inspected with great interest under the guidance of Mr. Walter Mallett of Bath, to whose energy and financial aid they largely owe their existence. The huge open ward for seventy-six beds, built of reinforced concrete, glass, and asbestos, impressed the visitors with its lightness and probable durability. The administrative buildings in brick and Bath stone are not yet completed. The cost we understand to have been remarkably low.

THE OFFICIAL RELIGIOUS SERVICE

The Abbey Church, Bath, was crowded in every part for the special service on Tuesday afternoon, July 21st, when the preacher was the Lord Bishop of Birmingham (the Right Rev. E. W. Barnes, Se.D., F.R.S.). The service was conducted by the Venerable the Archdeacon of Bath. The members of the Association assembled at the Guildhall, where they robed, and then walked in procession to the Abbey, headed by a civic procession which was led by the Mayor (Alderman Cedric Chivers) and the Marquess of Bath (Lord Lieutenant of Somerset). "Let all mortal flesh keep silence" (Gustav Holst) was rendered as an anthem. The Bishop of Birmingham's striking sermon is printed in full on another page this week.

CONDITIONS IN THE R A M C

In October, 1919,¹ and again in April of this year, we commented on the unfavourable manner in which majors in the Royal Army Medical Corps had been treated in regard to their pensions under the Royal Warrant of 1919. We might have been pardoned for assuming that such obvious blunders as were perpetrated in that Warrant merely required that attention should be called to them to bring about their rectification, but more than five years have now passed since the attention of the War Office was called to the matter, and the trouble still remains. The British Medical Association has for years been doing its utmost to obtain reforms which will restore the Corps to its former popularity, and it was only after a long series of disappointments that it decided upon the serious step which was taken at the Annual Representative Meeting last week at Bath—namely, the passing of the following resolution: "That inasmuch as the provision for a 20 per cent reduction in retired pay of majors after twenty years' service under the 1919 Warrant can have the effect of reducing the pensions of many of these officers below the sum of £1 per diem which was provided by the Warrant under which they joined the Service, the Representative Body is of opinion that a serious breach of faith has been committed by the Government, and that therefore the Association is unable to recommend recently qualified doctors to enter the R A M C, and declines to publish the terms and conditions of service in the R A M C in the Educational Number of the British Medical Journal or in its other publications until the Council is assured that this and other matters under negotiation have been settled to its satisfaction." It would be as well for the profession and the public to understand that, although the question of the majors' pensions precipitated the crisis, it was by no means the only source of dissatisfaction. There are several other questions in regard to pay and promotion which have contributed in no small measure to the present serious dearth of candidates for commissions in the R A M C. The Association has viewed with feelings akin to dismay the fact that the Corps has almost entirely ceased to attract young graduates of the right class, and year after year it has urged upon the War Office and the Army Council the urgent necessity for action. The country will not have forgotten the magnificent work during the war of the R A M C, strengthened as it was by a considerable proportion of the civil profession, and it is by no means in the interests of doctors alone that the Association has been driven to adopt as a last resource a method of procedure which is profoundly distasteful to it.

VICTORIA PARK HOSPITAL

In *The Story of a City Hospital* Lady Butterworth has told very pleasantly the history of the foundation and progress of this useful institution, which, beginning in 1848 as a dispensary in Liverpool Street, E.C., soon developed into the well known hospital in the Bethnal Green district. In 1849—three quarters of a century ago—the four acres of "Bonnet's Fields" which the committee acquired was suburban or nearly rural, a fact that is realized with difficulty to-day, when streets extend for many a weary mile beyond it. Luckily for the amenities of the site, in 1842 Victoria Park, which adjoins it, had been laid out and dedicated to the public use, and the presence of this open space must benefit the quality of the atmosphere of the hospital. Although in 1823 the name was changed to the lengthy but descriptive one of "the City of London Hospital for Diseases of the Heart and Lungs," it will be long before it ceases to be familiarly known as the Victoria Park Chest Hospital. This attractive booklet is rendered the more interesting by its

appendices. The first contains brief notices of some of the distinguished men who have served on the honorary staff. Among these the first and fullest is that of Dr Thomas Bayly Placock (1812-1882), who was one of the two first netting physicians and "the guiding spirit of the institution and almost its ruler." Take so many of the founders of the charity, he was a member of the Society of Friends, but humility does not seem to have been one of his outstanding characteristics. Indeed, he was an autocrat, and his word was for long law in all departments of the hospital. Guy Babington of Guy's, Risdon Bennett, Andrew Clark, Henry Gawn Sutton, and all names which are writ large on the roll of distinguished physicians. In the note on Sir James Risdon Bennett, who was President of the Royal College of Physicians, it is stated that he held consultations in Finsbury Square up to the time of his last illness. This is an error, for, like his contemporaries, he moved to Cavendish Square some years before his death in 1891. In another appendix, for which most of the facts of antiquarian interest were supplied by Mr A Forbes Sieveking, will be found a very good account of Bethnal Green and Victoria Park. Bonner's Fields include probably the site of a country house that belonged to the Bishopric of London, and was occupied, it is believed, by that notorious persecutor of Protestantism, Bishop Bonner. But the most famous association of the neighbourhood is with the legend and ballad of the blind beggar of Bethnal Green, commemorated by public house signs and by the plays on the same theme by John Dry and Henry Chettle in 1659, by Robert Dodsley (played at Drury Lane in 1741), and that by Sheridan Knowles in the last century. Thus in three successive centuries the story has been commemorated in dramatic representations, and the suggestion seems reasonable that it might be once more illustrated by a local pageant in the twentieth century. There is very much else of interest in this pamphlet, which has a coloured frontispiece and two maps. It has been brought out by friends of the hospital without any charge on the funds of the charity, and it has our best wishes for its success as an appeal for funds.

SIR RICKMAN GODLEE'S BEQUESTS

SIR RICKMAN GODLEE died on April 20th, aged 76, and an obituary notice was published in our issue of April 25th (p. 809). He left estate of the gross value of £94,148, with net personalty £83,728. He made a number of bequests, which will take effect after his wife's decease. After certain specific bequests he left the residue of his property as to one-half to University College, London, and one-half to University College Hospital, London, £10,000 will go to the Medical School, £1,000 to the Students' Home, and the balance for the hospital, unless it shall be taken over or maintained by the public, when the one-half left to it will revert to University College. He left £10,000 upon trust, the income to be applied for travelling scholarships for students of University College Hospital Medical School who have held a house-surgeoncy and one other resident appointment at University College Hospital, and are, in the opinion of the committee, likely to benefit from visiting medical schools and scientific institutions abroad in this country. If in the opinion of the committee there should be a more suitable form of post-graduate study the scholarships may be applied for that purpose. In the event of the hospital being taken over by the State or municipality, or other public authority, the trust would continue as a fund to benefit students in the way indicated and not be merged in some general educational trust. He bequeathed £5,000 to the Royal Medical Benevolent Fund, and a like sum, including the amount of his debentures in the society, to the Royal Society of Medicine, to be applied as far as possible for the purposes of the library of the society.

THE POWER OF IRRATIONAL BELIEF

BY

THE RIGHT REV E W BARNES, Sc D, F R S,
Bishop of Birmingham

ON Thursday, July 21st, in the Abbey Church, Bath, preaching at the official religious service of the Annual Meeting of the British Medical Association, the Bishop of Birmingham delivered the following sermon, taking as his text—

"Wisdom is justified of all her children"—St Luke vii, 35

I cannot address members of the British Medical Association now assembled for their ninety-third Annual Meeting without expressing pleasure at the opportunity afforded me. I naturally share the regard in which the medical profession is held by all sensible men. My own status and interests—yes, and needs—have from time to time brought me into close contact with leaders of medical science in this country. I have had opportunities of measuring the value of their work and of realizing the generosity of temper and fineness of character which it can develop. I know of no other profession which more naturally leads to breadth of human sympathy. Your work will not allow you to form any false estimate of human nature or to ignore any of the fundamental instincts and appetites of man, but intimate knowledge makes a good physician compassionate and not cynical, and many of you have thus been led to revere the human body and the spirit of which it is the shrine as the noblest work of God on earth. The physician who, through the practice of his art, acquires this truly religious reverence learns to worship God through service to his fellow men. Members of your profession are to no small extent guardians of public morality. Your professional work constantly reminds you of the close connexion between clean living and good health. You probably receive more confessions of grave importance than all the clergy of the various branches of the Christian Church altogether. You are bound by principles of professional honour not to disclose what is thus revealed, and although such an obligation would be legally recognized you know that in fact no High Court judge would allow you to be forced to violate the confidences which you receive. Because you are thus consulted and thus trusted you have immense opportunities of influencing the personal lives of your patients. A wise and sympathetic physician of high ideals can hardly fail to be a moral inspiration to the section of the community which he serves. His influence will make for social righteousness; he will feel impelled to seek to preserve the purity of family life. If his work be among the poor he will naturally be sensitive to their special hardships, and in particular at the present time to the evils of overcrowding, but wherever his work may be he will be able to advise those concerned with social welfare, because he will have a knowledge more direct and more extensive than others can gain.

Superstition the Bane of Medicine

There are some among us who assume that medical science should, by religious teachers, be mainly considered in relation to public morality, but I will to-day emphasize the religious importance of the regard which physicians and surgeons must necessarily pay to accurate knowledge, and therein I would say that superstition, excess of belief—belief which does not rest on a basis of accurate scientific investigation—is the bane of medicine no less than of religion. Every thoughtful physician, like every thoughtful clergyman, recognizes the power of irrational beliefs. Neither is ignorant of the uses—sometimes the base uses—which can be made of such a power. Neither, if he is wise, will allow the immediate utility of irrational emotion to blind him to its dangers. Especially is this true at the present time. We are living in a strange world, where lax morality is matched by lax thought. If some present tendencies are permanent Western civilization will not escape the intellectual degeneration which finally ruined Graeco-Roman civilization some fifteen centuries ago. To take the case of medical science, until quite modern times, the highest level reached by that science was attained by the Hippocratic school in the great age of Greece. During the last century accurate clinical observations and patient research have caused medical science first to reach, and then far to surpass, that level of the

great age of Greece. The progress which has been made in medical knowledge and surgical skill since (say) the time of Charles II is amazing. Yet are we sure that we can preserve what has been won? Is its value safely rooted in popular esteem? The great triumphs of Greek medicine were gradually, but not the less definitely, ignored. Medicine ceased to be scientific as it became slowly barbarized by the folk beliefs which, especially after the Christian era began, acquired new vitality. In fact, from science the populace of the ancient world turned to quackery, old wives' lore, magical charms, visits to healing shrines—all the paraphernalia of primitive health cults—renewed their ascendancy, and the same recrudescence of magic and superstition which infected medicine found expression in religious extravagance.

Intellectual Barbarism

Are there any signs to-day that people turn from scientific medicine to quackery? You have, I am glad to say, an organized authority which your profession never attained in the ancient world but can you, with all that authority and with the abundant knowledge which it guards, prevent recourse to faith healers and osteopaths and charlatan psychoanalysts? You might retort and ask whether bishops can prevent the recrudescence of thinly disguised magic in Christian worship. The sad truth is that we are all subject to the same pressure of irrational belief. As that great physician, Sir Clifford Allbutt, said to me in one of the last conversations which I had with him, 'When superstition attacks religion it also attacks medicine. Religion is the first to feel the effects of an uprush of intellectual barbarism. This is natural, for there is in the very best spiritual understanding an emotional element associated with those very judgements on which all true religion is based. The history alike of philosophy and theology shows how difficult it is for humanity to apply reason successively to the spiritual valuation of human life, and my growing expression of reason will therefore show itself rapidly in religious extravagance. But the same impatience of rational thought will gradually spread to other regions, because there are no absolutely water-tight compartments in the human mind. The temper of superstition involves dislike of scientific methods, of accurate reasoning. After manifesting itself in religion, it will turn upon scientific medicine because that is the branch of science most closely concerned with ordinary life. The obscurity which, as we all know, surrounds the influence of the mind upon the body gives many opportunities to irrational theories, and if the doctor fails, thinly veiled magic may succeed and when once the idea gains sway that the universe is non-rational for human thought, when once men set aside God's gift of reason, then scientific progress is doomed.'

The Bishop went on to speak of the reaction from scientific theology in his own Church. If the present tendency to go behind the Renaissance (when the scientific spirit was reborn in Western Europe) to medieval folk beliefs prevailed in the Church, the prospect before rational medicine and, indeed, before all forms of intellectual progress was gloomy. The whole world to-day was laughing at the State of Tennessee, where religious fanaticism was arrayed against a well attested scientific theory. But opposition to evolution was not less sensible than many beliefs associated with the various cults which during the last half century had shown disquieting vitality.

The Scientific Temper a Recent Acquisition

Dr Barnes proceeded

You yourselves must often ask why superstition makes a stronger appeal to-day, as I believe in fact it does, than half a century ago—why apparently well educated men and women among your patients will leave you for self-assertive charlatans. There are some obvious reasons. The scientific temper which trusts in reason is a recent acquisition of humanity. In comparison with the immense antiquity of the human race it was born but yesterday. Like all recent acquisitions, its place in our mental make-up is insecure. Then, too, it is exacting and men are mentally lazy. And, moreover, during the last century science has made such extraordinarily rapid progress that the mass of men are bewildered by the change of outlook to which it has led. They feel that their spiritual intuitions no longer rest on a firm basis. The feeling of course, is false, but it is there. They distrust intellectual novelty, and in the recoil turn to primitive fancies. There is also at the moment the disturbing effect of the war, which led to psychological distress

without a parallel in recent history. The war created a situation in which mass suggestion of the crudest kind was unusually potent.

In the modern educated world superstition is really of the nature of mental disease. Irrational beliefs spread by that power of suggestion which, if sufficiently strong, penetrates the barriers by which reason should prevent its entrance to the mind. Men and women such as popular novelists who succeed by appealing to popular fancy are naturally sensitive to emotional currents in the community. Such yield more rapidly than others to unreasonable beliefs which gain popular approval, and spread them by their writings. For the same reason religious leaders and enthusiasts who are similarly sensitive have their critical faculty inhibited. Without any intellectual dishonesty they yield to suggestion, and will make what is really an obsession the basis of an elaborate argument.

No 'Short Term' Optimism

Unfortunately, it is more easy to explain the spread of false emotionally coloured ideas than to suggest the remedy. As the Greek Roman civilization showed intellectual degeneration may conquer a whole group of peoples, but this probably happens only when the best stocks die out. Civilized progress is maintained, not by the many, but by the chosen few, and we must trust that Western civilization will continue to throw up an adequate number of men and women of intellectual strength sufficient to resist irrational emotion. After all man is a reasoning animal, and therefore in the long run reason will prevail. As the Christian would say, God is both wisdom and love. He has made man to think. His thoughts no less than to obey His laws. In the thought and conduct of men progress and reaction alternate. Human history and pre-history taken together justify the Christian optimism that in the long run progress is sure. But it is certainly not uniform, nor even approximately steady. We cannot be short-term optimists. At present, I fear, there is little reason to hope that English men and women of the twentieth century will show the solid good sense of the Victorian era now commonly despised.

Nevertheless we must continue to proclaim our faith in reason for it is only through the operation of the divine gift of rational consciousness that we can advance in knowledge of God's world and of God's ways. I personally believe that through such faith in reason we shall be led to accept more wholeheartedly and more intelligently than heretofore the revelation of Christ. Your great profession is founded upon loyalty to truth. A determination to discover truth is the very basis of the scientific method through which medical and surgical knowledge advances. When we recall that all the faculties of man—bodily, mental, and spiritual—form a definitely planned unity, we can affirm that the progress of medical science must serve the cause of true religion. It will be associated with an enrichment and with a purification of spiritual understanding and I believe that amid all change such understanding will continue to be centred on Christ, who said, 'Wisdom is justified of all her children.'

INTERNATIONAL CONGRESS OF HISTORY OF MEDICINE AT GENEVA

THE fifth International Congress of the History of Medicine opened in the Athens at Geneva on Monday, July 20th, and continued during the ensuing week. The President of the Congress was Dr Charles G. Cumston, Professor of History of Medicine in the University of Geneva, and a number of representatives from various public bodies were present at the opening to welcome members of the Congress.

Inaugural Ceremonies

In his inaugural address the President referred to several distinguished physicians of Geneva who had in the past interested themselves in medical history. Daniel Leclerc, in 1696, brought out his great work on the history of medicine, some twenty-nine years before Freund published his *History of Physic* in London. Leclerc, in addition to being a historian, was a very successful practitioner, and people came from far to consult him. An earlier Geneva physician was Jean Antoine Sarrasin, who in 1598 published at Frankfurt an edition of Dioscorides in Greek and Latin. He wrote also a treatise on the plague, published at

Geneva in 1571, in which he spoke of cancers of this disease, a subject to which Calvin had also referred. During the seventeenth century Bonetus published at Geneva, in 1679, his celebrated *Scapulicrurum*, one of the earliest studies of pathological anatomy. Many other physicians of Geneva had enjoyed fame beyond the city, and among those of more recent times he mentioned Lionelin, Maunon, and Rilliet.

Dr ANDRÉ PATRI, President of the Medical Society of Geneva, next extended a welcome to the Congress on behalf of the doctors of the city. He reminded his hearers that Geneva and Switzerland generally had been famous for centuries on account of the attention paid by various medical men to ophthalmology and to the improvement of operations for cataract.

M ADOLPHE OTTAVIANI, expressing a welcome on behalf of the Council of State, said that Geneva took a great interest in the history of medicine because this was an important part of the history of the world. There was in medicine some part of intuition or divination which had given rise to the expression "the art of healing"—that was, an ability to recognize the means of warding off death. The Roman physicians of the declining empire had struggled, along with the moralists, for a return to simplicity of manners, like those of our day.

M GEORGES WEHNER (Rector of the University of Geneva) recalled as a point in local history the foundation of the Red Cross and the aid of the wounded. It was, he said, of as much interest to the doctor to study the history of medicine as it was to the jurist to study the history of law.

Professor TRICOT-ROUX of Antwerp, President of the International Society for the History of Medicine, declared that while the history of politics was considered an indispensable study, the history of science had long been neglected. Nevertheless, a fertile theory was the result of the effort of an infinity of obscure workers. Research into this subject helped to prevent pride, for every doctrine passed through stages of youth, maturity, and senescence, and the study of this chain constituted the history of medicine.

Professor EUGÈNE PITTARD of the University of Geneva then delivered an interesting lecture on the prehistory of medicine, illustrated by skulls and implements, chiefly from French and Swiss burial mounds. Among prehistoric peoples, he said, trephining of the skull was a fairly frequent occurrence. It was usually carried out in the parietal, less frequently in the occipital, region, sometimes it had taken the form of long grooves running from the frontal to the occipital region, but not penetrating the skull completely. These operations had apparently been effected by flint instruments, which he demonstrated, it must, he thought, have taken at least an hour of seeping to make a large opening in an adult skull. Whether the operation was carried out to relieve symptoms or for some social or therapeutic purpose it was impossible to say, as regarded recovery from the operation, it had evidently been quite successful.

On the evening of the opening day a reception was held by the President and Mrs Cumston in the Beigues Hotel. The members of the Congress were entertained at a concert by Mlle Cougnaud, Marguerite Roesgen, and Lily Ganzoni of the Geneva Conservatoire. A special feature was the performance of an ode in honour of the medical profession, which had been composed and set to music by one of these artistes for the occasion of the Congress.

Fairly Eighteenth Century Theses

On Tuesday, July 21st, Sir D'Arcy Power, President and Honorary of the Congress, read a paper on the *Disputationes chirurgicae selectae*, which were edited in six quarto volumes by Albrecht von Haller at Bern in 1755 and 1756. The theses were written for the doctorate of medicine in the various European universities between 1699 and 1742, and were interesting partly because they showed how early some modern surgical discoveries had been recognized, partly on account of the light they shed on the social habits and customs of the times, and partly because they gave contemporary methods of surgical treatment and proved how free was the interchange of ideas

between the surgical centres in Europe. Sir D'Arcy Power mentioned an interesting thesis on sinusitis, in which the various forms of inflammation were detailed, and the treatment of an empyema in the rutium of Highmore was given. Another thesis dealt with the radical cure of hernia, and another asked whether there was not a better treatment for aneurysm than by the methods of Antyllus and Ael. The passage of a tubo was recommended for the relief of patients suffering from cruecious stricture of the oesophagus as early as 1740, whilst some of the candidates showed that they had performed experimental surgery upon which to found their theses. Details were given of a case of acute perforation of a gastric ulcer after which the patient survived twenty-seven years, and of another case in which two and a half feet of gangrenous ileum was removed, the man living for twenty-two years, passing his motions per anum, and the post-mortem examination showing that the intestine had become "short-circuited." One of the theses dealt with wounds of the knee-joint and gave details of injuries sustained in Marlborough's campaigns of 1705-7. It showed that Claudius Amyand—afterwards sergeant-surgeon to King George II—had acted as a military surgeon in Flanders, a fact hitherto unknown. There was also an account of a man whose reducible hernia became strangulated during "a solemn boar hunt," which lasted several days in the depth of winter near Stuttgart, and another of the town surgeon who developed a strangulated femoral hernia as a result of drinking a large draught of ice-cold beer one morning in the dog days when he had overfatigued himself with a long round of visits. Perhaps the gem of the collection, Sir D'Arcy Power concluded, was the thesis dealing with the blindness of Tobit, which was reminiscent of a chapter from Sir Thomas Browne's *Vulgar Errors*.

Voltaire and English Doctors

Dr J. D. ROLLESTON (London) stated that though there was no record of Voltaire having been attended by any practitioner for the various illnesses from which he suffered during his residence in London (1726-29), he appeared to have been acquainted with several leading medical men of the time, especially Sir Hans Sloane, Cheselden, Mead, and Friend (whose death he described in an English letter), as well as with other medical Fellows of the Royal Society (especially Arbuthnot and Pemberton). He was himself elected some years later (1743) to be a Fellow of the Royal Society. Among the less known doctors whose acquaintance Voltaire made in London was a certain Dr Towne, the author of a work on the diseases most prevalent in the West Indies, who translated into English part of *La Henriade*. Dr Rolleston pointed out that Voltaire had some knowledge of the classic English medical writers, as shown by allusions to Harvey's works on the circulation and on generation, and also to Sydenham. During his old age Voltaire received visits from several English doctors, of whom the best known were Oliver Goldsmith, Samuel Sharp, surgeon to Guy's Hospital, and John Moore, who had left a striking portrait of the aged philosopher. Dr Rolleston showed a complete list of 343 English subscribers to *La Henriade*, including the names of four doctors—Mead, Misaurin, Broxholme, and Chamberlain—and he also exhibited a hitherto unpublished portrait of Voltaire by Woolledge, in possession of Mr A. Forbes Sieveking.

Robert Whytt of Edinburgh

Dr JOHN D. COSMIE (Edinburgh) contributed a paper upon Robert Whytt, an eighteenth century neurologist. Whytt had been made professor of medicine in Edinburgh at the early age of 33, but had all his life been overshadowed by his more vigorous contemporary Cullen. Whytt died at the age of 52, and Cullen succeeded to the chair at the age of 63, but still maintained a great reputation and a huge consulting practice, so that Whytt was largely forgotten. Posterity had hardly done justice to the original work that Whytt had produced. His early work had dealt with a subject which at that time was considered very important—namely, the search for remedies to dissolve urinary calculi. Whytt's research had had the effect of stimulating his friend Joseph Black to investigate the

properties of magnesium alba and other ill-dine substances, and thus led indirectly to the discovery of the first known gas, "fixed air" or carbon dioxide. Whitt, in his treatise on the *Involuntary Motions of Animals*, was probably the first to localize the mechanism for a reflex act, showing that the brain was unnecessary and that the reflexes for upper and lower limbs were complete in the upper and lower parts of the cord respectively. Whitt's essay on *Sensibility and Irritability* brought him into conflict with Haller, then the great hierarchy of physiology. The dispute as to the nature of muscular action was rather a dialectic one, but Whitt in the opinion of his contemporaries got the better of Haller. Whitt's *Observations on Various Disorders*, an elaborate treatise published in 1764, contained an important doctrine regarding the "sympathy" of the nerves and Whitt in some respects anticipated the modern idea of "reflexed pain." Whitt, in a small paper published after his death, gave the first clear presentation of tuberculous meningitis. An interesting point in regard to one of his cases of this disease was that the patient was seen in consultation in 1764 with Professor Monro (*secundus*). After death a large opening was found between the lateral and third ventricles, and being discovered by Monro also in normal brains came to be known as the foramen of Monro.

The Elsevier Press

On Wednesday, July 22nd, Dr E. B. KENNEDY (Philadelphia) read a paper upon medical literature of the seventeenth century as exemplified in the Elsevier Press. A very important indication of the medical boom in demand during the seventeenth century was gained by considering the books published and sold by the famous house of Elsevier in the Netherlands during this century. When one examined the catalogue issued by Daniel Elsevier at Amsterdam in 1674, one found in it 1,641 titles of medical books by more than two hundred authors. Almost all the more celebrated writers of antiquity and of the sixteenth and seventeenth centuries figured in the list, but most of the works were written by some eight or ten authors of the epoch whose names were to day quite forgotten. Thus Læcius is represented by over 50 titles, Deusingius by 34, Sennet by 22, Sebæus by 21, Major by 14, Aldrovandi by 13, Rolingius by 12, Severini by 11, Primerosius by 11, while Harvey, Willis, Celsus, Hippocrates, Sidenham, and other notable writers were only represented by one or two books each. It was evident, however, from various facts that in this the Elseviers were complying with the popular demand of the time.

Hygiene in Early Civilizations

Mr C. J. S. THOMSON (London) contributed a paper dealing with hygiene and public health in the early civilizations. He referred to the preparation of soap among the early Sumerians (2,500 B.C.), the teachings of the early Greek philosophers and physicians upon general sanitation, and described in detail the arrangements of water supply and baths in ancient Rome. Other papers contributed were by Dr WICKLESHAMER (Strasbourg) on syphilis at Geneva in the end of the fifteenth century, by Dr J. W. JONSSON (Copenhagen) on a letter of Paracelsus on poisons, by Dr J. W. COURTNEY (Boston) on Benjamin Waterhouse, American pioneer, Professor JEANLEUR (Paris) on magic in medical treatment throughout the ages, etc.

Paracelsus and Medicine

Dr R. O. MOON (London) contributed a paper on Paracelsus and medicine. This stringest of figures in medical history, he said, was reviled by his enemies as a vulgar and ignorant charlatan, while hailed by his disciples as the inaugurator of a new epoch in medicine and as a man of deep religious belief and purity of life. Though called no more than the "father of medicine," he had no real enthusiasm for the defenders of religious freedom. Like all prophets of revolution he had a sovereign contempt for learning, and boasted that he had read no book for ten years. "The sick," he said, "should be the doctor's school." As a teacher his success was due to his lectures being given in German instead of in medieval Latin, his success as a practitioner owed to his careful observation

of the individual patient, to his knowledge of chemistry, and to the free use of opium. But, above all, much of his influence came from the neo-Platonic philosophy, which had been awakened by the Renaissance and suffused most of his works. Paracelsus was undoubtedly a mystic, but, like Pythagoras, his mysticism was not incompatible with practical medicine. Neo-Platonism, unless handled by an intelligence more disciplined than that of Paracelsus, readily passed over into anti-intellectualism, and from this reproach the writings of Paracelsus were not free.

Early History of Dentistry

In a paper on the history of dentistry in England up to the beginning of the nineteenth century Mrs LARRY JAMES, L.D.S.D., advanced the thesis that the current belief that the modern dental surgeon was an offshoot from the stock from which the general surgeon had sprung—namely, the guilds of barbers and barber-surgeons—was erroneous, and submitted evidence, derived from a careful reading of all available original documents, to prove that a special type of dental practitioner, universally known as the tooth-drawer, could be traced continuously in literature from the fourteenth to the nineteenth centuries. In 1376 "tooth-drawing" was included in the first memorandum of the Company of Barber-Surgeons, and in England's *Visions of Piers Plowman* (1377) a tooth-drawer was mentioned. Evidence was advanced that in the fifteenth and sixteenth centuries the increase in dental disease brought the tooth-drawer more into prominence, until in the seventeenth century he became the "Operator for the Teeth"—one of the titles adopted by Charles Allen in his book published in 1686. The title "dentist," introduced from France about the middle of the eighteenth century, was not generally adopted until a century later. The scientific teaching of dentistry, originating in the works of John Hunter, followed by the lectures of James Roe in 1782, finally brought dentistry into recognition as a learned profession.

On the evening of Wednesday, July 22nd, the members of the Congress were received by the Administrative Council of the City of Geneva in the Palais Lyriad. On Thursday, July 23rd, a whole day excursion was made by steamer to the head of the Lake of Geneva, the party being entertained to lunch in the Castle of Chillon by the physicians of Montreux, and to dinner at L'Arrière-Bains by the administration of this spa.

The Congress resumed its sittings on Friday, July 24th, and ended with a banquet in the Hotel des Bergues.

Canada.

[FROM OUR OWN CORRESPONDENT]

CANADIAN TUBERCULOSIS ASSOCIATION

THE twenty-fifth annual meeting of the Canadian Tuberculosis Association was held on May 14th to 16th in Montreal. Great regret was expressed that, owing to illness the President, Dr C. D. Piffitt, of the Calidar Sanatorium, Gravenhurst, Ontario, was unable to be present. Dr A. Roussier, Dean of Laval Medical School, Quebec, was elected the new president. Most of the meetings were held in the Mount Royal Hotel, but Dr F. W. Archibald, Professor of Surgery at McGill University, gave a clinic at the Royal Victoria Hospital on surgery in tuberculosis. Visits were paid to the Institut Bichat and to the Royal Edward Institute. A meeting was also held under the auspices of La Société médicale de Montréal, indeed, a particularly pleasing feature was the number of French speaking physicians and nurses who were present. Several papers were given in French, one, especially good, on the progress of antituberculosis work in France, being by Dr Willard B. Soper of Saranac Lake, N.Y.

An Urban Health Demonstration

On the last day of the conference a large number of members visited Three Rivers on the St. Lawrence River, half-way between Quebec and Montreal. Here, in a town with about 27,000 inhabitants, and in the little town of Cap

de la Madeleine, with a population of some 7,500, just across the St. Maurice River, a "health demonstration" was begun in December, 1923, and will continue until December, 1928, of the same type as that which was undertaken at Framingham, Massachusetts. The work is being done by the Department of Health of the Province of Quebec, with the financial assistance of the Canadian Tuberculosis Association, the Federal Government, the Canadian Red Cross Society, and the Sun Life Assurance Company of Canada. The survey of tuberculosis was begun in May, 1923, and a dispensary was opened. An active educational campaign has been carried on and the public have become conversant with the dangers of the disease. Before the centre was established a survey showed that only 70 patients with tuberculosis were known to the physicians of the town, they had not been reported and did not receive home visits. During the first year's work 118 cases were recognized, and 57 others were found in the second year. At present 195 patients with tuberculosis are being cured for, and 889 others are under observation, they suffer from adenopathy, ure contracts, or the diagnosis is doubtful. Altogether 3,234 persons have been examined. Of these, 583 were factory workers, and the diagnosis of tuberculosis in some degree was made in 231. This seems an extraordinarily high rate of morbidity, but it must be noted that those who sought examination were those who were most impressed with their need of it. In a college with 400 pupils from 11 to 20 years of age, 330 were examined. 31 cases of tuberculosis were found, 45 others are still under observation, and in 254 the diagnosis was negative. Besides this tuberculosis work maternal welfare and child welfare clinics have been established. The death rate from gastro-enteritis amongst infants up to 1 year of age has been greatly reduced, for in 1915-22 the average was 89.5, from May 1st, 1923, till May 1st, 1924, it was 49, and in the following year it fell to 41.4. Such work as this cannot but be far-reaching in educating the French Canadians and English speaking Canadians in the principles and beneficial results of hygiene.

Travelling Diagnostic Clinic

Dr. G. C. Bink's paper on a travelling chest diagnostic clinic told the story of a new effort in the campaign being waged against tuberculosis. It is a clinic established by the Provincial Board of Health of Ontario. On receipt of a request of the local practitioners and the local medical society a physician, well trained in the diagnosis of the disease, accompanied by a nurse, spends a week examining all patients referred to the travelling clinic. A portable clinic machine is part of the equipment. Altogether twenty-two centres were visited, 721 patients were examined, and out of this number 133 were diagnosed as "suspect," 81 as having active tuberculosis, and 63 as presenting evidence of "arrested" disease.

OSLER JOHNSTON McCRAE

Three memorial tablets were unveiled on May 27th by Dean Cahsle (of Christ Church Cathedral) at the Montreal General Hospital, to the memory of three men who had worked there—Sir William Osler, Bt. (1849-1919), Walter Galt Johnston (1863-1902), and John McCrae (1872-1918). The most important part of their work there was in the pathological department. Osler, as his great friend Dr. F. J. Shepherd, emeritus dean of the McGill Medical Faculty and emeritus professor of anatomy, said, was appointed pathologist to the hospital in 1876, and was physician from 1878 until 1884, when he became professor of medicine in Philadelphia. At the hospital he made his excellent post-mortem observations which formed the basis of the pathology of disease so well and so fully taught in his *Principles and Practice of Medicine*. Dr. R. F. Rutten, Professor of Chemistry at McGill University speaks of Johnston's work in pathology and bacteriology at the hospital and in public health and medico-legal pathology in the University. His sudden death after infection received at an autopsy robbed Canada of a brilliant scientist. Dr. C. F. Martin dean of the McGill Medical Faculty, then referred to McCrae, who was Fellow in pathology and pathologist to the hospital. Later he became assistant physician at the

Royal Victoria Hospital and lecturer in medicine at McGill. He was a splendid teacher for undergraduates, and had the happy knack of giving only the salient features, the really important points, in his clinics. He served during the South African war as a combatant, and in the European war with the allies, and later also in France with the Canadian Army Medical Corps. Before he died he was appointed medical consultant to the Fourth Army. He is now widely known as the writer of the verses "In Flanders Fields," and each year his memory is reawakened in us when poppies are everywhere sold on Armistice Day.

ANTI-VACCINISTS AND SMALL-POX

In the Province of British Columbia the activities of the antivaccinists have been very annoying. During the last year or so there has been a good deal of small-pox in Vancouver and its vicinity, slight cases have passed unnoticed, but 300 have been reported in Vancouver since the beginning of the year. The United States insisted that all persons travelling south across the line should show evidence of recent vaccination. The Provincial Health Department instituted general vaccination. The antivaccinists tried to persuade the citizens that a small-pox alarm was being spread by the physicians in order to line their pockets with vaccination fees. The antivaccinists have even tried to work up a scare about "bovine syphilis" with its dangers for human beings. The campaign of vilification and exaggeration was, it is said, carried too far, so that the ordinary sensible citizens became weary of it.

INSURANCE COMPANY'S GIFT FOR POST GRADUATE LECTURES

At the annual meeting of the Canadian Medical Association at Regina it was announced that the Sun Life Assurance Company had given thirty thousand dollars to the association to establish a scheme for post-graduate lectures and teaching throughout Canada. The work will be carried out as it has been during the last few years in Ontario under the Provincial Association (see *BRITISH MEDICAL JOURNAL*, 1925, i, 44) by sending out medical men at the request of medical societies of towns or of county districts, who attend the regular meetings and lecture upon any one of a wide range of subjects offered by the central committee. This very generous gift is greatly appreciated by the medical profession.

Scotland.

EPIDEMIC OF MILK POISONING AT ABERDEEN

An outbreak of food poisoning which at first affected between thirty and forty people in the city of Aberdeen commenced on July 7th. On July 8th there was something in the nature of an epidemic, and eight patients had to be removed to the Aberdeen City Hospital. The symptoms were vomiting, which made its appearance about eight hours after milk had been consumed, accompanied by a sudden onset of diarrhoea and vomiting which was extremely acute and painful. By July 9th over 300 persons had become affected by the epidemic, which was mostly confined to the Rosemount and central area of the city. The outbreak was traced to three dairies in the city, and the supply of milk from them was stopped, by the end of the week the public health authorities had the epidemic completely in hand. The bacteriological examination of the milk showed one of the organisms of the typhoid dysentery group which apparently had been derived from a bare or farm worker. None of the patients died.

HEALTH OF EAST LOTHIAN

Dr. George L. Richardson, medical officer of health for East Lothian in his annual report for 1924, refers to the East Fortune Sanatorium, which has recently been opened. In the county of East Lothian during the year 54 cases of tuberculosis of the lungs were notified, of whom 24 died, and 44 cases of non-pulmonary tuberculosis of

whom 11 died. The treatment of tuberculosis in 1st Lothian will in the future be on a plane higher than in the past. The report refers also to an outbreak of acute infective jaundice, which occurred in the western area of the county and involved 14 persons, of whom twelve were coal miners. Among these 4 deaths occurred. A bacteriological examination had been made of rats from underground workings and from the surface of pits and also of rats from rats fur removed from pits. Of nineteen rats examined ten were found to be infected. Infection was also found in field mice. The organism has been found in slime taken from the roof of a wet section of a pit which appeared to be inaccessible to rats and this proved that there were other sources besides the rat whereby man might become infected.

EDINBURGH SANITARY DEPARTMENT

In presenting the annual report of the sanitary department of the City of Edinburgh Mr. Allen W. Ritchie, chief sanitary inspector, drew attention, among other things, to the pollution of the air and to overcrowding in houses. Though Edinburgh was not so seriously affected by smoke pollution as the more industrial cities, yet the position could not be regarded as satisfactory. The law required remodelling to enforce the adoption of newer methods of heating in dwelling-houses and for motive power for factories and transport. Overcrowding in the smaller houses became more serious year by year. The number of overcrowded houses which came to the knowledge of the department during the past year (1924) exceeded that of the previous year by 210. In a considerable number of cases the condition had prevailed for several years, and in some one-apartment houses as many as seven, eight, and ten persons were found living in a single room, while in several two-roomed houses ten, eleven, twelve, fourteen and in one case sixteen persons were found. As the majority of these overcrowded houses were in the congested areas of the city the matter was all the more grave. The new schemes under the corporation and private enterprise had had their effect in easing the housing difficulties of many occupants of the better class of houses.

England and Wales.

LEPSOM COLLEGE

FOUNDER'S DAY at Ipswich College was celebrated on Saturday, July 25th, when a service was held at midday in the chapel, and the prizes were distributed in the afternoon by Earl Beauchamp. The headmaster, in the course of his annual statement referred to the substantial progress that had been made during the year in the school, out of forty-two candidates forty-one had secured school certificates, and thirty-two had been exempted from matriculation. Outstanding features were the winning of an open history scholarship at Hertford College, Oxford, an open science scholarship at Clare College, Cambridge, and a double first in a Cambridge Tripos. The numbers in the school had passed all previous records, and until further accommodation was provided no more boys could be admitted (we referred on July 4th (p. 19) to the extensions that were under consideration to meet this and other needs). Dr. E. N. Gardner was leaving the school after thirty-five years' service; he had been awarded the honorary degree of D. Litt. at Oxford. In the evening there was a successful choral performance of *The Midado* by the College musical society.

SCARLET FEVER OUTBREAK IN PORTSMOUTH

Portsmouth Health and Housing Committee has received a detailed report by Dr. A. Means Fraser, medical officer of health for the borough, of a limited outbreak of scarlet fever which occurred at the end of May and the beginning of June. On May 29th, 21 cases were notified, followed by 21 on May 30th,

14 on May 31st, 8 on June 1st, 6 on June 2nd and 1 on June 3rd the total number, including a few cases in which notification was delayed, amounted to 83. The majority of the patients were found to have partaken of ice cream which had been bought at branch shops in different parts of the town, belonging to one particular dairy firm. The man who prepared this ice cream had been assisted by a boy who, on May 30th had been diagnosed as suffering from scarlet fever. During the previous week he had had a sore throat, but the rash did not appear until the night of May 25th. His duty had been the putting of the ice cream into tins for distribution. No further cases occurred among persons who consumed this ice cream after May 29th the last day on which the boy was at work. Three cases of scarlet fever occurred amongst other persons employed by the dairy firm, but it did not appear that any of these could be held responsible for the spread of infection. A total of 63 of the 83 patients had eaten this ice cream within a few days of being taken ill, the disease starting within a few hours to four days. Dr. Means Fraser pointed out that, so far as he was aware, no cream had not been previously incriminated in an outbreak of scarlet fever and that the incubation period in several of these cases was far shorter than would have been expected. No other factor could be discovered which was common to a large proportion of the cases, and he felt that a coincidence could hardly be assumed since so many people had contracted the disease after eating a plentiful supply of ice cream which had had ample opportunity of having become infected. There was no evidence that scarlet fever had been contracted from the milk supplied by the firm, and as soon as the sale of the ice cream stopped the outbreak ceased. Every assistance in investigation was rendered by the dairy firm, who were quite unaware that the boy was not in perfect health at the time he was working for them. The outbreak was mild in type.

Correspondence.

THE TREATMENT OF PLACENTA PRÆVIA

SIR—I am afraid this letter will lose its interest owing to the delay that must occur before its publication is possible. I regret very much that I find myself in direct opposition to Professor Watson for whose opinions and work I have the greatest respect and admiration, but in the present instance he is in direct conflict with facts as I know them. Moreover, should his opinions gain the ascendancy, they will undo a portion of what I have tried to do in New Zealand with the object of reducing maternal mortality.

I have just read the report of the discussion on the treatment of placenta prævia which took place at the Edinburgh Obstetrical Society on January 14th last (*BRITISH MEDICAL JOURNAL*, February 21st, p. 363). From this I understand Professor Watson's view to be that Cæsarean section is the treatment of choice for severe cases. As an alternative there is the vaginal "prek plus version" bys, bipolar and internal version" while for the mild cases there is rupture of the membranes with or without the application of forceps.

In 1897 I published the first edition of my *Short Practice of Midwifery*, in which I reproduced the teaching of Sir William Smith, whose Mastership at the Rotunda Hospital had ended a year before. In this edition the treatment of placenta prævia is given as follows:

If the patient is not in labour 'the best treatment then is that recommended by BRYANT HICKS. It consists in turning the foetus by bipolar version into a breech presentation rupturing the membranes drawing down a foot and leaving the rest of the delivery to nature. If it be a case of central placenta prævia the fingers must be pushed directly upwards through the placenta in their attempt to seize the foot. This treatment at both cheeks the haemorrhage by the pressure of the breech or the back of the child against the placenta and brings on labour. A piece of gauze should be tied to the foot and if further haemorrhage occur light traction on the gauze will check it by drawing down

more of the breech. This treatment requires two conditions to be present: (1) The membranes must be unruptured, (2) the os must be large enough to admit at least two fingers.

The first condition is practically always present unless indeed an ignorant attendant has ruptured the membrane. The second condition is present in more than 99 per cent of all cases of placenta previa in which the patient is bleeding. In the rare instances in which it is not present, plug the vagina and leave the plug in for a few hours. The os will then be found to be sufficiently dilated to allow version to be performed.

If the patient be getting strong labour pains when the hæmorrhage commences, rupture of the membranes is often sufficient to check the bleeding. If the hæmorrhage still continues the child may be delivered by the forceps, if the head be fixed and the os dilated. If these conditions be not present the child may be turned by internal version and the rest of the delivery left to nature.

In the ninth edition of the same book, published in 1924, the treatment of placenta previa is described in identical words, except that I have given up the use of the sub-junctiva suture. In addition, it is stated that Cæsarean section is permissible when the placenta is central, the infant viable, and the mother has not been unduly weakened by previous hæmorrhages. Now this persistence of an identical teaching from 1897 to 1925 is the result either of an obstinate conservatism that will not change or of a decisive and favourable experience gained during this period. Which it is I will ask Professor Watson to say when he has considered the following figures.

In 1896 Sir William Smiley's Mastership at the Rotunda Hospital ended. During it he had treated in the hospital 55 cases of placenta previa, with one death. The late Dr Purser ended his Mastership in 1903, and in that date 108 cases had been treated, with three deaths. Dr Hastings Tweedy ended his Mastership in 1910, and by that date 149 cases had been treated, with four deaths. My own results were not so good, and, by the end of 1919, 230 cases had been treated, with fourteen deaths. When the last edition of my smaller book on midwifery was published in 1924, the statistics of three years of Dr FitzGibbon's Mastership were included, bringing the total figures since 1889 to 264 cases, with fourteen deaths, a percentage mortality of 5.3. As Professor Watson says, many cases are admitted to hospital when moribund, and in the statistics I have quoted such patients account for a number of the deaths. I do not think any operator would try to do Cæsarean section on such patients, and so it would not have saved any of them. Consequently, when we compare the results I have given with those of Cæsarean section, such cases should be omitted. If this be done we shall find that the treatment I have described gives a mortality rate of about 3 per cent in non-moribund patients, while Cæsarean section gives a mortality of 7.1 (Watson) or 11.5 (Holland) in patients whom we must assume were also non-moribund.

The treatment I have described has been carried out consistently at the Rotunda Hospital, with a single exception, since 1889, unless Dr FitzGibbon has altered it in the last few years, and it is a very different treatment from that which has given in Edinburgh a mortality rate of 13 per cent. It does not consist in the use of the "pach-plus version, brigs, bipolus and internal version." It consists, in serious cases, in which the patient is not in labour, simply in the adoption of version (whatever form is best, and usually a combination of external and bipolus), bringing down a leg, and leaving the further delivery to the natural efforts. It condemns the use of the pack as a grave danger, because of the necrosis of the uterine sinuses to the uterine orifice and the consequent risk of infection. It condemns efforts at dilatation, other than that implied by the passage of two fingers through a soft and partially dilated cervical canal, because of the ease with which the cervical tissues tear in these cases and of the proximity of large blood vessels to the cervix. It condemns any attempts to hasten delivery, unless the patient is in the second stage and the uterus is contracting strongly, because of the necessity of allowing the patient to recover from the primary shock of the hæmorrhage. It does not take into account the life of the foetus, because such a life is, in these cases, antagonistic to the life of the mother. Lastly, it has given during a period of thirty-six years a gross mortality of 5.2 per cent.

It took at least twenty years to teach obstetricians generally that the use of the vaginal plug in external accidental hæmorrhage, as taught by the Dublin school of midwifery, was both permissible and advisable. I hope it will not take another twenty years to teach them that its use in unavoidable hæmorrhage is neither the one nor the other, except under the rare conditions I have mentioned.

My object in writing this letter is mainly to prevent the views brought forward at the Edinburgh meeting from undoing any little good which my efforts may be doing to reduce the mortality from placenta previa in New Zealand. I cannot tell the proportion of fatal cases of placenta previa in this country, as the statistics do not show them. They do, however, show that one woman died out of every 2,787 labours of unavoidable hæmorrhage in the year 1920. The corresponding figures for a period of years in the Rotunda Hospital are 1 in 7,397. I believe the difference is largely due to the distance that here often separates doctor and patient, and so delays treatment. It is, however, also due to the adoption of unsuitable treatment, such as that advised at the Edinburgh meeting.

The issue which I want to put before your readers, both here and at home, is very clear. Placenta previa is always serious, and can be a fatal complication of pregnancy. Which do they prefer—a clearly defined treatment, which in thirty-six years has given a gross mortality of 5.2 per cent, or the choice between a heterogeneous treatment with a mortality of 13 per cent and Cæsarean section with a mortality of 11.5 per cent (Holland) in selected cases?

If Professor Watson can see his way to adopt the Rotunda experience of thirty-six years, and then to give the world his own experience of it, he will both improve the statistics of his hospital and materially help those whose work it is to try to reduce maternal mortality in general practice.—I am, etc.,

HENRY JELLET, M.D., F.R.C.P.I.,
Consulting Obstetrician to the Health
Department of New Zealand

Christchurch N.Z. April 9th

FOCAL SEPSIS AS A CAUSE OF NEURASTHENIA AND INSANITY

SIR,—In a letter in your issue of July 25th (p. 177) Dr Crichton-Miller has done useful service in drawing attention to four papers on focal sepsis as a cause of neurasthenia and insanity, published in your issue of July 4th. Increasing interest has in recent years been shown in this subject in this and other countries, but it may safely be said that the fringe of the subject has hardly yet been touched, and the publication of four independent yet correlated papers on this subject from the broad standpoint of general medicine and surgery in one issue of the JOURNAL is a fact of far-reaching interest and importance.

More than twenty years ago, on the strength of clinical and pathological data collected in collaboration with the late Dr George Wilson, I drew attention to the importance of this subject, and to the need for its investigation on the lines indicated in the recently published papers, but little work has yet been done on the subject. In this joint communication attention was also directed to the need for equally directing attention to the influence of chronic toxæmia in inducing impairment of function of the thyroid gland and other endocrines on the lines usefully brought out in Dr Crichton-Miller's letter. In a more recent communication it was also pointed out that the theory of focal sepsis as a cause of mental and nervous disorders was not new, it is at least a hundred years old, but little or no attention had been directed, in the light of modern knowledge, to determine its correctness or otherwise. One of the reasons for this neglect has been, it seems to me, the excessive degree of specialization characteristic of modern medical practice. There are, in relation to nervous disorders generally, hopeful indications of a reaction against this tendency, and this will be strengthened by the publication of the papers from the

Bristol school. In this connexion attention may be drawn to the view expressed by Dr P. Watson-Williams, in one of his papers referred to, that sepsis is a far deadlier foe to civilized races than tuberculosis. There is much to be said in support of this view. The time seems ripe for applying the principles of Isterism to general medicine. The successful application of these principles to surgery in the past twenty-five years has added enormously to our knowledge of disease, and greatly increased our skill in curing or alleviating it. I venture to think that the wise application of the principles of Isterism to medicine, over a similar period, would yield results of incomparably greater importance and practical value.—I am, etc.,

Edinburgh July 25th

CHALMERS WATSON, M.D.

Sir,—In drawing attention to the exacerbation of symptoms which, in a neurotic subject, may follow operative interference, Dr Crichton-Miller raises an interesting point. It is doubtful, however, whether the exacerbation is always, or even usually, attributable to a flooding with toxins.

The same phenomenon is frequently observed in cases where the operative interference has not involved any such focus. As an example I may cite three cases in women upon whom nephropexy had been performed for what was diagnosed as neurasthenia—actually all three were manic-depressives. The operation was in each of these instances followed by deterioration, and each confessed to me subsequently that her reason for submitting to operation was the hope that she might never come round from the anaesthetic. In other words, the surgeon was being used as a suicidal agent. The reason for deterioration in these cases was increased disappointment, not increased intoxication. Another neurotic, a man, who really had a septic infection of the naso-pharynx, for which he was treated by autogenous vaccine prior to operation, confessed that the reason for his increased anxiety after operation was that, the cloak upon which he had hitherto relied to cover his nervous being removed, he "felt himself more miserably than ever exposed to a cruel world." These are but a few of many similar instances with which I have met.

While quite agreeing with Dr Crichton-Miller that the physician must avoid blindness with either eye, I feel that local sepsis *per se* is not a cause of neurasthenia, but that, in these mixed cases, we have to deal with a vicious circle, the same remark applies to endocrine disturbances associated with mental aberration. It is astonishing what a burden of physical ills the robust mind can tolerate without losing its balance. The badly balanced individual, on the contrary, is easily upset by an immense variety of circumstances, and then both patient and doctor are only too willing to bring in the exerting is the essential causative factor of the breakdown, even if it has to be admitted that the sepsis is 'latent' or 'cryptogenic,' as is done by Dr P. Watson-Williams in a paper in your issue of July 4th (p. 2). In these mixed cases the real problem, in my opinion, is to decide, in any given case, which factor should be tackled first, or how far both may be treated concurrently. Perhaps some of your readers would give us the result of their experience upon this difficult aspect of the question.—I am, etc.,

Birmingham July 25th

ALFRED CARVER, M.D., D.P.M.

PLUGGING THE POSTERIOR NARES

Sir,—In your issue of July 11th (p. 60) Dr Henry S. Russell described a method of plugging the posterior nares which he believes to be new. It is by no means new, quite twenty years ago, while assisting Mr Herbert Tiller at an accessory sinus operation, I saw him plug the posterior nares in precisely the manner described by Dr Russell, and I myself on numerous occasions afterwards adopted the same method.

In the vast majority of cases of epistaxis the bleeding point is situated well forward on the cartilaginous septum, and is known to rhinologists as the "site of predilection," the bleeding can usually be stopped by firm digital pressure on the rib, using the septum as a *point d'appui*, or, better still, a plug of gauze dipped in dienealine chloride and

wring out can be inserted into the nostril, and pressure made on it in the same way (in either case the blood clot should be first cleared out). If this fact were more generally known there would be fewer occasions to plug the posterior nares.

Finally, in order to prevent recurrence, I have found the application of the galvanocautery thoroughly satisfactory.—I am, etc.,

ARTHUR J. S. ROR

Hull July 13th

Surgeon to the Throat, No. 1 and 2
Department, Hull Dispensary

Sir,—Plugging the posterior nares with a taped finger is not new, but in the hands of a skilful house-surgeon it is a method of performing this tricky operation when recognized methods are not followed. Hospital practice and private practice are not comparable. In the former everything is ready to hand, while in the latter it is frequently an ingenious operation in which special skill is required of the practitioner. Late dental extraction, it calls for mechanical aptitude. In my opinion a man who is unskilled in Lachman catheterization should not undertake the operation of plugging the posterior nares. But if he can do this, Belloc's sound, or even a suitable catheter with a small silk or gut loop, prevents the double operation of the taped finger and sinus forceps. There are a large number of cases of epistaxis in which plugging the anterior nares alone will suffice.—I am, etc.,

Southampton July 13th

JOHN FRED BIRCHOP

DISTASTES DUE TO FASHION IN CLOTHING

Sir,—It is with great interest that I have read Dr Parles Weber's communication in the *BRITISH MEDICAL JOURNAL* of May 23rd. When I was house physician at the hospital here at the beginning of the century, sufferers from chlorosis formed a considerable proportion of the women seen in the out-patient department, and the wards were seldom without one or two cases. Since the war I do not remember to have seen a single typical case in the wards, and inquiry of the house-physicians and physicians in charge of the out-patient departments has shown that it is now very uncommon there. The disease, as Dr Parles Weber points out, has practically disappeared.

But that it was the result of wearing corsets cannot be accepted unquestioned, for the following reasons:

1 The complaint was notably more common in girls of the domestic servant class—girls who, whilst they may have lived with their more fashionable sisters in the matter of tight lacing on their occasional outings, certainly did not do so whilst following their daily vocation.

2 The age incidence of a first attack of chlorosis was from 14 to 20 years. It is difficult to see why it should have been restricted to these ages if the wearing of corsets was the cause.

3 Iron, in sufficient doses, was a specific for the disease as much as quinine is a specific for malaria or mercury for syphilis. Girls who presumably continued to wear their corsets could as a rule be quickly and completely cured by the administration of iron. It is true that rest in bed was helpful in severe cases, but alone it did not cure the disease.

4 Tight lacing, especially amongst the "rather fat girls," who, as Dr Parles Weber points out, were more affected than thin girls, is by no means unknown at the present time.

5 Did tight lacing and chlorosis wane at the same time? The former went gradually, but I should have thought had gone out of fashion at least ten years before there was any noticeable diminution in the number of cases of chlorosis.

6 Whether credit for the hypothesis that chlorosis is due to tight lacing should be given to Meisner or to Rosenbach, the fact remains that it was advanced some thirty years ago and did not find general acceptance.

7 It is generally admitted and Dr Parles Weber agrees, that married life had a beneficial effect, but it would be interesting to have the verdict of a jury of

nations on his contention that, "the male once captured," women do not tire the same pains to render themselves attractive—even for the first few years of married life!—I am, etc.,

Bath July 11

RUPERT WATERHOUSE

SIR,—Dr William Elder (July 11th, p. 88) expresses his opinion that, in regard to chlorosis, "the tight corset, important as it was as a causative agent, was only one cause amongst several." The evidence that we at present possess points, I think, as I stated, to its having been the cause—that is to say, the essential cause, just as exposure to cold is the essential cause of chilblain (pernio). But though cold is the acknowledged cause of chilblain, other factors may favour its development, such as moisture, the judicious application of heat after exposure to cold, insufficient muscular exercise, certain forms of defective diet, and the age and constitutional tendency of the individual. So, in regard to chlorosis, there probably are several favouring or contributory factors—sex, age, diet, and individual constitution. The last mentioned is undoubtedly very important, the majority of girls and young women seem to have been resistant, so that with moderate tight-lacing they did not develop chlorosis. If it be asked how chlorosis, a disease known to be curable by iron, can be due to corsets, one may answer that chilblains, though known to be due to cold, can in some individuals under ordinary conditions be opposed or prevented by calcium therapy.

I am not disposed to admit without very good evidence that any disease known to the ancient Greeks and Romans was the same as what is now known by the Greek name "chlorosis." Dr Elder states that under this, its present name, it was described by Varro in 1620. One has only to go into any large picture gallery or look through any collection of prints to convince oneself that at least since 1620 tight-lacing was very prevalent amongst young women until in the present century it finally almost ceased together with the almost complete disappearance of chlorosis.

Exceptional cases might still throw valuable light on the subject, like Dr J. H. Abram's, to which I alluded in my previous letter (p. 1194). In some remarks on Dr Abram's case (Association of Physicians, May 30th), Professor W. L. Dixon said he had seen a good deal of chlorosis in Holland (particularly, he thought, in the islands), where the girls still tight-lace. I do not know whether tight-lacing is still encouraged anywhere owing to national or local costumes, but, if so, such costumes would probably be worn almost only on festive occasions, and would hardly act as a cause of chlorosis.

In my investigations of the kind the characteristic chlorosis of girls and young women, to which I have been referring, should not be confused with the so-called "secondary anaemia of the ordinary chlorotic type"—which simply means any anaemia (oligochromia rubra) due to any cause in which the colour index is below the normal—I am, etc.,

London W 1 July 11th

F PARKES WEBER

TREATMENT OF FRACTURES

SIR,—Some thirteen years ago the late Mr Clinton Dent, who was chief surgeon to the Metropolitan Police, made the statement that he had never known a police officer who had sustained a Pott's fracture return to full duty. Sir Robert Jones, in his lecture on "Crippling due to fractures," published in the *BRITISH MEDICAL JOURNAL* on May 16th, quoted this as one of his arguments to prove how badly London hospitals treated fractures. I have just returned from the discussion at the British Medical Association at Bath on our duty towards the fractured public and our duty to hospital students, and I was very sorry to hear Sir Robert repeat the same argument. It is really time that this misconception was cleared up. What Clinton Dent said thirteen years ago is about as valuable in argument as "what Gladstone said in '85." The really important fact, however, is that ever since the death of Mr Clinton Dent this statement has ceased to be true. For some time during the war I had the honour of deputizing for the present chief surgeon, Sir Charles Ballance, and I always took particular pains

to test the value of Clinton Dent's statement, which I had originally received with surprise. It took me just three months to find out that the statement no longer held true in 1915, and I believe it has become less and less accurate during the succeeding ten years. It would seem not unfair to conclude that real progress has been made in the treatment of these fractures since the original statement was made. The credit is largely due to Sir Charles Ballance, who has done so much to organize the treatment of sick police.

This may seem a trivial matter, but error is apt to grow, and it always hampers fair argument. The discussion stimulated by Sir Robert Jones has proved most interesting, and I have no doubt it will have far-reaching results. With all the wealth of argument at his disposal I hope I am not asking too much if I request him to give up this one, which is entirely played out—I am, etc.,

London, W, July 25th

JOSEPH E. ADAMS

THE DICK TEST IN SCARLET FEVER

SIR,—The following experience with the Dick test and scarlet fever antitoxin may be of interest. On January 18th scarlet fever occurred at the Ontario School for the Blind at Brantford. Between that date and January 27th six children contracted the disease. On January 27th I tested the remaining children with the intradermal test, using scarlet fever toxin from the laboratory of Dr A. Zingher of New York. Seventy-two children were Dick-negative and 38 children were Dick-positive. Between January 27th and February 19th, 7 of the Dick-positive children developed scarlet fever. On February 16th I received a supply of scarlet fever antitoxin from the Connaught Laboratories at Toronto, and injected the remaining Dick-positive children with 5 c.c.m. each, with the exception of two who had chicken-pox and who developed scarlet fever on February 19th.

The next day, February 17th, I again applied the Dick test to these children. All were now negative, with the exception of three who were only slightly positive, whereas before they had been strongly positive. On February 27th another child, who had been originally Dick-positive, had received 5 c.c.m. scarlet fever antitoxin and had then become Dick-negative, developed scarlet fever.

The epidemic then ended.

This experience would seem to prove conclusively the value of the Dick test. The scarlet fever antitoxin was, of course, used only with the idea of producing a temporary immunity. Unfortunately I was unable to go ahead with the attempt to produce permanent immunity by means of graduated doses of scarlet fever toxin in the remaining susceptible children, as the school principal felt that the children had had enough needles stuck in them. A report on this epidemic was made to the Provincial Board of Health, Ontario—I am, etc.,

W. L. HUTTON, M.D.,

MOH Brantford Ontario Canada

July 9th

THE ETIOLOGY OF MALIGNANT NEW GROWTHS

SIR,—The facts so ably discovered by Dr Gye,¹ and so widely made public, have awakened a natural enthusiasm. If the parasites grown in culture after filtration should eventually prove to be the immediate causal agents of cancer, they can be no more than a particular phase of the same protist, of which other phases are clearly indicated in the *BRITISH MEDICAL JOURNAL* of December 24th, 1882, the year in which Ivanovski demonstrated the first filterable contagium vivum, that of mosaic disease of the tobacco plant.

Anyone who will make a water culture from a ripe lesion of molluscum contagiosum in the way that I have described² will in the course of a few days have ample proof that the specific corpuscle is a protist, and, having weighed other experimental evidence, will conclude that, pounded with sand, this protist separates into variable filterable subdivisions.

No one who has not made a careful practical study of the causal organism of molluscum can have a well balanced conception of filterable micro organisms—I am, etc.,

London W 3 July 26th

J JACKSON CLARKE

¹ W. E. Gye, *Lancet* July 18th 1925.

² Report of a meeting of the Pathological Society of London.

³ *Protists and Disease* 1922, chapter vi.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

THE Government hopes to adjourn the House of Commons for the recess on August 8th, unless industrial troubles call for debate. The chief business of this week was to take the concluding stages of the Unemployment Insurance Bill, and the House has also discussed the votes for the Colonial Office, for the Mines Department, and for the Navy's new ship building programme. Minor bills of medical interest have been advanced in both Houses. The Therapeutic Substances Bill has been read a third time in the Commons.

On July 27th the Medical Committee of the House of Commons met a deputation from the Medical Practitioners' Union on the recent refusal of the Minister of Health to hear the views of the Union with regard to panel practice. The deputation said that nine tenths of the members of the Union were insurance practitioners, but Mr. Neville Chamberlain had declared that on subjects connected with the panel he could only confer with the Panel Committees. Some members of the Parliamentary Medical Committee thought that there was much to be said for the contention of the Medical Practitioners' Union that the Panel Committees largely consisted of men to whom National Health Insurance work was only part of their practices, whereas the Union largely represented whole time insurance practitioners. The Medical Committee promised to consider the representations, and has forwarded a resolution on the matter to Mr. Neville Chamberlain.

Sir Richard Luce raised the question of the R.A.M.C., and explained the present position between the British Medical Association and the Government, which is stated in an annotation on page 224. It was understood that only two applicants for commissions had come forward at the current examinations for the R.A.M.C. The Committee determined to keep the question to the front. The War Office is reported to keep the pathetic with the claims advanced on behalf of the R.A.M.C., but there are Treasury objections to the expenditure involved, and the matter has gone to the Cabinet for decision. The Medical Committee also considered the Indian Medical Service, and was informed that changes were believed to be contemplated which would, to a large extent, remove the difficulties which stood in the way of obtaining British recruits for the service.

The Committee was informed that the estimates for the Ministry of Health were not likely to be discussed this year partly because several commissions and committees on public health topics had not reported. A discussion followed on the demand for the teaching of birth control in maternity clinics, a demand which a non-party deputation was to put before Mr. Neville Chamberlain that day. The Parliamentary Medical Committee agreed that the demand raised ethical questions more important than the medical and the general opinion of the medical members present was that there should be a thorough inquiry by departmental committee or otherwise into the implications of the proposal to give such instructions in clinics.

The third reading of the Surrey County Council Bill and the second reading of the Bethlem Hospital Bill were moved on July 28th but objection was taken to both. Dr. Fiemantle had given notice of opposition to the Surrey County Council Bill in regard to a clause in which the county virtually resigned to the medical officers of urban districts the inspection of maternity homes in such areas. Dr. Haden Guest gave notice of opposition to the Bethlem Hospital Bill on the ground that part of the site of the hospital should be reserved as an open space.

Therapeutic Substances Bill

In Committee on the Therapeutic Substances Bill Commander Keworth said that the bill was to apply to therapeutic substances specified in the schedule and also to any other therapeutic substances which might be added to the schedule by regulations. He thought that the power of adding to the schedule by regulations if given to Government departments was liable to abuse and asked why the Ministry of Health did not put in a complete list of the chemicals which it proposed to control. Sir Kingsley Wood said it would be unwise to bring in a new bill for every new remedy that might be discovered. All regulations that would give adequate protection. He did not think however that Parliament would be anxious to interfere in a matter in which the Ministry of Health had been largely guided by the Medical Council. The bill was founded on a recommendation from the appropriate branch of the League of Nations which had found that it was necessary in dealing with these substances that in all countries proper regulations should be laid down. British standards in respect of chemicals were very high but it was only fair to those who were manufacturing the substances up to the proper standard that they should be protected.

Dr. Drummond Shiels strongly supported keeping the bill open for the possible addition of other substances. He thought there were omissions in the schedule as it stood and pointed out that the United States Pharmacopoeia required criminal indications and its preparations to be standardized.

The clause was added to the bill as it was that imposing restrictions on the importation of therapeutic substances. In the clause moved to leave out Commissioners of Customs and Excise and to insert instead Licensing Authority. This change was in accordance with representations from the Medical Practitioners' Union that the substances should not be tested by the Commissioners of Customs and Excise but by the Licensing Authority to be established by the bill. The authority would have the assistance of Dr. Watts who had had a similar amendment down and allowed to pass without effect. If the clause were in a few months to obtain in large quantities from Mr. Herbert Williams a list of the substances which they hoped to import.

Dr. Watts who had had a similar amendment down and allowed to pass without effect. If the clause were in a few months to obtain in large quantities from Mr. Herbert Williams a list of the substances which they hoped to import. Sir Kingsley Wood then moved an amendment to make it clear that in the case of a foreign serum which was not manufactured in this country it must conform to such standards of strength and purity as might be prescribed or if there were no such standard it must conform to the regulations on quality and purity which applied to substances of the same class. Any Spahlinger serum imported would be required to conform to such regulations in regard to quality and purity as applied to such Spahlinger serum was prepared from toxic constituents. If the proper care in its preparation might be contaminated by anthrax tests to be used by a number of practitioners throughout the country. He was anxious that no substance should be prevented from being properly tested in this country should be prevented by terms of a suggested alternative amendment. He read out the amendment met Dr. Shiels's case. The whole object of the bill would go if the examination of a therapeutic substance could be avoided by sending it to a medical practitioner. But another objection declared that nothing in the bill should apply to the preparation by a medical practitioner for and at the request of applied if prepared for an individual patient. He thought the medical practitioners of the country were satisfied with the proviso. On this assurance the amendment proposed by Sir Kingsley Wood was accepted.

On the clause dealing with the constitution of the Joint Advisory Committee Sir Kingsley Wood moved to add, "no member appointed by the British Medical Association." He said he moved this in response to the suggestion that medical practitioners generally should have some representation on this body. The British Medical Association covered all parts of the kingdom and was representative. The addition would add to the strength of the committee and the Government gladly responded to the suggestion. Dr. Watts moved to add also one member appointed by the Royal College of Surgeons of England and one appointed by the Royal College of Physicians of London. He said he could not understand why the Council of the Pharmaceutical Society or the Council of the Institute of Chemical Engineers could not be represented by the Council of the Pharmaceutical Society. Sir Kingsley Wood said he thought most members would agree that it was helpful for a representative of the Pharmaceutical Society to be engaged on an inquiry of this kind. He could not accept Dr. Watts's amendment because if he did so he would immediately be confronted by suggestions from Scotland and possibly from Northern Ireland which would make the Advisory Committee unmanageable.

The amendment was negatived. Sir Kingsley Wood then accepted an amendment to the clause dealing with power to make regulations. He declared that regulations made by the Minister should be modified or annulled if after twenty-one days praying for such a change the House of Parliament without further change. On July 28th in the House of Lords the Commons amendment to the Therapeutic Substances Bill were considered. On the motion of Viscount Gize all the amendments were accepted with a slight modification to that which provided that a regulation should be modified or annulled following the voting of an address by either House of Parliament.

Diseases of Animals Bill

On July 28th the House of Commons read the Diseases of Animals Bill a third time. Previously on the report stage Mr. Alexander had renewed his protest against the use for human food of any part of the carcasses of animals slaughtered as tuberculous.

culous. He moved an amendment to provide that compensation should only be paid when no part of the slaughtered animal was so used. He was afraid that often the hind parts of a tuberculous carcass were sold for making up such dishes as sausages for sale at a cheap price. There was no provision for protection against the use of the blood from the animal. In slaughterhouses the blood from the various beasts mingled in one vessel and was used for food purposes. Through all the agencies, national local and voluntary £12 000 000 to £14 000 000 a year was paid in trying to cure tuberculosis. By the bill £67 500 a year was being voted for its prevention more money should be devoted to that purpose.

Mr Buchanan said that in Scotland as in England the blood of animals was more and more used in the preparation of food.

The Minister of Agriculture Mr Wood said the animals that would be slaughtered as tuberculous under the bill were only a portion of the tuberculous carcasses discovered after slaughter to be diseased. After consultation with the Ministry of Health he was entitled to say that both scientific and medical opinion the world over held that the total condemnation of a carcass on evidence of local tuberculosis was needless and wasteful. Both Holland and Denmark followed the same practice as this country. He would go some way, however, to meet Mr Alexander and would promise to issue an amendment to the Tuberculosis Order providing that the local authority's inspector, when acting under the Order, should send a notice in writing to the medical officer of health of his intention to slaughter an animal under the Order, giving time and place and that the veterinary officer should not remove the carcass or offal from the premises until he had received from the medical officer of health a certificate saying whether the carcass or any part of it might be disposed of for human consumption.

Dr Shells in supporting Mr Alexander's amendment said that with a local tuberculous lesion there might be a lymphatic spread of undetermined extent and it was difficult to delimit the exact portion which might be used for human food. In a cow with tuberculosis of the udder there would certainly be secondary infection and toxic absorption. The thorough cooking of meat was a great safeguard but sausages were often cooked very superficially and minced meat—a kind universally used—was often very lightly cooked. Vendors sending animals for slaughter, when doubtful about the meat often avoided the large towns. He urged the Minister to carry on the work of ridding the country of tuberculosis a great part of which, varying from 35 to 50 per cent of all cases of bovine tuberculosis was due to the bovine tubercle.

Sir Richard Luce thought that Dr Shells had perhaps given an exaggerated view of the danger of tubercle. There was a large consensus of opinion in the medical profession which held that there was practically no danger in the use of a large portion of the carcasses of animals infected only by local tuberculous disease. In such cases there was practically no risk of blood infection. Some years ago a Royal Commission had decided there was no danger in the great majority of cases.

Answering an observation by Mr Palin the Minister of Agriculture said that under the existing Order no part of the carcass of an animal which had tuberculosis with emaciation was allowed to pass for human consumption. Mr Palin retorted that there were people who traded in this suspicious meat.

Dr Vernon Davies said that if members were to take up the attitude that if the blood stream carried certain toxins then the carcass should be destroyed they were opening a big question. It would mean that an animal could not be killed for human consumption unless it had a clean bill of health. Few animals in the country could pass such a test.

Mr Alexander, in view of the assurance given by Mr Wood, withdrew his amendment.

In an answer given later, the Minister of Health stated that having considered the question of the slaughter of animals for human consumption, he did not think that any useful purpose would be served by setting up a committee of experts to hold an inquiry into the question.

Insurance Contributions Anticipated Surplus

On the third reading of the Contributory Pensions Bill Sir Robert Horne renewed his suggestion that the Government should reduce the National Health Insurance contributions of employer and employee by a penny each per week. He estimated that the quinquennial investigation now finishing would reveal £60 000 000 available for the reserves which the actuaries desired and that something like £40 000 000 of surplus would be declared by the various approved societies. He contended that the reduction which he proposed in contributions would still leave the fund solvent and yield surpluses for extra benefits.

Mr Neville Chamberlain said that until the report of the Royal Commission on National Health Insurance had been received the Ministry of Health was not in a position to say what surplus was likely or whether there would be any surplus at all. It was therefore impossible to contemplate at present any reduction in the rate of contributions. Certain rather disquieting features of which the Ministry of Health had information made it very unlikely that in future quinquennial periods the surpluses would be anything like what they had been. At present the annual charge of about £2,000 000 for doctors and drugs was being paid from an accumulated balance but when that balance came to an end in 1926 the charge of £2,000 000 would then fall on the contributions. Even if other factors remained the same a year later the charge would be reduced thereby to £3 000 000. Rather disquieting features arose out of the rate of dismissal unemployment benefit and the existence of so much unemployment meant a reduction in contribution surplus which would have its effect upon the gross surplus.

The Contributory Pensions Bill was then read a third time without a division.

Tropical Medicine

Mr Omsby Gore Under Secretary for Colonial Affairs replying on the debate on the Colonial Office vote in the House of Commons on July 21st referred to the importance of medical research in the overseas Dominions, it was the doctor as much as the engineer that made Panama. The most urgent thing, certainly as regarded the development of all tropical countries—tropical Australia as well as tropical Africa—was the further work in the combating of tropical disease, and in working out of all the various problems connected with the life of the different races in tropical Dominions. It was he said a fallacy to suppose that it was only the white man who found it difficult to live in the tropics. In East Africa the birth rate was extremely high but the infant mortality was appalling. So far as he could get figures—and it was very difficult to do so in connexion with tropical administration because no adequate staff or statistics existed—in many of the native areas and districts remote from civilized life the mortality in the first year of life was anything from 400 to 500 per 1 000 children born. In facing these questions great care should be taken to be thoroughly objective to be thoroughly determined to face the facts to do the best possible to make the thing work to help and not to cramp. Constructive effort was equally needed in West and East Africa. He hoped shortly to visit West Africa. He was convinced that the progress of the negro races of Africa was bound up with their ability and their increasing ability to make use of the enormous resources of the country in which they lived. It was only by then becoming physically mentally and morally more capable of doing that that they would progress to a higher civilization of their own.

Several of the previous speakers referred to the need for medical work and medical research in the tropics. Mr Thomas urged that attention should be given to combating venereal disease. Mr Lunn recounted the work of the Liverpool School of Tropical Medicine and hoped the Colonial Office would make more use of its services.

Spahlinger Treatment for Tuberculosis—The group of medical members of Parliament who have been negotiating with M. Spahlinger announce that his arrangements with the Bovine Tuberculosis Committee at Crewe for a test of his vaccine for bovine tuberculosis on animals are practically complete. All his energies will be required for three months in preparation for this test. He will then be free to proceed at once with the completion of his twenty-two serums and vaccines for the cure and immunization of human beings and will devote himself and his staff at Geneva to the production of these of which about one third are now in existence. Unofficially it is added that M. Spahlinger has given this group of medical members of Parliament a written assurance that he will provide the serums and vaccines for human tuberculosis in sufficient quantities if funds are provided and it is understood that these will be forthcoming. The test of the products if made would be in England, and it is possible that the serums and vaccines may be produced here under supervision.

Health of School Children—In Committee of the whole House on the Board of Education estimates Mr H. A. L. Fisher asked whether the reports received by the Board of Education from its inspectors about the health of children in the schools were satisfactory. Had the improvement in the years immediately preceding and during the war been maintained? Very largely owing to the skill, energy and devotion of the school medical services the health of the school population had been greatly improved but there were still great defects to be remedied. The last report of the Board of Education stated that 200 000 mentally or physically defective children had not been given places in special schools. Owing to the great expense of special schools this deficiency could not be made up immediately but he hoped that education authorities might receive aid from private benefactors to this end. Dr Haden Guest said he would like to see all schools including private schools inspected by inspectors of the Board of Education not only from the educational point of view but medically. At present the physical health and well-being of the child in the elementary school was in some respects better looked after than that of the child in certain public schools. By purely administrative means the Board of Education could extend its inspection to all schools. He maintained that, judged by records of weight, height and growth 10 per cent of the children attending elementary schools were not adequately fed. It should be the business of the medical officer and the school inspector of each school to make a list of children who would benefit by increased nourishment and it ought to be part of the school curriculum to provide school meals which could either be paid for or given free for all the children in the school who were not getting the amount of food required. Dr Graham Little drew attention to what he thought the meagre provision in the estimates for the needs of the University of London but the Deputy Chairman pointed out that this arose on another vote. The Duchess of Athol, Parliamentary Secretary Board of Education said that in 1923 it was found that 36.7 per cent of the children in the schools inspected had defects of one kind or another, compared with 44 per cent in 1894. In the same year there were 5.9 per cent who had been diagnosed as undernourished as compared with 12.8 per cent in 1913. The number of children suffering from defective hearing was only half of that ten years ago. Local authorities were well aware of their duty of providing meals for necessitous children and the Board had been pressing for the provision of meals at school canteens for non-necessitous children especially where the children had to go two or three miles to school. The estimate of £25,652,754 for the Board of Education was approved.

Mental Deficiency—On July 27th Mr Hurd who asked what official expert investigation into the effect of mental deficiency upon the national life was now in progress was told by Sir Kingsley Wood that the Board of Control in conjunction with the Board of Education was about to undertake an inquiry into the incidence of mental deficiency. An inspector of the Board of Control had been detailed to carry out the investigation. It was estimated that the inquiry would take at least a year to complete and it was not anticipated that any report would be available before that time.

General Nursing Council—The Select Committee on the General Nursing Council has sat twice to hear witnesses. After taking evidence on July 28th the Committee sat again on the following day to prepare its report. It has still to take evidence from witnesses now abroad but hopes to report before the next session. Witnesses already heard include Mr J. G. Brael, C.B. (Ministry of Health), Sir Wilmot Herringham (Chairman of the General Nursing Council), Mrs Bedford Leach (Member of the Council), Mrs Herbert (sister tutor St George's in the 1st), Miss Haywood (Waltham town), Miss Philpott (High Wycombe), Miss Lucy Grant Duff (Herbert Paterson C.B.I. (medical honorary secretary of the B.N.A.), Miss Maud McCallum (honorary secretary Professional Union of Trained Nurses) and Miss Du Sautoy (member of the General Nursing Council).

Poison Gas—On July 27th Mr Austen Chamberlain Foreign Secretary told Colonel England that at the Arms Traffic Conference at Geneva last May under the auspices of the League of Nations a protocol was drawn up prohibiting the use of chemical or bacteriological methods of warfare. Twenty-five States had signed the protocol which remained open for accession by other Powers. It would come into force immediately on ratification by between those States which had ratified. On July 28th Sir L. Worthington Evans informed Mr Thurtle that poison gas was being manufactured only on a very small scale for experimental purposes.

Training in Cleanliness—On July 27th Sir C. Oman asked the Minister of Health whether considering the high importance of perfect cleanliness in casual wards both to the public and to the inmates of the wards he would authorize the insertion of eight hours work in washing, scrubbing and cleaning as one of the alternative prescribed tasks for inmates passing through such wards. Mr Neville Chamberlain replied that he was prepared to consider any application made by a board of guardians in this sense and had already approved a task of this kind in eight cases.

Food Preservatives—Sir Kingsley Wood informed Mr Clynes on July 28th that the recommendations of the Departmental Committee on Food Preservatives had in view that the use of preservatives could be avoided partly by the adoption of greater care including more cleanly methods in the preparation, transport and distribution of food and partly by the increased use of cold storage. A large amount of cold storage in the country was not being used. The Minister of Health recognized that adequate accommodation was not available everywhere but anticipated that the prospect of restrictions on the use of chemical preservatives would result in the increased use of the existing accommodation and the provision of such further accommodation as might be necessary. This was one of the reasons for allowing an interval before the regulations became operative. Every opportunity had been given to the trades affected to present their views on the proposed regulations. Mr Chamberlain in an answer to Mr Lowth said the trade opposition to the prohibition of preservatives in food had in some cases taken the form of an allegation that the prohibition would increase the cost of the food. It was impossible definitely to prove or rebut this but he did not think that there was adequate ground for supposing that the prohibition of preservatives would cause an increase in prices if a sufficient period was allowed for the changes. Replying to Mr Sutton Mr Chamberlain said the physiological effect of the use of preservatives in food was considered by the recent Departmental Committee on Preservatives and Colouring Matters in Food which included distinguished physiologists in no way connected with the Government or the trades concerned. He had an offer from one large firm interested in the production of boron compounds to co-operate in a further inquiry into the effect of the consumption of small quantities of such compounds in human food but he did not think it necessary to institute any further inquiry.

Tuberculosis in Service Pensioners—The Parliamentary Secretary to the Ministry of Pensions has stated in reply to questions that the earlier records of the Pensions Ministry did not distinguish pulmonary tuberculosis from other chest complaints. During the last five and a half years however approximately 14,000 cases had been admitted to compensation in respect of disablement arising from this disease. The number of men in receipt of pensions for pulmonary tuberculosis at the present time was approximately 36,500. About 10,000 men were in receipt of pensions at the rate of 100 per cent in respect of total disablement due to pulmonary tuberculosis but how many of these fell under the special arrangements for men who had completed a course of sanatorium treatment could not be stated.

Notes in Brief

The Voluntary Hospitals Commission is understood to have tendered its report.

Though no date has been fixed for the constitution of the Indian Public Services Commission it will be set up without avoidable delay.

The Committee on Child Adoption has presented to Parliament a further report containing suggestions for a draft bill. The Dangerous Drugs Bill was read a second time in the House of Lords on July 28th.

Obituary

HARRY DRINKWATER, M.D., M.Sc. (Hon.),
Wrexham

We regret to record the death of Dr Harry Drinkwater at his residence in Wrexham, on July 11th. He was 70 years of age and received his medical education in Durham and Edinburgh. He took the diploma M.R.C.S. Eng. in 1877 and graduated M.B., C.M. in the same year. When he became M.D. in 1885 he was awarded a gold medal. In 1924 he received the honorary degree of M.Sc. from the University of Wales. After practising in Sunderland for a short time he entered into partnership with the late Dr Lyton Jones at Wrexham, where he continued to practise until his death. He was president of the North Wales Branch of the British Medical Association from 1917 to 1922, and was a justice of the peace for the borough of Wrexham.

Dr Drinkwater possessed considerable artistic ability, and the National Museum in Cardiff contains many botanical drawings by him. He contributed numerous papers to various societies, and was the author of *A Primer of Dietetics*, and also of *Fifty Years of Medical Progress 1877-1922*, published in 1924. For the last twenty years he had been engaged in compiling a medical biography. Dr Drinkwater first married Miss Ellen Percella Reed who died in 1901 leaving three children, one of whom, Dr H. Drinkwater, is a specialist to several London hospitals. Dr Drinkwater's second wife, who is a medical graduate, was one of the first women to take the D.P.H. degree in Liverpool, and was awarded the O.B.L. for her services at the Hospital for Military Invalids in Malta during the war. She is a justice of the peace for the county of Denbigh.

A colleague writes: By the death of Dr Harry Drinkwater North Wales has lost one of its oldest and most respected medical practitioners. He had not been in good health for some considerable time, but was in fairly active practice until the day of his death which was brought about by an attack of angina pectoris. Many in Wrexham will have lost a true friend and helper. He was always a student and a great reader and thinker, one of the most methodical men that I ever knew. He was one might say, wedded to his profession, and a continual source of inspiration to his young colleagues, trying to instil into them the value of reading, methodical examination of patients, and the collecting of cases, rare and common, upon which to build priceless information which would yield great results in practice. This he always did throughout his life, and the variety and originality of his communications to learned societies will always be a source of amusement to his friends. He was a prolific writer, and could always be depended upon to read interesting papers at the local meetings. He would not accept any statement without sifting the facts, yet he was not dogmatic in his own statements. He was the embodiment of professional etiquette and an example to all. One of his favourite sayings was "Scepticism is the highest virtue and blind faith the one unpardonable sin." It is not for his profound knowledge of his profession that Dr Drinkwater will be remembered by his colleagues, but for his kindly nature, his deep sympathy, and cheerful outlook upon life. He was laid to rest on a beautiful sunny afternoon, surrounded by a host of friends, and amidst a wealth of the flowers that he loved so well.

HAROLD CLIFFORD, M.B., F.R.C.S. Edin.,
Surgeon to St Mary's Hospitals Manchester; Surgeon for Women
Salford Royal Hospital

The death of Dr Harold Clifford came as a great shock to his numerous friends. It is true that his health had not been good for some three or four years, but there had been nothing very definite. In April last he had a sudden loss of vision, which was due to an intracranial haemorrhage. But towards the end of June his eyesight had shown much improvement, his general health was better, and he was in good spirits—he had even arranged to leave for South America for a voyage on July 9th. On July 5th he became ill with what appeared to be a gastric disturbance. Late

on July 6th he became restless, and he died early on Tuesday morning July 7th, from a severe cerebral haemorrhage.

Dr Clifford was well known in Manchester and occupied many important posts. He received his medical education at University College Hospital, London, and graduated M.B. Lond. in 1899, and took the diploma of I.R.C.S.I. in 1905. In 1901 he was appointed resident obstetric house-surgeon to St Mary's Hospital, Manchester. He had previously been house physician at University College Hospital, and medical officer to the cancer wing of the Middlesex Hospital. His progress in Manchester was steady, in 1912 he became assistant surgeon and in 1919 surgeon to St Mary's Hospital. He was at one time surgeon to the Northern Hospital for Women and Children, Manchester, and latterly surgeon for women to the Salford Royal Hospital. He was also a lecturer on clinical obstetrics in the University of Manchester. He was a member of the North of England Obstetrical and Gynaecological Society for many years, and held the office of president in 1922. He was widely known as a wise adviser and a skilful surgeon in his own department, and had a large practice.

Dr Clifford was handicapped for the struggle of life by ill health. A delicate infancy left him with rather a poor physique, but he had in him a very active brain, keen judgment, and a cheerful and genial disposition. He gave an example of what could be accomplished by a courageous and resolute spirit in a frail body. He was never fitted for any form of severe physical exercise, and the recreation of outdoor games or any kind of sport was barred to him. It was his lack of stamina which determined his mode of life, and yet one wonders whether, if his lot had been cast in healthier surroundings, he might not have been stronger. As it was, he was content with the life of a town dweller. He was a bachelor and lived in the centre of the city. He found his pleasure in his work during the day, and in reading and in the society of his friends in the evening. He had a charm of personality which brought him many friends and endeared him to his patients. He was an excellent host and seemed to be happiest when he was entertaining a small circle of friends. His manner was always quiet, and he had a keen sense of humour.

Although he held so many important appointments and had attained to a position of distinction in his special department he never sought publicity—on the contrary he did all in his power to avoid it, and preferred to remain in the background. His death has been keenly felt by all who knew him well, and he will be much missed by a large circle of friends and, perhaps most of all, by his colleagues.

A. D.

ROBERT MILNE BEATON, M.B., C.M.,

Late Chairman London Water Examination Committee

We much regret to record the death of Dr. Robert Milne Beaton at his residence in Highbury, on July 21st at the age of 71. Dr. Beaton received his medical education at Aberdeen and Guy's Hospital, graduating M.B., C.M. in 1883. He was a member of the Council of the British Medical Association from 1912 to 1914, a member of the Executive Committee of the St. Pancras and Islington Division from 1911 to 1912, chairman in 1915, and representative from 1913 to 1916. He was a member of the Executive Committee of the City Division in 1919 and 1920. He took a very active part in the National Insurance controversy of 1911-13, and his eloquence, combined with his evident sincerity, made him a very great influence in the Representative Body and Council as well as in his Division.

Sir Alexander Houston writes

On July 25th at Hampstead Cemetery I had the mournful privilege of paying a last tribute of respect to the memory of my dear old friend, Dr. Robert Milne Beaton.

Dr. Beaton was the first chairman of the Water Examination Committee of the Metropolitan Water Board and Londoners owe him a deep debt of gratitude for the enthusiastic way in which he threw himself into the task of securing the safety of the supply to the metropolis. He served seventeen years on that committee (seven as chairman), and the splendid work he did will never be forgotten. Dr. Beaton was the staunchest advocate of purity, and at

heart probably cherished the hope of a revival of the so-called London County Council Welsh Water Scheme. At all events he never tired of saying, "I want clean water, not cleaned water." Failing the provision of a virgin source of supply, he threw himself heart and soul into the task of perfecting purification safeguards. There can be no shadow of doubt that Dr. Beaton's influence is still felt in the affairs of the Board. His hatred of sham and subterfuges, his suspicion of compromises, his passionate love of truth, and the transparent honesty of his motives were bound to influence all those with whom he came into contact.

Some of the other positions held by him were Representative of the St. Pancras Borough Council, 1903-6; representative of the London County Council, 1906-22; member of the Works and Stores Committee, 1904-5, and June, 1911, to May, 1922; Finance Committee, June, 1907, to June, 1913; General Purposes Committee, 1910-13, and (as already stated) Water Examination Committee, June, 1905, to June, 1922 (Metropolitan Water Board).

Dr. Beaton had a breezy personality, he was bubbling over with good humour, and his smile and laugh were infectious and well-nigh irresistible. The kindness of his heart was proverbial, and his goodness to the poor widely known. He will be sorely missed, by no one more deeply and sincerely than his old friend and admirer who sorrowfully writes these notes.

A. BLAYNEY, F.R.C.S.I.,

Surgeon to the Mater Misericordiae Hospital, Assistant Professor of Surgery, University College (N.U.I.)

We regret to announce the death of Mr. A. J. McEuley Blayney, surgeon to the Mater Misericordiae Hospital, Dublin. For some time past Mr. Blayney had been residing at Howth to convalesce from an attack of influenza. He came into Dublin every day, however, and attended to his extensive practice. A keen golfer, he was walking across the Portmarnock links with his family, when he was seen to stumble and fall. Dr. Cecil Robinson, who happened to be playing close by at the time, hurried to his assistance, but, in spite of all his efforts, Mr. Blayney never recovered consciousness. There was an immediate cessation of all the matches that were being played on the links, and the body was subsequently removed in an ambulance to 15, Merion Square, Dublin. Mr. Blayney was a frequent visitor to the grounds of the Portmarnock Club, and was a member of the committee, and it was his great interest in golf which had brought him to the links although he was not playing himself. The deceased surgeon leaves a widow and four children. Mr. Blayney was the son of Mr. Alexander Blayney, a ship owner, of Cushendall, co. Antrim, and was born in 1869. After a distinguished career at St. Malachy's College, Belfast, he went to the Catholic University, Dublin, where it was early seen that his natural bent was in the direction of surgery. After a brilliant academic career he took the M.B. and M.A. degrees, and subsequently became a Fellow of the Royal College of Surgeons. He had been surgeon to the Mater Misericordiae Hospital, a position which he held for many years, he was extern examiner in surgery at Dublin University and an examiner in biology at the Royal College of Surgeons, Ireland, and he also acted for a time as an examiner in surgery for the same body. He had been professor of biology and assistant professor of surgery at University College, Dublin, since 1909, and was visiting surgeon to Marinooth College, Blayney, with all his professional training and vast surgical experience, did not contribute as much as might be expected to the literature of surgery. This was due almost entirely to the fact that when he had done his teaching and operative work there remained for him no time for writing. Amongst his contributions to the BRITISH MEDICAL JOURNAL were "Removals of great length of intestine" and "Four cases of removal of Grasserian ganglion for epileptiform neuralgia." He was for many years a member of the Council of the Royal College of Surgeons in Ireland and his election for the presidency at an early date was assured. He was also a member of the British Medical Association. During the great war he served in France, where he did excellent work.

We regret to have to record the death, on July 27th, after a long illness, of Mr. WILLIAM NEWTON SHANNON, who for some ten years had acted as Parliamentary Correspondent of the *British Medical Journal*. He was born at Mistley, Essex, and received his early training with the *East Anglian Daily Times*. In 1897 he was appointed Lohia correspondent of the National Press Agency, and eight years later succeeded Sir Arthur Spurgeon as editor of the Agency. Afterwards he became a partner in the Central Press Agency. He had many friends both within and without the profession of journalism, and for nearly twenty years was honorary secretary of the Whitefriars Club, in which he took a great interest. He had recently been concerned in the appeal of the Westminster Hospital for funds to reconstitute the fabric, for these services he received the thanks of the committee and was made a governor of the hospital. He showed great interest in his work for this journal, and on several occasions gave the Association the advantage of his wide acquaintance with parliamentary procedure.

Medico-Legal.

CLAIM AGAINST A MEDICAL MAN WITHDRAWN

The claim of James Higgins, an employee in the tramway department of the Manchester Corporation against Dr. R. G. Clements (Manchester) for alleged negligent treatment was withdrawn before the conclusion of the defendants' case at Manchester Assizes on July 15th. Mr. Justice Fraser, in directing the jury to return a verdict for the defendant with costs, said that there was not the slightest foundation for any suggestion of negligence against the defendant.

Mr. N. J. Laski and Mr. Barry appeared for the plaintiff and Mr. T. Eastham, K.C. and Viscount Keregh for the defendant.

The plaintiff's case was that in March 1922 Dr. Clements certified him to be suffering from rheumatoid arthritis and conjunctivitis and in January 1924 he consulted the doctor again but did not mention his eyes until February 12th. On February 15th Dr. Clements noted that the rheumatic pains had gone but that the eyes were worse examination showing phlogia conjunctivitis, choroiditis and ulceration. When Higgins walked into the surgery Dr. Clements asked him what was the matter with his eyes and Higgins replied, "I am not bothering about my eyes. I can see as well as ever but the pain in my back is very bad and almost stops me from walking." Dr. Clements looked at the plaintiff's eyes and his assistant Dr. Scott put him in a chair, put one hand on his shoulder and took a little brush and flicked something from a box into the plaintiff's right eye. The pain was instantaneus and intense and Higgins screamed in agony. The alleged consequence of the administration of the powder was that the plaintiff's eyesight was so damaged that he could no longer follow his former employment and he was now engaged by the corporation to take charge of a small telephone switchboard—a job ordinarily done by a boy. On February 28th Dr. Clements made a note thatritis had developed and the following day Higgins was admitted to hospital where he was treated by Dr. Ware.

For the defence a number of eye specialists were called who all agreed that it was not within the bounds of possibility that the condition of the plaintiff could have been caused by the calomel treatment administered by the defendant. The inflammation was entirely due to the presence in the plaintiff's body of a focus of poisoning which affected different parts of his body at different times. This accounted for the variations in the plaintiff's vision that had been noted and which were in no sense unusual. In every respect the case was a normal one.

Before the medical evidence for the defence was completed plaintiff's counsel and Dr. Clements's professional career was the issue in the case and every regard should be had to that. The plaintiff was satisfied that he no longer had a case and therefore no hazard should be allowed to intervene. The plaintiff withdrew every aspersion of any kind against the competence of the defendant. The proceedings had been brought under a misconception of the facts and they were now satisfied that no blame attached to Dr. Clements.

DAMAGES FOR DEATH DUE TO MOTOR COLLISION

In an action in the King's Bench Division before Mr. Justice Avey and a special jury on July 17th damages to the total amount of £12,000 were awarded to the widow of Dr. C. J. Pentland and her two sons. Dr. Pentland had practised in Ireland but in 1920 he acquired a practice in Gower Street paying £2,000 for the house and practice and spending a further sum of £2,000 on the property. For the last four years his income was £2,000 a year. On December 21st 1924 Dr. Pentland was killed while standing on the doorstep of his house in Gower Street by a motor lorry belonging to Messrs. Dewhurst butchers and a motor car owned by Messrs. Cleeve blouse manufacturers Great Portland Street coming in collision. Dr. Pentland was crushed against the wall and killed instantly. His practice had since been sold for £3,600. The jury found that the death of Dr. Pentland was due to the negligence of both defendants and awarded the widow £8,000 and the children £2,000 each the latter sums to be paid into court and invested by the Master on the children's behalf.

Universities and Colleges

UNIVERSITY OF OXFORD

At a congregation held on July 25th the following medical degrees were conferred:

B.M.—P. B. Boardman 1 C. Whitchall Cooke T. I. Lyves C. L. Tolst.

UNIVERSITY OF LONDON

A meeting of the Senate was held on July 22nd the Vice-Chancellor (Professor J. A. Gardner Litt D) being in the chair. The title of Reader in Medical Radiology in the University was conferred on Mr. J. C. Thomson M.A. M.B. Ch.B. F.R.C.S. in respect of the post held by him at the London School of Hygiene and Tropical Medicine.

The Committee of the Medical Members of the Senate have elected Sir Wilfrid P. Herrington, M.A. M.D., F.R.C.P. to be the chairman for the year 1925-26.

June Matriculation

At the June matriculation examination of the University of London there were 116 successful candidates in the first division and 919 in the second division. In addition supplementary certificates were gained by 52 candidates in Latin 3 in mathematics (more advanced) 2 in chemistry 1 in heat light and sound and 1 in Spanish. Six candidates took the junior certificate in English.

UNIVERSITY COLLEGE

The following awards have been made in the Faculty of Medical Sciences:

Cliff Memorial Prize for proficiency in anatomy physiology pharmacology and chemistry R. M. Barrett
Gold medal for anatomy (senior class) Mary J. Sharp
Histology and embryology (prize equivalent to silver medal) Andrew Z. Belcher and Margaret D. Wright (equal)
Silver medal for organic and applied chemistry (general course) D. I. Osborn
Gold medal for physiology (senior class) T. R. Innes
Silver medal for pharmacology (general course) H. L. James

UNIVERSITY OF EDINBURGH

A GRADUATION ceremony was held in the M. J. Hall on July 24th. The following degrees were conferred:

M.D.—A. Barlow (E. Hunter S. C. Clatter L. S. I. Davidson (an absent) H. B. Dicks R. N. Gibson
Torrairie K. A. J. Martin S. I. Bown S. (an absent) May D. Straker B. C.

Ch.M.—T. B. Mount
I.D.—Dr. I. Dautchando for thesis on "The acid base equilibrium of the blood in electrolytic states."

M.B. Ch.B.—J. Alexander Christina W. Alton F. S. Anderson C. M. Under on M. D. S. Arnott P. Ayres J. D. W. Barlow J. M. Bassett D. Bell H. I. Berwickhout J. C. Bogle Eleanor B. Bone G. I. Boyd C. C. Brander I. Brown Anna M. Brown J. Brown J. S. Brown W. M. Brown J. Bryant H. Chang J. L. Chisholm R. V. Christie R. Clair
I. G. Collins J. B. Colquhoun I. Connolly J. M. Davidson H. N. Davies I. I. G. H. Duncan M. I. Elrick I. L. Farrow
Charlotte I. Fisher C. C. Fletcher Mary G. F. F. J. A. Fullerton A. N. Gardner Margaret S. Gibbo
A. A. Gibbons A. Mac. Gillespie C. C. Grannum Jessie Griffin W. Harp
F. J. C. Hewitt J. F. Hinkson
L. I. Howie (in absentia) C. L. H.
F. J. Jones Marjory I. D. Kelly M. Kelman Betty W. Kennedy
F. G. Kerr J. B. Jung S. J. G. Kinnmonth H. S. Kissenisky
W. F. Knowles D. I. Lambert R. Lees W. M. Lloyd C. C. Love
J. M. Crie O. J. S. Macdonald W. I. Macdonald D. Macfarlane
J. T. M. Casson J. J. G. Macgregor B. C. Mackay J. Mackay
Margaret S. Macleay Mary L. M. Laren Christina J. M. Lees
A. Macleod Annie F. M. Lood Isabella Macleod J. Macleod
D. Macmillan J. G. Macmillan I. C.
M. D. Macqueen H. M. McKee
I. and W. Marshall W. R. Martin

De la R. van der Merwe A. L. Miller Margaret M. D. Millar
A. J. Milne C. E. Mitchell K. T. Mow W. A. Morrison J. Morton
H. van R. Mostert W. T. F. Muir D. A. Murray S. I. C. Nairn
S. G. Narasimha Beatrice M. Nicholson Elizabeth H. Munro
C. W. M. Paer on P. W. R. Petrie Hilda I. C. Paster C. H. Lipner
A. M. Porteous S. P. Pottinger I. Prentice A. M. R. Reekie
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J. A. Ross Margaret Sophia S. Sanderson R. H. Sanderson
A. E. M. Sandison Sophia Sash J. B. de C. M. Saunders
H. J. Schiller G. I. Scott W. F. Scott H. Selesnick W. V. Semple
Crispie Short A. I. Skinn W. B. Smellie A. H. Smith Dorothy
Smith R. W. Smith T. H. Stephens R. Stang C. M. Sturrock
J. S. Sutherland Jean Sutherland V. W. Sutherland Dorothy M.
Taylor A. Leasdale D. W. Thomson J. Thomson Irene M. H.
Tinker N. S. Turnbull A. B. Waller Alexandra A. Watson
A. O. Watkins J. M. Watt Dorothy Watterson B. P. Webster
L. B. Weyll J. White Janet Wilson A. S. W. W.

The following Fellowship prizes etc., were presented:

Cameron Prize in Practical Therapeutics Dr. R. M. Murray Professor of Pharmacology University of Utrecht for his important research in pharmacology particularly on investigations on the nerve
Memorial Fellowship A. D. in Physiology W. G. Miller
H. K. K. Chene Medal
Scholarship and Leslie Gold Medal W. J. A. Coldstream Allan
Fellowship in Clinical Medicine and Clinical Surgery J. G. Kinnmonth
Murchison Memorial Scholarship in Clinical Medicine S. E. Crossley

M Co in Graduate s and Medical Bur ardes. Hilla I C Hister Mount
 Scholarship in the Faculty of Physic. W I A Goldstream Buchanan
 Scholarship in Gynaecology. R W Smith James Scott Scholarship
 in Medicine. C McCrea Lander Brunton Prize in Pharmacology
 and Therapeutics. A J. Gilchrist Burns Prize in Anatomy and
 Surgery. Cunningham Comm Davis Prize H I Schiller
 Anniversary Gold Medal in Clinical Surgery. W I A Goldstream Scott H
 Memorial Medical Education of Women Prize and Dorothy Hiffman
 Memorial Prize. Hilla I C Hister Sir Robert Jones Prize in Ortho-
 pedic Surgery. A W Sanderson Latimer Prize in Clinical Surgery.
 Thomson or Wellcome Medal and Prizes in the History of Medicine.
 A Haddon (a 22 m dal) B William (silver medal) Cunningham
 Memorial Medal and Prizes in Anatomy. C I H Francis Whiteside Bruce
 Lurney I I Hise

Awarded Gold medal for thesis	Commended for thesis
Highly commended for thesis	First Class Honours
Second Class Honours	

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

The twenty eight successful candidates (out of fifty eight entered) who passed the requisite examinations between March 30th and April 16th were admitted fellows on July 21st.

(Alexander L C J Averill C H Buckles I A C Burton
I N Comm L R D Castro W A Djansezian Doris C Gordon
W P I Gordon I V McK Hall R B Harv I W Hlinworth
N Kenn S Kimmear R H Jula C H Marshall I S Mayne
D S Middleton O O Lappa C N Reynolds I H Richards
D E Lo C R Sandford R Selby I McD S Inter Captain
J W van Rensin I M S A Wallace W H O Wood

The Scribes

TERRITORIAL DECORATION

The Territorial Decoration has been awarded to the following officers of the R.A.M.C. (1st) Tulent Colonel (Brevet Colonel) G. C. L. Simpson, O.B.E. and Majors A. A. Hingston and S. F. Linton.

Medical News.

THE sixth annual report of the Ministry of Health for the year ended March 31st, 1925, has been published by the Stationery Office and can be obtained through any bookseller (price 3s 6d). It deals, among other matters, with finance, Poor Law, and housing and town planning.

The council of the Institution of Electrical Engineers, which took a part in founding the Society of Radiographers in 1920, and has up to now nominated six out of the eighteen members of the society's council, has withdrawn its nominees and terminated the institution's connexion with the society. The council of the institution informs us that it has taken this action because the majority of the council of the Society of Radiographers have resolved upon certain alterations of the society's articles, with which the council of the institution is in disagreement as in the council's opinion these alterations will materially lower the professional status of non medically qualified radiographers.

The Fellowship of Medicine announces a special series of lectures on tuberculosis from October to December. From August 24th to September 5th there will be an intensive course in general medicine, surgery, and the special departments, with practical study in gynaecology and obstetrics, at the Queen Mary's Hospital, St. Mary's. The Serenus Hospital will hold an operative surgery course from September 7th onwards, and classes will be held four times weekly. The Brompton Hospital has arranged a course in pulmonary diseases from September 21st to October 3rd. There will be afternoon courses at the Brickfields Skin Hospital and the Infants Hospital from September 7th to 19th. At the Royal Westminster Hospital a course in eye diseases will be given from September 7th to 26th and an intensive course at the Westminster Hospital in general medicine and the specialties is announced for

THE climatological congress at Davos from August 16th to 22nd, will be divided into three main sections—a physico-meteorological, a biological, and a clinical. The subjects to be dealt with include the effect of climate on various diseases, the climatology of high mountains and the marine climates of Naples and of Holland. Professor Leonard Hill will give an address on the influence of sunshine and open air on health, and Sir Henry Gairdner will compare the effects of inland and marine treatment of surgical tuberculosis. Other subjects to be considered include heliotherapy in surgical diseases, adaptation to climate and to work on the high

mountains during the period of semile involution and the significance of the ozone in the atmosphere in relation to solar radiation

The *Gesundheitsfürsorge für das Kindesalter* is a new German periodical devoted to infant welfare. About eight numbers are to appear yearly at the price of 20 marks. The editors are Professors L. Dietrich and P. Pott of Berlin. The first number contains original articles by Professor von Pfander on clinical medicine and child welfare, by Professor Leo Langstein, on the problem of children's milk, by Professor Pott, on the mortality in the first seven days of life and on infant welfare schemes. The titles of recent articles of pediatric interest in German literature are given

THE new bacteriological and biochemical department of the Harrogate Royal Bath Hospital will be opened by Princess Mary, Viscountess Loxelles on Monday August 10th. The Earl of Harewood will take the chair at 3.30 p.m.

THE Ministry of Health has issued a revised list of approved sanatoriums and other residential institutions for the treatment of tuberculosis in England and Wales. It is published by H.M. Stationery Office, price 2d net.

THE Dunlop Rubber Company Ltd (Kingsway, London, W C), has prepared a new edition of its *Guide* enumerating parking places for cars in town and country. It appears that there are thirty-one official parking places in central London.

MESSRS W HIFFER AND SONS LTD Cambridge have in the press a book entitled *Notes on Medical Case taking and the Examination of Patients* by Dr G S HAYNES ASSISTANT Physician to Addenbrooke's Hospital. It is intended for the use of students who have passed the second or intermediate examination in anatomy and physiology.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring PEPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager British Medical Association House Tavistock Square W.C.1 on receipt of proofs

All communications with reference to ADVERTISEMENTS as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager.

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QUERIES AND ANSWERS

INCOME TAX

"W A T" has purchased a practice and the local income tax authorities claim that as from the date at which he became entitled to a share of the profits the gross income of the practice shall be taken at the full amount of the bookings, without any allowance for anticipated bad debts.

* The inspector of taxes who is presumably the official in question is quite in order in objecting to assess our correspondent's earnings on the basis of his cash receipts as from the date

British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL
MEETING, BATH, 1925

SECTION OF MEDICAL SOCIOLOGY.

CHARLES I. S. LEECHING, M.R.C.S., L.R.C.P., President

DISCUSSION

WHAT SHOULD BE THE STANDARD OF
PURITY OF MILK?

OPENING PAPERS

I.—R. STANHOUS WILLIAMS, M.B., D.Sc., D.P.H.
(The National Institute for Research in Dairying)

BACTERIOLOGICAL STANDARDS AND A PURE MILK SUPPLY

Bacteriological standards for the cleanliness of milk may be employed in two different ways either as a method of public health control or as a means by which the true essentials of the methods of handling milk and their necessity for the creation of a healthy trade are brought home to the members of the industry. The latter function will in the end, to a great extent eliminate the necessity for the former since the industry will itself, and for its own good, desire that only the best shall be offered to the consumer. I should like, therefore, to be allowed to consider these two aspects of these standards.

Public Health Standards

The bacteriological examination of milk samples as a method of estimating the cleanliness of the milk was only introduced into England in 1917. At that time a sufficient amount of work upon this subject had been carried out in this country to make a tentative standard of 30,000 per cubic centimetre of milk and absence of *B. coli* in two out of three tubes of 1/10 c.c.m. on delivery of the milk to the consumer to be established for certified milk. It is to be noted that this test differs from that which is found in New York in that a count of 30,000 is permitted whereas a count of 10,000 is required in New York. On the other hand a definite standard of freedom from coliform organisms is required in this country, in New York State this is not so. It is probable that the English standard is at least as difficult to maintain as that in New York, and it has the advantage that the inclusion of a *B. coli* test makes it much more possible to control, not only the work in the cowshed but also the efficiency of the methods of washing and steaming all utensils which may be employed in the handling of milk. It is our experience that inefficient methods of washing and steaming of milk utensils are a most potent factor in the increase in numbers of coliform organisms. The use of the two tests is therefore a valuable help to those who are endeavouring to assist the farmer and the dairyman in their work.

As time progressed and with the introduction of the Milk and Dairies Act, 1922 it became possible to lay down further standards for the different grades of milk. An epitome of these is set out in Table I which is slightly modified from a similar table published by the National Clean Milk Society.

This table shows that in addition to the standard for certified milk we now possess standards for Grade A (tuberculin tested) milk, Grade A milk and pasteurized milk when sold under official licence. It will be noted that the coliform test does not apply to pasteurized milk. The reason for this I do not know. The official test for certified milk has now been in use for some years and it may be well therefore to consider whether it can or cannot be maintained. For this purpose I may perhaps be allowed to refer to a paper which was published by Mr. Matthei and myself.¹ It concerns the milk of Mr. Symes, who is working under conditions which do not show any special advantage. The series of samples were taken weekly between April 21st 1921 and June 6th, 1924 a period

TABLE I

Designation	Acids				Coliform Bacillus	Other Conditions
	Tuberculin tested at regular intervals	Inspected at veterinary intervals	Maximum No of bacilli per c.c.			
Certified	Yes	Yes	30 000	—1/10 c.c.		Bottled on the farm the name of farm day of production and word Certified on each bottle cap
Grade A tuberculin tested	Yes	Yes	200 000	—1/100 c.c.		Delivered to consumers in— (a) the bottles or the sealed container as received from the farm (b) suitable containers of not less than two gallons capacity (c) bottles with the name of the dealer by whom the milk was bottled the address of the licensed bottling establishment the day of production and the words Grade A T.T. or Grade A on each bottle cap
Grade A	No	Yes	30 000	—1/100 c.c.		

Pasteurized Milk

Grade A Pasteurized—Grade A milk that after pasteurization as required by the Minister of Health contains not more than 30,000 bacilli per cubic centimetre and no coliform bacillus in 1/10 c.c.m. All other conditions as required for Grade A milk.

Pasteurized—Any milk that after pasteurization as required by the Minister of Health contains not more than 100,000 bacilli per cubic centimetre. No requirement for bottling.

of more than three years. It is to be noted that 1921 owing to the prolonged heat, was a most difficult year for the milk trade. The samples were taken at random from the milk as it was bottled and were at once dispatched by post to the laboratory without placing in cold store. The age of the samples varied from twenty to twenty-four hours at the time of examination.

Up to August 1922 the milk was cooled with water from a town supply. From April 1921, to August 1922 the average temperature of cooling during the months May to September inclusive was 51° F., and from October to April inclusive was 48° F. After this date the temperature of cooling seldom exceeded 50° F., and was usually between 40° and 50° F. Milling was done in the cowshed which is of the type ordinarily found on farms where clean milling is practised. There is no separate milking shed. Table II is an epitome of the bacteriological counts which were obtained.

TABLE II—Bacteriological Counts

Temperature of Samples on Arrival at the Laboratory	Total Number of Samples Examined	Number of Samples containing not more than					No. of Samples containing more than 200 000 Colonies per 1 c.c.
		1 000 Colonies per 1 c.c.	10 000 Colonies per 1 c.c.	30 000 Colonies per 1 c.c.	50 000 Colonies per 1 c.c.	200 000 Colonies per 1 c.c.	
41-53.1	32	22	32	32	32	72	0
51-55	52	44	51	51	51	52	0
56-60	53	42	53	53	53	53	0
61-65	28	15	26	27	27	27	1
66-70	13	8	12	13	13	13	0
71-75	4	1	1	2	2	2	2
Over 75	2	0	0	1*	1	1	1†
Total	184	133	175	179	179	180	4

* 80° F. † 85° F.

This table shows that of the 184 samples which were examined 179 gave counts of 30,000 or less, and that of the five which were above this figure three arrived at the

laboratory at temperatures higher than 70° F. In Table III the results of the coliform test have been epitomized.

TABLE III—Results of the Coliform Test

Temperature of Samples on Arrival at the Laboratory	Total Number of Samples Examined	B. coli Absent in—	B. coli Present in—			
			1 cc	1/10 cc	1/100 cc	1/1000 cc
41-50 F	32	32	—	—	—	—
51-55	52	52	—	—	—	—
56-60	53	51	1	1	—	—
61-65	28	25	2	—	—	—
65-70	13	13	—	—	—	—
71-75	4	2	—	2	—	—
Over 75	2	1	—	—	—	1
Total	194	177	3	3	—	1

The figures in this table are intended to show that coliform organisms were found in the dilutions stated, but not in higher dilutions. Thus three samples showed *B. coli* in 1 cc but not in 1/10 cc and so on. In effect, therefore, four samples showed coliform organisms in 1/10 cc or higher dilutions, and, of these, three arrived at the laboratory at temperatures greater than 70° F.

These results show, first, that it is possible to maintain the Ministry's standard for certified milk, secondly, that success in clean milk production rests not so much on the buildings and equipment as upon the skill of the workers and the unflagging interest of the farmer or milk dealer. It is in the creation of this skill and interest that the Ministry of Agriculture and Fisheries is so deeply interested, and it is to this part of the work that I should like now to be allowed to turn.

Agriculture and Bacteriological Standards for the Cleanliness of Milk

If now we turn to the industry itself it is found that there have been two most potent factors in the recent movement towards a clean milk supply in this country. One of these was the existence of a very small band of people, of whom Mr. Buckley was one, who had of their own initiative created a special market for what is now known as "certified milk." When the war came and the price of milk was controlled, it was realized that these pioneers could not continue to exist if they were only permitted to charge the price current for ordinary milk. The Minister of Food, therefore, acting in conjunction with the Ministries of Health and Agriculture, granted these persons special licences which empowered them to make an extra charge for their better product. Such licences were later extended to any other who might fulfil the necessary conditions. This was one of the great events in the history of the milk industry, since it was an official recognition of the fact that the man who offered a better product was worthy of his reward—the recognition which was sufficient to create a new hope in the hearts of the more inspired members of the industry.

Such licences, however, could only be controlled by some means which would tell the cleanliness of the milk. It was fortunate, therefore, that agricultural educational bodies, working with the Ministries of Health and Agriculture, were already making careful bacteriological studies of the conditions which govern the successful handling of milk. Those studies had their origin in work which was undertaken in 1913, became more specially devoted to the needs of the whole milk trade in 1916, and have continued ever since. In so far as it is possible to foresee even, it is probable that their need will continue for a long time to come. It is work which any man may be glad to do, for it forms the fundamental basis of a vast number of the problems which concern, not only the whole milk trade but also those of condensed and dried milk and of the cheese and butter making industries.

It is not well to weary you with all the details of this work, it is enough to state that it was done with an eye

to efficiency and economy. It was fortunate that it was carried out by those whose primary duty was to help agriculture, for thus it was carried right down into the cowsheds and on to the dairyman's premises by those who were glad to spend the necessary time in assisting the workers who were actually responsible for carrying out the duties involved in the handling of milk. Had it not been for the accumulation of concrete facts based upon careful experimental work it would have been impossible to impart this knowledge efficiently, to explain the causes of error, or to obtain the improved results upon which the whole future of a clean milk supply must depend. That, on the whole, efficiency has been attained is shown by the steadily increasing demand for milk sold under licence. This increasing demand is demonstrated by the constantly increasing number of licences which is shown in Table IV. This table was very kindly prepared for me by Mr. Holt of the Ministry of Health.

TABLE IV

Date	System of Licensing	Producers	Distribution
Dec. 1918	Special Licences	16	4
Mar. 1920	Licence A and Licence B	22	12
Dec. 1920	Grade A (Certified) and Grade A	23	15
Dec. 1921	Do to	33	55
Dec. 1922	Do to	43	121
Dec. 1923	Certified Grade A (tuberculin tested) and Grade A (assured)	14	80 (including 4 bottles depo.) 160 (including 56 depo.)
Dec. 1924	Certified Grade A (tuberculin tested) Grade A (assured)	71 61 52 224	1216 (including 94 bottles depo.) 28 (including 66 depo.)

It is to be noted that although some districts show a greater preponderance of licensed holders than others, they are, none the less, scattered all over the country, and are most common in those districts in which they receive the most active support from those who are responsible for agricultural education and the public health authorities.

The success of this movement depends upon knowledge and constant interest in the work. Knowledge, if it is to be effective, must depend upon careful research, that the true facts may be known, and the results of such research must be brought to those engaged in the industry. It is here that agricultural education authorities, supported by the Ministry of Agriculture, are rendering so great a service to the nation, much of which is perhaps unknown to many of those who are here. Let me therefore try to tell you a little of what is being done.

Ten days ago I was at the Royal Show at Chester. In the tent of the Ministry of Agriculture there was an exhibit showing the methods of handling the milk, and daily lectures and demonstrations were being given. In addition to these the Cheshire School of Agriculture had a tent in the show ground in which the whole process of milking the cow and handling the milk was demonstrated practically three days throughout the show. Such demonstrations are being carried out at endless shows throughout this country and in Wales. The work was begun immediately after the war, and has been continued at an ever increasing number of shows from that date to this. It is astonishing to see the numbers who come to these demonstrations and the interest that is taken in them. But this is not enough. At least two further steps are needed, first, to create the spirit which carries on from day to day, morning and evening, twice a day, seven days a week, and three hundred and sixty-five days a year, in the dark hours of a cold winter's morning just as well as in the bright sunshine of a summer's afternoon, and, secondly, to give for that spirit when it is created.

The first of these objects is being accomplished partly by demonstrations at shows, partly by lectures at fairs,

and dealers' meetings, partly by literature but most of all, perhaps, by the increasing number of clean milk competitions which are being carried out throughout the country. Most of these are conducted upon a common system the conditions of which may be found in the Ministry's *Guide to the Conduct of Clean Milk Competitions*. Two of the main features of these competitions are first, that a very large proportion of marks is given for "methods" the results of which are controlled by the bacteriological examination of samples which are taken in the course of the competition and, secondly, that every effort is made to secure that the competitions shall last for sufficiently long periods to enable those who are competing to develop a new habit of mind. Table V shows how greatly these have increased in number during the last few years. It is to the honour of Essex that the first competition of this character was held in that county in 1920 on the initiative of Howard Dimes and of Captain Skelton, a producer of certified milk, working in collaboration with the Agricultural College at Chelmsford.

TABLE V.—Clean Milk Competitions

Year	No. of Counties competing
1920	1
1921	2
1922	3
1923	3
1924	19
1925	33

From these competitions much is learnt. Here, for example, is an illustration taken from the competition which was held in the counties of Nottingham, Leicester, and Derby during the period October 1st, 1924, to March 31st, 1925. In Table VI are set out the results of the bacteriological examinations of the first and eighth samples of milk taken during the competition.

TABLE VI

Bacterial Count	No. of Competitors		B. coli Present in—	No. of Competitors	
	First Sample	Eighth Sample		First Sample	Eighth Sample
Millions	2	0	1/1000 c.c.	5	2
1-27 million	1	0	1/100 c.c.	5	2
1 million	3	0	1/10 c.c.	0	1
250 000-500 000	0	0	1 c.c.	2	1
100 000-250 000	1	1	Ab sent from 1 c.c.	3	9
50 000-100 000	0	0	—	—	—
20 000-50 000	3	1	—	—	—
10 000-20 000	1	1	—	—	—
5 000-10 000	1	0	—	—	—
2 000-5 000	0	4	—	—	—
Less than 2 000	3	8	—	—	—

If this table be examined it is found that in the first series of samples six showed counts of half a million or more, this number was reduced to none in the eighth series. On the other hand, in the first series only three samples showed counts of 5 000 or less, this number was increased to 12 in the eighth series.

The attempts to eliminate *B. coli* were not quite so successful, but nevertheless there was a definite improvement, since the numbers of samples showing this organism in 1/1000 c.c. were reduced from 5 to 2, and the numbers of those showing *B. coli* in 1/100 c.c. were also reduced from 5 to 2. On the other hand, the number of samples which showed complete absence of *B. coli* in 1 c.c. was increased from 3 to 9.

The relationship which exists between the bacteriological content and the keeping qualities of the milk is brought out in Table VII, in which the keeping qualities of these same samples are set forth.

TABLE VII.—Keeping Qualities

Days of Sweetness	First Series of Samples	Eighth Series of Samples	Days of Sweetness	First Series of Samples	Eighth Series of Samples
4	0	0	22	2	6
3	0	0	3	0	0
1	0	0	3½	1	2
1½	0	0	7½	0	0
1¼	2	0	3½	2	1
1½	1	1	4	0	1
2	2	0			
2½	3	4			
2¼	2	0			
				15	15

The effects of the improvements in the bacteriological content upon the keeping qualities of the milk are clearly demonstrated, since the table shows that three of the first series of samples failed to keep sweet for more than one and three quarters days, whereas in the eighth series this number was reduced to one. Again, in the first series of samples ten kept sweet for more than two days in the eighth series this number was increased to fourteen. When these results are further examined it is found that the average duration of sweetness of the first series of samples amounted to 58.8 hours, the average duration of sweetness of the eighth series was 66.4 hours. The improvement in the methods of handling the milk had increased the average duration of sweetness of the samples by no less than seven and a half hours. If one remembers the extreme importance of the duration of sweetness of the milk in promoting the sale of milk this result represents a most important advance.

These tables show the importance of the study of bacteriological standards if the conduct of the milk trade is to be successful, but I should like to be allowed to go one stage further and give you an illustration of an observation that has been made which will, I believe, prove to be of great importance to the industry and will demonstrate the value of preserving the coliform test. Work of this character is being carried out by Miss Hickson at the National Institute for Research in Dairying but I will content myself with a simple illustration taken from a recent competition which Mr. Mercer of the Cheshire Agricultural College has been conducting in that county. In the course of this competition 87 samples showed counts which lay between 1 000 and 5 000. Coliform organisms were not found in 1 c.c. in 57 samples, they were found in 1 c.c. or in higher dilutions in 30 samples. Table VIII shows the total duration of sweetness and its average duration in each of these groups.

TABLE VIII.—Bacteriological Counts 1 000 to 5 000

Coli Absent from 1 c.c.			Coli Present in 1 c.c. or Less		
No. of Samples	Keeping Qualities in Days	Average	No. of Samples	Keeping Qualities in Days	Average
57	202½	3.5	30	9.5	3.18

These figures demonstrate that the average duration of sweetness of the samples which did not show the presence of coliform organisms was 3.5 days. On the other hand, the duration of sweetness of those which did show their presence was 3.18 days, a difference of 0.32 day, or more than seven hours, a very appreciable gain.

The great value of bacteriological standards to the industry itself is thus again made clear for it is by these, and by these alone, in the present state of our knowledge, that it is possible to rescue the work from the fog of talk and opinions. So far you have seen that the imagination is being stirred, and is then being encouraged to practise. It remains to see what steps are being taken to give that constant help which is necessary to prevent falling off and thus discredit to our industry. That this may be accomplished the Ministry of Agriculture is offering encouragement to agricultural colleges and county educational authorities to make special appointments for the conduct of this work. Such appointments have been made

in various counties, and in addition it runs in agricultural colleges and university centres—is, for example, Bristol, Bangor, Leeds, Cambridge, and the South-Eastern Agricultural College at Wye. There may be others which I have forgotten, but the list is sufficiently long to demonstrate to you the widespread interest which agriculture is taking in the promotion of this kind of knowledge. The men who undertake this kind of work and their colleagues are prepared, not only to carry out bacteriological tests in the laboratory, but also to go down into the cowsheds and on to the dairymen's premises and study the conditions under which the work is done. By these means they will make their work effective and prevent mistakes.

If I have succeeded in demonstrating to you the magnitude of the efforts which agriculture is making in the promotion of a clean milk supply, then this paper has fulfilled its function. It only remains for me to say, what I have often said before, that the members of the staff of the National Institute for Research in Dairying will give all the help they can, and may I add how proud I am to think that bacteriology is being justified of her children?

REFERENCES

¹ A. T. R. Mattick and R. Stenhouse Williams. Certified Milk in Relation to the Bacteriological Standard. *Journal of Hygiene* xvi, 3, December 1924.

² Ministry of Agriculture and Fisheries. *Guide to the Conduct of Clean Milk Competitions*. Miscellaneous Publication No. 43, 1924.

³ Midland Agricultural and Dairy College. *Report on the Inter-county Clean Milk Competition 1924-25*.

II—WILLIAM G. SAVAGE, B.Sc., M.D. LOND., D.P.H., County Medical Officer of Health, Somerset

I THINK the word "purity" should be interpreted in this connexion with a fairly wide meaning, and include within its scope abstraction of contents, such as fat, since this often implies the replacement of that constituent by water, which I regard as a lowering of the standard of purity. The public health administrator makes four demands as regards the milk supply:

- 1 That it shall not serve as a vehicle for the transmission of infectious or other diseases
- 2 That its nutritive qualities shall not be impaired
- 3 That nothing shall be added to it of a chemical nature which may prejudice the consumer
- 4 That its price shall be as low as practicable, after the above three postulates have been satisfied, so that this fluid shall be readily available to the community

All four demands merit careful consideration.

(1)

That milk has served in the past, and continues to serve at the present time, as a vehicle for the spread of infectious diseases is a well attested fact. The diseases so spread include tuberculosis, diphtheria, typhoid fever, paratyphoid fever, dysentery, scarlet fever, Malta fever, infective sore throats, epidemic diarrhoea, cholera, and food poisoning. Others less common are foot-and-mouth disease and anthrax. The pathogenic bacilli gain access from two main sources. One is the cow, who may herself suffer from tuberculosis, streptococcal mastitis infective to man, or from infection with one of the food-poisoning bacilli or *Micrococcus melitensis*, or, less commonly, may become infected on the teats with the organisms of diphtheria and perhaps scarlet fever. More commonly the infection is conveyed by human agency, and extensive multiplication of the specific organism takes place in the milk, a very favourable culture medium. Such specific infection may be direct into the milk from the infective person or indirect from imperfectly cleansed vessel or impure water. The recorded outbreaks of acute infectious disease spread through milk run into very many hundreds while the extensive mortality and amount of disease due to the bovine tubercle bacillus is only too well known.

Knowing these facts the public health administrator demands that the production, handling and distribution of milk shall be treated as something which requires special care and attention. He asks that steps shall be taken to ascertain that the milk and butter production shall be free from disease which will render them likely

to shed infective bacilli into the milk. It is impracticable, considering the extent to which cows are infected with tuberculosis, to require freedom from that disease, but it is legitimate and reasonable to demand that steps be taken to reduce to a minimum the liability to excrete living tubercle bacilli into the milk pail.

He asks that all who come into contact with the milk at any stage shall be the object of special supervision, and that their state of health be subject to control and investigation. It is also a reasonable requirement that the processes of milking and subsequent milk handling shall be carried out with care and cleanliness so as to admit as few extraneous bacilli as possible. Our knowledge of the prejudicial nature of such bacilli is limited, and we are not in a position to conclude that the bacilli in cow dung, or from other adventitious sources, are harmless, particularly to the young or the invalid. In fact we do know that many tubercle bacilli even from cows showing no evidence of open tuberculosis are carried into the milk while animal streptococci of unascertained virulence are added in this way.

To provide an adequate system of milk control which on the one hand will be effective and on the other will not be unduly restrictive and vexatious in its working is admittedly a difficult task. One solution is to abandon control at the source and to trust to a system of universal pasteurization before distribution to ensure safety. This is a short cut which prevents considerable objections. Some authorities advocate an extension of the principle of graded milks to include all types—good and bad. This implies a regular system of bacteriological standards. Fixed bacteriological standards of milk, non-compliance with which is a punishable offence, have been studied and put into operation in the United States of America. They have many objections, one being that they do not necessarily pick out the worst offenders and another that they do not give any guarantee of freedom either from the tubercle bacillus or from the risk of spreading acute infectious diseases. More practical methods are the extensive use of bacteriology as a sorting agent to pick out milk producers whose methods of handling milk are below a reasonable standard and the provision of a reliable system of supervision and inspection. These must include both the cows and those who handle the milk in any stage. Notification of all cases of illness of the staff to the medical officer of health followed by systematic supervision and examination is a necessary procedure. These different methods are only touched upon here since they will no doubt be discussed in detail in the afternoon session.

Lastly in this connexion the public health administrator demands that any processes of pasteurization or other process advocated to remove these proved dangers of an infective milk supply should be carefully considered as regards any possible prejudicial effect on the qualities of the milk, while such processes should not be allowed to be haphazard but should if permitted at all, be exactly specified, frequently supervised, and effectively controlled.

(2)

The medical officer of health regards milk as the most valuable food we possess and is jealous that its nutritive qualities should not be impaired. Its value as a food is based upon its valuable fat, carbohydrate, and protein constituents, its high content in vitamins, and its mineral constituents.

As regards its ordinary food constituents every medical officer of health who has studied the subject and been brought into touch with the working of the Food and Drugs Acts is profoundly dissatisfied with the present legal position. The more recent legal decisions allow any fluid obtained from the cow to be called "milk," however deficient in food constituents, provided there is no evidence that direct adulteration has resulted. They make it legal for the rich strippings to be wilfully skimmed and the fat-deficient remainder to be sold as milk, thus elevating the calf as of greater importance than the human infant. They allow what amounts to legal adulteration to take place by failing to penalize a milk producer who neglects to feed his cows properly and thus inevitably to produce poor quality milk.

Faced with the present legal position one remedy frequently advocated is to define milk as something which must have a definite chemical constitution, that usually accepted being the present presumptive standards of 3 per cent fat and 8.5 per cent solids not-fat. Such a remedy would press unfairly upon the smaller purveyors and producers. The big milk vendors with skilled staffs and working with a large bulk of milk could reduce to the legal limits to a nicety, while the small man would be unable to hit the happy mean between a profitable abstraction and an excessive but illegal removal.

We now know a great deal as to the composition of milk from different sources and at different seasons of the year. Seasonal variations are considerable, and it should be possible to have two standards to conform with these variations. One, in my opinion, should be above the present standard, the other the existing one. It is necessary to protect the milk producer and vendor, and my own solution of this difficulty remains what I stated in 1912.¹ This is to give the owner of the milk prompt notice (without prejudice) of the fact that his milk is below standard, and to provide facilities for examination of the mixed milk of the herd to be sampled before any question of prosecution is entertained. If the mixed milk is also found below the standard no prosecution would result, and the local authority might even pay the cost of this second examination. If the purveyor of the deficient milk failed to avail himself of this means of protection he should not be permitted to use the plea that it was from impoverished cows, and the analyst's certificate would be final. It would not operate for large bulk milk supplies, but genuine milk in bulk is not below legal standards. It should be supplemented with legal powers requiring milk producers to improve the quality of the milk given by cows when proved to be deficient.

As regards vitamin content, it has now been demonstrated that this fluctuates with conditions which are controllable, and it is reasonable to ask that the conditions of feeding and storage shall be such as will result in a reasonably high vitamin content.

The salts content does not directly raise questions of standards of purity. Indirectly both this and the vitamin content are influenced by any heat processes to which the milk may be subjected, and this aspect has already been mentioned. If milk is sold after heat treatment, that fact should be declared.

(3)

The subject of chemical additions to milk need not be more than mentioned, since it is now legally recognized that the addition of preservatives and colouring matter to milk is not permissible.

(4)

The price at which milk can be sold at a profit is of decided interest to the medical officer of health. While not strictly germane to my discussion on standards of purity for milk, it cannot in practice be left out of consideration, since it does affect in a very practical manner the standards to be accepted. The opponents of any system of efficient milk control invariably raise the bogey of enhanced cost, and vociferate that any efficient control will so increase the cost of milk production and distribution that it will become more esbale to the poor, and the last state will be worse than the first.

If we free ourselves from the demands of the extremists there is no real reason why the measures outlined above for the safeguarding of the milk supply should send up the cost of production appreciably. There are a number of ways, many now neglected, by which the cost of milk production can be reduced. The Committee on the Production and Distribution of Milk pointed out eight of them. If it is so important to keep down the cost of milk, why allow these to be neglected and fasten attention on the one factor which is of public health importance? Reasonably interpreted, an enormous advance in the safety of our milk supply can be attained with little or no increase in the cost of milk production. Undoubtedly the cost of supervision will be increased. This however, should not

fall upon the milk trade, but be part of the general public health expenses of the country, and therefore would not affect the price of milk.

In my section of the discussion I have avoided any consideration of bacteriological standards, as this point of view is in the crumble hands of Dr Stenhouse Williams. I have attempted to look at the subject from the aspect of the public health administrator and official. I would suggest that what I have advocated on his behalf is fully justified by the scientific data available. As regards the best methods of obtaining these standards of purity, there will no doubt be legitimate grounds of divergence. To solve the difficulties of the milk problem and obtain a solution which will be fair to the agricultural interests, to the milk trader, and to the consumer will require the most careful co-operation of the administrator, the bacteriologist, and the practising physician, as well as of the trade itself. This side of the problem will be discussed this afternoon, and is beyond the scope of the present discussion.

REFERENCE

¹ W. C. Savage, *Milk and the Public Health*, Macmillan and Co 1912, p. 403.

III.—ERIC PRITCHARD, M.D., Medical Director, Infants Hospital, London

THE POINT OF VIEW OF THE CLINICIAN

My contribution to this discussion will be confined to the consideration of the standard of purity required in milk intended for consumption by infants and children, for I take it as granted that milk which is good enough and safe enough for them is good enough and safe enough for the rest of the community.

In considering standards of purity we should be careful to distinguish between those which are concerned with the exigencies of nutrition and health and those which are demanded by our aesthetic tastes. A milk which is perfectly safe, as far as its consumption by infants is concerned from the point of view of its bacterial content and nutritive value, may be repugnant to the refined tastes of a fastidious adult, for the reason that in the process of production or distribution it has been handled in a manner which offends against his notions of decency, propriety, and cleanliness. For instance, I think few of us would care to drink a glass of milk, even though absolutely sterile and therefore clean in a bacteriological sense, which we knew to have been drawn from the udder of a cow by a milker who constantly spat upon his hands. The presence of a small quantity of sterilized faeces or urine in milk would not prejudice its nutritive value nor render it harmful to the health of the most delicate infant, but a knowledge that it had been so contaminated would certainly interfere with our enjoyment of it as a food or as a beverage.

I well remember some twenty years ago how I was completely prejudiced against the drinking of milk after I had witnessed the process of cleaning some 500 gallons of milk by its passage through a centrifugal machine and the removal of a pint or two of the most filthy-looking sludge which contained cow's hairs, faecal matter, and slimy mucus. The milk from which this loathsome foreign matter had been removed was, after pasteurization or scalding, a perfectly safe and nutritious food for infants and children but hardly one which would commend itself to the refined tastes of an epicure.

Milk is such a valuable food both for infants and children and for the community as a whole, not only from the point of view of the nutritive qualities of its energy-containing elements especially the fats and proteins, but also in respect to its mineral extractive, and vitamin content that any attempt by legislative or other means to attain Utopian ideals of cleanliness irrespective of cost would be little less than a national calamity. Although it is possible with sufficient knowledge and adequate resources to compound a mixed diet that it contains all the thirty or forty individual constituents of milk, nevertheless I now from experience that the moment the child passes from the milk age to solid food age it is deprived of a number of necessary elements essential for nutrition.

The drinking of milk is indeed a most reliable guarantee

against a number of pathological conditions to which French writers have applied the term, "enfance frêle" or "hypocaenece." In his excellent book on vitamins Ragnar Berg constantly refers to the prevalence among children and adults of minor degrees of ill health, due to deprivation of the very elements, mineral and organic, which are so richly represented in milk, conditions for which he has suggested the comprehensive name of "larval deficiency diseases."

The experimental feeding of school children on additional rations of milk has been conclusively proved by W. M. Frazer and others to be immediately followed by a marked improvement, not only in their general physical condition but also in the degree of their mental alertness. In view of these indisputable facts, I submit that we should be careful not to impose conditions on the milk industry, which, with the object of securing high standards of bacterial purity, may at the same time raise the cost of production to the prejudice of its more extended consumption.

Although milk is undoubtedly the most valuable of all food commodities it is at the same time without question the most dangerous vehicle for the conveyance of infectious disease, and the whole history of the clean milk movement both in this country and in the United States of America is to prove that the commercial production of a raw milk which is safe from this point of view is an impracticable proposition. In order that milk may be made safe for human consumption it must be treated in some way which renders it free from pathogenic organisms, and so far no means other than exposure to degrees of heat sufficient to kill such disease provoking agents has been devised by the wit of man. At the National Milk Conference on Pasteurization held in London in 1923 Dr. S. G. Moore, M.O.H. Huddersfield, summed up the whole situation when he said: "Pasteurization has been said to be a confession of failure. I do not call it a confession of failure, but a recognition of inexorable facts." And in spite of all arguments to the contrary, and in spite of what has been said before and will probably be said again during the course of this discussion I thoroughly agree with him.

To my mind it does not come within the range of practical politics to consider whether milk should be rendered safe by exposure to heat or whether it should not, but rather how when and where the heat should be applied—how clean it should be and what degree of bacterial contamination should be allowed before pasteurization or other form of sterilization.

Since it is universally admitted that milk may become contaminated by the cow, the producer, the distributor, or the consumer it does not appear to me to be logical to look for complete safety from milk infections unless the milk is rendered sterile of pathogenic organisms immediately before consumption, and to attain this end I do not see any alternative to some method of home pasteurization or scalding. If we are prepared to dispense with absolute safety and acquiesce in relative safety, the only solution to the problem is the commercial pasteurization of the whole milk supply.

I do not wish to insult the intelligence of this meeting by seriously raising the question as to whether the nutritive qualities of milk are dangerously prejudiced by the process of pasteurization. This old bogey has, I hope, been finally disposed of by the teaching of our newer knowledge of nutrition. Out of the thirty or forty essential constituents of milk it is possible that one or two may be slightly impaired in biological value by the application of heat, but even with this admission the balance of advantage is so enormously on the side of safety, and any minor defect so easily compensated for in the case of children, and so utterly unimportant in the case of adults existing on a mixed diet, that objections to pasteurization on this count need not be considered seriously. I would like, however, to point out to the few who still hold contrary views and persist in the unachismism of the raw milk doctrine, that the changes to which raw milk are submitted in the stomach are of far more revolutionary and drastic character than any to which it is submitted by the application of heat outside the body. If, then, "in recog-

nition of inexorable facts," to use Dr. Moore's wording, we are driven to some form of pasteurization of milk to render it safe for consumption, how is the method to be applied, and how clean is the milk to be before treatment?

As far as the specific infectious most commonly conveyed by milk—namely, those of bovine tuberculosis, human tuberculosis, typhoid fever, paratyphoid fever, diphtheria, and septic conditions—are concerned, we learn from the report recently issued by the United States Public Health Service (Bulletin No. 147, February, 1925) that milk can be rendered sterile with a considerable margin of safety by improved methods of commercial pasteurization in which it is held for thirty minutes at a temperature of 145° F. The experimental researches on which this report is based were of a very searching nature. For instance, 4,000 quarts of milk containing 10,000,000 tubercle bacilli per cubic centimetre were pasteurized in bulk and rendered sterile, and similarly 4,000 quarts of milk containing 30,000,000 typhoid bacilli were treated and rendered sterile. Incidentally, I may mention that one of the results of these very elaborate investigations has been to show that the lethal temperature for certain pathogenic organisms is lower than is usually believed—for instance, in milk pasteurized in bulk, the lethal temperature was as follows:

For the bovine tubercle bacillus	138° F. in 30 minutes
For the typhoid bacillus	132° F. in 30 minutes
For the diphtheria bacillus	129° F. momentarily
For haemolytic streptococci	125° F. momentarily

From this report and the investigations on which it was based—a report which was prepared under the direction of Dr. L. Clinck North with a staff of the most experienced scientific and practical milk experts in the United States—it is abundantly clear that the commercial pasteurization of the milk supply is a practical proposition under adequate supervision, and it goes without saying the same is true of the home treatment of milk, by boiling or scalding provided that the public can be induced to see the necessity for such precautions.

If, then, milk can be rendered safe, as far as the specific infections are concerned for immediate consumption by the processes of commercial pasteurization or by scalding in the home, are there any dangers to be interpreted from toxic substances resulting from the activity and development of germs in milk prior to the time of sterilization, or from the survival of varieties of spore forming bacteria not specifically pathogenic and not destroyed by the degrees of heat to which the milk has been submitted? This, indeed, is a very serious question, and one that cannot be answered definitely in the light of present knowledge.

As regards the presence of toxic substances in milk, in Bulletin No. 41 of the Public Health and Marine Hospital Service of the United States (1908) which deals with milk and its relation to the public health, there is a good summary of the then existing knowledge on the subject, and a full bibliography by Joseph H. Kastle, and as far as I am aware our knowledge has not been supplemented since. From this it would appear that stale milk can contain toxic substances of bacterial origin (tyrotoxicon) capable of producing symptoms (galactotoxism). Several epidemics and sporadic cases due to this cause are reported. I have myself seen two cases of severe vomiting in infants occurring immediately after the consumption of stale sterilized milk, kept in bottles, in both cases there was a strong smell of sulphuretted hydrogen. The results followed so immediately on consumption that bacterial infection could be definitely excluded. Whether or no the repeated consumption of slightly toxic milk can by its cumulative effect inflict damage on the human organism is a moot point. But common experience goes to prove that no such injurious results follow the use of sterilized or pasteurized milk when such milks have been used for infant feeding on a large scale. The possibility of such accidents must not, however, be ignored if commercially pasteurized milk is allowed to grow stale even though such milk is again pasteurized immediately before consumption.

The chief objection to the indiscriminate use of commercially pasteurized milk for the feeding of children is that this process has a selective lethal influence on the

bacterial flora. Although when properly conducted, it ensures the certain death of all pathogenic organisms and a large proportion of the non-pathogenic varieties, including the lactic fermenting group, it permits of the survival of a considerable contingent of resistant, spore-forming and putrefactive bacteria, which thus have an opportunity of development subsequent to pasteurization both inside and outside the body, unchecked by the restraining influence of their fellow lactic acid bacteria. Unfortunately we know very little about the significance of a mixed bacterial flora in the alimentary tract, we hardly know what is normal and what is not, but, speaking solely from my own experience, I can state very definitely that the stools of infants fed on milk which has been deliberately soured by twelve hours' incubation with a known dosage of the lactic acid bacillus are very different from the stools of infants fed on pasteurized milk. The latter class of stools is invariably alkaline in reaction, more or less offensive, and quite different in character from those of infants who have been breast-fed. At the Infants Hospital, although our milk supply is beyond reproach, we now invariably sour the milk which is supplied to premature or young babies who are not breast-fed, the stools are usually acid in reaction, free from the odour of decomposition, and far more like the natural stools of breast-feeding, and the results generally far more favourable than before we adopted this method.

The bacterial count of such milk after treatment usually lies between 60 and 600 million lactic acid bacilli per cubic centimetre almost in pure culture, a count which would very justly condemn any milk offered for public sale. I regard it as very probable that the susceptibility to intestinal infection of infants who have been fed for any length of time on dirty milk with a high bacterial count is due to the constant reinforcement of the digestive tract with a mixed and dominant strain of putrefactive organisms. For this reason alone I regard standards of purity for the public milk supply as absolutely essential for the safety of infants and children, and since a differential count is at present out of the question, the only practical standard that we can adopt is one based on the total number of bacteria present in milk irrespective of the particular species.

For my part I am well satisfied with the standards required under the terms of the Milk (Special Designation) Order (1923), provided that the pasteurization of all milk not attaining the Grade A standard is made obligatory.

A relatively safe milk for the whole community, rich and poor, purchasable at a relatively cheap price, should be our great consideration, by some system of controlled inspection, and in the case of all milk not coming up to the highest standard, by controlled pasteurization. The quality of the milk should be guaranteed, and high grades, for which a correspondingly high price may reasonably be expected, should only be supplied in sealed bottles, with the time, date, and place of sealing clearly designated on the caps. By such means the health of our child population would be reasonably safeguarded, and ample provision made according to their respective means and fancies for the more fastidious tastes of those who can afford milk of a better quality.

GENERAL DISCUSSION

Mr WILFRID BUCKLEY (London) demurred to two statements in Dr Savage's address: first that the percentage of butter-fat in milk could be altered by feeding, and, secondly, that conditions of feeding could assure a high vitamin content. Mr Buckley thought that the alteration of the percentage of butter-fats by feeding was not borne out by experience, that a definite standard of butter-fat could not be set up, and that often the 3 per cent standard could not be maintained. He would like to know how Dr Savage proposed to use food to produce a high vitamin content. When grass is not available, a diet of oats would not produce sufficient albuminoids; consequently the farmer had to rely on cake. Dr Savage's proposition was really impracticable.

Mr J T QUINTON (Liverpool) supported the view that the milk supply needed special legislation, the danger of using preservatives in milk might be dismissed from their

minds. In some 24,000 samples examined, only 10 contained preservatives, and in those the quantity was very small. For a low bacterial count the sterilization of milk vessels was essential. They needed to encourage the production of good milk, and at the same time to pay for the quality produced. Mr Quinton suggested that in dealing with large quantities of milk the price should be fixed in accordance with the percentage of fats.

Mr BEN DAVIES (United Dairies) said that Dr Savage had left out one of the most serious causes of contamination in milk—a cause which killed many babies—contamination in the home. This should be recognized when legislation was promoted. In support of this view he quoted Dr Robert Hutchison, Sir John Robertson, and Sir George Newman, who was quoting from Sir Arthur Newsholme. Mr Davies said that he was the first to introduce certified milk, but that he was a convinced pasteurizer. The suggestion that milk might be toned down in large cities was an idea which had no existence in fact—at all events in regarded London. The records of metropolitan boroughs showed that the analyses of all the samples of milk taken during the year by their inspectors give an average fat content of from 20 to 25 per cent above the Government standard. As regards the healthfulness of the milk supply, Sir Frederick Anderson had stated that the milk supply of the City of London was now purer than ever before in its history. It was sometimes suggested that because of his reliance on the protective virtues of pasteurization the milk distributor was less careful than he might be of the original quality of his milk; this again was at variance with the actual facts. The speaker had taken out the average plate counts for four years of the very large quantities of milk with which he had to deal, and found that its bacteriological quality had enormously and continuously improved. The relative number of bacteria in the milk as received from the producer was as follows: 1922, 50; 1923, 28; 1924, 22; 1925, 16. Such results were the reward of an enormous amount of painstaking and costly effort, and showed that the London milk supply was being developed on lines which would place it beyond criticism.

Mr J C COLLYER (Swindon) thought that the production of clean milk did not pay the small producer; the increased cost over ordinary milk was absorbed by the distributor. Clean milk required clean production, and it was impossible to obtain milk which was dirty. Some of the difficulties of clean production were due to the disparity of the wages of the farm labourer and of the distributor's employees. Mr Coleman stated, amidst some dissent, that while the former received 30s a week, the latter earned £4 to £5 and in many cases a bonus on sales.

Mr P B TUSTIN (United Dairies) said that an interesting experiment had been conducted recently by the Medical Research Council in an institution for boys between the ages of 6 and 10 years. One section of these boys had been given one pint a day each of pasteurized milk and it had been proved that pasteurization did no harm to the nutritive value of milk. Mr Tustin thought that people suffered rather from too little milk than from had milk. Real progress in improving the milk supply could only be achieved by getting the producer, the distributor, and the controller together to find out where the difficulties of each might lie. In Chicago, where this had been done, there had been no case of outbreak of infectious disease from milk for the last ten years. Dr Savage had enumerated a long list of fearful diseases which might be caused by milk. Would he give a list of the outbreaks of these diseases recently which could be traced to milk? Mr Tustin wished to know if oilcake containing cod-liver oil was quite without vitamins; the authorities should tell the producer more in this matter. Bacterial content should be estimated by a series of counts and not by an isolated count. The bacterial count was valuable in suggesting faults in the supply. Pasteurization should not be used to disguise dirty milk. Mr Tustin again urged that reading out lists of all the horrible things that might happen was of no value compared with getting together those engaged in the milk supply for the purpose of discussing their difficulties.

Mr S R WHITTY (British Dairy Farmers' Association) was quite convinced that there were a thousand ills arising from the deficient use of milk is compared with every one due to bad milk. The English people were undoubtedly consuming a grossly inadequate amount of milk per head, on the other hand, doctors who ought to have been emphasizing the advice "Drink more milk," had in the past said "Drink less milk." During recent years there had been an enormous advance in the care devoted to the production of milk, milk competitions were going to help in the improvement. Mr Whitty implored doctors to help in increasing the production and consumption of milk, by doing this they would, moreover be rendering a valuable assistance in the most important work of improving agriculture generally.

Dr H SCURFIELD (Colleston) asked for information about the attitude of the big distributors towards this problem. Were they offering any inducements to their customers to take clean milk, and were they co-operating in any definite way with Dr Savage in his endeavor to bring about improvements in the milk supply in Somerset?

Mr R BOUTFLOUR (Agricultural Office, Wilts) mentioned the difficulty experienced by producers in keeping up the standard—especially of butter-fats—in milk at all times of the year. He thought that medical officers of health should be prepared to sympathize with the difficulties of producers, and should make a practice of observing certain farms and of learning the difficulties that had to be contended with.

Dr STEPHENSON WILLIAMS, replying to Mr Quanten stated that the value of the bacteriological tests for the cleanliness of milk depended upon a series in each case and not upon individual samples. When used in this way the test would be found to be of very great assistance in controlling the supply of milk.

Dr SAVAGE said that he wished to impress upon his critics that in his address he was simply putting before them the views of the administration. He was strongly in favour of the increased production of milk, but medical men were able to perceive the dangers in milk, while at the same time anxious to increase its consumption. In reply to Mr Buckley Dr Savage said that he was under the impression that it was possible by feeding to increase the quantity of fluid in the milk without increasing the fats, with the result that the percentage of fats was lowered. They were now learning much about vitamins and Dr Savage thought that in the future it would be possible to increase the vitamin content by methods of feeding. He could inform Mr Fustin that many outbreaks of infectious disease could be traced to milk. To Dr Scurfield's question the reply of the distributors would be, "We pasteurize our milk, why should we bother about giving higher prices to clean producers?" Dr Savage did not think the consumer was a great cause of the contamination of milk, probably he did no more than cause germs, previously in the milk, to multiply.

Dr ERIC PRITCHARD, replying to Mr Coleman's statement that it was impossible to clean milk which was dirty, called attention to the fact that in a milk supply dirty milk was milk containing excess of bacteria. Pasteurization destroyed bacteria, and therefore rendered dirty milk clean. He had found it impossible to get any definite information as to the effect of the toxins of bacteria if ingested with milk. The toxins of pathogenic organisms did not produce any effect, and the non-pathogenic organisms had not been proved guilty.

Cinematograph Demonstration

After the conclusion of this discussion two cinematograph films were shown to illustrate several of the points which had been raised. One film displayed the various steps in the production of certified milk on an English farm, and the other dealt with the precautions observed in the course of handling and distributing milk in New York City.

DISCUSSION BY WHAT MEANS CAN PURER MILK BE OBTAINED AND AT WHAT COST?

OPENING PAPERS

I—WILLIAM BUCKLEY, C.B.I.,
National Clean Milk Society

THE POINT OF VIEW OF THE PRODUCER

In considering the requirements for a standard of quality for milk there are two separate aspects that must be dealt with: the chemical composition and the hygienic quality. The first, the chemical composition, embraces broadly three factors—namely, butter fat, solids not fat, and vitamins. Milk reaches the consumer, so far as chemical composition is concerned, as it leaves the cow (except for the changes brought about by the action of bacteria) unless it has been tampered with, therefore the problem of a standard is comparatively simple, so far as it concerns the chemical composition. Such variations in the chemical composition as do occur are largely beyond our power to control.

The percentage of butter fat in cow's milk varies from day to day in herds and, to a greater extent, in individual cows. It is common knowledge that the milk of Channel Islands breeds is richer in this respect than that of short horns or of Holsteins, and that the butter fat content of individual samples can be varied by the periods that are allowed to elapse between hours of milking. It is also well known that as the cow's period of lactation advances the percentage of butter fat increases. Variation in the kind or quantity of food that the cow receives, so long as she receives sufficient to maintain her health, does not appear to affect the proportion of butter-fat she yields, although the chemical composition of the fat may be altered.

The percentage of solids not-fat varies comparatively little, and it appears that on the occasions when the butter-fat content in the milk of the individual cow increases or decreases below the normal or average, there is a tendency for the solids not fat to vary in the opposite way—to increase when the fat diminishes and to decrease when it increases. The presumptive standards of 3 per cent for butter-fat and 8.5 per cent for solids not-fat are firm standards and can usually be maintained, although the morning milk of individual cows, and less frequently of herds, falls below these figures on many occasions particularly in regard to butter fat. The evening milk usually falls below these standards. The means to attain these standards on all occasions is beyond our present knowledge. The vitamins in milk do depend upon the food consumed by the cattle; this such foods as grass and clover provide a maximum of vitamins.

The hygienic quality of milk is a much more difficult matter to regulate, although, unlike the question of chemical composition, it is one which can be controlled to a greater or to a lesser extent. It depends upon the care exercised by those who produce the milk and by those who handle it from the moment it leaves the cow until it is consumed.

When one considers the standard that should be required for milk of satisfactory quality, one should bear in mind always that milk, as it leaves a healthy cow, is a perfect product, no matter what may be the surroundings where it is produced. Nothing can be done subsequently to improve it. The question that arises is as to the amount of damage it may sustain before it may be deemed to have fallen below a reasonable and satisfactory standard. The aim of all producers and distributors of milk must be to get milk to the consumer in a condition as near as possible to that in which it should leave a healthy cow.

The first point to be considered is the health of the cattle that produce the milk. The cows should be in perfect health, and in particular must suffer from no disease that can be conveyed to man. The most dangerous disease that may be conveyed by milk from a diseased cow to the consumer is tuberculosis. Tuberculous milk may come from cattle with diseased udders, or from cattle that have tuberculous lesions in some other part of the body from which tubercle bacilli are liberated into the blood stream, or the

milk may become infected by manure containing tubercle bacilli that, through carelessness, is allowed to get into the milking-pail. The most practical method of ensuring that no milk from a herd contains tubercle bacilli is by means of a careful and regular application of the tuberculin test to all the cattle, all lactating or doubtful animals being discarded immediately. In practice it is found that to maintain a herd entirely free from tuberculous animals the most (economical or perhaps the only) method is to breed all animals, or at least to make purchases only from herds that are regularly tested and which are found to contain a minimum of reactors.

The maintenance of a herd in regard to which the health of the animals is left to chance costs considerably less than the maintenance of a herd that is known to be healthy. Milk from the former cannot be regarded as satisfactory. Milk from a herd not known to be healthy may cost to produce in the neighbourhood of twopenny a gallon less than that from a herd that is free from tuberculous animals as shown by the tuberculin test.

Apart from the health of the herd the only other consideration is that of cleanliness—cleanliness of the cows, of the milkers, and of all utensils with which milk comes into contact. A satisfactory milk supply requires extreme cleanliness throughout. The milkers must be clean in person and in method. If slovenly methods are employed such as milking with dirty or wet hands, if the cow's udders and flanks are not cleaned, washed, and wiped before milking, if the milk is left in open vessels in the cowshed instead of being removed immediately to the milk room, the milk is damaged, it is worth less, and the producer should be paid less for it. Where cows are properly washed and groomed before each milking it takes about three minutes to prepare a cow properly before she is milked. Assuming that a cow gives two gallons of milk daily, or one gallon each time that she is milked, and that a milker is paid at the rate of 7½ p. an hour, the producer who omits this necessary work saves three eighths of a penny a gallon, and should be paid at least that much less for his product.

In order to ensure that the utensils with which milk comes into contact are scrupulously clean, they must be sterilized by steam. This can be done by any farmer for there are various kinds of sterilizing apparatus on the market suitable for large or for small herds. The omission of this necessary requirement saves a little in expense, perhaps a further farthing a gallon.

It is advisable that milk should be cooled as soon as possible. I have not dealt with this aspect because it is the common practice to cool milk to as low a temperature as is possible, dependent usually upon the temperature of the water supply. According to my experience if milk be clean it is not necessary to reduce it to a temperature lower than 60° F. during the first nine hours of its existence, by which time usually it has left the farm.

I have outlined what is necessary for the production of milk of satisfactory quality. Milk so produced will be found to meet the requirements of the present standard of "Grade A" milk, or, if it comes from a tubercle-free herd for "Grade A (tuberculin tested)" or for "Certified" if it be bottled on the farm. Anyone who sells milk that falls below Grade A standard is selling an article so damaged that it cannot be regarded as satisfactory. According to my calculations, if the producer disregards the necessary requirements (which he usually contrives with the distributor to fulfil) he saves about a halfpenny a gallon by omitting clean methods, and about a further twopenny a gallon by omitting to ensure that his herd is healthy.

I am satisfied that it is impossible at the present time for the majority of farmers to maintain tubercle-free herds for various reasons. As a result of the classification of milk that was inaugurated by the Ministry of Food during the war and which has been extended since by the Ministry of Health in co-operation with the Ministry of Agriculture, the number of tubercle-free herds in this country has been increased from two or three to upwards of one hundred and fifty, but it is not possible to deal with the question of the national milk supply upon the basis of anticipating that,

for many years to come, the bulk of our milk can be produced under such conditions. But the production of milk of decent cleanliness is practicable. If the producers of this country want to do it if their lenders are courageous enough to lend and to teach progress, the entire milk supply that is at present used for liquid consumption can soon be raised to the present Grade A standard. That is the standard that should be demanded by the public, and until the public is sufficiently educated, which at present it is not, it is the standard that should be required by all public health authorities or officials who come in contact with the milk supply in the course of their duties.

The question of how to deal with milk from non-tested herds so that it shall not contain any living tubercle bacilli is a very important one, and is outside the scope of this paper. It resolves itself into whether milk from herds that are not free from tuberculous animals shall be consumed raw or pasteurized. In the larger American and Canadian cities such milk must be pasteurized. Pasteurization may or may not have its disadvantages, but personally I should not offer milk to children that I did not know did not contain living tubercle bacilli. I am satisfied that all milk sold for consumption as liquid milk could be and should be at least of Grade A standard, whether it is to be consumed raw or pasteurized.

II—GEORGE P. MALE, M.R.C.V.S.,

Reading

THE POINT OF VIEW OF THE VETERINARY SURGEON. Pure milk may be defined as "the product derived from the normal udder of a healthy cow," and in dealing with this subject there are two factors to be considered: (1) contaminations that may take place after the milk leaves the cow from handling utensils, and accidental infections; (2) contaminations arising from unhealthy cows.

With regard to the first, great strides have been made in recent years to ascertain the exact nature of the bacterial infections, and how they arise, but I expect you will wish me to deal more particularly with the second class of impurities.

I should like to say, however, briefly, that the chief source of contamination is from the vessels in which the milk is placed, such as milk churns, pails, coolers, etc., and if careful washing and sterilization by steam is thoroughly carried out the bacterial count can be reduced to a minimum. A certain amount of contamination does occur from dirty udders and from the milker's hands, but not to the extent that is generally supposed. This can be prevented to a great extent by a proper system of drainage and construction of the byres, by clipping off the long hairs round the udder, and by washing, if necessary, or wiping with a clean cloth the udders before milking. It is not necessary to have elaborately built cowsheds for this purpose so long as attention to detail is ensured. I emphasize this because many people have the idea that vast sums must be spent on new buildings before they can hope to get pure milk and so do not attempt it.

A proper water-tight floor, with the right length of stall and guttering is quite adequate, if the cows are groomed, the udders washed, and all vessels that come in contact with the milk are properly sterilized. In regard to the last, I may say that good and comparatively cheap sterilizers can be obtained now which answer every purpose so that no producer need be deterred from trying to obtain pure milk owing to expense under the first head.

Contaminations arising from Unhealthy Cows

The solution of this problem is not quite so easy, although after nearly twenty years' experience I have not yet found it insuperable nor is it an impracticable proposition for any owner of cows. There are many diseased conditions which may affect the purity of the milk, but the most important one is tuberculosis.

The fact that bovine tuberculosis is communicable to man and that from 5,000 to 10,000 children die each year from tuberculosis, chiefly abdominal, derived from cow's milk, besides causing untold suffering in many other non-fatal

eases, makes it imperative that the milk must be freed from this contamination. It has been stated by eminent authorities that perhaps bovine tubercle bacilli taken in this way may produce some immunity to human tuberculosis, but unfortunately one cannot control the dose, and one could not say which child would be protected or which one would succumb to such administration, therefore it cannot be entertained for one moment.

Many methods have been advocated for freeing herds of tuberculosis, ranging from a diet rich in vitamins to the wholesale slaughter of all reacting animals with compensation by the State, but time will not permit me to do it with these in detail. I am, however, satisfied that the tuberculin test, if carefully employed, is the most helpful agent for the purpose, and with proper facilities for isolating reactors, and for the breeding and rearing of non-tuberculous young stock, it can be relied upon to obtain a healthy herd, or one in which the percentage of reactors is very small indeed, within a reasonable time.

Experiments are now being made to improve the method of testing, and just recently a valuable report was issued by the Tuberculin Committee of the Medical Research Council on an improved method of applying the intradermal test. Whether this will supersede the subcutaneous test or not I cannot say. It will have to be tested on large numbers of animals under field conditions first, but at any rate it will be very useful as a secondary test in doubtful cases. Any method which will simplify the test and make it less irksome to the operator and less expensive for the owner will be welcome, as the present regulations required by the Ministry of Health for the production of Grade A milk involve a great deal of exacting work and make it very difficult for many veterinary surgeons and owners to carry out on a large scale. To turn out on a winter's night at about 10 o'clock to go to some far away premises to test a number of cows with the aid of a lantern, then to take the temperatures again, commencing at 4 a.m., and so on every three hours to the eighteenth hour, is scarcely a picnic, but to do it sometimes six nights out of seven is a labour of love in which happily very few of you are privileged to participate.

The expense involved in the eradication of tuberculosis from a herd arises from two sources: (1) the cost of the test itself, and (2) the culling of the affected cows.

With regard to the first, veterinary surgeons are co-operating with the producers in reducing expenses to as low a level as possible, so it need not be seriously considered. The second expense depends upon the number of reactors. In some herds only 5 to 10 per cent react, while in others the percentage may rise to 50 or even 80, when it is a very serious matter and will have to be considered very carefully. That it is sound economics I will endeavour to prove for many reasons:

1 In badly affected herds the number of diseased cows often called "wasters" amounts to perhaps 10 or 15 per cent a year. I know of quite a number of herds of about 50 cows where the "wasters" have numbered 10 or more in a single year and if one takes the average value of a cow at only £30 it will mean £300 loss a year.

2 Cows suffering from tuberculosis are frequently ill, weak, have coughs, chills or pneumonia, there are often variations in the quantity of milk given, they suffer from enlarged glands in the throat with difficult and noisy breathing, udder troubles are frequent, and there is always an indefinable something which keeps them back, giving constant cause for anxiety, whereas in a tubercle-free herd the cows are rarely ill, and speaking from experience the assistance of a veterinary surgeon is hardly ever needed.

3 The average life of a tuberculous cow is considerably less than that of a healthy one.

4 It costs more to feed and keep in condition a diseased herd, tuberculosis being a wasting disease an affected animal requires more food to supply its needs.

5 If a pedigree herd it will be very difficult to sell an animal to foreign buyers, and a great many home buyers also demand the tuberculin test, and the value of a tuberculin animal will be about one half or one third that of a healthy one.

6 Sooner or later tubercle bacilli are sure to find their way into the milk. Then the owner will be obliged to take steps to find the offending cow or cows, and he may not be able to sell the milk until this has been done, also he may, under the Milk and Dairies Act 1915, soon be obliged to be fined very heavily and have his licence taken away, which makes it imperative that he should put his house in order.

7 There is always a ready sale at enhanced prices for young stock from healthy cows.

8 When sold to the butcher there will be less loss from carcasses seized by the meat inspector as unsound. The losses under this head all over the country must be enormous. The value of diseased tuberculous carcasses seized in Edinburgh market alone amounted to £5,000 in one year. Not only is this the case with cattle but also with pigs. In certain parts of Australia where the herds have been cleared of tubercle it was found that the number of pig carcasses with tuberculous diseased proportioned.

In these ways, and in other indirect ways, it will be seen that to keep a tuberculous herd is indeed a bad policy and not a paying proposition. If only every farmer grasped this fact there would soon be a great alteration in the respect. He must realize that tuberculosis is a very contagious disease, that one badly infected animal can infect a whole herd, and that very few cows appear to have any immunity against it, or live long enough to recover from it.

The producer will ask: If I get rid of my tuberculous cows, alter my cow-byres, put up a sterilizing plant and produce pure milk, will the public appreciate it or give me more money for it? Until quite recently the answer would be No, because the public is very ignorant on the subject, and further, there is always a tendency to buy in the cheapest market whatever the quality of the milk, and wherever it is produced. I am happy in being able to say that a system has been inaugurated for producing milk of the highest quality, and the public, realizing its value is beginning to demand it and is willing to pay a small additional sum for it. I refer to the graded milks which are recognized by the Ministry of Health.

In October 1918, when first issued Grade A and Grade B licences, and up to March 1920, only 6 farmers were selling Grade A, 30 were selling Grade B (14 of these farms being in Scotland), whilst 13 retailers were licensed for the distribution of these milks. At the end of 1921 there were 41 Grade A (certified) and 22 Grade A licences, but there was a remarkable increase in the distributors to 181. In December, 1924 there were 74 farms producing certified milk, 66 producing Grade A tuberculin tested milk, and a large number of Grade A herds, while the distributors had increased enormously.

I am proud to say that most of this Grade A tuberculin tested milk is produced in and around Reading and some of this milk is being retailed at the same price as ordinary milk, while in other cases only a penny a quart extra is being charged. When sold wholesale the producer gets 3d a gallon more, and I hope some of these producers will be here to say that they can pay expenses with perhaps a small margin of profit at this price.

It has been estimated that the producer will obtain on an average from £8 to £10 a year extra from each cow for this milk, and in an average herd of 50 cows this will mean £400 to £500, which will pay for any number of tests and should compensate him for the decreased value of his reactors, especially as there will be no loss from "wasters."

Certified milk has to be produced under the best possible conditions, is bottled on the farm, entailing considerable expense and obtains a better price so the sale of this class of milk must necessarily be limited, but there is no reason why Grade A tuberculin tested milk should not be used by all, and it has been found to be cheaper to pay this small additional amount, as there is less souring, less waste, and the milk is more appetizing and nutritious. There is really very little difference between this and certified milk, except that it is bottled by the dairyman instead of on the farm and the bacterial count allowed per cubic centimetre is 200,000 instead of 50,000. These two milks must not be put mixed. Ordinary Grade A milk, on the other hand, differs from the two former grades in that the cows are not tested with tuberculin, so there are not the same safeguards against tubercle bacilli being present in the milk, but it may be pasteurized if a special licence be obtained.

One great advantage with all these milks is that the cows are periodically inspected by a veterinary surgeon for the purpose of discovering any diseased conditions that may injuriously affect the milk. A certificate is given showing particulars of any cows with any of the following abnor-

militia and these must immediately be excluded from the herd, either temporarily or permanently. These conditions are tuberculosis of the udder, tuberculosis with emaciation, chronic cough with definite clinical symptoms of tuberculosis, anthrax, foot-and-mouth disease, mastitis, abscess of the udder or retained placenta. This provision is a great safeguard to the public and also to the owners, as it is not uncommon to find men continuing to milk cows with mastitis without they or the owners realizing the fact. No doubt many childish ailments, such as diarrhoea, skin eruptions, and febrile conditions, are due to imbibing milk containing coliform bacilli or various pus-forming organisms.

It, as I have endeavoured to show, clean milk can be produced on most farms at a small profit, and it is to the advantage of the consumer to buy it even at a small extra cost than why cannot it be obtained everywhere? The answer is that the producer is waiting for a market and the distributor for an assured supply, thus a vicious circle is produced. If only there was a general demand for this milk it would soon be produced. In Reading production preceded demand, which had to be created. If only medical men throughout the country would advise it which they can wholeheartedly do, for children, invalids, schools, hospitals, and other institutions, not forgetting the general public, there would soon be such a demand for clean milk that the whole of the milk supply of this country would be revolutionized.

If the discussion on this subject has done no more than convert some members of the British Medical Association and of my own profession to be the pioneers of clean milk in their own districts, it will not have been in vain.

III—MR J H MAGGS, Chairman of United Dairies Ltd

THE POINT OF VIEW OF THE DISTRIBUTOR

THE production side of pure milk will have been dealt with by the previous speakers, and I am deputed to open the discussion on the distribution side.

At the time of preparing this paper I am, of course, not in a position to know the views of those eminent authorities who will have preceded me, and who will have defined what standards should, in their opinions, be applied to pure milk. As a layman who has to carry on the distribution of milk obtained from thousands of farms, I am content to accept the standards adopted by the Ministry of Health in its Designations Order as reasonable from the standpoint of bacterial content. These designations apply to Certified, Grade A (T.T.), Grade A, Grade A Pasteurized, and Pasteurized.

Now the volume of tuberculin tested milk produced is, so far as I am able to judge, not likely within this generation to be more than a small percentage of the supply required for our population. If the figure usually accepted of the proportion of retching (tuberculous) cows in English herds is correct—and I have no reason to disbelieve it—it must be obvious that any immediate order to destroy such cows would create a famine in milk which would be far worse for the health of the community than the possibly slight risk of tubercle infection in drinking such milk. Should, however, the work which is being done by Spaulinger and others on the lines of immunizing cattle by serum treatment prove successful, the whole aspect of the case would be altered. The Tuberculosis Order, the reintroduction of which is now suggested would, in my opinion, be sheer waste of public money without any compensatory benefit, unless accompanied by rigorous inspection, which is not, I believe contemplated. Indeed in so far as it would satisfy public opinion it would be even dangerous.

Of milk-borne diseases however although tuberculosis is most in the limelight it is, I gather the prevailing medical opinion that the possible conveyance of scarlet fever, diphtheria, sore throat, typhoid and infantile diarrhoea, is more to be feared, and requires to be guarded against as far as possible. Of course, none of these is attributable to the cow herself, but milk-forming as it does such

an ideal medium for the growth of bacteria, is peculiarly liable to infection from other than bovine sources and I would emphasize particularly from domestic sources.

As regards tubercle, I would remind you of the statement made in the Registrar-General's annual report for 1921 as follows: "The fall in infant mortality attributed to tubercle is so rapid and continuous that the disease is ceasing to be an important contributor to the death rate." I am sure that dried milk vendors and others have claimed the credit for the improved mortality figures and I have pointed out that since my company commenced retuling milk in London the infant mortality rate has rapidly fallen. No doubt there are many factors at work but all must admit that the credit is mainly that of the scientific and medical side working through enlightened sanitary authorities and a public opinion which has been awakened and educated by the scientific side.

On the lowest grounds of self-interest, apart altogether from the standpoint of public health, the milk distributor must consider on the scientific data available to him, the best and most certain means of ensuring that his deliveries of milk are safe and palatable, and of the highest possible food value. He may obtain the best clean milk from the cow but between the cow and the household the opportunities of contamination are many. To a certain extent these are eliminated where, as in the case of certified milk, the milk is bottled at the farm although even there a risk is run—a cow may have become tuberculous since the previous testing, or a milker may be suffering from infectious disease not yet diagnosed as such. Such cases are not imaginary—they have occurred, and even certified milk has spread disease. Dr Leonard Findlay is quoted as having stated that "Recently five cases of bovine tuberculosis had occurred in infants fed entirely on Grade A milk from a most reputable dairy." Fortunately, science has placed at our disposal a simple process known as pasteurization, which, if properly performed, eliminates probably 99 per cent of the risks, without damage to the food value or the palatability. It is claimed that this process destroys all pathogenic organisms and, provided that pasteurization is immediately followed by bottling, the dairyman will have a safe milk. In the minds of some of you there may be still a prejudice against any treatment of milk whatever, but I venture to say that the more that is known about milk and about the effects of pasteurization, the more will such prejudice disappear. In most of the large cities of Canada and the United States of America, pasteurization of all but certified milk is compulsory. In Denmark even the skim milk for pig feeding must be pasteurized. In this connexion the statement of the National Commission on Milk Standards set up by the United States Government very well represents the prevailing opinion. I will quote:

The Commission think that pasteurization is necessary for all milk excepting Grade A Raw Milk [which corresponds with our certified]. The majority of the Commissioners voted in favour of the pasteurization of all milk including Grade A Raw but since the action was not unanimous the Commission recommend that the pasteurization of Grade A Raw Milk be optional.

I quote also from *A Half Century of Public Health*, published for the American Public Health Association:

The feeding of commercially pasteurized milk under the auspices of the City of New York to many thousands of infants at the Baby Health Stations constituted the most extensive infant feeding experiment the world has ever seen and demonstrated conclusively that such milk was entirely satisfactory as a safe and wholesome food for infants.

In claiming pasteurization as the distributors' sheet anchor I do not for a moment wish it to be thought that I disparage the work that has been and is being done to clean up the farms. Indeed I regard it as most important and there is in my experience very definite ground for congratulation to Dr Stenhouse Williams and his staff for the work they have accomplished in this direction. The Ministry of Agriculture, too, is keenly alive to the education of the producer of milk in clean methods. My own company does all in its power by young farmers' club, clean milk competitions, farm inspections and general educational means, to improve the supply at its source. Many

producers have been frightened by the expense which they thought would be involved, but there is abundant evidence now that the cost of cleanliness in milk production need not be appreciable, and moreover, I have no doubt in my own mind that it is to a large extent, if not entirely, counterbalanced by increased yields and the better health of the stock.

All the best elements in the distributive milk trade desire, I am sure, still closer co-operation with the medical profession and sanitary authorities. You view necessarily, and rightly, carry great weight with the consumers. From time to time great harm has been done, not only to the industry, but probably also to general health, by "scare" paragraphs in the press on the subject of milk. In your warfare against disease I am convinced that the great majority of you appreciate the value of pure milk. Some of my friends have used, as a slogan, "A pint a day keeps the doctor away"—very likely, but does not the advent of the doctor usually mean two pints a day?

You can educate the public mind to discriminate between good milk and bad, and arouse public opinion to demand a safe, clean milk supply. Legislation in this country, both national and local, does little for the betterment of the milk supply. The improvements which have come here, in the main, been initiated and carried through by enlightened members of the trade itself. The farmer or distributor who lays himself out to do his business clean has very little encouragement when he sees his neighbours going on in their old careless ways with impurity, and able to sell their milk at the same price, in the same market. Inspection of dairies and cowsheds is, in many cases, an absolute farce, and, so far as the sanitary authority is concerned, provided the liquid sold is milk containing 3 per cent of fat and 8.5 per cent solids not-fat, it will pass. In the light of present-day knowledge, that is not a healthy state of affairs.

The only method which I know that will satisfactorily discriminate between clean milk and other is the bacteriological count, and it should not be impossible to insist that all milk intended for human consumption should fall below a certain count. For a start, the standard for raw milk would have to be fairly liberal, but as time goes on it might be tightened up. Just as an indication of what is being now obtained, in the month of March, out of 60 bulk samples of raw milk taken in our various London plants, 41 were between 200,000 and 500,000, whilst 19 fell below 200,000, but all except one contained *B. coli*. After pasteurizing, the milk (the bacteriological content of which has been reduced to about 5,000) is delivered either in bottle or by can, and whilst we spare no effort to see that the cans are clean we usually find that when we examine the same milk on delivery to the householders the can delivery contains nearly ten times the bacteria of the milk in the bottles.

It would therefore appear to me that if the medical profession regards the presence of bacteria, and particularly *B. coli*, as prejudicial to health, it could quite reasonably demand that, at any rate in the larger centres of population, the milk supply should be such as to comply with the requirements of the Milk (Special Designations) Order, thus would of necessity, in my view, imply that it should be bottled.

It is probable that if the distributor adapted his methods to meet these requirements the cost would not be more than one halfpenny a quart above the admittedly unsafe methods frequently adopted at present, and if—as we might perhaps reasonably assume—the better milk led to increased demand, the cost of distribution might ultimately be still further reduced.

Assuming that the farmer and the distributor have done their parts conscientiously, that good work is often speedily nullified when the milk enters the consumer's house, it is there that the most serious contamination often occurs. Left about in hot kitchens in open vessels, it speedily becomes swarming with bacteria.

May I ask you to co-operate with us in our efforts to educate the public not only to demand clean milk, but to keep it clean and cold when they have obtained it?

GENERAL DISCUSSION

Professor WALTER HALL (Bristol University) had observed in the addresses a tendency to get away from the title of the subject. He had hoped that the discussion would turn on the ideal of how to obtain pure milk, rather than on a defence of the methods at present used. He was convinced that the methods of collection of the milk were not thorough. Clean milk could be produced at a better standard than the Government laid down. A bacterial count of 200,000 was not good even in summer—200 is possible. In his opinion the personnel at the farm was the first important matter, and the education of this personnel should be aimed at. Legal powers were best employed in an advisory capacity. Help should be offered in improving method, rather than the adoption of oppressive measures, because, in his ignorance, a farmer had not reached a particular standard.

Mr CUMBER (Reading) said that the cost of the various grades of milk had been settled by the National Farmers' Union and the Dairyman's Federation, but the milk supply was not satisfactory. What was wanted for the elimination of tuberculosis was the removal of the source of infection and the isolation of reactors to the tuberculin test. Testing an animal need not cost its price more than £1. The slaughter of reactors was not necessary; they should be isolated. Mr Cumber thought that it cost much more than 1d. a gallon to keep milk clean but 3d. more a gallon for clean milk paid. For his part he preferred his milk raw, but he knew of a London hospital which refused to be interested in the matter because all its milk was pasteurized. He doubted whether in poor homes the parents could afford the extra cost of supplying fruit juice. Milk that would keep clean could be produced; he had had milk tested after a long delivery round, and had found its bacterial count to be only 850 per cubic centimetre.

Mr R. BOUTFLOU (Agricultural Office, Wilts) advocated milk competitions as a method of education in the production of clean milk. At the last competition in Wiltshire there were thirty or forty entries, and after the competition visits were offered to those farms from which came milk with large counts. Tuberculosis was a legacy of mismanagement in the past. Better methods of feeding were producing healthier cows. Cowsheds were not a large factor in producing the disease.

Major ROBERT CURTIS (Abingdon) said that a clean product should be demanded and not merely expected. Much uncleanness was due to lack of supervision. There should be supervision of all products, and the duty should be penalized. The only protection offered to the consumer at present was pasteurization by benevolent distributors. And the bulk of the "serums," when the milk producer had finished with them, went to the butcher.

Mr J. T. QUINTON (Liverpool) thought the Tuberculosis Order was of immense advantage. It made possible a quick search into the source of trouble. In the visitation of farms there had been a great change. Farmers were now ready to receive and listen to advice, and accepted suggestions for improvement. Legislation had made many farmers come to the milk more quickly than anything else could have done. Mr Quinton wanted a better standard than 3 per cent for fats and 8.5 per cent for solids not-fat.

Mr J. C. COLEMAN (Swindon) asked whether Mr Buelley meant that tuberculosis was the most dangerous of the most prominent disease. Very few reacting cows gave tuberculous milk. The tuberculin test was very reliable, and in 164 cases of slaughtered reactors tuberculous lesions were found in every one. The intradermal reaction was said to be fool-proof.

Dr H. SCURFIELD (Folkestone) asked Mr Myle how frequently tuberculosis was reintroduced in tubercle-free herds and how the reintroduction was explained.

Dr STENHOUSE WILLIAMS stated that the papers presented that afternoon were all based upon the assumption that the New York method of supplying milk was the

ideal to be aimed at. In effect that method provided a supply of milk of which 2 per cent came from tuberculin tested cows, and was sold at a price which was beyond the pocket of the average consumer: the remaining 98 per cent was pasteurized milk. He wished to point out that there was an alternative to this which had been found to be very successful in those districts in which it had received adequate support—namely, the production of Grade A tuberculin tested milk, the price of which was very much less than that of certified milk. In the town of Reading this milk formed not less than one-sixth of the total supply of the town, was sold without treatment, and was purchased by the poor in quantities at least equal to those which were purchased by the rich.

Dr C. A. MORTIMER-BROWN (Brampton) called attention to the need for a clean water supply and an incubator on dairy farms.

Mr WILFRED BUCKLEY, in reply, said that he proposed in future to test his cattle for tuberculosis—once by the subcutaneous method and once by the intradermal. He pointed out that under the new Tuberculosis Order the farmer was to be compensated for under disease and emaciation instead of being fined or imprisoned. It was not possible to eliminate or isolate all tuberculous cattle. In this country there were about 2,500,000 milch cows, where were the 1,000,000 reactors to be put? In matters such as this it was advisable to go reasonably slowly. The percentage of fat in milk could be kept within a limit of variation of 1/2 per cent if cows could be milked every twelve hours, but conditions of transport and so on

did not allow of this. In Mr Buckley's opinion more suffering was caused by tuberculosis than by other diseases, but some said that there was more disease from dirt. He protested strongly against the view of some physicians that children could be immunized against tuberculosis by consuming tuberculous milk. It was a view which encouraged bad producers.

Mr MAGGS was not satisfied with the present state of things. The farmer already helped to eliminate cows by sending them to the butcher, and if Mr Coleman had not condemned the 164 cows in 1913, the farmer would have condemned them himself. Inspection might be adequate in Liverpool, but this was not so in other places; in many places it was a farce. Consequently he was not impressed by Mr Quinton's views on legislation, and he asked if there had ever been a prosecution for dirty milk in London.

The CHAIRMAN said that the medical profession must stimulate public interest and a public demand. Education was needed both amongst the public and in the medical profession. He disliked the division of milk into grades, as he thought that under ideal conditions the term "milk" should be sufficient. The producer must be able to assure the medical man that his goods would be up to standard. Dr Flemming wished to add another slogan to that mentioned by Mr Maggs about the doctor—namely, "Dirt in the cup Will send his bill up."

At the end of the afternoon session a visit was paid to the fifteenth century moated manor-house at Great Chirfield, where a demonstration was given of the production of Grade A certified milk.

THE TREATMENT OF HARE-LIP

BY

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As many improvements which have been introduced into the operations for the repair of hare-lip—or cleft lip as Brophy¹ suggests it is more correctly designated—have not yet found their way into the ordinary textbooks, it has seemed worth while to give an account of those that I have found useful.

The age of choice is about 3 months; this can be varied, but it should be remembered that the longer the operation is postponed the larger the cleft becomes. The infant ought to be fed until about two hours before being given the anæsthetic, which should be open ether reinforced subsequently, if necessary, by a few whiffs of chloroform through a Junker's inhaler. I prefer to have the patient upright on the table with the head supported from behind by a nurse. This prevents the reflux of blood into the pharynx, and avoids pulmonary complications.

Simple, Single Cleft Lip

After cleansing the operative field, two stout silk sutures are passed on a curved needle from without inwards and half-way up the lip near each angle of the mouth, they are tied with a good deal of tension.² Good hæmostasis is secured by this method, and if the free ends of the sutures are caught in forceps they will act as efficient retractors. Special forceps are advocated for the purpose, but in my opinion are inferior to the silk ligatures. The lip and cheek on each side of the cleft is freed from the underlying bone in the usual way; the extent to which this is carried depends on the size of the cleft; it is particularly necessary to free and bring down an abnormally attached ala nasi.

The next step is to pare the sides of the cleft. Each side of the cleft is incised from the upper end down to the exact line of junction of skin and mucous membrane on the lip margin. The incision separates the red margin of each side of the cleft, and in addition a small triangular area of skin with each. It is essential that the flap be not

too slender, as the lip will be liable to part later at the sutured area, or too thick, for then the upper lip will be too narrow, and subsequently the lower lip will project. It is for the latter reason that I abandoned the use of Thompson's lines, for though they gave a beautiful result in the repaired lip, they caused the sacrifice of too much lip tissue, and when the child was seen after a year or so the lower lip was unduly prominent.

The tips of the free ends of the detached flaps are caught in a pair of Allis's tissue forceps, which will serve to control the flaps and to approximate the raw margins for suturing (Fig. 1). It is to be noticed that so far no tissue has been sacrificed, the flaps having been turned down in their entirety; this is Mayo's method.³ Suturing is now proceeded with, fine silk-worm gut or horsehair on the skin, and catgut on the mucous membrane side, to close the raw area there and prevent adhesion of the lip to the cheek. The first suture should be through the skin, emerging exactly at the line of the mucocutaneous junction on either side of the cleft, the accurate approximation of this line is of the utmost importance. The second suture is placed at the upper end of the cleft, and it should also be finely adjusted in order to secure a good nostril.

Then when all the suturing is finished except at the free margin the excess of tissue is removed from the flaps by an oblique incision, and the free border of the lip is finished by a mattress stitch of catgut. The small triangles of skin turned down in each flap are removed by the incision together with excess of mucous membrane. A little excess of tissue is left at the free margin, this by Mayo's method is rendered very easy.

The operation described above is for complete single clefts, for incomplete clefts the steps are much the same, but freeing of the cheek from the bone need not be so extensive, and the incisions for the flaps commence above the angle of the cleft, and need not go into the nostril.

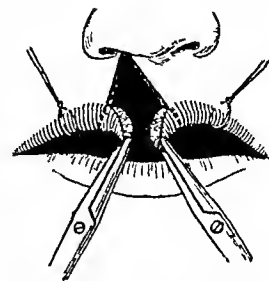


FIG. 1.—Showing hæmostatic ligatures. The dotted lines show excess of tissue to be removed after suture of the skin edges.

Cleft Lip with Unilateral Detachment of Premaxilla

If the lip can be repaired without interference with the premaxilla, that bone should not be touched, as in the course of time pressure of the repaired lip will put back the prominent bone into good line. If, however, the prominence is so marked that the lip cannot be repaired over it or only repaired with considerable tension, then the bone requires replacement. It is, I think, useless to attempt to push the bone back into place unless it is fractured at one end. Various methods of producing the fracture are suggested, probably the following are the best.

Method A—Make a small incision on the alveolar edge where the interval between the lateral incisor and canine on the attached side of the premaxilla would be expected to be there insert a small chisel and fracture the bone sufficiently to allow manual replacement.

Method B—This method was originated by Mr. Staunton in the Children's Hospital, Dublin, to produce a fracture of the site mentioned and leave the overlying mucous membrane intact. A specially devised forceps is used, one blade of which is broad and blunt while the other has a narrower but blunt edge. The forceps is so made that the blades on full compression do not meet but sufficient space is left to allow the more elastic soft parts to escape whilst the mella bone is fractured.

The usual procedure when the bone has been mobilized sufficiently is to pierce the edges of the cleft alveolus on either side and to fix the bone by wiring across the cleft. This method is to be condemned as it is unnecessary and difficult in performing the bone for the wire teeth on each side of the cleft are often destroyed or detached, and the wire often cuts through, or a piece of the premaxilla may be detached. It is much better to proceed immediately to do the lip operation, as the repaired lip will then act as an efficient splint.

Cleft Lip with Bilateral Detachment of Premaxilla

This constitutes the most difficult problem in the surgery of the condition, as the bone is frequently displaced far forwards its reduction and retention in place may be extremely difficult. Of course if the displacement of the bone is slight it may be possible to bring the lip over it without interfering otherwise with the bone. This fortunate state of affairs, however, is very unusual, and other methods are generally necessary.

The anterior part of the nasal septum, to which alone the projection is attached, must be divided by making a short incision along the lower edge of the nasal septum right down to the bone, separating the soft tissues from the underlying bone, and dividing the denuded septum for the required extent with a small stout pair of scissors.

In these cases it is practically impossible to avoid retention wire sutures to hold the mobilized bone in place. For this purpose as the premaxillary segment is so small, I have devised a method in which it is necessary only to pierce that segment once, and only in its central thicker part. The best instrument to use for piercing the bone is a very small sized trocar and cannula the cannula being without a shoulder so that it can be with drawn through the bone either outwards or inwards. For ease of insertion and avoidance of undue trauma to the small premaxillary segment, I strongly advise piercing and insertion of the wire through that segment before it has been mobilized by division of the septum. The bone is pierced at its centre by the trocar with cannula attached and the trocar is withdrawn and the two free ends of a silver wire loop are

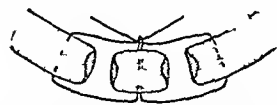


FIG. 2.—Horizontal view showing method of wiring premaxillary segment in bilateral detachment.

passed from within (from the mouth cavity) outwards, leaving the loop on the inside. Each free end is then drawn in an opposite direction. The superior maxilla of each side is pierced at some distance from either cleft as before and each free end is returned through the cannula to project on the inside of the mouth. The margins of the cleft are pierced, and the suture tightened by drawing the free ends through the loop, pulling them taut, twisting the wire and cutting off any excess (Fig. 2).

The lip may be repaired immediately, or if the ability of the child to stand further operation at the time is questionable, further measures may be delayed for some days.

The repair of the lip defect is carried out as before. The fleshy middle part of the lip attached to the premaxilla is merely freshened by two perpendicular cuts down the sides, and from then lower ends by two angular cuts meeting at the midpoint of the lower border. Mayo's flap method is employed on the lateral margins of the cleft. Sutures are then carried out but there is no excess of tissue to be removed. It may be necessary to make lateral cuts into the lip tissue on either side before suturing, to secure accurate coaptation of the lateral with the central fleshy segment and to give fullness to the lip. As even with the premaxilla replaced it is sometimes difficult to avoid tension, it is useful to remember the suggestion of Gosselin in such cases, to do only the repair of one side of the double cleft at the time and at a subsequent operation, when the wound has completely healed, to do the other side.

Post-operative Treatment

The silk haemostatic sutures at the angles of the mouth are removed immediately on the completion of the operation. The question of fixation of the cheeks by drawing them towards the middle line so as to avoid strain on the suture line has then to be decided. In the majority of my own cases I merely paint the wound with ichthyl, leave it without covering of any sort, and I use no fixative whatever. But if a child is very fractious, and particularly in cases of bilateral clefts, I adopt one of two methods of fixation. The first, by passing two pieces of a sterile plaster, one from the cheek in front of the ear up over the bridge of the nose and down to a corresponding point on the other cheek, the cheeks meanwhile being drawn inwards, and the other from in front of the ear down to the chin and up to a corresponding point on the other side, to exert the lip and allow a free inward as well as to aid in relieving tension. The other method also leaves the wound free. It is the use of the Langan traction brace as depicted in Brophy's textbook.

The trend of modern methods in the treatment of the deformity of cleft lip is to use simple methods for the repair of the lip and to avoid when at all possible, interference with associated lesions of the alveolus.

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THE USES OF COELIOSCOPY

BY

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An exploratory laparotomy, often referred to as though it were a mere trifle, may be from the patient's point of view a very formidable affair. It involves a general anaesthetic followed probably by some flatulent discomfort and perhaps anaesthetic vomiting and two or three weeks in bed and occasionally some complications with the wound. The expense may be considerable. In cases of enlargement of the stomach, or malignant processes, death may follow so soon after as to raise a suspicion that the operation had something to do with it.

In a certain number of cases, not many perhaps, there is a far less formidable alternative. This is to distend the abdomen with air, which can be done without serious discomfort under a local anaesthetic through a tiny incision, and to inspect the viscera with a cystoscope. I have been using this method for about a year, and have never seen him follow. Like every other technical procedure, a little trouble must be taken to learn how to get a good view, but it is not more difficult than cystoscopy.

The advantages of coelioscopy over exploratory laparotomy are (1) it can be done without discomfort under novocain, (2) the incision is so small that it is only necessary to keep the patient in bed for a day or two, (3) no special instruments are needed, (4) it can be done at the patient's own house, (5) it is available when it would be dangerous to perform laparotomy.

A few examples may be given to illustrate its usefulness. Small malignant nodules have several times been seen on

the surface of the liver, which in one case clinched an uncertain diagnosis, and in another forbade a drastic operation. In a case in which tuberculous peritonitis was suspected it was easy to see that there were no tubercles on the intestine. The extent of a carcinoma on the surface of the stomach may be discerned. Information may be given as to the nature of swellings of uncertain origin inside the abdomen. I have once or twice seen the appendix presenting itself. Pelvic tumours can be suspected. The method would be available to determine the presence or absence of blood in the abdomen in cases of ruptured ectopic gestation or traumatic rupture of a

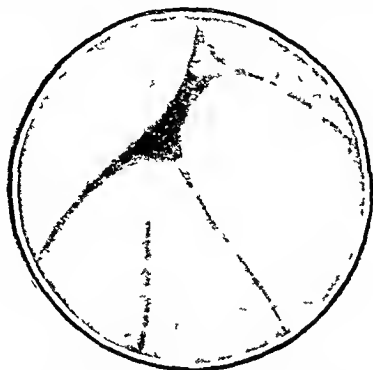


FIG 1—Coils of normal small intestine.

viscus. It is easy to see whether the liver is or is not "hobnail."

Coechoscopy does not and cannot replace exploratory laparotomy in those cases where the cause may have to be sought for and does not lie on the surface of the abdominal viscera, and these will always be the majority. It is principally valuable for what is definitely seen, and not for what is apparently absent.

The technique is simple. Under novocain anaesthesia, or under ether if preferred, an incision half an inch long is made in the skin and fascia. I usually enter in the middle line just below the umbilicus. Above the umbilicus difficulties with the falciform ligament arise. Liver after

layer is picked up with a pair of artery forceps until the peritoneum is opened, the incision being just as large as will admit the cystoscope, but no larger. The cystoscope, sterilized in carbolic solution, is then passed in and the abdomen inflated with air through it. The air is filtered through sterile wool, and an ordinary bellows is all that is necessary. Then the lamp is inserted, the brightest possible light is used. Some risk of fusing the bulb must be run. If the upper abdomen is to be examined the table is tilted to raise the head, and vice versa. I usually commence by finding the edge of the liver on the right side, and then the gall bladder. If the patient is under a local



FIG 2—The edge of the liver showing a small nodule of carcinoma on its surface.

anaesthetic the peristaltic movements of the small intestine can be seen. When the examination is finished, the air is let out as completely as possible and a stitch put in—unless, of course, the findings are such as to encourage a set operation.

Fig 1 shows coils of normal small intestine, and Fig 2 the edge of the liver, with fat lying on the surface of the viscera below it. There is a small nodule of carcinoma on the surface of the liver, secondary to a growth in the rectum, no operation, therefore, could be undertaken. I am indebted to Mr. Sewell for the pictures. They are from two separate cases.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

PARALDEHYDE POISONING

PARALDEHYDE is not a scheduled poison, but is used extensively as a sedative in mental cases. There are only two cases recorded of death from this drug, one of them being a person suffering from typhoid fever. A recent case (Liverpool, June, 1925) is interesting and should be put on record.

The person was a man aged 41, very lightly built, who had been accustomed for some months to take doses of paraldehyde varying from one to two teaspoonfuls. The source of his supply of the drug up to the present has not been ascertained and it is probable he had gradually increased the dose. On the last occasion he went to bed at 11 p.m. and slept by himself. The next morning at 8 o'clock he was found dead in bed, a glass with half an ounce of paraldehyde and a 4 ounce bottle containing three-quarters of an ounce of paraldehyde were by the bedside, two other empty 8 ounce bottles were in the room. The washings gave the reactions of paraldehyde. It is estimated that he had taken between 2½ and 3 ounces. He had had very little food of any kind and very little stimulant for two or three days before death. When found there was a little oozing of stained fluid from the nose but no vomiting had taken place.

At the post mortem examination the innermost exposed portions of the lips were seen to be dry and darker than normal, the mouth smelt of paraldehyde. The mucous membrane of the mouth, epiglottis, larynx and upper portion of the oesophagus were blanched and in the lower third of the oesophagus the mucous membrane bore light-coloured coagulated patches.

On opening the body the cavities smelt strongly of paraldehyde. The stomach, normal in size, contained about 5 ounces of turbid fluid smelling strongly of and giving the reaction for paraldehyde. The mucous membrane was marked hyperaemic with

uniform injection of the small vessels. The hyperaemia was more marked on the back part of the stomach towards the cardiac end. The mucous membrane of the duodenum was more lightly injected, the appearance gradually fading away, the small and large bowels and their contents were normal.

Both lungs were very congested at the bases. The blood was fluid and dark. The heart showed some small atheromatous patches on the aorta just beyond the aortic valves and at the openings of both coronary arteries it was otherwise normal. The liver, spleen, kidneys and brain were quite normal. All the organs seemed to bear the odour of paraldehyde but it was difficult to eliminate the smell. The bladder contained 14 ounces of urine which smelt very strongly of paraldehyde and gave the chemical tests for aldehyde.

As the deceased had made his ordinary arrangements and laid out his clothing ready to be put on the next day, the case was taken and returned as one of misadventure.

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RAT-BITE FEVER IN AN INFANT

As rat-bite fever though common in Japan, is rare in England, the following case, which occurred recently in Sunderland, seems worthy of record.

On April 8th an infant was bitten on the right thumb while in bed with its mother, the wound bled profusely. Next day the thumb was somewhat swollen and dark in colour, the back of the hand was also swollen. The child had some bronchitis and appeared ill. During the ensuing week the swelling subsided, the wound healed and the general symptoms abated. Fifteen days after the bite a scarlatiniform rash appeared about the chest and armpits, together with four swellings, one on each wrist and one just below the sternal end of each clavicle. There was some pyrexia. The child was taken to the Borough Sanatorium and next day the swellings were incised, thick pus being evacuated. This was placed in broth and some blood smears forwarded to the pathologist. Dr

Cookson, who reported polymorphonuclear leucocytosis, and isolated a leptothrix from the culture. Four weeks later a further abscess formed on the right wrist. To date there have been three periods of three day pyrexia of intermittent type, and the patient has now been discharged well.

It is interesting to note that the mother was bitten on the head previously. The rat was caught on the night after it had bitten the child, but was not obtained, half having been eaten by a cat and the other half thrown away. It was reported that the rat suffered from salivation and was off its feeds at the time the abscesses appeared on the child, but we were unable to gain possession of the animal.

JUSTICE THOM,
Assistant Medical Officer of Health, Sunderland.

FULL TIME PREGNANCY IN A BICORNUATE UTERUS

THE rarity of this condition is sufficient justification for recording the following case. I have not seen a pregnancy in a bicornuate uterus myself in twenty years of active practice, during which I have averaged 100 confinements annually.

At 10 p.m. on May 2nd I was called to see a primipara, aged 28, in the first stage of labour. I had not seen her previously, and on arrival found a woman of delicate appearance somewhat anæmic and with a history of headaches for the previous week. She admitted one finger the presentation was left occipito-anterior. The appearance of the abdomen was unusual. There was a distinct longitudinal tumour occupying the left half of the uterus which gave the impression of being thickened uterine muscle rather than uterine contents.

She was delivered spontaneously at midday on May 3rd of a male child weighing 6½ lb. After waiting one and a half hours with no sign of separation of the placenta and as the perineum required repair I anaesthetized the patient and intrauterine examination. I found that the uterus was completely divided by a well formed muscular septum, and after difficulty removed from the fundus of the right compartment an extremely adherent placenta. I was able to introduce three fingers without difficulty into the left compartment of the uterus.

Except that the lochia was very profuse for the first week she made an uninterrupted recovery.

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MENINGITIS AND KERNIG'S SIGN

It does not seem to be generally known that meningitis may occur in young children without its characteristic signs. A few months ago I saw an infant, 3 months old, which had a temperature of 104° and convulsions, but there was no retraction of the neck, no Kernig's sign, and no bulging of the fontanelles, yet, by a lumbar puncture, I drew off cloudy fluid, a direct film from which showed very numerous meningococci and polymuclear cells.

In my experience it is unusual to get retraction of the neck and Kernig's sign in meningitis in a child under a year old, and up to 3 years of age meningitis may be present without these signs, but I have never seen them absent in children over 3 years. By retraction of the neck I mean inability to make the chin touch the chest without pain. This retraction of the neck and Kernig's sign may be found where there is not meningitis, the cerebrospinal fluid is under pressure if lumbar puncture be done, but clear and normal on examination. This is often found when a mastoid operation has been delayed or incompletely performed, and it is then an indication that the inflammation in the bone is approaching the meninges and will soon cause a genuine meningitis.

I have also seen this meningismus in a bad attack of typhoid fever in a child of 6, whose temperature was 105°. The child made a good recovery without any real meningitis. In severe pneumonia in young people retraction of the neck and Kernig's sign may be found when the fluid drawn by lumbar puncture is clear and normal, and pneumococcal meningitis does not follow. In sunstroke these signs of intracranial pressure may be marked, and lumbar puncture greatly improved the patient's condition in two cases that I have seen. Other conditions in which retraction and Kernig's sign are sometimes found are encephalitis, lethargia, tumour of the brain, especially near the base, large cerebral hæmorrhages and in uræmia when headache is severe or convulsions are threatening.

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Reports of Societies.

MEDICO-PSYCHOLOGICAL ASSOCIATION

The annual meeting of the Medico-Psychological Association of Great Britain and Ireland was held at the University of Birmingham on July 6th to 10th, under the presidency of Sir ILMERICK MORT, who announced that the Council had nominated Lieut.-Colonel J. R. LORR, Editor of the *Journal of Mental Science*, to be the next President. The meeting closed in silence, resolutions of condolence on the deaths of Sir Clifford Allbutt and Dr. Rouse.

The Sympathetic Endocrine System

Dr. DAVID ORR of Prestwich Asylum gave a lantern demonstration on the sympathetic endocrine system. He said that emotion and all intellectual life were inseparable from and depended on sensory stimuli, from birth until and beyond adult age. Certain areas of the brain were associated with the registration of visceral impressions, and there was no impression in any part of the body which was not registered in the brain and which did not immediately react on certain organs. The central nervous system could not be spoken of as a system *per se*, it was intimately connected with the sympathetic system, and this latter with the ductless glands. He referred to CRYSLER's laws, one of which was that of dynamic polarization—namely, that in axis cylinders spread its little collaterals around the protoplasmic processes of the cell, when an impulse passing through it was then transmitted into a multitude of cells. As every impression reached the brain it was accompanied not only by its own specific sense, but by an emotional content, and it aroused certain responses, it produced either a pleasant or an unpleasant sensation, as there was no such thing in the human mind as a negative impression. Through the spinal cord impressions were going down, they then spread through the interior roots and into the white ram of the sympathetic system, and thence onwards. All this time sensory impressions were proceeding up from the viscera, and from the ductless glands, forming reflexes. The vegetative system possessed its reflexes, as did the system which was related to the outside world. This was most important, and was a standing justification of the treatment of mental patients from the physical point of view. Dr. ORR proceeded to elaborate his thesis, and demonstrated the sequence of events during a nervous upset. His main point was the intimate co-operative working of the whole mechanism and the need for treating patients from the physiological point of view.

The President's Address

SIR FREDERICK MORT, in his presidential address, said that no progress was possible in knowledge of mental disease until the spell of metaphysical speculation had been shaken off, since that carried with it the doctrine of mind as an invisible intangible spirit with its existence separate from the body. The functions of mind depended on the whole body and on the harmonious action of all its parts. In the apparently healthy brain there might be subtle biochemical and biophysical conditions which were dependent on inborn functional or bodily defects. Acting on the highest levels of the brain, small doses of narcotics sufficed to affect intelligence, self-criticism, judgement, and control, leaving the lower levels unaffected, the higher levels were the first to undergo the deleterious effects of any form of intoxication. This highest level represented the psychic personality of the individual, and was the personal equation due to inborn tendencies and characters derived from racial and familial ancestry, near and remote. Primitive people suffered from the same psychoses and psycho-neuroses as did the most cultured people, but the illusions, hallucinations, and delusions were coloured by social usages, customs, and beliefs. Yet there might be no discovered differences in the brain structure, even by powerful microscopy. There might be a vital germinal deficiency, perhaps manifesting itself by an arrest of development of many of the cortical neurons or a lack of durability. Vascular conditions might

be present which interfered with the nutrition of the rapidly developing neurons.

Sir Frederick Mott then proceeded to deal with the changes in the mental attitude coincident with the involutional period—adulthood—remarking that all psychic activities were subordinate to and dependent upon physiological processes. Indeed, he put forward the premise that a disintegration of the psychic unity might be conditioned by a disintegration of the physiological unity. The functional correlation of mind and body was shown by the profound influence which the reproductive endocrine system exerted upon evolution at puberty and on the sentiments which had their roots in the sex instinct. In the female particularly, the repression of this instinct caused a mental conflict, which might end in neurosis or psychosis, hence it was not surprising that disappointed love was fairly frequently assigned as a cause of mental breakdown. The function of reproduction stood in a position different from that of any other—it depended not alone on the sex organs, but also on the functionally correlated endocrine system of glands. Steinach had shown that the substances of internal secretion had a selective action in storage in the central nervous system, and it was not sufficiently recognized that a characteristic might occur in men between 55 and 65 years of age, being observed in some of them—but not in all—with arteriosclerosis. Some cases of involutionary melancholia had their origin in testicular regression and the concomitant endocrine gland changes, for in many such persons the *potestas* had ceased.

The President next dealt with inborn characters of mind. A high degree of mental plasticity was, he said, necessarily associated with an enhanced liability to mental instability, and this even more than intermarriage, was responsible for a high percentage of the cases of psycho-neurosis and psychoses in the Jewish race. A study of relatives in a large series of cases in the London county asylums revealed three main facts in relation to the causation of mental disease: (1) the importance of a neuropathic and psychopathic heredity, (2) the special liability of the neuroses and psychoses to occur in adolescence, and (3) the influence of child bearing and lactation in women, acting as an exciting cause. Speaking of alcohol, he said this normalized the highest volitional level, and it was a source of benefit in banishing anxiety and sorrow until the morrow, but it must be retained as the servant and not allowed to become master. In most of the cases diagnosed as dementia praecox there was found to be a regressive atrophy of the reproductive organs, of the pituitary and the adrenal glands. The general conclusion he wished to enforce was that it was the duty of medico-psychologists to practise general medicine in its broadest sense, and to ascertain whether there was present any body condition which could act either as a cause or a contributory factor in the production of the abnormal psychic state.

Encephalitis Lethargica: Its Psychological Implications

Dr G. A. ARDEN pointed out that the late sequelae of lethargic encephalitis gave it sinister importance, which was intensified by the steep rise in the epidemic incidence which had marked the past year. Lethargic encephalitis opened up an entirely new outlook in psychiatry and neurology, which might bring us to a better understanding of the genesis of certain psychoses and neuroses. Confining his remarks to children between 5 and 15 years of age, he pointed out that the clinical picture presented by the disease was one of a generalized toxic condition, which affected particularly the nervous system, while the later manifestations both psychic and somatic, formed a syndrome which gave all the features of a definite and distinct morbid entity. One of these was a characteristic failure of adjustment to the inhibition and sanctions of the social order, especially in the direction of persistent thieving and lying. Other features such as a reversal of the normal sleep rhythm, coupled with noisy excitability, perverse habits such as that of tearing the clothes to pieces, seemed to bring the disease into definite relationship with certain types of mental disorder. A considerable number of children developed peculiar habits and ties. Some of these might be attributed in the first instance

to increased suggestibility—thus, the hawking and spitting might be the result of a salivation which had passed off. Occasionally cases showed iteration compulsions. In some of the advanced cases of Parkinsonism there was a superficial resemblance to catatonics, but in these cases as von Leonono had pointed out the patients were appreciatively and intellectually intact, appreciating fully their relation to their environment, well orientated, and with undiminished critical judgement. The main characteristics were a combination of mental apathy with explosive irritability, a rapid onset of fatigue and a marked drop in attention, with a heightened susceptibility to emotional stress. These might be correlated with an inhibition of volition and a failure of the exercise of self-criticism. In the opinion of Dr Arden the theory of the development of the nervous system put forward by Head and Rivers gave a key to the proper understanding of these characteristic changes and volitional defects. They appeared to be regressions due to a removal or suppression of the epiepic control over the protopituitic instinctive tendencies. The child was essentially, in Lloyd Morgan's phrase, a "self of enjoyment," and it was only as he grew that the ceaseless stream of suggestions of social import raised in him a predisposition towards social conduct. This process of regression might be compared to the geological process of denudation, whereby the newer sedimentary formations were removed, leaving bare the ancient and primitive rocks upon which they had been deposited. This view received confirmation from the action of alcohol on emotions, the effect being to produce a regression to a more primitive all-or-none protopituitic type of reaction. With regard to treatment, if the theory set forth in the paper was correct punishment could have little or no deterrent effect; indeed, it might have disastrous results by fixing an antisocial attitude through the creation of a conflict or an inferiority complex. Under the simple and regulated life of a special institution, differing from the Boarding or industrial school type, sufferers from encephalitis lethargica would reacquire the necessary epiepic control to enable them again to take their places in ordinary life.

Chronic Infective Processes in Mental Disorder

Dr I. C. GRIVES (medical superintendent, Holloway Asylum), in an elaborate paper on the incidence of chronic infective processes in association with mental disorder, said that often the conditions found were beyond the possibility of cure as they were slow, insidious, and hidden, and sometimes they had not given evidence of their presence. The infective process might be deep in the jaw-bone, and a sequel to this might be a chronic osteomyelitis. In the femur the motor and sensory disturbances were usually intensified at the extremities and especially at the premenstrual phase. He narrated a number of cases in which slides of the dental conditions were shown and the clinical notes read out. In some cases after extraction of teeth a root had been left, and the shutting in of infection had led to spread into the bone. Some people with undoubted septic foci seemed not to suffer disability from them, the explanation being that they were putting up an effective resistance. He also dealt with the questions of sinus infection, infection of the tongue, tonsils, and, in the female, the genital tract and contended that these septic processes played a definite part in the causation and the duration of mental disorder.

Delinquency

Dr W. A. POTTS, in a contribution on delinquency, said he thought the time would come when all sexual offenders, those of a kind now sent to reform homes and those who had committed serious offences, would be referred for a special medical examination. Inability to earn a living might be due to lack of training or a definite handicap. Activity simply to obtain luxuries, denoted a wrong attitude towards life. The first duty was to see that the person concerned was not suffering from a physical or psychological handicap, the latter being divisible into inborn and environmental. The presence of a physical disability did not mean that there was not a psychic one also, but when a physical factor had been efficiently dealt with the

psychological factor disappeared of this he quoted some convincing examples. But children must not be trusted until they were old enough or had been trained enough for this. Defective sight was important, for if a boy could not see everything on the board at school, he was weighed down by a sense of inferiority. In many cases of juvenile delinquency the problem was the parents. It had been said that 10 per cent of delinquents were mentally defective, but Dr Potts regarded this figure as much too high, it was nearer 2 per cent. A very useful point to determine was the mental age of an offender in comparison with his actual age in years. A mental conflict must be recognized and treated as such usually the delinquent was failing along more than one line. He had found that homosexual offenders had been retarded, especially on the emotional side, and that they responded well to psychoanalysis. Cases of chronic alcoholism required much more serious attention than had been yet devoted to them by the profession, and the possible benefit from treatment was better than was generally realized. Physical treatment should not be neglected, and here also psychoanalysis was valuable.

Iodine Content of Thyroid Glands

Dr F A PICKWORTH read a paper which represented a further stage of the work by Sir Frederick Mott that had been submitted to the association at its meeting in Belfast last year. An attempt had been made to correlate the iodine content of the thyroid gland with histological structure, and the mental and bodily condition of the patient. Patients with myxoedema and those who had very sluggish thought were greatly benefited by the administration of thyroid gland, no other form of treatment having any effect. Dr Pickworth described and demonstrated his new method of ascertaining the iodine content of glands. It consisted of the destruction of the organic matter by fusion with alkali, and the oxidation of the resulting iodide to iodate with permanganate solution, the excess of the latter being removed by means of animal charcoal. After filtering, potassium iodide was added, and the iodine titrated with thiosulphate solution. Arterio-sclerotic glands showed less iodine, and in fibrotic glands the iodine was very low indeed. A case of tuberculosis showed a lowered iodine content, but one of primary tuberculosis showed iodine above the normal. A low quantity of iodine was also found in melancholia, mania, dementia praecox, and arterio-sclerosis, as well as in dementia. In the thirty-nine cases of general paralysis of the insane there was a large range of variation in this respect. It became clear from this investigation of over a hundred cases that the iodine content in the thyroid was very important in combating infections, though it probably was associated in this influence with the endocrine products.

Institutional Treatment of Mental Defectives

Dr A M McCUTCHON read a paper on the treatment of mental defectives, with special reference to occupational training. He said the objects of this treatment in institutions were four: (1) to correct antisocial conduct, (2) to restore self-respect and happiness, (3) to teach the patients the work for which they seemed most fitted, leading to discharge if possible, and (4) by stopping the procreation of children to prevent the blight from being handed on. All these could best be achieved, he thought, by segregating them in institutions, preferably of the colony type. A keynote of success was adequate classification. He discussed the question from the standpoints of the child and the adult, and ended by an examination of the question of reversion.

The Psychopathic Personality

Dr HAMILTON SMITH (medical officer of the Birmingham Prison) said that the cases of psychopathic personality formed a large but ill-defined group, the members of which found it impossible to make satisfactory social adjustments. They had a strong inferiority complex, and however well the physical treatment of them might be carried out the psychiatric must not be neglected. The abnormal degree of worry which they seemed to experience was not so much a reaction to an environmental state as a reaction to something in the patient's unconscious mind. These people had a 'shut-in' personality, and the hope for the future lay in taking the psychological view of them.

Rebicus.

THE RACES OF MAN

THIS book, *The Races of Man and their Distribution*,¹ though small in size, is pregnant with the learnings of a lifetime. It is written by the most outstanding figure among British anthropologists, Dr A C HADDON, Reader in Ethnology in the University of Cambridge. Thirty-seven years ago, when Professor of Zoology in the Royal College of Science, Dublin, Dr Haddon went to study corals in the Torres Strait. When there he realized that coral zoophytes might be investigated in any subsequent century, but that if the native races in that part of the world were to be studied investigations must be set on foot forthwith, for natives and native modes of living were disappearing under the drive of Western civilization. At great and continued personal sacrifice he devoted his life to this mission, and by his own efforts, ably seconded by those of his distinguished pupils, has made the British school of anthropology respected at home and renowned abroad. Dr Haddon reached his 70th birthday this year, and his many pupils and admirers gladly seized the opportunity to have his portrait painted by a distinguished artist as an acknowledgment of the services he had rendered to anthropology and of the love and esteem in which they hold him.

Thus it is scarcely necessary to say that this new work by Dr Haddon will prove of the highest service to all who study, or are interested in, the racial differentiation of mankind. It is true that Dr Haddon issued a small book on the races of man sixteen years ago, but so much has happened since then, so much has been learned that is new, that the present work, although described as a new edition, is really a new book. For its author has been not only a student of culture but also of race, and has been engaged for many years in collecting data concerning the origin and distribution of the races of mankind, with the view of preparing a standard treatise. The book now issued is a summary of the proposed larger work.

The main feature of the present book is the theory put forward by the author to account for the distribution of living races of mankind which are rightly regarded as products of a common stock. This stock, on the author's theory, is regarded as having been evolved in Central Asia, the Himalayan range being presumed to have been a primary dividing line. All the finer races have been evolved to the north of this primary racial watershed, while the darker have come into being in lands to the south. By adopting such a hypothesis Dr Haddon believes that a rational explanation can be given of the distribution of living races—at least their distribution before the overseas exodus set in from Europe. The subject is one which appeals to many medical men, and to such this work by Dr Haddon can be recommended unreservedly.

HUGHLINGS JACKSON'S "NEUROLOGICAL FRAGMENTS"

THE volume of the late Dr J HUGHLINGS JACKSON'S *Neurological Fragments*, edited by his pupil Dr JAMES TAYLOR, is sure of an enthusiastic welcome by neurologists and should interest all medical men, not only on account of the collection of the twenty-one fragments which appeared from 1893 to 1909, described by Dr James Taylor as illustrations of intensive neurological investigation and research, but because of the personal features of the character of this philosophic neurologist contained in Dr Taylor's memoir and the biographical recollections of the late Sir Jonathan Hutchinson and the late Dr Charles Macleer. Hughlings Jackson was persuaded not to give up medicine for philosophy by his lifelong friend Jonathan Hutchinson, who, however, later had misgivings whether

¹ *The Races of Man and their Distribution*. By A C Haddon. Second Edition. New edition. Cambridge: The University Press, 1924. (Cr. 8vo. pp. viii + 184. 10 plates. 6s. net.)
Neurological Fragments. By J. Hughlings Jackson, M.D. F.R.S. F.R.C.P., with a Biographical Memoir by James Taylor, M.D. F.R.C.P., and including the Recollections of the late Sir Jonathan Hutchinson and the late Dr Charles Macleer. Oxford Medical Publication. London: H. Milford Oxford University Press, 1925. (Demy. 8vo. pp. ix + 227, 1 plate. 12s. 6d. net.)

it would not have been a greater gain to the world at large if philosophy had had the advantage of his undivided devotion. His characteristics are admirably described, and it is interesting to be told that with all his perfect courtesy he had much in common with Samuel Johnson, whom he greatly admired and often quoted. They were both conservative, with the same power of brushing aside subtleties so as to get to the very essence of the matter, had the like contempt for pretension and the same love for the real truth, many of Jackson's utterances were quite in the Johnsonian vein. He said of Gilbert White of Selborne that he "Boswellized the birds, he took down the familiar conversation of Nature."

A Yorkshireman by birth, Hughlings Jackson was house-surgeon to the York Dispensary when Dr Thomas Laycock, who was much interested in the relations of the nervous system to psychological phenomena, was physician before his election to the chair of physics at Edinburgh, the first Englishman to obtain this coveted post. On coming to London he met his fellow Yorkshireman Jonathan Hutchinson, and the two undertook journalistic work in general medicine until the influence of that erratic genius, Brown-Sequard, caused Jackson to focus his energies on the nervous system. The late Dr Charles Mercier held that no man ever had a better right to the title genius, and that his speculations on the ultimate nature of mental processes and their connexion with brain processes would undoubtedly be the foundation of a future system of psychology, he rather characteristically remarks that Sir Andrew Clark's dictum that neither Jonathan Hutchinson nor Hughlings Jackson had a sense of humour is accountable only when we remember that Sir Andrew was a Scotsman.

The neurological fragments were preceded in time (1892) by a lecture bearing that title, and as this apparently suggested the series of shorter articles which commenced in the following year it has appropriately been inserted in this volume. In addition there is a useful list of Hughlings Jackson's published articles from 1861 to 1909—about 284 in number.

In conclusion it may be said that this most interesting volume is a welcome complement to the Hughlings Jackson number of *Brain* (1907, vol. 425-311), which celebrated his jubilee in medical practice, to the late Dr G. Schorstein's article in the *London Hospital Gazette* (October 1895) in connexion with the presentation portrait of Dr Hughlings Jackson, and to the complete account of his views and writings on speech defects contributed by Dr Henry Head to *Brain* (1915-16, vol. 1, 1-90).

A MANUAL OF COMMON INFECTIOUS DISEASES

Dr FREDERIC H. THOMSON'S little work on *The Diagnosis and Treatment of the Infectious Diseases*³ is based on thirty-four years' experience of infectious diseases in the service of the Metropolitan Asylums Board. During more than half of that period the author had given courses of postgraduate lectures. The book is divided into thirteen chapters, the first dealing with the conveyance of infection, while the remainder are devoted to a consideration of thirteen diseases—namely, measles, rubella, scarlet fever, small-pox, chicken-pox, enteric fever, typhus, diphtheria, cerebro-spinal fever, acute poliomyelitis, lethargic encephalitis, whooping-cough, and mumps. Dr Thomson's long experience entitles him to speak with authority, and many of his readers will regret that he has not embraced the whole subject of infectious diseases instead of confining his attention to diagnosis and treatment. A few points call for criticism. Dr Thomson is perhaps inclined to over-estimate the value of alcohol in the treatment of acute infections, and still regards this drug as a cardiac stimulant whereas the value it has seems to be confined to its narcotic action. The statement on page 143 that practically all are agreed that tracheotomy is superior to intubation⁴ should be qualified in view of the fact that in

many clinics on the Continent and in the United States intubation is the method of choice for relieving laryngeal obstruction and primary tracheotomy is rarely employed. We have noticed three important omissions. In the brief chapter on typhus fever there is no mention of the Weil-Felix reaction, which is now generally held by competent authorities to possess the same diagnostic significance in typhus as the Wassermann reaction in syphilis. In the discussion of the treatment of cerebro-spinal fever we do not find a description of intraventricular puncture, which has proved a valuable method for the removal of fluid and injection of serum when lumbar puncture has failed. Lastly, in the description of the differential diagnosis of enteric fever and lobar pneumonia no mention is made of blood examination.

The book, which is clearly written and essentially practical, will serve as an excellent introduction to the study of the commoner infectious diseases.

BIOLOGICAL THERAPY

Biological Therapy,⁴ a small volume prepared by Messrs Parke, Davis and Co for the use of the medical profession, contains summaries of the evidence regarding vaccine therapy, serum therapy, phylacogen therapy, gland therapy, and the diagnosis of protein sensitization, and also gives lists of the preparations manufactured by the firm. The first half of the book consists of a new and enlarged version of the firm's handbook on vaccine therapy, of which many editions have already appeared. It is written by Sir Almroth E. Wright and members of the staff of the inoculation department of St Mary's Hospital, London. This section may therefore be taken as giving an authoritative summary of the views of this school regarding the use of vaccines in disease. The subject is treated in a very clear manner. Great emphasis is laid on the fact that the problem of greatest importance and greatest difficulty in vaccine therapy is the discovery of the correct dose. The articles on serum therapy call for little comment, since the main facts in this field are well established, and only five pages are devoted to the more disputable question as to the therapeutic use of phylacogens.

The second half of the volume is occupied chiefly with gland therapy, a subject which is, of course, rather controversial and extremely difficult to treat briefly. The well established facts regarding the use of dried thyroid in cases of definite hypothyroidism are summarized, of the use of dried thyroid in other cases it is said:

"With the other conditions which have been more or less loosely associated with thyroid hyposecretion (thyroid insufficiency) the results as might be expected have been more or less irregular. Thyroid therapy is not to be regarded as a panacea for all of the ills which have been described in connexion with thyroid disturbances but its intelligent application will often prove of great benefit in some of the more or less obscure types of thyroid insufficiency."

This appears to be a very fair summary of our present state of knowledge on this subject. As regards parathyroid therapy it is stated:

"So many indications for the administration of parathyroid gland substance have been put forward that there is a danger of the remedy being regarded with scepticism and ignored even in those cases in which its exhibition has been followed by the most satisfactory results. In the following pages only those cases have been quoted that have been reported in the medical press or contributed by responsible authorities."

Following this we have seven pages summarizing the many and various diseases for which parathyroid therapy has been recommended. The writers however, must have exercised a considerable critical censorship to have kept the list within this limit. Accounts are given also of the actions of the following extracts: suprarenal, pituitary, ovarian, corpus luteum, mammary gland, thymus, and pineal. The note on the last named extract is a model of reserve.

The administration of pineal gland substance is to a great extent empirical and clinical evidence so far available is mainly suggestive. The gland substance however, is supplied with full assurance as to genuineness for physicians who may desire to use it though no claim is made with regard to any remedial virtues that it may possess.

⁴ *Biological Therapy including Vaccine Therapy Serum Therapy Phylacogen Therapy Gland Therapy Diagnostic Proteins* London Parke Davis and Co 1925 (Demy 8vo pp 198)

³ *The Diagnosis and Treatment of the Infectious Diseases* by Frederic H. Thomson M.B. C.M. DPH London H. K. Lewis and Co Ltd 1924 (Cr 8vo pp viii + 203 10 figures including 7 plates, 7 61 net)

The medical profession has for years been deluged with commercial literature booming glandular therapy in a most uncritical and unscrupulous manner. It is a pleasant change to find a commercial firm dealing with this subject with a sense of responsibility and restraint. We do not wish to suggest that all the claims made in the volume under review are certainly or even probably true, but in every case they can be supported by reputable evidence. It must be recognized that it is impossible to summarize the subject of glandular therapy in a manner that will meet with general acceptance, since the evidence available is both imperfect and contradictory. The summary under review, however, comprises very favourably as regards its caution and restraint with most of the literature on this subject.

The volume *Biological Therapy* is, we are informed, circulated exclusively amongst medical practitioners and is being offered free to all members of the profession who desire a copy.

NOTES ON BOOKS

SIR J. J. THOMSON, Master of Trinity College, Cambridge, delivered the first Lison memorial lecture at Guy's Hospital last May. It was on *The Structure of Light*, and is an attempt to provide a theory on light partly corpuscular and partly undulatory. The corpuscular theory began with Newton; it was discussed and supported by Laplace and Poisson, and had an undisputed sway until the end of the eighteenth century. Then came the English physician, Thomas Young, with the undulatory theory, the mathematical development of which was due to the Frenchman, Fresnel. It was almost universally accepted until quite recently. It was shaken up by the discovery of the X-rays. Planck revived something like the corpuscular theory and propounded his law of the quantum, which, again, has been very generally accepted. Sir J. J. Thomson summed the matter up by saying that the position is that all the optical effects point to the undulatory theory and all the electrical to something like the corpuscular theory. Taking up Maxwell's electro-magnetic theory of light, Sir J. J. Thomson elaborates another in which the corpuscular, or quantum, idea is combined with the undulatory. It will no doubt, receive at the hands of physicists the full consideration it deserves. The lecture was founded in memory of Mr. Alfred Henry Lison. For twenty years he was a staff lecturer in physics for the Oxford University Extension Delegacy, and all through his life he was a most successful public lecturer; from 1912 he held the office of secretary to the Gilest Educational Trust. In 1906 he was appointed lecturer in physics at Guy's Hospital, and it was while examining a wireless aerial on the roof of the medical school that he slipped and crashed through a skylight, receiving internal injuries which caused his death four days later (February 4th, 1923). The idea of establishing an annual lecture in his memory originated among his friends on the staff of Guy's Hospital and its medical school. It had the hearty support of the Gilest trustees and the response to a public appeal enabled the idea to take practical shape.

The *Catalogue of British Scientific and Technical Books*, published by the British Science Guild, is a volume that should be of great service to anybody who wants to know what books to buy for the study of any branch of science and technology. The first edition was published four years ago; the second, now before us, is dated May, 1925, and contains the titles of nearly ten thousand books under 51 sections and 555 subsections. There is a long list of addenda, a list of publishers, and an index to subjects and subject titles at the end of the volume. The book seems very complete and well up to date, and is admirably fitted for the use of the general inquirer and the orientation of specialists in the many departments of science and technology for which it caters.

The writing of a scientific paper always turns out to be more difficult than it seemed at the outset. Before pen and paper were collected the idea seemed clear as crystal, but faced with the blank and staring page its outline became less definite and its substance less transparent. Very quickly we become aware of the difficulties of composition. In such a mood, or better before it overtakes him, the author should, of course turn for guidance to the wisdom of the late Sir Clifford Allbutt in *Notes on the Composition of Scientific*

Papers. But besides the difficulties of composition there are others which spring up at a later stage when the thought is out on paper and the troubles of composition past. Now we are confronted with the technical difficulties of the headings of sections, the punctuation, the form of illustrations, tables, graphs, etc. the correct expression of citations and references. Help at this stage will be found in a useful little work, entitled *Preparation of Scientific and Technical Papers*, by S. I. MITTAS and J. S. YOUNG. This is a guide book to the correct expression and arrangement of a scientific communication. It contains a good deal of common sense advice about the orderly setting out of a subject and the use of clauses and correct grammar, but it is not for this that we wish to praise the book, for what the authors say on this score, though useful, is not distinctive. The chief merit of the book is that it is a handy little dictionary; it seems to answer all the irritating technical questions connected with the publication of scientific papers. For instance, the reader will find here information about corrections and alterations in the manuscript for the printer, the kinds of type the use of italics, the proper way to express the names of plants and animals, the signs employed in proof reading, and so on.

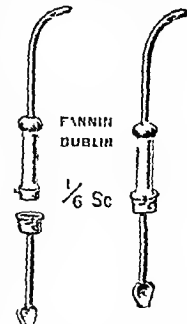
The Harvard Health Talks delivered at the Medical School of Harvard University provide in popular language information on medical subjects of general importance, and thus educate the public in the principles of hygiene. In the twelfth of these attractive little volumes Dr. CHARLES MACFARLANE, the university professor of psychiatry, speaks of *A Present-day Conception of Mental Disorders*, and asks his audience to consider the topic to be that of men, women, and children in difficulty suffering, hoping, thwarted, groping, and not to regard it with the vague feeling of mystery that the term 'mental disorder' may connote the word 'mental', indeed, is uncanny, and nervous is preferable. These disorders form a motley group, including respectable bankers peevish with their wives, scrupulous housewives with immaculate and uncomfortable homes, children with night terrors, earnest reformers, intellectuals, aesthetes and delicate invalids, evasive and tyrannical with manifold symptoms and transitory dramatic episodes. This charming lecture lays stress on the view that mental disorders can be explained in the light of the same general principles that explain the mechanism of the organs of the body, the evolution of the instincts, the origin of human culture, and the early phases of individual development in infancy and childhood.

Preparation of Scientific and Technical Papers. By Sam I. Mittas and Emma Saxena. Yale, Baltimore, Williams and Wilkins Company, London. Baillière Tindall and Cox, 1925. (Cf. 8vo pp. 113, 7s. 6d. net.)
* *A Present-day Conception of Mental Disorders*. By Charles Macfarlane. Cambridge, M.D. 1906, professor of psychiatry in Harvard University. Harvard Medical Talks 12. Cambridge, Mass.: Harvard University Press, London: H. K. Mulford Oxford University Press, 1924. (Fcap. 8vo pp. 54, 1 dollar.)

PREPARATIONS AND APPLIANCES

A Modified Mucus Catheter

Dr. BETHEL SOLOMONS, M.R.C.P. (gynaecologist to Mercer's Hospital, Dublin) has had made a mucus catheter on the same idea as the Record hypodermic syringe. It is shown in the illustration. Its advantages over the ordinary pattern are (1) that the mucus is made of glass so that the mucus can be seen and will not be sucked into the doctor's mouth (2) that it is easy to clean. It has been made to his instructions by Fanning and Co. Dublin and will be supplied in a box to prevent breakage in the bag.



A Slotted Bicycle Saddle

A bicycle saddle has been designed with a longitudinal median slot extending over its entire length; the width of the aperture is adjustable at both ends. It is claimed that this device obviates pressure upon the pubic region and is beneficial in cases of haemorrhoids or after operations for prostatic enlargement and anal fistula. We are informed that the saddle is made by The Leatheries, Ltd., Sampson Road North Birmingham.

An Insecticide Flit

An insecticide called Flit, produced by the Nupol Laboratories, New Jersey, U.S.A., is supplied by the Anglo-American Oil Company, Albert Street, Camden Town, N.W.1. It is used in a sprayer which is supplied with each outfit and is stated to destroy all insects such as flies, fleas, cockroaches, bed bugs, and their eggs. The price for a complete outfit is 5s. 3d. a 16 oz. can of fluid costs 3s., and the sprayer separately 2s. 3d.

* *The Structure of Light*. By Sir J. J. Thomson, O.M. The Frobenius Memorial Lecture, 1915. Cambridge: The University Press, 1915. (Imp. 16mo pp. vii + 38, 8 figures, 2s. 6d. net.)

† *Catalogue of British Scientific and Technical Books*. Second edition (entirely revised and enlarged). London: British Science Guild and A. and F. Dore, Ltd. 1925. (Dem. 8vo pp. vii + 489, 12s. 6d. net.)

THE STATE OF THE PUBLIC HEALTH

SIR GEORGE NEWMAN'S REPORT FOR 1924

[Concluding Notice*]

GENERAL EPIDEMIOLOGY

ENTERIC and paratyphoid fevers are not differentiated in notifications, but the total of both is 4,121 cases, against 3,211 in 1923 and 2,414 in 1922. The increase is regrettable, but it is pointed out that the decline has been exceptional in recent years. As regards paratyphoid, inquiry failed, in most outbreaks investigated, to elicit the means by which the disease had been spread. An account is given of various local epidemics, including that at Chorley in Lancashire, which was the subject of a special report by Dr. W. V. Shaw (BRITISH MEDICAL JOURNAL, March 21st, 1925, pp. 563 and 565). In an outbreak of enteric at Luton an itinerant ice-cream vendor seems to have been a carrier. In another, at Bethnal Green, in the last quarter of the year there were 65 primary cases with 12 deaths, and the infection was ultimately traced to milk, the manager of the dairy having been affected, not with influenza as at first supposed, but with enteric as diagnosed immediately after his removal to hospital. Scarlet fever is to be the subject of a special report in an early date.

Diphtheria and the Schick Test

The prevention of diphtheria is discussed in some detail in relation to the value of the Schick test. Two schools in the South of England are contrasted. In one, 220 children, mostly of rural origin, attending a school where there had been no diphtheria for years, were, naturally, highly susceptible when infection was introduced by means of a sickly child with "septic tonsillitis" which proved fatal. Of 122 older children, 83 (69 per cent) were found susceptible when tested, and 39 (31 per cent) immune, while of 63 younger children no less than 85.5 per cent were susceptible, and only 14.5 per cent immune. "Active immunization" was the method adopted for dealing with the outbreak, and "toxoid" antigen was employed in view of the great susceptibility of the children. The results were not so satisfactory as those usually obtained with "toxoid-antitoxin." In the other school there were between 400 and 500 boys, and 21 cases of diphtheria (one fatal) had occurred in less than a year, 20 of the children had been less than a year at school. The Schick test was carried out, and among 432 boys aged 6 to 15 years, 54, or 11.2 per cent, were found susceptible, and 378, or 88.8 per cent, immune. This school had mainly been recruited from urban districts, but even so the high percentage of immunity was remarkable. Reference is made to the account of the Schick test in Edinburgh given by Dr. Robertson (not Robinson, as in the report) before the Society of Medicine on the Royal Commission on the Prevention of Disease, and it seems ripe for consideration whether this method of protection more generally available. The co-operation of local education authorities would be necessary.

Influenza

Influenza is held to be in our own time like one of Sidenham's "epidemic constitutions." The recent type has, in most cases, been indistinguishable from a severe cold, but in some cases gastro-intestinal symptoms were common. The total number of deaths from influenza registered in England and Wales in 1924 was 13,986 as against 8,461 in 1923, and 21,498 in 1922. An account is given of outbreaks in two public schools.

Infectious Diseases of the Nervous System

Infectious diseases of the nervous system receive much attention in the report especially encephalitis lethargica, of which there were 5,039 notifications—much the highest figure since it became notifiable in 1919. The other

diseases of the group shew also some increase. All of them are believed to be conveyable by personal contact, and unrecognized errors may be suspected. It is remarked that the excessive humidity of the year "may possibly have had some bearing upon the enhanced morbidity of these few diseases." The heaviest incidence of encephalitis lethargica was in the second quarter of the year. Its urban and rural incidence, mortality, seasonal prevalence, predisposing causes, infectivity, after-effects, prevention, and treatment are discussed, and also its relation to influenza—an interesting question which is likewise dealt with by Sir William Hunter in his London County Council Report, noticed in our issue of August 9th, 1924 (p. 247), and also with some fullness in his Report for 1924 quite recently issued.

Tuberculosis

Unfortunately it cannot be said that within the past five years there is any appreciable decline either in prevalence or mortality of tuberculosis. Of pulmonary cases the tables show that 57,844 became known in 1920, and 55,040 in 1924, but non-pulmonary cases, which were 15,488 in 1920, were 17,684 in 1924, so that in the total there is very little change, and indeed 1924 has had more cases than either of the three immediately preceding years. In mortality also there has been little alteration within the lustrium. In 1924 the deaths from pulmonary tuberculosis numbered 32,690, against 32,097 in 1923, but in other forms there was a slight diminution—from 8,691 to 8,413—and if 1920 be compared with 1924 a trifling decline appears, from 32,791 to 32,680, while in other forms of the disease there is a very appreciable fall—from 9,754 to 8,413 deaths. None of these figures are rates per population, which has, of course, somewhat increased, and an appendix table gives the standardized death rate per million from the pulmonary disease as 843 per million in 1920 and 801 in 1924. But the statistics for the five years are not satisfactory, and it is suggested in the report that the conditions associated with lack of employment supply the probable explanation.

Notification, however, presents another aspect. An increase of 1,500 in pulmonary notifications in 1924, as compared with 1923, and a trifling increase in non-pulmonary may be partly due to more complete compliance by medical practitioners with the Regulations issued in August, 1923. Yet there emerges the very regrettable fact that no fewer than 8,434 cases became known to medical officers of health, not from formal notification, but from death returns, etc. It is pointed out that there may be delay in the patient consulting his doctor, delay in diagnosis, and failure to comply with regulations. But these considerations are no sufficient justification for the omissions, and Sir George Newman remarks that the solution must be sought in the education of public opinion. Even medical officers of health cannot be excused. The importance of this matter is such that we quote in full the following paragraphs from the report.

Evidence from various sources suggested that in a number of urban and rural areas the Medical Officers of Health were seriously irregular and negligent with regard to the register of notifications of tuberculosis required to be kept by the Tuberculosis Regulations of 1912 and that they had failed to revise their registers periodically as required by Article 4 of the Tuberculosis Regulations of 1921. Apparently the Medical Officers of Health of many smaller urban and rural districts have taken the view that they need not interest themselves particularly in tuberculosis, since the responsibility for carrying out the official scheme of treatment of this disease was vested in the County Council and not in the Local Sanitary Authority.

Tuberculosis is a disease of so much importance in connection with the public health problems of an area that it seems particularly unfortunate that any Medical Officers of Health should assume that the special position of the County Council in relation to schemes of treatment in any way detracts from the responsibility of the District Council in regard to this disease. The Tuberculosis Regulations of 1912 specifically indicated the duties and powers of Local Sanitary Authorities in connection with tuberculosis and it is essential that these duties and powers should be exercised. Where County Councils and Local Sanitary Authorities have collateral powers it is indispensable that the work should be carried on in close co-operation arrangements being made to prevent overlapping.

It was found that in some areas the tuberculosis notification register was either non-existent or had not been revised and kept up to date so that the Medical Officer of Health was unaware as

to the number of notified cases of tuberculosis in his area. It was consequently considered necessary to take steps to ensure that due attention should be paid to the question of the proper and periodical revision of the tuberculosis register. The Public Health (Tuberculosis) Regulations 1924 dated 18th December 1924 (Statutory Rules and Orders, 1924 No 1411) have therefore been issued.

The steady diminution since 1917 in the mortality from non-pulmonary tuberculosis is a redeeming feature, and is attributed partly to a safer milk supply, partly to institutional isolation of advanced cases of pulmonary tuberculosis, and partly to extended facilities for residential treatment of non-pulmonary cases, with excellent results even in severe bone and joint conditions. Indeed, the care of the advanced case, whether pulmonary or not, is an important influence in limiting spread of infection in families, and it is very desirable that small units of hospital accommodation should be available within easy reach of the homes of patients, though such units should be so administered as not to acquire the reputation of being merely homes for the dying.

Regarding the subject of results of sanatorium treatment, reference is made to the report issued by the Medical Research Council in July, 1924, as to patients treated at Emsayn Sanatorium. Notwithstanding disappointed hopes, it is held that sanatorium treatment "offers a more solid prospect of general all-round gain to the community in the combat against this disease," and that "at present there is no alternative." The points to be attended to in early notification, sufficient period of residence, sound principles properly applied, and after-care assistance. Cure and after-care, occupational training, and methods of treatment, including vaccine therapy, are all discussed in this valuable section of the report, but space forbids their further exposition here.

ATMOSPHERIC POLLUTION

THE pollution of the ocean of the atmosphere in which we are all immersed may be regarded as one of those evils called necessary which are inseparable from civilization in temperate latitudes. Dust is universal in the city and even in the country. Smoke is being continually discharged into the atmosphere and every day the ever increasing volume of heavy traffic is grinding down wood, stone and metal into impalpable particles to be blown about by every breeze. All this is quite apart from the myriads of minute living things—yeasts, other fungi, bacteria, spores, etc.—which contribute their substance to the omnipresent dust.

In 1912 a Smoke Abatement Exhibition was held in London, and one of the things accomplished by the delegates of the municipal authorities present was the establishment of a committee for the investigation of atmospheric pollution. This committee has now issued its tenth report.* It covers the work of the year ending March, 1924, the twelfth year of activity. The committee consists of members appointed by the Meteorological Office, by the Department of Scientific and Industrial Research, and by a technical subcommittee of experts, representing chemistry, physics, engineering, and other applied sciences. Sir Napier Shaw, F.R.S., is chairman.

The method of measuring the aerial pollution by means of the "standard gauge" has been fully described in previous reports. In the year under review forty-five gauges were in operation. Besides reporting upon the total deposit of impurities, the committee was able to estimate all of the following materials which contribute to the pollution of the atmosphere—namely, soluble ash, ash soluble on ignition, tar, carbonaceous matter, sulphates, chlorine and ammonia. Saturdays and Sundays for obvious reasons, are studied in a group by themselves, the other days being called "week-days."

All days for the purposes of this study are divided into two types: ordinary days and "7" days the latter being those on which the smoke haze was at some hour very thick.

A "7" day is defined as one during any portion of which the maximum impurity is equal to or greater than 1.28 milligrams of dirt per cubic metre of air. Three types of instrument have been used: (1) the standard deposit gauge, the purpose of which is to collect the deposited impurity at any station so as to compare the amounts which fall in different localities; (2) the automatic filter, which hourly measures the amount of suspended impurity; and (3) the jet dust counter, which allows of a microscopic examination and enumeration of the dust particles. A new form of instrument is described, the settlement dust counter, designed by Dr J. S. Owens, the consulting engineer. It measures the amount of dust or bacteria in the air even when the dust particles are very coarse, such as are found in warehouses for grain and in similar buildings. The ordinary method of exposing a plate has little value as a quantitative method, for the deposit on such a plate varies as the size of the particles, their density, the temperature of the air, and the degree of its turbulence. Further, the deposit is made from an unknown volume of air.

The figures for the total deposits are striking. Expressed in metric tons to a hundred square kilometres of surface in a year (omitting hundreds) we have for London from 8,000 to 16,000, for Glasgow from 9,000 to 12,000, for Central Birmingham 17,000, for Blackburn 8,000, for Leeds from 15,000 to 16,000, for Newcastle-upon-Tyne 34,000, for St. Helens 15,000, for Liverpool from 23,000 to 25,000. At Blackburn in winter there were 47 per cent ordinary days and 53 per cent "7" days. In summer in Blackburn on a week-day the deposit of impurity begins about 4 a.m., rising to a maximum at 7 a.m., whereas on Sundays the maximum is not reached until 10 a.m. This is taken to mean that the inhabitants, by remaining longer in bed on Sundays, prolong by three hours the period of natural salubrity.

The ratio of total smoke on Sundays to week-days in that town is as 2,000 to 3,677. Assuming that the Sunday smoke is exclusively domestic, while the week-day is domestic plus factory, the ratio of factory to domestic smoke is as 1 to 1.85. The instruments of precision have permitted a high degree of accuracy being attained in the work.

In previous years it had been found that 10,000 particles went to a milligram; the observations now reported confirm this, about 10,000 particles per cubic centimetre corresponding to 0.8 milligram per cubic metre.

Research is being conducted into the ability of light to penetrate haze or fog—a subject of great practical consequence. As might have been expected, the greater the number of particles suspended, the greater is the percentage of light thereby obstructed. The contrast photometer is used to measure the amount of light transmitted through a known distance of hazy atmosphere. In round numbers there is a loss of 50 per cent of light in traversing 50 feet of air when there are present 32,000 particles per c.c.—that is, by 2.6 milligrams per cubic metre. As we ascend from the ground the number and size of the particles diminish, as has been ascertained through observations by balloons.

The average diameter of particles collected at the surface was about four times that of those at 10,000 feet, so that the ratio of the total weight of particles at the surface of the ground to that of those at 10,000 feet was 530 to 1.

The spectroscopic appearance of dust volatilized in the electric arc has been studied, but as yet few reliable data have been collected.

The abnormal darkness of January 23rd, 1924, has been the subject of extensive investigation. The "Load diagram" for the power station in the City Road shows that at 2.30 p.m. on that day this station had to send out between 13,000 and 14,000 kilowatts the normal output for the same time of day at that time of year being 10,000 kilowatts. At the height of the observation no lights were visible beyond 500 feet; the impurity was equal to a precipitation of between 1 and 2 milligrams per cubic metre.

D. FRASER HARRIS

* The Tenth Annual Report of the Committee for the Investigation of Atmospheric Pollution. Meteorological Office. Air Ministry. H.M. Stationery Office. 1925. (1 p. 53, 16 figures, 4s. net.)

British Medical Journal.

SATURDAY, AUGUST 8TH, 1925

A PURE MILK SYMPOSIUM

THE experiment, suggested a few years ago by Dr. Fothergill, of a Section of Medical Sociology at the Annual Meeting of the Association, has been amply justified by its results. In the discussion on pure milk this year at Bath (of which a full report appears at p. 241) a high level of interest was maintained. There were present representatives of county councils, medical officers of health, and sanitary inspectors, of veterinary surgeons, farmers and milk purveyors, and of eleven milk societies. In fact the only interests not directly represented in this discussion on pure milk—a matter brought to the notice of the public originally by the doctors—were those of the ordinary consumer and the retailer. The interest of these comprehensive sections of the community may be summed up perhaps in a demand for efficiency with economy, and it is in the light of such a demand that the discussion should be studied.

The discussion fell into two parts in the morning and in the afternoon with the standard of purity of milk, taken to obtain pure milk, and its cost. It will be useful in the first place to attempt to define the terms used in the discussion. Pure milk presumably is milk which has not been tampered with, which has not been diluted with water, which has no added preservatives, and which is clean. The meaning of clean milk is fairly definite. It is based on the bacterial count, and is related especially to the presence and numbers of coliform bacilli. The difficulties in producing completely clean milk are so great that the cost of the milk would be prohibitive. It has been thought well in order to stimulate the production of milk that is as clean as circumstances will allow, to introduce a system of grades. (1) Certified milk is obtained from cows tuberculin tested and inspected by a veterinary surgeon every three months. The number of bacteria must not exceed 30,000 per c.c.m., and must not contain *B. coli* in 1/10 c.c.m. on delivery. (2) Grade A milk must appear on each cap of the milk the date of production and the words "Certified milk" except that the maximum bacterial count must not exceed 200,000 *Bacillus coli* and the name of the farm. The cap must be stamped with the address of the licensed bottling establishment. (3) Grade A milk is from cows that need not be tuberculin tested but the herd must be inspected every three months by a veterinary surgeon. The bacterial count allowed is as in (2). The milk must be distributed from the farm in unventilated sealed containers, dated, and stamped. (4) Grade A milk which after pasteurization does not contain more than 30,000 bacteria per c.c.m. and contains no coliform bacilli in 1/10 c.c.m. (5) Pasteurized milk is milk that after pasteurization does not contain more than 100,000 bacteria per c.c.m. It need not be bottled. To these Dr. Chalmers

Watson wished to add a sixth grade—milk only suitable for use when cooked (BRITISH MEDICAL JOURNAL May 16th, 1925, p. 943). From this summary of the authorized grades of milk it will be seen that the term 'Grade A' is misleading, and that milk to which this title is given is really Grade C. One of the speakers in the discussion at Bath commented strongly on this deceptive nomenclature.

From the addresses read before the Section it is plain that the matter under discussion involved two main problems. First, the production of milk as clean as circumstances will allow, secondly, the production of tubercle free milk. The subject matter of these problems was debated under two headings: the standard of purity of milk and the means and cost of obtaining pure milk. Some of the speakers asserted once more that it was impossible under all conditions to maintain the standard of 3 per cent butter fat and 8.5 per cent solids not fat though difficulties with individual cows are often neutralized by the mixing of milk in bulk. Enlightenment was asked for as to any feasible way of increasing the vitamin content by feeding methods. With regard to pasteurization doubt was expressed as to the ability of very poor parents to pay for fruit juices to replace destroyed vitamins and Dr. Ene Fritchard gave the interesting information that he had been quite unable to find any evidence in literature or in his practice of harm from the ingestion of toxins of either pythogenic or non pythogenic organisms.

An important part of the discussion was concerned with bacterial questions—the production of clean milk, with, on the one hand, a minimum number of bacteria (especially *Bacillus coli*), and on the other an absence of the tubercle bacillus. Putting aside for the moment all question of tubercle, and dealing only with dirtiness as evidenced especially by the coliform bacillus, there appeared to be no doubt from the discussion that it is not difficult to produce milk that will reach the standard of Certified or of Grade A. Professor Walker Hill went so far as to say that instead of a bacterial count of 200,000 a count of 200 was possible even in summer and several speakers asserted that they produced milk with a count of less than 1,000. At the same time it is certain that the general production of Grade A milk is not practicable without a vast amount of further education. The general production of Grade A milk requires the greatest possible cleanliness in the collection of the milk. The cowsheds, if reasonably clean are of far less importance than the cleanliness of the workers of the pails and of the cows. Anyone who is old enough to have observed the struggles of the surgeons who were pioneers in aseptic surgery and their difficulties in keeping their hands out of their pockets or off their spectacles, will sympathize with the less educated milker in his attempts at keeping primitive methods with the farmer in the constant supervision he has to maintain and especially with the small farmer who has to expend money on the provision of suitable plant and time on the instruction of his workers in its use and its maintenance in cleanliness and good order. The production of certified milk with the obligation of bottling on the farm in such a way that when delivered to the customer it shall contain a minimal number of bacteria, is at present, quite beyond the capacity of anyone except the owner of a crack herd. The attitude most suitable for the present state of education and for present conditions is probably, as follows. Let the general production of Grade A milk (unpasteurized) be the ideal

aimed at, develop education as to the value of clean milk amongst producers, distributors, and consumers, but pasteurize is the safest course until education is more advanced. The objection that a general resort to pasteurization may delay progress in getting really clean milk is not valid, inasmuch as when he has something of value to offer to the public if not too much harassed by Government control, does not long allow himself to be quiescent. Attempts to go too fast are apt to produce again such statements as that made in one of the addresses: 'Recently five cases of bovine tuberculosis occurred in infants fed entirely on Grade A milk from a most reputable dairy.'

Turning now to the question of tubercle the discussion showed that a far more difficult problem was presented. In the face of these difficulties, and in order that the public may not lose its head (though it is perhaps unlikely to do so, having had the subject before it so long and so continuously) it might have been well if the opening of the discussion had begun by stating the magnitude of the problem. How much disease is caused by bovine tuberculosis? One of the speakers said that between five and ten thousand children die annually from tuberculosis, chiefly abdominal, and for that reason perhaps mostly bovine. Therefore, though the mortality is not enormously high yet, as was observed, much suffering and crippling is caused in many other non-fatal cases. Most of us do not desire to run the risk in ourselves or in our children of suffering from bovine tuberculosis, although there are some who think that tuberculous milk may serve to immunize children against tuberculosis. The matter is not yet ripe for dogmatic statement, there has been a very great decrease in mortality from tuberculosis, and panic measures are not justified. It will be possible to examine coolly the remedies proposed, and to refrain from expensive procedure unless the evidence that it is necessary is well established. It appears that there are about 2,500,000 milking cows in this country. It appears, also, that about 1,000,000 of these are tuberculous or would react to the tuberculin test. In addition, of course, there are large numbers of non-milking animals affected by the disease. It is impossible to eliminate bovine tuberculosis at once. As one of the speakers pointed out the result of an attempt to do so would be a milk famine. The Government has recently introduced an Order similar to the Tuberculosis Order of 1914 to come into force on September 1st next, when the Milk and Dairies Acts take effect. These Acts prohibit the use for the production of milk of any cow which is giving tuberculous milk, or is suffering from tuberculosis of the udder or tuberculous emaciation. The Order will compel the slaughter of all such cows and any other bovine animal which may be suffering from tuberculous emaciation or from a chronic cough and showing definite clinical signs of the disease. The owner is required to report such an animal to the police, and veterinary surgeons are required to report such animals to the local authority. After full veterinary inquiry such animals will be slaughtered, and the owner will be compensated at the rate of three quarters of the market value in non-advanced cases and one quarter if the animal is affected in an advanced form. The minimum payment is 45s. This Order raises many questions, some of which are left in doubt by the discussion at Bath. The tuberculin test appears to be reliable but some difference of opinion was shown to exist as to the respective value of the subcutaneous and the intradermal methods. The test is somewhat exacting, it requires

the taking of the temperature at intervals for eighteen hours. It does not seem certain how often it should be repeated and it appears to be not easy to maintain a tubercle free herd free from reinfection. The Order is confined to grosser lesions which can be recognized without the tuberculin test. But is it certain that a cow gives no tuberculous milk until the lesions are sufficiently gross to attract the attention of the farmer, the veterinary surgeon or the inspector? During the discussion in the House of Commons, reported in the JOURNAL of July 25th (p. 179) it was stated that the cost of compensation would probably be about £67,000 a year and that only £17,000 of this would fall upon the local authority. But has any calculation been made of the increased inspection that will be required and of the fees for veterinary services included? Mr. Quinlan Chairman of the Sanitary Inspectors' Association asserted that inspection was effective in the Liverpool district. But Mr. Maggs was equally strong in asserting that in many places inspection is a failure. If he is right a more thorough system of control will have to be added to the cost of the Order in such districts. As to tuberculous meat, it would seem that the lesions in the animals condemned will be too gross in most cases to allow of the carcasses being sent to the butcher but is disease of the udder always associated with such serious internal lesions as to need condemnation of the carcass for meat purposes?

The questions as to the stage of the disease at which a cow begins to give tuberculous milk, and as to the necessity for the tuberculin test to all milking cows, and the difficulties in the way of applying it, suggest that the results will be more satisfactory if hasty action is avoided. Dr. Stenhouse Williams in his opening remarks at Bath, said that bacteriological standards could be employed in two ways—either as a method of public health control, or as a means by which the true essentials of the methods of handling milk, and the need for them if the trade is to be in a healthy state can be brought home to the industry. And he added: 'The latter function will, in the end, to a great extent eliminate the necessity for the former.' The same remark can be applied to the problem of tuberculosis. The lines of progress in eliminating tubercle may be administrative or educative. The administrative method involves inspection, veterinary investigation, condemnation of unfit cattle, destruction and compensation. At the present time sufficient machinery does not exist in most rural and many urban areas to make this method effective. Administrative control will have to be made general, and, however moderate the cost of compensation, it seems probable that the cost of administration must be great. Moreover, control is apt to arouse opposition and unless in the present case its application is very gentle and judicious there will be many attempts at evasion. One of the speakers at Bath said that he had little doubt that the minimum compensation of 45s. will tend also to be the maximum. The educative method proceeds on different lines, involves less expenditure is less irritating but is possibly slower in its action. Dr. Savage, M.O.H. for Somerset, was cheered when he gave his own solution of the difficulty of milk control—namely, to give the owner of the milk prompt notice (without prejudice) of the fact that his milk was below standard, and to provide facilities for examination before any question of prosecution was entertained. It was noticeable also that the value of milk competitions was mentioned by a large proportion of the speakers and disputed by

none. Educative measures include the promotion of milk competitions, as is being done by many large firms of dairymen, instruction of the public as to what it should ask for, advisory assistance by administrators, exhibitions of good methods at agricultural shows, and, as a last resort only, the prosecution of those who offend through design and not through ignorance. The money that would be spent on the enforcement of harsh regulations would be more than sufficient for extensive propaganda.

The present position of the supply of pure milk is one in which the immemorial contest is going on between State control and voluntary effort. If every human being aimed at the ideal there would be no need for control. If everyone was controlled the human being would become a machine, and progress would stop. If these premises are accepted, then the aim should be a minimum of interference consistent with a reasonable probability that matters will improve. The symposium at Bath showed that the question is in the hands of very capable men, that the milk supply has improved enormously in purity, and is improving every day, that further examination and experiment will continue, and that the safest plan to avoid a setback to progress is that no rash step should be taken.

THE HEALTH GOVERNMENT OF ENGLAND

IN a discussion following a recent valuable and comprehensive address by Dr Andrew Balfour at the Royal Society of Arts one speaker remarked that a special merit of what they had listened to was that it left those who followed Dr Balfour absolutely free to start talking about any subject they pleased. The same comment applies to Sir George Newman's Report on the State of the Public Health in England in 1924, of which a concluding notice appears elsewhere in this issue. He surveys the world of hygiene from China to Peru, and the questions on which he comments are varied and important. We propose to confine ourselves to one subject which must at the present time be pressing itself on the attention of those who are most intimately occupied with questions of local government. In our issue of March 21st, 1925 (p. 565), we dealt with the subject of local government in rural districts, the article being called forth by a report by Dr W. V. Shaw, of the Ministry of Health, on a milk borne outbreak of paratyphoid fever in a Lancashire borough, due to the failure to take proper action of those responsible for the public health administration of the rural district from which the milk was supplied. The lesson which we drew from the deplorable occurrence was that it disclosed defects in the whole system of health government by the smaller sanitary authorities of England. The outstanding flaw is due to the insufficiency both as to population and valuation, of many of the areas in question—in insufficiency for which the power of local combination of adjoining areas for appointment of a medical officer of health is not always an adequate remedy. As a corollary we urged that the matter should receive the fullest consideration by Lord Onslow's Royal Commission on Local Government which, doubtless, is now engaged in the preparation of its report.

Sir George Newman's new survey of the health of England and Wales impresses on us afresh the fundamental importance of this question in its bearing on the future of sanitary government outside the great cities and the county boroughs. We do not revert to

the subject because the death rate and the infant mortality rate of 1924 have been higher than in 1923—annual fluctuations will occur in the course even of the steadiest improvement, nor because small pox, while mild in type, is becoming more prevalent year by year, though here the remarkable success achieved by the great and crowded cities in wading off the disease, as compared with what has occurred in certain lesser areas, is a fact of much significance. Enteric and paratyphoid fever, too, have increased within the past three years, but the same reservation applies to them notwithstanding the revelations of mismanagement in at least one rural district. The particular matter to which we wish most of all to call attention relates to tuberculosis. The steady decline in the prevalence of and mortality from pulmonary tuberculosis has practically ceased during the last five years. No doubt, in accounting for this, Sir George Newman is right in attaching importance to conditions associated with lack of employment throughout the country. But his report shows that there is more than this. Notification is the basis of measures for prevention and control. Yet in the year 1924 no fewer than 8,434 new cases of tuberculosis which had never been notified became known to medical officers of health, death returns being an important source of information. Causes of deferred notification mentioned in the report are delay in consulting a doctor, delay in diagnosis, and failure to comply with official regulations. These, each in its own measure, are relevant, but whether taken together or singly do not account for death registration being in a considerable number of cases the first intimation officially received of the existence of the disease. Making every allowance for difficulties, we are almost driven to the conclusion that medical practitioners are sometimes at fault in this matter. Obviously it lies with the medical officer of health insistently to invite the attention of the practitioners in his district to the necessity for notification as promptly as circumstances may render practicable in every case. But *quis custodiet ipsos custodes?* What if the medical officer is failing in his own duty? That question arises from a paragraph in Sir George Newman's report (p. 91), which is quoted in full in this issue at page 261, and suggests irregularity in keeping the registers of tuberculosis notifications. This, on the face of it, constitutes a very grave indictment of officers of "a number of urban and rural areas." The allegation should be read along with what he wrote in his preface to Dr Shaw's report on the outbreak of paratyphoid fever already mentioned. He there emphasized the necessity for constant vigilance on the part of the officers of sanitary authorities when dealing with even an isolated case of infectious disease, and the importance of prompt and continuous attention to cases among persons engaged in occupations associated with the production and distribution of food.

But, as insisted in our comments on that report, so in the present connexion, the entire blame is not to be laid at the door of the health officers. There are, to a great extent the victims of a system of local government which the country has outgrown. Many of them perhaps most of them have no diploma in public health. Many of them, perhaps most of them, whether with or without such diploma, are engaged in general medical practice, with all its worries and anxieties in respect of medicine, surgery, and midwifery. It is particularly difficult for them to maintain a proper official relation to their colleagues and competitors in practice, whose performance of

POST GRADUATE EDUCATION

then obligations under the notification and other Acts it is the health officer's duty to supervise. Further, it is not really practicable for an ordinary man to keep up, in the interests of his patients, his acquaintance with current advances in the science and art of medicine at the same time that he is responsible for knowing and obeying all the regulations, old and new, issued from the Ministry at Whitehall—such as the Tuberculosis Regulations of 1912, the Tuberculosis Regulations of 1921, and the Public Health (Tuberculosis) Regulations, 1924 (Statutory Rules and Orders, 1924, No 1411). Yet these regulations and many more are necessary in the public interest, and an immense task is thus reached in the health administration of many small urban and rural districts. As already urged, these districts are often too small that can neither pay for the whole time of a fully qualified officer, nor would they provide him a sufficient field in which to employ his energies or increase his experience. Attempts to meet the situation in that way would be both financially extravagant and administratively unsound. Rural and urban district authorities in charge of a population of only a few thousands—in some cases, indeed, of only a few hundreds—each district being theoretically responsible for the routine administration of the many Acts relating to public health, are preposterously unfit for the functions assigned to them in this respect. In the old days, when public health administration was now understood as undeveloped, and when very few medical men possessed a diploma in public health, such a system was better than none, and much genuinely good work was done. But, notwithstanding all that may be said in praise of the whole-hearted efforts of many men to fulfil the double duty of public and private work, the system has outlived its usefulness and should be scrapped. Districts requiring the whole time services of properly trained and qualified officers should be created in their stead, only such officers should be appointed, and the scale of salaries and the conditions of service should be such as to attract the right kind of applicants.

Sir George Newman's report provides the occasion for returning to this subject and at the same time emphasizes not directly, but by means of a plain statement of correlated facts, the urgency of the problem, and the need for taking the opportunity which the Royal Commission will afford of insisting on a fundamental change in the scheme of local health government throughout the counties of England.

NEW DEPARTMENTAL COMMITTEE ON
POST-GRADUATE EDUCATION

THE Minister of Health has appointed a Committee, of which he will be chairman, to draw up a practicable scheme of post graduate medical education centred in London. The Ministry will be represented on the Committee by Sir Arthur Robinson, K.C.B., First Secretary of the Ministry of Health, and Sir George Newman, K.C.B., M.D., Chief Medical Officer of the Ministry and of the Board of Education. The other members of the Committee are Lord Dawson of Penn, Sir Humphry Rolleston, Bt, Regius Professor of Physic, Cambridge, and President of the Royal College of Physicians of London, Sir John Blund Sutton, Bt, President of the Royal College of Surgeons of England, Sir Thomas Horder, Bt, M.D., physician to St Bartholomew's Hospital, Sir George Blacker, M.D., Dean of University College Hospital,

Medical School, Dr R. A. Bolam, Chairman of Council, British Medical Association (Newcastle on Tyne), Dr H. G. Dain, Chairman of the Insurance Acts Committee, Mr Herbert J. Paterson, F.R.C.S., honorary secretary, Fellowship of Medicine, Dr J. Parkinson, physician in charge, cardiological department, London Hospital, Mr H. L. Lason, ophthalmic surgeon, Guy's Hospital, Professor Hugh Macleod, M.D., St Thomas's Hospital, and Mr A. E. Webb Johnson, Dean of the Middlesex Hospital Medical School.

The appointment of this Committee is a result after a rather long interval, of the report of the departmental committee which in 1921 was instructed to "investigate the needs of medical practitioners and other graduates for further education in medicine in London, and to submit proposals for a practicable scheme for meeting them." It was presided over by the Lord of Athlone, then chairman of the Middlesex Hospital, and after a thorough examination of the position recommended that two post graduate colleges should be set up in London—one medical college and a college of hygiene.

The second recommendation was quickly realized. The Rockefeller Foundation munificently gave a capital sum of £400,000 for the erection of buildings for a College of Hygiene and Tropical Medicine, to serve not only the British Empire, but in some way also as an international centre of research and instruction. Parliament, at the instance of Sir Alfred Mond, then Minister of Health, voted £15,000 a year for maintenance. The College was constituted with the adhesion of the London School of Tropical Medicine, and that ship, if not yet afloat, is well advanced on the stocks.

The keel of the other has not yet been laid down. The Athlone Committee took a good deal of evidence and received written information from the British Medical Association, the medical schools, and other medical educational institutions in London, and also from the universities in England, from the University of Wales, and from the Universities of Edinburgh and Glasgow. The committee recommended that a school attached to a hospital centrally situated in London should be devoted solely to post graduate medical education, and that it should be a school of the University of London receiving substantial financial assistance from the Treasury through the University Grants Committee. It recommended also that a central office should be established to co-ordinate and develop the work of post graduate education in London, and that in the administrative building should be provided not only offices, but the accommodation necessary for social purposes. The committee advised further that in addition to the courses at the central school for the full time instruction of general practitioners, and at the existing post graduate colleges and schools, further facilities for post graduate study should be made available at non-teaching hospitals, and in Poor Law infirmaries, and that a large number of residential appointments and clinical assistantships should be created in hospitals and Poor Law infirmaries. The new Committee will doubtless take into consideration the work that is being done by the Fellowship of Medicine and also by the West London Post Graduate College and at the North East London Post Graduate College at Tottenham. It will also have the advantage of the advice of the British Medical Association, the Council having recently appointed a Committee on Post Graduate Education. Some curiosity may be excited by the fact that the

scheme of the new Committee is to be centred in London, but it is to be remembered that in many other centres post graduate medical education is a matter to which the university itself gives attention. This is true of Bristol, Birmingham, Manchester, Edinburgh, and Glasgow, and in a modified form at Leeds and Newcastle. Oxford and Cambridge also have classes which are in relation with the universities.

We understand that the members of the Committee met the Minister of Health last week, and that the first actual meeting of the Committee will probably be held early in October.

THE BRITISH OPTICAL INDUSTRY

BEFORE the war the British optical industry was thought in many quarters to be in a sadly unenterprising condition. This was not altogether true, for even then British optical manufacturers were producing the very best instruments in several fields of optical application, even if they were outwitted by foreign competitors in others. Since the war, in spite of financial and commercial disabilities, the original grinds have been consolidated, and conquests have been made in fresh territory. The history of recent progress was reviewed by Mr. Frank Twyman in his presidential address at the annual meeting of the British Optical Manufacturers Association. Mr. Twyman referred in particular to the construction of microscopes, where improvements had been made able in the illuminator, the objective, and the stand which holds the optical parts and the objective in their proper relative positions. With regard to the first of these elements, a dull ground illuminator has been developed which permits the use of higher powers than heretofore. A series of apochromatic objectives has been worked out, superior to any forthcoming from a foreign country, and, finally, the accuracy of focusing and the rigidity demanded by the recent work on filterable viruses has been met by the development of a special microscope stand, also of British design. In this connexion Mr. Twyman pointed out how essential to medical research is an efficient optical industry. A year or two ago instruments adequate to the investigation of filter-passing microorganisms were not in existence, but the investigators laid their requirements before the instrument makers, and within a period of months the instruments were forthcoming which enabled the research to be carried through. Mr. Twyman went on to describe the marked improvement made in British camera lenses, including those used for aerial surveying, for telephotography, for cinematograph work, and for process reproduction. Again, at the astronomical observatories it is British lenses which hold the field. The discs of glass for the largest telescope in the world have lately been successfully made in a British lens factory, this telescope, which will shortly be completed, is to be of 41-inch aperture, or one inch larger than that at the Lick observatory. Mr. Twyman thought it probable that most of the physical research now going forward in the world is being carried out with British-made instruments. Some very important apparatus had been made in this country for Japanese, American, and European universities, including even schools at Charlottenburg and elsewhere in the country of Abbe, the genius of Jena. Progress in optical instrumentation has, of course, depended on the supplies of optical glass and here also improvement can be recorded. Before the war there were but three makers of optical glass—one in Great Britain, one in France, and one in Germany. The British maker, although his glass was of excellent quality, listed only twenty-six varieties, which was insufficient for modern optics. That same maker now listed eighty optical glasses,

and two other British makers of optical glass have since come into the field. The Scientific Instrument Purchasing Association had done valuable work for the industry. Until recently the character of the abrasives used in grinding glass had remained unaltered since the early Egyptian dynasties, now, through the work of Sir Herbert Jackson and the Research Association—work of which full details cannot yet be given—an abrasive is forthcoming, of better quality and not dependent on foreign supplies. The Research Association has dealt also with the important question of the durability of glass and the stabilization of glass surfaces so that they will not become tarnished or cloudy. The colour of glass is now better understood, and the associated problem of producing a colourless glass has been successfully tackled. Work of a fundamental character on the theory of lenses, again, has been done at the National Physical Laboratory. Altogether the British optical industry is active in invention and development and in scientific research, and eager to prove its vitality.

A HEALTH DEPARTMENT FOR THE COLONIAL OFFICE

THE Committee of Supply on the Colonial Office vote Mr. Amery (Secretary of State for the Colonies), in the course of his speech on July 27th, made reference to the immense importance of the development of research into tropical diseases. It was, he said, one of the matters which would engage the attention of the new Committee on Civil Research (see *BRITISH MEDICAL JOURNAL*, July 11th, p. 76). It would investigate the problem of how to deal with the tsetse fly in Africa, and it was hoped that the temporary scheme of investigation to be carried out during the next year under the League of Nations would be followed by a much more comprehensive and effective campaign in subsequent years. He was inclined to agree that the increasing diversity of the work done in the colonies called for corresponding diversity in the central organization in this country, more extensive than the old method of dealing with all problems, including agriculture, medicine, and education by civil servants responsible for every aspect of life in a particular group or area of a colony. As a step in this direction he had decided to establish in the Colonial Office a chief medical officer and at least the beginnings of a health department, to enable the office to keep in closer touch with the health and research work which is being done, and to give more direct guidance and assistance to the medical officers who are working, often in great difficulties, especially in the tropical colonies. The step Mr. Amery has now taken is overdue. The late Sir Patrick Manson was for some years medical adviser to the Colonial Secretary on tropical matters, but his position was not well defined, and so far as we are aware he had no staff. Sir John Ross Bradford is at present Senior Medical Adviser to the Colonial Office.

THE EARLY TRAINING OF MENTAL DEFECTIVES

A COUPLE of years ago (July 21st, 1923) we commented favourably on a little book by Dr. John Thomson, entitled *Opening Doors*, which was written for the guidance of mothers with defective children. The same author has now written a short paper for nurses on "Mentally defective babies: their recognition, treatment, and training," in it he again emphasizes the lessons taught in his book. Recognizing that care should be taken not unduly to alarm the mother, Dr. Thomson points out that all she needs to be told about the present is that the child is unlike the ordinary run of babies in not being able, as yet,

to do certain common things as well as they do, and as to the future, that he will come to do many of these things, but that only time will show how far improvement is likely to go, and that this will depend largely on the amount of trouble she takes with him. Especially does he stress the fact that almost all these children are capable of being greatly improved in course of time by proper training, and made much happier than they could have been without it. It is true, as he points out, that only a few of the slighter cases will be self-supporting when they grow up, but many will be able to do work of some kind, and, though this may not support them, it will have the advantage of keeping them busy, and contented. The emphasis here given to the value of early training in the case of defectives must also be applied to the period when these children reach school age. It often happens that a mother does her best with her child as a baby, but finds that no provision is made for its subsequent training, though this is actually as essential as in the case of normal children. Where centres have been established by the Voluntary Association for Mental Welfare it has been found that even "incurable" children are capable of learning a good deal in the way of manners, collective games and singing, and simple occupations. The training of high grade defectives and backward children is probably of even greater importance from the social point of view. The presence of a defective in an ordinary class is not advantageous to the child, his classmates, or the teacher. The defective is liable to be afflicted with a permanent sense of inferiority, and is, furthermore, compelled to spend several of the most important years of his life being taught what he is incapable of learning. Under such conditions there is every chance that the child will become wayward, troublesome, and even vicious, whereas if he is taught in a special class or school where those aptitudes which he happens to possess are developed, he will feel that he is capable of something, and will be much less likely in subsequent years to swell the ranks of the paupers and delinquents. The money and care expended on the mentally defective are not wasted, and though they cannot lead to a cure, they will do something to prevent these cases from developing into a menace to the community.

DOZING AT THE WHEEL

The tragedy of the death of Mr. Hamilton Drummond, surgeon at the Royal Victoria Infirmary, Newcastle, calls attention to a possible cause of some mysterious motor accidents. Mr. Drummond died from injuries received through the overturning of the car he was driving. The car swerved suddenly to the left, and ran into a gate. At the coroner's inquest it was reported that before he died Mr. Drummond said, "I dozed over, pulled in, could not recover. Have you ever had that experience? I have done this before, but once too often." Such an accident may easily occur with an overtired driver, soothed to greater somnolence by the rhythm of the engine and the monotonous grind of the gear. A doctor tells us that on one occasion while his new car was being driven to London by an employee of the manufacturers, he suddenly noticed that the driver was slipping down between the steering pillar and the seat. The man was asleep, he explained the occurrence by stating that he had been driving for three days and nights! Medical men who drive their own cars must be more liable than most people to the risk of falling asleep at the wheel, since they often have many long days of tiring work. Since Mr. Drummond's death other medical men have told us of their terrifying experiences in dozing while driving, and more than one has said that when he found the inclination to sleep overpowering he pulled up in some safe place by the side of a road and took

a short nap. It seems possible that many of the fatal accidents which, being unaccountable, have been attributed to a burst tyre or to some derangement of the steering apparatus, may really have been due to the driver falling asleep, the evidence of its effect in causing accidents is sufficient to suggest that motorists who are very tired would be wise to refrain from driving on monotonous country roads.

SIR WILLIAM HAMER

We greatly regret to learn that, on grounds of health, the services of Sir William Hamer will no longer be available to the County Council of London. He became assistant medical officer under the late Sir Shirley Murphy thirty-three years ago, and succeeded to the principal post on the retirement of his chief. During his period of office the public health functions of the County Council have been very greatly developed. When he began the accommodation for the health staff consisted of two or three rooms of very modest size in an upper floor of a house adjoining St. Martin's Church, and there was the meagre nucleus of a department. Now it occupies a large space in the notably handsome building on Thames side at Westminster Bridge, the increase in the space it occupies only corresponds with the increase in its activities, which now include among many other things, the whole work of school medical inspection and treatment in the area of the metropolis. The annual reports of the retiring Chief Medical Officer have constituted a notable part of the current health literature. He is in the best sense of the word an epidemiologist, and his published studies in that science are read with the keenest interest, including as they do thoughtful discussions of such subjects as the agencies involved in the spread of enteric fever, and the interrelationships of differently named diseases, like influenza and the group of cerebral infections of which encephalitis lethargica is at present the most prominent member. At meetings where bacteriologists, statisticians, clinicians, and epidemiologists foregather in friendly controversy, Sir William Hamer's contributions to debate have always been a notable feature, and the discussions have never been characterized by monotonous unanimity. It is sincerely to be hoped that in the leisure or well earned retirement his health will be speedily and fully restored—he is still far short of being an old man—and that he will devote some part of his time to the elaboration and exposition of his views on the root problems of public health from the scientific side, and on administration from the side of practical experience.

THE LATE DR HERBERT WILLIAMSON

It is proposed, with the approval of the Medical Council of St. Bartholomew's Hospital, that a memorial to the late Dr. Herbert Williamson be established at St. Bartholomew's. The form which the memorial takes must depend upon the sum subscribed, but it is hoped that a sufficient amount may be secured at least to endow a bed in the Obstetrical and Gynaecological Department in which he worked. Subscriptions from Dr. Williamson's former colleagues, students, and friends should be sent to Dr. Barris, 50, Welbeck Street, London, W.1.

We announced some time ago that there was a movement on foot to obtain a portrait memorial to Sir John MacAlister, who recently resigned the office of secretary of the Royal Society of Medicine after holding it since the formation of the society, which was achieved largely through his efforts. We are informed that the fund now amounts to £615, subscribed by 307 individuals.

Scotland.

EDINBURGH MEDICAL GRADUATION

SOME two hundred students, of whom about one-fourth were women, graduated in medicine at the University of Edinburgh last week.

Professor G. M. Robertson acted as "promoter" and gave the address to the graduates. After depicting the necessity for examinations, he said that it was strange that no test was applied to that which was the master-key to success in a physician—namely, "personality." Personality was described by some in poetical language as personal magnetism, by others it was regarded as a miraculous gift of healing, he went on in humorous vein to compare this gift with magic. There was no charm of magic in the University of Edinburgh, although, he said, Sir Walter Scott informed us that at the University of Toledo there was a charm of incantation. If King James VI, who founded the University, had been present in Edinburgh last week when Wemyss was opened and had heard the voice of the King addressing the people from the in his modern development of electricity, he would certainly have regarded this as a manifestation of magical character. In the Faculty of Medicine magic under a disguise was also to be found, the prescription of life by insulin, the painless sleep of chloroform, and the protection of millions of people from typhoid fever, were in a sense magical. Magic consisted in a certain habit or attitude of mind towards inexplicable phenomena, and no educated person now believed that the applications of physics were magical, but the symptoms of disease readily lent themselves to treatment by magical methods. Pain was the basis of every symptom, misery and discomfort were merely lesser varieties of it, and pain was simply a state of mind like the sensation of colour. Pain was sometimes called real and sometimes imaginary, but to the patient both forms were real and both were inenarrable to treatment by mental suggestion, whether magical or otherwise. A patient desiring treatment of a magical kind might go to a Christian Scientist, he might consult a plausible charlatan, or he might seek the vendor of a secret nostrum. In many cases he would benefit, and as honest seelers after truth those he was addressing must face the facts. Christian Science was a very simple therapeutic system from which diagnosis was excluded and which employed one remedy. Yet it had succeeded in founding cathedrals and in comforting millions. Had the medical profession, like Mathra, been careful and troubled about many things material, but missed the one thing psychic that was useful? If a patient consulted a regular practitioner of medicine almost inevitably he would prescribe certain vegetable or mineral products, and the patient would derive benefit from the prescription. Drugs undoubtedly possessed pharmacological actions which were invaluable, but symptoms were mainly mental, and medicines depended largely for the benefit they conferred upon the confidence of the patient in the physician and faith in his prescription. What distinguished the doctor from the "healer" was his undeviating rationalism. Recognition of the mental element in disease was deficient, and he had a horror of introducing mystery into his treatment, even though his patients had not yet emerged from the darkness of superstition. It was not however in the alleviation of symptoms nor in the treatment of minor ailments that medicine was impressive, but rather in its confident challenge to the diseases that killed. During the lifetime of persons at present living the death rate had fallen from 22 per 1,000 to 12 and the expectation of life had risen from forty years to fifty-five. That was like the Prophet's promise to the dying Hezekiah: "I have heard thy prayer, I have seen thy tears, behold, I will add unto thy days fifteen years." Professor Robertson concluded by saying that the most valuable asset of the physician was personality. Its influence in sickness was mental healing, which was of the greatest value when trained and directed. The methods of such healing varied with age and sex, with race and religion and with circumstances but it was this possession that made medicine greater than science.

A previous graduation ceremony had been held on Wednesday, July 22nd, at which a number of distinguished men received the degree of LL.D. These included the Right Hon. J. Ramsay MacDonald, M.P., Mr. G. K. Chesterton, Dr. A. H. Freeland Barbour, Mr. Alexander Miles, F.R.C.S., and Sir Harold Stiles, K.B.L., F.R.C.S. The Honorary Graduates were entertained at dinner in the upper library of the University of Edinburgh on the evening preceding the graduation ceremony.

CONGRESS OF THE ROYAL SANITARY INSTITUTE

The thirty-sixth congress of the Royal Sanitary Institute was held in the Edinburgh University Buildings from Monday, July 20th, to Friday, July 24th. Some nine hundred delegates attended on the first day when an official welcome was given by Lord Provost Sir W. L. Sleigh and other municipal representatives. A public luncheon was held in the hall of the University Union, at which the Lord Provost presided, and in the evening the delegates met in the McKean Hall to hear the inaugural address of the Secretary for Scotland, Sir John Gilmour, who was president of the congress. The Marquess of Aberdeen presided. Sir John Gilmour observed that this was the first occasion upon which the Royal Sanitary Institute had held its annual congress in Edinburgh. He discussed various matters regarding the public health work of Scotland, and indicated some of the points in which the Scottish Board of Health was most actively engaged at the present time. These have been already summarized from the report of the Scottish Board of Health in the *BRITISH MEDICAL JOURNAL* of July 18th (p. 148).

On Tuesday, July 21st, over one thousand members, delegates, and associates attended the conference meetings. Sir George Newman, K.C.B., Chief Medical Officer, Ministry of Health, in his presidential address to the Sanitary Science Section, discussed the future of sanitary science. Reviewing the results since the passing of the Public Health Act in 1875 he said there had been a decline in the death rate from 21 to 12 in 1924, while in the same period the infant mortality rate, the most sensitive index of national health, was brought down from 149 per 1,000 born to 75. Expressed in another way, the expectation of life of every child born in Britain today was approximately twelve years longer than that of its grandfather. There had also been a great reduction in sickness and invalidity from certain diseases. There was still much that was anomalous, extravagant, and redundant as regarded views and authorities for dealing with health questions, and this led to ineffectiveness and waste. What seemed to be needed was a single unit of health government with necessary subcommittees for particular purposes.

Captain Elliot, M.P., commenting on the advances that had taken place in industrial hygiene, said that the employment of children was no longer a menace to the national health, and the conditions in factories and workshops were beyond all reckoning better than they were a few years ago.

Sir W. Leshe Mackenzie, LL.D., of the Scottish Board of Health, addressed a public meeting in the evening on the problem of psycho-physical fitness. Speaking on the causes of unfitness he said that some of these lay on the surface and were known to everybody. Every attack of disease meant a temporary or permanent increase of unfitness. He thought that two definite public movements were making a systematic search for unfitness: those were the child welfare movement and the medical examination and treatment of school children. Discussing the preservation of social fitness, the speaker said there was a great field in the psycho-neuroses for preventive and curative treatment, and in the segregation of the feeble-minded into proper institutions one great source of psycho-physical unfitness would be destroyed.

On Wednesday, July 22nd the meetings of the Sanitary Science, Personal and Domestic Hygiene, Sanitary Authorities, and Medical Officers of Health Sections formed the programme of business. Dr. Robert A. Lister, in his presidential address to the Medical Officers of Health Section, said the urgent need was for an entire medical profession trained in, interested in, and engaged in the practice of prevention of disease.

Dr. James Young (Edinburgh) read a paper in the course of which he gave a lantern demonstration of the micro-organism which he believes to be the cause of cancer. (See page 271.)

Lady Aberdeen discussed the question of personal health. Dr. Fremantle, M.P., appealed for a central directing policy in national health which would economize services and encourage private effort. Tuberculosis and the treatment of leprosy were discussed in the Sanitary Science Section. Dr. Archibald Leitch, director of the Cancer Hospital Research Institute, London, contributed a paper on practical measures which should be advocated for reducing the prevalence of cancer.

On Thursday, July 23rd, Prof. Sir Hudson Buxton delivered a presidential address to the Engineering and Architectural Sections, in which he discussed the problems of housing and transport. He considered that dwellings were as lasting and as substantial as those of brick. Dr. Gerald Leighton spoke on the necessity for a closer alliance between the veterinary and medical professions in his presidential address to the Veterinary Inspectors' Section.

On Friday, July 24th, the congress concluded. Counsellor Dr. F. G. Nasmith (Edinburgh), in a paper to the Maternity and Child Welfare Section, urged the necessity for providing beds for ante-natal treatment in maternity hospitals. At the Health Visitors' Conference considerable discussion took place in regard to the training of women for various branches of the nursing service.

During the congress a health exhibition was held in the Waverley Market, Edinburgh, which illustrated the evolution of modern sanitation and the present state of various agencies for the amelioration of the home and civic life.

Ireland.

A TUBERCULOSIS TOUR

Sixty months ago a reputation of the Tuberculosis Committee of the Belfast Corporation waited on the Prime Minister of Northern Ireland (Sir James Craig Bt, M.P.) to urge that some further efforts should be made to render available recent methods of treatment of tuberculosis. As an outcome of this meeting a medical commission was appointed to visit institutions and to report on various forms of treatment, including the Spaulinger and that by sunbath. This committee, which consisted of Dr. A. Trimble (Chief Tuberculosis Officer, Belfast), Dr. T. Houston (Chief of Clinical Laboratories, Royal Victoria Hospital, Belfast), and Dr. Norman Graham (City Bacteriologist), visited London, Paris, Geneva, Montigny, Frankfurt, Hamburg and Copenhagen in all of which places they were received with great kindness, saw many of the leading authorities on the subject, and were given opportunities of examining the methods, the statistics, and the results as far as available.

The report is now presented to the Tuberculosis Committee. Towards the end it states that in all the towns visited there was a recognized medical institute devoted to research and the investigation of disease and methods of treatment. This statement will be welcomed by those who have for years advocated, in connexion with the local university, the formation and equipment of such an institution. The members did not confine their attention to the one subject, but, as opportunities offered, took note of work being done on the blood, on cancer, and on other directions, also of the hygienic labours of the League of Nations.

The report is prepared for a lay committee, and so, it may be presumed, does not represent all the knowledge its members have gained or all the opinions they have formed. They were evidently impressed with Mr. Spaulinger and met many who had "formed a high opinion" of his methods and results but nowhere do they say that they were convinced as the profession is convinced, of the efficacy of antitubercular serum, or of salvarsan or its modifications. The same attitude is adopted as regards sunbathing which is now being tried in Belfast. When we remember the countless "cures" that have been

exploited in the past, the natural intermittency of tubercle, and the many undoubted cases of recovery without any treatment, we can appreciate the wisdom of the reports in a return of a verdict of "not proven, but" "well worth full investigation and trial." The profession in Ulster appreciate the warm sympathy and encouragement of the Prime Minister and Government of Northern Ireland, and its action in giving the financial sanction required for the expenses of the Commission, it is in keeping with the broadminded support of the many extensions of the University.

Correspondence.

CANCER AND THE FILTERABLE VIRUS

S.—I am not in a position to criticize the value of the discovery made by the help of Bismuth but I am sure that many of our profession have noticed for years past paper-much, to the effect that the cause of filterable virus is a cancer cell. I have not been able to repeat this as yet.

For some years I have been interested in the study of many of the known filterable bodies, especially the virus of vaccinia, variola, herpes, pemphigus, chicken, influenza, and possibly that from a common cold. All of these can be recognized when examined by direct ground illumination with as low a power as 1/3 inch objective and compensation ocular No. 12 or 18—1/2 inch, with a magnification of 350 to 550 diameters, in fact that is the method I have constantly used for at first determining the presence or absence. I have so far used chiefly Giemsa stained films and these have been subsequently examined with a good oil immersion objective—for example 1/10 or 1/12 inch under critical conditions and with suitable colour screens.

Anyone can prove for himself if a virus is to see the virus, say, of vaccine by taking a minute drop of serum from a vaccinated arm and spreading this is thick as possible on a slide or cover glass allowing it to dry, and then staining with Giemsa fluid or an old solution of methylene blue for some hours. The thinner the film the better the image and the less stained is the background.

In my experience after many months' work at these virus bodies with magnifications from 2,000 to 3,000 diameters, I should say there is very little difference in the appearance between the virus bodies of one disease and those of another. They may differ slightly in size, possibly a little in shape, the average size is about 0.2 to 0.3 μ in diameter. In other words, they are perfectly defined and definite bodies—not degenerate products as some would have us believe—but they have little or no individuality, and I very much doubt whether any increased magnification, or any increased aperture of the objective, or the use of light of shorter wave-lengths would render any material service in the elucidation of the nature in the differentiation of one species from another of these minute bodies. I am hoping that certain modification in the method of staining or more correctly methods of preparation, at which I am now working may perhaps give us a little more insight.

I would like to put on record here the very remarkable and original observations which my friends Mr. I. M. Nelson and Mr. Thot Mehlum, admittedly two of the finest microscopists in Great Britain, have made on the structure of the virus bodies. I sent to both of these observers carefully fixed and Giemsa stained films of the vaccine virus. They, use the finest apochromat objectives, Nelson a 1/12 in. of N.A. 14, and Mehlum a 1/8 in. of N.A. 142, with oil immersion condensers and suitable colour screens, and only the light from 1/2 inch wick of a paraffin lamp. Mr. Nelson pointed out that the vaccine bodies had a flagella-like appendage later, October 8th, 1922, on further examination he reports: "The germs in the vaccine virus are not isolated but are fixed to a very delicate mycelium, just like the tubers on a rhizome." Mr. Mehlum, independently, on October 25th 1922, says: "There is no doubt whatever that a great many vaccine bodies are fixed in long lines and curves to mycelial threads, as described by Nelson. Is it

not possible that the germs are really spores formed in the mycelium and that they break away from the mycelial threads when ripe?"

Nelson, writing on the virus bodies of influenza—film made from lung of a fatal case—says: "Minute germs, many on mycelial threads, not unlike those of the vaccine virus, but if my memory is right they were more on a plexus, whilst these were on isolated chains." My powers of microscopic vision are unfortunately not nearly so keen as either those of Nelson or Merlm, and up to the present time I can only see short thread-like appendages on a few of these minute bodies, but I would like to ask Mr. Brunard if his wonderful apparatus and special illumination has enabled him to see any such minute details on the so-called cancer virus—I am, etc.,

Bournemouth July 24th

ALFRED C. COLES

* Dr. Gordon's remarks in the Section of Pathology and Bacteriology at the Annual Meeting at Bath on July 22nd were reported last week (p. 192). The full text of his report will we understand, be published shortly by the Medical Research Council.

SIR,—Dr. Gie's recent investigations¹ have been of special interest to me, because I believe his virus will prove to be identical with the ultramicroscopic phase of the complex micro-organism which I described in 1921. This micro-organism I have obtained from a large number of cancers of all types. I have shown that the larger elements (cocci, bacilli, fungi) which soon appear in any ordinary culture medium containing a piece of cancerous tissue can be traced directly from minute elements, which emerge from the cells, or indirectly from an amorphous material, which escapes from the cells as globules and rods and which in this early stage is often curiously resistant to ordinary stains. This unstained "plasm" often first appears in and escapes from the dying cells as minute elements just on the verge of visibility. A study of these facts led me to write in 1922 that "the organism has, during its parasitic phase, acquired the faculty of infecting individual cells and of living in a sort of symbiotic relationship with the cells which it inhabits. This conclusion goes far to confirm the view which I advanced in a previous paper (1921) that the organism lives parasitically in a minute phase which is unveiled by ordinary methods of staining." The globules and rods can sometimes be seen to emerge from the cells with a cleanness that is diaphanous. The organized forms (cocci, bacilli, yeast) often spring from refractile elements which appear in and are detached from the globule and rod. Glover of New York and his colleagues have recently described a microbe which they have obtained from all types of cancer and whose general characters are similar to mine.

A remarkable feature of this micro-organism is that the alternative forms, although springing from one common stock, can pursue each an individual and stable life as cocci, bacilli, or yeast and they may resist any efforts to change them, although I have frequently, during five years' study, convinced myself that under certain conditions any one form can pass over into any other form. These facts are foreign to ordinary bacteriological teaching and have made my views incongruous to many bacteriologists, although there is a great deal of evidence in the literature to support them (Lohms, Mellon, de Negri, Hort, Almquist, etc.). It is, I believe, apparent from the recent literature that fixity of form in bacteria is illusory as a criterion of specific characters for, as Lohms, Mellon, I, and others have shown, the alternative phases of the same organism can often and probably usually pursue an independent true-type existence. It is sometimes urged that such a conception is opposed to the facts of biology. This is not so. It is opposed to much of the traditional teaching of bacteriology, but it is obviously in conformity with the great biological fact that a multitude of different cellular elements, each capable of independent propagation, are commonly derivable from one common germ-plasm. The further back we go in the world of life forms the more we find the differentiated cell assumes the multipotential characters of the original plasm. In the bacteria this retention would seem to be complete. The essential resemblance between the

primitive bacterial matrix and the germ-plasm of higher life led me to name the former the bacterioplasm.

The first indications of these facts in regard to the cancer parasite came to me when I discovered that "plasm" rod or globule, minute granule or thread (in this stage stillingly similar to Rickettsia), bacillus or coccus could apparently, depending on the culture medium and other factors, be derived indifferently from the cells of the same piece of cancer. The confirmation of these facts came with the discovery that from the same "plasm" all the different forms were derivable. In this stage the refractile granule is a common index. During this phase the germinating "plasm" is easily mistaken for masses of debris to which the bacterial forms have adhered. As Lohms has pointed out, in the past it has been commonly looked upon as dirt.

With the attention now being paid to the cancer parasite I feel forward confidently to an early confirmation of these views first published in 1921. For long I have been urging that a similar reorientation of the bacteriological mind would probably quickly resolve the difficulties surrounding typhus, influenza, small pox, etc. If it be true that Weigl, Bicin, and Fejgin have all succeeded in deriving the *Bacillus proteus* (X 19) commonly associated with typhus from the Rickettsia of typhus, we have the first augury of the unexpected facts which will transpire with the application of this broadened outlook. We can safely prophesy big developments along the same lines in the near future.

That familiar bacteria may possess a filterable phase is suggested by the work of Heymans (*B. anthracis*), Valtis, Vinnici, etc. (*B. tuberculosis*), Almquist (*B. typhosus*), Hort (*Meningococcus*), and Lohms. The very striking investigations of Lohms make it likely that all bacteria have a filterable mode of life, it may even be that this is the essential parasitic form of all bacteria—I am, etc.,

JAMES YOUNG

Edinburgh Aug 1st

CANCER BURIAL OR CREMATION?

SIR,—I am writing to urge that the profession should advocate cremation in cases of persons dead of cancer. I understand that cancer is now shown to be caused by a filter-passing germ. Now if a germ will pass through a porcelain filter, surely it will pass through any soil, either gravel, chalk, or clay, and will slowly percolate downwards until the deep water be contaminated.

Maeaulay, in his history, calculates the population of these islands in 1685 as about five million. We are now nearly forty million, which means that if by burial the deep water is contaminated, it is now nearly eight times more likely to happen than in the reign of Charles II.

May not the increase of cancer be due to this? Burial or cremation are essential for the disposal of the dead, but it cannot be pleaded for burial that it is an imitation of following of Nature's way of disposing of a dead body. I think it is quite possible that we are taking too much comfort from the old saying "Out of sight out of mind"—I am, etc.,

Yattendon Berk July 20th

F. A. BRODIE

COLLECTIVE INVESTIGATION OF RHEUMATOID ARTHRITIS AND ALLIED CONDITIONS

SIR,—After a long and pretty extensive experience I can say without hesitation that rheumatoid arthritis and allied conditions cause more human suffering and incapacity than that produced even by malignant growths.

It seems to me that their collective and intensive investigation might very well be undertaken with rather more hope of beneficial results than in the case of cancer.

No doubt the study of etiology and pathology should receive due attention but I do not think that it should be at all necessary to postpone the making of careful therapeutic experiments until all points as to nature and causation have been fully and finally settled. Of course, many such experiments have been made and are being made daily—and they will continue to be made. It would be necessary to collect and correlate the nature and results of past, present and future work carried on in special institutions as well as in general and special practice.

The sending out, the filling up, and the co-ordination of

¹ See BRITISH MEDICAL JOURNAL July 25th p. 74

The Summer Time Bill was also read the third time and passed.
The Royal Assent has been given to the Mental Deficiency
Amendment Act and the Guardianship of Infants Act.

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Chambers of Medical Science and National Health Insurance
The Summer Time Bill was also read the third time and passed.
The Royal Assent has been given to the Mental Deficiency
Amendment Act and the Guardianship of Infants Act.

Chairman of Medical Service Subcommittee—Mr. Meller asked the Minister of Health whether he had received from the Insurance Committee for the County of London a representation protesting against the National Health Insurance (Medical Benefit) Amendment Regulations (No. 2) 1925 which provided for the appointment of the chairman of the Medical Service Subcommittee by the Minister of Health failing the unanimous vote of the subcommittee and further provided that such person might not be a member of the Insurance Committee. Sir Kingsley Wood replied that under the previous regulations the chairman of the Medical Service Subcommittee was required to be elected by the approved society representatives on the subcommittee and the of any selection by them by the neutral members of the Insurance Committee. No request for an amendment of the regulations had been received from any members of the House in London failure to find a chairman commanding the confidence of both parties led to the withdrawal of the representatives and the machinery for the investigation of complaints was brought to a standstill. A similar situation had arisen recently in Southampton. The amending regulations of 1925 arose out of the difficulty in London and represented a settlement which the Minister of Health understood to be agreeable to both parties to the dispute. The Minister had recently received representations from the London Insurance Committee against the new regulations but he could see no other method of preventing the recurrence in future of a deadlock in the administration of medical benefit and to the detriment of insured persons. On August 3rd Mr. Harney moved a resolution in the House praying that Regulation No. 2 of July 1925 be rescinded. Mr. Neville Chamberlain said he had taken part in the negotiation with the parties concerned and he had withdrawn the article in the regulation to which objection had been taken and to substitute other arrangements. The Minister of Health stated (August 3rd) that he was not prepared for the distribution of the Government's share of the cost of the National Health Insurance.

[illegible][illegible][illegible]

Account Haldane supported the bill which was read a second time the second reading of the Bill was postponed owing to an objection raised by the Duke of Devonshire and other members of the House of Lords in the Commons. Drafting changes made by the House of Lords in the Commons amendments to the Therapeutic Substances Bill were accepted by the House of Lords. Further progress with the Dangerous Drugs Bill was accepted by the House of Lords. In the House of Lords the Glasgow Act 1888 (Amendment) Order Confirmation Bill was read the third time and passed.

Further progress with the Dangerous Drugs Bill was accepted by the House of Lords on August 4th the Victoria Infirmary of Glasgow Act 1888 (Amendment) Order Confirmation Bill was read the third time and passed

regulations had been issued dealing with grinding, a frequent cause of silicosis, and regulations were under consideration for vehicle painting and the painting of buildings.

In answer to a question on August 3rd Mr G Locker Lampson (Home Office) said that he was advised that it was not necessary to extend the provisions of the Lead Paints (Protection against Poisoning) Bill to give protection against the dangers of poisoning incurred in painting whether from lead or other paints as there was no evidence of danger of poisoning from any paints other than those dealt with in the bill.

Scottish Estimates

On August 4th the Scottish Estimates were discussed in the House of Commons. Mr Selwyn Hughes raised the question of the treatment of inmates, and Mr S. Mitchell said that he was not satisfied with the present test for tuberculosis in cattle, which could be easily defeated.

Sir John Gilmour, Secretary for Scotland, replying to the debate, announced that he proposed to set up a committee on the employment of juveniles in Scotland. The more he probed into the housing problem the more he realized the slow progress that had been made and that some other methods must be found. The greatest difficulty lay in the shortage of building labour. The construction of 300,000 steel houses was being held up because of trade union rates or wages or this or that trade union condition. The problem could only be solved by the combined effort of masters, operatives, local authorities, and the Government.

Mr Wheatley said it was admitted that the highest death rate in Scotland was caused by housing conditions inferior to those existing in England.

Dr Elliot (Parliamentary Under Secretary for Health Scotland) briefly replied.

Smallpox and Vaccination.—Answering Mr Brod Mr Neville Chamberlain said that of the 16 fatal cases of smallpox among vaccinated persons during 1922-1923 and 1924 only one was under the age of 35, while of the 22 fatal cases among unvaccinated persons 7 were in infants under 1 year and in children between the ages of 1 and 9. Of the fatal cases amongst vaccinated persons only one had been revaccinated and it was doubtful whether in this case the disease was smallpox. The remaining 15 cases had been vaccinated in infancy. In his opinion these facts showed the importance both of infant vaccination and of revaccination at appropriate ages. The Ministry of Health had never carried out experiments to ascertain how frequently vaccination could be repeated in the same individuals. He had no authority to arrange for such experiments nor did he think they would serve a useful purpose.

Deaths attributed to smallpox.—On August 4th Mr Brod asked the Minister of Health whether the Registrar General would revise his figures for 1924 in regard to smallpox deaths in the light of the information given in the recent report of Sir George Newman in which five of the smallpox deaths were transferred to other classifications, it being the opinion of the certifying doctor that smallpox was not the cause of death. Mr Neville Chamberlain said he understood that in the case of all the deaths in question smallpox was certified by the certifying doctor as being one of the causes of death. In such cases the selection from among several certified causes of the particular cause under which the death was classified for statistical purposes was governed by general rules based upon international agreement which in this country provided that deaths should be classed as smallpox if this disease was included among the certified causes. He saw no reason for revising the classification in the case of these particular deaths, especially since full information regarding them was given in the Chief Medical Officer's report.

Accidents in Mental Hospitals.—On July 27th Sir Kingsley Wood informed Mr Saltsvala that the Minister of Health was not prepared to give general instructions that in the event of a patient in a mental hospital meeting with injury the guardians of the particular union or parish to which such patient was chargeable should be immediately notified of such injury so that they could, if considered desirable, have such patient visited. Any request from a board of guardians to be represented at an inquiry held either by the Visiting Committee or the Board of Control would be considered on its merits in each particular case.

Poison Gas.—On August 4th Sir L. Worthington Evans (Secretary for War) in reply to Mr Cecil Wilson who asked whether the Committee of Imperial Defence had come to any decision as to the methods to be taken for the protection of the civil population against poison gas said that consideration of this question was progressing but he could not say when it would be completed.

Hospital Clothing.—The Minister of Pensions informed Mr W. Baker on August 4th that a rule was in force throughout all the hospitals of the Ministry that patients were expected to wear special hospital clothing. This rule which had been repeatedly considered had been found both by himself and his predecessors to be of material advantage in the interests of the patients and of their treatment.

Nursing Homes.—Mr Neville Chamberlain informed Mr Cooper Pannett that the Government did not intend to set up till after the recess the proposed Select Committee to inquire into the registration of nursing homes. The committee would no doubt consider the question of inviting evidence from the British Medical Association.

Notes in Brief

The circular letter of the Ministry of Health calling attention to the Lunacy Act of 1892 does not contemplate—nor has the

Minister of Health any intention of allowing—the housing of lunatics in the same premises as normal old people.

In 1922 there were discharged from the army 277 men on account of tuberculous disease, 236 in 1923 and 193 in 1924.

Mr Neville Chamberlain states that most sanitary authorities have made arrangements for the services of a veterinary surgeon for the inspection of cattle when occasion demands.

The Ministry of Pensions state that over 1,500 medical boards have been held in the London and Portsmouth districts during the past three months.

Provision for inquiries into road accidents is made under the London Traffic Act in regard to London, and the extension of some of the similar powers to the rest of the country is under consideration. Legislation for the better regulation of public service vehicles will be introduced as soon as possible.

Obituary

J. S. KESER, M.D., F.R.C.S.

Formerly Physician to the French Hospital, London.

Those who knew him died in London in the last decade of the last century will keep with regard to the death of Dr J. S. Keser. It occurred some six months ago, but has only just come to our knowledge. He had been ill for two years, and towards the end suffered much.

He received his early education in arts and science in Lausanne, graduated M.B. Geneva in 1877, and M.D. Bâle in 1880. He studied for some time at St. Thomas's Hospital, and took the diploma of F.R.C.S. in 1880, in 1884 he became F.R.C.S. England. He was physician to the French Hospital in London, and enjoyed a large practice, especially among the French-speaking colony in London. He had an attractive personality, he made friends easily, and always retained them. He was the correspondent of the *Semaine Médicale*, which under Dr. de Maurins (who was both editor and proprietor) won a high place among French medical journals and had a large circulation. It had itself out to report the meetings of societies and associations, and for a good many years Keser regularly attended the annual meetings of the British Medical Association.

In 1899 he was threatened with loss of sight, and made up his mind to retire. After a year's rest he was restored to health and was able to indulge his hobby, which was Greek archaeology, by extensive travel in Greece and the Near East. Afterwards he settled in the outskirts of Geneva and lived a life of lettered ease until it was rudely interrupted at the outbreak of war, when some hundred thousand miserable refugees, expelled from the invaded parts of France, passed through Geneva. He was placed at the head of the dispensary where some ten thousand persons were treated, many of them reduced to a shocking condition by the cruel treatment they had suffered at the hands of the Germans. It was a terrible experience for a man of Keser's cultivated mind and sensitive nature. Later the hordes of refugees were succeeded by other hordes carrying sick and wounded soldiers from France to Germany and the reverse, hundreds of volunteers were enlisted under the Red Cross and the work went on for years, involving great exertions and many hardships. All through he was unwearingly helped by his wife, with whom in her great loss all Keser's surviving English friends will sympathize deeply.

LIEUT.-GENERAL SIR W. LAUNCELOTTE GUBBINS, K.C.B.

Late D.G.A.M.S.

LIEUT.-GENERAL SIR WILLIAM LAUNCELOTTE GUBBINS, K.C.B., a former Director General of the Army Medical Service, died at Westgate from the effects of a cycling accident, on July 8th, aged 75. He was the second son of the late Chancellor the Rev. George Gubbins, M.A., of Maidstone, and of Kilperstone, co. Limerick, and was educated at Trinity College, Dublin, where he was Baccalaureus Smith Scholar, and graduated M.A., M.B., and M.Ch., with honours in history and literature, in 1872. He received the honorary degree of M.D. from his university in 1912, and the honorary F.R.C.S.I. in the following year. He entered the army as surgeon in September, 1873, attained the rank of colonel, by special promotion for

service in South Africa, in November, 1900, became surgeon-general on August 27th, 1903, and Director-General, with the rank of lieutenant-general, on March 6th, 1910, succeeding Sir Alfred Keogh in that post. He retired on June 1st, 1914, just before the beginning of the war, when he was succeeded by Sir Arthur Sloggett.

He had a distinguished record of active service, beginning with the Afghan war of 1878-80, in which he served with the 5th Northumberland Fusiliers—the 'Lighting Fifth', afterwards, on the staff of Lieut-General Sir F. Maude, V.C., he was present in actions in the Bazu Valley, and in the Mohmand and Ghilgai expeditions, receiving the medal. He also served in Egypt in 1882, and in Burma in 1885. From 1894 to 1899 he held the post of assistant director of the Army Medical Service at the War Office. He served in South Africa from 1899 to 1901 as P.M.O. of the 6th Infantry Division, and afterwards of the Pretoria District, with the local rank of colonel, took part in the relief of Kimberley, in operations in the Orange Free State, including the actions of Paardeberg, Poplar Grove, and Drifontein, and in the Transvaal. He was mentioned in despatches in the *London Gazette* of February 8th, 1901, received the Queen's medal with five clasps, and was specially promoted to colonel. He was P.M.O. of the Home District in 1902-3. On promotion to surgeon-general he was posted to India where he was P.M.O. of the Western (Bombay) and Eastern (Lucknow) Commands successively. He was P.M.O. of H.M. Force in India from 1906 to 1908. From 1908 to 1910 he served as Deputy Director-General of the A.M.S., prior to his promotion to Director-General.

After his retirement he was again employed, in the recent war, chiefly in connexion with the Red Cross Society. He received the M.V.O. in 1902, the C.B. in 1903, was appointed honorary surgeon to the King in 1909, and was promoted K.C.B. in 1911. He received a Distinguished Service Pension at the end of the war. He was a Commissioner of Chelsea Hospital and a justice of the peace for Surrey. In 1885 he married Florence Muguet, second daughter of the Rev. H. Mugg of Huntspill and Winford, Somerset. He had lost two sons, but is survived by his widow and one daughter.

**MAJOR GENERAL SIR OLIVER JULIAN, K.B.E.,
C.B. CMG,
Army Medical Service**

MAJOR-GENERAL SIR OLIVER RICHARD ARCHER JULIAN, K.B.E., C.B., CMG, Army Medical Service (retired), died at South Molton, Devon, on June 13th, aged 62. He was born at Gillingham, and was educated at St. Bartholomew's Hospital; he took the M.R.C.S. and L.S.A. in 1885, and the L.R.C.P. Lond. in 1886, he obtained the D.P.H. of the London Colleges in 1905. He entered the army as surgeon in February, 1887, he was made brevet lieutenant-colonel in July, 1908, but did not reach the rank of lieutenant-colonel in the regular line of promotion till August, 1911, when he had twenty-four and a half years' service. He was promoted to colonel in the long war promotion list of March 1st, 1915, received the temporary rank of surgeon-general in June, 1917 and became major-general in April 1918. He retired on March 22nd, 1921. He served in the South African war for the whole three years (1899-1902), taking part in the operations in Natal, including the defence of Ladysmith, and the actions at Tlanya, Lombard's Kop, and Laing's Nek, and in the Transvaal, including the actions at Belfast and Ladenburg. He was mentioned in despatches in the *London Gazette* of February 8th and September 10th, 1901, and received the Queen's medal with four clasps, the King's medal with two clasps, and the C.M.G. He next saw service on the North-West Frontier of India in 1908 in the Mohmand and Zakka Khel campaigns of that year including the actions of Matti and Kughra, was mentioned in despatches in the *London Gazette* of August 14th 1908 and received the frontier medal with clasp, and was specially promoted brevet lieutenant-colonel from 1913 to 1915. He was physician and surgeon to the Royal Hospital, Chelsea.

During the recent war he served in France as a D.D.M.S., was mentioned in despatches in the *London Gazette* of

January 1st and June 19th, 1916, and received the C.B. in 1916, and the C.B.E. in 1919. He succeeded Surgeon-General Henthaw as D.D.M.S. of the Western Command in 1918, and in the following year was sent as D.D.M.S. to Mesopotamia, receiving the K.B.E. for his services there, in February, 1921.

**EVAN EVANS, M.B., B.Ch., F.R.C.S.,
Llanelli**

We regret to record the death of Dr. Evan Evans at Llanelli on July 18th, in his 72nd year. Dr. Evans received his medical education at Cambridge and St. Mary's Hospital; he graduated M.B., B.Ch., and obtained the diploma of M.R.C.S. in 1886. In 1888 he obtained the D.P.H., and in 1894 the F.R.C.S. For the last forty years he had been medical officer of health to the Llanelli Rural District Council and Poor Law officer to the Llanelli Union. He was also engaged in general practice, and was an eye specialist under the Pensions Board for West Wales. His other appointments included those of medical referee under the Workmen's Compensation Act, and lecturer and teacher under the Midwives Board. Shortly after settling in Llanelli he became associated with the local volunteer corps, and subsequently held a commission in the 4th Battalion Welch Regiment three years ago. He retired with the rank of surgeon lieutenant-colonel. He was the pioneer of ambulance work in Llanelli, and held his first ambulance class so long ago as 1887. He was appointed by the St. John's Ambulance Association to be commissioner for the county, and in 1921 became an honorary associate of the Order. In 1924 he was invested by the King as a Knight of Grace. Always a strong supporter of the British Medical Association, he was an ex-chairman of the West Wales Division, and ex-president of the South Wales and Monmouthshire Branch. He leaves a widow, one son, who is in practice at Westcliff-on-Sea, and three daughters. The funeral was held on July 22nd, with full military honours, officers of the St. John's Ambulance Association acting as bearers.

THE LATE DR. R. M. BEATON

'A.B.' sends the following further tribute to Dr. R. M. Beaton, of whom an obituary notice, embodying a tribute from Sir Alexander Houston, was published last week (p. 237).

Beaton was a strong man and in consequence made enemies as well as friends. His convictions lay deep and he was prepared to sacrifice almost anything to them. Years ago, as a practitioner, he was almost a phenomenal success coming to London (Aberdeenshire was his home) as he did without friends or money, merely settling in St. Pancras; he was able, after something like fifteen years, to retire from practice and enter public life. But with the controversy over the Insurance Bill he quickly identified himself again with his profession dominating his Division (the St. Pancras and Islington) whose chairman he became and which he represented at Representative Meetings. He was chosen by the Representative Body as one of five to interview the Chancellor direct. His Division gratefully recognized these services and held in his honour a dinner, at which some beautiful silver plate was presented to him. Although in debate he struck hard, even remorseless, it was not before he had given long and temperate thought to his matter. And in his friendships, loyal and deep as they were it would not escape one that here was a man in whom without doubt were the elements of greatness.

We regret to record the death of Dr. JOSEPH BOYER SIDBALL, at Great Malvern, on July 4th, at the age of 85. Dr. Siddall received his medical education at St. Thomas's Hospital where he obtained the diplomas M.R.C.S. Lond. and L.S.A. in 1864. He then went to Aberdeen University and in 1865 graduated M.D., C.M., with the highest honours. In 1876 he obtained the D.P.H. Camb. Dr. A. C. Deveraux writes Dr. Siddall was in the real sense of the phrase a pioneer of medicine, for in 1868 he went to Japan as medical officer to the British Legation. There

* Kathleen L. Hieles C H Highfield G S Hirst C H Ho B L
Hodge S J Hoffman R St J Honner C L Hunt D J C
Hutton S W Innes Smith A O Jacob T L Jenkin B Jones
Helen J Jones Jorweth H Jones W R Jones I S L Jones
C W Keelo J J Keevil Frances M Konyon A K Keil
B Kornburn O J A Kruze F D Lawrence H I Lewis W L
Lishman W Dorothy M Llewellyn T R I Tongton J S S
Fene W S Macgowan C C MacKinnon *Alison I McMahon
I Melherson M L Macey Joan G Malletson W N Mapo H L
Marriott C H Mason A R Miller N A Miller H I T Modder
W J Moody A L Moorby R H Mortis K V N Nair W B
Norcott *Kathleen C Nortie B V O Connor Gwynedd M I
Olive *dithG Posecock R L Pearson H Peaston K R I
Peiris A B Plant W G Platt G L S Plumbly Stephen M
Power J Price * Nora Irector Louis T B Pryes Jones * Violet
R H Rains J Rasmann J R Ratcliffe M P S Rau J I
Readman E W Riches J H W Robertson *May I Rogers I G
Ross G L I
Seddon S Q
S J H Summ
*Rachel W
Spero *Loi
F W TaBo
I Tyrie I
Thornton I
Tunser A I
A G Walter Elizabeth M Whisbaw J I Whitehill I S
Whitton J McM Wilder E C I Williams F J Williams G O
Williams H J Williams I H William W H Williams J H
Wills N Wilson R E Woffendale C J Wilde R H Whit
T Lora I

*Under the Medical Act 1876

Diplomas

The diplomas indicated were granted jointly with the Royal College of Surgeons to the following successful candidates

PUBLIC HEALTH J C O S B Brooke Dorothy M Campbell Meiklejohn
J L Carroll J Oauchill I P Farce D G M Edwards J G N
Harris S S Hunt A H L Stauden D Barn B F Klammbatta C
Rumbaldman H T Strausman Fous L Stone L Teoult
TROPICAL MEDICINE AND HYGIENE A I Abbassi M Ali D
Anderson J B S Baxter I C R Buchanan M Burn All
Campbell R A Chamber W Corner J R Davies G H Divo
J Cirgis F M Halley Hans Raj G W Harle J McKenzie M S
Mahmood W J Moir C R Ishih L M J R Pilo S Rama
Irishman H D C Rice G W Scott L A Seagar T F Sheehan
Charkit C A Stuart C Sturton W Wilkinson
PSYCHOLOGICAL MEDICINE - G T Baker G L Cutts H T Jones J J
Lowe J B S Lewis H C McManus A H Pearce G F Peters
R G Riches G R A de M Rudolf J Rusch
ORTHODONTIC MEDICINE AND SURGERY W Arndt H I Pabla K D
Heave Catherine B H Cruesebank W D Ombrian
Agnes Foutcourt O wald I A T Flynn K L Johnston W A Khan
C J Kribsasman A P Lawrence A L McCurry W M
MacDonald K K Nayyar K B Palshivala R W Payne
LARYNGOLOGY AND OTOTOLOGY - S N Chau E D D Dickson R McV
Glynn R E Jowett I P Kies N W MacKeith J H Shaw

Awards and appointments

The Baly Medal was awarded to Professor R. Magnus of Utrecht on the recommendation of Council.

On the recommendation of Council Sir Frederick Andrewes was reappointed a representative on the Executive Committee of the Imperial Cancer Research Fund.

Harleian Oration

The President announced that he has appointed Sir John Rose Bradford K C M G , C B C B E , M D , to deliver the Harveian Oration in 1926

ROYAL COLLEGE OF SURGEONS OF ENGLAND

AN ordinary council meeting was held on July 30th, when the President, Sir John Bland Sutton was in the chair.

Professor Alexander Primrose C B was introduced and admitted a Fellow of the College

Diplomas of Membership were granted to 235 candidates and diplomas of Fellowship to 3 candidates

Diplomas were granted jointly with the Royal College of Physicians in Public Health to 14 candidates in Tropical Medicine and Hygiene to 28 candidates, and in Ophthalmic Medicine and Surgery to 17 candidates.

The names of the successful candidates are published in the report of the committee of the Royal College of Physicians of London published in this issue.

Post Graduate Study and the Fellowship

The following resolution adopted at the annual meeting of the Canadian Medical Association was referred to a committee for consideration:

That this Council puts itself on record in expressing its unanimous desire and approval of establishing such means as may be necessary for the purpose of facilitating for our Canadians by post graduate study and examination the obtaining of the Fellowship of the Royal College of Surgeons of England

Supplemental Charter

The terms of a petition for a Supplemental Charter were taken into consideration and approved and it was decided that the further steps to be taken in the matter should be considered at the quarterly meeting of the Council in October. The proposed Supplemental Charter is in general terms to enable the Council to make improved arrangements for certain examinations. In accordance with this object it is proposed to give the Council power to increase the number of members of the Court of Examiners and to give greater freedom in the selection of examiners for the Licence in Dental Surgery. It is also proposed to admit women Fellows and Members of the College and

Licentiates in Dental Surgery on the same terms and conditions as men and with the same rights and privileges, and to effect certain minor adjustments.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated

Surgery—S J Alexander S Bartlett T Beimaschewitsch T Carroll
W Hinds P H Knowles
Medicine—S Bartlett T T Birkinshaw A H Henson A Kaplan
T A Lazaro C H Mason C S Netscher R C Pratt K I R
Robertson

Forensic Medicine—S Bartlett T A Lazaro R D Mason P B P
Mellows J M Moran K L R Robertson
Misadversu—S Bartlett S A Joelson C H St Johnston J Nindess
J M Moran P H Row

The diploma of the Society has been granted to Messrs S J Alexander
S Battlett I T Birkinshaw F Carroil A haplan I H knowles C H
Mason C S Netscher and h I R Robertson

Medical News.

WE have on several occasions called attention to the high price at which the Registrar General's *Statistical Review* is issued. The Registrar General, we understand, has himself regarded the price with dissatisfaction, and it has now been found possible to make a special offer of the two parts, "medical" and "text" to public health authorities and officers, at the price of 12s 6d a year instead of £1, on certain conditions. A circular has been issued by the Minister of Health to public health authorities, boards of guardians, and insurance committees announcing this and stating the conditions, which include a promise of a subscription for at least five years. The circular is accompanied by a memorandum by the Chief Medical Officer of the Ministry of Health.

THE King and Queen visited the Royal Society in the afternoon of July 22nd, before the annual ladies convocation that evening, and were received by the President, Sir Charles Sherrington. They saw many of the exhibits arranged for the evening, and attended a lantern lecture by Mr F E Smith, Director of Research at the Admiralty, upon the subject of navigational devices. On July 24th Sir Walter Fletcher, by command, presented Dr W E Gye and Mr J E Barnard to the King.

The Minister of Health and the Secretary for Scotland have appointed a committee to inquire and report whether any amendments are required in the Local Government and Other Officers Superannuation Act, 1922, in particular (a) whether it is desirable that the scheme of superannuation established by that Act should now be made obligatory on all local authorities, and (b) whether that scheme should, with or without modification in respect of particular classes of officers, be made applicable to all persons in the employment of those local authorities, other than school teachers and police. The chairman of the committee is Sir Amherst Selby Bigge, Bt, KCB, and Dr Drummond Shiels, M.P., is a member.

THE Fellowship of Medicine announces that the Queen Mary's Hospital, Stratford, will hold a general course in medicine, surgery, and the special departments from August 24th to September 5th, with practical study in gynaecology and obstetrics. On September 7th an operative surgery course commences at the Seamen's Hospital, the course will last five weeks with four meetings weekly. On September 21st, at the Brompton Hospital a two weeks course in pulmonary diseases begins. There will be an afternoon course with evening clinics at the Blenheim St. Hospital from September 7th to 19th. At the Infants Hospital a course of instruction will be given from September 7th to 19th in the latest methods of treating infantile ailments. The Royal Westminster Ophthalmic Hospital has arranged a course from September 7th to 26th, and there will be an intensive course in general medicine, surgery, and the specialties at the Westminster Hospital from September 21st to October 3rd. A series of lecture demonstrations in electrotherapy will be given on Wednesdays, beginning September 23rd, at the Royal Free Hospital. Copies of the syllabus of these courses can be obtained from the Secretary at No. 1, Wimpole Street W. 1.

The annual congress of the French Society of Oto Rhino Laryngology will be held from October 12th to 17th, at the Faculty of Medicine in Paris, under the presidency of Dr Bimel of Bordeaux. The congress will discuss latent otitis in children and the syndrome of the sphenopalatine ganglion, further information as to this congress can be obtained from the general secretary, 216, Boulevard St-Germain, Paris 7^e.

THE twelfth annual Congress of Hygiene will be held at the Institut Pasteur, Paris, under the presidency of Dr. Laveran from October 19th to 23rd when the following subjects will be discussed: (1) Is syphilis tending to disappear? introduced by Professor P. Auriol of Strasbourg; (2) standardization of the methods of bacteriological analysis of water, introduced by Dr. Rochoux of Lyons; (3) epidemiology, geographical distribution, and prophylaxis of undulant fever, introduced by Dr. Baruet of the Institut Pasteur; (4) experimental hygiene and laboratory research introduced by Dr. Dujardin de la Riviere; (5) general and social hygiene, introduced by Dr. Ott and Biran; (6) sanitary hygiene, introduced by Dr. Dequidat. Further information can be obtained from M. Bossu, 142 Boulevard Montparnasse, Paris XIV.

THE seventh congress of the French Society of Otho-pedies will be held in Paris on October 9th when the following subjects will be discussed: Pulmonary treatment of inveterate congenital dislocation of the hip introduced by M. Lanee; congenital club hand and paralytic club hand introduced by M. Roche of Bordeaux.

THE second Latin American Odontological Congress will be held at Buenos Aires in October and in international odontology exhibition is being organized.

THE congress of French speaking gynecologists and obstetricians will be held in Paris under the presidency of Dr. Sneyers from October 1st to 3rd when the following subjects will be discussed: the biological action of the corpus luteum and the interstitial gland of the ovary by Professor Schiele of Strasbourg; tumours of the broad ligament, by Professor Torquero of Montpellier; and Dr. Crousse of Brussels introduces for poliovirus, by Professor Romer of Lonsanno and Dr. Le Loric of Paris. Further information can be obtained from M. Proust, 2 Avenue Hoche Paris.

THE Zanon Ophthalmic Institute of Milan has offered a prize for the best essay published in 1925 on the experimental and clinical aspects of myopia.

AT a meeting attended by Dr. Cann, director of the European Mission of the Rockefeller Institute Professor Brumpt member of the Academie de Medecine and Dr. Serri senator of Corsica it was decided to found a malaria research laboratory at Bastia (Corsica). The expenses will be defrayed by the Rockefeller Institute.

THE Royal Free Hospital has received a gift of £2,000 from an anonymous donor for the enlargement of its light treatment department.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

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QUERIES AND ANSWERS

DR. J. DONALD (Glasgow) writes: I now wonder whether any experiments on animals have been made in this country by the intravenous injection of the local methyl propyl carbonyl methane?

A CORRESPONDENT asks whether there are any institutions in England where natural and artificial sunlight treatment can be given to a child suffering from chronic nerve trouble. She does not wish to enter a sanatorium for tuberculosis.

SUBNOCTURNAL TEMPERATURE. DR. S. V. H. TAYLOR (Middlesbrough) writes: I have written to the **BRITISH MEDICAL JOURNAL** July 2nd p. 184 asking for advice about subnormal temperature. The patient is otherwise fairly fit. I am inclined to ask two questions. The first is: Why worry if the individual has experienced in that often this is an average ten minutes and one of the 15th. Month temperatures taken for a minute are generally about this level in health especially if taken in cool weather and after a person has been inactive. An accurate reading of the body temperature is best taken in the rectum or at least by passing a good stream of urine on to the bulb of the thermometer.

LETTERS, NOTES ETC

SLEEP AND SLEEPINESS

DR. H. WILLIAMS (Birmingham) writes to express the opinion that Dr. I. H. Simmons in his article on sleep in our issue of May 9th did not attribute sufficient importance to the part played by the eyes in inducing sleep. In the course of his lecture Dr. Williams made the following observations: The feeling of sleepiness apart from the sensation which leads to yawning—a heaviness of the lid than in any other part of the body—is a heaviness of the lid. This is of practical importance in the induction of sleep. One of the commonest impediments to sleep is an overactivity of the mind during the last of the morning. This enema of mental material must be effectively counteracted by the following procedure: open the eyes wide keep them open and stare into the distance resist and continue to resist the increasing tendency of the lids to close. Consciousness is thus centred in this physical effort and the sense of eye weariness which supervenes while awake is an important element in sleepiness over which I think is an important element in sleepiness. The power of the overactive mind is side-tracked into oblivion. The power of habit is immense. Contact with the pillow should normally invite sleep. It is he adds important that the bladder of which we become empty even half a pint of urine in the bladder of which we are normally unconscious may with some he the last straw in maintaining wakefulness. As the bladder fills more rapidly while awake than asleep if one has lain awake for an hour double this quantity may have collected according to the amount of fluid taken before retiring. Thus an old Dublin doctor specific for insomnia was—Get up and pass water. There is further no more potent soporific than a mild degree of bodily fatigue and for those who cannot take a brisk walk or gentle run of a mile or so just before retiring to bed produces a very sound sleep which is profoundly restful.

DRIVING A CAR

ON *Driving a Car* the *British Motorist* is an extremely well set up advertisement of the *British Petroleum* as a petrol. On each left hand page of the book is an illustration as artistic as the subject will allow of some portion of the oilfields or works from which the *British* petrol is produced. Each right hand page has an illustration in bold design of some portion of a motor car to which is attached a hint on the proper care or the proper use of the part. For the new motorist the hints will be most useful. He will learn the meaning of choking the engine the disadvantage of overloading the correct method of braking safe method of starting the clutch while the *British Petroleum* Company will endeavor to persuade him that all these matters are dealt with best by the use of their petrol. Copies of the book may be obtained free on application to the *British Petroleum Company Ltd*, Britannic House, Moorgate, L.C.2.

ROAD PLANS

THE *Dunlop Rubber Company Ltd* have now issued the third volume of their series of provincial road plans. On the *London*, produced by *Ed J. Broom* and *Company Ltd* of Cheltenham price 6d. It shows the old coaching highways to Bath and Bristol which the rise of the motor car has brought back to life. It shows also the road from London to Milford Haven with Oxford the Cotswolds the valleys of the Thames Severn and the towns of Wales. There are six other plans of Cardiff Swansea Reading Oxford Bristol and Bath Central London and the way out. The book includes forty-eight strip maps adorned with thumb nail drawings.

MOTOR TOURS

AS evidence of the increasing popularity of motor touring the Automobile Association states that this summer it is issuing specially prepared routes and tours to members at the rate of over 1,000 miles a minute.

VACANCIES

NOTIFICATIONS of offices vacant in universities medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 34 35 38 and 39 of our advertisement columns and advertisements as to partnerships assistantships, and locum tenencies at pages 36 and 37. A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 64.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL
MEETING, BATH, 1925SECTION OF OBSTETRICS AND
GYNAECOLOGY

Lady BARRITT, C B E, M D, M S, President

DISCUSSION ON
MALIGNANT DISEASE OF THE PELVIC ORGANS

OPENING PAPERS

I—B P WATSON, M D, I R C S F,

Professor of Midwifery and Diseases of Women, Edinburgh
University

THE PROBLEM OF CANCER OF THE UTERUS

When I was honoured by the invitation of the President and officers of the Section to initiate the discussion on malignant disease of the pelvic organs by saying something on the problem of cancer of the uterus I hesitated to accept because it seemed that nothing new could be said on the subject. On reflection, however, I realized that, as with every educational effort, constant reiteration, even to the point of boredom, is necessary if the public and the profession are to be thoroughly convinced of the responsibility which rests upon patient and doctor alike in the effort to diminish the great loss of life resulting from this disease. That proper education would result in such a diminution has long been realized. That it is not an accomplished fact is the justification for the present communication.

Incidence of Cancer of the Uterus

The toll that cancer of the uterus takes of the population of the world is enormous. Out of a total of 25,637 deaths from cancer in females in England and Wales in 1922 5,354 were due to cancer of the pelvic organs, and of these 4,228 were cases of cancer of the uterus. This figure was exceeded only by the 4,826 cases of cancer of the breast. In Scotland in 1923, out of a total of 3,604 deaths from cancer in females, 489 were cases of cancer of the uterus. This figure was exceeded by those for cancer of the stomach 729, cancer of the intestine 595, and cancer of the breast 540. The totals for comparison are, of course, very different, but it is striking that in the Scottish statistics cancer of the uterus comes fourth, and in the English statistics second in order of frequency. I do not venture on any explanation. Cancer of the uterus accounted for 16.5 per cent of all deaths in females from cancer in England, and 13.5 per cent in Scotland in 1923. In America in 1915, out of 47,124 deaths from cancer in females, 11,965 were from cancer of the pelvic organs. It is unnecessary to quote further figures to show the frequency of the disease and its high mortality. Nor need we stress the point brought out by statistics over recent years that cancer generally is apparently increasing in frequency. We are not concerned at present with discussing whether this increase is only apparent or is real. It is enough for our purpose to face the facts as they are, and to try to find means for diminishing the incidence and fatality of the disease.

In attempting to diminish the incidence we must not be discouraged by the fact that we do not yet know the ultimate cause of cancer. There are many diseases, such as malaria, yellow fever, and sleeping sickness, the incidence of which was diminished before their ultimate cause was known, simply by controlling one factor which appeared to play a part in their causation. The nature of all the agencies which have to work together before cancer can develop in the uterus we do not know, but one condition—namely, irritation—is so constant in cancer of the cervix that it must be recognized as one of the etiological factors, and it is a factor which can be controlled.

Cancer of the cervix is ten times as common as cancer of the body of the uterus, and cancer of the cervix is essentially

a disease of the parous woman. Frank's statistics show that 97 per cent of all cancers of the cervix occur in women who have borne children. The number of pregnancies and labours plays a secondary role. The fact that a woman has had one child predisposes her to cancer of the cervix, that predisposition is almost certainly due to injury of the cervix. If that injury is followed by chronic infection and catarrh, as is so frequently the case after deep lacerations, the predisposition is increased. We know that cervical catarrh occurs in nulliparous women as the result of infection, and even in virgins in whom infection can be excluded, and these may be the nulliparae who develop cancer.

Local Irritation

If this factor of local irritation, present in the vast majority of women who develop cancer of the cervix, were more fully recognized and more effective means were adopted to eliminate it, would not the incidence of cancer of the cervix be diminished? That diminution would be brought about, first, by abstention from all procedures which tend to produce deep lacerations, such as forcible dilatation of the cervix in labour and the application of forceps before completion of the first stage, and, secondly, by the thorough treatment and, if necessary, repair of existing lesions. Women should be made to understand that long continued leucorrhoeal discharge indicates a diseased condition and calls for investigation and treatment.

When a woman comes to us complaining of this symptom we must do something more than merely prescribe a vaginal douche. A careful examination should in all cases be made, and the cervix inspected through a speculum. If the laceration is a deep one and the lips of the cervix are everted and catarrhal a repair or amputation should be advised. A repair, when properly carried out, does not prejudice the patient as regards future child-bearing, but, if this be feared, the operation may, in certain cases, be postponed until the child-bearing period is over. The importance of cervical laceration and catarrh, as a cause of disability and possible future trouble in women, was emphasized many years ago by Emmett. In the intervening years its importance has been rather forgotten, and it is only comparatively recently that we in this country are again realizing that these cervical lesions demand proper treatment. The operation is a very simple one and devoid of risk. I believe that its more extensive employment in women at the end of their child-bearing period would result in a diminution in the incidence of cancer. It is extraordinary how women will allow these vaginal discharges to continue over a long period of years without seeking relief therefrom. A similar condition in any other part of the body would lead them to seek advice immediately. In this matter it is obvious that the public requires educating, and the profession also needs to realize more than it does at present the importance of these lesions as a precursor of cancer. Repair of cervical lacerations is one of the most frequent operations which I perform in hospital practice.

Early Diagnosis

While much may be done by this form of prophylaxis, we must look to the early diagnosis of cancer itself for a diminution in the mortality of the disease. In order that these may be obtained two things are necessary: first, the education of the public in the early symptoms and signs of the disease, and, secondly, the instruction of the individual members of our profession to grasp the importance of making a most thorough investigation of any woman seeking advice because of those symptoms and signs. Women must be made to realize that the occurrence of any abnormal bleeding, or the change in the character of any existing leucorrhoeal discharge may be of serious import, and should lead them immediately to seek medical advice. A very large number of women know the import of those symptoms, but abstain from mentioning them because they fear that cancer may be diagnosed. It is therefore important that along with any publicity campaign for the information of women regarding those symptoms, emphasis should be placed on the fact that cancer, if detected early, is a curable disease, that at first it is a purely local condition and in no sense constitutional. If this were more fully realized we should

have coming to us many more early cases which are amenable to treatment.

The number of early cases which we see is very small in proportion to those more advanced. It is usual to divide the cases into "operable" and "inoperable," those being classed as "operable" in which the disease is confined to the cervix or extends only slightly to the vaginal wall, and in which there is no fixation of the uterus or obvious secondary deposits. Many of these cases, however, at operation show extensive involvement of the parametrium and of the pelvic lymphatic glands. When the disease has so extended the chance of cure, either by operation or by radium therapy, is very much diminished. According to this classification we find from the statistics of various hospitals that the number of "operable" cases presenting themselves varies from 40 to 70 per cent. Maitzloff states that in the Johns Hopkins Hospital 52.1 per cent of the cases were operable and these yielded a 26.6 per cent of five-year cures. Craves in Boston found 64 per cent of the cases operable, and these gave a five-year cure of 18.5 per cent. Stoekel gives his operability rate as 70.6 per cent, and in these the percentage of five-year cures was 26.6.

In this country we have not done as much in disseminating a knowledge of the early symptoms of cancer as has been done in America, and especially in France and Germany. That the propaganda in these countries has had good results is shown by the larger number of early cases going to their clinics. Compare the 70.6 per cent operability rate of Stoekel in Germany, the 60 per cent rate of Craves in Boston, the 52.1 per cent rate in Baltimore, and the 27 per cent rate in my clinic in Edinburgh. I believe that much more might be done here by judicious propaganda in the daily press. Public opinion would probably not allow of the general display of posters detailing symptoms, such as we see in Continental cities, but more might be done in other ways. In any such poster or announcement the first thing that should arrest the attention is a statement that cancer is a curable disease. Unless that fact is driven home a large proportion of women with cancer will still delay in seeking advice.

Duration of Symptoms

It is interesting to analyze the extent of the disease in relation to the duration of symptoms. Schmitz finds that, when the irregular vaginal bleeding is of less than three months' duration, the chances are that the case will be one in which the cancer is still confined to the cervix and operable. If the bleeding has been of longer duration, and especially if there is pain, there is almost certainly an extension to the parametrium. The presence of fetid discharge is of less prognostic significance than bleeding or pain. Irregular bleeding between the periods, or after the menopause, is the most constant and significant symptom of cancer—both of the body and of the cervix. Leucorrhoeal discharge, whether fetid or not, is of less importance. Norris and Vogt, in assessing the relative values of these two symptoms from the diagnostic point of view, put hæmorrhage at 90 and discharge at 10 in cancer of the cervix, and hæmorrhage at 75 and discharge at 25 in cancer of the body. Pain, as we all know, is never an early symptom of cancer of the cervix, its presence, practically always, indicates an extension beyond the uterus, and is, therefore, of very serious prognostic significance.

Age Incidence

Another most important aspect of the problem which requires to be put before the public and the profession alike is the age incidence of the disease. Cancer of the cervix most commonly occurs between the ages of 40 and 55. Hevran, in a series of 505 cases, found that one-third of them were under 45, one-third between 46 and 55, and one-third over 56. Norris and Vogt found that 86.9 per cent were 41 years or over. Whilst the disease is uncommon, therefore, at about the time of the menopause, we must remember that it may occur in quite young women. Schmitz found that it occurred before the thirty-sixth year in 11.9 per cent of his cases. I have myself had three patients who were under 30 years of age. Cancer of the body of the uterus, on the other hand,

usually occurs at a later age than cancer of the cervix. In most cases the menopause has been established for some years. The first symptom may be a slight amount of vaginal bleeding or simply a watery discharge which, in the course of time, changes to a blood stained one. Such symptoms in a woman past the menopause should call for immediate investigation. It must also be emphasized that cancer of the body, while commoner in nulliparae than cancer of the cervix, is not essentially a disease of nulliparae. In Norris and Vogt's cases only 26 per cent of all the cases of cancer of the body were nulliparae.

Methods of Investigation

It has long been my teaching to students that the first thing which should cross their mind when a woman of my age comes to them complaining of irregular vaginal bleeding is cancer, and that they must not be satisfied until they have definitely excluded it as a cause. One of the hardest things to teach them is the method of investigating such a case and of establishing a definite diagnosis. After going over the whole matter in the lecture room and at the bedside one often finds that, when confronted with the individual case, they fail to realize that a mere digital examination may be insufficient. There is no credit in diagnosing by vaginal examination an advanced case of cancer of the cervix. What we have to teach them is to be able to recognize the early case, and the ease of early cancer of the body. They must be taught that every woman complaining of abnormal vaginal bleeding is entitled to the most thorough examination. She must never be put off with drugs or douches. If digital examination reveals nothing the uterus must be explored. Many cancers of the cervix begin within the cervical canal and are inaccessible to the examining finger until they are far advanced. Those cases are very deceptive, even in their advanced stages, as the disease extends outwards towards the paracervical tissue and may scarcely reach the external os.

What nature should the further investigation of a case where nothing is palpable per vaginam take? We are now all alive to the risk of disseminating cancer cells by manipulation of a cancerous area, and especially by incising or curetting it. I therefore believe that, if any exploration of the uterus is necessary, and especially if curetting has to be done, the diagnosis should be established one way or the other there and then, and, if cancer is diagnosed and the case is operable, the operation should be proceeded with at the time. In the case of cancer of the body the naked eye appearance of the curettings is usually quite characteristic, in doubtful cases frozen sections should be made. If a piece has been excised from the cervix and immediate diagnosis is impossible the area of excision should be thoroughly euterized.

It is no use educating the public in the importance of early consultation in cases of irregular vaginal bleeding and discharge unless every member of the profession realizes the responsibility placed on him, or her, in advising and carrying out this thorough investigation. It is only by this mutual co-operation that we can hope to get the early case.

Prognosis and Treatment

If we do get the early case what are the chances of permanent cure? Collected statistics from a large number of different operators give a five-year cure in 25 per cent as the result of radical operation. Many of these cases were, of course, border line ones, for we are often deceived as to the extent of the disease until the operation is actually in progress.

When we take selected early cases where the disease was actually confined to the cervix the ultimate results are very much better than 25 per cent of cures, such cases also show a high percentage of cures by radium. I do not think we are yet in a position to be dogmatic about the relative merits of operative and radium treatment in these early cases. Some of those who use radium alone are so enthusiastic about their results that they consider operation inadvisable in any case of cancer of the cervix. Expert operators, on the other hand, are just as positive in the other direction. More time must

chance, and more figures must be available, before we can reach finality on the subject. My own feeling in the matter is that, with a clearly operable case, operation preceded by radium treatment offers the patient the best chance. I am driven to this conclusion by the frequent discovery of definitely cancerous lymphatic glands in early cases. Even with the elaborate modern technique of applying radium on chains passed through the pelvis the chances of eradicating these cancerous nodes are greater by operation.

In the border-line and in the advanced cases, radium treatment is the only one which holds out any hope. By it the local disease is checked, and often completely eradicated, with a disappearance of the vaginal discharge, and very often a marked improvement in the general condition of the patient. In a large number life is very definitely prolonged, and in some an absolute cure is effected. Thus Heyman, in a series of 505 cases in the Radium Institute at Stockholm had 20.29 per cent of five-year cures. In the operable and border-line cases the percentage of five-year cures was 40.5. Schmitz in 105 cases had 14.5 per cent of five-year cures. Bailey and Healy, in 85 cases of recurrent carcinoma, had 8 per cent of their patients well after five years. These figures are very impressive, but such results can only be obtained by a very carefully applied technique. The technique of radium treatment is rapidly being improved and elaborated, so that it has become a very specialized procedure.

In judging of the relative merits of operation and radium therapy we must bear this in mind and against the results of our expert operators place only the results of our expert radiologists. Only by observing such conditions can we hope to arrive at a definite conclusion. Cancer of the body of the uterus shows a distinctly higher percentage of cures by operation than does cancer of the cervix. Norris and Vogt in 115 cases found a three-year cure in 44 per cent. At the present time it would seem that operation offers a better chance than radium treatment in such cases.

But whatever the disease, and whatever the method of treatment employed, the chances of cure are in inverse proportion to the duration of symptoms. The pressing problem is, therefore, to get the cases early, and that can only be accomplished by a more widespread educational propaganda among the people. Is it possible to carry on such a propaganda without unduly alarming the women of the country, and without the risk of creating hypochondriacs? I think that it should be possible. Every effort to remove the supposed mystery of medicine ought to be encouraged. A knowledge of a little elementary anatomy is a good thing for the lady, for with a knowledge of anatomy there comes very quickly some understanding of pathology, and with that there is, undoubtedly, a tendency to discuss symptoms more freely than is otherwise the case. Ten years' work among women on the other side of the Atlantic has convinced me that more good than harm results from such knowledge. The women there have less hesitancy in consulting their medical advisers, and they have less fear of surgical operations than the women of this country. It is sometimes thought by us that our transatlantic cousins and Canadian sisters know too much, and speak too freely about their internal arrangements. With that criticism I am not in agreement so long as such knowledge keeps them alive to the early danger signals of disease.

II.—VICTOR BONNEY, M.S., B.Sc., F.R.C.S. Eng.,
Surgeon to Chelsea Hospital for Women. Assistant Gynaecological
Surgeon to Middlesex Hospital, etc.

THE SURGICAL TREATMENT OF MALIGNANT DISEASE OF THE PELVIC ORGANS

I WELCOME this opportunity of speaking on the operative treatment of carcinoma of the uterus because I have no doubt at all that, down to the present time, it remains the treatment of election for the majority of the cases. I do not propose, in the short time at my disposal to quote the views of others, but to show from my own experience and results what surgery can achieve.

CARCINOMA OF THE CERVIX

Preliminary Considerations

Dealing first with carcinoma of the cervix, I would remind you that here, as in every other variety of carcinoma, the growth extends itself in two ways—tissue infiltration and lymphatic permeation. The first is a gradual crowding out of the normal tissues around the periphery of the growth. It is so slow a process that, even in persons dead of the disease, the primary mass of cancer cells is, relative to the individual it has killed, quite small. It is so defined a process that, were it the only method of extension, it would suffice, in order to obtain a cure, to excise the cell mass by an incision just outside its microscopic growing edge. Lymphatic permeation, on the other hand, is much faster—many inches between the primary cell mass and a lymphatic gland may be spanned in a few weeks, moreover, it is only occurring along certain well defined lymphatic lines, which, in the case of the cervix, fortunately are fewer in number than in any other place-variety of carcinoma. Commonly, indeed, there are but two—one, the most important, straight outwards in the upper part of the crural ligaments and under the meter to the obturator and external iliac glands, and the other downwards in the vaginal wall. The line of rational operative excision must therefore be planned so that, whilst at all points it keeps outside the margin of growth by filtration, it is extended in the regions of lymphatic permeation as far outwards as the anatomy of the parts and the endurance of the patient will permit.

Wertheim's Operation

The operation which fulfils these requirements we owe to the Viennese gynaecologist Wertheim, who, in the face of bitter opposition, had the courage to persist in its performance until its worth was manifest. I do not think that Wertheim's services to humanity have been properly recognized, so I will take this opportunity of reminding you that in this country twenty-five years ago not more than ten out of every hundred cases of carcinoma of the cervix were able to be treated by removal of the primary growth, and of these ten not more than one was alive five years afterwards. To-day, in England alone, there must be hundreds of women who, thanks to Wertheim, have escaped a peculiarly cruel form of death.

From 1907 to the present day I have performed Wertheim's operation about three hundred times, but since no figures bearing on results are of any value unless founded on the basis of five years' freedom from recurrence, I shall deal with the first 192 cases of the series, the 192nd of which was operated upon in July, 1920.

Operability Rate

But before giving you the figures I must explain what these 192 cases stand for. This brings me to the question of operability rate—that is to say, the ratio borne by the number of cases operated upon to the total number of cases seen in the same period. Without knowing this it is impossible properly to appraise a surgeon's results, since it is obvious that he who cautiously selects for operation only those cases which appear early and easy will, on superficial showing, have much better results than he who attempts to remove the growth in every case in which there is the smallest possibility of doing so.

The operability rate of an institution or individual clinic is estimated by comparing the total number of patients with carcinoma of the cervix presenting themselves at the particular hospital or clinic with the total number of radical operations performed over the same period. Thus, during the years 1923-24, 104 cases of carcinoma of the cervix presented themselves at Chelsea Hospital for Women, out of which 57 were radically operated upon—that is, an operability rate of just on 55 per cent. It has been objected that even in an instance like this, the cases had, to an extent, been previously selected, because certain patients, on account of age, hopeless advancement of the growth, or extreme poverty or neglect, are doubtless sent direct to their local workhouse infirmary and never come to the hospital at all, but since this objection applies equally to all average hospitals, the value of the operability rate as a basis of comparison is unaffected. It is otherwise, of course,

mention occurs chiefly along the lymphatics which accompany the ovarian vessels in the ovarian pelvic ligaments and eventually reaches the upper aortic glands. But much more important than this is the direct infiltration of the uterine wall, which presently penetrating the peritoneum, is followed by multiple peritoneal metastases. This is the usual mode of death in carcinoma of the corpus. The disease, as you know, has a narrower age limit than that in the cervix, occurring chiefly in the first fifteen years during and succeeding the menopause, before which event it is quite rare.

In a discussion on its surgical treatment the problem of diagnosing the disease must be given an important place, because, unlike cervical carcinoma, in which in most cases a correct diagnosis is easily made by rectal digital examination, in corporeal carcinoma to effect the diagnosis alone usually requires an operation. The earliest sign is bleeding, at first irregular and scanty but later on continuous and often free. When bleeding comes on after the menopause its possible significance is less likely to be overlooked or underestimated than when it comes on during the "change." A mistake then is much more likely to be made, not only by the patient but also by her medical man. It must further be remembered that bleeding, although the first sign, may not appear until a late stage of the disease, and in some cases is absent even where the growth has advanced to the stage of massive peritoneal secondaries. In some instances a profuse watery discharge takes the place of the more usual bleeding, and again the medical man may overlook the possibility behind it.

The size of the uterus, as estimated by vaginal examination, is of no help in diagnosis, for though some forms of corporeal carcinoma do enlarge the uterus considerably, yet in at least three cases out of five the organ is no larger than would be normal for an elderly woman and if enlargement is detected it is often difficult to distinguish it from that due to old fibroids, with which carcinoma is often associated. In many of the patients the vagina is shrunk and the vaginal cervix is atrophied, and when in addition a patient is stout as many of them are, ordinary examination reveals little or nothing except perhaps some blood on the finger-tip. It is necessary, therefore, to explore the interior of the uterus under an anaesthetic but this is by no means infallible, for even with a quite fairly advanced growth it may be impossible to scrape out anything apparently worth microscoping. It is most important to realize this. There is a further difficulty—namely, that in many carcinomas of the corpus the stroma of the malignant gland tubules is so similar to that of innocent endometrial hypertrophy that distinction is difficult when the material the pathologist has to work upon amounts to no more than a few tiny fragments.

In making up his mind in a doubtful case the surgeon, therefore, should take its whole aspect into consideration, besides the facts obviously elicited by examination. Bleeding after the menopause can occur from causes other than carcinoma, but it is always a menacing sign, and the likelihood of error should always be on the side of interpretation too grave rather than one too optimistic.

The operation I perform is a free total hysterectomy, taking out with the uterus the vaginal vault and both appendages and dividing the ovarian pelvic ligaments at the point where they take off from the pelvic brim, unless I have reason to believe that perimetrium has already extended along them, when I follow up the ovarian vessels under the posterior peritoneal peritoneum to near their origins from the great vessels and divide them there. I do not perform Wertheim's operation for carcinoma of the corpus except in special instances, holding that the very slight gain which it affords in the matter of freedom from recurrence is more than balanced by its increased operative risk. The exceptions are those occasional cases in which the whole uterus—cervix included—is carcinomatous and also those in which a secondary growth is present in the vagina. Such secondary growths occur occasionally also in carcinoma of the cervix, and unless situated very low down can be dealt with by removing the whole vagina from above, as I have described when dealing with Wertheim's operation. Where, however, the nodule

is right down at the outlet it is necessary to perform a combined abdomino-vaginal operation, or what I call a "super-Wertheim." My method of doing this is first to open the abdomen, and, after having ligatured both internal iliac arteries, proceed as with an ordinary Wertheim to the stage of complete separation of the uterus and upper vagina from all adjacent structures. I then temporarily close the abdomen and, placing the patient in the lithotomy position, dissect free the lower end of the vagina, together with a part or all of the vulva, if that be necessary. I make this the second stage of the operation, because the previous ligation of both the internal iliac arteries markedly reduces the amount of blood lost during this dissection. I then close the lower end of the freed vagina by suture and, replacing the patient in the Trendelenburg position, remove the temporary sutures closing the abdominal wound. I then separate the vagina from above until it is entirely free, so that it, together with the uterus and its attached structures, can be lifted out through the abdominal incision. The regional glands are then removed, a full peritoneal floor is formed in the usual way, and the abdominal wound is closed.

I have performed this operation on a good many occasions, and although it is more severe than the ordinary Wertheim's operation, my immediate results have been fairly satisfactory. As regards the remote results, however, I cannot say this, most of the patients having died of recurrence sooner or later.

I have not followed up the patients on whom I have operated for carcinoma of the body of the uterus with the same thoroughness as I have in the case of those with cervical disease, but I have no doubt that the results of the operation are at least as good. The primary mortality of the operation at Chelsea Hospital for Women, from January, 1905 to the present time is 8 per cent. This is the result of the work of many operators. It is higher, perhaps, than one would have expected, but it must be remembered that many of these patients do not present themselves to the surgeon until the disease is very advanced and the discharge exceedingly foul and septic.

As regards recurrence my own experience is that at least 50 per cent of the patients recovering from the operation are free from recurrence five years afterward. Unfortunately, I cannot base this estimate on accurate statistics, but it accords with the figures of Wertheim, Mayer, and Winter, and I think it would be agreed to by all surgeons who have much experience of hysterectomy for carcinoma of the corpus. The most favourable group of cases are those in which the malignant growth is associated with fibroids, because the much increased size of the uterus considerably extends the area over which the malignant cells may extend without exceeding the limits of operative extirpation. This particularly applies to direct spread to the peritoneum.

The operation for carcinoma of the corpus is, therefore, upon the whole a far less difficult and severe procedure than in the case of carcinoma of the cervix, but though this is generally true it is often otherwise. I know of no exercise more fatiguing to the surgeon than abdominal extirpation of a small carcinoma of the uterus when the patient is exceedingly fat and the abdominal wall is rigid. The latter handicap is far more frequently present in corporeal disease than in cervical disease, because so many of the patients have not borne children. I shall never forget performing the operation on a patient of this sort who weighed 22 stone.

This leads me to the subject of vaginal extirpation of the uterus as an alternative to the abdominal operation in some of these cases. There are some cases in which I think it is preferable, but not many, because the combination of great fatness with rigidity of the abdominal wall, which makes the abdominal operation so difficult, is largely limited to patients who have had no children, and in them the vaginal route is equally made difficult by the narrow calibre of that passage. I have performed Schauta's operation (hystero-vaginectomy) both for carcinoma of the cervix and carcinoma of the corpus but I hold that in the majority of cases, it is much inferior to the abdominal operation.

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MALIGNANT DISEASE OF THE OVARIES AND FALLOPIAN TUBES

Those of you who are engaged in gynecological work will appreciate my difficulty in doing justice to the conditions under consideration, for apart from the comparative rarity of malignant disease in the tubes, little information is to be gleaned from the somewhat scanty literature on the subject.

After due reflection I decided to limit my contribution to cancerous and sarcomatous disease of the ovaries and cancer of the Fallopian tubes. Doubtless some of you may regret that I have not included such diseases as chorion-epithelioma, and debited as to whether peritoneal metastases of the ovaries arise from the interstitial cells or not. My excuse is that such considerations seemed to me more appropriate to the special meetings of a pathological or gynecological society, and that if I succeeded in placing before the members of this Association certain facts which would prove helpful to them in the practice of their profession a more useful object would be achieved.

Malignant Disease of the Ovaries

Despite the last statement, I must refer for a moment to the Krukenberg tumour, which is, as you know, a malignant tumour of the ovary. As a rule both ovaries are involved and their shape is retained. This tumour is characterized by globules in the cells which take up the red stain with mucicarmine. Seldom (but still occasionally) the cells make an attempt to form tubules or even small cysts containing intracystic growths. My impression is that the tumour is almost invariably secondary to cancer of the stomach, and in all probability the cells pass to the ovary by way of the lymphatics as peritoneal deposits may be absent, a circumstance one would not expect if the cells were shed into the abdominal cavity. Cells evidently of a sarcomatous nature may be intermingled with the cancerous elements, and it has been suggested that the simultaneous proliferation of epithelial and connective tissue cells may be due to a common cause. In this connection it will be remembered that laboratory workers have demonstrated that transplantable cancer may eventually become transplantable due to stimulation by the cancer cells, but, on the other hand, Krukenberg believed that the tumour was an ovarian sarcoma in which a carcinomatous appearance resulted from alteration within the cells.

Turning from this subject to that of the commoner forms of malignant disease of the ovary, I would impress on you the ease with which the real nature of a cystic ovarian tumour may escape detection. This fact was brought prominently to my notice many years ago when one of my patients from whom I had excised what appeared to be an ordinary multilocular ovarian cyst returned a few months later with a malignant abdominal tumour. A portion of the cyst which had been preserved was subjected to microscopic examination, and the malignant nature of the tumour was revealed. Since a naked eye examination may fail to detect malignancy, it is advisable that every ovarian cyst should be histologically examined. As a rule ovarian tumours always give with suspicion a case in which whose general health has been deteriorating for a few months prior to examination. The diagnosis of malignancy can be made with certainty if free fluid is contained in the peritoneal cavity, and if a sensation of crinkling upon the abdominal wall is detected. The diagnosis of malignancy can be detected only when the disease is advanced, and it seems probable as a result of Fyfe's investigations in connection with the chemical diagnosis of cancer that an early and less crude method of diagnosis will be procurable.

In this communication I present to you the results of my inquiry into 94 hitherto unpublished cases of malignant disease of the ovaries. It is regrettable that in the 83 cases of ovarian cancer I could obtain definite proof in only 31 instances that the disease was secondary to a cancerous

tumour elsewhere. As primary cancer of the ovary is rarer than the secondary variety, I suspect that the size of the ovarian growths frequently dwarfed the primary nodule in the surgical picture, as large ovarian neoplasms of secondary origin by no means predicate a primary tumour of corresponding size. Apparently the ovary provides an exceptionally favourable soil for the growth of cancerous seedlings, as masses of similar proportions are foreign to the peritoneum, which is evidently able to offer greater resistance to the invading cells. It is often stated that a secondary deposit in the ovary reproduces so faithfully the characteristics of the parent tumour that the site of the primary growth can be located by microscopical examination of the secondary neoplasm. That there may be exceptions to this rule is evidenced by the two sections which I show you. The first was taken from the tissue of a primary cancer of the sigmoid, while the second was prepared from an ovarian deposit in the same case. It will be seen that the two sections present different appearances, and the conclusion is that site influences to some extent cellular type and arrangement in the daughter tumour. This is well exemplified in the two slides which illustrate secondary growths in heart and brain from a case of cancer of the liver. Note the papillomatous appearance of the cerebral neoplasm and the scirrhous type of the cardiac tumour. No one would ever suspect that these growths had a common parent. These slides were given me by Dr Cipel.

All the cases recorded in this communication occurred either in the gynaecological department with which I am associated at the Western Infirmary, Glasgow, or at the Cancer Hospital, Glasgow, and I am indebted to Miss Mackenzie, who has diligently searched the journals of these institutions for clinical and pathological notes of the cases. The investigation showed, as was expected, that cancer of the ovary occurred much more frequently than sarcoma, the relative percentages being 88 and 12. Of the 31 definitely secondary examples of cancer of the ovary the primary nodule was situated somewhere in the gastro-intestinal system in 12 instances, in the uterus in 9, in the breast 8, in the bladder and kidney 1, and in the kidney alone 1.

It seems to me, however, that the cases in this series which were secondary to malignant disease of the uterus form an abnormally high percentage. In analysing details of the available material I arranged the cases according to age into five-yearly groups, the first including patients between the ages of 19 and 25 and the last between 69 and 75. It occurred to me that a certain amount of interest was to be derived from the records of each group by noting such features of the disease as pain before operation, uterine haemorrhage, ascites, distribution, operability, and the expectation of life after removal of the tumours. The results of this investigation may be summarized thus:

Age 19 to 25—Two cases were met with the average age incidence being 21. Pain was present in one instance before the patient came under observation. Ascites and uterine bleeding were absent in both the disease was bilateral and in one the tumours were irreparable. A note sent to the patient who was subjected to operation failed to elicit a reply.

Age 24 to 30—Five cases occurred between these ages the average being 26. Pain was complained of by all these patients and all but ascites occurred in 60 per cent of the cases. In one instance the patient had been ailing for one and a half years before she consulted a doctor and the average duration in the other four cases was three months. In three instances the disease was unilateral and removal was accomplished in these cases but the average duration of life afterwards was only three months.

Age 29 to 35—There are only two cases in this group the average age being 33. Discomfort existed in both cases before the patients were treated and the general health had been in an unsatisfactory state for an average of seven months. Bleeding from the uterus was observed in one case, and ascites in the other. The disease was bilateral and so extensive in the affected ovary did not prolong life to any extent as the patient died two months later.

Age 34 to 40—Eight cases are in this section, the average age being 36. Again pain proved a common symptom and was noted in 75 per cent of the cases. Haemorrhage was found in 62 per cent and in 50 per cent the patients had been ailing for six months before they came under medical supervision. Bilateral tumours occurred in 37 per cent and in 42 per cent removal was accomplished. One patient with an adenocarcinomatous tumour lived for four and a half years afterwards, death then resulting

from recurrence of the disease. Of the other traceable patients subjected to operation 25 per cent lived for seven months.

Age 39 to 45—Eight cases also occurred between these ages the average being 41 years. In 75 per cent of the cases pain was noted but there is no mention of uterine haemorrhage in any of the clinical histories. Ascites was evident in 50 per cent of the cases and 62 per cent had been in poor health for five months before advice was sought. The disease was unilateral in 75 per cent but in only 25 per cent could a radical operation be performed. One patient was in a satisfactory state of health fourteen months after operation but the other died in ten months time.

Age 45 to 50—More cases were met with in this division than in any other and of the seventeen patients the average age incidence was 47. Pain was noted in 70 per cent, haemorrhage in 17 per cent and ascites in 41 per cent. In 70 per cent of the patients their health had been deteriorating for an average of five months before a doctor was consulted. As regards the distribution of the disease it was bilateral in 47 per cent and extirpation was only possible in three instances. One patient who had her enucleated ovaries excised by me nine years ago consulted me recently owing to recurrence of the disease in nodular form within the abdomen. Another patient survived for three years but the third case only lived for thirty four days.

Age 50 to 55—Fourteen cases comprise this group the average age being 51. Bleeding existed in 21 per cent of the cases and ascites in 42. An unsatisfactory state of health was present in 42 per cent of the patients for an average period of twenty months before they reported sick but in a similar percentage of cases the average duration of ill health was only four months. In the remaining case information regarding this point was not obtainable. In one half of the cases both ovaries were implicated and in 43 per cent the tumours could not be extirpated. When the records of the patients who had undergone operation were examined it was found that 14 per cent remained in good health after an interval of four years, 21 per cent lived for eight months and 7 per cent for three months. The remainder either died in hospital soon after operation or failed to reply to the note of inquiry.

Age 55 to 60—In this section there are twelve patients the average age incidence being 57. Life was rendered miserable by pain in 58 per cent of the cases, uterine haemorrhage was observed in 25 per cent and ascites in 33 per cent. No less than 54 per cent had been in declining health for an average of eighteen months and 27 per cent for five months. The distribution was unilateral in 50 per cent and in a similar percentage of cases excision of one or both ovaries was performed and of the patients who survived only 14 per cent lived for sixteen months while 43 per cent succumbed in from five to seven months. The remaining cases could not be traced.

Age 60 to 65—The average age incidence of the seven patients in this division was found to be 62 and pain was a symptom in 43 per cent of the cases. Bleeding was noted in 28 per cent of the patients and free fluid was detected in the peritoneal cavity in 43 per cent. The average period of ill health prior to medical supervision was five months. Unilateral tumours were found in 57 per cent and the growths proved inoperable in a corresponding percentage of cases. In 43 per cent of the traceable cases which had been surgically treated the average duration of life was six months but one victim of an encephaloid cancer lived for fifteen months.

Age 65 to 70—Five cases were met with and the average age incidence was 66. None had uterine haemorrhage but in 60 per cent ascites existed. All the patients had been in declining health and that for an average period of seven months in every instance pain was an accompanying symptom. A single ovary was involved in 20 per cent of the cases and in no less than 60 per cent removal proved impossible. One patient is leading a normal existence six months after operation but in another instance a fatal termination was reached in three weeks. Information could not be obtained regarding the fate of the other three patients.

Age 70 to 75—There were only two patients in this group and in one instance pain was a symptom. Neither patient had uterine haemorrhage but ascites was noted in one instance. Failing general health was observed in both instances for about nine months before the cases were examined. A single ovary was involved in each instance but only one patient was in an operable state and she died five weeks after removal of the tumour. In one case the age was not stated.

From a perusal of these notes the following tentative conclusions may be arrived at.

Age Incidence—It was found that 48 per cent of the patients were aged between 44 and 65 years, 30 per cent between 44 and 55 years, and 18 per cent between 54 and 65 years. Of the five-year periods the 44-50 group contained the greatest number of cases, but in illustration of the widespread distribution of the disease among patients of all ages it should be noted that the number of patients below 45 years of age almost equalled the number above 55 years.

Pain—Owing to the relatively small numbers in the various groups it is not desirable to state the results in exact figures. It appears however, that this symptom was present in 50 to 75 per cent of the cases, but that there was no relationship to the patient's age.

Uterine Haemorrhage—In the age-group 34-40 this symptom was noted in approximately 60 per cent of cases. Among the patients from 39 to 65 years it occurred in about

25 per cent of cases, while it did not occur in any patient older than this. The high incidence of bleeding in the 34-40 years group may be due to endocrine disturbance, and may not be directly associated with any special feature of malignant ovarian disease at this age period. The absence of bleeding in cases over 65 may be due to extreme uterine atrophy.

Ascites was noted in 40 to 60 per cent of cases in the several groups but appeared quite unassociated with age.

Period of Ill Health—Among the patients below 50 years of age the duration of ill health before examination varied from three to six months. Many between 49 and 60 years of age did not have a longer period of ill health than this, but, on the other hand, in about 50 per cent the initial illness extended over a period of twelve, eighteen, or even twenty months. In patients over 65 years of age the average duration was about seven to nine months. It may be that in the older patients the tendency to slower growth affords an explanation of this while the relatively shorter period in the extremely old people may be accounted for by their feebleness.

Unilateral tumours occurred in about 60 per cent of cases—this occurrence could not be correlated with age.

Operability—In the various groups this ranged from 30 to 45 per cent and was not associated with age the greater malignancy in the young apparently compensating the greater debility in the aged.

Expectation of Life—It appears that the very old and the very young patients succumb slightly more quickly after operation than the middle aged subjects but on the whole the average is about five to six months. The most favourable result was obtained in one patient of the age of 44 to 50 years group, who lived for nine years after operation at the end of which period she was readmitted with an inoperable recurrence.

At the outset of this investigation I was not prepared to find that so many patients had been induced to seek surgical aid owing to pain and haemorrhage. I had not associated either symptom with this disease, but this inquiry demonstrated that they are not infrequently accompanied by ascites and failing health of a few months' duration. Nevertheless we must not forget that in some instances the only two complaints are general weakness which is associated with progressive enlargement of the abdomen. Scrutiny of the operative results also emphasizes two distressing features of this disease—namely the large percentage of inoperable cases and the short tenure of life after excision of the growths. In these respects cancer of the ovaries compares unfavourably with cancer of the cervix, but we should remember that about twenty five years ago the surgical aspect of the latter disease was extremely discouraging. In dealing with malignant disease of the ovaries are we to practise the operation of ovariectomy, or are we to employ a more extensive operation? Success has attended radical operations in combating malignant disease in other parts of the body, such as the uterus and breast, where, previously, restricted procedures had failed, and it seems to me that in the present state of our knowledge relief is most likely to be obtained by similar measures. In our present inability to make an early diagnosis surgical treatment is frankly disappointing, and future success may depend on biochemical diagnosis, or on the use of serums, or on the perfecting of a new technique. Within the last few days the attention of the entire medical world has been attracted by the publication of the investigations of Gye and Bernard. This interesting research may result in the discovery of a method of immunization which will protect the individual against cancer and other diseases, or relieve him should he fall a victim to one of these disorders. All interested in this matter should study the contributions of these authors, but it is evident that the cancer problem remains unsolved.

Sarcoma of the Ovary

The patients involved were of widely varying ages, only two falling within the same five-yearly group. Eleven cases of sarcoma of the ovary were noted, and in seven the disease was primary. Of the primary cases the youngest was aged 22 and the oldest 52, the average age of 41 being considerably younger than that of patients

afflicted with cancer of this gland. Four of the patients had borne children, and the average duration of failing health before coming under observation was six weeks.

In every instance pain was a symptom, while uterine bleeding was present in three cases and ascites in four. Amenorrhoea was noted in two patients. Unilateral distribution was universal, and in four instances the diseased ovary was extirpated. The results of operation were generally disappointing with one exception, where a patient remained free from recurrence for twelve years, when secondary growths appeared in the uterus, bladder, and intestine after this long interval.

It should be remembered that some forms of fibrosarcoma of the ovary are slow growing and do not recur readily after removal. Favourable reports appear from time to time in connection with the treatment of sarcomatous tumours by x-rays, and while I do not depreciate the temporary comfort and improvement obtainable from the use of radium and x-rays in certain gynaecological lesions, I would utter a word of caution in connection with this matter. On two occasions during my surgical career I have treated and abandoned an operation in the belief that I was dealing with an irreducible ovarian tumour of a malignant nature. After the attempted operation one patient was treated by deep x-ray therapy, while the other was not, and therefore furnished an excellent control. Both patients still enjoy a fair measure of health and the tumours have not increased in size. It is certain that in the untreated case and probably in the treated one an error in diagnosis had been made. Both tumours were probably innocent, and but for the untoward control I should have credited deep x-ray therapy with arresting permanently the progress of a malignant growth as four years have elapsed since she was treated.

In two out of the four cases of secondary ovarian sarcoma I find that the primary growth was situated in the mediastinum. The remaining examples occurred in patients so far removed in age as 22 and 64. In the younger woman a wart was noticed on the vulva at the age of 15, and when she was 20 a rapid increase in size was observed during the third week of the puerperium. About three weeks later one leg and groin were greatly thickened, and in a few weeks' time free fluid distended the abdomen. At the post-mortem examination secondary deposits were found throughout the abdominal cavity, one omental mass actually weighing 7 lb. On microscopic examination it was found to be a spindle-celled sarcoma with connective tissue of embryonic type which had in almost myxomatous appearance. In the older patient the disease also took an acute form, death resulting ten weeks from the onset of symptoms. The primary nodule was situated in the neurofibroma and the patient complained of tingling neuralgia. Secondary deposits were also found in the uterus.

Cancer of the Fallopian Tube

This disease is so seldom met with that some gynaecologists have never operated on a case. Even with the opportunity which I have had during twenty years of practicing a large number of women suffering from pelvic disorders I have only encountered two cases, and in one instance the nature of the lesion would have escaped detection if the patient had been less courageous and determined. The incidents associated with the treatment of this case have served as a salutary lesson to me in demonstrating that our measures are often concealed and that inability to accomplish an objective may eventually prove a fortunate circumstance. To amplify these statements let me give you a brief history of the case. The patient was a nullipara, aged 62 who complained of a copious watery discharge which caused vaginal and vulvar irritation. Attempts at a diagnostic cure ting were rendered futile by the extreme narrowness of the vagina, which was also irregularly constricted by stout bands of cicatricial tissue. As this was the only occasion in my career where I had been unable to perform this simple operation, it was in a spirit of humility that I confessed my failure to the patient. By persistent interrogation she elicited from me the information that the presence or absence of cancer of the uterine body in her case could

be determined by hysterectomy alone. She insisted then that the operation should be performed without delay, and events justified her decision, as on opening her abdomen I found that she had a primary cancer of the right Fallopian tube, but it was so slightly thickened that it is questionable if its presence would have been detected readily on rectoabdominal examination. The disease had extended on to the outer surface of the uterine body, and I had succeeded in enucleating the uterus. I would have assumed the patient that she was not the victim of a cancerous growth, as I would have failed to extract material for pathological examination. At operation, the only evidences of inflammation were numerous peritubal adhesions, which may have been produced by the neoplasm. Many observers believe that salpingitis precedes tubal cancer, and it is interesting to note that on one occasion I removed a pus-laden tube which contained a cancer of columnar type. Nevertheless, I presume that few now would assert that salpingitis is an essential precursor of tubal carcinoma.

The second specimen of tubal carcinoma was removed from a nulliparous patient, and its presence was unsuspected until the abdomen was opened for the removal of large fibromyomatous tumours, which were causing profuse uterine haemorrhage. In this instance also the right tube was involved, and showed considerable elongation. A solid tumour, about the size of a turkey's egg, occupied the ampullary portion. I believe that this tube had been distended with fluid prior to the development of the cancerous growth. The macroscopical and microscopic appearances were those generally found in association with hydrosalpinx. Thus the tube resembled a retort in shape in undulation and a kink occurred in the wall between the neoplasm and the margin of the uterus, while a normal ovary lay in the concavity below the tubal curve. Although the ostium was sealed adhesions were absent in the area where the tubal wall was unattached to the surface of the tumour. Microscopic examination demonstrated that the attenuated tissues of the wall were not invaded by cancerous elements. As hydrosalpinx in some instances may result from inflammation, it is possible that in this case salpingitis predisposed to malignant disease. It is stated by some observers that the intermediate straggle of the growth can easily be recognized on microscopic examination. On searching the literature of this subject I find that when cancer appears in the tube it usually takes a papillary form. The disease in this second specimen was limited to the tube, and a healthy section existed between the neoplasm and the uterine margin. Although in both these specimens the disease was unilateral and located in the right tube, it appears that the left tube is as liable to be implicated as the right and in about one-third of the recorded cases the disease was bilateral. Apparently, the most prominent symptom of primary cancer of the Fallopian tube is the occurrence of a copious discharge which is usually clear in colour, but may be stained with blood. Women over the menopause are most likely to be affected and nulliparae are as liable to the disease as multiparae. It would therefore appear that the occurrence of a clear, watery discharge in an elderly patient should always arouse the suspicion that cancerous or papillomatous disease of the tube exists if the cervix and body are found to be normal. Careful examination of the fornices usually reveals the existence of a pelvic tumour, but it is curious how seldom ascites is present. This circumstance is probably to be attributed to early closure of the tubal ostium, which thus causes the fluid exuding from the neoplasm to pass into the uterus instead of the peritoneal cavity. Ascites seems to occur only in cases where the peritoneum is the site of metastatic deposits. Pain was not present in either of my cases, but I find that it occurred in the majority of the cases recorded by Dorn to whom we are indebted for valuable information on this subject. Cancer originating in the Fallopian tube may appear secondarily in an adjacent cyst of the ovary and it is worthy of note that primary cancer of the ovary seldom spreads to the tube. But Glendinning has demonstrated that in cancer of the ovary cancer cells may pass through the ostium of the tube and become implanted

on the tubal lining. At various points these wandering cells penetrate the epithelium and enter the lymphatics of the tubal wall. From here they pass into the mesosalpinx. In Glendinning's sections unattached cancer cells can be seen in the tubal lumen, and at other parts penetration of the subepithelial tissues by the cancerous elements can be observed. Discrete cancerous nodules are most numerous towards the ampullary extremity of the tube. Naked-eye examination may fail to reveal involvement of the tube in cases of ovarian cancer, and this was the case in the specimen from which the section shown in this lantern slide was procured. On operating I knew that I was dealing with a malignant papillary cyst, but I did not realize that the apparently normal tube contained metastatic deposits until I prepared microscopical sections. The little papillary budlet which you see is situated in the tubal wall, and it may have reached this point by leaving the ovary in the efferent lymphatics and by next pressing up into the lymphatics which drain the tube. At any rate I was unable to discover penetration of the tubal lining by wandering cancer cells.

GENERAL DISCUSSION

The PRESIDENT stated that in view of the steady increase in the deaths from cancer during the last fifty years, the Section could not have chosen a more important subject for discussion. During the last twenty years the mortality rate from cancer had risen from 800 to 1,250 per million, whereas in the case of other diseases the mortality rate was diminishing.

Mr. H. J. DREW SMYTHE (Bristol) heartily agreed with Mr. Victor Bonney in the necessity for the most radical operation for carcinoma of the cervix, and was interested to hear that he removed the whole of the vagina. He had been in the habit of only removing half, and in one of his cases the growth recurred in the other half. During the year 1923 he had performed Wertheim's operation seven times, two of these patients died as a result of the operation, and in two cases there was recurrence, one in the vagina and the other in the pelvis, the other three patients had had no recurrence so far, and he hoped that they would not in the future. In one case he had to dissect the base of the bladder, leaving the mucous membrane intact, the patient, however, died from the effects of the operation. He agreed with Mr. Bonney that the only sure way of telling whether a case was operable or not was to open the abdomen. In one of his cases he was able to perform Wertheim's operation, though on ordinary examination he thought it hopeless, and that patient was still alive and free from recurrence. Last year he treated with post-operative irradiation two patients that were in hospital at the same time. In one case the growth recurred in the pelvic wall within six months and attained extreme rapidity, the other, however, was free from recurrence fourteen months afterwards. He had not tried a case since those two. With reference to preliminary irradiation to reduce the size of the growth or to render the case operable, he said that the fibrosis resulting made operation extremely difficult. He would plead that day for the earlier diagnosis of carcinoma of the uterus, and more especially for the medical treatment of the precarcinomatous cervix. There were numbers of cases with a history of slight intermenstrual haemorrhage and discharge. The cervix was found lacerated with a large red hypertrophied erosion which bled slightly on examination, but the cervix on palpation was hard though not friable and ulcerated as with a carcinoma. This was a typical precarcinomatous cervix. In his opinion, with this condition in a patient of 40 or more a panhysterectomy should be advised. This might sound too radical an operation, but what else was there to offer? (1) Cruties—these were more likely to accelerate the carcinomatous change. (2) Curettage—this did not remove the epithelium of the deep glands, and it was there the carcinomatous change was recurring. (3) Amputation of the cervix—this left a certain amount of the cervix behind, and though carcinoma in situ was unlikely, yet it was possible. The operation had a definite mortality, and he maintained that a panhysterectomy in selected cases had no greater mortality

than amputation of the cervix. During the year 1924-25 he had performed panhysterectomy for a precarcinomatous cervix, both in private and hospital cases, eighteen times without a death. He was sure that the future of carcinoma of the uterus lay in early recognition and early radical operation rather than in extensive operations with high mortality after the cancer had risen.

Dr. W. C. SWANN (Bristol) said that Mr. Bonney's statistical tables gave most startling information as to the possibilities, both immediate and remote, of the more extensive methods of operating in cases in which the disease was advanced, obviously in the earlier cases the results would be far superior. He mentioned two cases of his own treated by vaginal hysterectomy which were living and well twenty years later. This was not to be taken as proof of anything, except that in a proportion of cases in inadequate operation might produce good results if the case was dealt with sufficiently early. Professor Watson had alluded to education and propaganda. As regards the public this must be done by the family doctor. It must be remembered, however, that while the receptivity of the public for propaganda and education varied enormously in different districts, the family doctor was the person who could best supply it, either indirectly or directly. The capacity for carrying on educative or propaganda work depended on those who, like Professor Watson, were engaged in teaching. While under present conditions it was practically impossible for every student to get the opportunity of examining more than one or two cases of carcinoma, it was possible to see that every student was thoroughly drilled in taking histories of cases until he automatically recorded the instances in which the patient deviated from his own physiological normal. This necessitated a clinical examination in the subject in order that this part of his instruction might be brought before the student in its proper perspective. Mr. Bonney had referred to the extensive operation as one for a specialist, he might have gone further and said that it was an operation for two specialists. Anyone who had watched Mr. Bonney and his colleague, or various Continental operators, performing this operation could hardly fail to be struck with the enormous advantage resulting from both operator and assistant not only being experts, but also accustomed to work together. If, however, the best results were to be obtained the early recognition of the cases was the important factor, and this depended on the systematic instruction of the student.

Dr. SIDNEY FORSDYKE (London) congratulated Mr. Bonney upon the results he had achieved by operation. He questioned whether many surgeons would accept and adopt his arguments in favour of operation upon the advanced cases he described. Mr. Bonney's dexterity was so great and his enthusiasm so infectious that there was just a danger that he might induce lesser craftsmen to tread in his footsteps. His operability rate, mortality, and five-year cures were not, to his knowledge, equalled. It seemed to him that he approached this question from the standpoint of a deft surgeon fascinated by a difficult problem rather than from the patient's angle of vision. The latter wanted two questions answered: (1) What were the risks attached to this operation? (2) If that risk were taken, would cure of the disease result? To answer these questions in advanced cases they must look at Bonney's table of 78 cases with carcinomatous glands, and there it was found that the number of operative deaths and recurrences were equal to 69 per cent, the number of five-year cures was 25 per cent, the chance of a cure was in the ratio of 25 to 69, or 28 to 1 against. The operative mortality was 23 per cent and the five-year cures were 25 per cent, and to answer the patient's question they must say that the chance of a cure was slightly greater than the chance of death from operation. He wondered whether many patients would be found willing to undergo, or many surgeons to undertake, such operative risks, and he also wondered whether such results were not in great part responsible for the concealment by women of symptoms which would lead to an early diagnosis. But these results were better than others published and unpublished.

In his Hunterian Lecture last year he had recorded the results of 50 border-line cases which came under his care. After the Wertheim operation there was in 58 per cent recurrence within a year, in 18 per cent between one and two years, in 18 per cent within three and a half years, and 6 per cent only of the patients remained alive four and a half to six years. Martzloff (Johns Hopkins Hospital) reported that of 120 border-line patients less than 10 per cent were alive a year after operation, and that the mortality rate varied between 25 and 70 per cent, according to the severity of the operation. There was a general consensus of opinion amongst English gynaecologists that the only treatment for early cancer of the cervix was operation, but he was glad to say that he met an increasing number of surgeons who refused to operate upon the advanced case, and refused to accept Bonney's arguments in favour of a high mortality rate. Was it to be wondered at when Radium-Hemmet reported 40.5 per cent operable or border-line cases free for five years and more, and 16.6 operable cases free from symptoms after five years?

With reference to bias to operation, the most essential examination in a doubtful case was cystoscopy, for that was the only means by which involvement of the bladder could be excluded. Frequency of urine was a common complaint in parous women, and that was the only minor symptom present in a woman he had seen with extensive involvement of the trigone and both ureters, bulbous oedema around the mouth of a ureter in the presence of cancer of the anterior lip indicated involvement of the lymphatics, a widespread oedema of the trigone or an obvious tumour meant a growth so extensive that there was no hope of removing it.

Mr Bonney had given them no information about the methods of post-operative irradiation he employed, and therefore it was difficult to assess the value of his criticism. He himself had operated on 20 border-line cases following exposure to radium. In only one case did he find any difficulty owing to the presence of excessive fibrous tissue, and that was a case in which he postponed operation for five weeks. In the remainder he had operated in the third week, between the fourteenth and twenty-first days, and found no greater difficulty than was usual in the Wertheim operation. As to post-operative irradiation, he had been rather elated about using it on traumatized tissue immediately after operation, but he had seen Professor Adler (Vienna) place tubes of radium against the side wall of the pelvis at the end of the operation, he had never had any ill effect from it, and had formed the opinion that it was advantageous.

Mr C. P. CHILDE (Portsmouth) said that nothing less than examination under anaesthesia with smetting and microscopic examination could be sufficient to establish a diagnosis in an early case. He advised this in every case of deviation from the normal in women of cancerous age. The questions of operability, of death from operation, of early recurrence after operation were of secondary importance to that of really early diagnosis. Radium and the x-rays would probably give better results than surgery in advanced cases. In regard to the pre-cancerous cervix, no one could say exactly what that was. He certainly did not advise panhysterectomy for erosions and lacerations. How could they expect to get good results when most of the cases they saw had been having haemorrhage for six months or more? The student must be educated and women must be educated so that if they noticed any deviation from the normal menstrual function they would submit to examination at once. In that way only could earlier diagnosis be made, and it might then be possible to succeed with a far less severe and radical operation which would carry a very much diminished primary operation risk.

Dr H. LEITH MURRAY (Liverpool) issued the importance of the midwife as a factor in the dissemination of knowledge of early symptoms. He had noted with regret the grossly inaccurate replies given by the bulk of candidates to a question on cancer set at the last examination of the Central Midwives Board. Very many women he found, turned for advice to their midwife rather than their doctor

when the symptom was one of bleeding. Very great harm would be done if that midwife's idea of cancer was limited to a picture of wasting disease with foul blood-stained discharge at, or after, the menopause. With regard to radium he had up to the present left the administration wholly in the hands of radiologists. He had like Mr Bonney, experienced intolerable difficulty where radium had been applied before operation, and preferred the difficulties of huge growth to the sclerosis resulting from radiation. On the other hand, he was convinced that radium, applied either by the vagina or rectum at intervals after a radical operation, was of real service. Comparison of his private cases, who all had radiation, with his hospital cases, for whom there was no provision of radium in Liverpool, was definitely in favour of the former.

Colonel V. B. GREEN-ARMYtage (Calcutta) said that though he had had a considerable experience with women of many races, he had never met with a case of cervical carcinoma in a Jewess. He believed that the experience in America was the same.

Dr W. H. HOWAT (Ayrshire), speaking as a general practitioner, said he was glad to hear the former distinguished speakers stress the dangers of the conditions under discussion, both from the point of the specialist and the general practitioner. Education of the student was, in his opinion, of the greatest importance, and he thought he was right in saying that in Edinburgh and Glasgow their training in the direction of early diagnosis was on sound and up-to-date lines. His own experience led him to believe that radical surgical treatment, on the lines so clearly laid down by Mr Bonney, offered the best results from the point of view of the patients and of the family doctors to whom they returned for after-care and treatment. The difficulties in the way of radium treatment for the patient of the working class a long distance away from a centre inclined him to think that operation offered the best hope of early recovery and return to household duties. He agreed that propaganda was necessary amongst the general public but would point out that the patients were shy and did not care to let anyone know of their sufferings until the condition was fairly well advanced, so that the fault did not lie wholly with the general practitioner in not recognizing the condition at an early stage.

Mr MALCOLM DONALDSON (London) protested very strongly against the sweeping statements made by people who had very little experience of radiological methods. It would be far better to content themselves with a statement of facts giving full details of the technique employed. One of the speakers condemned radium on his experience of patients who were treated for only a few hours at intervals of six weeks. Such remarks did a great deal of harm.

Mr R. H. PARAMORE (Rugby) referred to the importance of the prophylaxis of malignant disease of the cervix. Professor Watson had stated that leucorrhoea and split cervix were predisposing causes, an opinion with which most would agree, and had suggested that cervical tears, if not repaired during the child-bearing period because of the likelihood of rupture again at some future labour should at least be dealt with when that period was past. In the speaker's opinion it would be much better to remove than to repair the cervix, but he went further and agreed with Mr Smythe in prophylactic panhysterectomies. In women of 45 or over showing simply irregular uterine bleedings, or in other cases in which the uterus was obviously diseased, as in fibroids, panhysterectomy should be performed, unless indeed the patient were very anæmic or the pulse rate unduly high. Subtotal hysterectomy was too commonly practised. The risk of complete removal was certainly somewhat greater, but the risk was small. He did not agree with Mr Childe's advocacy of a preliminary smetting in suspected cases. It had already been said that that operation favoured dissemination of the cancer cells, and it certainly caused delay in the radical removal. But there were other objections. It entailed two operations and the risk of two anaesthetics, and it prolonged the period during which the patient was under treatment. There were other dangers also. He

had heard of a case in which a woman had been enucleated and the scrapings, with some others, had been sent for microscopic examination and report. The specimens and reports had been mixed, and the patient who had not carcinoma was subjected to Wertheim's operation, fortunately she recovered.

Mr. JAMES RIDDEL (Plymouth) agreed that full investigation of all cases was certainly the ideal but it was not always easy to achieve. One might be accused of being in almost the same position as a case of carcinoma occurring in the stump of cervix left behind after subtotal hysterectomy. He asked, Was this common? Is it as it was he would be tempted in future to perform panhysterectomy more frequently.

Professor F. W. MARLOW (Toronto) expressed his belief that in Canada more early cases of cancer of the uterus were coming under observation as the result of the teaching on this subject and the enlightenment of the public. Unfortunately however there were still a great many inoperable cases. As to the preoperative use of radium, he stated that it should be remembered that, in addition to cancer, infection was practically always present, and it was no doubt due to this fact that reactions following the use of radium were sometimes of a serious nature. He stated that cauterization and cooping of the cervix as a preliminary operation was less likely to be followed by a marked reaction in the surrounding tissues and provided an efficient method of cleaning up the cervix and getting rid of the infection also that at the radical operation about fourteen to sixteen days later it was often found that the uterus had actually loosened up to some degree. He also spoke of the great importance of prophylaxis in respect of cancer of the cervix, and urged that if greater care were given to the diagnosis and efficient treatment of cervical catarrh and cystic disease, which undoubtedly rendered the cervix prone to the development of cancer, more lives would be saved than by the performance of formidable operations after cancer was well established. More especially was this true if they regarded cancer as being due to an infection which more readily became active in sites of chronic irritation and infection. It was also urged that Mr. Cameron's reported cases of tubal cancer should be carefully noted since this condition probably afforded the explanation of some cases of malignant disease in the pelvis, where uterine or ovarian cancer could be fairly well excluded in diagnosis.

Dr. TARGEMAN MURRAY (Newcastle-on-Tyne) congratulated Mr. Bonney on his results, which represented the best that surgery could do for this disease. Better results would be obtained if the cases were diagnosed earlier. The sound training of students was most important, but the women themselves were chiefly responsible for the large number of cases seen which were quite inoperable. Ignorance, fear and even shame all played a part in making them seek advice as a last resort. There was no reason why the public should not be educated on these matters as freely as they were on venereal disease. Gynaecological examinations should be carried out in the privacy of the patient's home. Women seeking advice often did not expect to be examined and were not prepared for one should it be suggested. No pelvic examination was thorough unless it included an abdominal examination as well, and this could best be obtained in the patient's own home. Unless the home conditions were suitable the patient should be sent to hospital. He called attention to the importance of examining pregnant or recently delivered women complaining of irregular bleeding, having met a number of cases in which the condition was due to cancer.

Professor WATSON, in reply, said that it had been very satisfying to find that opinion throughout the discussion had been practically unanimous. The solution of the problem lay mainly in the thorough education of the student. Dr. Marlow had very rightly laid stress upon the proper prophylactic treatment of cervical lesions. He quite agreed that bleeding during pregnancy should always call to mind the possibility of carcinoma being present.

Mr. VICTOR BONNEY, in reply, deprecated the criticism of the results he had obtained in cases in which the regional glands were carcinomatous. It was true that the outlook for these patients, as a class, was much less good than for those whose regional glands were not carcinomatous, but whatever views might be held as to the efficacy of radium in cases where the regional glands were not carcinomatous, it was certain that when the glands were carcinomatous radium was incapable of effecting a cure. The advocates of radium would no doubt say that the carcinomatous regional glands could be treated by deep x-rays, but his experience of this treatment both for primary and secondary growths, was most disappointing. He had seen many cases in which the growth was certainly delayed, but never once had he seen a cure. In short, the only cure for cases in which the regional glands were carcinomatous was operative removal, and this being so he saw no point in arguing against the results of a treatment which, though very far from ideal, was yet the only treatment which held out any hope. He submitted that to have cured 25 per cent. of these cases was an unexpectedly great triumph. If it were possible to recognize before the operation those cases in which the glands were carcinomatous, he would not adversely criticize the surgeon who considered that, as a group, they were not worth operating on, even though the risk of the operation was great and the chances of permanent cure relatively small. He should not agree with such a view himself, but it would be a matter of personal opinion which every surgeon would have to decide for himself. It was however, impossible to make such a decision, not only before the operation but even during the operation for until the glands were removed it was in many cases impossible to say whether they were carcinomatous or not. No one more than himself desired to find a method of treating carcinoma of the cervix better than operation, but there was no sense in the advocates of radium carpentering the results of surgery until they had produced a series of figures comparable with those he had just put before them. It was in use trading on foreign cases for such figures. A study of the literature showed how entirely discordant they were. What was needed was the publication of a British series of not fewer than a hundred cases treated by radium, in all of which at least five years had elapsed between the date of cessation of all treatment and the date of publication. The interval that had elapsed since the cessation of all treatment was of prime importance. There was a great difference between keeping a patient alive with carcinoma and curing carcinoma. When such a series produced from a reliable British source, gave a better cure rate than he had obtained by operation he would immediately cease to operate any longer and hand over all his cases of cancer of the cervix to the radiologist.

Mr. CAMERON (Glasgow), in his reply, said that his views in regard to operation and irradiation were exactly the same as Mr. Bonney's, so that there was no need to reiterate them.

SECTION OF PATHOLOGY AND BACTERIOLOGY

DISCUSSION ON FILTER-PASSING VIRUSES

[The following remarks, with Dr. Gye's reply, had not been received when the papers and general discussion on filter-passing viruses were published (August 1st, p. 189).]

Dr. J. A. ARKRIGHT said. As a general comment on the discussion it seems to me that there should be no assumption that the viruses known as "filter-passers" are all of a similar nature. In regard to many of them it may be said that we have little reason to regard them as similar except our ignorance of their nature, including our inability to see them. Next I should like to express my unbounded admiration for the work of Dr. Gye and Mr. Barnard on the cause of cancer. This does not mean that I think there will be no criticism of their interpretation of the experiments they have published. Whilst their facts are no doubt correct the hypotheses will, I feel sure, be subjected to critical examination. There are two points on which I should like to ask Dr. Gye to give us further enlightenment. The first question, which it seems

almost certain he will answer in the affirmative, is whether the experiments, in which Rous's fowl sarcoma was produced by the inoculation of a chloroform-treated "sand-filtrate" of one of these tumours together with a "sub-culture" of the Rous "virus" were controlled by giving parallel injections of material in which un inoculated culture medium containing fresh chicken embryo was substituted for the "subculture." Another point which strikes one is the resemblance between the chloroformed sarcoma extract which Dr Gye does not regard as living and calls the "specific chemical factor," and some of the so-called "filter-passing viruses" which are associated with various other diseases. Some of these are remarkably resistant to adverse conditions. For example, the virus of vaccinia is well known to have a high resistance to chloroform and ether and the virus of foot and mouth disease is known to resist drying over sulphuric acid, and was found by Loeffler sometimes to withstand 1 per cent

alcohol for many weeks. If the "specific factor" is really a simple chemical substance, as Dr Gye believes, it is remarkable that it should be able to determine the kind of cell in the new growth resulting from an inoculation and the kind of animal in which the virus can cause growth.

Dr Gye said. The answer to Dr Arlwright's first question is "Yes." Parallel experiments have been done many times with negative results. The second question is more difficult. The interpretation put upon the experiments has been founded upon first, cultures from chloroformed extract fail secondly direct dilution experiments are all favourable to the interpretation given, and thirdly the assumption that the effective factor is another virus again lead us to the position that strict specificity is dependent upon a virus. In short the simplest and most direct interpretation has been put forward, and this is supported by available facts.

TWO CASES OF TUBERCULOUS SPLENOMEGALY

BY

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A.D.

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THE title "Tuberculous splenomegaly" has been chosen to avoid the implications of the word "primary" sometimes used in the description of this form of tuberculosis.

CASE I

Maria C., aged 65, was admitted under the care of Mr W. G. Spencer—to whom we are indebted for permission to publish the notes—on November 10th 1919.

There was but a five weeks history of progressive wasting and muscular weakness with no particular complaint or symptoms other than those due to the presence of the splenic tumour. She had noticed for two or three years that her abdomen was getting bigger. She had had varicose veins in the left leg they had ruptured three times. She was pallid her atrophic skin had a subicteric tint. The tumour filled the whole left upper and lower quadrants and the right lower quadrant of the abdomen. The right side of the tumour on which the notch was recognizable, was somewhat mobile whilst the left side of it seemed to be deeply anchored.

Laparotomy had been performed in 1911 at St Thomas's Hospital for removal of an ovarian cyst and the appendix no enlargement of the spleen was noted at that time a fibroma had also been removed from the left labium.

There was irregular fever on admission the temperature ranged from normal to 102° pulse 88 to 104.

The blood count on November 18th 1919, was as follows:

Serum to corpuscles	1 to 1
	65%
	0.8
	8200
Polynuclear neutrophils	70% 74%
Eosinophils	4%
Lar. mononuclear	10% 26%
Small mononuclears	16%

The Wassermann reaction was negative.

Splenectomy was performed by Mr Spencer on November 25th. There were no adhesions of the spleen but the transverse colon was firmly attached to the anterior parietal peritoneum. In dealing with the horizontal ligament the tip of the tail of the pancreas was removed and the ligatured pedicle was therefore fixed in the wound.

On the day after the operation the temperature was normal but respirations were 40 to 50 on the next day the pulse was 124 temperature 101.2°, respirations 36. She died on November 28th 1919.

The necropsy notes state Emaciation no peritonitis along splenic vein five enlarged lymphatic glands liver greatly enlarged (73 oz) pale and firm on section no amyloid reaction. Small subperitoneal cyst on surface of left lobe. Kidneys pale and firm on section right 6 oz left 3½ oz. Left ovary absent right small. No tubercles on peritoneum diaphragm or parietal pleura. On visceral pleura a few grey tubercles. Lungs scattered grey miliary tubercles more on right side than left lungs otherwise well aerated not engorged. Castrointestinal tract nil.

Microscopical.—Lungs, emphysema pneumoconiosis tuberculous. The liver and lymphatic glands showed tuberculous kidney cloudy swelling no tuberculous.

The surface of the spleen (which weighed 72 oz) was smooth there was no thickening of the capsule scattered over the surface were a number of pea-size yellow areas each surrounded by a zone of hyperemia. On section the spleen which was very vascular showed similar yellowish areas with hyperaemic zones some one to two inches in diameter no caseation.

CASE II

Lizzie S., aged 28 a patient of Dr Gordon Ward was sent to one of us in April 1920 complaining of weakness and constitutional fatigue of the presence of a lump in the abdomen noticed for the first time six months before and associated with discomfort sense of weight and dragging in the left side. She had lost weight. She had also a seropurulent nasal discharge due as reported by Mr de Santi to advanced left sided atrophic rhinitis with crust formation. The spleen firm and apparently smooth to the touch occupied the whole left side of the abdomen to three or three and a half inches below the umbilicus there was no enlargement of lymphatic glands to be detected the liver was but slightly if at all larger than normal no other abnormal physical signs could be found. There was irregular fever the temperature reaching 99.6°, 100.8°, 100.2° and so on in the evenings.

The blood count on April 30th 1920 was as follows:

Serum to corpuscles	1 to 1
Haemoglobin	90%
Red blood corpuscles	5 820 000
White blood corpuscles	4 600
Polynuclear neutrophils	56% 59%
Eosinophils	3%
Lar. mononuclear	27% 42%
Small mononuclears	14%

Splenectomy was performed (E.R.C.) on May 1st. The spleen was adherent to the diaphragm and elsewhere but presented no considerable difficulties in removal a cigarette drain was employed. The stitches were out on May 9th and she was discharged on May 20th.

A blood count taken on May 7th, 1920 was as follows:

Serum to corpuscles	1 to 1
Haemoglobin	68%
Red blood corpuscles	4 430 000
Colour index	0.8 approx
White blood corpuscles	10 500
Polynuclear neutrophils	69% 70%
Eosinophils	1%
Lar. mononuclears	17% 25%
Small mononuclears	6%
Transitionals	6%
Basophils	1%

Dr Gordon Ward informs us that for some weeks after discharge she picked up nicely but that she died six months later of generalized tuberculosis.

The spleen weighed 4 lb. It closely resembled a spleen from a case of miliary tuberculosis but on a very much larger scale. The surface was studded all over by raised tubercles surrounded by small zones of hyperemia. These tubercles were of considerable size being generally the size of a large pin's head. On cut section also the very free distribution of the tubercle was well seen and the contrast between the very numerous tubercles of this spleen and the comparatively few of Maria C. was noteworthy. Another contrast was the comparatively smooth surface of the spleen of Maria C. and the nodular surface of this case.

Lizzie S. There were no areas of caseation.

In considering these two spleens, it was found that they had certain characteristic features in common, but presented certain well marked differences. A feature common to both is vascularity, with a change of the ordinary splenic structure into that of a moderately loose-meshed sponge, of which the interstices are for the most part filled with blood. Indeed in one spleen (I. S.) so loose is this meshwork that parts of it resemble lung tissue at the first casual glance. Another similarity is a general increase in the interstitial fibrous connective tissue, in M. C. this process is uniform diffuse in L. S. there are in addition, well marked areas of local fibrosis where the tubercles are "healing" or "granulated." In both spleens, whilst some typical "granulated" formations are found, there are differences in other which as a histological study, are of great interest. In

L S, who is aged 28 years, the "tubercles" are numerous and stand out boldly, the central giant cell being surrounded by endothelioid cells of fibroblastic tendency, for the fibrous areas mentioned above are most marked where the giant-celled formations are most numerous. In M C, who is 65 years of age, the typical "tubercles" are few and far between, but scattered throughout the section are large numbers of "lonely," somewhat atrophic, giant cells, with no tissue reaction (fibrosis, etc.) around them. This latter appearance has been observed not infrequently by one of us in senile tuberculous of lymphatic glands, and is, after all, what one might expect in old age where tissue reaction to infection is often half-hearted and atypical. It is further of interest from this point of view to remark that, of the sections examined, it is only in those of M C that necrosis of tissue was found. Although sections were diligently searched for tubercle bacilli by three competent observers, none were seen.

These two cases well illustrate the type described by Winteritz in his study of fifty-one examples. The comparatively mild symptomatology, the size of the spleen, the existence of tuberculous in the liver and lymphatic glands, leading to it, and in the lung in the one case, the supervision of generalization in the other, despite splenectomy (performed, as Dr. Ward suggests to us, "too late") and the microscopic findings, are all in accordance with the general picture. No inoculation experiments were performed in our cases.

Although no definite primary focus was found and although the splenic lesion dominated the clinical picture and was the source of spread, we hesitate to accept the term "primary tuberculous" of the spleen. From a surgical point of view the conclusion to be drawn from a study of these cases is that splenectomy should be performed early, and that, for what it is worth, irregular fever with splenomegaly should suggest tuberculous, but we admit that though, having seen one of these cases recently, one of us (J. A. B. H.) did suggest the diagnosis in the other, yet in the presence of the splenomegaly syndrome we are still very much in the dark as to diagnosis and rational treatment.

Recent bibliography in Silvestri: *Patologia e Chirurgia della Vitis Capelli*, Bologna, 1924.

DIFFICULTIES IN THE DIAGNOSIS OF CEREBELLAR ABSCESS

BY

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THE signs and symptoms of cerebellar abscess, in a typical case, are very definite, and it may be imagined on reading the textbook descriptions that the diagnosis of a case should present few, if any, difficulties. In practice, however, the diagnosis of a cerebellar abscess is often very difficult. So experienced a surgeon as Mr. J. S. Fraser said of his own cases, not long ago, that in only four out of eight cases of cerebellar abscess was the diagnosis sufficiently certain at the time of operation to enable the surgeon to proceed to the opening of the abscess.

Intracranial abscesses are almost always the result of chronic, rather than of acute, suppuration of the middle ear, and cerebral are much more common than cerebellar abscesses. Neumann found, in a total of 532 that 336 were cerebral and 196 cerebellar abscesses and Hunter Tod, in a collection of 100 cases, found that in adults cerebral abscess occurred in 65 per cent of cases and cerebellar in 35 per cent.

The onset of an intracranial abscess is gradual, and as the symptoms arise during the course of chronic suppuration of the middle ear, the patient is not usually seen at an early stage by the otologist. The chief symptoms, which are due to intracranial pressure, are headache (usually dull and not, as in meningitis, excruciating), insomnia, a sub-

normal temperature, a slow, bounding pulse, vomiting and optic neuritis. It is usually taught that a subnormal temperature and a slow pulse are typical of intracranial abscess, but in intracranial abscess secondary to middle ear suppuration a rise of temperature often occurs, and the pulse rate may not be slowed. Again while the presence of optic neuritis may be evidence of increased intracranial pressure, its absence does not negative intracranial abscess. It is said that in cerebellar abscess the vomiting and the optic neuritis are more marked than in cerebral abscess, but, on the other hand, both of these symptoms may be absent. Headache is usually stated to be more severe, persistent, and localized in cerebellar than in cerebral abscess, but mental dullness is much less marked. A staggering gait, vertigo (which seems to be quite independent of the ataxia) and nystagmus, are all symptoms which are usually considered to point definitely to cerebellar abscess, but they may also be symptoms of labyrinthitis. In the latter, however, the ataxia and the nystagmus tend to subside, while in cerebellar abscess they are inclined to become more marked as time goes on, is usually absolute in labyrinthine inflammation, but the hearing may not be affected in cerebellar abscess. Sometimes in cerebellar abscess there are no disturbances of equilibrium. Nystagmus is often absent in cerebellar abscess, but, on the other hand, it would hardly be wise to make a definite diagnosis of cerebellar abscess in the continuous absence of nystagmus. Barry has shown that in a cerebellar lesion the patient first points outward with the arm on the affected side, and after vestibular irritation (induced by irrigating the ear of the opposite side with cold water) the pointing deviation of the same arm continues towards the same side, whereas in a normal person the first pointing of both arms which results is towards the opposite side. Unfortunately these changes in pointing accuracy are not constantly present in cerebellar abscess, and their absence does not exclude it.

The difficulty of making a diagnosis of cerebellar abscess is well illustrated by the cases of two patients on whom I have operated recently. The first who presented typical symptoms and signs of cerebellar abscess, proved to be a case of extradural abscess in the middle fossa, with chronic perilabyrinthitis, while the second, a case of cerebellar abscess, was diagnosed as a case of acute mastoiditis only.

CASE I

History.—J. M., a man aged 34, came to hospital complaining of giddiness and of intense pain on the left side of the head, which had prevented him from sleeping for four nights. The pain had begun a week previously, radiating down the left side of the face and settling below the left ear. Two days after the onset of pain he had four attacks of giddiness at his work without losing consciousness, and on his way home he vomited twice. Since then he had felt rather dazed but had not vomited again, but had felt inclined to do so several times.

Examination.—The left ear was discharging, and the patient stated that it had discharged from time to time for the past sixteen years. There was a large perforation of the left tympanic membrane and a considerable quantity of pus was exuding. There was tenderness over the point of the mastoid. He could hear the conversational voice at a distance of 3 feet but not a whisper. Rinne's test was negative and bone conduction was prolonged fifteen seconds. The fistula test was negative, he first pointed with the left hand to the left. There was definite nystagmus to the left, the margins of the optic discs were blurred. His gait was ataxic, his temperature was 102.4°, his pulse rate 80 and his respiration rate 20.

Diagnosis.—A diagnosis was made of cerebellar abscess complicating suppurative mastoiditis on the left side, and the patient was accordingly admitted to hospital for operation.

Operation.—Next day I performed a radical mastoid operation on the left side. The mastoid cells were full of pus and pus welled up from the antrum when it was opened up. Beyond the antrum the bone was necrotic so I continued to clear it away and as pus under pressure I enlarged this opening, but there was no bulging of the dura and there did not appear to be any intracranial inflammation. The lateral sinus appeared to be healthy and there was no track towards the cerebellum. I accordingly made a metal flap, bipped the wound and drained the cavity with a wide rubber tube in the external meatus and a gauze drain to the postaural wound, which I closed partially.

The patient's temperature fell to normal in five days. When he got out of bed at first he complained of giddiness, but this

gradually disappeared. He remained in hospital for a month, and made an excellent recovery. When I saw him recently he was quite well, and his hearing was fair; he had had no further giddiness. The post-aural wound soon healed, and although there was a slight discharge from the ear for a month or two it is now dry.

In this case the symptoms attributed to cerebellar abscess were caused by the intra-aural pressure of a large extradural abscess, and also by chronic perilymphitis, which subsided as the mastoid suppuration cleared up. A more thorough examination of the vestibular apparatus would probably have helped towards a more precise diagnosis, but it is obviously impossible to carry this out in the case of a very sick man with a temperature of over 102°.

CASE II

History—D B, a man aged 52, was sent into hospital by his doctor as an emergency acute mastoiditis. He complained of very severe pains in his head which he had had for six or eight weeks sometimes at the vertex but mostly behind the left ear. He had been unable to sleep or to work for over a week. He had never had any ear discharge and was not deaf. Two days before he came to hospital a swelling had appeared behind the left ear.

Examination—The left mastoid region was swollen, and tender to the touch. There was no discharge from the left ear, and the tympanic membrane was opaque but otherwise seemed normal. Rinne's test was positive and the hearing was apparently unaffected; there was no vertigo, no nystagmus, no optic change apparent. His temperature was 99.6°, his pulse rate 112, and his respiration rate 24.

Diagnosis—A diagnosis of acute mastoiditis on the left side was made, and an immediate operation was decided upon.

Operation—I made the incision for the Schwartz mastoid operation on the left side, and pus appeared at once when I reached the bone. The mastoid cells were necrotic and full of pus more so towards the tip of the mastoid process. I tracked the pus down wards and behind the lateral sinus to the posterior fossa of the skull, from which pus welled up as I made a wider opening into it. The dura mater over the cerebellum was bulging and I made a crucial incision over the bulge through which a small quantity of pus came out. I then opened up the antrum, wiped the wound packed it lightly with gauze through to the cerebellum and left the posterior wound open.

The patient was in hospital for just over a month and left in good health but with a post-aural sinus discharging. When I last examined him three months after the date of the operation this sinus had cleared up and the posterior wound was completely healed. Rinne's test was positive, with the left ear he could hear the conversational voice at 35 feet, and a whisper at 6 feet.

This case presented no symptoms or signs of cerebellar abscess, nor, indeed, of any intra-aural lesion, though perhaps the severity of the localized headache should have made me more suspicious than it did. It is also interesting as being a case of mastoiditis without any apparent middle-ear inflammation (so called latent otitis media), which is rare in adults, but somewhat more common in children.

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VACCINE TREATMENT OF SPLENOMEGALY IN CHRONIC MALARIA

BY

R. E. INGRAM-JOHNSON, L.R.C.P. Ed.,

LABU & MS

In the tropics the presence of children with chronically enlarged spleens is always regarded as a source of danger of infection, as the enlargement is evidence of the presence of the malarial parasite in large numbers in the spleen itself, with the possibility of its appearance in the peripheral circulation at any time. The percentage of children suffering in this way is taken as an index of the health of the community so far as malaria is concerned.

Being fully convinced that some antitoxin is formed in the blood of persons who have suffered from true dengue fever, which has a destructive action upon the malarial parasite, I obtained a serum from the blood of persons just recovered from true dengue and experimented with it, by intramuscular injection, upon children with chronic splenomegaly, as I concluded that it would probably destroy the parasite, in which case the spleen would gradually resume, at any rate to some extent, its normal size. Should my conclusions be correct, the shrinkage would prove the presence of the antitoxin.

The photographs reproduced are of the three children upon whom I first tried this method of treatment. They show (1) the line of the splenic margin before treatment, (2) the shrinkage at the date the photographs were taken, (3) the costal margin.

Case A: A boy aged 8 and Case B: a boy aged 5 each received the first injection on October 16th 1924 the second on October

23rd and the third on November 11th. The photographs were taken on December 25th. Case C: a boy aged 13 received the first injection on November 9th 1924 the second on November 16th and the third on November 30th. The photograph was taken on December 14th. I examined this patient again on March 1st 1925 and found the spleen normal in size, but very mobile, as the ligaments were very lax.

These cases were chosen as having enormous spleens, a deficient haemoglobin index, and as having been under the usual treatment for many months without effect. They had no other treatment but the serum after the first injection. I claim to have proved—

1 That an antitoxin against malaria exists in the blood of patients who have suffered from true dengue.

2 That the antitoxin is due to the presence of dead (not artificially killed) dengue germs, thus forming a true vaccine in the blood serum.

3 That this serum, being a vaccine, and having a destructive effect upon the malarial parasite, contains dead germs which must, in life, have had some close connexion with that parasite, or be a modification thereof, even as the active principle of vaccine is a modification of that of variola, as, were there no connexion between the two diseases, malaria and dengue,

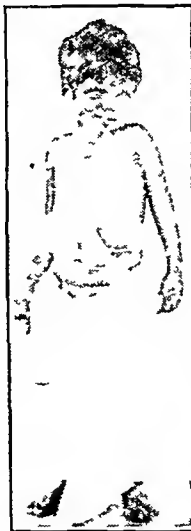
it could not possibly have the effect that it undoubtedly has.

4 The vaccine having such an effect on malarial parasites present in the circulation (even though not causing acute attacks of malaria) should, by its presence in the blood, prevent the proliferation of parasites injected into the blood as sporozoites by infected anophelines, and hence should act as a prophylactic against the disease.

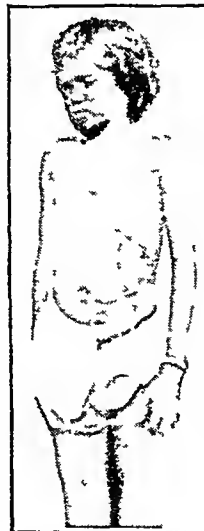
5 The logical sequence is, therefore, that by injections of this vaccine artificial immunity from malaria can be procured, the length of time that immunity holds good, and the quantity of vaccine needed to make it absolute, being matters for further experiment.



CASE A



CASE B



CASE C

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

POISONING BY IVY

A boy, aged 3½ years, was, according to his mother, taken ill on June 20th at midday. I saw him two and a half hours later. He was then in a condition of mild delirium which alternated with stupor. He never completely lost consciousness, and could be roused when he relapsed. During the delirious stage clonic convulsions would come on, and he screamed and cried. No tetanic spasms were observed. He could not stand. He had visionary hallucinations that bulls were chasing him and rats and beetles crawling over him, they lasted for many hours. An intense scarlatiniform rash, most marked on the legs, face and back, was present. There was no vomiting or purging. The pulse was rapid but full and bounding, becoming weaker later. The pupils were widely dilated. The temperature was raised.

Emetics were given but failed to act, and the stomach was washed out. Nothing appeared to be of assistance in coming to an accurate conclusion as to the nature of the poison. I strongly suspected that he had eaten some poisonous substance despite his mother's emphatic declaration to the contrary. Afterwards he was given a stiff dose of castor oil, which was retained, but did not act until some hours later.

The symptoms abated after the wash out, and in about three hours he was fairly well. When the hands acted the cause was discovered—namely, ivy leaves. He had eaten a considerable quantity of these. Next morning he confessed to having eaten the ivy leaves, and a boy who was with him corroborated. The ivy was the common climbing variety.

There are several interesting features about this case. Glaister in his *Medical Jurisprudence and Toxicology* (1915) does not mention ivy as a poisonous plant. I am well aware that the American variety of poison ivy (*Rhus toxicodendron*) may cause dermatitis venenata, an example of which I saw last year from this plant, but in the present case this plant was not the one at fault. Another name under which this particular plant masquerades is *Impatiens naggii*. The variety of ivy which was the cause of all the trouble was the ordinary common ivy, which can be seen climbing on my wall. Another point was the close resemblance which the symptoms showed to belladonna poisoning—namely, the irritation of the central nervous system followed by depression, the widely dilated pupils, and the scarlet rash. The distinguishing point was the absence of dryness of the mouth and throat which invariably follows poisoning by belladonna. In view of the fact that *Rhus toxicodendron* may cause a skin rash it is interesting to note the presence of a rash in the case.

Hearnor

P. H. J. TROTTER, M.B. Edin.

TRANSIENT GLYCOSURIA FOLLOWING SCORPION STING

This note is published with a view to ascertaining whether similar observations have been made in other countries where stings of such a toxic nature are encountered. Scorpions abound in Trinidad, and it is frequently necessary to treat patients who have been subjected to their venomous sting. Two varieties of scorpion are found—the "small brown," which is harmless, and the "large black," which is extremely toxic and dangerous to adults and children. The symptoms develop about half an hour to an hour after the sting showing that the toxin takes some time to develop its action. The earliest symptom is dyspnoea, associated with muscular contractions. The patient passes later into a state of extreme shock with cold, clammy sweats, profuse vomiting of a frothy nature, a slow, thin pulse, and a subnormal temperature. This critical period lasts for about three hours, and the patient then improves gradually and has apparently quite recovered twenty-four hours afterwards. Death rarely ensues. Fits of an epileptiform nature sometimes occur and are apparently due to the toxin. Albuminuria is generally absent. In twelve

out of fourteen cases investigated a transient glycosuria developed and lasted from two to five days. In some the percentage of glucose present was high, ranging according to the severity of the symptoms. In no instance was a special diet enforced. The following three cases illustrate these points.

1. A girl, aged 10, was stung on the leg at 8 a.m. An hour later there were no symptoms and a specimen of urine contained no glucose. She was admitted to hospital at 9.30. At 11.30 the patient complained of pain in the chest with copious salivation and sweating. By 6 p.m. she had quite recovered. The following morning glucose was present to the amount of 0.64 per cent, the specific gravity of the urine being 1008. The next day 0.55 per cent of glucose was present and the specific gravity was 1020. On the following day 0.42 per cent glucose was present, the specific gravity being 1012. The glucose percentage fell to 0.21 a day later the specific gravity being 1016. On the following day it was 0.19 without change in the specific gravity and on the next day glucose was absent the specific gravity of the urine being 1008.

2. A female, aged 18, was stung on the left foot at 10 a.m. and at 2.45 p.m. the urine contained 0.31 per cent glucose, the specific gravity being 1018. She was admitted to hospital at the time with vomiting and epigastric pain, profuse salivation and collapse. An intravenous injection of 5 c.c. of 1 in 1000 potassium permanganate solution was given, improvement began in an hour and a half and by 9 p.m. the patient had quite recovered. On the following morning 0.41 per cent of glucose was present in the urine, the specific gravity being 1010. The next day the glucose percentage fell to 0.3, the specific gravity being 1012, and on the third day glucose was absent the specific gravity being 1010.

3. A female, aged 20, was stung on the leg at 10.30 a.m. and admitted to hospital at 2 p.m. in a collapsed condition with profuse vomiting and muscular pain. Two hours later a specimen of urine contained 0.24 per cent glucose, the specific gravity being 1010. At 4.30 an intravenous injection of 10 c.c. of 1 in 1000 potassium permanganate solution was given, this was followed by improvement within an hour and the patient had completely recovered at 9 p.m. On the following day glucose was absent from the urine, the specific gravity being 1008.

In the three cases glucose continued present after intravenous injection of potassium permanganate showing that the injection did not affect the glycosuria, though I think it had some influence on the acute symptoms. All observations were confirmed by some of my colleagues.

I am indebted to Mr. Sweeny, Junior Chemist of the St. Michael's Sugar Co. Ltd. for verifying my calculations with regard to the percentage of glucose present.

J. F. KING, M.D., F.R.C.S. (Edin.)

San Fernando, Trinidad.

INJURY DUE TO LIGHTNING STRIKING A WIRELESS AERIAL

This form of trauma seems sufficiently novel to be worthy of record.

On the night of July 27th I was called to see a young woman who was said to have been struck by lightning. Over the right hip she had a large bruise about six inches in diameter with a central area of scorching. She was also suffering from a mild degree of shock. Her clothes were quite unruined. At the time of the accident she had been standing close to the lead in of the wireless aerial. This had completely fused and it seemed to be the flash from the fusing wire which had done the damage. She described it as seeming as though the whole of her right side had caught fire.

Considerable damage had been done to the window frame at the point where the wire entered the house, and bricks had been dislodged from the wall—this although the aerial was earthed by a switch inside the house. Apparently this common form of protection against lightning risks is useless.

The aerial which was of seven strand copper wire, was fused in several places.

Voisbury, S.W.

W. EDWARDS, M.B. Cantab.

SALICYLIC ACID IN EPITHELIAL PROLIFERATION

A solution of salicylic acid in collodion has long been a popular remedy for warts. A similar solution has been found useful in the treatment of moles, warts, especially flat pigmented warts, and other epithelial growths. I have used a 20 per cent solution. It is necessary to scrape off the superficial layer of epithelium in order to allow the collodion to penetrate. A scab forms, which can be removed in a few days, and another application made. The result is very much like that from carbonic acid snow—a soft pliable skin apparently normal. This method appears to deserve a trial in many cases of epithelial overgrowth.

Loughborough.

J. B. PIERCE, M.R.C.S.

Revelus.

EDWIN CHADWICK

THE happily named Roadmaker Series began with *Lord Lister*, and the latest volume is devoted to *Sir Edwin Chadwick*.¹ In small compass the author, Mr Maurice Marston, gives a singularly vivid and attractive sketch of the life and work of one of the most remarkable men of the nineteenth century. Chadwick was a pioneer in far more than public health. His bounding energy spread itself over many fields, Poor Law, registration of births and deaths (see p 301), factory legislation, employers' liability, the suppression of intemperance, education, physical training, housing, the prevention of crime, the police force, the extinction of fires, the disposal of the dead—these are among the subjects in which his long and busy life was occupied. Nearly forty years ago Sir Benjamin Ward Richardson published in two big volumes many of Chadwick's papers and essays, prefaced by a biographical dissertation, as indicating his view of the scope and importance of Chadwick's writings, Richardson entitled the work *The Health of Nations*. But Mr Marston's little book contains what most general readers of the present day will want, and his picture of Chadwick is all the better in that he makes no attempt to gloss over or explain away the faults which characterized his administrative methods and brought his official life to a close at the early age of 54. That, however, hardly gave pause to his work. Until his death, many years afterwards, his public activities were endless, and, having been born at the beginning of 1800, he survived until within a decade of the close of the century. In fact, he lived so long that when the contemporaries with whom he had quarrelled and fought had passed away, it occurred to a new generation that Chadwick was worthy of a knighthood, and so a C.B. of 1854 was raised to a K.C.B. in 1889—shortly before his death.

In his public health work—in the development of his "Sanitary Idea"—he had for medical colleague on the Board of Health Dr Southwood Smith, who also played a large part in awakening the nation to the need for giving attention to the physical welfare of the industrial population, who, in the new era of steam power and mass production in great factories, deserted their domestic or village workshops, and herded into cities where house accommodation had to be found by them—not for them—under conditions which had not, and perhaps in the practical absence of local government and of awakened public conscience could not have had, any regard whatever to the health of the occupants. Sufficient and safe and systematic water supply was practically unknown, underground drainage also, whilst refuse removal was left to chance, so that in court-yards and closes surrounded by dwellings filth accumulated in heaps until some farmer would buy it for manuring his fields, and the price would be divided among the contributing households.

In these conditions it is not surprising that in the cities epidemics of "fever" were of very frequent occurrence. Chadwick had no high opinion of doctors in general, at least in relation to the prevention of disease, but he did trust Dr Southwood Smith who no doubt was largely responsible for their whole-hearted warfare against epidemics.

Southwood Smith was considerably his senior, and had for long been physician to the London Fever Hospital, which he records was "capable of receiving sixty-two patients." In 1830 he published *A Treatise on Fever*, and the views there set forth express the knowledge and opinions of the period in relation to infectious disease. Typhus and typhoid fever had not been differentiated, and cholera was regarded as air-borne. Fever, under the general term "synochus," he divided into minor and major, these two being further classified "according to the different organs in which the several affections have their seat. Hence synochus gravior with cerebral affection—subacute—acute, with thoracic affection with abdominal

affection, with mixed affection." As to the causes he writes "The immediate, or the exciting cause of fever is a poison formed by the corruption or the decomposition of organic matter. Vegetable and animal matter, during the process of putrefaction, give off a principle, or give origin to a new compound, which, when applied to the human body, produces the phenomena constituting fever" (p 77), and Chadwick, following him, told how, in cleaning ditches, "people were apt to spread the putrid contents over the banks and extend the evaporating surface, so as to generate immediate fever" (Richardson, vol II p 227). As a working hypothesis this was excellent, and there is no need to jeer at it to-day.

At the time when Southwood Smith wrote his book the public mind was occupied, not with health problems, but with the abolition of the corn laws and the adoption of free trade. The age of organized sanitary effort had not begun, and it was long afterwards when Disraeli gave forth as a political battle cry his famous "Sanitas sanitatum, omnia sanitas"—described by his opponents as "a policy of sewage." It was under these unfavourable conditions that Chadwick began his health crusade. Not only were the times inauspicious, but the basal conception of the Board of Health (of which he and Southwood Smith formed half the membership) was a blunder, in the very important respect that the Commissioners were quite independent of Parliament. They were under the wing of no Minister, and had no representative to answer questions or give explanations. As Mr Marston also points out, they had power, when requested by ratepayers, to appoint local boards, but once appointed the central authority had no power to control them. It could only use influence by way of advice, and probably no man was ever less qualified than Chadwick in the art of persuasion. The members of the Board were, says Mr Marston, "doctrine and aggressive."

They trusted no one, believed in no one, and thought that every man's hand was against them. They were apt to seek no advice but their own, and they were often in the wrong. Lord Shaftesbury, one of the four Commissioners, wrote that they had enemies of all sorts—parliamentary agents, civil engineers, the College of Physicians, all the boards of guardians, the Treasury, the water companies, the commissioners of sewers—"they hated us with a perfect hatred." Owing to cholera, the Board's life was extended from five years to six, but then the agitation was successful. In Parliament, writes Mr Marston, "none would have a good word to say for the man who had devoted the greater part of his public life to bringing the atrocious sanitary conditions of the country before their eyes. They saw in him a man fighting against private property and private interests, a man whose energy they distrusted and disliked, a man who was a danger to their comfort and prosperity," so that the *Times* wrote "Mr Chadwick and Dr Southwood Smith have been deposed, and we prefer to take our chance of cholera and the rest, rather than be bullied into health." As to the work of the local boards, the same paper said "It was a perpetual Saturday night, and Master John Bull was scrubbed and rubbed and small tooth combed till the tears ran into his eyes, and his teeth chattered, and his fists clenched themselves with worry and pain." So finished the Board of Health, but Chadwick was a long way from being finished, and his activities, splendid notwithstanding all his defects, continued until the end of his long life, so that now he is remembered as a road-maker—indeed, one of the very greatest road-makers of the nineteenth century.

In closing this notice of Mr Marston's admirable little volume, it happens that the reviewer is able to correct a small error into which both Sir Benjamin Ward Richardson and Mr Marston have fallen. Chadwick stood as a parliamentary candidate for the University of London in 1867, but was defeated, and Mr Marston, following Richardson, says that proposals were afterwards put forward that he should stand as a candidate for Evesham and Kilmarnock Burghs, but that "none of these, however, came to anything." As regards the latter, this is not correct. Chadwick stood for Kilmarnock in 1868, but was defeated. He opposed the sitting member, the Hon E. P. Bouverie. Mr Marston quotes a letter from John Stuart Mill in support of the London University candidature, and the same letter

¹ *Sir Edwin Chadwick (1800-1890)*. By Maurice Marston. The Roadmaker Series. London: I. Parsons Boston U.S.A. Small Maynard and Co. 1925. (Cr. 8vo pp 185. 1 portrait. 4s 6d net.)

was used in the Kilmarnock contest. Bouvier, commenting on it, pointed out that John Stuart Mill was himself in Parliament, and that having so high an opinion of Chadwick he ought himself to stand down and make room for him. The retort was pointed and effective. The fact, brought out during the fight, that Chadwick had a pension of £1,000 a year, was much less cogent, but none the less vote losing. Kilmarnock electors were just as much grieved by Chadwick's £1,000 a year pension as university students of the present day are grieved by the fact that Jenner more than a hundred years ago was voted £30,000 by Parliament. A cartoon showing Chadwick hauling a great dung cart, with his principal supporters pushing it, also played its part, and the fact that he was 58 years of age was much against him. But he made a gallant fight, and it happened that the writer of this notice was one of his poll clerks, thereby earning his first guinea fee, though at the cost of being cooped up all day in a polling booth, instead of wandering at large to enjoy the fun of the last open election before the Ballot Act was passed. That was not the reviewer's last connexion with Chadwick for the old man was glad to indicate his appreciation of young workers trying to build, however clumsily, on the foundations which he had so well and truly laid, notwithstanding opposition and obstruction such as is unknown to students of the present century.

J C M

BUCHANAN'S "ANATOMY"

The Manual of Anatomy, by the late Professor A. M. Buchanan, in reaching the fifth edition* may, we think, be considered to have satisfactorily passed through the probation imposed upon such publications, and to be now firmly established as one of the standard English textbooks on the subject.

In forming any judgment upon it we naturally derive considerable assistance from the institution of a comparison between it and other textbooks of the same class. Perhaps the most distinctive feature of Buchanan's book is that, whereas in other books, we believe without exception the subject-matter is arranged according to the systems of the body, here it has been arranged topographically. Much might, no doubt, be said as to the relative merits of the two methods. All, however, that we would here say is that the latter method appears to have two very real and sound advantages. In the first place, it will, we think, be generally agreed that the knowledge of anatomy required in practice is mainly of the topographical variety. In the second place, a student's early instruction in the subject, the fundamental training which he receives in the dissecting room, is on topographical lines, and it would seem to be only natural and proper that his studies should continue along the lines on which they had begun. It is no doubt, too, more easy to convert topographical knowledge of the subject into systematic knowledge, should this be required, than it is to effect the reverse process.

Another important feature which distinguishes Buchanan's *Anatomy* from at any rate most of the other standard textbooks is its smaller size, the diminution being at the expense of minutiae of little or no practical value. The task of deciding what to retain and what to omit must always be one of great delicacy, requiring in a high degree both care and deliberation. The publishers have, we think, been singularly fortunate in obtaining the services of such experienced teachers as the four editors responsible for the present edition. The task has been admirably performed, and the work should prove a real boon to the medical student who, realizing as he must sooner or later the vast amount of knowledge which he is expected to acquire in the course of his curriculum, is not infrequently depressed by his inability to decide with any confidence between matters of real as distinct from matters of problematical value. Not only can we assure him that nothing of importance has been omitted but that matters of serious concern are treated with greater detail than is often the case in books of larger size. We would instance in this connexion

such regions of the body as the mastoid antrum, the parotid gland, the axilla, the perisynovial spaces of the hand, the articulo-ventricular bundle, the biliary passages, and the knee joint. Among the illustrations the plentiful supply of sections is in keeping with the general topographical character of the book, and cannot fail to have a salutary corrective value on what a student has learned from either his own dissections or from those exposed in museums. Text and illustrations have been so amply revised that the book may almost be said to have been rewritten and reillustrated. This statement appears to be particularly true of the parts devoted to embryology, enriched as they are with a very large number of original illustrations. In this section special attention has been paid to the embryological interpretation and explanation of abnormal conditions, particularly those resulting in congenital variations and defects.

We are glad to see that the old nomenclature has been adopted in its entirety, that the nerve accompanying the anterior tibial artery remains the anterior tibial nerve, and that the atlas still revolves round the odontoid process of the axis.

In matters of arrangement, size, discrimination, and nomenclature the volume presents a very agreeable and useful union which cannot fail, we should think, to find much favour with large numbers of medical students. To them we can cordially and confidently recommend it, not only as a reliable and helpful guide through the dangers of the examination room, but also as a simple and practical book of reference throughout the years of their professional life.

THE CEREBRO SPINAL FLUID IN CLINICAL DIAGNOSIS

THE literature on the cerebro spinal fluid has become so extensive, and the multiplication of "tests" and "reactions" so confusing, that a summary in convenient form of the important facts will be welcomed by many clinicians. In *The Cerebro Spinal Fluid in Clinical Diagnosis* Drs J. GODWIN CARMICHAEL and I. ARNOLD CARMICHAEL have given concisely the results of the great experience they have been privileged to obtain in the ward and laboratory of the National Hospital for the Paralyzed and Epileptic, Queen Square, London. The book is written specifically for the guidance of the clinician, and questions of pure technique have been relegated to a subsidiary place, though they have not been neglected. With clinical needs uppermost in their minds, the authors, in the arrangement of their book, have largely followed the plan adopted in the classical monograph of Mestier published in 1912.

The first part of the volume before us is concerned with the general physiology of the cerebro spinal fluid and the changes that occur in disease. Detailed instructions are first given for obtaining specimens of the fluid by lumbar, cisternal, and ventricular puncture, this section is full of useful advice of a practical sort, such as could only be given by operators of long experience at the bedside. The authors rightly remark that lumbar puncture should not be regarded as a routine measure in diagnosis, but should be undertaken only after due consideration of the benefits which may be derived from it. The necessity for special precautions in cases of cerebral tumour and disseminated sclerosis is wisely emphasized. The method of measuring the pressure of the fluid by manometer is described, both for simple lumbar puncture and for combined cisternal and lumbar puncture after the method of Ayer. As an indication of subarachnoid block by spinal tumour and other lesions, attention is called to the absence of the normal rise in pressure on compression of the jugular veins (the Queckenstedt phenomenon). A complete and interesting account is given of the physiology of the formation and absorption of the cerebro spinal fluid, together with the salient facts of the anatomy of the choroid plexuses, subarachnoid and subdural spaces.

The pathological changes occurring in the fluid are then dealt with successively in reference to the pressure, naked-

* Buchanan's *Manual of Anatomy*. Edited by E. Barclay Smith M.D. J. E. Fraser F.R.C.S. F.G. F.R.C.S. W. Wright F.R.C.S. Fifth edition. University Series. London: Lilliere, Tindall and Cox. 1925. (Demy 8vo pp viii + 1702. 810 figures. 5s net.)

3 *The Cerebro Spinal Fluid in Clinical Diagnosis*. By J. Godwin Greenfield M.B. B.Sc. M.R.C.P. and I. Arnold Carmichael M.B. Ch.B. London: Macmillan and Co. Ltd. 1925. (Demy 8vo pp x + 212. 8 figures. 12s net.)

cerebral appearances, cytology, and chemical composition, and the methods of counting the cells are described. It is of interest to note in passing that the authors do not agree with the statement frequently made that the glucose content is increased consistently in encephalitis lethargica. They confirm the value of diminution of glucose as a sign of acute meningitis, and draw attention to the contrast between this diminution and the presence of a high percentage of blood sugar in such cases. Many will agree with the view expressed that the era of the "reaction" in the cerebro-spinal fluid is giving place to more exact biochemical investigation. At the same time the authors subscribe to the value of the colloidal reactions.

A chapter is devoted to the compression syndrome of From, and then individual diseases are considered from the point of view of the changes they produce in the fluid. The last section of the book is concerned with technique. This is a convenient arrangement for the clinician, who is saved the necessity of seeking the significant facts among a mass of technical detail, and increases the value of the book as a work of reference. The volume is completed by a bibliography of modern writings on the cerebro-spinal fluid. This is a book which should find favour with a wide circle of both practitioners and students as an authoritative and practical guide to an important subject.

NOTES ON BOOKS

A NEW number of *Brain* dated June has just been issued. It contains a series of papers which will appeal to the professional neurologist more than to the general medical reader. The opening paper is by Dr J P Martin, who apologizes for introducing a new name, amyotrophic meningo myelitis, on the ground that it is reasonably descriptive of the pathological process with which he deals. This is followed by an elaborate study of the histology of juvenile amaurotic idiocy, by Drs J G Greenfield and Gordon Holmes, it is founded upon work done in the pathological laboratory of the National Hospital for the Paralysed and Epileptic, London. Dr Arthur F Hurst has a paper on the pathogenesis of subacute combined degeneration of the spinal cord, with special reference to its connexion with Addison's anaemia, achlorhydria, and intestinal infection, a subject of which he gave some account in a lecture published in our issue of January 19th, 1924 (p. 93). Dr Otto Sittig of Prague contributes a clinical study of sensory Jacksonian fits, among which he distinguishes several classes. Mr Percy Sargent relates four cases of haemangioma of the pia mater causing compression paraplegia, and adds a report of an example of arterial angioma, a very rare condition.

Sir W M BAYLISS has completed the work of revision of the fifth edition of his monograph, *The Nature of Enzyme Action*,⁴ before the onset of his fatal illness in 1923. The volume has been passed through the press by his son, but no attempt has been made to add to the work by including the advances made in the subject during the past two years. The fourth edition of this work appeared in 1919, and no extensive alterations have been made in the present volume. The monograph is so well known to students of biochemistry that it is unnecessary to describe it at length. It gives an excellent introduction to a subject of great difficulty, and in particular explains very clearly the mathematical laws that have been established in the case of enzyme action. Sir William Bayliss undoubtedly had a peculiar talent for explaining highly complex phenomena in the simplest manner possible, and in this book he showed this gift to a remarkable degree.

The latest of the series of small volumes on the history of science edited by Dr Charles Singer is a book written by J W N SULLIVAN entitled *The History of Mathematics in Europe*.⁵ It is a very interesting account of the development of this science from its first beginnings in Europe down to the invention of the differential and integral calculus a story which the unmathematically minded will enjoy almost as much as the wranglers. Nowadays the mathematician is held in general esteem by his fellows, and he has enjoyed similar respect in the past, a mysterious benevolence which

Mr Sullivan finds difficult to explain. The brief biographies of eminent mathematicians the book contains serve only to increase this esteem, for they reveal the great difficulties the early pioneers had to overcome.

The chief addition made to Mr BERTRAM KERSHAW'S book *Sewage Purification and Disposal*⁶ in its second edition is that it now contains a much fuller account of the activated sludge process of sewage treatment. This and the subject of sludge digestion form the main substance of the ninth chapter. For the benefit of those unfamiliar with the first edition we may add that Mr Kershaw has been for many years the engineer to the Sewage Disposal Commission, that he has had exceptional opportunities for investigating various sewage treatment processes, and that his volume is recognized to be an authoritative textbook on its subject.

Two French authors, Dr JACQUES PARISOT and Dr PIERRE SIMONIN, have written a book⁷ on vaccine therapy in which they describe the methods of preparation of vaccines and the different diseases in which vaccine therapy is likely to be beneficial. It is divided into three parts: the first discusses the theoretical basis of vaccine treatment, the second the actual technique of vaccine therapy, and the third the practical applications of vaccine therapy and the results to be expected. It is a sober account of a subject about which extreme views are frequently expressed. On the one hand the authors for the most part avoid extravagant claims for vaccines, and on the other they are not so foolish as to deny the existence of benefits which fail to secure the support of current theories of immunity. It would have been more easy for the reader to find his way about if the book had been provided with an index.

London has been truly as well as wittily called a province of houses. Most of its inhabitants know very little beyond their road from home to business and what bus to take to popular places of amusement, a few, perseveringly walking home by devious paths, or by deliberate exploration, gain an acquaintance with a district, possibly a square mile or so. Then there are the suburbs and semi-suburbs, unattractive to the walker for pleasure, who prefers to take a train to carry him further afield. A map on a scale sufficiently large to be useful fills too large a sheet to be manageable. What is wanted is an atlas giving a section on each page and provided with a good index. Several map publishing firms have sought to meet this need, and Messrs John Bartholomew and Son, Ltd (Geographical Institute, Edinburgh), have just issued a fifth edition (price 6s net) of their *Handy Reference Atlas of London and Suburbs*. We have tested the index for several rather out of the way streets and have only found it fail once.

¹ *Sewage Purification and Disposal*. By G Bertram Kershaw. M Inst C E Second edition. Cambridge: Public Health University Press, 1925. (Demy 8vo pp. v + 355, 8s 6d.)

² *Les Vaccins et la Pratique de la* Parisot et Pierre Simonin. Paris: A. N. pp. 322. 8 figures. 2 plates. Fr. 16.

PREPARATIONS AND APPLIANCES

Jecomalt

JECOMALT is a preparation of cod liver oil and malt extract prepared by Messrs A Wander Ltd (King's Langley, Hertfordshire). The manufacturers state that it contains 30 per cent of cod liver oil. Jecomalt is a dry powder free from any odour or taste of cod liver oil and has a very palatable flavour. Messrs Wander report extensive laboratory and clinical experiments which seem to show that Jecomalt contains a satisfactory content of vitamins A and B and the antirachitic factor. Jecomalt appears to be a palatable substitute for cod liver oil and the presence of the malt extract increases the nutritive value of the compound and also gives it a high content of the water soluble vitamin B.

Digitalis Leaf

'Tabloid Digitalis Leaf gr. 1 is a preparation by Messrs Burroughs Wellcome and Co (Snow Hill Buildings, London, E.C.1) which should prove a great convenience to many practitioners. Tincture of digitalis is the favourite preparation of digitalis in this country, but many Continental and American workers claim that the powdered digitalis leaf is a superior preparation. Unfortunately the activity of powdered digitalis leaf varies with a number of factors, such as the variety of seed and the methods employed in collection and drying. The preparation of Messrs Burroughs Wellcome and Co is made from digitalis leaves grown, collected, and dried under standard conditions, and furthermore the finished product is physiologically standardized. Thus the same accuracy of dosage can be attained with these tabloids as with tincture of digitalis, and the tabloids have great advantages in convenience of use and in keeping properties. An estimation of the activity of the preparation by the frog method showed that one tabloid (1 grain) was equivalent in activity to 11 minims of standard tincture of digitalis.

⁴ London: Macmillan and Co. New York: The Macmillan Company. (Price 5s yearly subscription 25s net.)

⁵ *The Nature of Enzyme Action*. By Sir W M Bayliss, M.A., D.Sc. F.R.S. Fifth edition. Monographs on Biochemistry. London: Longman Green and Co. 1925. (Net 8s 6d pp. 200. 9 figures. 9 net.)

⁶ *The History of Mathematics in Europe*. By J W N Sullivan. Chapters in the History of Science—IV. London: H. Milford, Oxford University Press. 1925. (Cr. 8vo pp. 103. 17 illustrations. 2s 6d net.)

British Medical Journal.

SATURDAY, AUGUST 15th, 1925

THE IDEAL GERMAN

DURING the war there was an uneasy feeling in this country that all was not well with our manhood but so far as we could learn then Germany was satisfied that all was well with hers. And now nearly seven years after victory came on war we seem to have exchanged places while we have apparently resigned ourselves to that part of our population which was relegated to the lowest grades in war time, Germany has become concerned about the racial constitution of her people. Thus, at least seems the just interpretation to place on the fact that a work on the racial nature of the German people written by Dr Hans F R Gunther,¹ is meeting with a remarkable demand in the Fatherland. The first edition was published in Munich in the summer of 1922, in less than a year it had passed into a third edition. It is true that Dr Gunther writes with remarkable force and clarity—he knows how to break the dry bread of anthropology for a popular appetite, but these merits alone will not explain the success of his book. It is to be found in the remarkable gospel which he wishes to instil into the uneasy mind of Germany.

Here Gunther has discovered what is wrong with Germany. All her present misfortunes, he asserts, spring from the bastardization of her blood. She has become "denordized", this calamity overtook her in the nineteenth century when she was so satisfied with her worldly progress. It was then that the true blood of the Nord—the fair haired, blue eyed German of the time of Treitsch—became mixed and ruined by the blood of a stock which penetrated Germany from the East. Of this Eastern blood—most students of human races would call it Alpine or Slavonic—Dr Gunther speaks in the most uncomplimentary manner. It has ruined Germany, it has rounded her heads, darkened her hair, blunted her noses, shortened her faces, thickened her necks, destroyed the athletic and classic lines of her figure, and, what is worse, destroyed the German soul. For the Nordic man, the original German, was the soul of honour and of courage, he glowed with his ideals and enthusiasms, he was supreme in leadership, art, and invention. Whereas this Eastern stock, with its round heads, dark hair, wide and flattened visage—of ultimate Asiatic origin—has a soul that cannot rise above its native parish, destitute of all generous impulses, thinking only of its money bags, it is the stuff out of which cowardice and Bolshevism grow. This is Dr Gunther's diagnosis, and, like a confident and practical physician, he has a definite cure to offer. Germany spent the nineteenth century in becoming "Asiaticized" she must make every endeavour in the twentieth century to regain her original heritage of Nordic blood.

Dr Gunther is confident that this miracle can be accomplished, if only those Germans who have the fortune to retain Nordic qualities will remember their responsibilities and choose mates who will give the Fatherland children of the olden stock. Women with Nordic qualities, who have been said sinners in past times, must do their duty

to the full. The war has hit the Nordic element hard, only life is against it, modern industrialism bears unkindly on it, America has sinned the Nordic cream off the German milk, alcohol, venereal disease, and the wiles of women of Eastern origin threaten the Nord with extinction in Germany. All of these mortal influences can be altered so Dr Gunther believes, if only Germans of true Nordic descent will take thought. They must dedicate themselves for purposes of propagation, they must be regarded by the general population as a special and honoured caste. He evidently believes that the huge element of the population which has inherited Eastern traits of body and mind will acquiesce in such a scheme, because it is one which will bring salvation to the Fatherland. It is to be feared that Love, which laughs at locksmiths, will refuse to alter its smile at the behest of our modern eugenicists.

According to Dr Gunther, the population of Britain is in just as parlous a position as that of Germany. He asks his readers to accept without question the modern doctrine that German and British peoples have been compounded out of four racial elements. He believes—and in this he is probably right—that the Nord forms the basis of both populations, he estimates that in Germany as in Britain, 60 per cent of the total blood is Nordic, but this blood is pure and uncontaminated, so far as concerns Germany, in only 6 or 8 per cent of her population. As to how many pure Nords there are in Britain he hazards no guess, but if we accept his criteria of the type we may lay the flattering unction to our souls that pure Nords are six or eight times as frequent as in Germany. The despised Eastern blood mixes up so Dr Gunther has estimated, 20 per cent of the total blood in German veins, but pure representatives of the Eastern stock make up only about 2 per cent of the population. In Britain we have, according to Dr Gunther, 15 per cent of Eastern blood, this estimate will cause anthropologists on this side of the North Sea some degree of surprise. We differ from Germans—still following Dr Gunther—in what he calls the

"Western" or Mediterranean element. He believes that we have drawn 15 per cent of our blood from the native stock of Mediterranean lands, whereas Germany is indebted for only 2 per cent, but as our author has no high opinion of the Mediterranean stock this is no great gain to us. As regards the fourth element of our racial constitution—the Danube element—the positions are reversed. This element finds its purest representation in the round headed, long faced, big nosed strong chinmed, and tall men of the Tyrol, they almost rival, in gifts of mind and virtues of soul, so Herr Gunther declares, the noble Nord, the German of ancient times. Germany in this respect seems to come off best, for she is said to be as rich in Danube blood as we are in that rather inferior article Mediterranean blood.

In Dr Gunther's pages the whole problem of racial analysis seems so interesting and so simple, his descriptions of the types are so clear and detailed that we are surprised to find, when we pass into the highways and byways and meet our fellow men and women, that it is so difficult to arrive at a satisfactory racial diagnosis of the individuals we meet. Theory and fact seem constantly at war. Fortunately, however, Dr Gunther gives his readers numerous photographs of his types. The essential Nord is to be recognized, not by the colour of his hair or the shape of his head, but by the form of his face and, of course, by his mental qualities. Men who have the facial lineaments of the

¹ *Rassenkunde des deutschen Volkes* von Dr Hans F R Gunther. Dritte umgearbeitete Auflage. Munich J F Lehmann 1923 (Med Bro pp 513 14 plate, 537 figures Paper cover 9s bound 11s)

gent Julius Cæsar is declared to be Nordic, Luden doff is a representative specimen, Viscount Grey is also one, save that his forehead is somewhat wide. We are somewhat taken aback when we find Thackeray, Oliver Goldsmith, Thomas Hardy, and Arthur Conan Doyle cited as representative specimens of the Eastern or Asiatic stock, we find them placed in this category because their faces are wide and somewhat short, also because their noses are undistinguished. Were we to accept such features as criteria of the Eastern stock, we must throw overboard much of our present anthropological cargo. When we find Helmholz dissected into Eastern and Nordic components, a suspicion of hydrocephalus being added to the diagnosis, we begin to wonder whether our author's racial standard is not somewhat arbitrary, when we find classified as Eastern Nordics such men as Ibsen, Poincaré, Luther, Beethoven, Schumann, Schubert, and Schopenhauer, we begin to realize that the Eastern blood is more potent than Dr. Günther thinks. Nietzsche is said to have been Danish Nordic, and yet to the unsophisticated ethnologist his features speak strongly of a pure Slavonic origin.

Dr. Günther's book belongs to political rather than to scientific literature, yet it is very interesting, and will stimulate further observation and thinking. He makes a move in the right direction when he refuses to recognize shape of head as the final criterion of race. He is probably altogether wrong when he supposes that the round heads of Western Europe are any more Asiatic in origin than the long heads. He is probably altogether wrong, too, when he supposes that the spirit of a nation—its moral and political behaviour—depends on its racial constitution. The Norseman of to-day, the modern Spaniard, the valley dwellers of the Tyrol, the Slavonic dwellers or the plains of Poland—representatives of Dr. Günther's four racial components of European nationalities—are all swayed by the herd instinct, they could not live in communities unless they were all of them liable to that psychological state spoken of as swollen head. All modern experience goes to show that such swelling is due less to racial heredity than to national environment—the environment created by professors, preachers, and press. Germany herself is a standing instance of the truth of this statement. The nationalities which made up the German Empire suffered no radical change during the nineteenth century, yet the national spirit became transformed in that space of time. All her racial constituents seemed then to have become slaves to the *Zeitgeist* to an equal degree. Indeed, if Dr. Günther is right in attributing the supreme form of doing and doing to men of the old German or Nordic breed, then they were probably the inglanders in what proved a debacle for the Fatherland. A close study of this book will convince most men that it is dangerous—it has always been hazardous—to yoke anthropological doctrines to national policies. Anthropology may prove a helpful handmaid to the statesman, but much has to be done before she can be accepted as a mistress.

ADDITIONAL BEDS FOR VOLUNTARY HOSPITALS

THE Voluntary Hospitals Commission has now presented its report, and a review of it is published in this issue (p. 304) on the instruction it received from the Minister of Health in April, 1924, to inquire into and report upon the extent of the additional voluntary

hospital accommodation required in England and Wales and the best means of providing and maintaining it. The Commission directed its inquiry "to a consideration of what extensions could be regarded as immediately necessary and capable of accomplishment within a reasonable period," and in thus taking short views in politics it has reaped the advantage of being able to avoid the discussion of many thorny problems which have made heavy demands upon the energies of those, including the British Medical Association, who have attempted to explore the fundamental questions of hospital service. The answers of the Commission to the three branches of its inquiry may be shortly stated to be that the extent of additional accommodation now required in England and Wales is approximately 10,000 beds, to provide it a Treasury grant of £2,000,000, equal to half the capital cost of these beds, is necessary, the other half to be provided from local sources, the local voluntary resources will we are assured, be able to maintain the beds so provided.

The statement that the available hospital accommodation is about 33 per cent short of the present public needs is likely to be generally accepted, and in proportion to this great total of 10,000 beds the various suggestions which have been put forward of saving in detail by co-ordination of hospitals which have vacant beds with those having long waiting lists and in other ways fall out as factors in the solution of the main problem, though each may find an appropriate sphere of influence in lightening the burden of future maintenance. To get 10,000 beds within a reasonable time needs the capital provision of about £5,000,000 within the next few years. Many will probably agree with the Commission that to secure this capital a substantial contribution from public resources is required and some may even think the suggested grant of £2,000,000, in comparison with other operations of the Treasury, a light burden. On these points the decision must be taken on grounds of public rather than of medical policy. It is important to realize that in the opinion of the Local Voluntary Hospital Committees there are local resources capable of bearing an equal or even greater burden, not only in providing a large share of the original capital, but in undertaking the task of future maintenance without having to make a recurring appeal for assistance from Government. If this opinion is well founded, the voluntary system can be regarded as a safe and competent factor in meeting the present needs of the community.

On the questions relating to the future maintenance of the voluntary hospitals, the Commission may have heard much but it has said very little. The establishment of a system of local bodies to afford centres for co-operation in the activities of the voluntary hospitals it regards as a measure the wisdom of which has been proved by experience, and it affirms that as these bodies will in future have to undertake new duties and heavier responsibilities, they will need some measure of reconstitution. It seems to favour the plan of evolution along local lines but states that the direct representatives of the hospitals should not be in a majority, and that a strong independent element has proved valuable and should be maintained. This is a matter to which the British Medical Association has given attention, and a full statement of its conclusions will be found in its *Policy affecting Hospitals*,¹ where it will be seen that the problems with which these local bodies will be called upon to deal go deep into the fundamental interests of both the

¹ *Policy affecting Hospitals* (London: British Medical Association Press, 1924).

citizen and the doctor, and that if the members of the Association are to take their full share in securing prudence in local hospital policy it is necessary to be ready soon and to put their own machinery in an efficient condition

THE HEALTH OF LONDON IN 1924

The most fervent advocate of public economy could not say that the 124 pages of Sir William Hamer's report for the year 1924¹ are too many to devote to the medico-statistical and epidemiological experience of a population of four and a half millions, and some readers will think them too few. The discussion of the epidemiology of typhoid fever, particularly the evidence against smallpox, needed fuller statement to carry conviction, while the suggestive essay on influenza and the influenzal group of diseases is certainly not too long. But it is undoubtedly better literary art to leave the reader wishing for more, and that sensation is usually excited by the reports on London.

The rate of mortality in 1924 was 12.2 per mille of the civil population—higher than that of 1923 (11.4 per 1,000), but lower than the rate of 1922, which was 13.5 per 1,000. The rate in 1923 was the lowest ever recorded, and the increase in 1924 was mainly due to greater mortality amongst children under 5 years of age caused by measles, there was also some increase in deaths at ages over 45 largely due to influenza. Neither tuberculosis nor cancer was appreciably more fatal. Deaths from the former showed an increase of only 35 (deaths in 1923—all forms of tuberculosis—5,285, in 1924, 5,320), deaths from the latter increased from 6,346 to 6,483. The increase in the number of deaths due to cancer (137) is three short of the increase in the number caused by vehicles and horses, which rose to 593 from 453—a percentage increase of 30.9, or of 30.3 if allowance is made for the fact that there was an extra week in the registration year 1924. The percentage increase of mortality from cancer was 2.2. Journalists who dwell upon the alarming increase of cancer might meditate upon the contrast. It is indeed, an interesting psychological question what level an increasing rate of mortality must attain before it is a serious factor in promoting reform. In Great Britain in 1924 motor vehicles caused on the average slightly more than 8 deaths a day, an increase of 24 per cent above the figure for 1923. In the United States of America the average daily tribute to the god of the car was 52 deaths, an increase of 4 per cent over the 1923 quota. The latter is a good deal higher, proportionally, than the British rate. In the city of Baltimore, with a population of less than one-sixth that of London, there were 161 fatal accidents due to vehicles in 1920—more than a third as many as in London in 1924. In Baltimore between 1900 and 1920 the rate increased by 55 per cent. The explanation is, of course, the immense increase in the use of motor propelled vehicles, and it would seem a reasonably safe statistical prediction that the London deaths will increase to about the Baltimore standard—say, to 950 annual deaths within a few years—unless some very special measures are taken.

Of the major infectious diseases, smallpox although only four notified and one unnotified cases occurred among the resident population, deserves mention in the first place. Nobody would describe Sir William

Hamer as a scaremonger, but the facts move him to remark: "Having regard to the special position of London, and the fact that sea-borne traffic is plying daily to and fro between its docks and small-pox infected countries, the need for constant vigilance is apparent, particularly as the surest protection against small-pox is gradually being stripped of its influence by the increasing unwillingness of the population to undergo vaccination and revaccination. If the decline in vaccination continues it is possible that the time is not far distant when a serious epidemic can no longer be prevented. A very practical illustration is provided by the circumstances of one of the notified cases. This concerned a man of 54 associated with a group of cases, three fatal in an extrametropolitan district, all the victims were infected by a person whose condition was not diagnosed."

The future of smallpox in this country should afford the epidemiologist most interesting material, and it will no doubt be unspeakably gratifying to the victims that, to quote Mr. Bernard Shaw, nobody sent the police to force their parents to have the most villainous racial poison we know thrust into their veins. Perhaps however, Nature will treat us more kindly than we deserve in that the change of type may not be sudden, as was the case with scarlet fever many years ago but gradual. If there is a gradual change, deaths creeping up from units to tens and then to hundreds, resort to vaccination will gradually become more frequent, a vast majority of the unvaccinated care nothing about the matter one way or the other, and are susceptible to example. The one danger against which we are utterly powerless is a sudden change of type, wide epidemicity, and high fatality.

Both scarlet fever and diphtheria were more prevalent in London in 1924 than in the previous year—1,563 more cases of scarlet fever and 383 more cases of diphtheria. Sir William Hamer devotes some suggestive pages to the general epidemiology of these diseases, and two of his conclusions are noteworthy. The first is 'that the tendency must be recognized, when sufficiently large populations are passed under review, for epidemics of throat disease to occur in major waves at intervals of some thirty years and for the types of disease exhibited at various stages of these epidemic waves to manifest varying phases'. The second is 'that study of any special preventive or prophylactic measures against diphtheria or scarlet fever in a particular town or tract of country, during any year or series of years, needs to be very carefully conducted and that, while closely scrutinizing what actually happens, a critical eye should ever be kept upon what might have been expected to have happened independently of the special preventive measures newly applied'.

In the section of the report dealing with the school population, anthropometric data are given which suggest that there has been some improvement of physique. "That the height attained by a given generation can be affected by the conditions under which childhood is passed is, Sir William Hamer writes, 'well known to physicians. The condition known as rickets profoundly modifies growth, and when widely prevalent this disease undoubtedly leads to much dwarfing. As all are agreed that rickets is much less prevalent now in London than it was it would not be surprising to find an improvement in the height of the children affecting the eight-year-old children, rather more than the twelve-year-old children, owing to this factor alone.' There was again a slight increase in the percentage of children classed as below normal in nutrition. Some 12,000

¹ London County Council—Annual Report of the Council 1924. Chapters XIII and XIV (Reports for the year 1924 of the County Medical Officer of Health and School Medical Officers).

children were so described—6·2 per cent of the school population, the percentage in 1923 was 5·9, in 1922 it was 5·7, but in the year before the war it was 12·8. Having regard to the economic position the deterioration is not remarkable, indeed, "looking at the comparison of the figures during the past year with those of the pre-war period, it is clear that but for the ameliorative efforts at work the condition of the children in this respect must have been far worse than, in effect, it is."

Upon that hopeful note we may conclude this brief notice of a most valuable public document. There is not much likelihood of any student of the newspapers taking an unduly optimistic view of our national position, it is well to realize that the children are now better cared for than in what some regard as a vanished golden age.

THE GENESIS OF A CRIPPLES HOSPITAL

The Story of Baschurch Miss Agnes Hunt tells with much quiet humour, which masks but does not hide her deep feeling, how the Baschurch Cripples' Hospital came to exist, what were its early difficulties, and how it has grown into the Shropshire Orthopaedic Hospital at Oswestry with 320 beds. Miss Hunt writes impersonally and tells the doings of the superintendents, but nowhere does she even hint that she herself was one of them, and the very soul of the whole undertaking. But this fact has now become so well known that any attempt to respect her anonymity would be futile, seeing that in the next article in this pamphlet the cat is expelled from the bag by Sir Robert Jones, who very properly pays the highest tribute to her achievements. The Baschurch Convalescent Home, as it was at first called, was started with eight patients in 1900, and it is interesting to note that these were treated at first indoors, and that the addition of open-air sheds was made as a cheap and expeditious method of increasing the accommodation, and apparently not as the result of any deliberate consideration of what had already been done elsewhere in the open-air treatment of surgical tuberculosis. Yet the erection of these sheds, built with materials pilloined by Miss Hunt from her brother's stables, was the beginning of the work which rendered Baschurch famous throughout the surgical world. Unfortunately for Miss Hunt, but fortunately for the cripples, she herself became lame, this misfortune brought her into contact with Sir (then Mr.) Robert Jones, and she started the home in a large old-fashioned farmhouse at Baschurch in Shropshire. At first Miss Hunt took the cases to Liverpool by train and endeavoured to be seen, and if necessary operated upon, by Sir Robert Jones, but in 1904, when he became surgeon to the home, now a hospital, he visited at regular intervals, performing operations—at first in a very makeshift theatre—and prescribing treatment. Miss Hunt was quick to take hints and to learn the principles of orthopaedic surgery, and because so expert that it would hardly be too much to say that she was univalled in the application and care of splints and plaster-of-Paris, and no mean diagnostician in cases of deformity. As Baschurch became known the number of cases seeking admission increased, and, despite lack of funds, the hospital was enlarged again and again, until, in 1914, it held 150 patients. During the war it became No. 14 V.A.D. auxiliary hospital, and, despite the rigours of the War Office, which are described with the unfading humour which seems to have supported the superintendents in many emergencies, it was able to do good work. In Sir Robert Jones's contribution he describes his first meeting with

Miss Hunt, then herself on crutches, but in charge of six children lying upon a railway truck. He pays a well deserved tribute to her foresight, courage, and ability, which have enabled her to render such great services to humanity. For not only is she to be credited with showing that the open-air treatment of children suffering from tuberculous disease of bones and joints is practicable on a large scale in this country, but to her is due the idea of local clinics, where relapses are prevented and early diagnosis made of crippling diseases, thus by early initiation of treatment shortening its duration. Early in the history of Baschurch Miss Hunt foresaw that the success of the scheme would largely depend upon the supply of an adequate number of properly trained nurses and sisters, and she and her coadjutors began to train probationers in the methods and preparation and uses of appliances which had been successful there. The nurses and massenses trained at Baschurch have since been in great request as the scheme for the cure and cure of cripples has developed. As is well known, the county organization first established in Shropshire is being repeated in other parts of England, and we are justified in hoping that in the near future the care and cure of all cripples will be provided for throughout this country. The qualities which made Baschurch possible to a master spirit are a fresh mind that looked on things in an unconventional way, and a will to which what seemed impossibilities were only difficulties to be surmounted. Miss Hunt was fortunate in her co-workers, to the memory of one of whom—co-superintendent and co-founder, Miss Selma Goodford—she pays an eloquent tribute. Miss Goodford died in 1920, and in memory of her a chapel has been erected at the new hospital at Park

THE REGISTRAR GENERAL'S ANNUAL REPORTS

EDWIN CHADWICK (whose biography is reviewed at page 295) performed one of the most notable services in his notable career when he succeeded in getting the Government of the day to establish by statute the office of Registrar-General, with all its duties of recording and publishing the vital statistics of England and Wales. Also he was most fortunate in achieving the appointment, in 1838, of Dr. William Farr as the medical statistician of the new office. Service was thereby done, not only to England, but to the world, which has, each nation in its own way, adopted and followed more or less closely the example set by Dr. Farr. But with passing time the amount of material requiring to be set forth and elaborated in detail by Farr's successors has so greatly increased that the huge foolscap volume, issued for a number of years, was apt to be viewed with dismay or even repulsion by any but the most enthusiastic student. In recent years the scheme of publication has been changed, and the reports have been replaced by three smaller separate volumes of octavo size, the whole being entitled "The Registrar-General's Statistical Review." One of these relates to civil and social conditions which are not in question here, for only the other two are usually needed for medical statistical purposes. But even these are costly to produce, and the price of £1 hitherto jointly charged for the two has tended to limit their circulation and so restrict their usefulness, at the same time that their production has involved a heavy outlay. Every contributor to medical literature knows the comparatively high cost of a limited number of reprints—or offprints, as is perhaps the more strictly proper term—and how much the printer's price per copy is diminished when a larger number is required. Influenced by such considerations, and at the same time impressed by the urgent need for public economy, the Minister of Health has now submitted a proposition towards the adoption of which he requires and requests the co-operation of all concerned—public health authorities,

¹ *The Story of Baschurch* By A. G. Hunt. With contributions by Sir Robert Jones and other Oswestry. Caxton Press. Price 6d.

bords of guardians, Insurance Committees, and whoever else may find value in the possession of these volumes prepared by the Registrar-General. As mentioned briefly in our last issue, the proposition is that the combined price of the two shall be reduced from 20s to 12s 6d annually if a subscription order for the next five years is given by such a number of public bodies or individuals as will make the project financially feasible. In circulars explaining the scheme it is pointed out to public health authorities that they may legitimately out of their funds provide the volumes for their medical officers, and that would be true also in the case of the other classes concerned. The scheme, it seems to us, cannot fail to command hearty approval. No municipal library, no library of any institution or organization relating to health and disease, can be elementarily complete without having these works on its shelves. Nobody would want to read right through the hook of tables any more than he would want to read right through a dictionary. But everyone needs a dictionary for reference, and every committee and every official dealing with any section of health administration ought to have immediately available the Registrar-General's volumes both of tables and text. Emulation is the soul of progress. Health rivalry is healthy for the localities which engage in it. Each authority wants to know how its birth rate and infantile and all-age death rates compare, not only with those of England as a whole, but with those of other areas, both similar and dissimilar in the conditions presumably influencing local health. This applies not merely to comparison of age period with age period but of disease with disease, whether infectious or non-infectious. It applies also to comparison of successive periods of time, year with year, decade with decade. These are mere truisms and need not be multiplied, indeed they hardly require statement, but possession of the Registrar-General's publications is at the basis of them all, and every health officer should settle down once in a while to dip into and study one part or another of the immense mass of material contained in these reports. They will be found rich in suggestion as regards many a problem affecting his preventive work. It is true that to do justice to such study he requires intervals of leisure from the multitudinous duties, old and new, imposed on him by statute and regulations, but it is not good for him to occupy more than a reasonable portion of his time with child welfare, maternity welfare, school medical inspection, venereal disease clinics, and other such duties, notwithstanding the importance of each and all of them. And when he does chance to have a free interval he might well devote it sometimes to browsing quietly in the field of problems provided by the publications periodically sent out from Somerset House. The undertaking to subscribe for the two volumes for five years at 12s 6d a year should be sent to the Registrar-General, Somerset House, London, W C 2. If the special terms are confirmed they will apply to the 1924 edition now in the press.

PILLS, POLITICS AND RELIGION

To those who in these days feel an inclination to disturb the clean-cut outline of medicine as a positive science and merge it with the supernatural, we commend the study of the native medico-religious systems of India. In that country medicine is based on religious doctrine, and is part and parcel of a complicated philosophical theory. The inconveniences of the combination are notorious, and the despair of medical reformers, innovations and improvements are liable to be regarded as unorthodox, and are tested in the light of antiquated dogmas dating back thousands of years, new facts and new ideas collide with religious convictions, and progress is blocked. Let us, in this country, keep our science positive and its sphere well defined. There is, indeed, little fear of our falling into such a slough. Despond is exhibited by Indian medical matters, but we

do well to remember that a little leaven leaveneth the whole lump. It appears that Indian medicine is also plagued with the contamination of political propaganda, an ailment of which may be obtained from the following quotation from an advertisement of Ayurvedic drugs. The advertisement is that of an evidently reputable firm of Swadeshi pharmacists, and is printed on the blank sheet of the prospectus of a State lottery. Tea, which is stated to cure all troubles of the stomach and lungs, heads the list of important drugs, and a stirring appeal is made to the patriotic instincts of Indians on this subject. "We strongly recommend everybody to use our Swadeshi Ayurvedic tea" (prepared, it is stated, in accordance with the precepts of the holy books) "in the interest of our country and countrymen. Our tea will save you from the habit of the foreign injurious tea." "Foreign tea is produced by our own countrymen working as labourers whose heart-rending sufferings are worldwide known. If you are a true Indian, you must at once relinquish that poisonous and unholy tea to achieve our countrymen from slavery." The religious element is also clearly discernible in this effort to promote the buoyancy of the drug market by linking it up with the present political unrest. We have nothing to say against the religious convictions of the Indians, we merely draw attention to the undesirable mixture of medicine and metaphysics, to say nothing of political propaganda. Ayurvedic itself is an interesting study abounding in quaint details, as witness the following from the same source as the preceding quotation. "Gonorhoea Churan—Excellent for every kind of Gonorhoea and gives coolness to a burning heat." The latter expression evidently refers to a painful sense of remorse that follows the perpetration of a wicked deed, and is perhaps borrowed from the New Testament—"did not our heart burn within us?" With all its faults there is a quaintness about the Ayurvedic philosophy which renders it strangely attractive.

ANIMAL EXPERIMENTS IN 1924

THE annual report for 1924 of the inspector, Dr J A Giles, under the Act for regulating experiments on living animals has been issued. It is founded on three tables—one showing the number of registered places, the second a number of licensees, and the third the number of experiments performed. Twenty-six new places were registered and four places were removed from the list. Licensees are restricted to the place or places specified on their licenses, with the exception that permission may be given for the performance in other places of inoculation experiments with the object of studying outbreaks of disease occurring in remote districts, or in circumstances which render it impracticable to perform the experiments in a "registered place." The total number of licensees was 1,042, but only 803 performed experiments. The experiments fall broadly into two classes. Of 8,053 experiments comprising all those in which any serious operation was involved, 4,324 were performed under the provision of the Act directing that the animal must be kept under an anaesthetic during the whole of the experiment, and must, if pain is likely to be felt after the effect of the anaesthetic has ceased, or if any serious injury is inflicted on the animal, be killed before it recovers from the effects of the anaesthetic. In the experiments in which the initial operations are performed under anaesthetics but the animals are allowed to recover, the operations are required to be performed antiseptically, if the antiseptic precautions fail and suppuration occurs the animal must be killed. It is pointed out that experiments involving the removal of important organs, including operations of the brain, may be performed without giving rise to pain after the recovery from the operation, and that after the section of a part of the nervous system the resulting degenerative changes are painless. Exception is made in a few cases, such as experi-

ments which deal with the efficiency of antiseptics. Experiments performed without anaesthetics (which numbered 168,653) were mostly inoculations, but some were feeding experiments, or the administration of various substances by the mouth or by inhalation, or by external application, or the abstraction of blood by puncture or simple venesection. A certificate is required, not for the inoculation, or injections, or venesection, but to permit the subsequent course of the experiments, which lasts during the whole time from the administration of the drug or injection until the animal recovers from the effects, if any, or dies, or is killed—a period possibly extending for several days or weeks. To administer to an animal diphtheria toxin, or to induce such a disease as tuberculosis, though not accompanied by acute suffering, is held to be a proceeding calculated to give pain, and therefore such experiments come within the scope of the Act. It is noted that in a large number of the experiments performed the results were negative. The returns show that during 1924 the number of experiments performed by twelve licensees in the course of cancer investigations was 8,083, of these, 7,754 were almost all inoculations into mice or exposure of animals to radiations. A large number of the experiments, almost entirely simple inoculations and similar proceedings, were performed either on behalf of official bodies, with a view to the preservation of the public health, or directly for the diagnosis and treatment of disease. Several county councils and municipal corporations have their own laboratories in which bacteriological investigations are carried on, including the necessary tests on living animals, and many others have arrangements by which similar observations are made on their behalf in the laboratories of universities, colleges, and other institutions. A sewage farm is registered as a place in which experiments on living animals may be performed in order that the character of the effluent may be tested by its effects on the health of fish. 198 licensees performed over 43,000 experiments for Government departments, county councils, municipal corporations, or other public health authorities, 44 licensees performed over 76,000 experiments for the preparation and testing of antitoxic serums and vaccines and for the testing and standardizing of drugs. The net result is that the total number of experiments in 1924 was 177,815, being 43,032 more than in 1923. The Home Secretary, under whose control the Act is administered, has an advisory committee, consisting of Viscount Cave (chairman), Sir John Rose Bradford, Sir Archibald Garrod, Sir W. B. Hardy, Sir D'Arcy Power, Sir Seymour Shirley, and Sir Charters Symonds.

THE PREVENTION OF RABIES

HISTORICALLY rabies was one of the earliest specific diseases to be known and described—Aristotle, Virgil, Horace, and Plutarch all mention it, yet we still know very little of its cause. Indeed, in recent years comparatively few advances have been made on the work of Pasteur and Roux. New methods of vaccination have been produced, however, and of late there has been a tendency to attack the disease from its origin in the dog. Diagnosis of the disease in the dog is still of first importance for both prophylaxis and treatment. Clinically many pseudo-rabid syndromes exist in that animal which render an exact diagnosis difficult. Changes in the ganglia are not always evident, and subdural inoculation of rabbits is slow in yielding results. The most reliable test is still the demonstration of Negri bodies in the brain, although Moore¹ believes that these sometimes escape detection. Rabies can be kept under control by quarantine regulations—as in this country—or by canine inoculation such as is now being practised in many countries abroad, including the United States and Japan. A vaccine, developed largely in the latter country, which appeared to give excellent

results, has been previously referred to,² but recently Mohler (of the American Bureau of Animal Industry) has asserted that while the vaccine gave protection against two strains of street-runs, it was ineffective against a third. The duration of the protection conferred has not yet been definitely ascertained—the Japanese do not put it beyond a year. Accordingly Moore recommends that until more definite information is available reliance must be placed in early diagnosis and enforcement of a proper quarantine. If rabies does appear vaccination should be adopted in addition to the quarantine, but though strongly recommended in this connexion it must still be regarded as a supplementary measure. Where rabies is enzootic the vaccine already elaborated should give considerable protection to the community. An effective diagnosis after a person has been bitten by a supposedly rabid dog is of great importance. Many people suffer unnecessary mental agony through a mistaken belief that they have been bitten by a rabid dog when some other non-infectious disease has been the cause of the symptoms in the animal. This applies even to this country, from which rabies is at the moment absent. As we have pointed out many times, it is a mistake immediately to destroy the animal, for the opportunity of making a satisfactory diagnosis is thus frequently lost. It is desirable to keep the animal alive—under proper conditions of confinement and supervision, of course—until the presence or absence of the virus can be definitely ascertained. While the incubation period in dogs is variable, sometimes exceeding six months, it is only infectious within a comparatively short time of the development of actual symptoms. Accordingly every animal biting a human being in countries where the disease exists should be kept under close confinement for at least a fortnight. Panisset and Verge³ have recently formulated a useful set of rules for the procedure to be adopted at the end of the fortnight: if, during the interval, the dog dies from any cause, is killed, or disappears, antirabic treatment should be given, if the animal is alive and shows symptoms of rabies or symptoms simulating rabies, treatment should be given, if, however, it is ill but with symptoms not simulating rabies, the observation period should be prolonged, while if it is alive and well no treatment is necessary. This set of instructions does not, of course, invalidate the golden rule—when in doubt give the patient antirabic treatment.

SCIENTIFIC RESEARCH WORKERS AND INDUSTRY

THE British Science Guild published a report in 1919 reviewing the position of industrial research, and showing how far this country was behind Germany and the United States in providing for scientific training in industrial research. It was felt that the adequate supply of highly trained scientific workers and technologists was a matter of the greatest urgency, since upon it depended the prosperity and safety of the country and the development of the natural resources of the Empire. The supply of scientific workers has since been greatly increased, but it now appears that there is increasing difficulty in obtaining employment for them. The results of an inquiry made into the present position with regard to the supply of trained workers and their utilization in industry has been embodied in a report published by the British Science Guild, at 6, John Street, Adelphi W.C.2. Medical research workers are not included in this report, as their position, it was considered, called for separate inquiry. Comparison of the year 1923-24 with the year 1913-14 shows that the number of full time students in science at the British universities has increased by 60 per cent, while the number of bachelor degrees in science has more than trebled. During the same period the number of full time post-graduate students

¹ Cornell Veterinarian 19-5 xv, pp 217-226

² BRITISH MEDICAL JOURNAL, December 6th, 1924 p 1062.

³ *Per Gen Med Vet* March 1925

engaged in scientific research has increased to over four times the figure for 1913-14. The inquiries show further that there is considerable unemployment among recently trained scientific research workers, especially in the case of research chemists. It is concluded that, though the value of scientific research to industry is well recognized, the part that industry itself can play in maintaining an adequate supply of research workers and in promoting scientific research is not so clearly understood. The demand for these workers should come from industry, either directly by the provision of posts on the research staffs of the great industrial enterprises and the industrial research associations, or, indirectly, by financial assistance from industry for experimental research. It is suggested that research workers might well be maintained in university laboratories or in special research and experimental stations to work on specific problems under the direction of an expert committee, and further, that a permanent staff of research fellows might be maintained in a special building, with fully equipped laboratories, their services being available for industrial firms which would pay the necessary expenses, and require, subject to an arrangement for royalties, the results of the investigations as their sole property. Such an organization would supplement the activities of the existing industrial research associations. A strong recommendation is made that an expert committee should be formed as an integral part of the department of scientific and industrial research, or as a separate entity, to examine inventions and to arrange for the commercial trial of those which were passed by the committee as being probable of industrial value.

THE ROCKEFELLER FOUNDATION IN 1924

DR GEORGE E. VINCENT, the President of the Rockefeller Foundation, gives his usual attractive review of this organization "for the well-being of mankind throughout the world." Its activities, which are wide, especially in America, Europe, and China, are graphically shown in a map. The directions in which assistance has been given during the year are tabulated under nineteen heads, of which the present effort is concentrated on public health and medical education. Before granting help to any existing institution the conditions are carefully studied at first hand by a representative of the Foundation, and it is qualitative advance in some special line of scientific, administrative, or educational direction, and not quantitative expansion of routine activities, that is taken into account. Selection is obviously needed, for during the year no fewer than 622 formal applications for aid were refused. While emphasizing the great value of the work of the general practitioner, it is pointed out that he must meet new conditions and take part in some measure of team work in the use of laboratories so as to become a practitioner of preventive medicine—in fact, a health counsellor. The International Health Board's campaign against hookworm disease which grew out of the original Rockefeller Sanitary Commission (1909) has now been extended to fifty-two countries in six continents and twenty-nine islands. Until 1924, when there was an outbreak of yellow fever in Salvador (seventy-five cases with twenty-two deaths), there had not in recent years been any cases in Central America; there are no carriers of the virus of yellow fever, as in the case of malaria and enteric fever, a survivor becomes free from the germs and is immune, the disease, it is believed, is kept going by cases in young children, in whom it is usually mild and often not recognized as such, these cases serving to infect the mosquitos. In order to facilitate the spread of medical knowledge among workers in various parts of the world the Rockefeller Foundation has pledged itself to provide 350,000 dollars for ten years to found and

maintain an international journal for abstracts of the biological sciences. Another new departure in this special direction—namely, the bulletins dealing with *Methods and Problems of Medical Education*—was started in September, 1924 (vide *BRITISH MEDICAL JOURNAL*, 1924, ii, 859), they come out, not at any specified time, but when suitable material becomes available. During 1924 some form of fellowship stipend was granted by the Rockefeller Foundation to 864 graduates of promise and young officials selected with the advice of Governments and university departments of thirty-three different countries. This review, which is well illustrated, fills the reader's mind with sincere admiration for the principles, policies, and work of this great Foundation.

TREATMENT OF TUBERCULOSIS IN POOR LAW INSTITUTIONS

FOLLOWING the reception of a report by medical officers of the Ministry of Health on the institutional treatment of tuberculous patients by boards of guardians, the Minister of Health has addressed a circular (607), together with a covering letter (607A) to these boards emphasizing the desirability of closer co-operation between them and those local authorities which are concerned with this form of treatment. The Minister considers that it is advantageous to appoint tuberculosis officers as consultants on the staffs of Poor Law institutions. Co-operation between the dispensary and the Poor Law services is thus facilitated, and the guardians obtain the benefit of the clinical services of a specialist who in many cases will have a personal knowledge of the previous medical history of the patient, and be responsible, as a rule, for the patient's supervision after discharge from the infirmary. It appears that some patients in an early stage of the disease are admitted to infirmaries, whereas they might preferably be treated in a residential institution by the local authority under its tuberculosis scheme. The Minister points out that it is desirable, therefore, that the medical officers of Poor Law institutions should, by consultation with tuberculosis officers, obtain adequate knowledge of other residential accommodation for such patients. In the opinion of the Minister of Health the provision of new accommodation for the institutional treatment of tuberculosis is a matter for the county and county borough councils, and that where boards of guardians propose to extend such accommodation as they have, they should in the first instance ascertain the views of the county or county borough council as to the need for such additional provision, and as to whether such additional provision should not be made by the council. A copy of this circular has also been sent to county councils, county borough councils, and joint committees for tuberculosis in England.

By an Order of the Privy Council dated July 31st, Sir Charles S. Sherrington, O.M., G.B.E., Sc.D., President of the Royal Society, Wavenslete Professor of Physiology in the University of Oxford, is appointed a member of the Medical Research Council from September 30th next. The vacancy is caused by the retirement of Dr. Henry Head, F.R.S., who leaves the Council under the provisions of the Royal Charter governing the rotation of membership.

CANDIDATES for the M.R.C.P. London may be glad to have their attention specially called to the alteration in By-law 112 approved at the meeting of the College on July 30th, as reported in our issue of August 8th (p. 276). The age for examination and for conferment of the diploma has now been reduced from 25 to 23 years. It may also be noted that a committee of the College has been for some time engaged in revising the by-laws and regulations relating to the examination for the Membership.

THE VOLUNTARY HOSPITALS COMMISSION.

REPORT ON ADDITIONAL ACCOMMODATION REQUIRED

MR WHEATLEY, as Minister of Health, on April 22nd, 1924, requested the then existing Voluntary Hospitals Commission to inquire into and to report upon "the extent of the additional voluntary hospital accommodation required in England and Wales and the best means of providing and maintaining it." The report, which has been presented to his successor, Mr Neville Chamberlain, is a relatively short document of twenty-four paragraphs, supplemented by two important appendices.

The Commission directed its inquiry to a consideration of what extensions could be regarded as immediately necessary and capable of accomplishment within a reasonable period. Owing to war conditions the hospitals had not expanded with the growth of population, but the improvement during the last two years is noted as evidence of the vitality of the voluntary system, though it is added that a large proportion of this activity has necessarily been put to the provision of further accommodation for nurses, and that this has checked further provision for patients.

Local Voluntary Hospital Committees

A paper of questions was issued to all voluntary hospitals through the Local Voluntary Hospital Committees, which were asked to collate the results and make recommendations, after taking into account the other facilities in their areas for the institutional treatment of disease. The reports confirmed the wisdom of setting up these local bodies, which afford centres for co-operation for the activities of the voluntary hospitals. In addition to these reports the Commission had reports on selected areas from officers placed at its disposal by the Ministry of Health, and through the British Medical Association further reports were obtained from the medical practitioners in selected areas.

Fluctuations in Demand for Beds

The report discusses a series of topics which have been under consideration either as evidence of deficiency of hospital accommodation or as suggestions for its alleviation. A waiting list, while it shows that a hospital is not meeting the demands of the area which it serves, does not quite simply measure the deficiency. The numbers are subject to accidental and seasonal variation and may include cases that are simply maturing, and on the other hand not show cases which doctors would like to send in, but do not register, because they regard the application as hopeless. Lists not frequently revised include persons who have secured treatment elsewhere or no longer need it.

Poor Law Infirmaries

The suggestion of co-operation with Poor Law infirmaries has not received much favour, especially in areas where schemes of mass contribution to the voluntary hospital exist, but some committees reported that vacant Poor Law beds could be used to reduce the pressure on voluntary hospitals if they were transferred to the local health authorities. The Commission states that full use of Poor Law beds could not be secured under present conditions, but also says that the number of vacant beds in this class of institution is much smaller than is commonly supposed. It seems that there must be two types of hospital in congruence with two types of care needed. One case needs special diagnostic facilities and highly specialized methods, the other needs mainly skilled nursing which cannot be provided at home. Between the two will be a field in which either type of hospital may find scope for service. It is in practice difficult to restrict a hospital to chronic cases alone without unduly limiting the activity of the medical and nursing staffs.

Public Health Authorities

In relation to the shifting line of responsibility between the general hospital and the public health authority, in which the actual point now lies in surgical tuberculosis, the report indicates that, apart from difficulties arising in the needs of medical education, the hospitals might gravely impair their field of appeal to the public if they should insist on the health authority taking over all the cases in which it may become statutorily interested. The Commission regards this as a matter suitable for negotiation between the hospitals and the health authorities, both local and central.

Transfers from one Hospital to Another

The suggestion that patients might be transferred from hospitals that are full to others which have empty beds is regarded as on the whole impracticable, in view of the very definite idea patients have as to the hospital to which they are willing to go. The fact that cottage hospitals, as a class, have a high proportion of empty beds evokes the note that it is desirable to discourage the multiplication of small hospitals which in equipment and staff are at a disadvantage compared with larger hospitals. The suggestion of grouping the smaller hospitals with a neighbouring large hospital for co-operation is met by an expression of a doubt as to the power of the medical staffs of the larger hospitals to cope with the widened field of work.

Convalescent and Recovery Homes

While it is held that the effect of the convalescent home is rather to extend the total period of institutional treatment than lessen the stay in the main hospital, the recovery home, which is a branch hospital under the control of the main hospital, from which patients can be transferred but remain under the care of the same medical staff, is considered by some as the best form of future development. The removal of cases to the recovery home soon after their need of the special facilities of the main hospital was over would, it is argued, make possible a more extensive use of these facilities, while the new beds would be provided on a site less costly than extension at the main hospital. The system is still in the experimental stage and has not been tested on a large scale. This part of the report closes with a reference to the possibility of economy by the co-ordination of the activities of the hospitals within an area. Some of the relative facts will be found in the appendices to the report, but no specific recommendations are made by the Commission.

Estimate of the Additional Beds Needed

The Commission estimates the number of additional beds now needed to be 10,000 for England and Wales including London, and regards the burden of providing these beds within any reasonable period as altogether beyond the resources of the voluntary system. It regards the deficiency as due to the war, and is in agreement with Lord Curzon's Committee that some measure of State assistance is essential and can be given without prejudicing the voluntary principle by creating a demand for a continuing contribution towards the cost of maintenance.

Cost

Whereas the purpose of the former grant was to save existing institutions from the consequences of past misfortune, the object of the grant now proposed would be to secure the number of hospital beds needed for an area as a whole, and to ascertain where such beds can best be provided and at the lowest cost, due account being taken of accessibility and other relevant considerations. Schemes would therefore have to be prepared for an area as a whole, and in view of the expense of urban sites the presumption would be in favour of suburban annexes, apart

from special local conditions. The rapid changes which have taken place in hospital design make it desirable to give preference to buildings of a somewhat utilitarian and less permanent type.

The Commission, having given careful attention to the question of cost, and received special reports from Dr. Steel and Mr. Worsley on recent buildings, considers that as at June 1925, a reasonable figure for the cost of plain buildings of a utilitarian character would be £400 a bed, excluding the cost of site, furniture and equipment, and in considering the need of an L-shaped subsidy tiles this is its basal figure.

State Assistance for Capital Expenditure

The experience of the Commission in administering the recent grant of £500,000 has shown that the voluntary hospitals are with exceptions now solvent and would be able to raise the additional money needed for the maintenance of the 10,000 new beds but that they have no margin for new capital expenditure. The continuance of the present deficiency would react to the prejudice of the voluntary system and the Commission has come to the conclusion that a substantial measure of State assistance is essential.

It is recommended that if this L-shaped grant is given it should like the deficiency grant, be made a stimulus to the voluntary subscriber, by requiring an equivalent from local sources. To secure this the grant should be substantial and the Commission recommends a grant of 50 per cent of cost up to a maximum of £200 a bed, subject to the rest being raised locally or available from existing building funds. This would involve a total liability of £2,000,000 but the expenditure would be spread over a considerable period and the Commission seems to believe the alternative to be a series of demands for State assistance.

To administer such a grant would require the co-operation of local bodies such as the Local Voluntary Hospital Committees, but these would need to be widened and indeed reconstituted. In this reconstitution the Commission thinks that the direct representatives of the hospitals should not be in a majority. A central body would also be needed and the Commission states that should it be asked to undertake the duty it would in the first place request these committees to prepare schemes for their own future constitution.

The report concludes with acknowledgements of the services of the secretaries to the Commission, Mr. L. G. Broel, C.B. and Mr. P. Butler, and their staff.

Appendixes

Number of Additional Beds Needed.—The first appendix to the report sets out in detail for the hospitals of England and Wales outside London, the position as to the number of available beds, the waiting lists, and the number of additional beds which the hospitals have reported as needed. For a total population of 33,401,993, the number of available beds is approximately 36,703 in 674 hospitals—that is, for each 1,000 of population, 1.10 beds. The rates for the separate areas vary from 0.22 and 0.31 in Middlesex and Essex up to 2.46 in Bristol and 2.53 in Manchester. The waiting lists of 282 hospitals record numbers totalling 31,127. Of the hospitals, 191 report the need of additional beds totalling 10,614 when those whose needs do not exceed ten beds are omitted. The Commission is of opinion that this number may be reduced by about 20 per cent when the possibilities of local co-ordination have been explored. This leaves round 8,000 beds, which with the 2,000 needed for London gives the 10,000 which the Commission has taken as approximately the number of beds now needed for the whole of England and Wales.

Income and Expenditure.—The second appendix gives a comparative statement of the receipts and expenditure of the voluntary hospitals of Great Britain, and shows that while in 1920 only 44 per cent of the hospitals showed an excess of ordinary income over expenditure the position has steadily improved, and in 1923, 66 per cent showed a favourable balance. The total ordinary income has risen from £4,766,931 to £5,386,316, and there has been a slight decrease in expenditure.

REPORT OF THE MINISTRY OF HEALTH, 1924-25

We have already announced the publication of the annual Report of the Ministry of Health for 1924-25. It deals generally with the administrative work of the Ministry and is naturally of smaller interest to medical readers than the report of the Chief Medical Officer, of which an account has been given in three recent issues of the JOURNAL (July 11th p. 63, August 1st p. 216, August 8th, p. 261). In the following paragraphs some matters of more or less direct medical interest are selected for notice.

Health Officers

On March 31st 1925 out of a total of 1,612 council of county, metropolitan, and municipal boroughs, and urban and rural districts, 557 had whole-time medical officers of health. The corresponding figures for the previous year were 1,609 and 549. The remuneration of such whole-time officers was a subject of informal discussion in the course of the year between the department on the one hand and the British Medical Association and the Society of Medical Officers of Health on the other. As a result certain proposals were submitted by the department to the Association of Local Authorities, the London County Council, and the Metropolitan Boroughs Striding Joint Committee. These bodies did not at the time see their way to endorse the proposals, but the Association of Municipal Corporations reported to its constituents that it did not think the figures of remuneration unreasonable. In dealing with individual cases the Minister has decided to be guided by the proposals, and in cases of dispute between the British Medical Association and a local authority he will try to arrange a discussion between the parties.

National Health Insurance

Insurance Committees due to terminate their period of office on October 31st, 1924, are continued for two years after that date, owing to the appointment of the Royal Commission. As regards the scope of medical benefit 90 cases raising questions of scope came before Local Medical and Insurance Committees, who found themselves in agreement that only 7 of the 90 cases could be allowed, the other 83 being outside the benefit. This agreement made it unnecessary to refer any cases to the Minister.

The total cost of medical benefit in the financial year 1924-25 in England was £7,429,000, of which about £5,700,000 was paid to doctors, and the remainder spent on drugs and appliances, excepting certain small sums under special arrangements, and to approved medical institutions. In addition £200,500 was distributed in 1924 to rural practitioners for mileage, £10,000 was set aside for aiding unremunerative practices in sparsely populated areas, but all the necessary information had not been received to permit distribution by the end of the year.

Drugs and appliances supplied by chemists cost about £1,477,000, and drugs supplied by doctors in rural areas involved payments of about £180,000. Prescriptions dispensed by chemists numbered about 41,550,000, being an increase of 15 per cent on the previous year. The increased cost was about 17½ per cent.

In respect of unsatisfactory standard of service, money was withheld from 118 doctors and 24 chemists, the total being £1,764 9s. In one case £100 was withheld for failure to keep proper medical records. In another the same amount was withheld for failing to provide proper treatment. In this case removal from the medical list was considered. In six cases £50 was withheld, four in respect of treatment and two of records. The Minister received seven representations for removal of practitioners from the list, and three for removal of chemists. Two doctors were removed, one for failure to provide proper treatment, and the other for incorrect entries in his day-book with a view to increasing his remuneration, which was on an attendance basis. Two chemists were removed for inaccurate dispensing. Two inquiries were instituted by the Minister, one relating to a practitioner who had persistently failed to furnish reports on insured patients to the Regional Medical Officer, and the other relating to a chemist whose authorization to deal in dangerous drugs

had been withdrawn by the Home Office after conviction in the courts. The inquiries resulted in the removal of both names from the list. In twenty-four cases there were appeals against decisions of Insurance Committees regarding medical benefit administration. Of the total, eighteen were by doctors and six by insured persons and approved societies. Four of the doctors' appeals were allowed, ten dismissed, three withdrawn, and in one no formal decision was given. One appeal by a society was allowed, and five by insured persons were dismissed. Four doctors appealed against surcharges by Insurance Committees as recommended by Panel Committees, in respect of alleged excessive prescribing. One appeal was allowed, two were dismissed, and in one the surcharge was reduced. One appeal was lodged and was successful against disallowance of an anaesthetist's fee by a Panel Committee. A doctor's appeal was allowed against certain requirements by an Insurance Committee regarding notification of a change of surgical address.

Additional benefit schemes to the number of 6,612 were in force at the end of 1924. The great majority—5,358—were for cash increases only, and 1,104 were for cash and non-cash. Nearly £2300,000 was available per annum for dental benefit, and about £270,000 for hospitals and convalescent homes. The funds for dental benefit increased from £167,765 to £296,675 in the course of the year. The Approved Societies Regulations, 1924, made certain modifications in schemes for additional benefits, and societies have been circularized as to the material changes.

New South Wales.

CANCER RESEARCH FUND

DURING April of this year the New South Wales Cancer Research Fund was officially inaugurated at a meeting held at the Sydney Town Hall in the presence of the Governor-General and Lady Foster. The fund is in charge of a professional committee nominated by the Senate of the University of Sydney, of which Professor F. P. Sanders is the honorary secretary. Research work will be done under the control of this committee in the laboratories of the University. Funds to the amount of £5,000 and £2,500 have been given by the State and Federal Parliaments respectively. In all, up to the present, some £18,000 is in sight for this fund, and it is hoped that the objective of £50,000 will be attained.

UNIVERSITY OF SYDNEY

The tender of Messrs John Taylor and Company of Loughborough, for the erection of a cruciform of forty-nine bells, has been accepted by the Senate of the University of Sydney. The total estimated cost of the installation is £17,389. This cruciform is to be erected as a war memorial at the Sydney University. Dr. Walter Burfitt, a graduate of the University, has given it a sum of £1,000 for the foundation of a scholarship to be known as 'The Walter Burfitt Scholarship for the Advancement of the Study of Science.'

DEATH OF DR ERIC SINCLAIR

The State has sustained a great loss in the death of Dr Eric Sinclair, Inspector General of the Insane, a position he had held for the past twenty-seven years. He was born at Greenock in 1800, and studied medicine in the University of Glasgow. He landed in Sydney in 1881, and entered the Lunacy Department in the following year. He was appointed inspector-general in 1898. A strong man of dogged resolution, he gradually introduced reforms into the department until the asylums were transformed into true hospitals for the mentally afflicted, fully equipped and with a properly trained nursing staff. Through his efforts a pathological department, modelled on the lines of the laboratories at Claybury in England and in Edinburgh under the Scottish asylums, was established at the Sydney University. He was, in the main, responsible for the establishment of a chair of psychiatry at the Sydney University, of which Sir John Macpherson is the first professor. In 1918 the military authorities sought the services of a master

organizer and strong disciplinarian, and Sinclair was appointed principal medical officer to the Second Military District—a department which he organized successfully, and administered satisfactorily until the end of 1920, when he was transferred to the reserve. He was President of the Section of Neurology and Psychology at the Australasian Medical Congress held at Melbourne in 1908. In character a strong man, of highest ideals, gifted with foresight and imagination, of great pertinacity of purpose, and, withal, with the most gentle and lovable nature, he will be missed by all who knew him, the loss to the community is great.

India.

CALCUTTA SCHOOL OF TROPICAL MEDICINE AND HYGIENE

At the Calcutta School of Tropical Medicine and Hygiene during 1924 researches were made into the use of carbon tetrachloride in the treatment of hookworm disease, the standardization of pure oil of hydrocarbons with its esters, the economical working of mechanical water filters, and other subjects connected with public health. Further advances in the development of the school are desired, including the appointment of a whole-time helminthologist and of a research biochemist. The organization of a department of hematology is felt to be an urgent need, and a museum of tropical medicine and hygiene is also required to form part of a special institute of hygiene. The fourth annual report, which deals with 1924, illustrates the great expansion in the general work of the school which has occurred. The Pasteur Institute began its work in June, 1924, and by the end of the year 1,995 patients had attended, of whom 1,461 had then completed their treatment, while in the case of 422 no treatment had been found necessary. Full accounts of the work of the different departments of the school are included in the report, which is richly illustrated by photographs. Subscriptions to the amount of 124,685 rupees were received during the year, and the expenditure amounted to 120,989 rupees.

PARCEL BACTERIOLOGICAL LABORATORY, BOMBAY

Under the auspices of the Bombay Branch of the British Medical Association and the Grant College Medical Society, a conference was held early this year. Sir Leslie Wilson, the principal guest of the evening, was received by Lieut.-Colonel F. P. Macle, director of the laboratory. Lieut.-Colonel Macle summarized the progress of the laboratory during the past year, and said that the output of plague prophylactic during 1924 had been nearly one and a half million doses—an amount that had been only twice exceeded in the history of the laboratory. It was estimated that nearly two-thirds of the whole cost of staffing and running the laboratory would be recovered by the charge made for this prophylactic. The reduction in mortality due to Hoffman's vaccine appeared to be about 47 per cent. The laboratory was used by the municipal authorities for the diagnosis of plague in rats, and some share was taken in the educational and propaganda work relating to the epidemiology of plague, malarial febrile diseases, tuberculosis, milk supplies, rabies, and disease-carrying insects. A considerable amount of research had been undertaken in connexion with the plague prophylactic, with special reference to the improvement of its immunizing powers. It was hoped that important practical results would be obtained shortly. Lieut.-Colonel Macle appealed for help towards the establishment of a mobile laboratory and a school of tropical medicine at Pune, and Sir Leslie Wilson in his speech, promised to give any support that he could.

NEW MATERNITY HOSPITAL IN BOMBAY

It is proposed to construct and endow a maternity hospital with 120 beds, near the King Edward Memorial Hospital and the Medical College at Pune. The hospital will be known as the Narmada Wadia Maternity Hospital, and will be governed by trustees and a board, on which the Government and the municipality will be represented. Twenty thousand square yards of land will be acquired at

a cost of about 3 lakhs of rupees, and the building equipment will cost a further 7½ lakhs. An annual grant of 30,000 rupees will be made by the municipality, and a similar amount will be given by the Government towards the maintenance of the hospital. The balance of the money is being defrayed from a gift of 16 lakhs of rupees by Mr. N. M. Widra for the extension of medical relief in Bombay, conditional on sixty beds being reserved in the new hospital for women labourers of the textile mills, who will be treated free of charge.

England and Wales.

THE BIRMINGHAM LABORATORY OF MENTAL DISEASE

THE annual report of the Laboratory of the Joint Board of Research for Mental Diseases of the City and University of Birmingham for the year ending March 1925, states that the general work has been to develop lines of research upon the basis of endocrine functions. Special attention has been paid to the thyroid gland, numerous determinations of basal metabolism have been made and are shortly to be published. The investigation of the iodine content of thyroid glands has been transferred to Birmingham from the pathological laboratory of the Maudsley Hospital, in original method for the accurate quantitative estimation of the iodine has been devised, and has been applied in sixty instances. It has been found that there is a great variation in the iodine content— from 15 to 44 milligrams per gland. This corresponds fairly well with the results previously obtained as to the extreme limits, but the method is more accurate in respect of individual cases. An inquiry has also been conducted into the action of certain hypnotic drugs on animals to ascertain their physiological action and their effect upon the general health and well-being. A large amount of routine serological, bacteriological, and chemical work has been done for the clinical staff of the Rubery and Holmwood Hospitals. It has included the investigation of a few cases of typhoid fever which have occurred in each institution. In view of the probable association between chronic sepsis and disturbed endocrine function bacteriological work has occupied a large part of the time of the workers in the laboratory. The examination of the faeces in certain gastrointestinal cases has shown many varieties of organisms, streptococci were present in many instances, occasionally in pure culture, Friedländer's bacillus often occurred in groups of cases—for example, nine out of twenty in one ward, *B. cloacae* was found in a blood culture in one case on two successive occasions. Thus, it is considered, suggests that organisms usually considered non-pathogenic may multiply and cause disturbance in debilitated patients, such as are commonly met with in mental hospitals.

THE LONDON AMBULANCE SERVICE

The London County Council has recently published another pamphlet of "The London County Council and what it does for London." The new publication is on *The London Ambulance Service*, and for it Mr. Montagu Cox, Clerk of the Council, has written a foreword. The London County Council was authorized by the Metropolitan Ambulances Act, 1909, to establish a service. Previously accidents and sudden illness in the streets were dealt with by the police and though many improvements were introduced, it was shown in 1899 that 70 per cent of casualties reached the hospitals in unsuitable ways. Sir William Collins appears to have been responsible for the passing of the Act of 1909, and in 1914 the Council formed an independent ambulance system of its own. The pamphlet describes the functions of the service, its growth, and objects. The qualifications, pay, and duties of the staff are set forth. The number of calls was 12,000 in 1917 by 1924 it had risen to 31,000. A chapter on curious incidents cultivates the account of the excellent work of the service, and the occa-

sional allegation of delay between the occurrence of an accident and the arrival of an ambulance is duly explained. The average time taken to reach the place of call in 1924 was eight minutes.

THE MILK AND DAIRIES ACT, 1915

The Minister of Health has issued an Order, dated July 28th, 1925, formally appointing September 1st 1925 as the date of commencement so far as it is not already in operation, of the Milk and Dairies (Consolidation) Act 1915 (England and Wales). A covering letter (Circular 612) is issued with the Order. From this it appears that a new Order is contemplated under the provisions of the 1915 Act for the making and enforcement of Milk and Dairies Orders, which extend the list of purposes for which similar Orders can be made under the Contagious Diseases (Animals) Act, 1878. In the meantime the Orders of 1885, 1895, and 1899 and the regulations made by local authorities under Article 13 of the Order of 1885 remain in force. The letter goes on to state that under the General Act the duty of enforcing the stoppage of the supply of milk which is likely to cause tuberculosis is placed upon the council of the county or county borough in which the cows are kept, and any order made by such council will prohibit the sale of the affected milk in any area. Previously the power of stopping the supply has been given to the local authority, and the prohibition only applied to that area. After one year from the commencement of the General Act, local Act provisions will be repealed. The covering letter then reminds local authorities of their duties under the Tuberculosis Order of the Ministry of Agriculture and Fisheries, which comes into force on the same day as the Act of 1915, and of their increased powers for taking samples of milk. Although samples may only be taken in the men for which the officer acts, an authorized officer of one authority may, by notice, require the medical officer or other authorized officer of another authority to take samples of milk within his area, the expenses being defrayed by the authority requiring the samples. Where the warranty defence is pleaded by a purveyor of milk a sample from a corresponding milking must be taken in the course of transit or delivery to the purveyor, and if the owner of the cows so requests a further sample must be taken at the dairy at which the cows are kept. The covering letter concludes by drawing attention to the definition of the expression "dairy." From this it appears that the expression "does not include a shop from which milk is not supplied otherwise than in the properly closed and unopened receptacles in which it was delivered to the shop." The language is not pellucid, but it is possible to arrive at the meaning of this sentence.

TUBERCULOUS DAIRY WORKERS

The Minister of Health has issued additional regulations bearing on the transmission of tuberculosis by means of milk. Article 4 is that "No person who is aware that he is suffering from tuberculosis of the respiratory tract shall enter upon any employment or occupation in connection with a dairy which would involve the milking of cows, the treatment of milk, or the handling of vessels used for containing milk." The regulations are to be carried out by the local authority, which must be satisfied, on a report by its medical officer of health, that a person in the district suffering from respiratory tuberculosis and in an infectious state is engaged as aforesaid, in these circumstances it may issue a notice, signed by the clerk or medical officer of health, requiring discontinuance of such occupation. The person receiving the notice may appeal to a court of summary jurisdiction, which may make such order as may seem equitable to it, and may award costs. The court is to have power, with consent of the appellant, to direct his examination by a registered medical practitioner nominated by the court. Any person sustaining damage through the regulations and not being himself at fault may take action for compensation. In a covering circular it is explained that the new regulations remove restrictions imposed by certain provisions of the 1912 regulations upon action by local authorities and their officers in cases of tuberculosis notified by the 1912 regulations.

¹ The London County Council and what it does for London. *The London Ambulance Service*. London: Hodder and Stoughton. Publishers to the University of London Press Ltd. 1925. (Demy 8vo pp. 32. 6 illustrations. 6d. net.)

KING EDWARD'S HOSPITAL FUND FOR LONDON

The annual report of the King Edward's Hospital Fund for London for 1924 records that the year was the first since 1919 in which the voluntary hospitals of London received no assistance from exceptional distributions towards meeting their maintenance expenditure. The steady improvement observable during the intervening period was very marked at the close of 1922, when the statements of account showed that the net aggregate deficit had declined from £381,000 for 1920 to £175,000. The total receipts of the fund in 1924 amounted to £412,472, of which £112,240 came from the estate of the late Mr John Wells, £50,203 from the estate of the late Sir Thomas Sutherland, and £16,000 from the estate of the late Mr Samuel Lewis. The general receipts amounted to £214,342, towards which the League of Mercy, as in the previous year, contributed £14,500. The King, as patron of the fund, continued his annual subscription of £1,000, while the Queen, Queen Alexandra, and the Prince of Wales subscribed generously. Among other large subscriptions were £4,000 from the Drapers' Company, £1,050 from the Imperial Tobacco Company, and £1,000 from the Merchant Taylors' Company. The amount of ordinary distribution was £235,000, of which £233,000 went to grants to hospitals, including recovery and convalescent branches. Convalescent homes unattached to London hospitals received £2,000. As the voluntary hospitals are beginning to balance their expenditure the needs for extensions and improvements, postponed owing to the war, are being considered, including the recommendation of the special committee presided over by Sir William Collins that the Distribution Committee should take into account at the annual distribution the question whether the hospital provided sufficient bed accommodation for accidents and cases of sudden illness. It is suggested that no institution not equipped for the reception and treatment of serious cases of accident or illness should be returned on the list of institutions to which ambulance cases should in the first instance be taken. The Wells legacies were made the subject of special distribution, mainly in aid of schemes of extension and improvement, including the provision of more accident beds. By the end of the year grants amounting to £81,000 had been approved in aid of schemes providing for 301 beds, of which 53 were to be reserved for accident cases, at King's College Hospital 40 beds were opened during the year, including 16 reserved for accidents. During the last ten years £3,020,428 has been distributed by the fund amongst hospitals, convalescent homes, and consumption sanatoriums. In the twenty-eight years of the existence of the fund the grand total of £8,432,484 has been received, representing an average annual income of £301,160.

Scotland.

EDINBURGH HEALTH DEPARTMENT REPORT

The annual report for 1924 of Dr William Robertson, M.O.H. Edinburgh, has recently been published.

Population—The population of the city estimated to the middle of the year 1924 was 426,305 and the number of inhabited dwelling houses was 101,625 (an increase of 240, as compared with 1923). Of these no fewer than 40 per cent were of one and two apartments and these were inhabited by 37 per cent of the entire population. To this congestion are attributed many of the difficulties experienced in dealing with some of the most pressing health problems.

Deaths—The death rate for the city during 1924 was 14.8 per 1,000 as compared with a death rate for the whole of Scotland of 14.4 and one of 16.1 in Glasgow. The highest death rate occurred in the more crowded wards of the city, notably St Giles Ward with 17.8 per 1,000 and St Leonard's Ward with 17.7. In some of the suburban wards the death rates were only 10.6 and 11.1. In regard to the causes of death, the proportionate figures follow very closely those for the whole country, the leading causes being in order diseases of the circulatory system, cancer, pneumonia, cerebral haemorrhage, and tuberculosis.

Child Welfare—The child welfare work increased during the year both as regards visits paid by official health visitors and as regards the number of mothers who brought their infants for supervision to the centres. A suggestion was being considered to complete a comprehensive maternity and child welfare centre in

the Pleasance area, which would include accommodation for other child welfare activities in addition to clinics. During the past year four are lamps had been installed at the infectious diseases hospital in the annex for the treatment of surgical tuberculosis by artificial sunlight, and striking results had been obtained. Treatment of rickets and malnutrition by irradiation with mercury vapour lamps had also been tried.

Diphtheria—Gratifying results were obtained in an elaborate experiment conducted with a view to ascertaining the value of immunization of children against diphtheria. In all, twenty-six schools were taken in hand and 3,507 children were immunized without any untoward result. This encouraged the municipal authorities to undertake in future the immunization of children before attaining school age.

Other Epidemic Diseases—Towards the end of the year the city was invaded by an epidemic wave of measles and whooping cough. In order to discover the circumstances of those who required hospital treatment the Public Health Committee extended notification to the first cases of these diseases occurring in any house and two nurses trained in managing fevers were appointed visitors. A grant in aid of the Scottish Board of Health in the month of December 1,524 cases of measles were reported and 120 deaths and whooping cough for 85, chiefly among young children. The number of cases of scarlet fever during the year was 1,761, with 63 deaths. Only 27 cases of enteric fever were reported to the department and in 8 of these it was definitely ascertained that the disease had not been contracted in the city. Enteric fever appeared to be dying out. There were 720 cases of diphtheria with 73 deaths. This mortality rate of 10.1 per cent was higher than that recorded in any of the three preceding years. During the year 15 cases of cerebro spinal meningitis were reported with 11 deaths.

Tuberculosis—For the past three years the number of deaths from pulmonary tuberculosis had been increasing until, in 1924, it had reached 424. This rise could be accounted for in part by the present unsatisfactory housing conditions. During the year 799 cases of pulmonary tuberculosis were notified to the department, as compared with 692 and 762 in the preceding two years. The number of cases of non-pulmonary tuberculosis intimated to the department during the year was 455, as compared with 482 and 485 in the preceding two years.

Veneral Diseases—A total of 3,361 new patients suffering from venereal disease were reported for examination at the various centres (2,292 men and 1,569 women and children). 808 had required in-patient treatment, or 17.5 per cent. The number of attendances during 1924 was 106,456 as compared with 92,912 in the preceding year and the number of patients (3,861) in 1924 was a considerable increase on that in the preceding year (3,579). The great amount of bacteriological and serological work necessary was done in the clinical pathology department of the Royal Infirmary. The chief drugs used in the treatment of syphilis were salvarsan and its substitutes, some 30,000 injections had been given but treatment by preparations of bismuth gave very promising results in over a thousand cases so treated. During the year 1,712 patients were discharged from hospital, after passing the tests of cure.

Purity of Food Supply—Analyses were conducted of 468 statutory samples, an increase of 27 per cent. Of these 83 were certified by the city analyst as not being up to the standard, and 16 prosecutions were instituted against offenders. These proceedings were successful in every case. In addition to these 148 samples of sweet milk had been obtained at shops and railway stations for bacteriological examination by the veterinary department. Of these, 58 per cent conformed to the general bacterial standard laid down for Grade A milk, but only 33 per cent were up to its coliform standard as the bacterial standard for this milk was low, and as experience had proved that it could be easily maintained with an ample margin by any producer who exercised ordinary care in the collection and handling of milk, and in the cleansing of milk containers this result would not appear to be very satisfactory. The total approximate daily sale of all classes of milk was 22,704 gallons, which was equal to an average consumption of about half a pint per person a day. Progress had been made with the sale of the various grades of milk and the amounts of these sold daily were as follows: Certified "185 gallons," "Grade A (tuberculin tested)" 33 gallons, "pasteurized" 2181 gallons making a total of 2,449 gallons as against a daily consumption of non-graded milk amounting to 20,255 gallons.

WATER SUPPLY OF SCOTTISH TOWNS

An inquiry was opened on July 29th at Edinburgh into a series of Scottish Provisional Orders. Sir George Berry, LL.D., M.P., presided over the meeting of Commissioners. One of the chief subjects considered was the Perth Corporation Water Order. The water supply of Perth had hitherto been obtained from the river Tay by pumping, and has hitherto been found insufficient. The present provision was described by the promoters of the new scheme as one which kept the city of Perth living on the "verge of a precipice of disease," because the sewage of the city was discharged at a point only four hundred yards distant from the pumping station, and, as the river at this point was tidal, the sewage was at times carried by the tide past the entrances to the filters. It was stated that this state of matters tended to keep the typhoid rate of the town abnormally high, as

well as to produce a form of diarrhoea. It was now proposed to obtain a gravitation water supply from Loch Ordie, high in the hills in an uninhabited district, twenty miles from Perth, with a catchment area of nearly 4 500 acres, the scheme would supply four and a half million gallons of water a day, and would cost £300,000. The city of Aberdeen has also recently provided a new water supply and the works were last week visited by the Conference of the Institution of Water Engineers. Mr. George Mitchell, M Inst C.E., who presided, said that the city of Aberdeen, with a population of 160,000, was supplied with water drawn from the river Dee, twenty miles west of the city. The old works, completed in 1866, consisted of a twelve million gallon storage reservoir, with slow sand filters and a brick aqueduct, having a capacity of eight and a half million gallons a day. In 1916 the town council obtained powers to carry out a new scheme designed to supply an estimated future population of 240,000 with forty gallons a head a day. The new service reservoir at Cairnron is to contain seven million gallons, and has been constructed with a 24 in main supply pipe. The cost of the works carried out exceeded £900,000.

CENTRAL MIDWIVES BOARD FOR SCOTLAND

The examination of the Board, held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen, has just concluded. Out of 134 candidates who appeared for the examination, 121 passed. Of the successful candidates, 26 were trained at the Royal Maternity, 38 at the Royal Maternity Hospital, Maternity Hospital Aberdeen, 9 at the Maternity Hospital, Dundee, 15 at the Queen Victoria Jubilee Institute, Edinburgh, and the remainder at various recognized institutions.

Ireland.

NOTICES IN THE PUBLIC PRESS

At a meeting of the Council of the Royal College of Surgeons in Ireland on July 16th the following resolution was adopted, and directed to be sent to the Fellows and Licentiates of the College:

The Council of the Royal College of Surgeons in Ireland having discussed the question of the propriety of certain notices which appeared in the public press during the recent visit of the American doctors, decided not to take any special action in the matter trusting that the Fellows and Licentiates of the College will do all in their power to prevent the publication of such notices which are not in accord with the reserve prevailing in this country as to such matters.

Correspondence.

THE USES OF COELIOSCOPY

SIR,—I think Mr. Rendle Short (August 8th, p. 254) is to be congratulated on having drawn the attention of the profession to a method of examination of the abdomen which appears to have attracted little attention, although it was described fully by Otto Steiner, of Georgia, U.S.A. (*Surg., Gynecol. and Obstet.*, vol. XXXIII, 1924, pp. 266 and 575), who quotes Kelling (*Munch. med. Woch.*, 1902, No. 1, p. 21) and Jacobaeus (*ibid.*, 1910, No. 40, p. 2090).

I have been working at the same method of examination for the past eighteen months, in an endeavour to find the form of instrument best suited for the purpose. The principle adopted by Steiner is an instrument like a cystoscope, that of Mr. Rendle Short is, I gather, a cystoscope. I imagine there might be difficulties with an instrument with an optical system owing to blood or other substances getting on the lens of the telescope. I have had a direct vision instrument made for me by Messrs. Down Bros. which is simply a sigmoidoscope slightly modified, with a lamp at the end of the cannula. It is introduced under local anaesthesia through an incision three-quarters of an inch long in the peritoneum, para-medial, just below the umbilicus, with an obturator in place. The latter is withdrawn the skin edges clipped

with Poirier's forceps to keep the opening airtight, and the abdominal cavity inflated with air filtered through a glass tube filled with sterilized cotton wool. The biliary leads are enclosed in a sterile tube of linen. The further steps of the examination are conducted exactly as described by Mr. Rendle Short, the difference is that objects are viewed by direct vision and seen their natural size, the field of vision is of course much more limited. Air distension of the abdomen appears to cause little or no discomfort, and is then carried out under general anaesthesia. The anaesthetist has told me that the breathing and colour improve as soon as air is pumped in. As an example of its use I may describe a case I operated on to-day.

The radiographer had reported a fibrous defect at the pylorus with five hour retention. With the direct vision coelioscope the anterior surface of the stomach and the first part of the duodenum could be clearly seen and were apparently normal. A distended gall bladder with walls mottled red and yellow in patches could also be clearly seen. On reversing the instrument the bulbous tip of the appendix was seen for about an inch protruding from under the caecum. Laparotomy was immediately performed. The gall bladder with thickened oedematous walls was removed together with a thickened knicked appendix. No abnormality was found in the stomach.

I should like to endorse all that Mr. Rendle Short says in his paper, especially would I like to bear out the remarks in his last paragraph. Nor do I think he is unduly enthusiastic as to the scope and uses of coelioscopy. A criticism levelled at me by a colleague was that if an incision has to be made in the abdominal wall, the surgeon may as well make one of five inches and see and feel everything, as make an inch incision. This is an obvious fallacy. In the first place, one does not see everything through a five inch incision, although one may feel everything. In the second place, it can hardly be as good for the patient, and I do not think that even to-day we can tell a patient that a laparotomy carries no risk. At the present time I know of two cases where, through the premature removal of the deep silk worm gut stitches, the wound has burst open in the entire absence of sepsis or a laceration, and where the wound was carefully closed in layers.

As a further example I may mention two cases of carcinoma of the colon where I was able to see secondary deposits in the liver. These patients were able to leave hospital in three days. It is quite certain, as Mr. Rendle Short states, that patients with malignant disease of the abdomen do die in some cases within two or three weeks after a simple laparotomy.

In conclusion, I may say that about three months ago I submitted a paper entitled "A preliminary note on a method of examination of the abdomen by air inflation or abdominoscopy" to a leading journal, and gave an account of certain cases in which I had used the method I have described. Possibly on account of the hybrid word "abdominoscopy," which, by the way, is that used by Steiner, it was returned to me with the comment that "As the method has been before the profession for the past twenty years or more, what is wanted is a record of actual clinical experience with it, in what class of case it has proved useful and so forth." It may be my limited reading of medical literature that is at fault, but the only references to the method I have come across are those here quoted above and Mr. Rendle Short's brief article in the *Journal* of to-day.—I am, etc.,

Cardiff Aug 8th

J. W. GEARY GRANT

BRITISH SOCIAL HYGIENE COUNCIL

SIR—In your issue of July 11th (p. 88) Mr. C. J. Bond, C.M.G., F.R.C.S., makes an eloquent appeal for a body which is to be known as the British Social Hygiene Council, and whose aim he states will be to provide for the adolescent population not only "sound instruction and wise advice in the principles which underlie the right living of the sex life," but also "instruction and guidance in healthy and right living in every department of life, individual and communal." This council proposes, in short, to do what not only parents, but also "churches and other religious bodies have so far failed" adequately to do.

These are praiseworthy aims, but, alas! is not a profound

fillicy involved at the very outset? Before we can teach anything we should at least have reached among ourselves some general agreement as to what is to be taught. Yet, in the present instance, views on the very "principles" themselves are notoriously discordant. Thus, regarding the particular topic of the sex life itself, we have diametrically opposed positions, as of those who consider continence and self-control the primary essential—indeed, *a sine qua non*—and those, on the other hand, who pin their faith on "birth control" apparatus, the V D clinic, *et hoc genus omne*.

And similarly with all views of "right living" or "citizenship in the wider sense", the tragedy of our day is precisely that there already exist countless philanthropic organizations which desire to enlighten us on these matters—all equally well intentioned, but all fundamentally at loggerheads regarding the very elements of their subject. I see that Mr. Bond foreshadows some kind of co-operation between his council and the State. Can it possibly be that when he has got his council ready and a full membership, he expects to be vouchsafed enlightenment regarding the "principles of mental and moral health" from some Government department? If this be so, then he must not be surprised if quite a number of plain but level-headed people, who have done no more than use their eyes during these years of world-wide Prussianism and Socialism, decline to follow him further. But if it is not so, then will Mr. Bond, before he, so to speak, "sends the hat round" and invites our suffrages for his new venture, grant us a little more information? What are the sources of those principles which he proposes to instil into the adolescent mind? He acknowledges that "at present teachers are not available." Who, then, are going to teach the teachers, and—above all—what are they going to teach them to teach?—I am, etc.,

Edinburgh, July 13th

ARTHUR J. BROOK

CANCER BURIAL OR CREMATION?

Sir,—Were Dr. Brodribb not better advised (see his letter on the question in your issue of August 8th, p. 271), did he advocate universal cremation of all animal remains? This would cover all undiagnosed cases of malignant disease, in the lower animals as well as in man. His Dr. Brodribb may reason for believing that micro-organisms behave alike in a living body and under conditions outside of a living body, that deep has the same effect on micro-organisms as has shallow burial, or that whether the soil be dry or water-logged and the distance to be traversed before water is reached, be factors which have nothing to do with the problem? Are not the micro-organisms contained in the excretions, dejecta, and discharges of living bodies likely to be more potent than those contained in dead bodies?

Is the rural population of these islands so dense as it was in 1685? Is the incidence of malignant disease the same in rural as it is in urban regions? and is not the modern water-borne system of urban sewerage an entirely new device since 1685? We talk about modern foodstuffs lacking certain essential elements (vitamins, etc.), does not our soil suffer from kindred deficiencies? "Dust to dust, ashes to ashes" appears to suggest that Nature expects the return of what she has given on loan. The late Dr. Vivian Poore wrote most convincingly on this theme "Nature is the best of physicians and the wisest of surgeons." Ancient civilizations which suddenly become urban and predominantly industrial upset the balance of nature, is it wise to upset the balance of nature? In the matter of preventive measures against malignant disease we have a multitude of counsellors whose respective counsels are mutually at variance. For example, what school, if either, is right—that which advocates raw, or undercooked, food and drink, or that which advocates food and drink sterilized by cooking?

The suggestion may be a carrying of coals to Newcastle, for no man can keep pace with all of the views put forward in the medical press, but the sophistication of modern foodstuffs has its complement in the modern urban system of sanitation—in that part of it which is effected by means of water-closets. It is widely believed that the

primary focus of much invasion by malignant disease is to be found in the gut, most victims of the invasion use private and public water closets, and must often deposit therein the parasite of malignant disease (if there be one, as seems to be now demonstrated). We know how frequently splashing occurs, and the inference is obvious. This suggestion is one of wide application to sumptuous utensils. For example, for generations old-fashioned country people have attributed cases of epithelioma of the lips or of the mouth, not to the taking of tobacco, but to the victims having smoked other people's pipes.

I hazard the guess that were all people persuaded, as a matter of routine, always to flush out water-closets before using them, we should have a more effective weapon with which to combat malignant disease than could be afforded by cremation, *pace* the fact that cremation is by far the most effective method of disposing of dead bodies.

But the agnostic attitude is necessary towards the cancer problem—I am, etc.,

London, S W 1 Aug 9th

M. CAMERON-BLAIR

MEDICAL OFFICERS AND CONSULTING FEES

Sir,—As inquiries have reached me asking reasons for the withdrawal of the Derby motion at the Bath Representative Meeting, may I be permitted to state, for the information of those interested who were not present at the meeting, that in view of the latest announcement by the Council in the matter (para 245, p. 279 of the SUPPLEMENT dated June 27th) it was considered that the motion was no longer necessary (SUPPLEMENT, August 1st, p. 59)—I am, etc.,

P. HEFFERNAN,

Buxton Aug 8th

Representative Derby Division

ULTRA-VIOLET LIGHT

Sir,—We notice in your issue of June 20th (p. 1152) a letter by Dr. Blakiston of Birmingham, wherein he states that the cost of running a tungsten arc lamp is £300 per 1,000 hours worked, whereas the cost of running a quartz lamp for the same period is £2 10s.

We would like to point out that Dr. Blakiston is entirely wrong in these statements. The cost of running a tungsten arc lamp for 1,000 hours is £31 5s., which is approximately one tenth of the amount quoted by Dr. Blakiston.

Dr. Blakiston states that the tungsten arc lamp is admittedly a good one, but claims the same for the quartz lamp. We can only agree with Dr. Blakiston if he will state what period of the life of the lamp he refers to the ultra-violet radiations from a quartz lamp begin to fall off from the first day it is put into use, and after running for 800 hours the lamp is practically valueless from the therapeutic ultra-violet ray point of view. A new burner would have to be provided at a cost of about £12—I am, etc.,

F. W. READ,

Director Medical Supply Association Ltd

London W C 1 Aug 5th

The Services

DEATHS IN THE SERVICES

Inspector General Leonard Henry Kellett R.N. (ret.) died at Bedford on August 3rd aged 75. He was educated at Dublin in the school of the Irish College of Surgeons, and took the L.R.C.S.I. in 1866 and the L.R.Q.C.P. in 1867. He entered the Navy shortly afterwards and retired in January 1909. He served in the Sudan with the Royal Marine Battalion in 1884-85 and was present in the actions at Hashim and the attack on Sir John McNeill's zariba at Tofrek in March 1885 and at the capture of Tamai on April 3rd 1885, receiving the Egyptian medal with a clasp for Tofrek and the Khedive's bronze star.

Major Albert Edward Peel McConnell M.C., R.A.M.C. (T.F.) died in London on June 9th aged 57. He was the son of the late Mr. J. H. McConnell of County Antrim and was educated at Campbell College Belfast and at Edinburgh where he graduated M.B. and Ch.B. in 1913. He took a commission as lieutenant in the 3rd South Midland (Birmingham) Field Ambulance on September 5th 1914 became captain in 1915, acting major in March 1918 and major in the R.A.M.C. (T.F.) in 1920. He served with the unit in France and Italy throughout the war was twice mentioned in dispatches in 1917 received the Military Cross on October 18th 1917 and the Italian medal for valor in 1918. At the time of his death he was in practice at Stoke Newington.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

BEFORE Parliament adjourned for the long recess the Royal Assent was signified to the Therapeutic Substances Act, Diseases of Animals Act, Summer Time Act, Widows' Orphans', and Old Age Contributory Pensions Act, Public Health Act, Dangerous Drugs Act, Surrey County Council Act, and several Acts confirming Provisional Orders of the Ministry of Health. The Dangerous Drugs Act had been mentioned by the Prime Minister as one which must stand over until the House reassembled in November, but in the days preceding the adjournment the Home Secretary secured its passage through the House of Commons without debate. Other statutes already passed include the Mental Deficiency (Amendment) Act, the Town Planning Act, and the Town Planning (Scotland) Act. The question concerning the inspection of nursing homes, with regard to which Dr. Fennell had entered an objection to the Surrey County Council Bill, was not further mentioned.

The second reading of the Bethlehem Hospital Bill is set down for November 16th in the House of Commons, and the report and third reading of the Public Health (Scotland) Bill for the following day. This latter bill is concerned with the supply of insulin by Scottish public health authorities.

The Diseases of Animals Act provides compensation for the slaughter of animals condemned as tuberculous, if condemned before dispatch to the butcher. It is passed to facilitate the working of the Milk and Dairies Act, which was passed in 1914, and is to be enforced from September 1st. By the Summer Time Act the need for annual legislation to continue summer time is avoided and the period standardized. During the debates on this Act the House was impressed by the reading of a letter from the British Medical Association, declaring that medical opinion favoured it. The Dangerous Drugs Act carries out the recent Geneva Opium Convention, and adds several to the list of dangerous drugs. The Contributory Pensions Act is expected to remove a large class of persons from dependence on the Poor Law, and is thus a step to the general reform of the Poor Law, which the Minister of Health, Mr. Neville Chamberlain, may propose next session. A Rating and Valuation Bill, now before the House of Commons, is another step towards that end. During the debates on the Contributory Pensions Act Sir Robert Horne suggested that the new charges it made on employers and employed should be offset by reducing National Health Insurance contributions, and with them the future surpluses available for additional benefits. The Minister of Health rejected the suggestion. Answers to inquiries concerning the additional benefits to be provided under the National Health Insurance Acts, and about suggested amendments in those Acts, have invariably been deferred till the Royal Commission shall have reported. This it is expected to do about the end of this year.

There has been no debate on the Ministry of Health estimates this session, and the Minister has been largely occupied with the Contributory Pensions Act and the Rating and Valuation Bill. Housing, however, is being pressed forward. Regulations have been issued to ensure greater care in the handling and display of meat for sale, and to reduce the use of preservatives in foods. The Ministry proposes to give more general powers to local authorities to deal with tuberculous cases. Other health reforms to which it has attended include co-ordination of hospital services and amendments to the Midwives Act and the Children's Act. A scheme is in preparation for dealing with miners' nystagmus, but the Government has postponed the general measure codifying the Factory Acts, which had been prepared by the Home Office.

The Medical Committee of the House of Commons has been active throughout the session, and its opinions have carried weight with the Government. The Births and Deaths Registration Bill promoted by Dr Fremantle, after consultation with the Committee, did not succeed, but evoked a promise from the Government that the law of registration would be reconsidered with a view to legislation. A number of professional deputations have conferred with the Medical Committee, which has drawn the attention of the Government to certain grievances, particularly those of the R A M C, which the Cabinet has lately considered and hopes to alleviate. A scheme of bettering the conditions of the R A M C is, indeed, understood to await Treasury sanction. Certain members of the Medical Committee have undertaken an independent and unofficial investigation of the Spahlinger serums and vaccines.

Lay members of the House have shown increased interest in medical matters. Labour members have been most concerned with small pox and vaccination. There have been inquiries also about the medical services in India and in the tropical colonies. There have also been frequent allusions to health in mines and factories and the Home Secretary has recognized the desir-

ability of appointing more factory inspectors. The Medical Committee of the House in view of the forthcoming Factory Bill, has gone into the claims of certifying factory surgeons.

The Ministry of Health has not been the target of many denunciations for expenditure. In a debate on national expenditure on the day the House rose the Chancellor of the Exchequer referred to it. He said that it would be impossible greatly to reduce expenditure unless Parliament were prepared to contemplate a less scientific administration. These social services were intimately interwoven with the life of the people, and could not be drastically cut down.

Parliament has continued its financial support to the universities and to medical and scientific research, and the House has been informed that the recent advances in cancer research have been made under the auspices of the Medical Research Council. Lord Midhurst, in the House of Lords, has mentioned progress in the investigations under the same body into the problem of filter pressing viruses. There is strong hope that medical and scientific research will be further encouraged through the recent establishment of the Civil Research Committee.

Before the House rose the Select Committee on the General Nursing Council prepared a draft report. The committee was of opinion that the present syllabus of training for nurses should stand but should not be made compulsory, and that no lower alternative syllabus should be issued. It is also of opinion that election to the general places in the General Nursing Council should be open, without regard to the rank of the candidates.

Spahlinger Treatment—Lieut Colonel the Hon G F Stray (Parliamentary Secretary Ministry of Pensions) stated in answer to a question on July 28th that a few cases of pulmonary tuberculosis had been sent to sanatoriums in Switzerland by the Ministry. The cases selected were those in which the department was satisfied on the advice of its experts in tuberculosis that treatment abroad was essential and that equal good results could not be expected from the facilities available in this country. He was informed that the Spahlinger treatment had in fact been given in certain cases as an incident of their sanatorium treatment, but the resulting evidence as to the value of the treatment was not in the opinion of his medical advisers justifying the payment of patients at the public expense expressly for this form of treatment.

Salaries of Sanitary Inspectors—On the 13th Mr. Deville Chamberlain told Colonel Dyer that he was aware that in some instances local authorities proposed to appoint sanitary inspectors, but it was his picture that the approval was sought for the appointment of a sanitary inspector to be endeavour to secure that the salary paid was sufficient to attract efficient service. The circumstances of each case were to be taken into consideration in respect of size population and character of the district. It was not practicable to prescribe a uniform salary, but it would not be to the appointment of a sanitary inspector as a condition of approval.

Illness in Maternity Home - The Minister of Health was asked by Mr. Vincent about the maternity home of the Wandsworth Borough Council. He said that during the past seventeen months there had been a great deal of suffering from abscesses of the breasts. He said that the eyes of mothers made by patients and public bodies as to the complaints had been made by patients and public bodies as to the complaints had been proper treatment and that the eyes of mothers had been dispensed with except the matter was not all the staff had been wages as usual and, in view of the fact that he would institute an inquiry into the matter. Sir Kim Wood replied that the answer to the first part of the question was in the affirmative, and to the third part in the negative. The Minister of Health had for some months been aware of the special report of the Minister of Health had for question, but reported skilled inquiry had been referred to in the to elicit the cause of this unusual condition. He was up to the present, failed the borough council which had made every effort to grapple with the problem, had decided to close the home temporarily, and to give notice to the staff. The Minister of Health was suggesting to the council that a conference should be held locally at which his department would be represented in order to discuss future arrangements.

Miner's Dystagmus.—In the debate on the Dep^t of Mines vote several references were made to miner's dystagmus. Colonel Lane Fox, Parliamentary Secretary for Mines, said that the subject was receiving very considerable attention and research was constantly going on. A scheme was now being elaborated between the Home Office and the Mines Department, which he hoped would shortly be put into operation.

Medical Attendance on Wives of Naval Officers.—In reply to Mr Harrison, Mr. Dawson (Financial Secretary of the Admiralty) said that in view of the urgent need for economy it was impossible to arrange for the extension to the wives of naval officers generally of the privilege of free medical advice and treatment. The wives of a few naval officers serving in shore establishments might be attended free of charge by the naval medical officer of the establishment, provided his duties permitted.

Pensioners Ministry—In reply to Mr Robiason Major Tryon (Minister of Pensions) said he was not aware of any complaints by patients at Beckett Park Hospital, Leeds about the food supplied. The medical officer in charge of a case was authorized to prescribe

butter when necessary. The Minister added that he was not prepared to authorize in this hospital, any change in the general scheme of diet which had been adopted on medical advice for all the hospitals of the Pensions Ministry. The Minister of Pensions informed Sir Arthur Holbrook on August 7th that in any case where an officer in receipt of conditional award was considered by the medical officer in charge of the hospital to be likely at the conclusion of his treatment to be in a materially more disabled condition than was represented by his current award the patient was boarded before discharge and a provisional award suitable to his condition made.

Diet in Mental Hospitals.—Sir Kingsley Wood, answering for the Minister of Health, informed Mr. W. Baker that since the publication of the report of the Departmental Committee on Dietaries in Mental Hospitals the breakfast and tea meals had been considerably varied. A weekly allowance of 2s 6d was made to each 'Service' mental patient for additional comforts.

Cost of Medical Research.—Answering Mr. Duckworth, on August 7th Mr. Guinness (Financial Secretary to the Treasury) said the provision made in the Scientific Investigation Vote, 1925-26 in aid of the expenses of the Medical Research Council was £135,000. The grants in previous years had been

1924-25	£110,000	1921-22	£130,000
1923-24	£130,000	1920-21	£125,000
1922-23	£130,000	1919-20	£148,500

In addition certain inquiries were from time to time carried out by or on behalf of the Ministry of Health, the Scottish Board of Health, and the Service Departments. The whole cost of these inquiries was relatively small.

Financing Medical Benefit.—In reply to Sir Godfrey Collins on August 7th Mr. Neville Chamberlain said the National Health Insurance (Cost of Medical Benefit) Act 1924 provided that for the purpose of providing part of the additional cost of medical benefit for the years 1924, 1925 and 1926 certain sums were to be paid in those three years out of moneys in the Central Fund representing sums carried to that fund in respect of unclaimed contributions. The financial provision thus made involved the application of the whole of the estimated balance of unclaimed contributions at December 31st 1923 after allowing for the amounts estimated to be required for arrears grants. There was, therefore, no balance available to be allocated.

Nurses and Trade Union.—Sir Kingsley Wood told Mr. Gerald Hurst that so far as the Minister of Health was aware the guardians of the Stepney Union were not exceeding their powers when insisting as a condition of employment that candidates for the post of hospital matron should be members of a trade union. He could not interfere.

Picaine.—The Home Secretary, Sir William Jonsson Hicks said on August 6th that he was not aware of any discovery by Dr. A. J. Copeland of a new anaesthetic which would serve as an alternative to cocaine. Dr. Copeland had recently investigated the properties and effects of picaine a cocaine substitute prepared by German chemists. A caution regarding the supply and use of the drug had been issued through the pharmaceutical press.

Birth Control Instruction.—The Minister of Health said on August 6th that after very careful consideration he had decided that it was impossible to make any change in the instructions issued by the Ministry of Health to maternity centres for their guidance in dealing with the question of birth control.

Veneral Disease.—Answering Captain Wedgwood Benn Sir Kingsley Wood gave the following statistics of reported cases of venereal disease and total attendances at clinics during the years 1919 to 1924. The number of cases dealt with for the first time at treatment centres in England and Wales and found to be suffering from venereal disease was as follows: 1919 82,797; 1920 85,531; 1921 66,820; 1922 56,347; 1923 55,945; 1924 54,380. The total attendances at the centres were as follows: 1919 1,002,791; 1920 1,488,514; 1921 1,612,592; 1922 1,560,568; 1923 1,605,617; 1924, 1,645,415. Notification of these diseases was not compulsory.

Notes in Brief

Mr. Godfrey Locker-Lumpkin informed Dr. Watts that in view of the International Labour Congresses there was no necessity for the Home Office to be represented at the Fourth International Medical Congress of Industrial Accidents and Diseases to be held at Amsterdam in September.

The Government is not prepared to intervene in support of the claim of the British Red Crescent Society to be allowed to supply the Rifles with medical stores.

The Minister of Health is causing inquiries to be made into allegations that rashes, swollen arms and fever followed revaccination of children at Washwood Heath near Birmingham in June.

Austria, Czecho-Slovakia, Poland and Sweden have ratified the Convention of 1921 on the use of lead in painting buildings and have taken steps to give effect to it.

The Home Secretary declined to make any statement on death certification, as the whole subject is under consideration.

The veterinary inspection by local authorities of dairy herds in Scotland does not include systematic tuberculin testing.

In December 1923 921,127 persons in Great Britain were in receipt of old age pensions. In December 1924 the total was 937,160.

Obituary

GEORGE KENNEDY SMILEY, OBE, M.B., B.Ch.,
B.A.O. R.U.I.,

Regional Medical Officer for Manchester

WE announce with regret the death of Dr. George Kennedy Smiley, on August 2nd. Dr. Smiley received his medical education at Queen's University, Belfast, and Dublin, graduating M.B., B.Ch., B.A.O., R.U.I. in 1897. He was well known as a Rugby half-back. After graduating he spent a year at sea, he then held an assistantship in the South of England, and later studied in London as a general practitioner. He took an active interest in ophthalmology, and was honorary surgeon to the London-derry Eye, Ear, and Throat Hospital. On his marriage in 1906 he settled in England, starting general practice in Derby. Here he became actively interested in the work of the British Medical Association, he joined the Derby Division Executive Committee in 1912, and from 1913 to 1920 was honorary secretary of the Derby Division, and a representative from 1913 to 1917. In 1919 and 1920 he was a member of the Council of the Association, as one of the four representatives of the East Midland Branch. In the controversy regarding the National Health Insurance Act Dr. Smiley took a leading part in his own Division, and, when the profession agreed to take part in its administration, he became the secretary of the Derby Local Medical Committee, and later of the Panel Committee, and a member of the Derby Insurance Committee. In 1916 he was appointed chairman of the Medical Benefit Subcommittee, which position he held for two years, and, in 1918, he was elected chairman of the Insurance Committee. During the war he held the post of medical officer in charge of the Military Hospital at Derby, and after the armistice was awarded the OBE. He was also secretary of the Derby Local Medical War Committee. In 1919 he contracted acute sepsis of the left hand, followed by an illness lasting many months. When the Ministry of Health appointed its regional medical staff in 1920, Dr. Smiley was placed in charge of the Manchester area, where he quickly gained popularity with all his colleagues. Early in 1924 serious abdominal signs developed, and, though relieved by a palliative operation, a fatal issue ensued after fifteen months' illness.

Dr. BRODIE CRICKSHANK of Nairn died there on August 5th, aged 78. He was born at Montrose and educated at Aberdeen, where he graduated M.A. in 1856, M.B. and C.M., with first-class honours, in 1869, and M.D. in 1877. After filling the posts of resident surgeon at Aberdeen Royal Infirmary, and assistant physician at Perth District Asylum, he entered the army as assistant surgeon in April 1871, and served in the 80th Foot now the second battalion of the South Staffordshire Regiment. He resigned his commission in 1877, and soon after went into practice at Nairn where he held the appointments of provincial medical officer of Aulderin and Candor, consulting medical officer to the Town and County Hospital and medical officer under the Education Act. He was representative of the Banff, Inver, and Nairn Division of the British Medical Association for many years, and president of the Northern Counties of Scotland Branch in 1912. On December 13th, 1919 (p. 794), we announced the presentation to him of an illuminated address of congratulation on the attainment of his jubilee as a member of the medical profession.

Dr. FREDERIC VICTOR ELKINGTON of Fenny Compton, Warwickshire, who died on June 26th at the age of 61 received his medical education at Edinburgh University and St. Bartholomew's Hospital, and obtained the diplomas of L.R.C.P., L.R.C.S. Edin., and L.R.F.P.S. Glasg. in 1896. He was medical officer and public vaccinator for the Burton Bassett district of the Southern Union and lecturer and examiner to the St. John Ambulance Association and the Red Cross Society. He was a member of the British Medical Association and published an article

THE ninth Swiss Congress of Dermatology and Venereology was held at Zurich on July 4th and 5th under the presidency of Professor Bruno Bloch, when the following papers among others were read: Syphilis of the nervous system and its treatment, by Professor Dind of Lausanne, Electrolysis for hypertrichosis in women, by Professor Du Bois of Geneva, Erythrodermia and icterus after injections of acetylarsan, by Dr. Lussener of Lausanne.

An advanced course of pathological anatomy will be held under the supervision of Professor G. Roussy, in Paris, from October 5th to 30th, and will include lectures and practical work. The fee for the course is 150 francs, and the number of places is limited. Inquiries should be addressed to Dr Leronx, 21, Rue de l'École de Médecine, Paris.

An official medical guide to post graduate work in Hungary has been issued in English by the Hungarian Medical Post graduate Committee and the American Medical Association at Budapest. In addition to an account of post graduate work in Budapest and other universities in Hungary general information is given about the residences in the different towns. The book may be obtained from Dr Joseph Baló at the Central Office of the Hungarian Medical Post graduate Committee, VIII Maria utca 39, Budapest, Hungary.

A FRENCH commission, under the presidency of the Minister for Public Education, has been appointed to consider the methods of improving instruction in dentistry.

At the twelfth French Congress of Hygiene in Paris from October 20th to 22nd at the Pastour Institute the subjects to be discussed include the hearing of mental on social hygiene, Malta fever, and the decline of syphilis. A special number of the *Revue d'Hygiène* will be devoted to a report of the congress.

The issue of *Praxelles Medical* for June 21st is devoted to the life and work of the late Professor Depage.

The thirty first Congress of the Italian Society of Internal Medicine will be held in October, when the following subjects will be discussed: (1) Hepatic cirrhosis, introduced by Professors G. Sabatini and L. D. Amato, (2) Treatment of Graves's disease (conjoint meeting with Italian Society of Surgery), introduced by Professors A. Ferrata and P. Tiori, (3) Functional examination of the respiratory system, introduced by Professor G. Bocchi.

The third Spanish Congress of Pediatrics will be held at Saragossa in October under the presidency of Dr Borodío. Further information can be obtained from the general secretary, Dr Vidal Jordan, Sagasta 19, Saragossa.

The fourth Rumanian Congress of Otorhinolaryngology will be held at Bucarest, under the presidency of Professor A. Costina, on October 25th and 26th, when the following subjects will be discussed: Ozaena, by Professors Peimoff of Sofia and P. Rion of Cluj and Dr Tempoc, Rhinoplasty, by Dr I. Jirna, Treatment of cancer of the larynx, by Drs T. Nasta and L. Berner. Further information can be obtained from the general secretary, M. L. Meyersohn, 97, Callea Mosilor, Bucarest.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus*, Dublin telephone 4737 Dublin) and of the Scottish Office 6 Drumshugh Gardens, Edinburgh (telegrams *Associate*, Edinburgh telephone 4361 Central).

QUERIES AND ANSWERS.

"W. H. N." asks for advice in the treatment of a patient who is suffering from persistent pythemia after extraction of the teeth for pyorrhea and caries. He had been suffering from general articular rheumatism; the flow is so copious that he cannot sleep.

HYPERIDROSIS

"M. B." asks for advice as to treatment of generalized hyperidrosis in a patient who has had localized tuberculosis of one lung which is now quiescent clinically and by x-rays, there is no pyrexia and no night sweats. The hyperidrosis occurs on slight exertion and on emotional stress such as interviewing people. The teeth are normal; he is not obese; his weight is normal for build and there are no signs of Graves's disease. Takes atropine sulphate gr. 1/400 i.d.s. but this obviously is merely palliative and seems to prolong the trouble. Would a ray treatment to the thyroid be indicated?

INCOME TAX

Retirement from Partnership

"H. A. B." retired from general practice on December 31st 1924, on which date he dissolved partnership, later he accepted a salaried post.

"H. A. B." is entitled to an adjustment in respect of his share of the partnership assessment on the basis that his share of the gross assessment for the year ended April 5th 1925 is three quarters of what it would have been if he had stayed in the practice until that date. Tax in respect of the remaining quarter—less any personal reliefs, etc., that may be due—will fall to the incoming partner to account for. Probably the best way of settling the matter is to explain the facts to the local inspector of taxes and ask him to furnish a statement setting out what adjustments will be due as between the partners and also with the revenue—if any. In 1925-26 he will not be liable to assessment in respect of his share of past book debts, but will, of course, be assessable on the salary earned in that year.

Appointment Abroad

"A. H." has been offered an appointment abroad, what will be the position if his wife and family reside in this country while he resides abroad and draws a salary in the currency of that country?

In our opinion he will not be liable—nor will his wife—in respect of remittances to this country made out of his earnings, either to his family or in payment of debts incurred by them for years in which he was not in the United Kingdom. But if in any financial year that condition fails for however a short time, he will then become liable to assessment as for that year in respect of sums remitted or brought to this country.

LETTERS NOTES ETC

"THE MEDICAL DIRECTORY"

MESSRS J. AND A. CHURCHILL (7, Great Marlborough Street, London, W.) write: The annual circular has been posted to each member of the medical profession. If the form has not been received a duplicate will be sent on request. We shall be grateful for the return of the forms by an early post.

THE PLURAL OF VIRUS AND PUS

In the last annual report of the Lister Institute *virus* was used as the plural of *virus*. We had supposed this to be a slip of the pen, or at worst an innovation. But a note by "C. T. O." in *Lancet* XIX of the Society for Pure English seems to imply that it had been used before. In the eighteenth century, he says, the plural of *virus* might well have been spelt *viruses*, which would have dissociated the word from such forms as *abuses* and *amuses*. We admit *buses* and must be content with *viruses*. The Latin *virus* is recorded only in the singular, so that a plural *virus* is inadmissible. If a pathologist is to write of different varieties of *pust*, he must for brevity have recourse to a plural *pusses*—for the true Latin plural *pura* would be unrecognizable, and *pusses* is already allocated. This raises obliquely the old and much vexed question about Latin words ending in *um*. When does such a word become so fully adopted into English that it takes the plural in *s*? Everyone not only writes but says *museums*, *gymnasiums*, *nastiums*, *harmoniums*, and probably most people nowadays say *sanatoriums*. We had supposed it time that *serum* followed recently, however, we received a note from the chiefs of a medical unit to the effect that the plural was still to be *vera* for the sake as we understood of euphony. Not everyone will agree but it is proverbially useless to argue about matters of taste.

BAKER'S ITCH

A CORRESPONDENT who is under the impression that the number of cases of baker's itch is increasing asks for further information. He is told that master bakers in his district will not employ a man or a woman unless the applicant signs a paper to the effect that he or she has never suffered from the complaint. A patient now under our correspondence care states that he knows of about seventy persons who are affected at present in the area. We have referred this matter to Dr. Haldin Davis who writes:

Considerable attention has been given to the subject of baker's itch during recent years especially since the war. Attempts have been made by the trade unions which safeguard the interests of the workers in the baking and confectionery trades to have this complaint added to the list of notifiable diseases so that their funds may be relieved from the burden imposed on them by members incapacitated by eczema. For this reason the

Ministry of Health instructed Dr A. Parsons to carry out a thorough investigation. His report (published in the *Journal of Industrial Hygiene* 1914 vol. 11 pp. 410-433) showed that on the one hand the impression in the trade of the widespread and increasing prevalence of the condition was erroneous; that many cases of baker's eczema or itch so called, were wrongly diagnosed; that the materials used in the trade were quite innocuous to individuals with normally healthy skins and that almost always the individuals who suffered from baker's eczema were those who worked in small bakeries where the mixing of the dough was done by hand and in consequence the skin was liable to maceration from long contact with the wet paste. Such conditions are of course well known to encourage the appearance of dermatitis. Dr. F. Rossier White of Wigau, a well known authority on industrial diseases of the skin, has also studied the subject and has come to the conclusion that the majority of the cases are incidents rather than consequences of the work. As regards some of the points raised in our correspondent's communication the various substances such as the glutins and the preservatives and bleaching reagents employed for the flour have all been tested and found harmless. The consensus of opinion seems to be that the best way to prevent the incidence of the complaint is to carry out as far as possible the mixing of the flour and water by machinery and to improve toilet facilities. At the same time we must also take leave to doubt the accuracy of the estimate put forward by our correspondent's patient of seventy cases known to him alone. Judging by the experience of the investigators of the Ministry of Health scientific examination of these patients would reduce their number to a very much smaller figure.

Jonah and the Whale

DR REGINALD COCK (Blackney Road, L.) in the course of some comments on the lecture on the psychology of animals swallowed alive delivered by Sir John Blund Sutton (JOURN. July 18th p. 104) writes: "With regard to Jonah Sir John states: 'In Matthew's Gospel the creature that swallowed Jonah is called a whale.' This is quite correct, but the word used in the Greek version of St. Matthew was *kytos* and is not restricted to its meaning to a whale or any cetacean, like the Latin *cetus* or *celus*; it may denote any sea monster—either a whale or a shark or a seal. The German word for a whale is *Wal* or *Walisch* and originally meant any large fish literally a roller (*Walzen* = to roll). Walrus comes from the same root and means a horse whale. Although two or three species of whale are found in the Mediterranean Sea yet it is unlikely that the 'great fish' that swallowed the prophet was a whale—as we understand the word to day. The only fish capable of making a really good job of it would be a large specimen of the white shark (*Carcharias vulgaris*), which sometimes attains the length of 30 feet. Gilus and Rondeletius record that a man in armour was found in the interior of a shark taken near Nice and that another shark when placed upon a car, was almost too heavy for a pair of horses to drag. Dr. Baird of the British Museum (*Cyclop. Nat. Sciences* p. 514) says that in the river Lugli below Calcutta he had seen a white shark swallow a bullock's head and horns entire.

LEPHER INJECTIONS FOR WHOOPING COUGH

DR C. B. THOMSON (Wimborne, Dorset) sends to supplement the correspondence which has recently taken place in our columns a chart showing the effect in diminishing the paroxysms in whooping cough of intramuscular injections of ether made deeply in the gluteal region. After the injection the number of paroxysms fell on the second day from fifteen to five and later to one and two. Three injections were given on three consecutive days, the first of 0.5 c.c. and the other two of 1 c.c.

TREATMENT OF INCIPENT DIABETES

DR T. FIFELDING WOODHEAD (Huddersfield) writes to confirm his statement (JOURNAL February 21st, 1925 p. 392) that red meats are concerned in diabetes insipidus. He reports the case of a married woman, aged 35, with two children, who complained of loss of energy and irritability, together with backache. The urine was colourless and the specific gravity 1035. All red meats were excluded from the diet and milk and white meats allowed together with rest and the administration of a bitter tonic. Within a week the specific gravity of the urine increased to 1012 and seven days later was 1020. Dr. Woodhead contends that the English people would be much healthier if they ate less roast beef, he maintains that all meat ought to be boiled.

RHEUMATIC AFFECTIONS

DR H. A. ELLIS (London) sends a note on two recent communications which he considers contained a portion of the probable truth about rheumatic affections and though appearing to differ were reconcilable. He observes that Dr. A. H. Douthwaite (JOURNAL June 27th, p. 1170) says that the principal precursors to rheumatism are lowering of the body resistance with radiating pain over the occiput following the course of the occipital nerves due to direct infection of the nerve roots or compression from inflammatory swelling, the alteration of the character of the skin in peripheral neuritis of the posterior nerve roots, muscular atrophy not due to disuse but to reflex trophic disturbance, and absence of hypochlorhydria. The treatment recommended was vaccine therapy. In the other communication, on arthritis deformans by Dr. L. S. Ashcroft and others (JOURNAL July 4th p. 13) it is stated (in addition to bacteriological findings) that the patients had hypochlorhydria and that treatment with hydrochloric acid relieved the condition. In the course of two dis-

cussions at the Royal Society of Medicine (JOURNAL January 24th, p. 162 and March 14th, p. 509) Dr. Ellis stated that in all forms of rheumatism a condition of neuritis existed which was probably granulomatous and might affect Hunter's nerve fibres, it certainly affected Hunter's non-somatic muscle fibres. He believed that the condition was originated by various causes, primarily of metabolic character and that it generally varied in incidence accordingly. Deficiency of acid was always evident in arthritis deformans as shown by the small amount or absence of urinary phosphoric acid and a great increase in the ammonium phosphoric ratio usually associated with a great output of magnesium. Another cause was an increase of phosphoric acid with defective elimination accompanying metabolic excess. Increase of the acid ratio in a single specimen of urine and diminution in the tide as characterized by hypercalcaemia of the shoulders and outer surfaces of the thighs and a decreased with an increase of relative output of uric acid. The prevalent or toxic causes were nearly always in the first or acid deficiency cases and benefit was almost invariably obtained by giving phosphoric acid. Dr. Ellis considers that this evidence supports his view that rheumatism is a condition of 'anionomic' neuritis activated by metabolic disturbance and associated with one of the three causes named which can be distinguished by urinary analysis and the patient accordingly treated effectively.

MESLES WHOOPING COUGH MESLES

DR HUGH SMITH (Dixons Green Duddies) writes: "In the middle of May this year a boy aged 13 years had measles. As soon as the measles cleared up he developed a whooping cough which he still (July 26th) has and during this last week he has again developed measles. There is no doubt about any of the infections. Is not this rather unusual?"

PRESERVATION OF BODIES FOR IDENTIFICATION

In the course of an lecture recently Dr. Waldo spoke of the advantages of the formalin preserving apparatus in use at the two courts over which he presides in the City and in Southwark. He said that it preserved the features and so was of use in identification that it did a way with any danger from infection was particularly useful in cases of death due to arsenic and other causes in which decomposition quickly sets in and in criminal cases where it may be necessary to keep a body for some time before burial. We understand that the cold chamber is generally considered to be better, and is in use in many Continental towns.

COW BYRES

DR T. M. ALLISO (Newcastle upon Tyne) writes: "An important point in preventing tuberculosis in milch cows is to do away with the central feeding passage in cow byres. If a cow comes into an clean herd and is infected with pulmonary tuberculosis it can be infected from and spread into the face and forehead of the opposite animal and thus spreads tuberculosis. All cow byres should be arranged with the cows' heads (in single or double lines) towards the wall where ample light and ventilation should be provided, and the wall should be lime-washed."

DOZING AT THE WHEEL

DR G. C. M. M. GONIGL (M.O.H. Stockton-on-Tees) writes: "On page 258 of the BRITISH MEDICAL JOURNAL of August 8th you print a leaderette under the title 'Dozing at the wheel.' It would appear unfortunately that unaccountable accidents of this nature are increasing in number. In all similar accidents it would be of value if coroners' juries inquired if an automatic windscreen wiper were fitted and if at the time of the accident this apparatus was in use. The automatic windscreen wiper swings backwards and forwards through an arc of a circle directly in the line of vision of the driver, and it is not unreasonable to suppose that this rhythmic movement might exert a hypnotic effect upon the driver."

CORRECTION

DR HELEN BOLLF calls attention to some little inaccuracies in this report of her evidence given before the Royal Commission on Lunacy on June 22nd and published in the JOURNAL of June 27th (p. 1188). The hospital referred to is the Lady Chichester Hospital, Hove, it has 39 beds (not 29). With regard to nursing homes she said the only bad nursing home she had ever lived in was to surmise in its dignity was one which was under supervision.

WIESBADEN WATERS

MESSRS HEPTZ AND Co. 9 Minning Lane, London E.C.3 have been appointed by the municipality of Wiesbaden sole agents in this country for the waters of the springs there for the salts obtained from them by evaporation and for other preparations.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 31, 35, 38 and 39 of our advertisement columns and advertisements as to partnerships, assistantships and locum tenencies at pages 36 and 37. A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 92.

British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL
MEETING, BATH, 1925SECTIONS OF
SURGERY AND ORTHOPAEDICS.Sir BRUCELY MOYNihan, Bt, KCMG, MS,
in the ChairDISCUSSION ON
THE TREATMENT OF FRACTURES WITH SPECIAL
REFERENCE TO ITS ORGANIZATION
AND TEACHING

OPENING PAPERS

I—GEORGE E GASK, CMG, DSO, FRCS,
Surgeon and Director of the Surgical Unit, St Bartholomew's
Hospital

It is my duty to-day to open a discussion on the subject of the organization and teaching of the treatment of fractures. I have undertaken this task with grave misgivings because of the inadequacy of my powers to do justice to a most important debate, dealing as it does with a matter of education which may affect generations of students. My only comfort is a firm and strong conviction that the policy I uphold is the right one, and best calculated to bring about the result we all desire.

Statement of the Problem

The matter at issue is the best system to ensure that our medical students shall be well instructed in all the methods of treating fractures, so that when they go out into practice they shall be able to handle them in the best possible manner.

It may be admitted at the outset that at the present time something is lacking in our teaching and our way of treating fractures, and that a considerable amount of crippling results from want of knowledge and want of application of the best methods. It may also be admitted that the number of actions brought against practitioners in the civil courts may be taken as an indication of the accuracy of this statement—at any rate for the purposes of the discussion it may be taken as admitted. The matter has now been brought to a head by a vigorous article by Sir Robert Jones, published in the *British Medical Journal* of May 16th, 1925, and the action of this Surgical Section in choosing the subject for discussion.

Sir Robert Jones has delivered a slashing attack on the "Methods by which fractures are being dealt with at the big teaching hospitals"—an attack which may make some of us wince, and all think a good deal. As is right and proper, after criticizing destructively our present methods, with some of which I agree, Sir Robert goes on to make a number of very thoughtful constructive suggestions. The essence of these suggestions is a proposal that patients suffering from fractures should be segregated and placed under the charge of specialists.

I wish to make it perfectly clear at the outset that I do not enter into this discussion with any hostility to the aims and objects of Sir Robert Jones and his supporters for I am absolutely at one with them in these, I am entirely in agreement with them in holding that all is not well with the organization and teaching of the treatment of fractures, that reforms are necessary, and that for want of them patients may suffer from preventable crippling. I think that Sir Robert Jones has performed a bold and public-spirited service which deserves our grateful thanks. The only thing I challenge is the method by which he thinks the object he desires, and which we all equally desire, may best be obtained. I do not think that the way suggested—namely, the segregation of patients suffering from fractures and placing them under the care of specialists—will, in the long run, produce the desired result. I feel that there

may be great divergence of opinion on this point, and clarity of vision of our fundamental ideas on medical education is essential for the wise judgement of the problem.

Function of the Medical Schools

The hospitals were founded originally for the treatment of patients admitted to their wards, and the sole responsibility of the staffs of those hospitals was the treatment of the patients under their care. It is only comparatively lately that medical schools have become associated with some of these hospitals, and now the very grave responsibility of teaching generations of medical practitioners is added to the staffs of these hospitals. It is this grave responsibility that makes me ask you to consider the problem in its widest aspects, a problem which extends much further than the treatment of the individual patients in those hospitals.

Let us consider what is the function of medical schools. Is it to turn out general practitioners, well educated in the fundamentals of their profession, men who shall become capable of developing later into first-class general practitioners, specialists, or researchers, or is it their duty to turn out specialists? I think that the logical answer must be that the function of the medical schools is the sure grounding of the students in the elementary sciences, in methods of examination, and forms of treatment—in other words, the provision of an education in the best and widest sense of the word.

It is abundantly clear, however, that the education of a student on university lines would be lacking if during his period of training he did not have brought to his notice the ways in which advances in medicine are brought about. It is to my mind quite clear that advances in treatment cannot be sustained without continued improvements in teaching, and that improvements in teaching would cease to exist without the stimulus conveyed to the teachers by discoveries in science and the allied subjects, by research and pioneer work in all the branches of medicine and surgery. Far from decrying specialists, therefore, I hold that we need them, that we must have them, and that a university course would not be complete without them, but I do not think that they should have educative charge of the undergraduate student.

Divorcement of Surgery from Medicine

This discussion of specialism versus general medicine is no new thing, it is ages old. The first great division in the profession dates from 1163 and was brought about by Pope Alexander III at the Council of Tours, when an edict was enacted pronouncing that a practice which involved in its operations the shedding of blood was incompatible with the holy office of the clergy and forbade them to interfere with any matter of surgery.

That wise and far-seeing physician, Sir Clifford Allbutt, expressed himself on the matter in the following terms:

By the expulsion of surgery from the liberal arts Medicine herself was eviscerated the pernicious bisection of Medicine was made which has not yet spent its evil. The very foundation of the art was gone and the clergy and the faculties in France and England at any rate devoted all their energies to showing up the superstructure. Surgery had its revenge its bitter revenge but in the desecration of its own temple.¹

The effect of this edict was that the practitioners of medicine, who then almost all belonged to the clergy, "had to abjure manual occupation, and to content themselves with syllogisms and inspection of mines, often without any inspection of the patient himself" (Clifford Allbutt, *op cit*), while the operation of surgery was handed over to the uneducated and illiterate.

The effect of this edict of 1163 is still with us. It accounts for the present separation of surgery from inner medicine, for the bickering (now happily mostly good-natured) between physicians and surgeons, and it accounts for the artificial and most harmful distinction between the two subjects in our curriculum of education. It is my strong conviction that this artificial and totally unnecessary separation between surgery and medicine was the greatest blow the profession ever sustained, that it still constitutes a weakness to the profession, that any further splitting is to be deprecated, and that our best efforts should be towards union rather than towards further separation.

Growth of Specialism

During the past twenty years we have seen the growth of many specialisms, the formation of special societies for the study of special diseases and the institution of separate diplomas in special subjects. With these there can be no quarrel, because they are for the use and benefit of post-graduates—men who have had their original grounding and training in general medicine. It is necessary also for a man wishing to become an expert in one particular subject, whether it be golf or whether it be the use of a particular instrument, to devote a great deal of time and concentration of thought and effort to that subject. It is, of course, true that such a man who devotes himself to one subject, can excel in it and do better in it than those who spread their efforts over wider grounds.

Sir Robert Jones has instanced in his paper the great improvement which followed segregation of patients suffering from fractured femurs during the great war. This is perfectly true. The men who took charge of these patients became experts in their subject and as the result of their work notable reductions were effected in the mortality and disability resulting from this class of wound. Similar sorts of results were obtained in munition factories, where men and women spent their time making one little part of a machine and thus became incredibly expert at it. I cannot believe, however, that this is a good argument to apply to the education of medical students.

Reason for Specialism

The cause for this growth of specialism which has been so marked a feature of the past twenty or thirty years may be ascribed to the enormous impetus given to medicine by the discoveries of Pasteur, to the resulting facilities given to surgery, and the rapid improvements in instruments, technique and manipulative methods. It has been found impossible for ordinary mortals to keep pace with these rapid improvements, and impossible to obtain expert skill in all branches of the profession and with all sorts of instruments. In consequence specialists, men desiring to acquire expert skill in one or more subjects, have arisen. The advances made by these men have then spread slowly but surely, throughout the whole profession, so that the standard of medical efficiency has been raised to a higher point than it has ever been before in this country. This fact important as it is constitutes no argument, however, that students should be taught along the lines of specialism. The principles of treatment are the same in all types of injuries and diseases, and what is needed is a firm grounding in the fundamentals.

The Medical Curriculum

These improvements in medicine and surgery have been reflected in the medical schools. The medical curriculum has been altered from time to time to meet the ever-changing needs. It has been demanded that students should receive instruction in, and show themselves competent to recognize and treat, diseases of the eye, nose, and throat, and to take special courses in lunacy, fevers, anaesthetics, and many other subjects. This curriculum has become overloaded, and there is danger that it may become even more so, and in our desire to teach students something of everything the main great principles of education may be forgotten.

Quite recently, for reasons that appeared to be sufficient, patients suffering from venereal diseases and tuberculosis have been segregated for the purpose of special treatment, and students no longer meet with these diseases in the course of their general training. I have no hesitation in saying that, from the point of view of teaching the undergraduate student, this has been a disadvantage and not an improvement.

As an illustration of the way in which the objects of the specialists may be relieved, while preserving at the same time the best system of education, let us consider the subject of urology.

The improvements in this branch of surgery, which have been very rapid, date from the introduction of the cystoscope, the use of which has made possible the diagnosis of many affections of the bladder and kidneys which previously

were obscure. Following the introduction of the cystoscope there came in rapid succession the invention of special methods for the accurate estimation of the renal functions and many other improvements. A new specialty arose. In some hospitals special urological clinics were formed, and in the Royal Society of Medicine the men interested in this subject split off from the Section of Surgery and formed themselves into a special subsection for urology. In my opinion this action has not resulted in benefit to them either as to surgery as a whole.

I have a very clear recollection of the discussions that took place in my school as to the wisdom or advisability of establishing a department of urology, with special wards under the care of a specialist. After many long debates it was decided that this should not be done, but since of the younger surgeons who had leanings that way made themselves proficient in that art, and very soon they began to teach the other surgeons, and, what is more important, the younger men, the house surgeons and assistants. The result is that at the present time all the younger men are beginning to use the cystoscope in their ordinary work, even as a physician uses his stethoscope, and the standard of urological work, though it may not be as high as in the best urological clinics, is still, I am proud to say, quite good, and we are not ashamed of it. What is still more important, the student sees these cases while he is doing his ordinary surgical work, and he begins his professional life, not feeling that there is any mystery about the cystoscope but knowing that it is an instrument that he can master and use himself with a little practice.

It seems to me that here we see the right and natural development of a specialty and its gradual diffusion into the realm of general medicine. I confidently anticipate that before long we shall find the cystoscope in as common use in the medical wards and among medical practitioners as the stethoscope and the ophthalmoscope.

It has been suggested, and even asserted, that at the present time the teaching in the surgical wards of the big hospitals with teaching schools no longer gives the student a general education, and that, in point of fact, the general surgeons have become one-sided specialists caring only for diseases of the abdomen—to such an extent that the teaching on other subjects, including fractures, is in a great measure neglected. No doubt there has been a tendency in this direction, and the spectacular surgery of the abdomen has obsessed some surgeons and caused them to pay too little attention to other complaints. But to say, as has been said, in a leading article in the *BRITISH MEDICAL JOURNAL* of May 16th, that most surgeons in general hospitals must be classed as abdominal surgeons, is in my opinion a grievous error and most misleading.

The Remedy

It may be admitted, however, that there is some ground for complaint, and that, of late years, the teaching of fractures has not received as much attention as the subject merits, and that from the national point of view more good might be done by preventing the deformity and crippling following fractures than by doing heroic operations on patients suffering from inoperable forms of cancer.

What is the remedy for this state of things? Sir Robert Jones has made some very definite and drastic recommendations. I think he has gone too far, and if the reforms he suggests were carried out we should have a medical curriculum loaded in watertight compartments and even more confused than it is at present. What would be the outcome if it were admitted that patients suffering from injuries or diseases which were not being treated successfully should be segregated? Surely the logical answer would be that next year someone would say, "The results of operations of an epithelioma of the tongue or mouth are atrocious. Let a special stomatological department be formed, placed under the care of specialists, and let all the students be passed through this department, that they may go into practice equipped to fight this disease." Another would want a department for the stomach, and another for arteries, and so *ad infinitum*. On these lines medical education would become impossible.

All the same it is right and proper that each university should possess centres of specialism where men can devote

themselves after qualification to special studies, but in medical schools we should endeavour to strike a proper balance, and by wise judgement spare out the time allotted to clinical studies in the best possible way.

How, then, can the teaching of the treatment of fractures be improved in our medical schools? The very fact that a challenge to them has been thrown down and that this discussion has taken place will have an effect. Medical schools are very sensitive to public opinion, and the school committees are ever watching advances in medicine and striving to keep all departments under their eye up to date.

It is of great importance also that some of the surgeons should make the subject of fractures their interest in the same way as has been done in urology. It has been done before and may be done again, we need not be reminded of the names of Lane, Liston, and Bryant. At the same time I think that something more is wanted, and I would welcome the foundation of a special hospital in London for the treatment of fractures under the care of specialists, a hospital in which the best methods could be shown and from which light would spread.

Another reform which might well be achieved is the way in which patients suffering from fractures—generally of the upper limb—are treated in our casualty departments. Patients with minor fractures, and fractures of the humerus and radius and ulna, are not usually admitted as in-patients, too frequently they remain under the care of junior and inexperienced house officers. These patients are not as a rule admitted to wards of the hospital, because the beds are too few, and there are long lists of patients suffering from serious complaints whom humanity compels to take in, while a man with a fractured forearm can be treated as an out-patient. It is probable that, from the point of view of the State, it would be a far better business proposition to render a wage earner with a fractured forearm fit to return to his work, rather than to perform a colostomy for a patient suffering from intestinal obstruction due to an inoperable carcinoma of the rectum. Yet humanity demands that a patient suffering from intestinal obstruction must be admitted and operated on, while the man with a fractured forearm must only too often give way, because the available beds are too few to accommodate both.

As regards London I feel sure that at the bottom of the trouble lies the acknowledged shortage of beds. An attempt to remedy this shortage has been suggested by taking over the hospitals now administered by the Poor Law, and it is to be hoped the remedy may not be long delayed. In order to meet this shortage some hospitals are trying to remedy the defect by making out-patient ambulatory fracture clinics, to which all patients who can walk are sent, and these patients are placed under the care of one man, who may or may not happen to be a surgeon, or an orthopaedic surgeon, or an electrotherapist. Others, on the other hand, are enlarging and increasing the scope of the massage and physio-therapy departments. It is evident, therefore, that all the hospitals are not blind to their shortcomings, and each "must contrive the times to their necessities."

The conclusion of my argument is that it would not be in the best interests of medical education, and therefore in the long run to the public advantage, that patients suffering from fractures should be segregated and placed under the care of specialists. Though certain reforms in methods of teaching and organization are needed, there is evidence that attention is being paid to them, and that as opportunity yields, and more beds are provided, the necessary changes will become possible.

I earnestly hope that it will not be thought that I have entered this discussion with the idea of upholding the status of a general surgeon against that of the specialist, or in any spirit of hostility to specialism. My aim has been to argue the point which has been raised on medical education, in which I am deeply interested, and have a certain responsibility. For these reasons I welcome this discussion, and have no doubt that a free debate will tend to clarify our views and be of advantage to us all.

REFERENCE

¹ Clifford Allbutt. *The Historical Relations of Medicine and Surgery*

II—Sir ROBERT JONES, K B E, C B, M CH, F R C S

In an address delivered in May¹ I dealt in detail with the problem of teaching due to fractures, and ascribed it to the fact that the organization and teaching of fractures left much to be desired. The neglect of this important branch of work is mainly due to the rapid advances made in abdominal surgery, which fascinates the young surgeon and offers him a comparatively rapid path to fame and to fortune. A gastro-enterostomy or appendectomy is soon over, and, while it demands sound judgement and careful technique, the surgeon's care and responsibility ends with the healing of the wound. The setting of a fracture also requires considerable knowledge and technical skill, but this has to be continued without relaxation for many weeks, and often for months. With the advent of x-rays, and consequently a critical public opinion, the surgeon's responsibility and anxiety are considerably increased. A fracture, therefore, is not regarded as a kindly gift by the average surgeon, and is often handled under considerable stress and strain. The fracture may be simple or complex, easily dealt with or presenting great difficulties, but to the patient this makes no difference, he expects functional perfection, and unless this is obtained the surgeon is in trouble, whether he deserves it or whether he does not.

All this would lead one to expect that special effort would be made to perfect our diagnosis of fractures, revise and simplify our treatment, and render our teaching beyond reproach. Unfortunately this has not happened. On the contrary, our handling of fractures shows but little improvement, and our students are inefficiently equipped. Before abdominal surgery became a specialty and radiography the rule the older surgeons spent a considerable time in teaching the student the principles of diagnosis. In these later days the diagnosis is usually made in the radiological department, and students have but little opportunity of observing the methods of investigation of which many of the older surgeons were masters. If the case is one of fracture of the elbow it is usually sent directly to the x-ray department, and the student is often deprived of the opportunity of discussing the differential diagnosis in such interesting conditions as separation of the epiphysis, supracondylar fractures, separation of the epicondyle, fractures into the joint, fractures of the neck and head of the radius, or separation of the coronoid, any of which can usually be discovered with but little disturbance to the patient. I quite admit that no opportunity should be lost to procure an x-ray picture. It is an essential adjunct to accurate diagnosis. Twenty-five years ago I wrote:

The advent of the x-ray has added immensely to the accuracy of our knowledge and to the classification of our cases, and has saved our patients from much unnecessary and often aimless manipulation. We must however beware that we do not paralyse our diagnostic faculties from pure mania. The Roentgen ray should not usurp every other diagnostic means at our disposal.

A revival of interest in the management of fractures followed the intervention of Arbuthnot Lane, for whose pioneer work I have the greatest admiration. Moved doubtless by his observation of deformity due to malunion, he advocated the plating of most of the fractures of long bones. I do not wish to enter into the controversy to which this method of treatment invariably gives rise, but I would like to point out the fact that here was a field which appealed to the operating surgeon the world over, and hospital beds were readily found for all. Operation was looked upon as the last word, and success or failure depended upon the skill or otherwise of the operator. In the hands of a comparatively few the results were good, and little harm was done even in those cases where mechanical means would have alone sufficed. As a routine operation in the hands of the less capable and discerning, however, tragedies were plentiful, and we can all remember cases where the femurs of small children were plated, and where plates or screws were used to solve the problem of a Colles's fracture. Now that a reaction has set in I question whether beds can be as readily available for simpler, safer, and less dramatic methods.

We are met to discuss the organization and teaching of fractures, and this necessarily involves the question as to

whether we are satisfied with the treatment of fractures as we meet them today. If we are satisfied there is no need to change our organization or our teaching. If we are dissatisfied with what we see of results, then it is surely necessary that radical changes should be proposed. I question whether any surgeon who has given serious thought to the problem can remain complacent and satisfied with conditions as they exist. Indeed, from my inquiries and experiences a strong feeling exists to the contrary, shared both by the practitioner and by those whose responsibility it is to teach.

If any proof were needed of defects in organization and teaching the great war supplied it. All honour to the medical officers who worked so hard and so conscientiously. They cannot be blamed because the difficulties thrust upon them were often such that it was not humanly possible to overcome them. Men with no experience in the management of fractures did the best they could, while others with experience were confronted with appalling conditions. Splints of every variety, ancient and modern, were thrust upon them, immediate evacuation was inevitable, and continuity of treatment impossible. No wonder that in the early stages of the war excessive shortening and malunion were, I could almost say, the rule. By organization and intensive instruction under very adverse conditions a very satisfactory change was effected during the later stages of the war. This was notably the case in fractures of the femur. During 1916 the mortality from compound fractures of the femur amounted to 80 per cent, by 1918 it was reduced to about 20 per cent. This was due to organization and teaching. The men were thoroughly taught the use of one splint—in this case the Thomas's knee splint. The organization consisted of team drill, application near the firing line, segregation, and continuity of treatment. To Henry Gray and Maurice Sinclair much of this reform was due. Few know as I do the difficulties under which Sinclair laboured, and the skill and care with which he treated his wounded team work and segregation at Boulogne solved the tragic problem, and ended—is far as that district was concerned—errors of alignment and undue shortening. When his cases arrived in England, however, organization was far less perfect. There was no attempt at segregation, cases were distributed in obedience to the conveniences of transport, and then treatment was by no means efficient. Splints were removed too soon, changed unnecessarily, and often no protection applied during walking. It was only when permission was granted to segregate fractures in this country and terms were brought over from abroad to secure continuity that the chapter of disaster was finally closed. What was the result? Under the supervision of men like Pearson at Edmonton better results were obtained than could be shown in any of the hospitals before the war. The average shortening was half an inch in a group of many hundreds, several of which were of the worst type of compound fractures, not one of which was plied. If such treatment were organized at home there would be no need for this discussion to day. The difference between these results and those in previous times may be emphasized by the statement of a surgeon to a large teaching hospital, who said of the femur, "I am satisfied if the shortening is not more than from one to two inches." Let it be understood that the improvement in the treatment of fractures during the later stages of the war was due to expert supervision, simplicity of apparatus, team work, segregation, and appropriate after-care. These are the lessons of the war. Are we going to apply them, and improve upon them, or leave things as they are?

If reform is to come about it is essential that the large teaching hospitals should give the lead. Their responsibilities are grave and far-reaching, for we depend on them to sow the seed of precept and example to generations of practitioners. Furthermore, they have the means at their command, both as regards personnel and equipment. They do, I venture to think, need a more modern vision of the needs and difficulties of the practitioner. I am pleased to find that in Leeds reform and segregation have already taken place. This is what we might expect in a school dominated by our distinguished President and

governed by unique traditions. It is true that other hospitals are making efforts, but none of them have so far reached the promised land.

The teaching of the treatment of fractures can only be productive when based on the principles which govern the prevention and correction of deformity. Skill in the application of splints, though important, is secondary. The problems must be thought out in relation to function. Every fracture is a potential deformity, and the deformities, when they come, often do so insidiously. They may arise while treatment is being carried out or when treatment is completed. Splints may be so applied as to admit of a sagging of the femur, or taken off too early for the bone to resist the incidence of body weight. The external contour of a forearm may appear normal when it hides a cross union. The surgeon before he undertakes to teach should have the knowledge which will enable him to visualize all possible calamities, and impart this to his student. What actually does occur? In most hospitals ambulatory fractures are treated by junior officers with little or no supervision. These officers often have no special experience or knowledge, and the decision as to whether a case is admitted to the ward or not lies in their hands. Their office is a very transient one, because the post is subsidiary and merely a stepping stone. The junior officer does not even remain long enough in his position to acquire a practical knowledge. It is difficult for him to know enough to give sound instruction. He learns largely by his mistakes, which are usually repeated by his successor. This constant change can bring no credit to the hospital, nor will it admit of useful guidance to the student. We are not much better off when we deal with the recumbent case, for it is generally left in the hands of the house-surgeon. The honorary surgeon may at times see the patient, but often he is but little interested in this type of case, and rather resents the occupation of a bed which may exclude a more acute admission. The pernicious doctrine of early evacuation is therefore practised. The leg is put up in plaster, and the case sent out on the earliest occasion. This is a deplorable routine, productive of endless trouble, and can only be safely practised very occasionally. But once the patient is out of the hospital the surgeon rarely sees him again—a few visits to the out-patient department, and then the usual round of hospitals.

As I have often said, there is a fault about the plaster case which does not admit of compromise for it assumes the reduction to be immediate, complete and ended. A readjustment of the bone ends cannot take place. The reduction of a difficult fracture is not the work of a moment, but often of days. Many fractures of the shaft of the femur are treated in this way, and as for fractures of the neck of the femur, they are usually sent to the Poor Law infirmary without the aid of the student's vision, let alone education. Surely this is not an ideal state of things. I do not think it could occur if the surgeon were interested in fractures, and once it is admitted that he lacks an interest we may safely infer he lacks in efficiency and in that knowledge and enthusiasm so necessary for a teacher to possess. To the patient, and to his family, it is of paramount importance that he should leave hospital with the certainty of restored function, and that convalescence should be as short as modern methods can ensure. To a surgeon who takes pride in his work the full recovery from a bad fracture should be a source of gratification, while malunion, stiffened joints, and industrial disability should correspondingly fill him with remorse. The effect on the medical student is deplorable if he is brought up in an atmosphere where the teaching of the treatment of fractures is placed on a subsidiary plane. When he is qualified he pays a bitter penalty. It is the one department of medicine in which mistakes cannot be hidden, and which the public never forgives. In a country district the hunting hump is a perpetual menace.

I have only time briefly to indicate the type of mistakes which are in constant evidence in our hospitals and consulting rooms. Many of them are due to errors in alignment. I cannot too often repeat that an end to end

opposition in a femur with imperfect deflection of body weight is infinitely more serious than overlapping with correct alignment. The smooth working of a limb depends on preserving the true axis of movement of a joint, so that the stresses of action may act across the joint on normal lines—otherwise abnormal stress will produce abnormal strain. Many crippling deformities are due to want of recognition of this point. Again, let us instance fracture of the neck of the femur, the treatment of which is sometimes never seen by the student. We know how difficult such a case becomes when initial treatment has been neglected, and the shortened leg with internal rotation and lack of abduction presents itself. Such a case, seen and treated early, could have been saved from shortening and adduction even if bony union were not secured. How common it is to meet the angular lateral deflection in fracture of the upper tibia, and how easy to prevent it. In the tibia how commonly we see a knock-knee due to the error of obliterating the outward curve of the tibia, and in Pott's fracture—one of the simplest problems—how often the deformity persists because the practitioner has not been taught how to reduce it. Perhaps the elbow foras one of the commonest objects of disability and deformity, and yet with care in the reduction and the abolition of the internal angular splint it should prove a very satisfactory joint to treat. These defects and deformities could be many times multiplied, but they will serve to recall experiences constantly recurring.

A frequent source of error is to be traced to deficient instruction in prognosis. The student can rarely tell us the length of time which it takes for a broken limb to bear the brunt of body weight. A patient may leave a surgeon with a limb of normal form and length, and in a few weeks it will become short and crooked. He should know that a bone which cannot be moved by a manual examination often yields to a superimposed body weight, and therefore protection against telescoping and lateral deviation should form part of after-care. In spite of a well equipped physiotherapy department attached to the hospital, how few students are able to instruct a masseuse or direct a gymnast, or show an electro-therapeutist the muscles he should stimulate. I fear sometimes the surgeon himself has not the necessary knowledge to instruct. How few students have been taught to differentiate between the joint that requires rest and that which requires movement, or to handle a fracture with a minimum of pain, how to feel for crepitation, how to avoid muscular spasm, and to reduce a fracture almost painlessly by securing muscular relaxation. The rough handling of a fracture by the careless or unskilful is indeed an unpleasant sight. There is something radically wrong with a syllabus which leaves a student ignorant in matters of such vital importance to his future.

Now it is easy to be iconoclastic, but very difficult to be constructive. Before reconstruction can occur it is necessary to admit the necessity for it. I venture to hope that we are all convinced that things are not as they should be, for the evidence around us is overwhelming.

First let me deal as lightly and briefly as I can with our teachers. I would lay it down as an axiom that no man should bear the responsibility of teaching the treatment of fractures unless he is really interested in his subject. It is too heavy a charge upon his conscience. Whether he calls himself a general surgeon or an orthopaedic surgeon is of little importance compared with that of knowing his job. It is futile to bandy the term "specialism" or to speak of an encroachment upon the domain of the general surgeon. We are all specialists in practice when we devote our heart and mind to any particular group or type of case. It must be abundantly obvious that the day is passed when any one surgeon can adequately cover the constantly extending domain of surgery. The war proved this beyond question. Team work and segregation in many fields of surgical endeavour saved the lives of many thousands, and incidentally the reputation of surgery. Whether we submit gracefully to it or not, every surgeon in the future will be judged by the work he does in some special group of cases. Even now consultations are offered us, not because we are general surgeons, but because we excel in this or that. It is a relic of early days that in a general hospital we are

expected to do everything, whether we do it well or badly. A sound education in general surgery is a primary necessity, whatever the branch we favour later. Some of us choose the abdomen, others the extremities. Whatever we call ourselves our line of conduct is the same—we strive to excel in work congenial to us, and we succeed because of that fact. The orthopaedic surgeon is naturally interested in fractures because his mind is attracted to mechanical problems and to the prevention and correction of deformities. Let the general surgeon to whom fractures appeal continue to teach and treat them, for he at least possesses the qualification which I postulate as essential—namely, interest in the work. Such a surgeon will not be content to leave his cases in the hands of his house surgeon or feel happy when they are bundled out of his wards in plaster cases.

The treatment of fractures, therefore, must be placed on a different plane, and our students must be taught by teachers who are wisely chosen. After consultations with my friends Rowley Bristow and Harry Platt, who may be considered representative of the metropolitan and provincial schools, I would suggest the following scheme, based on certain general principles.

- 1 The necessity for the segregation of in-patient fractures either into (a) wards under the control of a special surgical unit, or (b) in special wards not allocated to one unit alone.

- 2 The creation of a special out-patient fracture clinic, to be included with the fracture wards as part of a general scheme. Out-patient fractures should not be dealt with as a separate entity—in other words, their control should be under the surgeon or surgeons in charge of the fracture wards.

- 3 A surgeon in charge of the fracture department should be a consultant, the director of a unit, and one in whose practice and teaching the treatment of fractures will be maintained during the whole of his active surgical career. If there exists an orthopaedic department, as should be the case in every teaching hospital, the chief of this department should be one of the surgeons in charge of fractures—even if he is not the only one.

In an ideal scheme the fracture wards should form part of the orthopaedic service, this would simplify both the organization and the teaching. It is certain that no real advance in the treatment of fractures will ever take place if the department is placed on a secondary plane, which is inevitable if the system is inaugurated or maintained of leaving it under the control of a junior surgical officer, who makes this position a mere stepping-stone to some other surgical post.

The fracture team should consist of

- 1 One or more surgeons, including the orthopaedic surgeon.

- 2 A senior assistant. This appointment should be well thought out, and only given to a man with special qualification for the post. There should be security of tenure for a period sufficiently long to make him not only expert, but to secure his skill for the training of the students. He should display special interest in the surgery of the extremities, and preferably intend to follow it up. I consider that the success or failure of the department will largely depend upon this appointment. It may be asked, "What is to become of this assistant in after-life? How is he to earn his living?" Is there room for fracture specialists in private practice?" My answer is that if the right man is chosen for this post he will almost surely gravitate to orthopaedic work, where his knowledge will be of the greatest service, and form an integral part of his expert education.

- 3 The third member of the team should be a physiotherapist, preferably the chief of his department. In addition to these there will be the house surgeons, who attend the clinic as part of their duties, dressers, and clinical assistants.

- 4 Another most important member of the fracture team should be a sister, specially trained, who should be in charge of the fracture ward. She should remain

in undisturbed possession. The care and nursing of fracture cases requires very considerable skill and training, and it is essential that the sister should not be transferred to other departments.

If the fracture ward is under the control of more than one surgeon the first assistant should be in the service of all. He will maintain a salutary rivalry between his various chiefs, which is an important step towards efficiency. I lay the greatest stress upon the segregation of fractures in special wards, even in those hospitals which do not specialize in teaching. It avoids for healthy criticism, and often leads to much needed introspection. Surgeon A, with a case of shortened malunited femur, will realize his limitations when he sees what Surgeon B can do with a similar injury. Surgeon C may feel that his reputation would be enhanced if he handed over his fractures to a more interested colleague.

In the first place, once or twice a week there should be an out-patient fracture clinic, which all senior students are obliged to attend. At least twelve attendances should be compulsory. No formal lectures are needed, but instead a series of clinical demonstrations, in which groups of fractures are collected and compared, and instruction given in relation to diagnosis, prognosis, and end results. More especially the student should be taught the principles that underlie the prevention of deformity and its correction. The tuition must be direct and simple, most of the time being devoted to the common fractures with which the practitioner is likely to meet. The x-ray department, with the wealth of information it represents, should be in close touch with the fracture clinic.

At this stage I should like again to emphasize the urgent necessity there is for each hospital to secure its useless splints and return for teaching purposes only those of known efficiency. Hospital staffs should, from time to time, meet and select the most useful—and they are generally the simplest—splints, and no student should graduate unless he has completely mastered their correct application. Furthermore, in order to simplify the training and to stabilize the examination of the students this idea could be extended by the formation of a committee, representative of all teaching hospitals, to decide upon the best type of splints.

This would be of immense service in a national emergency, and would save the student much waste of time. It is a haunting thought that many thousands of lives would have been saved abroad if every surgeon had been taught to apply splints correctly and expeditiously, and if only those splints had been at hand whose efficiency had been tested. We were able to be of considerable help in this matter to our American colleagues, who learnt from our mistakes, and they published an illustrated little handbook of splints, simple in construction and effective in use, which every surgeon had to master thoroughly. Instruction in a fracture clinic such as I have outlined would have met the urgent need in the great war, and such dire experiences as we encountered in its early stages should leave an indelible impression upon our mind and conduct.

The instruction carried out in the out-patient department should next be continued in the fracture ward, where the best methods of dealing with the recumbent cases could be taught.

I venture to suggest that the scheme I have formulated is neither difficult in conception nor revolutionary to bring into effect. There is sometimes a natural inclination on the part of the general surgeon to resist what he fears to be an encroachment of specialism. This, I am happy to think, is less evident than in days gone by. There is no more circumscribed a specialty than that of the surgery of the abdomen. Many men who have excelled in other departments of surgery have told me they would be glad to hand over their fracture cases, but, they ask, "To whom?" Without a fracture department there is no remedy for them. There can be little doubt that many surgeons would, to their advantage, prefer to leave such cases in the hands of a fracture team rather than be held responsible for mistakes, which are bound to be made by inexperienced juniors. Even if they did not hand their

cases over to a colleague, they would welcome the assistance of an expert first assistant.

Another criticism likely to be levelled against this scheme is that the student's curriculum is already too overcrowded. This does not bear examination. We do not wish to crowd the student's mind, on the contrary, we desire to simplify and clarify his instruction. By securing expert men to teach we exclude much waste of energy. His education becomes intensive instead of being diffuse and desultory. He is taught what is necessary and practical by teachers who have a real knowledge and interest in their subject. When we find students crowding the operating theatre on every opportunity, watching work they will probably never be called upon to do, and this for years, we appreciate how valuable time is wasted. It is doubtless necessary that they should know something of intricate and rare cases, but the out-patient department affords them a better equipment in after-life than academic lectures, the matter of which they can equally well glean from textbooks.

Another objection that may be urged is that our hospitals are already too crowded, and that the so-called chronic cases should not be allowed to exclude the acute ones. This is but poor comfort to a young working man sent off to a Poor Law infirmary with a wife and family dependent upon him. It is inefficient treatment and neglect which transform a simple fracture to a chronic deformity. It is far better for our hospital authorities to say "We are not prepared to treat fractures," than that they should take on responsibilities which they cannot meet. The responsibility is not met by sending a fracture of the femur from their door directly to a Poor Law infirmary, unless they know that its staff and equipment can meet the demand. We cannot disguise the fact that great numbers of adult cripples are manufactured by want of adequate provision. If our city hospitals admit that they cannot cope with the problem for want of beds, wards should be procured in Poor Law infirmaries or other institutions. These wards, however, should be fully staffed and equipped, and brought into close association with our teaching centres. But whatever the arrangement, the student should have the full benefit of it. There can be no justification for any system which adds to the complexity, and not to the relief, of our cripple problem.

REFERENCE
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GENERAL DISCUSSION

Mr S W DAW (Leeds) said he was asked to speak as a general surgeon in view of his long connexion with general surgery before confining himself to orthopaedic work. But in either case it was necessary to approach the subject in a spirit of detachment. They were chiefly concerned at that meeting with the interests of the medical student so far as they were compatible with the best interests of the patients, for there seemed to be no difference of opinion as to the great need of improvement in their methods. On the one hand, it was proposed that surgeons should take more interest in fractures and that more beds should be provided. The hope was expressed that these beds would be provided in Poor Law infirmaries. This was segregation indeed, and would seem to defeat the aims of those who wished to keep fractures closely associated with other branches of surgery. On the other hand, it was proposed to segregate fractures in special wards either under the care of an orthopaedic surgeon, or otherwise under the care of general surgeons as before, but with the special services of a resident fracture expert to act under the general surgeons. The chief difficulty appeared to lie in finding and retaining the services of the resident fracture expert. To make such a post attractive he thought it would be necessary to associate his duties with orthopaedic surgery generally so that the fracture surgical resident should act also as resident to the orthopaedic surgeon, in addition to his work on fractures under the general surgeons. He believed that the appointment of a resident fracture officer would go far to meet the requirements of the patient, whether that officer worked

under the general surgeon or under the orthopaedic surgeon. As to the welfare of the student, that depended mainly on the efficient treatment of the patients. Each student should be obliged to put in a definite number of attendances in the fracture wards where he would follow and assist in the practical application of splints by the resident fracture officer, and would also receive instruction from the surgeon in charge. In that way the student would see the application of approved methods and be kept in touch with any advances in treatment.

Dr ROBERT B. OSCOON (Boston, U.S.A.) said that the position which Sir Robert Jones had taken seemed to be unsatisfactory, and of pre-eminent strategic importance in the advance of surgery to which they all looked forward with hope and conviction. As Mr Gask had said, on this they were agreed, it was only a question of method of attack. Insurance companies and workmen's compensation boards in America were concerned with the treatment which accident and industrial fracture cases were receiving at the hands of the medical profession. It would probably be fair to say that in only a small proportion was wage earning function restored in the number of weeks which it seemed reasonable to expect from the textbooks and from the progress of the rarely well treated case. An extreme example might be cited in a fairly common but frequently unrecognized compression fracture of the spine. Sever had found that the average time of over twenty months had elapsed before such a case was reviewed by an impartial expert and the correct diagnosis made. The waste of time to the individual, the industrial company, and the State was appalling. They were finding the profession wanting, and the insurance companies were actually establishing clinics themselves. This, it must be admitted, was rather a reproach to their treatment and teaching. They were trying to meet it in two ways: first, by stimulating the interest of the general practitioner in these common injuries by affording him an opportunity to observe and learn well tried and practical methods of treatment; secondly, by crystallizing the opinion of the most expert and experienced surgical minds. This was not an attempt to standardize narrowly the treatment of every fracture, but an endeavour to reach an agreement as to certain essential conditions which must be satisfactory, and, if possible, to suggest simple and efficient methods of handling the common types. It was not as if the best methods of treatment were still very debatable, at least in America. The unfortunate mass of material in the war had largely settled these questions. That such attempts might be fairly successful was evidenced by an illustrative outline of the treatment of fractures, which was approved by a group of surgeons of wide experience and active practice in the treatment of fractures after a two days' conference under the auspices of the fracture service of the Massachusetts General Hospital. They came from widely separated cities. This outline, which the speaker presented, was published in the *Archives of Surgery*, and had had a very wide distribution. Such documents possessed a certain authority, and when published must influence medico-legal opinion. It soon became necessary for the practitioner who essayed to treat fractures at least to know and practise these or similar methods if his work was to stand the test of his patients' approval and favourably influence the opinion of the jury. To some extent they had complied with Sir Robert's requirements. Dr Charles L. Scudder, visiting surgeon to the Massachusetts General Hospital, which was one of the most conservative of American hospitals, succeeded many years ago in establishing a fracture service in the wards and out-patient department of that hospital. This service had grown both in number of cases and in its scope of treatment. It was now a rotating service shared by the general, surgical, and the orthopaedic services. Weekly visits to the outdoor fracture clinic were followed by visits to the ward cases by all the members of the staff, and a free discussion of methods and end-results ensued. This had proved instructive and stimulating to students and practitioners, who largely attended this visit. This service made possible the conference which had been mentioned. Friendly rivalry in methods and results was one of its best features. A National Committee on Fractures, of which Dr Scudder

was chairman, under the auspices of the American College of Surgeons, held several meetings a year, and its individual members organized in their own communities clinics to which local surgeons treating fractures were invited. The response had been most encouraging. Already this National Committee had approved a list of emergency splints and apparatus which, with the influence of the American College of Surgeons, would undoubtedly be accepted as a minimum standard by every first-class hospital. Railroad companies were now applying for descriptive lists of this equipment.

They agreed with Mr Gask that the teaching of the undergraduate should be as little as possible along the lines of specialism, but surely the teaching of the treatment of fractures should not be considered as specialism, and the need for teaching was intense. A review of the teaching of fractures in the best medical schools of America made it evident that much was yet to be desired. One of the best plans of teaching was that now in operation at the Johns Hopkins School, under the direction of W. S. Brier, professor of orthopaedic surgery. Fractures were assigned in rotation to the different surgical services and to the orthopaedic service, and the responsibility for their treatment was delegated to members of the staff especially interested in fractures. Four students at a time were on telephone call for stated periods, were notified as soon as a fracture case entered, and were obliged to follow the case throughout the entire period of emergency and convalescent treatment. At stated periods also a general fracture clinic was held, this was attended by the students, the surgical and the orthopaedic staffs treated the fractures, and the end results were studied. There were in addition clinical lectures on fractures, and instruction in the application of different types of apparatus. At the Harvard Medical School instruction in fractures began with a course in surgical technique in the second half of the second year. The students who had just finished their preclinical courses in anatomy, physiology, pathology, and bacteriology had an intensive course of three hours a day for twelve days, during which they reviewed the essential functional anatomy of the different lesions of the extremities and spine. The common skeletal lesions of these regions were then shown. The students were taught to apply to each other simple, practical, and, as far as possible, standardized apparatus for the treatment of these lesions. The avidity for such a course was enormous. A student who applied to a fellow, and had applied to himself, and then removed, an adhesive plaster strapping, or a plaster-of-Paris bandage, appreciated at once and permanently the sensation of the surgeon and the sensibility of his patients. Thomas splint drills were conducted in rivalry of teams as in war surgery. In the third year clinical lectures and fracture clinics were held for small sections totalling twelve to eighteen hours. The fracture service of the Massachusetts General Hospital, to which reference had been made, lent itself with peculiar facility to such teaching. They had come to feel that, at least in their country, for the moment, there was a distinct advantage to be gained by the establishment in great hospitals of fracture services supervised by surgeons especially interested in fractures, and therefore especially skilled in the treatment of these lesions. All the house-officers and pupils and nurses in training should serve for stated periods on such a service. Whether this service was under the direction of the general or orthopaedic surgeon seemed of no moment. They believed that a surgeon most keenly interested in bone and joint extremity surgery, if he possessed equal ability and devotion, would probably obtain better results than a surgeon whose chief interest was absorbed by abdominal, brain, or urological surgery. The utmost harmony existed in the service with which he was familiar, between the group of general surgeons and the group of orthopaedic surgeons who comprised the service. They felt also that when such a service had been organized it was advantageous to have the fracture cases segregated in one or two wards. The nursing force became much more useful if its attention was thus concentrated. Apparatus was much more uniformly efficient, and for teaching purposes the advantages were obvious. They felt that the surgeon whose interest lay elsewhere ought no longer to turn over his fracture cases to his house surgeon until that

house surgeon had had adequate instruction and experience. It was becoming a serious matter, with them, for him to do so, for not only was his moral responsibility to his patient thus unsatisfied, but the fulfilment of his medico-legal responsibility might well be the subject of question, and sometimes of embarrassing inquiry. Mistakes were always instructive, and Dr Osgood thought that they might count on enough continuing to occur to serve the purpose of the student, but attention should surely be attracted when one of the leading surgical teachers in America found it necessary to write as follows against the teaching of fractures: "I feel that the teaching of fractures may be emphasized by analysis of unsatisfactory end-results. Because of the nature of our clinic we have considerable material of this kind." They certainly owed to their patients the best they could give. They could hardly hesitate to initiate this much-needed reform deterred by the fear of more specialism, for with them it had brought about less specialism, and had created a much wider interest in these neglected cases. It had added a reagent, which had dissolved some of the precipitate thrown down by the specialities, and made it again a part of the general solution. This should surely be the aim of the orthopaedic surgeon, whose speciality was not a speciality of anatomy, but what might be called a speciality of function. By constantly striving to add a solvent and turn back into general medicine and surgery all that they were willing, to appropriate, they would lose their own soul—in order eventually, it might be hoped, to find it.

Mr H. Warr (Edinburgh) said that though they might differ as regards the remedies he was sure they all agreed that the results of the treatment of fractures in their public hospitals were not satisfactory, and that the clinical instruction in the treatment of these injuries that their students received was inadequate. These facts were in themselves sufficient to make that discussion of great importance, but arising out of them there was a far greater question—namely, the lines along which the organizations of the premier hospitals of this country were to evolve. What was to be the future of specialization in surgery in all its branches? The organization of the treatment of fractures and the clinical instruction of the student in this branch of surgery were associated but not coequally interdependent. Their primary duty as hospital surgeons was to the individual—to see that he received the best possible treatment, and the plea that in obtaining it the instruction of the student would suffer could never be entertained. They might safely assume, however, that what was best for the patient was the best form of instruction for the student. It was fortunate that the question should be raised in connexion with orthopaedic surgery. The majority of the fractures dealt with were met with in the wage-earning class, and those who saw much of the after-effects of injury realized that the problem of the maimed industrial worker was serious and pathetic. To the individual it so frequently meant misery at home and his ultimate gravitation, often through a course of weary legal bickering, into the category of "suitable for light work," which was reached after experiences which not infrequently led to his moral, physical, and mental deterioration. To the employers it was also a serious problem from the economic standpoint, the financial burden which it imposed being one which still further increased the expense of production and impaired industrial efficiency. It was not surprising, therefore, that in this country, and in the United States of America, as Dr Osgood had mentioned, they were taking an increasing interest in this branch of their work. In the spring of 1921 Mr Wade had delivered a British Medical Association Lecture to the Fife Branch on the influence of the war on the modern treatment of fractures. He then quoted certain facts gleaned from a large employer of labour on the economic aspect of the treatment of fractures in the industrial world. Before he came to the present meeting he had asked the same employer what approximately was the cost of a malunited fracture of the femur, and he replied that it might be put down at anything from £500 to £1,000. To the individual and to the employer, therefore, the issue was a serious one, and, as was only to

be expected in such circumstances, there was already evidence that the question was being looked into by some of them, not only from the humanitarian standpoint, but also from that of sound, efficient business organization. Both masters and men realized that the efficient treatment of the injured was a sound business proposition, and he was sure they would be willing and prepared to give good financial support to any scheme that promised to bring this about. A commission of inquiry into this question would be warmly welcomed. Such an inquiry would, first of all, deal with the front-line service of industry, and he was convinced it would be satisfied with the manner in which it was now being carried out. The first aid stations and treatment rooms in the mines and foundries were good and the work ambulances now available were abundant and excellently equipped. The Thomas splint was being more and more employed and little organization was further required to make it as readily available at the coal face or in the foundry shop as it was in the front-line trenches, there was nothing to prevent the ambulance orderly becoming as good at applying it as he or his brother was when a regimental stretcher bearer. The interesting part of the report would be when it came to deal with the arrival of the patient at their hospitals. Mr Wade feared that here the criticism would be most severe and the recommendations most drastic. It had been asked why those who knew so well what was achieved in the treatment of fractures during the war had not carried on that high standard of efficiency. When that suggestion was made by such an authority as Sir Robert Jones, Mr Wade said that he would plead with him that they felt his criticism severely for when they returned home to civil life full of enthusiasm as all did they were keenly anxious to do so, but found it impossible to carry out at home the same system of organization as in the war hospitals. The circumstances were so entirely different. As hospital surgeons they had individual independent charges and were grossly overworked. The assistance provided was totally different from that obtained in the hospitals in war time. With the exception of the assistant surgeon and what in his school was called the clinical tutor, whose services, like theirs, were limited to a few hours in the day, all the other members of the staff were essentially unqualified men in training. Was it surprising, therefore, that where fractures had to be treated, observed carefully from hour to hour, and corrections and adjustments made from day to day, the hospital surgeon had sought other methods that would permit of these injuries being dealt with in a manner which would dispose of the problem once and for all, as by open operation in the operating theatre, or the application of plaster under his direct supervision, and achieve finality? If these methods had provided the perfect result that at one time was anticipated, there would be no question for them to discuss. Unfortunately, the contrary had proved to be the case. The cases that could best be treated by open operation or by the immediate application of a plaster splint were few in number and seldom met with. What, then, was the solution? Mr Wade saw no other hope than that an expert with the necessary knowledge and time available should be given the responsibility of supervising all these cases, and for preference have complete and entire charge of them all. This meant the establishment in all the large teaching hospitals of special orthopaedic departments with the necessary beds, under the charge of an orthopaedic surgeon. He saw only one criticism that could be justly lodged against this proposition, and it was the ultimate division of the practice of surgery into many individual specialities, for after the creation of an orthopaedic department there must follow the establishment of a similar neurological charge. Neurological surgery, likewise, would become an independent speciality. This arrangement would certainly benefit the patient immensely, for the men who would undertake this work would at first be experts in their own speciality and also have had a long course of training in general surgery. The only fear he had was that it should be permissible for the recently qualified brilliant house surgeon, attracted by the glamour and fascination of orthopaedic surgery, neurological surgery, or some other specialism, to devote immediately his entire time to specializing in this branch alone, and in it he undoubtedly

would become highly qualified. A narrowed outlook, however, meant a parochial mind. The limited liability surgeon was a dangerous person. To avoid this, Mr Wade considered that it was essential that no orthopaedic or other specialist should be appointed to the entire charge of such a department until he had served a long apprenticeship in general surgery, or, better still, if he was a younger man, be associated with a larger surgical charge in which he would be brought in daily contact with the practice of general surgery, and preferably participate in this work to a limited extent. They might advocate such a scheme of reorganization, but at first they would not believe it. They who were members of the staff of teaching hospitals were proud of their great traditions, but realized that to effect any modification in their scheme of organization, which sometimes had stood unchanged for centuries, was naturally very difficult, and could only be brought about slowly, gradually, and step by step. When this was the case he would recommend to their consideration the system that some were endeavouring to introduce in the hospital to which Mr Wade belonged. They had each their small independent charge, but while continuing to practise general surgery in that post they had endeavoured with some success to qualify themselves more particularly in one department of surgery. They had done so, not for themselves alone, but to assist their colleagues in dealing with this branch of their work, and in their turn they received help in other directions. Their junior colleagues had specially benefited by this arrangement, and certain of them, while continuing to participate in the ordinary duties of the ward in the practice of general surgery, were devoting their time to the intensive study and practice of certain specialisms in which they were rapidly becoming very well qualified. The criticism had been advanced that the creation of special departments in general surgery would interfere with the efficient teaching of the undergraduate student. Mr Wade did not think so, and certainly it would greatly improve post-graduate instruction. In view of the rapid and widespread extension of the practice of surgery in recent years the importance of this was very great. It was to the larger teaching hospital that they had to look for the instruction of those who in cottage hospital and elsewhere were called on to do their surgical practice. They came to the larger hospitals expecting to find these men, not only qualified to do their routine work efficiently, but also to observe the best and most recent practice in all departments. So far they had not failed to find this, but if the teaching staff of these institutions was to continue to meet their requirements it must move with the times and further enhance their knowledge, which could best be done by further specialization in the manner suggested. He advocated, therefore, that as far as possible where special departments were being created they should be attached to a general surgical charge, and that the junior members of the surgical staff in such special departments should continue their training in general surgery by giving a limited amount of service to the department of general surgery as well. Out of this system, he trusted, there would evolve ultimately the complete surgical unit, maintaining within it all the departments of surgery, including gynaecology, the workers in which should meet together daily observe each other's work frequently, and the junior members of their respective staffs should mutually co-operate and interchange their posts. By this means there would be produced the better trained specialist, and one in whom the decision to specialize in any branch of surgery was arrived at after a period of sound and broad general training and at an age when, after mature reflection, he and his friends had come to the decision that by natural aptitude and instinct he was pre-eminently qualified for the practice of that specialty.

Mr HARRY PLATT (Manchester) said that he spoke in this discussion in the first place as a surgeon who for the past eleven years had had the good fortune to control the whole of the fracture material in a general hospital, and, secondly, as one who, beginning as a general surgeon, had under no compulsion come to restrict himself to orthopaedic surgery. According to the distinction made by Mr Call he must therefore accept the title of specialist. The organization of the fracture department in his own hospital

had already been described some years ago in the *Lancet*. It comprised an out-patient fracture clinic and an in-patient segregation of fracture patients under the control of one unit. It had been interesting to observe the influence of this department on the attitude of a succession of surgical residents. Their residents, who had been drawn from many different schools, for the most part had become general practitioners. Almost without exception they had acquired a love for the treatment of fractures and confidence in their ability to handle the ordinary everyday cases. Sir Robert Jones had dealt with the historical reasons for the general lack of interest in fractures at the present day. They must all recognize that before the Listerian revolution, and indeed in the generation which saw the widespread adoption of antiseptic methods, the treatment of broken bones and allied disabilities loomed large in the daily routine of the hospital general surgeon. They must also believe that the surgeons of that generation obtained very good results in their fractures, even though denied the aid of modern physiotherapeutic methods in after-treatment. But with the advent of abdominal surgery, the surgeon acquired a new orientation. During the past twenty years the commonplace injuries and disorders of the extremities had gradually receded into the background in the surgery of the general hospital. It was true that the great war had brought a rude awakening, but it would seem that its lessons—which, as Sir Robert Jones had said, were concerned with the value of organization rather than with mere advances in technique—had been forgotten. It could not be said that the general handling of fractures in hospitals, and the teaching of the undergraduate in the treatment of such common disabilities, brought great credit to British surgery. Furthermore, it was clear that the general practitioner of this age did not approach a fracture with the same confidence or skill as his predecessor. Both parties in this discussion appeared to agree that reform was needed. In his own judgement the only solution was contained in the principles of the scheme which Sir Robert Jones had put forward. Mr Gask viewed this scheme with misgivings, and he had raised, in no spirit of hostility, that old illogical lack of sympathy which still obtained between the general surgeon and the special surgeon. They did not question the sincerity of Mr Gask's views, and his quixotic defence of a losing cause compelled admiration. Mr Gask was opposed to the educational control of students by "specialists" and to the segregation of in-patient fractures under the sole charge of the specialist. The specialist referred to in that meeting was of course a euphemism for the orthopaedic surgeon, who was represented as an individual whose *raison d'être* was the possession of special skill in a limited field, and who was interested only in the training of future "specialists." This was a most unfortunate misconception. The special surgeons in that meeting were in no way different from the general surgeons in their early training or early efforts to traverse the whole field of surgery in hospital practice. Most of them had been reluctant to give up any branch of surgery. They were impressed, however, by the fact that the working hours of the day were limited, that life was short, but art was long, that there was little time to acquire knowledge which might, perhaps, contribute something to the intellectual currency of this and a future generation. For such reasons they had preferred to limit themselves to one great surgical field—which they hoped would remain an essential part of general surgery. In this field, of which fractures were an integral part, they stood out in contradistinction to the ordinary general surgeon, not as possessed of special skill, but by reason of their knowledge of its literature, its foundations in physiology and pathology, and not least its philosophy and relation to medicine as a whole. These attributes did not render them unfitted to take a full share of the direction and educational control of the student. The student would gain his inspiration from the best man, whatever his label might be. There could be no legitimate objections to the principle of segregation in surgery. Most of the great clinical advances had come from what might be called "massed production"—namely, the concentration of material in the hands of the few—witness the abdominal surgery of Leeds, the cerebral

surgery of Johns Hopkins and Harvard, the orthopaedic surgery of Liverpool, and so on. If fractures were to be segregated it was essential that they should be under the control of surgeons of full rank. In a very big hospital where the fracture material was abundant, a dual control of a general surgeon interested in fractures and prepared to give the necessary time to the work, and the orthopaedic surgeon of the hospital, working as equal directors with a full term of assistants, formed the ideal scheme. In a small hospital the allocation of the fractures to the control of the orthopaedic surgeon was likely to be the best arrangement. No progress could be expected if ambulatory fractures only were segregated, or if segregation was adopted with a junior surgical officer in control, or worse still under one who was not a surgeon at all. The facilities which a proper segregation of fractures afforded for student teaching were unique, and obvious to anyone who had experience of the working of such a department. If this plan was adopted widely, it meant a reorganization of the present undergraduate surgical curriculum and the restoration of the common disabilities to their rightful heritage in surgical teaching as a whole.

Mr H. H. SAMPSON (Birmingham) said that it must be borne in mind that probably one half of the fractures in this country were treated at home or in cottage hospitals by the general practitioner. It was most important that he should have had the opportunity of dealing with these cases during the whole course of his surgical training. It was impossible to become conversant with such a wide subject in a short concentrated course in a special clinic. The treatment of a single fracture might occupy many months, and it was essential that the student should be able to observe such cases during the whole of their treatment. Unless he could watch the progress of particular cases it did not seem possible for a student or house-surgeon to gain the necessary knowledge and experience to enable him to undertake their treatment when he was in practice. With regard to the organization of treatment, it must be remembered that there was an enormous number of cases to be dealt with. However many beds were provided there would always remain a large majority of ambulatory cases to be treated as out-patients, and the treatment of these could not be entirely entered for by a fracture clinic. Perhaps the most potent influence on the subsequent course of a fracture was brought to bear when it first presented itself for treatment, maybe in the middle of the night, in the casualty department of a general hospital. Now was the moment for their fracture specialist. Whatever organization was provided the initial treatment was usually carried out by the house-surgeon on duty in the casualty department, and it was on the wisdom of this officer that the ultimate fate of the fracture largely depended. It frequently happened that daily observation controlled by repeated radiographic examinations and perhaps resetting under anaesthesia on more than one occasion was necessary before a case was fit for transfer to the fracture clinic. This work could only be undertaken satisfactorily by a surgeon who attended daily in the casualty department. The number of fracture cases requiring admission to the wards under an improved scheme would be greatly increased. All cases which did not proceed satisfactorily in the out-patient department, difficult and doubtful cases, and such fractures as those of the lower end of the humerus, would require greatly augmented in-patient accommodation. As regards teaching, it would accommodate itself to the improved conditions of treatment. The increased care and attention which fractures would receive was bound to attract the attention of a student from his earliest days as a dresser. He would realize from the outset of his career how large a part the treatment of fractures would play in his future work as a general practitioner. When the student became a house-surgeon he would be better equipped to deal with fractures and more interested in the subject. Every house-surgeon who entered practice would have to cope with fractures, and it was of paramount importance that he should possess long and continuous experience of this class of work. Thus throughout his surgical training the future general practitioner would

be meeting with all varieties of fracture, and would have ample opportunity of gaining practical experience.

Sir Robert Jones and his school suggested that improved teaching and treatment could only be provided by a self-contained department carrying wards and out-patient clinic and staffed by special officers. The staff which he enumerated would be quite inadequate for the maintenance of a continuous day and night service such as would be required at a large general hospital. Unless such a service was provided the initial treatment must be left to the casualty house-surgeon, and it was the initial treatment which had the most profound influence on the subsequent progress of the case. The out-patient fracture clinics had special difficulties to contend with. Mr Sampson had consulted the surgeons who conducted the fracture clinics at his own hospital. Ninety to one hundred patients presented themselves at each clinic. It was obviously dangerous to the patient's welfare if the splints were removed before he was in the presence of the surgeon, therefore much delay occurred with every case that was seen. Careful examination and reapplication of the splints consumed more time. In practice it was found necessary to hand over much of the important work of the reapplication of splints to assistants. Officers in charge found that it was impossible during the rush of the clinic to give adequate consideration to any difficult or unsatisfactory case, and they were in the habit of making a special appointment for such work. The fracture clinic served as an excellent policeman, controlling the progress of the uncomplicated case, it did not intrude the treatment and it did not provide the opportunity for special consideration and treatment of difficult cases.

Mr Sampson had already pointed out that a short course of demonstrations on the subject of fractures would not suffice. Such a scheme could not include the handling of individual cases and the valuable teaching provided by the daily observation of their progress. The ordinary house-surgeon would not get any experience in the treatment of fractures, this might be disastrous to a man who might eventually practise in a district remote from a large surgical centre. He was not sure that sufficient stress had been given to the importance of securing trained auxiliary services—a splint maker who was available at all times to be instructed personally by the surgeon, nurses who understood the principles of treatment, were competent to adjust suspension apparatus to the patient's comfort, and to carry out necessary attentions without disturbance of the injury. At his own hospital there were two accident wards into which all male fractures were admitted. The sisters and nurses became conversant with the methods of treatment, and there was an expert mechanic and a carpenter to construct or modify apparatus. All out-patient cases were referred to a fracture clinic which was in charge of a surgical casualty officer. This system worked well and had undoubtedly improved the standard of treatment, but owing to want of space it was impossible to hold the fracture clinic during the busy hours of the day when the out-patient dressers were attending the hospital. Students were encouraged to attend the fracture clinic, but compulsory attendance could hardly be enforced until increased accommodation enabled the clinic to be held during their routine hours. In this particular case, then, segregation had improved the treatment but hindered the teaching. Situated in a great industrial area it was not surprising that the number of fracture cases was considerable. There were fifteen hundred new cases attended the fracture clinics during the year, and the average attendance at each clinic was between ninety and one hundred.

Mr Sampson suggested the following scheme of organization. All fractures requiring in-patient treatment should be admitted to special wards with an accommodation greater than any reasonable demand. The reserve of beds need not be kept empty, but should be used as far as possible for accident cases. The sisters in charge should be carefully selected and should have previous experience of the work. The nurses should be specially instructed in the details of nursing fracture patients and must understand the mechanical principles of the apparatus employed. The services of a trained mechanic and carpenter were essential. The beds would be divided equally among the surgical staff.

One surgeon, preferably on the junior staff should be appointed to exercise general supervision of all the fracture cases, to instruct house-officers and students in the methods of treatment, and to take full responsibility for treatment upon request by the surgeon in charge of the bed. Instruction and practical experience in the treatment of fractures would still form part of the in-patient dressing of every student. He would have the advantage of observing daily progress and of assisting in the application of apparatus. Clinical lectures on the principles of treatment could be given from time to time by the surgeons specially interested in the subject. One or two of the surgeons would probably show special inclination and aptitude for fracture work. They would lead the way in trying new methods and estimating the standard of cure. Methods of proved value would inevitably spread through the sister and house-men to the other surgeons' beds, with consequent improvement in treatment. Between the firms there would probably be keen rivalry fostered by house-surgeons and dressers, with the result that any old methods which were bad would rapidly drop into disuse, and new methods which were good would soon become incorporated in the practice of the hospital. The cases which did not require in-patient treatment would be referred to a fracture clinic under the direction of the specially appointed surgeon. The surgical casualty officer and the casualty house-surgeons could attend this clinic and they would have skilled assistance, which might be supplied by the special wards, the out-patient dressers would attend and receive instruction from the casualty officer. It was perhaps unnecessary to emphasize the importance of adequate radiographic assistance, both in diagnosis and treatment. Co-operation with the massage and electro-therapy departments was a vital necessity. Fractures should have a first claim on the attention of those auxiliary departments which were apt to be overworked and overcrowded. His conclusions were that increased accommodation and improved organization were necessary for the advancement of treatment and teaching. Students should have continuous experience of fractures during the whole of their surgical training. Every house-surgeon must have the opportunity of learning how to treat fractures.

Mr H. A. T. FAIRBANK (London) said he was in the fortunate position of being in charge of the fracture clinic in the general hospital to which he was attached. When considering reconstruction and the reorganization of the work of the hospital some six years ago, the surgeons came to the altruistic decision that the fractures should be handed over to the orthopaedic department. His experience of that fracture clinic convinced him that Sir Robert Jones's views were correct. All agreed that such segregation led to greater efficiency in treatment and thus benefited the patients. He also believed it benefited the student. More could be learnt in an afternoon spent in a fracture clinic, where most types of fractures could be seen gathered together, than by months of attendance in the general surgical wards and out-patient departments when the fracture cases were not segregated. Standardization of splints and simplification of methods were of the greatest benefit to the student. He admitted the difficulty of getting students to attend special departments; they always preferred to go to the general medical and surgical clinics. What was required was better organization of the working hours of the student, and it was not necessary to sacrifice the patient for the benefit of the student. With regard to splints, he thought wood should be used rather than metals, as the latter interfered with x-ray examination, which was so essential. There were exceptions, of course, such as the Thomas knee splint. The clinic of which he had charge was visited once a week alternately by the junior orthopaedic surgeon and himself. The former was also a general surgeon—a very important fact. Each term, in addition to the surgeon, consisted of a casualty officer, the house surgeon attached to the orthopaedic department, and a sister, who was always the same person. He differed to this small extent from Sir Robert Jones in thinking that the casualty officer should be included in the team rather than another senior assistant. The casualty officers were the men who had to treat the cases on arrival at the hospital, and they were the officers to be taught if the patients were to benefit to the

greatest extent. These officers submitted their work to the surgeon for approval and criticism, and they gained enormously by this arrangement. This organization was to the student's advantage also, since it was in the casualty department that he must gain a great deal of his practical knowledge of the setting of fractures.

Professor A. W. SHEEN (Cardiff) said that this discussion was concerned with defects in the treatment of the recent fractures of civil life in their present-day teaching, hospitals and their remedy, linked with a consideration of how changes in hospital organization would affect treatment, and thereby the teaching and the future practice of students. They had heard of the advantages of the segregation of fracture cases under a special fracture team, what were the disadvantages? There was the danger that the isolated team, while very efficient in treating the fracture, might not be equally efficient in treating the patient. There must be considered the severe traumas, the compound fractures, the multiple fractures, the fractures associated with other quite different injuries, and the shock which was an accompaniment of all such emergencies. Often the first thing to decide was whether an amputation should be performed or not. There must be a knowledge of the treatment of shock, of blood transfusion, of the excision of wounds, of the treatment of infections, of the treatment of associated injuries, of the treatment of lung complications. If the head of the fracture team was an orthopaedic surgeon purely, then his other practice was largely non-emergency, rendering him less qualified than others to deal with these emergency conditions. Another disadvantage that he found came from his dislike of over-committed surgery, and from his opinion that a number of surgeons, each excelling in a different direction, should work together as a large team or surgical service. He advocated, therefore, the admission of fractures under a general surgical team of which a fracture surgeon (who might be an orthopaedic surgeon) should be a member. As there were usually several surgical teams in a hospital the fracture surgeon would work with all, or—as this would probably entail undue demands upon his time—it would be better for all the fractures to be admitted under one team, which then should have a larger number of beds than the other teams so that its beds for cases other than fractures might not be inadequate. He agreed that it was better for all the fractures to be segregated, although wards could not usually be given up entirely to fractures, since empty beds would be wanted for other emergencies. A fracture clinic for out-patients, of course, commanded universal approval.

Certain minor disadvantages resulted from fracture segregation. Treatment might become too stereotyped where there was not emulation and comparison between different teams. There was no rest from the "taking-in" of these emergencies as there was when they were distributed. A surgeon who was not called upon to deal with fractures in hospital treated them with less experience in his private practice. One segregation led to others, and multitudes of more or less watertight compartments were to be deprecated for many reasons. All this compartmenting seemed to incite to irregular practice, if they might judge from America, where osteopaths and chiropractors thrived. Work in large surgical teams, each containing, or commanding the services of, the requisite specialists, was his present ideal in hospital surgical practice. His own surgical unit team consisted of himself as a full-time officer and three part-time assistants. They discussed and consulted upon all their cases, often before their students, and grouped various classes of cases under one or other of them. The fractures had been his own special care. The other teams in the hospital treated their fractures, and one of the assistant surgeons held a fracture clinic once weekly for out-patients. It was his hope that in time the fractures would be under one of the general surgical teams in special beds, and that a fracture surgeon would be one of this team. He asked Sir Robert Jones what arrangements obtained in the hospital treatment of fractures in the two places—Liverpool and St Thomas's—with which he was most associated.

Professor Sheen did not attach much importance to the suggestion that they were adding to an already overburdened

curriculum by segregating fractures. If this was done in the way he had just advocated fractures would be largely taught in the ordinary dresser's work. He did not agree with the suggestion of saving the student's time by his not watching operations which he was never likely to perform. It was only by studying a case at the bedside and in the operating theatre that a student could learn early diagnosis, and so be able when in practice to send his cases for operation early. Take the gall bladder for instance: the inaugural symptoms were demonstrated in the ward, and the early disease in the theatre. Instances of this kind could be multiplied indefinitely. Only by repeated ward and theatre demonstrations should they produce practitioners who would send their patients in an early curable stage or save them years of suffering. Now the student was to see and take a hand in the diagnosis and treatment of fractures, and thereby he was to learn. A disadvantage to him was that he would take less of a hand when the fracture team was evolved with its permanent highly trained assistants. Diagnosis he could and must acquire, but what about ability to treat? Treatment was often complicated and difficult. Fractures cropped up comparatively infrequently in the majority of practices. The practitioner was not in himself a team of surgeon, assistants, nurses, and mechanics, with all the elaborate material required. Whatever might be said about the universality and simplicity of the Thomas splint, it was often wrongly applied by the relatively inexperienced, when it was worse than useless. Thomas's splint was often associated with complex modifications and additions, and it could not have satisfied many judging by the innumerable other types of splinting and special splints that had been devised and used. He considered that certain fractures could never be treated effectively except by proper fracture terms, and he advised that the machinery of practice should be altered so as to bring the injured individual whatever class of the community he or she might belong to, under the care of such a team. Such fractures were most of those of the lower extremity and those about the shoulder-joint. He would concentrate on teaching the student the treatment of elbow fractures, particularly in children of forearm fractures, of Colles's fracture and of Pott's fracture, counselling him when he was in practice to send other cases and all cases that appeared rare and difficult to a suitable institution. In these days of motor ambulances and perhaps soon, in places like India, of ambulance aeroplanes, this should not be difficult.

Next with regard to the early sending out of fractures from hospitals which Sir Robert Jones deprecated, here indeed many of them were in desperate case. In his own hospital half the surgical cases admitted were emergencies, the waiting surgical list numbered considerably more than a thousand. Beds must be found. Consciously or subconsciously he might have been influenced by this necessity, but anyway he had pinned his faith to plaster-of-Paris for the majority of fractures admitted. They had used Thomas's splint often, they had used pins and callipers, they had operated to imbricate and to plate, but plaster remained the sheet-anchor, and he was perhaps still influenced by the excellent Croft's splint taught so well in his student days at Guy's. He was accustomed to give his students a textbook on the treatment of fractures in three words: (1) anaesthesia, (2) reduction, (3) plaster. Immediate full surgical anaesthesia. Reduction which was not a mere perfunctory attempt but forcibly manipulative and aided by apparatus, the Hawley table—which was only the bench of Hippocrates—being commonly used for fractures of the lower limb. Regarding the plaster he expressed his indebtedness to a one-time association with the Military Orthopaedic Hospital at Shepherd's Bush, where he learnt of the plaster, mushin, and wadding, which were the best, and which they used. Narrow-grooved metal strips were incorporated as required in the plaster. From Shepherd's Bush also came to them three years ago the sister who was head of the plaster department there, and who had been invaluable in theirs. Besides dressers attending, he attached other students specially to the plaster department as their opportunities permitted, and they welcomed the training and profited by it. A crisis in both planes

checked the results. If the position was bad, in anaesthesia, manipulation, and plaster were repeated. Making the plaster cases bivalve or windowed permitted dressing of compound fractures, and an opening plaster case permitted early massage. Some septic compound fractures had healed at once when sewn up and put under plaster. He was inclined to think that joints did not usually contract adhesions simply from immobilization. He showed a photograph of a lad who had fractured the neck of one humerus, the upper part of the shaft of the other, and the left tibia and fibula. He was treated in closed plaster, and was now back at full work as a collier.

Finally, he had not shirked the issue. Recently he had sent reply paid letters to all the patients with fractures of the long bones of the limbs (about 120) treated by the surgical unit since its beginning—namely, from October, 1921, to December, 1924. The majority either responded to the invitation to come for inspection or sent replies stating their condition. The unit reports would contain an analysis of these observations, which generally were not unsatisfactory. The inspections were most illuminating and were helpful for future work. Students attended and assisted. Such "follow-ups" were a feature of fracture organization which he considered of great importance.

Professor Slicen summarized his recommendations as follows. In organization, a "fracture surgeon" with proper staff and material to work with a general surgical team or teams, out-patient fractures, under such a fracture surgeon, institutional facilities for treating fractures for all sections of the community. In teaching, the learning particularly of diagnosis and of "first-aid" treatment, the appreciation of those fractures which required immediate institutional treatment, and a thorough knowledge of the home treatment of certain other fractures. In both organization and teaching, the establishment and display to the student of a complete "follow-up" system. He desired to express his great indebtedness to Sir Robert Jones for pointing out the defects in the treatment of fractures and for inciting them to study the causes of such defects and to find remedies.

Mr. C. MAX PAGE (London) said that after hearing the opening observations on this subject he felt that the points of divergence between the speakers were really narrow. Perhaps this was due to the broad minded and liberal spirit in which Sir Robert Jones and Mr. Cash had approached the problem, the practical difficulties which must be used being thereby in some measure obscured. At the end of a long, over ground already dealt with by other speakers, he would put forward his own views of the situation. It appeared to be generally accepted that the main thesis—namely, that the average present treatment of fractures in this country was unsatisfactory—must be accepted. Personal and local reservations to this view there were, no doubt, but the fact could not be escaped that most of them saw, if they did not commit, avoidable mistakes in the handling of fractures both in hospital and outside practice. Perhaps Sir Robert Jones had allowed them a little with a blacker picture than the facts justified. He suggested that there had been little or no improvement in practice of this character during the last ten or twenty years. It must be recognized that in his position he saw a very large number of the failures which did occur, and on this account might be excused a somewhat jaundiced view of the situation. Some of his evidence on the point must be regarded as rather out of date. Mr. Page certainly did not think there was any ground for general hospitals who were satisfied with two inches of shortening after a fracture of the femur, but rather that there had been a definite and general advance since the war in the treatment of fractures, and he knew that most of the teaching hospitals in London had made efforts to improve matters. In considering the present position it must not be overlooked that a certain proportion of the bad results seen to day came from the hands of those whose medical education dated from before or during the war. These reflections might perhaps help them to avoid blame in the matter, and at any rate lead them to investigate closely the remote as well as the immediate results of some of the experiments in organization which had been initiated, before completely changing current

hospital arrangements. Accepting the general view that the organization for the treatment of fractures in this country was far from perfect, one might most usefully concentrate on the consideration of the practical remedies which were advocated to correct the defects. Sir Robert Jones had brought forward the outline of such a scheme. His proposals on paper appeared so attractive and promised such efficiency that one hesitated to criticize them. For the non-teaching hospitals Mr. Page would let them stand, but for teaching institutions he thought they possessed definite weaknesses. In outlining their conduct for the future in this relation they should look very carefully to the effect of any scheme on the education of the medical student. The fully organized and specialized unit that Sir Robert Jones postulated could not fail to handle fractures up to a very high standard, but was there not a danger that its adoption would add one more pigeon hole to surgery—another specialization within a specialty? Would it not remove the student from the close practical contact throughout treatment which was essential if he was to obtain a proper grasp of the principles of treatment? They had most of them seen the development of specialism and appreciated the justification for its existence for certain groups of cases. The basic reason for the segregation of any branch of surgery into a special department was founded upon one of two factors, the first of which was the need for the use of special apparatus requiring expert handling and long experience for its proper application. The subjects of ophthalmology and laryngology were examples of specialties which had been established for this reason. The second reason was the existence of a sociological demand for the group treatment and supervision of those suffering from certain ineffective processes, such as tuberculosis and venereal disease. Specialization of this kind was undoubtedly of benefit to the community, though it would probably be generally admitted that it prejudiced the education of the medical student in those subjects. Should fractures be added to the list on either of the above grounds? Certainly not on account of the first—the treatment of the majority of simple fractures was a straightforward carpentering job which only demanded common sense, a knowledge of the reactions of the body to injury, and practical experience. The use of x-rays had so far simplified diagnosis and the control of treatment that it might be said that apart from radiology, no really specialized experience was required. It remained to consider how far the second or sociological reason for specialization held in this case. At first it might appear a valid one, but it must be appreciated that a large proportion of fractures in the country must be treated by the medical practitioner. The same was true of mining conditions abroad and in the services. In the event of war they did not only want to have fifty highly trained men to stay at home in charge of hospitals, they should want thousands of men of average competence who had practical knowledge and the self-reliance begotten of experience to handle fractures and injuries away from expert assistance. He did not think that teaching afforded by a special department would provide them with sufficient men of this type. In respect of pre-graduate study, the general effect of a special department was to make the subject to the medical student an academic one. He might show up very well on paper, but was a poor performer when left alone in sole charge of a case. He did not wish his remarks to suggest that he was against any form of segregation of fractures. He thought that a measure of segregation in after-treatment both for fractures and minor injuries was essential for a large hospital, but he would stress the point that all fractures should pass through the casualty department in the first place. Here they were seen together with other injuries by the student during his term of office as a dresser. The problem of supervision in a general hospital, if his point was conceded, was a different one for the out-patients and for those admitted. As Sir Robert Jones had so plainly put it, the essential factor for success was that the officer in charge should be experienced in this type of injuries, and keenly interested in their treatment. Mr. Page would prefer him to be a general surgeon, but if the general surgeon had not the time or inclination to deal with the problem then the orthopaedic surgeon should clearly be

given a chance of taking his place. But he did not think that the suggested clinic should become an integral part of an orthopaedic department. It must not be overlooked that patients the subject of a fracture might have internal injuries or suffer from infections which could not be properly handled by a specialist. He thought that the important point in any segregation in the after-treatment of fractures was that close co-operation should be established between the officer in charge of the physiotherapeutic department and the surgeon primarily responsible for the treatment of the case. He feared that his remarks might in effect appear to be destructive rather than constructive. The subject was, however, a very important one, and one which, if it was to be dealt with effectively, demanded considerable reorganization of the surgical work of a general hospital. He felt that there was a possibility that, in changing their methods so as to gain an immediate and obvious improvement in detailed treatment, they should only succeed partly, owing to a failure in the education of the future rank and file of the profession in respect of the condition under consideration.

Mr. McADAM DEELES (London) said that he was in accord in almost every detail with Mr. Gask. For the sake of the fracture patient at the moment in the hospital he was willing to concede that it might be better for him or her to be under an orthopaedic surgeon, but he was certain that for the general practitioner and for the general public it was better in the long run for the immediate patient in the hospital, and for the future fractured bone in the country, for the patient to be in a general surgical ward. At the outset it was a truism that the greater number of fractures were not treated in hospitals to which medical schools were attached, but in smaller country and cottage hospitals, in out-patient departments, and even in private hospitals and private houses. How then could they best train the medical practitioners who had to treat these multitudinous cases of fracture? One of the chief difficulties of teaching the treatment of fractures if they were segregated was that it was certain that from every batch of students some would miss this special training chiefly because the time of the curriculum did not admit of the arrangement for this particular specialty. Secondly, there was a very important point, which was that the student must be taught methods of treatment which he could use in private practice. When the general practitioner was faced with a fracture in private practice, his first thought was, What was the simplest and yet the best method of treating the particular fracture. Mr. Deeles had always personally advocated that every student should have a practical knowledge of a good recognized method of treating a fracture of every one of the chief bones of the skeleton, and he considered that all general surgeons should have sufficient practical acquaintance with such treatment so as to be competent to teach the average student adequately. He was sure also that it was important that every nurse should have practical experience of fracture nursing. Finally, he believed that if all fractures were placed under orthopaedic surgeons, it would mean at least tripling the beds at the disposal of the specialist, and probably doubling the number of orthopaedic surgeons.

Mr. GWYNNE WILLIAMS (London) said that though described as an orthopaedic surgeon for the purposes of the discussion he was a general surgeon, at least he thought he was until he had heard what terrible results in fracture cases were produced by the latter class of surgeons. He was optimistic enough to believe that Sir Robert Jones had painted the picture a little blacker than it really was, no doubt owing to the fact that the failures were brought to him from a wide view. Mr. Gwynne Williams also saw bad results, some of which were not his own, yet he had thought that treatment generally was improving. The problem of teaching the treatment of fractures presented three different sides. In the case of students it must be emphasized that the treatment of a fractured limb was very different from that of such diseases as appendicitis, in which diagnosis and operation were the most important, and all the essential treatment was, in the majority of cases, finished in a few days. The treatment of a fracture

extended over weeks or months until the patient had completely recovered and was fit to work. He therefore preferred that a student should take charge, under supervision, of a fracture throughout its treatment so that he could learn how necessary was continuous care of the case. In the present arrangement of the curriculum this could only be done satisfactorily during the period of clerkship, he therefore thought it desirable to return fractures in the general wards under the surgeons for whom the students dressed. It was generally admitted that in the second-year appointments the student did not come into that intimate contact with the case which was necessary if the treatment of a fracture was to be thoroughly learned. The second side of the problem was the hospital resident. He felt very strongly that no house surgeon should be deprived of the opportunity of treating fractures, there was no other period in the education of the man or woman who was going into general practice during which he or she learned more of the purely technical aspects of surgery (and the treatment of fractures was essentially technical), since the stimulus of responsibility deeply imprinted the lessons to be learned. If fractures were segregated still fewer doctors would have had experience of their treatment. It had been said that the general surgeon deprived his house surgeon of the opportunity of treating fractures by discharging them admittance and hastening their discharge in favour of abdominal and other cases, but he found that the difficulty was to persuade the resident to take in fractures and keep them in for efficient treatment, for the average house surgeon thought of surgery in terms of operations. Finally, there was the teaching of the surgeon, perhaps the most difficult part of the problem, for this he thought that there were advantages in segregating fractures, because although Sir Robert Jones had told them that the treatment was easy and that in the hands of experts even intracapsular fractures of the neck of the femur gave good results, yet Mr. Gwynne Williams had encountered many problems in the treatment of these and other difficult fractures. There was a large amount of work to be done in deciding on the best methods of treatment. For this purpose the surgeon required the material for investigation to be concentrated in order to work out various methods and to compare results. This method had been a great stimulus to thought and would inevitably further their purpose in obtaining better and better results, but he hoped that the treatment of fractures would be practised throughout as wide a field as possible in order that these two Sections might meet again, not so much to decide who should treat cases, but to discuss the technical methods by which difficulties might be overcome.

Professor ANDREW FULLERTON (Belfast) said that at the Royal Victoria Hospital, with which he was connected, fractures were treated by the general surgeons in the general wards. The teaching of the late Alexander Gordon, at one time professor of surgery at Queen's College, was responsible for the interest taken by Belfast surgeons in fractures for several generations. The inventor of Gordon's splint for Colles's fracture was an enthusiast in everything pertaining to fractures, and his influence was still dominant in the Belfast Medical School. Professor Fullerton believed that the teaching of fractures in Belfast was, on the whole, satisfactory. The cases being in the general ward they could be followed day by day and week by week by the clinical clerks, and their progress noted by the use of a travelling x-ray equipment. He took as an example of the work done in his own wards 70 cases of fractured femur treated during the last five years. 41 of these were of the shaft, and the remainder in the neighbourhood of the neck. In the 41 cases of fracture of the shaft there was an average shortening on eversion of less than a quarter of an inch. Students were taught that an inch of shortening was a disgrace, and that a patient who left the wards with a stiff knee as the result of a fractured femur was a disgrace. Of the 41 cases, 6 were plated and the rest treated by Thomas's splint, with the addition at the end of five weeks of the flexing iron to prevent stiffness of the knee-joint. His own results had improved since the war owing to the teaching of Sir Robert Jones, and especially to his association in France with Major Maurice Sinclair,

one of the most expert exponents of the art of treating fractures he had ever seen. The hospital arrangements in Belfast did not provide for a special orthopaedic department, and the responsibility for the treatment of fractures rested on his colleagues and himself, all of whom were general surgeons. He felt justified in saying that they had shouldered the responsibility, and in the circumstances obtaining in his part of the country had produced results which would bear a favourable comparison with those of other clinics.

He did not think the segregation of fractures in special wards was practicable in Belfast at the present moment, as the hospital with which he was connected could not accommodate them all. Many fractures were treated in cottage hospitals scattered over the North of Ireland by general practitioners. The training of these practitioners was a problem involving a good deal of responsibility, of which he and his colleagues were deeply sensible. Any practicable scheme which improved the teaching of fractures in his area would receive earnest consideration and support.

Mr R. C. LINSLEY (London) said that the subject was no new one. At St. Bartholomew's Hospital in 1642 a surgeon bonesetter was appointed to the hospital to set fractures, and a few years later an assistant had to be appointed. So that the hospital was a pioneer in this matter, although it had not kept up the organization. Mr. Eccles and other specialists had told him if Sir Robert Jones was advocating that all fractures should be placed under the care of an orthopaedic surgeon, but this was not so, he advocated that they should be placed under a surgeon who was interested in them, and in Mr. Linsley's experience many surgeons were not interested in them. Mr. Goss claimed that their duty to students was to teach fundamentals, surely the fundamentals of fracture treatment were an essential part of the knowledge of all medical men, far more important than the details of elaborate abdominal operations, which the student at the present day had to spend much of his time watching and recording. The specialist did not necessarily teach the student the details of his specialty, but by greater experience was more likely to recognize and emphasize the fundamentals.

Professor A. T. BAZIN (Montreal) said he had not been actively interested in the treatment of fractures for some years, but he was chairman of the surgical staff of the Montreal General Hospital and chief of one of the surgical services. Therefore, from an administrative point of view, he was keenly interested in both the treatment and teaching aspects of fractures. In 1919, after return from France, they established a fracture clinic—both in-patient and out-patient. Two young general surgeons were put in charge, both had had an experience with fractures, and both were keenly interested. There were two still more junior general surgeons as assistants and a house surgeon for the clinic. The out-patient fracture clinic was held once a week, and was largely of the nature of a follow-up clinic, the patients attending for supervision until function was satisfactorily restored. The department was not a watertight one. Fracture cases overflowed into the general surgical beds or vice versa, according to the demand. The chiefs of the general surgical services had supervision over the fracture cases, and at weekly surgical staff rounds these beds were included. Nor was there any regulation demanding that all fractures should be treated by the personnel of the clinic—either in-patient or out-patient. Nor did the members of this personnel limit their work exclusively to fractures. Thus they had achieved a very elastic arrangement in which there was segregation of fracture patients without narrow "specializing" on the part of the attending staff. Then, as regards results—and first treatment. In September, 1924, and therefore not for use at that meeting, there had been handed to him a report of the first five years' work. He spoke from memory, and would mention but a few of the salient features. In 2,000 cases admitted to the in-patient clinic there had been no cases of non-union and only three cases of delayed union. No patients had been "plated", in fact no plates were handled except in the removal of three for non-union, plated elsewhere. There had been no case of amputation for compound fracture, crushed limbs obviously

requiring amputation were admitted to general surgery beds. There had been a progressive diminution in the duration of hospital residence because of the adoption of ambulatory treatment in the later stages of treatment and the possibility of close and continuous supervision of these cases in the follow-up out-patient clinic. Secondly, with regard to teaching, all students in their third year attended a weekly two-hour clinic throughout the session of thirty teaching weeks. A systematic course was given covering the fundamentals, architecture of bone, the anatomy of displacements and deformities, and the repair of bone. Regular and irregular type fractures were studied and illustrated by cases from the wards or out-patients. In the out-patient department the students were taught to apply and reapply splints, plaster, and apparatus, also the practical application of the means employed for restoration of function. In the fourth and fifth years the surgical dressers were assigned to the fracture beds in rotation. In other words, the fracture beds were included in the number of beds in general surgery which were utilized for teaching. Professor Bazin did not believe that any student could be induced to follow through from first to last any one patient—for example, with a fracture of the femur. But with their system all of the students throughout three sessions had the opportunity of seeing and studying many cases in all stages of treatment and rehabilitation. So satisfied were they that the method was the right one that they aimed to extend and develop the department as a unit.

Mr. W. R. BRISTOW (London) said that it was evident from the remarks made by the openers of this discussion that it was generally felt that all was not well with regard to the management of fractures, but there was a very clear-cut division of opinion as to what procedures should be adopted by way of remedy. The question of segregation or non segregation was the first point to be considered. There could be no question as to which method was the better for the patient—all were agreed as to the benefit he derived from specialized treatment. This must be, as Mr. Wade had emphasized, of paramount importance. Mr. Bristow agreed that the student would learn best when the treatment was of the highest efficiency. Mr. Gask opposed segregation, and many surgeons agreed with him, because they feared that the teaching of the student would suffer. Mr. Bristow agreed that it was the duty of the teaching hospitals to turn out good doctors. But was the teaching with regard to the handling of fractures good under the present system? He agreed with Sir Robert Jones that it fell a long way below the required standard. But it was not to the surgeons attached to the staff of a hospital but rather to the general practitioner that the question should be put. There was little doubt as to his answer. It was easy even if somewhat cheap, to argue against extreme segregation—to say, for example, Why not have a specialist or special department for diseases of the little finger? But if criticism was to be constructive, why not equally consider a well established specialty like gynaecology—separate wards, separate teachers and now, he believed, in some institutions at any rate, a five or six months' course devoted to this subject? Had the result on the student been deplorable? No. Why, then, should the teaching of fracture treatment in special wards, or in a special part of the out-patient department, be such a hazardous undertaking? It was true that with special departments springing up on one had better say, arising by a natural process of evolution, the medical curriculum, and the way the student spent his time in the wards and out-patient department, needed some revision. It was said that students knew less of tuberculosis, less of venereal diseases, and so on since these branches of the work had been segregated. Mr. Bristow thought this was certainly true, but this did not necessarily mean the segregation in these departments was wrong. In his opinion the student's time should be so parcelled out that attendance in such departments was part of his routine. They were told his time was already fully taken up, but was it taken up to the best advantage? The old system of teaching was the master and his apprentice: they had lost the master, the work had been divided and much of it was treated elsewhere. Neither in his wards nor in his out-patient depart-

ment did any one man collect the varied material the old surgeons used to do. They might deplore the fact, but the fact remained. But what of the apprentice? Mr. X's dressers met him in the central hall and dutifully followed him round his wards and stood by in his theatre. They had little or no time to go elsewhere. If Mr. X did not care for fractures, or worse, if evening, had not the time, or the aptitude, to deal with them, the dressers suffered. Mr. Bristow suggested, with all deference to tradition, that in nine months' surgical dressing time could, and should, be found for definite work in a fracture clinic, even if the dressers were detached from the master for this purpose. Again, the teacher's interest in bone and joint surgery did not narrow his outlook and make him a poor teacher: the personal factor was all-important. It was not a question of brilliance, or special knowledge, or even all round knowledge of other branches of medicine or surgery—some men could teach, some could not. Mr. Gask seemed to think that the specialist was not the best teacher for the student and yet in Gask and Wilson—written, one would imagine, for the student—the section on fractures was written by the orthopaedic surgeon of St. Bartholomew's Hospital. For the average student a more intensive teaching and training in fractures was an urgent need, and Mr. Bristow believed that segregation under men specially trained and interested in the work was the only way this need could be supplied.

SECTION OF DISEASES OF CHILDREN.

ROBERT HUTCHISON, M.D., F.R.C.P., President

DISCUSSION ON THE TREATMENT OF EMPYEMA

OPENING PAPERS

I.—HECTOR C. CAMERON, M.D. CAMB., F.R.C.P.,

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In opening this discussion upon a disorder the treatment of which is primarily surgical, I must remember that I am to be followed by Mr. Souttar, and that it falls to his lot, and not to mine, to have real opportunity of assessing the value as well as the technical difficulties of different operative procedures. It seems to me right that I should confine myself to a consideration of what may be called the more medical aspects of empyema. To do so does not imply that I am to deal only with matters of secondary importance, for empyema is almost never a primary disease, but in general a complication of some form of pneumonic infection of the lung. The prognosis as to life is, and must be, profoundly influenced by the character of the pneumonia to which it owes its origin.

A discussion on the treatment of acute empyema in children can start with no other consideration than that of the very high mortality in the first two years of life. Almost all statistics show a death rate of about 75 per cent in the first year and of 50 per cent in the second. In the third year there is a sudden drop to about 18 per cent, and thereafter the figure remains constant at a low figure—6 per cent or less. With a death rate varying so greatly from year to year it is not possible to make any statistical survey of cases as they occur in childhood as a whole. A result which would mean a notable advance in treatment in the first year of life would imply failure in the fifth.

The high mortality in the first two years of life is, I think, undoubtedly due to the character of the pneumonia commonly met with at that age. In older children, as in adults, it is always a favourable feature when the rise of temperature due to the pneumonia is separated from that due to the empyema by an interval of time. It is an unfavourable feature if the empyema develops at a time when the pneumonic process is still active and when, upon our chart, the curve of the pyrexia due to the empyema is superimposed upon and blended with the curve of the pyrexia due to the pneumonia. In other words, the empyema which may be described as metapneumonic is of relatively good prognosis, that which is synpneumonic is

of relatively bad prognosis. The high mortality in the first two years of life becomes explicable when we consider that it is precisely in the first two years of life that pneumonia, both of pneumococcal and of streptococcal origin, tends to be of very long duration. Within that age limit it is the exception and not the rule to encounter the short-lived pneumonia of adult type with lobar distribution and termination by crisis. An empyema which develops in the course of a pneumonia which lasts three or four weeks is almost certainly an empyema which must be described as suppurative, that which complicates a pneumonia of five or seven days' duration is likely to be metapneumonic.

In the third year of life we encounter a somewhat sudden change in the type of pneumonia and the short-lived lobar type establishes itself as by far the most frequent variety. In the first two years of life metapneumonic empyema is comparatively rare, suppurative empyema distressingly frequent. The high mortality of empyema in the first two years of life is due to peculiarities of the acute primary pneumonia of infants, which from its longer course and its greater tendency to give rise to simultaneous infection of parts remote from the lung—the meninges, for example, the middle ear, the pericardium or the peritoneum—seldom produces the metapneumonic type of empyema, which we may define as a residual collection of pus localized in the pleura after the termination of the acute pneumonic process in the lung. With the sudden disappearance of the form of pneumonia characteristic of infancy metapneumonic empyema in this sense becomes the rule and the prognosis shows a correspondingly sudden improvement.

There have been many exhaustive studies of the bacteriology of empyema in childhood. It is clear that the pneumococcus, the most common organism to be isolated in childhood, has a prognosis considerably more favourable than the streptococcus, and it is significant that as a rule the empyema due to the streptococcus appears relatively early during the height of the illness and torremia due to the lung infection. It is especially apt to be associated with small scattered abscesses situated in the pulmonary tissue immediately beneath the pleura. Tuberculous empyemata are rare before the fifth year. Staphylococcal empyema, especially in the newly born, is commonly metastatic and may originate in umbilical sepsis, osteomyelitis, or some other infection of a remote part. Such metastatic empyemata are almost always fatal.

The distinction between metapneumonic and suppurative empyema has an all-important bearing upon the question of the treatment to be adopted. Open operation with resection of rib performed upon children with metapneumonic empyema gives highly satisfactory results, no matter what the age of the child may be. The mortality is little greater in the first two years than in the tenth. Death is only to be feared in cases in which there is very great weakness and prostration with extreme emaciation. On the other hand, the open operation with resection of rib, performed in cases of suppurative empyema in the first two years of life, has a very high mortality.

In 1923 Osman and I¹ investigated this point, so far as it is possible, in a series of 52 consecutive cases of empyema in children under 2 years admitted to Guy's Hospital. Of the 52 cases 13 recovered and 39 died. Of the 13 cases which recovered 12 were clearly to be classed as metapneumonic. All of these 12 cases were alike in that they showed no symptoms of pneumonia at the time when the diagnosis of empyema was made. High temperature, rapid pulse, urgent and distressed breathing, cyanosis, delirium, meningismus, expressionless faces, etc., formed no part of the picture. The symptoms of these metapneumonic cases were less striking. The mothers, as a rule, complained of the child's wasting, of an alteration for the worse in appetite, energy, and temper, of pallor, of persistent dry cough, or of intermittent attacks of diarrhoea. When it was recognized that the child had suffered and recovered from an attack of pneumonia, these indefinite symptoms were always dated from that attack and were regarded as an unsatisfactory

convalescence from it. Examination showed a pale, fretful, wasted child, with, as a rule, but a slightly irregular temperature, who became dyspnoeic only after exertion or after crying.

In our series all of the quiescent metapneumonic cases recovered after resection of rib. On the other hand, all the suppurative cases but one died. In the single suppurative case which recovered it appears likely that the termination of the pneumonia and the operation coincided in point of time. Of the 39 fatal cases, 18 were submitted to operation. In the remainder no operation was done, either because the empyema was not located during life or because the child appeared too ill. Of the 18 deaths after operation, 9 occurred within twenty-four hours of the resection of the rib, the remaining 9 at varying intervals thereafter. Of the 39 fatal cases, the *post-mortem* notes were available for examination in 36. In 28 pneumonia more or less extensive was present, in 10 suppurative pericarditis, in 1 peritonitis, in 1 meningitis. In only one case was none of these fatal conditions present—that of a young infant who died a few hours after resection of a rib on the seventh day of an illness marked by very high fever and a very rapid pulse. An acute streptococcal empyema alone was found without pneumonia and without pericarditis.

From a study of these cases Osman and I draw the following conclusions:

1. The high mortality of empyema in the first two years of life is due to the specific character of acute primary pneumonia in infancy.
2. Submitted to the radical operation with resection of rib etc. pneumonic cases almost always recover. suppurative cases almost always die.
3. Metapneumonic empyema should be dealt with by resection of rib as speedily as possible.
4. Suppurative empyema should not be subjected to resection of rib until after the termination of the pneumonic process. Some form of paracentesis should be practised as a temporary measure.
5. In suppurative cases death occurs from the original pneumonia and from metastasis of infection to other parts rather than from the empyema.

Circumstances have not enabled me to test the truth of these conclusions upon any considerable scale. I am unable to disprove the objection which may be very reasonably raised, that the cases which recovered did so because they suffered from a relatively mild infection or were possessed of a relatively high resistance, and that in the cases which died death would have followed equally soon and with equal certainty had they been treated by repeated aspiration in the hope that later, after recovery from the pneumonia, the radical operation might be performed in more favourable circumstances. The vast epidemics of influenza occurring during the war in training camps and elsewhere provided ample material for an investigation of this character. It is true that the material available was adult material but, on the other hand, the type of pneumonia which occurs during influenza, both in its symptoms and in its *post-mortem* appearances, presents a much closer resemblance to the lobular pneumonia of very young children than to the lobar pneumonia of adult type.

Thus the findings of the Empyema Commission of the United States seem to me of great importance as bearing directly upon this point. When the commission substituted a method of repeated aspirations until after recovery from the pneumonia for the method of immediate resection of rib previously employed, the mortality fell from 40 to 4.3 per cent. At Camp Lee the following was the experience:

- First Series.* Early operation. October, 1917 to January, 1918, 85 cases mortality 61.2 per cent.
Second Series. Early aspiration late operation, January 1918 to August 1918. 96 cases mortality 15.6 per cent.
Third Series. The same. October 1918 to February, 1919, 94 cases mortality 9.5 per cent.

These figures certainly support the conclusion derived from the study of the results obtained in young children at Guy's Hospital—that the performance of the open operation at too early a stage is dangerous and adds greatly to the mortality.

But successful treatment must be concerned not only with the saving of life. It must consider also the complete restitution of the function of the lung. Chronic empyema, which implies a failure to achieve complete obliteration of the cavity, is much more rarely met with in childhood

thru in adult life. The resilience of the thorax and the high degree of elasticity of the lungs, are no doubt factors acting favourably. We may in almost all cases regard the failure as due to the excessive formation of fibrous tissue around the cavity, so that there forms a space with thick and rigid walls which will neither collapse nor yield to the force which the lung exercises in its attempt to expand. Different factors contributing to this result may perhaps be set out as follows:

1 A too great delay in the establishment of satisfactory drainage

2 Insufficient drainage or drainage unsuitably placed

3 Secondary infection of the cavity from accidental contamination from without or from the presence of a bronchial or pulmonary fistula or of a foreign body such as a piece of rubber drainage tube which has slipped inwards

Let me briefly consider these points in turn

1 That in the case of young children and in certain influenzal cases it may be wiser to withhold operation until after the termination of the pneumonia does not contradict the general rule that any delay in operating makes it increasingly likely that the formation of fibrous tissue in the pleura will prevent or make difficult the proper expansion of the lung. The two considerations pull us in opposite directions. In a child struggling with pneumonia the sudden formation of an open pneumothorax with great mediastinal displacement, may turn the scale against recovery. Moreover, at an early stage the pleural infection takes the form of a diffuse cellulitis. Later adhesions both stabilize the mediastinum and localize the infection. But delay still carries with it its own dangers. In infancy we are most concerned with saving life, after the third year the risk to life is slight and the complete recovery of the function of the lung is our main consideration. It remains true of most of our bad results that the difficulties grow out of a failure to make an early diagnosis of empyema, and that the fibrosis of the walls was far advanced before operation.

2 Drainage must be adequate and the opening suitably placed. Without some fairly accurate knowledge of the exact shape and capacity of the cavity there must always be a risk that the drainage tube may be removed too soon, while the sinus contracts and affords inadequate drainage to a cavity only in part obliterated. Probing, irrigation with measured quantities of fluid, illumination by an instrument devised on the principle of a cystoscope, and radiography may all assist in investigating the shape and extent of the cavity.

3 It is probable that secondary infection is not uncommon. Moist antiseptic dressings offer obvious advantages over dry sterile pads, both in preventing accidental contamination of the wound or of the discharges and in excluding the air from the pneumothorax. A fistulous communication with a bronchus is the usual termination if an empyema is left undrained. This spontaneous escape of pus is seldom rapidly achieved. It is rare to find expectoration of pus from an empyema cavity before the eighth week, and the interval is usually much longer.

The date of the opening of the fistulous communication may sometimes be determined by the circumstances that while bronchial secretion is tasteless, the pus from the empyema has a peculiar bitter taste. After irrigation with Dakin's solution the taste of chlorure may be noted in the mouth. Surgical methods have been successfully devised by which a wedge-shaped piece of the lung containing the fistulous opening may be excised, yet it is probably true that the main difficulty in these cases is concerned not so much with the fistulous track as with the rigidity of the dense fibrous tissue which has grown around the empyema cavity in the long interval before the pus at length found an exit.

Irrigation is of service in disinfecting the cavity and in preventing the formation of adhesions with localization of the pus. With a sufficiently free outlet and with unobstructing solutions it is without ill effect. Accidents formerly described appear to have been due to the use of strong antiseptic solutions or to too great pressure. Dakin's solution appears especially of value because it possesses quite remarkable powers of softening and disintegrating newly formed fibrous tissue and organized lymph. The

discharge of large fibrous casts from the surface of the lung, after its continuous use, has often been noted.

If all of these sources of failure are avoided recovery should be rapid and complete, because the lung, in the absence of a rigid, uncollapsible, and indistensible fibrous covering, is free to expand and obliterate the cavity from which the discharge originates.

Many attempts have been made to assist the lung to expand and to force asunder the adhesions which bind it down. The methods of "siphon drainage" and "negative pressure drainage" are complicated and require constant supervision if free drainage is not to be impeded. In a sense they may be said to attack the problem from a wrong quarter. The primary aim must be to avoid the formation of fibrous tissue. If the lung is bound down by a rigid covering of fibrous tissue, decortication is indicated. If the lung is in a condition to expand, all devices to increase the negative pressure are unnecessary, if it is not in a condition to expand they are ineffective.

Of resection, followed by immediate closure of the wound, I have no experience. If it is to be successful it would seem that its use must be confined to cases in which immediate expansion of the lung is possible, which give the best results with the more usual methods.

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THE TREATMENT OF ACUTE EMPYEMA IN CHILDREN

Incidence and Mortality

It will be generally acknowledged that acute empyema of the pleura is a fairly common disease in childhood, and that its importance on this account is enhanced by its high mortality in early years. Yet to obtain accurate statistics on the subject is very difficult, and those which are available are marred by a disappointing divergence. Thus at the London Hospital, where we deal with most diseases on a generous scale, our annual cases of empyema have in the last fifteen years varied between 46 and 112, and our mortality between 85 and 40 per cent, without any obvious reason. Empyema is, indeed, only one local detail in the clinical picture, and it may be entirely overshadowed by general features of decisive importance.

From a study of certain large groups of cases a few statistical facts of real interest do, however, emerge. In the fifteen years from 1909 to 1923 there were treated in the London Hospital 1,310 cases of empyema, excluding those which arose secondarily to surgical conditions. Of these, 655, or exactly half, occurred below the age of 10. This agrees fairly well with the 425 cases from Johns Hopkins Hospital quoted by Heuer, 182 of which were below the same age. Even in this restricted period the incidence is uneven, for no less than 70 per cent of the cases in the first decade occur in the five years between the ages of 1 and 6, so that when we speak of the treatment of empyema in children it is this period which we must chiefly bear in mind.

The mortality of empyema in early years is even more striking than the incidence of the disease. In 1923 there were in England and Wales 445 deaths from empyema, and of these 143 were in the first decade. But of these last cases no fewer than 119 occurred in the first five years of life, and 97 of these were between the ages of 1 and 4. It is in these years that empyema is most fatal. It is true that in the first year the mortality is highest of all, reaching 75 per cent, but the number of cases is small. In the second, third, and fourth years the disease is common and the mortality anything from 40 to 60 per cent. Holt reports 204 cases in the first two years—14 in the first year with 10 deaths (74 per cent), 190 in the second year with 112 deaths (59 per cent), or a general mortality for the first two years of 60 per cent. Cameron and Osmani report 52 cases from Guy's Hospital in the first two years, with 39 deaths (75 per cent). Brown, from the Children's Hospital, Philadelphia, reports 149 cases between the ages of 1 and 4, with 51 deaths, and a mortality averaging 34 per cent over this period. The London Hospital statistics are shown in detail in the adjoining tables.

TABLE I—Cases of Acute Empyema in the London Hospital 1909-23 inclusive

Age	Male	Female	Total	Deaths	Mortality
0-10	397	258	655	189	28
10-20	125	54	179	11	6.1
20-30	113	61	174	27	15.5
30-40	82	35	117	23	19.6
40-50	74	29	103	32	31
5-60	52	14	66	26	39.4
6-70	11	2	13	5	38.1
70-80	0	3	3	0	0
Total	851	455	1310	313	23.9

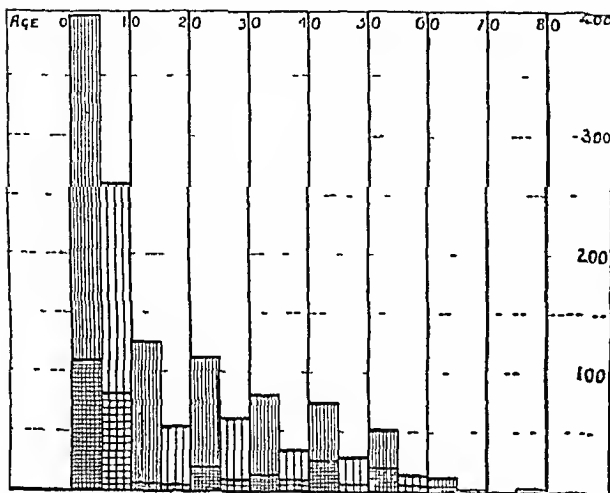


CHART A—Cases of acute empyema in the London Hospital 1909-23 inclusive. Age incidence and mortality. Left hand columns male right hand female

TABLE II—Cases of Acute Empyema under the Age of 10 in the London Hospital in the Years 1909-23 inclusive

Age	Male	Female	Total	Deaths	Mortality
0-1	23	27	50	43	86
1-2	68	40	108	61	56.5
2-3	79	73	152	51	31
3-4	47	33	80	16	20
4-5	41	37	78	17	21.8
5-6	49	30	79	6	6.3
6-7	40	27	67	11	16.6
7-8	32	17	49	2	4
8-9	19	8	27	3	11
9-10	19	6	25	0	0
Total	397	258	655	189	28

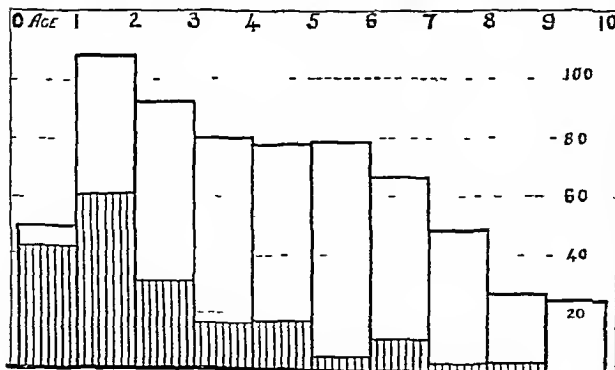


CHART B—Cases of acute empyema in the London Hospital under the age of 10 in the years 1909-23 inclusive. Age incidence and mortality

The heavy mortality in the first two years, and the sharp drop which occurs after the age of 5, are especially to be noted.

There is another curious fact in the incidence of empyema, that, taking all ages, the males outnumber the females by about 2 to 1. In the ten years ending with 1923 there was an annual average of 314 male deaths and 151 female in England and Wales. In later years increased exposure may play some part in the divergence, but even before the age of 10 the difference is marked, there being in the year 1923 88 male and 55 female deaths. This is in curious close agreement with the London Hospital statistics, for in fifteen years we had 401 male and 260 female cases of empyema under 10. Sex, however, appears to affect the incidence only and not the mortality of the disease. In our own figures 110 males and 81 females died—mortalities respectively of 27 and 31 per cent.

Etiology and Pathology

The mode of onset of the disease has a vital bearing on the mortality and on the method of treatment. When the empyema occurs as one feature of a general infection, as in pneumococcal septicæmia, or where the whole cavity is suddenly involved in a virulent infection, probably streptococcal the outlook is bad, and any attempt at immediate radical treatment will lead to disaster. When, however, the pleural cavity is infected by extension from a subsiding pneumonia the outlook is much more hopeful, and radical treatment is indicated, both to cut short the disease and to avoid such complications as pulmonary fibrosis, bronchiectasis, and bronchial fistulae.

In children at least empyema is very commonly associated with an underlying pulmonary condition. Fraser found that in 25 per cent of his cases there was a true lobar pneumonia, and in 50 per cent a bronchopneumonia, whilst in the remainder there was a general influenzal infection. Cameron and Osman have pointed out the difference in outlook in those cases which are consecutive with and those which are consecutive to the pulmonary condition. Under the age of 2 the synpneumonic cases are almost invariably fatal, whilst of 12 metapneumonic cases every one recovered.

Equally important is the nature of the organism producing the infection. Fraser found that of 70 cases in children, 53 showed a pure pneumococcal infection and 17 a streptococcal. In the former the mortality was 6 per cent, in the latter 24 per cent. This agrees with Binney's figures, for in 89 cases at all ages he found that 73 were due to the pneumococcus, 16 to streptococcal and staphylococcal infections, whilst the mortality in the latter was twice that of the former.

These facts find their explanation in the general and the local reaction of the individual to infection. Where the child is overwhelmed by a virulent infection to which it can offer no adequate resistance, an empyema is simply an incident—of grave import, it is true, but not the really critical factor in the situation. Mortality will inevitably be high, and surgical interference must be limited to the relief of mechanical conditions. When the infection is less virulent and the resistance better, there will be time for the formation of adhesions which limit the extent of the pleural infection and very materially affect the treatment of the case.

The formation of pleural adhesions is indeed a factor of the greatest importance from the surgical standpoint, and in this there is a marked contrast between pneumococcal and streptococcal infections. In the former massive adhesions are formed, limiting to some degree the extent of the empyema, binding the visceral and parietal layers of the pleura together, preventing gross collapse of the lung, and protecting the mediastinum from pressure. It is true that these adhesions may ultimately limit the expansion of the lung, delay recovery, and lead to the formation of a chronic empyema. But for the moment they are of undoubted advantage.

In contrast to this a streptococcal empyema usually involves the whole cavity, the lung is grossly compressed and lies squeezed up against the spine, whilst the mediastinum is driven across to the opposite side, and there is severe mechanical interference with the circulation in the heart.

and the great vessels. As Fraser points out, the two conditions produce very different effects upon the respiratory oscillations in intrathoracic pressure, the nature of which is shown clearly in the accompanying diagrams. In the

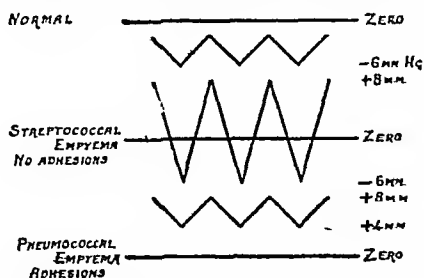


CHART C—Oscillations of intrathoracic pressure in a child 5 years of age

normal child the intrathoracic pressure is negative in every phase, in a pneumococcal empyema with adhesions it is positive in every phase, whilst in a streptococcal case without adhesions there is negative pressure on inspiration and a positive on expiration. So characteristic, indeed, are these pictures that it is possible from them alone to predict the findings of the bacteriologist.

There is one other very striking feature in any large group of empyemata—the influence of complications upon the mortality. Heuer states that in the Johns Hopkins series of 425 cases the mortality in the presence of complications was about 50 per cent, but when these were absent it was only 6.5 per cent. In children the contrast is even more striking, for in every case under 10 where an autopsy was obtained some grave complication was present. In the 52 cases under 2 years old reported from Guy's Hospital by Cameron and Osman the same facts appear, for death was probably invariably due to a complication—such as pneumonia in the acute stage, suppurative pericarditis, peritonitis, or meningitis—and never to an uncomplicated empyema.

The bearing of these considerations upon treatment is very direct. Where acute pneumonia is still present, where the empyema is one symptom of a general streptococcal infection, and where any grave complication is present, the surgeon will do well to remember that the empyema is only one factor in the case, and to exercise his judgement in assigning to it its proper position. The question of adhesions or their absence introduces, as we shall see, a factor of vital importance into the consideration of the surgical problem.

Operative Treatment

As regards operative treatment, empyemata fall into two groups—the adherent and the non-adherent. We have seen that the former are usually pneumococcal, and frequently they show pneumococci in pure culture. They are often loculated, they contain thick greenish pus which can only with difficulty be drawn through an aspirating needle, the pleural surfaces are covered with thick layers of plastic lymph, and floating in the cavity itself are large masses of soft fibrin. The non-adherent form is necessarily complete, it is usually due to streptococci or to a mixed infection, the pleural cavity is full of thin pus, gas-forming organisms are often present, and the condition is generally one of pyo-pneumothorax. In this form the intrathoracic pressure may be very high, the intercostal spaces bulge, the mediastinum is pushed over to an excessive degree, and the diaphragm and liver are pushed downwards. Obviously the two forms involve surgical considerations of a very different nature and demand very different methods of treatment.

In the first or adherent form there can, in our opinion, be no doubt that the best method of treatment is to open the cavity freely, evacuate the pus, clear out all solid masses of fibrin, and drain by a closed method. As there are sufficient adhesions to prevent the sudden collapse of the lung and the formation of a complete pneumothorax, there can be no objection to a free opening which gives adequate access to the interior of the chest. Without thus the removal of large solid masses is impossible and to

leave them behind is to leave an ideal culture medium for bacteria, greatly to delay the sterilization of the cavity, and to facilitate the formation of such massive adhesions as may ultimately postpone indefinitely expansion and recovery of function in the lung.

In a young child with a soft thorax an intercostal incision will give sufficient access, but in older children the resection of a rib is more satisfactory. In view of the possibility of loculation by adhesions it is essential that the incision should be over the precise point from which pus has been obtained, generally in the region of the eighth or ninth rib in the posterior axillary line. Either four inches of rib should be resected or a longer intercostal incision made. The pleura is exposed, and if it is thickened and its separation is easy it is well to separate it from the chest wall for an inch around the incision to facilitate subsequent closure. A small incision is now made in the pleura, and quite slowly the pus is allowed to pour out. We are convinced that caution at this stage will be amply repaid and that rapid evacuation of pus under pressure is thoroughly bad surgery. After a few minutes, when the pus is no longer under pressure, the pleura may be freely opened and a finger inserted to clear out solid masses. With a gauze swab in a holder they may be very gently detached from the pleura, the greatest care being taken to avoid bleeding, or irritation of the pleural surfaces. An occasional cough will help to empty the cavity and expand the lung, but a violent fit of coughing will gravely affect the mediastinum and should be avoided by extreme gentleness in all manipulations. A large tube is now inserted at the lowest point of the thoracic cavity, either through a fresh incision or through the primary opening. In either event the thorax is most carefully closed except for the tube, around which the tissues should fit quite airtight. The pleura itself and the deep fascial layers should receive especial attention. Finally, a large tight-fitting coil or a perforated sheet of rubber is threaded over the tube and incorporated in the dressings so as to hold the tube in place. The tube itself projects through the dressing and is connected to a long rubber tube the end of which hangs below fluid in a jar on the floor beside the patient's bed.

The great advantage of this method is that it allows full exposure and free drainage without the risks of secondary infection, which are inseparable from the ordinary method of open dressing. The dependent tube produces a constant slight suction on the pleural cavity and encourages early expansion of the lung.

In the non-adherent form of empyema, on the other hand, to open the pleural cavity freely and at once is to court disaster. The safer plan is to relieve the pressure by repeated aspiration, perhaps daily for five or six days. In this way the lung and heart are relieved to some extent from the mechanical pressure of the effusion, toxic absorption is diminished, and an opportunity is given for the formation of adhesions, which will prevent total collapse of the lung when the thorax is finally opened for drainage, and which will to some extent limit the infective process.

At the end of this time the actual procedure to be undertaken will depend upon the circumstances of the case. If the child is still dangerously ill and shows the signs of a marked toxæmia, or if there are signs of involvement of the opposite lung, interference must be reduced to a minimum. In such a case a small intercostal incision, with the insertion of a closely fitting tube and aspiration drainage as above described, is all that should be attempted, and every effort must be made to prevent the formation of an open pneumothorax. In children under 3 this is always the method of choice.

Where the child's condition warrants it, there are, however, advantages in a more complete exploration. The pleural cavity is opened as described above in the pneumococcal cases where adhesions are present, the greatest care being taken not to break down any adhesions. Solid masses of fibrin and debris are gently removed, and closed siphon drainage is established. In some cases, and especially where the pus is foul from the presence of gas-forming organisms, the cavity may be very gently washed out with saline, but in this case a suction apparatus should be used to extract the fluid as rapidly as it is supplied.

rehabilitation of non-resection methods under modern conditions. Resection was, and is, employed in young children almost as a routine, and this, to my mind, is utterly wrong. I have seen cases end disastrously that I believe might have been saved if less drastic measures had been pursued, such as preliminary aspiration, or treatment by simple incision and drainage. In children under the age of 4 treatment by primary resection is, I think one can say without exaggeration, unjustifiable. In the *St Bartholomew's Hospital Reports of 1924*, in a review of the treatment of acute empyema, I give figures of a number of cases so treated, and the consideration of the mortality showed it to be appallingly high, this has been brought out strikingly in the excellent contributions of Dr Cameron and Mr Souttar. Nevertheless, this high mortality until recently has not been sufficiently recognized.

Treatment of Ordinary Empyema

In treating the ordinary empyema we have four things to keep in mind: (1) the evacuation of the pus, (2) the expansion of the lung, (3) the speediest convalescence, (4) the comfort of the patient, and our measures must be directed towards these ends. As a rule there is little difficulty in evacuating the pus, it is the expansion of the lung that causes the trouble in the great number of cases that do not go well. For this reason suction drainage has been employed. In the article already quoted I endeavoured to show that, apart from a number of mechanical difficulties associated with this procedure, it is tackling the problem from a wrong aspect. If the lung does not expand it is because there is disease within it, or because it is held prisoner by thickened pleura or adhesions at least these are the natural reasons. It may be prevented from expanding by the insertion of a huge foreign body masquerading as an enormous drainage tube, a relic of an old-time superstition that still survives in some places.

If there is intrinsic lung disease ordinary incision and drainage by a small tube will suffice until the lung has recovered when it will expand. If a thick pleura or adhesions are the trouble these can be dealt with mechanically or by irrigation with Dakin's all-rhine solution. For this a wider opening would be necessary which would probably have to be made at a second operation when a resection might have to be done, but by this time the child would be less desperately ill and could support it.

Treatment of Acute Fulminating Empyema

A different problem confronts us when dealing with what I have called the acute fulminating empyema. By this type I mean that sort of case where the patient is taken ill and shows all the signs of a huge pleural effusion within twenty-four or forty-eight hours, and where exploratory puncture reveals pus, usually the reddish-brown pus due to a streptococcal infection. To my mind there is for this condition one treatment, and one only, and that is gentle aspiration repeated several times if necessary until the patient is sufficiently well to support severe measures. Then an incision can be made usually under a local anæsthetic, and lastly, if necessary, when the patient's general condition is good, a resection can be performed if decortication or frequent pleural lavage is indicated. There is one warning that must be given in aspirating this sort of empyema, or in fact any pleural effusion, and that is the danger of producing too high a negative pressure in the pleural cavity; it can easily happen and its results may appear with startling suddenness. For instance, I was called out to see a boy who had had an influenzal attack, and who in the space of two or three days had developed a very large pleural effusion and was desperately ill. Exploration revealed reddish brown pus. I aspirated this very gently by means of a bottle in which a negative pressure was maintained by means of a Higginson's syringe. After about a pint of pus had been withdrawn the patient suddenly cried out in acute distress and became intensely cyanosed. I at once slipped the tube from the aspirating needle, placed some cotton-wool over it, and told the child to breathe deeply, which he did. Air was sucked very audibly into the pleural cavity and the symptoms were at once relieved. I then aspirated altogether two pints, allowing air to enter the

chest in the manner described whenever the patient told me he began to feel uncomfortable. This, therefore, was a simple and crude, but effective, method of an replacement, and so to my original statement that the treatment of the acute fulminating empyema is aspiration I must add that in certain cases it must be aspiration and replacement by air or oxygen.

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Most speakers have laid stress on the mortality of empyema in children under 3, and with this I am cordially in agreement. But I do not think that sufficient attention has been drawn to the fact that in those patients who recover there is still a grave liability to such serious chronic troubles as sinus, fibrosis of lung, and bronchiectasis, and it is our duty, when called upon to treat a child with an empyema, as far as possible to consider the possibility of these after-effects as well as the immediate problem of saving the child's life. Empyema in children may be regarded from the point of view of surgical treatment as of four main kinds: those due to the pneumococcus, those due to the streptococcus and other organisms, those which are early, and those which are late, it is of the greatest importance to ascertain the nature of the organism before any operation is performed. In the pneumococcal cases, and especially the late pneumococcal cases, there is always the possibility—nay, probability—that large solid masses of fibrin and also pleural adhesions will be present, while in those cases due to streptococci and other organisms this is far less likely, though the toxicity and virulence of the infection is usually far greater and the prognosis worse. It must be remembered that these huge masses of fibrin in the pleura will often mask the physical signs and conduct the breath sounds to the surface of the chest in a remarkable way. When dealing with an empyema in an adult one of the most important considerations before the surgeon should be a thorough exploration of the pleural cavity with a view to the removal of solid masses of fibrin or slough, as these may materially interfere with the healing of the wound and the expansion of the lung, while in the adult, in most instances, the operation will be followed by open drainage of the pleura, achieved by the resection of a rib. But in children this is not so, for though the removal of solid fibrous masses is still important, everything must be done to diminish the shock and magnitude of the operation, while there is no doubt that small children do not tolerate open drainage of the pleura at all well. In an early pneumococcal case in a child, therefore, when the pus has been present less than four days, I think that repeated aspiration should be tried for a few days, and in some cases it may be that this will suffice to cure the condition. If, however, it is followed by no relief, or in those instances where the pus has been present for more than six days, the pleura will have to be opened and—provided that the patient seems fit to stand it—gently explored, and masses of fibrin removed, great care must be taken not to break down adhesions. This can easily be done without resecting a rib if a small rib-spreader is used, for children under 3 I prefer not to resect a rib. In patients over that age a rib may be resected, as it will give easier drainage. The operation must be followed by drainage, but this should not be the ordinary form of open drainage appropriate to the adult pleura, it is best done either by means of a suction apparatus such as that already described by Mr Souttar—though this may be troublesome in a tiny child who is restless—or perhaps better by a tube which is stitched in so as to be as nearly watertight as possible, and the end of which is closed by a stopper or clamp. The nurse then removes this stopper and allows the tube to drain for a few minutes every four or five hours. In those cases in which no rib has been resected the tube should be of metal, and rather resemble a large tracheotomy tube. I do not think that primary suture of the wound without drainage, which is sometimes successful in adults, is ever wise in children. Before passing to consider those empyemas which are due to other organisms, I wish to emphasize the fact that in

most cases of pneumococcal empyema there is no great urgency about performing an operation, and usually a delay of a day or two (during which aspiration may be performed) will do good and not harm.

When dealing with empyema due to streptococci or other septic organisms the problem is rather different. It is the need for exploration of the pleural cavity is less, but the urgency of drainage is far greater, though a preliminary aspiration may sometimes be performed, this should not be repeated, as it will do no good. Here drainage is urgently required, and again it should not be open drainage, but should be achieved by one or other of the methods already described. Again in children under 3, I prefer not to resect a rib. In those patients who are desperately ill, and in whom even this procedure of incision and drainage might be too severe, improvement can often be obtained by inserting a large trocar and cannula between the ribs and connecting a tube to the cannula, this is very likely, however, to be followed by infection of the chest wall.

It is in children that the three rare special varieties of empyema—the apical, interlobar, and bilateral forms—are most commonly seen. The chief interest and importance of the apical form lies in its diagnosis—its treatment is not different from that of the other forms of empyema except that its localization must be remembered and the greatest care taken not to disturb or infect the intact pleural space.

The interlobar form is also difficult to diagnose, and with regard to its treatment we must remember that here we are dealing with what is practically a localized abscess in the lung, that there is no question of exploring the pleural space, in fact, this latter structure must be studiously avoided. One of the difficulties in these cases will be to find the pus if it is a small collection, the operation should therefore always be commenced by inserting a needle into the collection of pus, and this is left *in situ* while the chest is opened. There is no need to employ one of the closed methods of drainage when dealing with a localized collection of this kind, and an ordinary open drainage tube may be used.

In the case of a bilateral empyema aspiration must be tried first, on both sides if necessary. If this procedure gives no relief, that empyema which appears to be the biggest should be drained, while aspiration is continued at intervals on the other side. Finally, after an interval of some days, a simple drainage may be performed on the second side.

With regard to the question of the anaesthetic and the position in empyema operations in children, though a local anaesthetic is feasible, I personally much prefer to use gas and oxygen or light ether anaesthesia. With regard to the position of the patient, it is always interesting to hear it insisted upon that the patient must never be laid upon his sound side, for I must confess that I always turn him upon his sound side to do the operation, and neither I nor Dr Shelley, who always anaesthetizes these cases for me, has ever seen any harm come of it.

V—T TWISTINGTON HIGGINS, M.B., F.R.C.S.,
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I am afraid I have no particular panacea to put forward for the surgical treatment of this disease. From the purely operative point of view we have to deal with an abscess, and on general surgical principles we must provide for prompt evacuation of the pus and for such after-care as will ensure the satisfactory obliteration of the abscess cavity. In the case of a pleural empyema we have to rely almost entirely upon re-expansion of the lung for the closure of the cavity, and success or failure, so far as the local abscess is concerned, will depend upon this factor. In addition, however, we have to recognize that the abscess in the pleural sac has vital intrathoracic relationships, from both a mechanical and pathological point of view. These relationships are such as to necessitate careful consideration in each individual case before any decision is arrived at on the question of treatment. It seems to me that the successful surgical treatment depends upon (1) early and accurate diagnosis, and (2) efficient operative and post-

operative treatment, always provided that the child can withstand the infection.

It is obvious that the sooner the presence of pus can be recognized the better, and the precise significance of this finding in the clinical picture must be appreciated so that the empyema may be viewed in its proper perspective—whether symptomatic, metapneumonic, or septicemic. All this is generally regarded as the physician's problem. It is assumed that the surgeon disdains the stethoscope as much as the physician despises the carpenter! I do feel that more intimate collaboration in these cases should be the rule. There can be few diseases in which it is more clearly called for, both before and after operation.

When we come to consider what can be done in any given case, we have at our disposal the following methods of attack: (1) Thoracotomy, with resection of rib, or by simple intercostal incision, followed by (a) primary closure, (b) closed or suction drainage, (c) open drainage. (2) Aspiration either continuous or intermediate. (3) A combination of these methods.

In considering which method shall be adopted the following factors must be weighed in each case: the age and condition of the child, the characters of the pus, the size and nature of the empyema, the site of the empyema.

Age and Condition of Child—Empyema are notoriously fatal in infancy, during the first two years of life for obvious reasons. It has been already pointed out that the fatalities are due to complications, local extension to the other intrathoracic viscera, or general spread to the meninges and so on. The relative violence of the bacterial onslaught in the very young renders these complications frequent at this tender age, and is such that one can hardly hope that any treatment of the empyema will lower the mortality appreciably. Yet there can be no doubt that the additional shock of a severe operation is to be avoided if possible. It is in this group of cases particularly that the method of continuous suction drainage, as described by Poynton and Reynolds, is valuable. Even if the chest has to be opened later the acute crisis may have been safely negotiated. The same applies, of course, to the case of the child of any age whose general condition is grave with an associated active pneumonitis, or in the septicemic cases.

The Characters of the Pus—Thin watery pus invites aspiration. Where the pus is thick—there will almost certainly be many solid "clots"—aspiration will fail. With regard to the bacteriology of the pus, it has not been our experience at Great Ormond Street that this helps us as much as appears to be the case elsewhere. We have not found it possible to say that all the pneumococcal cases should be opened or that the streptococcal cases should be aspirated. I understand that some indications of the patient's resistance can be obtained from noting the characters of the white cells and the extent of phagocytosis exhibited by them. My colleague Dr Hugh Thursfield tells me that he is endeavouring in this way to sort out those cases in which the chest wall might be closed after evacuation and cleansing of the cavity.

Size of the Empyema—Where the empyema is of such an extent as to produce serious respiratory embarrassment and cardiac displacement, of course a preliminary aspiration is clearly indicated—either continuously or as an intermittent procedure at least twelve hours before thoracotomy.

Site of the Empyema—An encapsulated or interlobar empyema is unsuitable for aspiration and must be sought for through the chest wall, by following the track of the exploring needle which has located the pus.

Operative Procedures

Thoracotomy—I am convinced that for the majority of empyema in children this will continue to be the operation of choice or necessity. The important details of this procedure, which have been already mentioned, were impressed upon me many years ago at Great Ormond Street by my senior colleague, Mr G. E. Wagh, and I have had abundant opportunity of proving their value.

(a) *Position of the Patient*—Obviously the good lung must have the fullest possible play, and I prefer the child lying on the face with just a flat soft pillow under the chest so as to simplify the administration of the anaesthetic.

(b) *Anaesthetic*—I am bound to say that I prefer warmed ether and oxygen. I have always hated using local anaesthesia alone in these cases.

(c) *Opening the Chest*—I have scarcely ever used the intercostal incision alone and prefer rib excision.

It is essential to remove a sufficient length of rib so that really good access is given to the cavity. The site chosen is as nearly as possible the most dependent point of the cavity, usually the eighth or ninth rib in the posterior axillary line. Not less than three inches of bone should be removed in a child of 5 years. It is generally possible, and always desirable, to separate the pleura a little, as Mr Souttar mentioned, so as to simplify the subsequent suturing.

Evacuation of the Pus and Cleansing of the Cavity—The pus should, of course, be evacuated slowly and gently. Then a wider pleural opening is made, the cavity thoroughly cleansed of all solid fibrous masses, and the lining walls gently sponged with gauze swabs. In the majority of cases the lung will be seen to come up definitely to meet the chest wall.

Drainage—I am quite satisfied that some form of closed drainage is the best. It simplifies the after-care, leaves the patient infinitely more comfortable, and, I think, definitely shortens the convalescence. The tube is introduced just within the cavity. The layers of the chest wall are sutured accurately round the tube, and this is led away from the bed to some form of suction apparatus. Nevertheless, open drainage is quite successful in many cases. If open drainage be adopted, the tube (large) should only just enter the cavity, and the utmost care is required to prevent secondary infection. We must admit that many cases can be treated quite satisfactorily by open drainage. With regard to complete closure of the chest wall without drainage, I have never done or seen this done successfully in the empyemata of children, and I cannot think that it is ever likely to prove very useful in practice.

Aspiration by means of the Potin apparatus may be valuable as a temporary measure in certain cases, as has been already indicated, for continuous aspiration some form of trocar and cannula, combined with continuous suction, is required. In the method described by Poynton and Reynolds such a special trocar and cannula is introduced under a local anaesthetic into the abscess cavity. The trocar is withdrawn and the rubber tubing, of suitable size and strength, is passed by means of a special introducer through the cannula. On the withdrawal of the introducer the tubing expands so as to fit the cannula tightly. The tubing is connected up to a continuous water-drip suction pump, so that continuous aspiration of the pus into a receiving flask takes place. In successful cases the discharge in a few days becomes scanty and serous, and the an entry and chest excursion indicate satisfactory re-expansion of the lung. The apparatus is a little complicated and requires careful supervision to maintain its efficient working, but the comfort of the child is striking. This method has had a fairly extensive trial at Great Ormond Street, and the results have been distinctly encouraging. It may be definitely said to have been proved of value in selected cases, in which the use of such a method has been indicated.

Lastly, the after-care of these cases is most important, especially breathing exercises to promote re-expansion of the lung on the affected side, after the first two or three acute days are over. The child is encouraged to breathe deeply or to blow out Woulfe's bottles while lying on the side of the healthy lung, or with the chest wall on the healthy side compressed by the nurse's hand, or even strapped.

GENERAL DISCUSSION

Dr CLARKE said he would like to advocate and give his experience of primary closure in suitable cases where empyema of some standing. The advantages were avoidance of secondary infection and the production of a negative pressure in the chest, at any rate temporarily. The operation consisted of making a careful toilet of the pleura and then sewing up tight. Out of some twenty patients three had healed, and none of the others died or had chronic empyema.

Dr L. A. PARRY (Brighton) remarked that there was happy agreement between all speakers on the general

principles of treatment, the variation being only in detail. He agreed with Mr Souttar that irrigation was inadvisable. There was no necessity for it, and it was certainly accompanied by distinct risk. Primary suture held out so small a prospect of success that it was hardly worth attempting. He thought that a piece of rib should be excised in all cases, even in young children, but he did not agree that it was necessary to remove the large lengths suggested—one or one and a half inches was quite sufficient. Breathing exercises to expand the lung were advisable after the operation. In young children bubble-blowing was a simple and efficacious method of performing these exercises.

Mr R. A. RAMSAY (London) thought that the objection to rib resection in very young children was that it made the operation longer and more severe. He was coming more and more to the conclusion that in infants all operative measures should be reduced to the shortest possible time. One of the objections to simple incision was that a large enough tube could not be inserted. This difficulty might be overcome to a large extent by introducing two moderate-sized tubes, after twenty-four hours it was usual to find that a full-sized tube could be substituted. The tube should only just reach the pleural cavity and not project inside it. He was now operating in most of the cases in very young children under local anaesthesia. One point regarding free drainage seemed to him of great importance. While it was undoubtedly true that the ultimate obliteration of the abscess cavity was brought about by the expansion of the lung, there was an immediate diminution of the cavity produced by the collapse of the chest wall and the rise of the diaphragm. This brought these two structures into apposition in their lower parts, and if the drainage tube was placed low, as most speakers had suggested, it came to lie in this practically non-existent cavity with the diaphragm laid against and blocking its opening. For this reason he made a practice of draining an empyema, not at its lowest but at its highest point, by preference at the level of the fifth or even of the fourth rib. Of course the actual site of incision depended on the situation of the empyema and of its upper level. He agreed that when a rib was resected one to one and a half inches was a sufficient length to remove, since a less severe and less prolonged operation was necessary than when three inches were removed. The smaller length gave an opening large enough to admit a drainage tube, and especially for the finger to be introduced.

Dr J. WILKIE SCOTT (Nottingham) pointed out the difficulty of obtaining pus by exploration of very chronic empyemata when the condition was obscured by the presence of a great degree of fibrosis, and the difficulty of draining such cases. Sometimes only a few drops of pus could be obtained, and he raised the question as to whether in such cases it was not best to aspirate, or, if a piece of rib had been resected, to close the chest completely afterwards.

Mr P. T. CRYMBALE (Belfast) agreed with Mr Ramsay that the apical part of an empyema was the most difficult to drain satisfactorily, the lower part was closed by elevation of the diaphragm. In a large empyema the fourth rib should be selected for resection. There was difficulty in exploring an empyema cavity if the incision was too small. In his experience treatment of chronic empyema was most unsatisfactory, the cases relapsed constantly. Decortication was a dangerous operation, and not to be undertaken if it could possibly be avoided.

Dr C. F. COOMBS (Bristol) was interested to find an increased sense of the gravity of operations on the thorax. He found himself increasingly impressed by the need for seeking the most skilled surgical assistance available, and for close co-operation between surgeon and physician in the treatment of empyema.

Dr CAMERON, in reply, said that one point came fairly out of the discussion, namely, that in the details of surgical procedure—the site, the extent of the incision, the character of the drainage, and so forth—there was very great divergence of opinion. It seemed to him that the

prognosis was mainly determined by one consideration only whether or not intervention was made at the right moment. He thought the same was true in pneumococcal peritonitis. The evacuation of a residual collection of pus gave brilliant results. The high mortality of pneumonia in young children limited the opportunities of seeing this result.

Mr ROMANIS, in his reply, said that it was exceedingly satisfactory that the discussion had centred more round general principles of treatment than minor details of technique. In reply to Dr Clarke's suggestion that primary suture without drainage might be employed more often, he felt that this method was more suitable for early cases of empyema in adults than in children, for in the former it was not, at any rate, likely to lead to any harm. He emphasized that he did consider there was an objection to resecting a rib in infants. With Mr Ramsey's and Mr Crumble's suggestion that the opening in the empyema cavity should be high up he agreed, and in reply to the latter's question stated that it was usually quite easy to explore the whole pleural cavity with the hand, by means of a rib-spreader, without removing a rib at all.

SECTION OF PATHOLOGY AND BACTERIOLOGY.

Professor J. C. G. LEDINGHAM, C.M.G., D.Sc., M.B.,
F.R.C.P., F.R.S., President.

DISCUSSION ON THE PATHOLOGICAL BASIS OF TREATMENT BY RADIATION

OPENING PAPERS

I.—PROFESSOR SIDALI RUSS, D.Sc.,
Middlesex Hospital.

The exposure of the body to radiation, ranging from light to gamma radiation, gives rise to changes so profound, yet different in character according to the degree of exposure and the nature of the wave-length employed, that it would appear too soon to expect any general explanation of these actions. Yet underlying their application the pathological basis becomes more and more elaborately laid.

Now may, I suppose, take it for granted that the most important therapeutic application of radium and x-rays is in the treatment of malignant disease, and, in the case of light and ultra-violet therapy, surgical tuberculosis and certain deficiency diseases. In the latter case we are dealing with radiation which penetrates a comparatively small distance into the body, yet profound effects are produced by it, while with x-rays, and especially gamma rays, there is often a widespread distribution of the rays throughout the structures of the body.

I take it that, in the laying down of the pathological foundations of such therapy, there is not only the necessity for specifying what cellular changes result from irradiation, but the no less urgent ones of correlating them with the dosage employed and indicating the processes by which these changes are brought about. In the latter case the pathologist is no doubt on physiological ground, for the processes set going by irradiation of the tissues are intimately bound up with the normal functions of the various organs. But the pathologist will no doubt be pardoned such an incursion where physiologists themselves have seemed rather shy of investigation. Perhaps the study of the normal functions of the body has left them too little leisure for investigating the upset of such functions by radiation, yet the need of this information is urgently felt.

Heliotherapy has of necessity focused attention on the indirect action of radiation. The degree to which visible and ultra-violet radiation penetrates the tissues is small, it becomes, in fact, gradually smaller and smaller as pig-

mentation due to the exposure occurs, and there is a natural tendency to attribute the reactions which occur to some effect set up either in the blood stream or of the lymph, or to suppose that the nervous system plays some important, though obscure part.

In spite of what we may call the extreme old age of this form of therapy, little is known of its essential processes, and hence its pathological basis is not so well defined as is the case with x-rays and radium. Attention will naturally be directed by others towards the various aspects of this basis, and we may then balance the evidence for the relative importance of the different processes involved. Pathological researches have shown that cellular degeneration is a frequent sequel to irradiation of tissues. This degeneration consists in various abnormal features appearing among the cells at differing times after irradiation. These changes, which have been described in great detail by various authors, are met both with x-rays and with radium. They may be due to

1. A direct action of the radiation upon the internal constituents of the cell.
2. A direct action of the radiation upon the interfaces of the cell.
3. An indirect action which irradiation initiates.

Though it is probably true that some malignant tissues are more susceptible to these rays than are the contiguous normal cells, it cannot be said that this is generally so. A damaging dose of radiation given to a malignant mass does some damage to the normal structures, and in many cases, as I have pointed out, therapeutic measures should be differently directed from what is possible when the factor of susceptibility is more favourable. The classical work of Dominici and of Cluett has shown that the subsequent course of events throughout an irradiated tumour mass is often largely conditioned by the reaction of the local normal tissues. It would be incorrect to say that the researches have clearly decided the conditions under which favourable reactions can be brought about, but their work clearly distinguishes the action of radium and x-rays from that of cauteries.

While pathologists have discovered various changes of structure undergone by the tissues after irradiation, they have hesitated definitely to attribute these either to a direct action upon the internal constituents of the cell or to some interfacial action. I should like to hear such alternatives discussed, because I think that there is much to be said for the latter playing the dominant part in the first instance, though, in the absence of direct experimental proof, this is perhaps rather speculative on my part.

If we look upon the tissues as systems involving a continuous adjustment of their equilibrium, I think that the upset of such equilibria is more likely to have a profound effect upon the composite mass than the actual breaking down of the chemical complexes within the cell. The fact that the life of the cell is so largely conditioned by the interplay of forces surrounding it, while the actual decomposition of chemical compounds is not a very striking feature of the action of x or radium rays, leads, I think, to this view. Perhaps one of the most striking facts in support of it is the special vulnerability of cells in the act of mitosis, when cell activity is at its maximum. Cells are, moreover, capable of standing a certain amount of irradiation without any naked eye or microscopical changes being detectable. It is easier to picture the cell accommodating itself to the irradiation than it is to visualize the restoration of broken down molecular complexes. Yet periodically the claim is made that the biological effects of radiation are due to the disintegration of some such complex.

Under natural conditions the surface of the body accommodates itself to light and, to some extent, to ultra-violet radiation. As far as I know, no experiments have been published showing the ranges of this power of the body towards x-rays and radium, and yet there is no doubt that it exists. Let us consider a very simple case. If the skin is exposed to a certain intensity of x-rays for fifty to sixty minutes we can produce a reaction which can be traced through the various stages of erythema, epilation, blistering, ulceration. Further, it is found that if the time

is reduced to thirty-five minutes, these stages only go as far as blistering, if the exposure is reduced to twenty-one minutes to epilation, and if the exposure is reduced to about five or six minutes there is no naked eye effect at all. This, of course, indicates the toleration of the skin, but what has this entailed? Is the skin now in a position to tolerate more or rather less radiation than before it was called upon to accommodate its function and structure to the dose? From the analogy in the case of ultra-violet light one might, perhaps, conclude that it would now need more radiation than initially to produce the same amount of damage, but that, if the initial dose had been a damaging dose the reverse would be true. Experiment or clinical experience can, however, decide these points.

Intimately connected with such accommodating power is the capacity of the skin to tolerate very slightly damaging doses, provided these are repeated at intervals which allow repair in between the exposures. Here Mr. Hudson, at the Middlessex Hospital, has found that although a certain dose can be repeated every week almost indefinitely, if it be attempted twice a week damage quickly becomes evident.

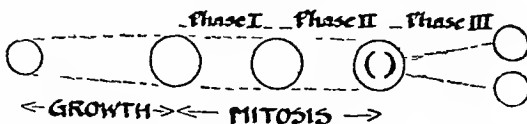
Experiments of this character appear to me to bear forcibly on the question of cell equilibrium. In tissue clearly damaged by radiation we have evidence of the whole equilibrium being upset. In tissue submitted to doses which have no visible effect whatever we have the equilibrium entirely conserved, as it is towards visible radiation and in those cases where only slight visible effects are produced, yet, with integrity of the structure, we may perhaps look upon them as stable yet entirely new conditions of equilibrium.

It is known that the various tissues respond differently to a dose of radiation ($Q \times t$) according to whether the time of exposure is short, Q being large, or long, Q being small. Lazarus Bailow was, I believe, the first to point out this difference in the columnar and squamous cells of the normal rat on exposure to radium. He found that, in order to eliminate undesirable damage, it was better to keep the quantity of radium low and prolong the time of radiation when dealing with squamous cells, while the reverse held good with columnar cells. As a result of clinical observations, Pinch concludes that malignant growths of an epiblastic character are more favourably influenced by a small intensity, acting for a long time, but the reverse is the case with mesoblastic growths.

It is still obscure why there should be a difference in the reaction of the tissues when the actual dose is constant, the only variation being in the conditions of exposure. There has been a tendency to link it up with the undoubted fact that, during a long exposure, unless prevented by the radiation from doing so, more cells would come under irradiation in a state of division, and, when in a state of division, some cells are known to be more vulnerable than in other stages of growth. I think that before accepting this basis of explanation we require proof of the following:

- 1 That the intensity of radiation used was enough for a lethal dose to be given during the actual time taken for division.
- 2 That the period of radiation extended over a period equal, or nearly equal, to the time for the cell cycle.

Though the divisions are no doubt arbitrary we may consider four stages in the cycle of operations involved in continuous growth (see diagram). The stage of growth



involves not only an increase in size but the process of maturing. When the cell is mature it goes into mitosis. We may consider Phase I as the stage in which the cell is going into mitosis, Phase II as the stage in which the cell is going through mitosis, and Phase III as the stage in which the cell is coming out of mitosis—that is, the cell is dividing, give rise to two daughter cells.

We may see by an example that similar microscopic findings, after irradiation of a group of cells, might be obtained by doses which were actually different. Let us assume that in one case we employ a dose

- (a) which is sufficient to—
stop Phase I,
do nothing to Phase II,
stop Phase III

And in another case we employ a dose

- (b) which is sufficient to—
do nothing to Phase I,
delay Phase II,
hasten Phase III

The result will be that subsequent to irradiation there will be in case (a) fewer in Phase II, more in Phase III, and in case (b) more in Phase II, fewer in Phase III. Actually the numbers of mitotic figures might be the same in the two cases, and the distinction between the two could only be made microscopically when the separate phases were recognized. On the other hand, naked-eye observation and measurement would recognize no growth in case (a), but growth, although retarded, in case (b).

This question, which is perhaps of equal interest to pathologists and radiologists, is one which I think will be discussed still more in the future, for the adjustment of the therapeutic dose to suit these particular characteristics of the system irradiated is a problem ever in front of the radiologist, and here he turns to the experimental pathologist. Only recently the striking fact has been shown by Stringer and his colleagues that when a heavy dose of radiation is given to *in vitro* growths of certain cells of the chick embryo mitosis is arrested almost at once, and there are good reasons for believing that this is true when tumour cells *in vivo* are irradiated.

The effects of radiation upon the tissues are unique—they do not in general resemble the effects upon inert media, so it seems to me that the safest guide in such exploration is not that of analogy to what occurs in ordinary gaseous and liquid media. In living tissues one is confronted with a complex which is continuously adjusting its equilibrium with contiguous or enveloping structures, and experimental methods appear to me more likely to be successful if the complex is kept in mind as such without the effort of reducing it to simple terms. One of the limitations of experiments on tissue cultures is that the cells are put under conditions different from what they would experience in the body, but this limitation is recognized by those employing the method, and valuable indications are to be expected from its use.

No doubt, for a thoroughly satisfactory pathological basis of radiotherapy, we ought to have enough information to enable us to visualize the processes involved in the irradiation of a malignant mass from start to finish, we shall have to wait for this, but, one by one, the significant processes are being recognized. There is nothing so depressing as being told that we are only at the beginning of the subject. I do not think that this is the case, but rather that we are well in the middle of it.

II—Miss M. E. HUME

THE ACTION OF ULTRA-VIOLET LIGHT UPON THE GROWTH OF RATS

It has now been known for some years that ultra-violet light is curative of rickets in both men and animals. Before that discovery was made it was already known that cod liver oil cured rickets.

When young rats are fed on a synthetic diet which is complete in fat, protein, carbohydrate, and salts, and in vitamins B and C, they cease to grow after a time and they develop symptoms of xerophthalmia and rhinitis, their bones develop imperfectly, there may be histological signs of rickets, and the animals eventually die. When cod-liver oil, containing an abundance of the complex most conveniently referred to as the "fat-soluble vitamins," is added to this diet in sufficient quantity, growth is restored, and all the other faults are corrected.

Since, then, ultra-violet light seems perfectly to substitute cod-liver oil in the cure of human rickets, it seemed of interest to find out how far, if at all, it can substitute cod-liver oil in promoting the growth of rats and in preventing the symptoms just described as occurring on a diet deficient in fat-soluble vitamins. It should also be possible by this means to discover which of the symptoms can be prevented from developing by the use of ultra-violet light, and which, if any, are controlled by another factor.

Young rats about a month old, when placed upon a diet deficient in fat-soluble vitamins, may behave in very different ways according to the light and food which the mother has received during pregnancy and lactation. This factor causes enormous variation in the amount of reserves which the little ones are able to accumulate, and thus may vastly influence their behaviour when faced with a deficiency. If the mother has received cod liver oil, the little ones may even reach maturity on the deficient diet, without showing any noticeable symptoms of deficiency. It is, however, possible to breed a very suitable type of young rat which, when placed upon the deficient diet, grows normally for about a fortnight, the rate of growth then slackens off, but growth does not entirely cease. It continues slowly for perhaps another eight weeks, then it ceases altogether, the symptoms already described appear, become acute the animal declines, and dies somewhere about the hundredth day of experiment.

If, however, we take such a young rat as I have just described, and from the moment at which it is placed upon the experimental diet we also irradiate it with the mercury vapour quartz lamp for ten minutes daily, we considerably alter the picture. Instead of growing normally only for the first fortnight of experiment, the irradiated rat continues to grow normally for a much longer period—some eight to ten weeks, then, however, growth ceases. Symptoms of eye disease appear, accompanied by rhinitis, pneumonia, and sometimes cystitis. Crimer has also described an atrophy of the intestinal mucosa, so that there is probably a very general mucous membrane involvement. Death occurs, but calcification is found to be normal.

If we proceed in the same manner as I have just described, but leave the rat on the deficient diet for two or three weeks before beginning irradiation, we find that when irradiation is started, growth, which had previously just begun to slacken off, becomes normal again, but it does not remain so for as long as when irradiation and deficient diet began on the same day, and the rat does not grow so large. If the period on deficient diet, before the commencement of irradiation, is made longer still, the growth response to irradiation is proportionately shorter, and, if irradiation is not applied until the rat has been on the deficient diet for some eight weeks, there is no growth response at all. The effect of irradiation in the last case, indeed, seems rather to be to hurry the animal over the precipice, rhinitis and xerophthalmia, which before seemed slight, may increase with catastrophic rapidity, and cause death in a couple of days.

It is therefore quite evident that light cannot substitute cod-liver oil indefinitely for the growth and well-being of the rat, and that, although calcification is being satisfactorily promoted by the light, yet the set of symptoms involving the mucous membrane is setting in and proving fatal, as some reserve is gradually used up. Some other element, of which the animal at first had a reserve, must therefore gradually become deficient, and in so doing limits growth, much more completely than the absence of light or the antirachitic factor ever does, giving rise also to the fatal symptoms. This other limiting factor appears to be the original vitamin A, but how far it is completely independent of the light or antirachitic factor we are not at present at all certain. The way in which the application of irradiation sometimes hastens the end of an animal already suffering from vitamin A deficiency suggests that there is a relation of some sort, but, on the other hand, it has been found that the liver of an animal which has ceased growing under irradiation can yet revive

normal growth, when fed to another rat, whose growth had slackened on the deficient diet, but which was still capable of responding by growth to the light stimulus. The liver of a non-irradiated rat which has ceased growing does not, however, possess this property. This observation is a most important one for it shows that the first rat, though unable to grow further itself, had been able to store up in its liver the light, or the effects of the light, and to pass them on to another rat which was still in a condition to profit by them.

Besides showing that light can bring about storage, this observation also seems to indicate that the action of light is not dependent upon the presence within the body of any substance of which a scarcity is liable to occur. One must then suppose that if the light is either absorbed by some substance within the animal body, or causes there the alteration or formation of some substance capable of transportation and storage, that substance should be one which the animal body itself can synthesize or which always occurs abundantly in any food. The substance, if such there really be, when activated by the light, can reasonably be called the antirachitic vitamin. Presumably it is such an activated body which is contained in cod liver oil.

The nature of the antirachitic vitamin or of any inactive precursor substance is at present uncertain, it appears to be fat-soluble, but it is not even absolutely certain that there is one specific substance. Antirachitic properties have been conferred upon various inactive substances by exposing them to ultra-violet irradiation, and when these substances are given as food to rats they produce the same effect as does direct irradiation. Such substances are hard, cottonseed oil, liver, muscle, milk, lettuce leaves, urine and faeces of rats, and dust, cholesterol, phytosterol, and, I believe, though I only have it from a private communication, hydroquinone. The excreta of irradiated rats are active in very small quantities, more than being sufficient to promote growth in other non-irradiated rats living in the same cage. Water could not be activated. Now the probable common factor in all these substances, except the hydroquinone, is a sterol, whether of plant or animal origin, and it does seem just within the bounds of possibility that cholesterol may be the substance within the animal body which receives the ultra-violet irradiation, but, if so, there is at present no indication of what happens afterwards, nor how the calcium metabolism is thereby affected.

In the perfectly satisfactory study of the pathological effects produced by deprivation from light or antirachitic vitamin, we want darkness and a diet in which that factor alone is wanting. That at present we are unable to supply I have already described how fatal a deficiency of vitamin A is, and it is therefore necessary, for the experimental study in rats of the pathology of light deficiency, to supply vitamin A adequately. Unfortunately the sources of vitamin A at present known to us seem to be to some extent contaminated with the antirachitic factor both being fat-soluble they tend to occur together. Green leaves, however, contain vitamin A far more abundantly than the antirachitic factor, 0.4 gram daily of summer spinach contains sufficient vitamin A to maintain a rat, without containing sufficient antirachitic factor materially to increase the calcification.

I have maintained three rats in darkness on a diet deficient in fat-soluble vitamins for four months without any addition, and for two further months with an addition of 0.4 gram of spinach a day. The diet and conditions must be regarded as very low in antirachitic influence, but the animals are still alive and in very fair condition, they grow slowly, showing that lack of antirachitic factor does not absolutely inhibit growth, but only partially—a conclusion reached before. These animals will probably show a very poor bone calcification, but they do not show any serious pathological symptoms, and as long as vitamin A is supplied they do not appear to be in any immediate danger of death. Whether their resistance to disease is seriously impaired I do not feel sure, but, as far as the rat is concerned, I am personally much more impressed by the increased tendency to respiratory disease caused by a vitamin A deficiency than by any such action of deficiency in light and the antirachitic factor.

III—A PINDY, M D, M R C P,

DIREC TOR of the Institute of Pathology, Charing Cross Hospital

SOME CHANGES IN THE BLOOD AND BLOOD FORMING ORGANS
AS A RESULT OF EXPOSURE TO X RAYS

THE effects of radiation on the blood and haematopoietic tissues are very complicated, and, in the time available, only a summary of the numerous observations can be given.

It is obviously most rational first to consider the effects of radiation on the formative tissues of which the blood represents only a secretion. It is then possible to attempt some explanation of the changes occurring in various disorders in which x rays have been used therapeutically.

The present purpose is probably best served by the acceptance of a rigidly "dualistic" attitude, that is, a view that there are two distinct varieties of blood cells—namely, those derived from the bone marrow (granulocytes and red cells) and those produced in lymphatic tissue in general (lymphocytes). Large hyaline leucocytes (monocytes) have been considered as a third distinctive variety of blood cell (Aschoff and Kiyono¹), but it is convenient and probably more accurate to regard them as being derivatives of the myeloid stem cell (the myeloblast).

The effects of radiation on the various haematopoietic tissues must now be described.

1 The Bone Marrow

The effects are essentially destructive in character, and are seen in the shape of nuclear degeneration of the essential cells, although there is no change in the adipose tissue. Regeneration is slow because there is injury to the mononuclear granular cells (myelocytes) as well as to the more mature forms. Non-granular parent cells (myeloblasts) are rarely in normal adult bone marrow, and Ellemann² has shown that regeneration of the blood normally depends mainly upon proliferation of pre-existing granular cells (myelocytes) rather than upon heteroplastic derivation from myeloblasts. So long as the dosage is insufficient to destroy all traces of myeloid tissue, regeneration, in the rabbit, is practically complete in about three weeks. It is of interest to observe that all the cells of the bone marrow appear to be equally susceptible to the action of the rays, whereas lymphocytes in different tissues vary in their liability to injury.

2 Lymphatic Glands

The results of radiation resemble those due to inanition, but occur much more rapidly. There is disappearance of the essential cells preceded by signs of nuclear degeneration, but, unlike the effect of fasting, there is no diminution in the amount of fat. There are differences between the effects of the rays on superficial and deep lymphatic glands respectively. The former normally possess a bulky cortex and relatively scanty medulla, while the latter show only a thin cortical layer. Mesenteric glands also have a large medulla which is chiefly composed of lymphatic channels. The effect of the rays is mainly exerted on the lymphocytes themselves, and therefore the changes in deep and particularly in mesenteric glands are less well marked than those in more superficial ones, but, in any case, lymphocytes in glands appear to be much more resistant to the rays than are the morphologically identical structures in the thymus.

3 The Thymus

The involution of the thymus resulting from x rays has been widely investigated by Heineke, Regaud and Clemens¹, Rudberg and others, and has been shown to be rapid and extreme.

Histologically the changes are very striking: there is pyknosis of the nuclei of the small thymic cells, which undergo complete destruction. The debris of these cells appears to be ingested by the cellular elements of the thymic stroma. It is striking that, just as in the process of physiological involution, the cortical cells are the first to disappear—that is, the areas of greatest lymphocytic condensation are the most severely affected. The corpuscles of Hassall increase in size as a result of condensation of the stroma, but ultimately many of them disappear as a result of cyst formation. The effect of these changes is a varying

degree of dense fibrosis of the organ starting from the interlobular septa. It must clearly be understood that small doses produce less vigorously destructive changes, but, in all cases, there is some amount of cell injury, although active regeneration may obliterate all traces of it within a very short time.

4 The Spleen

Changes in the spleen as a result of radiation are more difficult to interpret because considerable variations occur in response to different doses. Ziegler¹³ was able to show that, if the dosage were so adjusted as to injure the Malpighian bodies without damage to the pulp, it was possible to demonstrate the occurrence of myeloid metaplasia in the latter structure within a few days.

It is astonishing to realize that the response of the pulp cells of the spleen so closely resembles that of the bone marrow cells: neither of these structures is affected so rapidly or intensely as are the truly lymphatic ones. Thus, for example, with a dosage so great as to occasion maximum damage to the lymphocitopoietic mechanism in twenty-four hours, there is no immediate sign of injury to spleen pulp or bone marrow, and the maximum disturbance in them is delayed for several days—it is, in fact, usually noted only when the animal is already moribund. Heineke was able to confirm these observations, and pointed out that the lymphatic tissues suffered intensely without any demonstrable latent period, whereas injuries to myeloid tissue and spleen pulp arose later, and were not unless a dose sufficient to cause cutaneous reaction had been used. Aubertin and Beruand¹ reached similar results: they stated that single doses of medium intensity applied to the whole body would cause necrosis of lymphatic tissue while, at the same time, occasioning myeloid hyperplasia. They made a very important distinction between two types of leucopenia occurring as a result of radiation—namely, leucopenia as a result of extreme and generalized injury to the haematopoietic tissues, as a rule associated only with fatal doses, and leucopenia occurring in spite of myeloid hyperplasia: this is presumed to result from excessive destruction in the circulation, and is said to be a much commoner form than the previous one.

5 The Blood

It is here only possible to indicate briefly the changes in the circulating blood. The alterations occurring in the morphological composition of the blood of professional radiographers have attracted much attention, although the results observed have been somewhat variable. The great majority of investigations have shown that there is distinct reduction in the number of leucocytes, which depends mainly upon decrease of the neutrophils with consequent relative lymphocytosis. Jagic, Schwartz, and Siebenod³ have recorded many such observations, and have even been able to observe the development of typical lymphatic leukaemia in such cases, similar phenomena are mentioned by Aubertin³. The state of the myeloid tissue in the early stages is, of course, quite unknown, but the pathological condition of the blood may persist without any further change for many years, and it must, therefore, be presumed that the leucopenia cannot depend upon any gross destruction of myeloid tissue. More recent, there is distinct evidence, in the blood, that myeloid hyperplasia has occurred. Aubertin records cases in which there was well marked neutrophilia and eosinophilia. The more severe lesions resulting from long continued exposure to x rays are much better recognized—namely, aplastic anaemia. Chart I and Chart Ia show the typical changes in such a case, and it must also be added that there is complete absence of any sign of regeneration of red cells—that is, there is no poikilocytosis or anisocytosis, and no nucleated red cells are seen in the blood.

The basis of the changes occurring in the blood is still a matter of controversy and can best be elucidated by discussion of the leukaemias. Chart II shows, as has also been demonstrated by Minot² and his colleagues, that chronic myelosis is not much influenced by radio-graphical treatment inasmuch as the expectation of life is not increased, although they state that the incidence of jaundice of efficiency is greater in treated

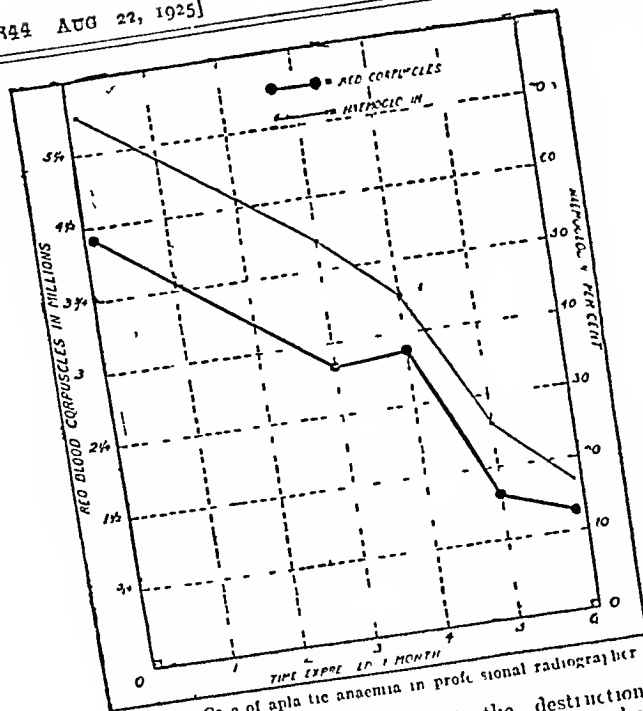


CHART I—Cause of aplastic anaemia in professional radiographer

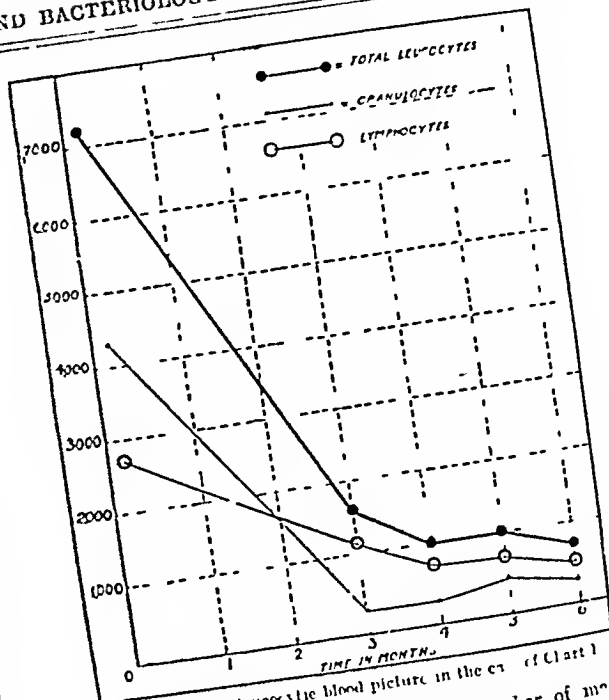


CHART II—The leucocyte blood picture in the case of Chart I

crises Henke is emphatic that the destruction of leucocytes by x rays is a direct effect, but Cuschmann and Guapp attempted to show that there was some formation of a leucotoxin. They demonstrated that such destruction of patients suffering from leukaemia would destroy the leucocytes of animals unless the serum was first inactivated by heat. I have satisfied myself that substances do exist in the serum of treated persons, but there is also other, more indirect, evidence of their existence. Masses of leukaemic infiltration in any situation decrease in size even when only the spleen is irradiated, and some serological explanation seems to be essential.

Arnetti has pointed out that simple destruction of cells is insufficient to account for the changes in the blood picture of cases of chronic myeloid leukaemia because there is, in such treated persons, a tendency for the re-establishment of a more normal type of blood formation after irradiation—that is, a purely destructive activity of the rays is not an adequate explanation of the changes.

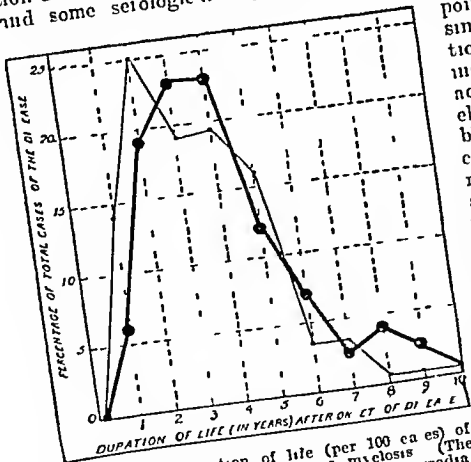


CHART III—Duration of life (per 100 cases) of 200 cases of chronic leukaemic myelosis (The heavy line represents cases treated with irradiation, the light line those which received no such treatment)

changes. Perthes¹⁰ has been able to show, with a fair degree of certainty, that there was a distinct slowing of the intensity of mitosis in the cells of the formative organs after irradiation, thus, again, some restraining effect other than simple destruction was well marked. It has to be recognized that, in the bone marrow of cases of chronic myelosis, there is more than one abnormality of blood formation: there is the process which results in the emigration of immature and abnormal cells, which is the most striking phenomenon noted in films. There is also, however, another process, which simply represents an increased functional activity of the haematopoietic tissue and manifests itself

in an emigration of an unduly large number of mature, well formed cells (Pincus¹¹). The effects of radiation in the cases can, therefore, be regarded as follows:
(a) A direct effect in the form of destruction of cells.
(b) An indirect effect in the form of a more selective injury to those parent cells which are producing abnormal offspring, and
(c) Another effect in the form of a more normal regulation of the production of and emigration of normal cells.
In brief, there is a qualitative as well as a quantitative change in the haematopoietic tissues of cases of chronic myelosis treated with x rays.

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IV—HELEN M. MACKAY, M.D. LOND., M.R.C.P.,
Physician to the Queen's Hospital for Children,
AND
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Senior Resident Medical Officer at the East London Hospital
for Children.

FOODSTUFFS IRRADIATED WITH ULTRA-VIOLET LIGHT. THEIR EFFECT ON THE BONE LESIONS OF RACHITIC CHILDREN.
Our contribution to the discussion is concerned with one disease, rickets, and incidentally with infantile tetany or spasmophilia, both of which, in our opinion, are probably due in this country, in the great majority of cases to insufficient exposure to ultra-violet light. Clinically there are two aspects to the treatment of rickets: one must consider the effect of the therapeutic agent (1) on the general health, and (2) on calcium and phosphorus metabolism, as evidenced by changes in the bone lesions. Light usually improves both the general health and the calcium metabolism of a rachitic child, but the two effects cannot be regarded as having an identical pathological basis since they frequently do not show a parallel course. Improved calcium metabolism is not merely the result of improved general health—for example, in a case we have recently had under observation, an acute illness (an attack of pneumonia) did not retard the onset of healing of the bone

lesions or prevent the cure of spasmophilia. As regards the retention and metabolism of calcium and phosphorus cod-liver oil, containing the so-called antirachitic factor, and ultra-violet light can be regarded as interchangeable, but the same does not hold as regards the effect on the general health. Miss Hume has pointed out that ultra-violet light cannot replace all the physiological effects of light and it is perhaps self-evident that cod-liver oil cannot replace light in many of its physiological effects. Artificial light therapy (in which only the factor of increased light is introduced, thus differing from sunlight therapy out of doors) usually brings considerable general improvement in the activity, muscle tone, and contentment of rachitic infants, whereas cod liver oil has much less general beneficial effect.

We will confine ourselves to observations on the pathological basis of the action of light on the bone lesions. The x-ray photographs (intern slides were shown) illustrate the process of healing of rachitic bone lesions, induced either by light treatment or by giving the antirachitic factor in cod-liver oil. The renewal of the normal process of calcium metabolism was in this particular case brought about by exposure to sunshine out of doors in London in April, May, and June. During the retic stage of the disease the laying down of calcium in the bones ceases, osteoid tissue is formed at the growing ends of the bones, and frequently also under the periosteum. This osteoid tissue, since it is uncalcified, is invisible or scarcely visible in the x-ray plate. After an interval of two to three weeks from the beginning of treatment, shadows appear in the x-ray plate, indicating the deposition of calcium in the osteoid tissue and at the epiphyseal line, and there is a gradual change from osteoid tissue to normal bone tissue—a change which in a case of some severity may take several months to complete, even with vigorous treatment. The clinical deformities of rickets may, of course, persist a lifetime.

It seems that the identity of the influence on calcium metabolism of exposure of the skin to ultra-violet light, or administration by the mouth of cod-liver oil, is due to the fact that these are two methods by which the body may acquire the same "antirachitic factor"—that by the action of light this substance can be formed either in the cells of the living creature or in its foodstuffs, and that many substances can be imbued with the antirachitic factor by exposure to ultra-violet light. The antirachitic property may be dependent on a chemical change shown to occur in cholesterol or phytosterol under irradiation. Irradiation alters both the smell and taste of certain foodstuffs—for example, dried milk or minced meat.

We have had under observation at the Queen's Hospital for Children since February of this year rachitic children receiving a daily ration of irradiated foodstuffs in order to test the clinical value of some of these substances. We would like to take this opportunity of acknowledging the constant co-operation and help of the sisters who worked with us—Sister Francis, Sister Hook, and Sister Westbrook. The number of in-patients was necessarily small on account of the difficulty of reserving beds for such cases, but we intend to give you only the results obtained with controlled in-patient cases on account of the uncertainties attaching to observations on children in their own homes.

The technique of irradiation of the foodstuff was the same in every case. Twenty-four hours' supply of dried milk, cottonseed oil, or white wheaten flour—the three substances heretofore tested—was spread in a very thin layer in a flat dish placed for one hour under the mercury vapour quartz lamp at a distance of one foot from the burner. The lamp used was the Hanau pattern of mercury arc with burner voltage of 140, made by the Hewlett Electric Company—namely, a lamp of the vacuum type. The burner has been in daily use for many months for the treatment of patients.

During the whole period of observation there have been cases of rickets in the ward on the same diets, excepting that no part of their foodstuffs was irradiated. In all, six such cases have been under observation—but since one admitted in June was already healing at the time of admission it should be excluded, leaving five controls. Of these five, four showed during the observation period of six weeks upwards no evidence of calcification, and the fifth

none for exactly six weeks—that is, until eight days after a single exposure to the mercury arc. We conclude that in this case the calcification, which was very slight (see below, Case V C), was probably due to the exposure to ultra-violet light, so that we may say that no healing of the bone lesions occurred in any of the five controls without antirachitic treatment.

The ward is light and airy, and the children were given the ordinary ward diet except that a dried milk (a full cream milk dried by the spray process) was substituted for fresh milk. The older children received a mixed diet of meat, soup, vegetables, milk pudding, dried milk, bread and butter, and fruit. A middle group received milk pudding, bread and butter in addition to the dried milk, and the youngest group only dried milk with additions of sugar and fruit juice. Weekly x-ray photographs were taken of the long bones of each child.

Lantern slides made from x-ray photographs were shown illustrating typical cases of the series and the effect of treatment with irradiated foodstuffs on the bone lesions.

J E aged 3½ years clinically a severe case of rickets showed radiographic evidence of calcification of the bone lesions fourteen days after the beginning of treatment with 3½ ounces daily of irradiated dried milk. The process of healing progressed steadily and was nearly complete at the end of two and a half months' treatment. Two other cases on irradiated dried milk showed equally satisfactory progress. Eleven to twelve days on irradiated dried milk caused the complete disappearance of symptoms and clinical signs of spasmophilia in one of these children. The rate of calcification was approximately that usually obtained with administration of cod liver oil or with direct exposure to ultra-violet light.

V C aged a year and ten months on the same mixed diet as J E but having her dried milk untreated showed no healing for the first six weeks in hospital. Eight days after a single exposure to the light of the mercury arc there was evidence of a slight increase in the calcification at the epiphysis, but this became again stationary in spite of three months' treatment with 3 ounces daily of irradiated white flour. Another case receiving irradiated flour showed no healing after six weeks' treatment. Both cases were cured with sunlight and cod liver oil administration.

J H aged a year and three months was one of two cases healed by the administration of irradiated milk which after irradiation was boiled for ten minutes. The rate of progress was as rapid as in the children receiving the milk without boiling. It is therefore possible to cook some irradiated foodstuffs without destroying their antirachitic potency.

One child received a daily ration of 6 drachms of irradiated cottonseed oil. This quantity in several out-patient cases produced looseness of the stools, showing that the dose was near the limit of tolerance in young children. In this case there was slow calcification apparent in the x-ray plate from the thirty-eighth day onwards. An average sample of cod liver oil in a much smaller dose usually produces radiographic evidence of healing in two to three weeks, and so far as one can judge from a single case (together with indications obtained from out-patient work) it would seem that irradiated cottonseed oil in the dose of 6 drachms daily exerts a slight antirachitic effect.

To summarize. The effect of direct exposure to ultra-violet light on the bone lesions of a rachitic patient appears to be dependent upon the power of light to produce in certain substances the so-called antirachitic factor. Rapid healing of the bone lesions in children can be brought about by dried milk irradiated with ultra-violet light from the mercury arc—and this antirachitic potency of the milk withstands ten minutes' boiling. Three ounces daily of white flour similarly irradiated had little or no effect, and the antirachitic power of 6 drachms daily of irradiated cottonseed oil is probably slight. It is possible in view of certain animal experiments, that the period of irradiation (one hour at one foot from the mercury arc) was excessive, since it seems that a prolonged exposure to ultra-violet light will destroy the antirachitic potency. A shorter exposure has imparted.

It seems probable that the action of a foodstuff artificially rendered antirachitic by irradiation with ultra-violet light is identical with the action of a naturally occurring foodstuff containing the antirachitic factor, and that no more beneficial effect is to be expected from irradiating a patient's milk than from giving cod-liver oil. But when cod-liver oil cannot satisfactorily be given irradiated substance may in the future prove of considerable value.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CONCURRENT HERPES ZOSTER AND VARICELLA

The occurrence of these two conditions in the same patient at the same time seems to me to be of sufficient rarity to attract attention.

On May 19th last I saw a boy, aged 7 years, who five days previously had complained of pain in the upper part of the left side of the chest, on the following day a rash appeared in this area. On examination there was an extensive patch of herpes zoster affecting the third left dorsal nerve, extending from the mid line behind to the mid line in front, the area was as much as 3 inches wide in places. Further there was a well marked rash of chicken-pox over the body and limbs, all stages of the rash being present. There was a history that there had been a few vesicles round the hips a few days before, but these were not present on examination. There were no other cases of chicken-pox or shingles in the family and the boy had not suffered from either condition before.

This case (which I report by permission of Dr. A. P. Thomson) seems to lend some support to the theory that the two conditions are due to the same cause.

GROFFER DEDRY, M.B., M.R.C.S.

Children's Hospital Birmingham

INCUBATION PERIOD OF VARICELLA

The following case is of interest in that it would appear to indicate that the incubation period of chicken-pox may, in the case of an infant, be as short as nine days.

On May 10th I was asked by Dr. D. D. Anderson of this town to see a mother and baby suffering from chicken-pox. Dr. Anderson had fifteen days previously attended the woman in her confinement. Mother and baby then appeared quite well. On the tenth day after birth the infant developed well marked chicken-pox and three days later the mother developed a similar rash. The mother had no preliminary illness beyond a slight headache which passed off in the course of a few hours.

When I saw the cases the rash was well developed, centripetal in distribution while constitutional effects were apparently nil. The mother had been vaccinated in infancy and showed no mark. The woman's mother had been present at the confinement and on the following day a sister aged 9 visited the house. During the time this young girl was in the house it was noticed that she had a few spots which were subsequently diagnosed as chicken-pox.

G. C. M. M'GONIGLE,
M.O.H. Stockton-on-Tees

SUPPURATION IN A HYDATID CYST OF THE LIVER OPERATION RECOVERY

The following case, which was under my treatment recently, seems of sufficient interest to merit publication.

A Hindu patient aged 30 was admitted to the Pachamba Mission Hospital on March 28th 1925 with a history of fever, pain in the right hypochondrium and progressive emaciation of about six weeks duration. The liver was enlarged in a downward direction to the extent of two fingerbreadths below the costal margin, the enlargement being semi-circular in outline and tender on pressure. There was no jaundice. The patient's condition and the fact that he gave a history of an attack of dysentery two years previously indicated a strong probability that the hepatic enlargement was due to an amoebic abscess. He was accordingly treated with daily hypodermic injections of emetine hydrochloride gr. i for ten days. This had no effect on the temperature which showed an evening rise to 103.104° and the liver enlargement increased in extent gradually assuming the form of a dome-shaped swelling. By April 13th the swelling had become definitely fluctuant and the liver dullness had extended upwards to the level of the fourth costal cartilage. The transmission of cardiac pulsation could be felt over the lower part of the right side of the thorax.

Operation

On April 14th under ethyl form anaesthesia the enlarged liver was exposed by an incision 3 inches long extending downwards from the costal margin and the exposed area was isolated from the peritoneal cavity by gauze packing. The liver was explored with a hypodermic needle and a syringe of thin pus was aspirated. The needle was withdrawn and the liver incised. The evacuation

of a large amount of pus containing numerous small cysts cleared up the diagnosis, and proved the condition to be due to suppurative infection with a hydatid cyst of the liver. Fibrinous fragments of the broken down capsule of the mother cyst were also evacuated, and the "daughter cysts" varying from the size of a cherry to that of a golf ball must have numbered well over fifty. A cigarette drain was inserted into the abscess cavity and sutured to the abdominal wall.

There was profuse discharge of pus and bile for several days and on April 30th a number of daughter cysts and fragments of cyst wall were evacuated. After this convalescence proceeded steadily. The wound was healed by June 6th and the patient was discharged from hospital a few days later, in good health and having gained considerably in weight.

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DIATHERMY IN PROSTATIC ENLARGEMENT

I want here to call the attention of those medical men practising diathermy to the very valuable method (if they have not already tried it) we possess in diathermy for relieving enlargement of the prostate. There are very many cases in which surgical procedure is inadvisable because of possible cardiac trouble, age of patient, etc. The method I adopt is to use a metal intracanal electrode with an oblong handle, this is warmed, introduced, and pressed against the gland, the indifferent electrode is placed on the abdomen, or, better still, under the hip. The regulator of the diathermy apparatus is at zero, the current is gradually increased until about 15 amperes is reached. The first session is limited to about eight minutes, it is repeated daily for several days, then every other day, gradually increasing the intervals between treatments. My experience has been that the patient experiences immense relief, the discomfort appreciably and quickly lessens, and life is made worth living in the case of men so afflicted in their declining years who would otherwise be doomed to chronic invalidism.

London W.

C. J. ST. ANDREW'S

STRANGULATED HERNIA CONTAINING OVARY AND FALLOPIAN TUBE IN AN INFANT

The following case is interesting in that inguinal hernia is rare in females, especially at such a tender age. Strangulation in such circumstances must be very rare. That the case was congenital is obvious, it is worth of note that there was no associated congenital deformity present in the parietal cleft palate.

A female child weighing 7 lb, born in King's College Hospital was unable to suck owing to a cleft of the soft palate. Whilst the mother was in hospital her milk was drawn off by means of a breast pump and given to the child. When aged seven weeks the child was brought back to hospital because the mother had noticed a lump in the right groin a few days before. At first it had disappeared when the child went to sleep, but it reappeared on crying. The child had been weaned and had lost 14 oz since birth. This lump the size of an acorn was situated in the crease of the right groin above and internal to the pubic spine. It was tense and irreducible, no expansile impulse on crying was detected, translucency could not be demonstrated. Percussion in such a case was of little value. The child was placed in a bed the foot of which was raised and evaporating lotions were applied locally. At first there was no constitutional disturbance, feeds were taken well and the temperature and pulse were normal. The next day the child became restless it cried a great deal and drew its legs up upon the abdomen, the pulse rate increased and the temperature was just subnormal, there was a small action of the bowels. The swelling had increased almost half as much again and was very tense, palpation was greatly resisted.

Operation revealed a well formed sac reaching down into the inguinal ring, the narrow neck was at the external inguinal ring. On opening the sac some fluid escaped, contained within were the right ovary and Fallopian tube intensely injected, oedematous and purple red. After dividing the constriction at the neck of the sac and applying hot saline solution most of the injection disappeared so that both organs were returned into the abdominal cavity. The neck of the sac was transfixed and tied, the fundus removed and the inguinal canal obliterated by two catgut sutures. The skin was closed with silk-worm gut.

The child did very well. Owing entirely to competent nursing it had gained 6 oz when discharged.

I am greatly indebted to Mr. Cecil P. G. Walcott for allowing me to operate upon and publish this case.

W. JACOBUS DUFFETT,
M.B. Ch. Cantab. M.R.C.S.

King's College Hospital.

Reviews.

"MANSON'S TROPICAL DISEASES"

THE world is apt to forget the great men by whose genius and labours wide regions, rich but pestilence-ridden, have been opened to the farmer and pastoralist. No one gave so great an impetus to the serious study of tropical diseases by modern scientific methods as Patrick Manson. Not only was he himself an indefatigable student of the clinical characters of these diseases and of their pathology and etiology, being in the two subjects last named greatly helped by an intimate acquaintance with their epidemiology, but he was from the first anxious that others should continue and extend his researches. From the time he returned from the East to this country he was determined that the knowledge gained should be popularized, using that term in its best sense. To this end he followed two distinct but parallel lines of policy: the first was to interest the administrator at home and abroad, and the second to give to the medical men who were to be the executive officers of the administrators opportunities for learning what was known. He therefore prepared a *Manual of Tropical Medicine*, and with the help of Mr. Joseph Chamberlain established the London School of Tropical Medicine. The school will keep his memory green, and the pious cure which his son-in-law, Dr. Manson-Benn, has devoted to the production of the new edition¹ of the manual will help in this direction.

It was no light task to prepare the first edition of the manual, which was published in 1893, for it was practically virgin ground that had to be broken, and Manson had no precedent to guide him in its arrangement. The introduction written by him for the sixth edition has been retained by the editor of the eighth, and it is to be hoped that it will not be omitted from any subsequent editions. The book has been thoroughly revised, but the work has been so well done that there are fewer pages than in the seventh edition.

The article on medical zoology (with a section on snakes by Miss Procter) now occupies 190 pages, and the forty pages on laboratory methods will be useful to those who have to travel light. Many new illustrations have been added, and the coloured drawings are a striking feature of the book. There are also maps showing the geographical distribution of trypanosomiasis, leishmaniasis, yellow fever, schistosomiasis, and filariasis. There is a brief section on infections by *Bacillus coli*, and this rather tempts one to ask why tuberculosis and other world-wide diseases should have been left out. The question of what should be included in a manual of tropical diseases is of course a matter of opinion, and Sir Patrick Manson's own definition may well continue to be the guide. The plan Manson adopted in dealing with each disease under etiology, pathology, symptoms, and differential diagnosis, has been continued, and undoubtedly has its advantages, though some would perhaps prefer to have symptoms and pathology side by side.

There are so many people who still, whenever they exhibit a rise of temperature, think they are suffering from "malaria" because they were infected many years previously, though they have not had any subsequent reinfection, that a note on the duration of latent malaria with any statistics available would be of very real interest and help to the profession and to the public.

The book is eminently readable, and the illustrations, paper, type, and printing are good but it remains portable. The book is not an encyclopaedia, but a handbook, and the ideal of returning it as an introduction to the subject—a textbook for the student, a practical handbook for the worker—has been excellently well maintained.

THE ENGINES OF THE HUMAN BODY

IN the second edition of Sir ARTHUR KEITH's *Engines of the Human Body* the text of the first edition has been reprinted with merely verbal alterations, but at the end of the volume there is added a series of thirteen appendices, running in all to upwards of fifty pages, in which an account is given of the knowledge of the mechanism of the human body gained since 1919. The plan permits of the reader seeing at once the directions in which our knowledge is extending and at the same time allows of the larger volume being published at the original price. The appendices open with a very graceful tribute to the late Sir James Dewar, who was for so long the director of the Royal Institution, at which the lectures which form the basis of the book were originally delivered. The remaining appendices deal with such subjects as the phenomena of muscular contraction, the nerve control of muscle, vitamins, insulin and hormones, the nourishment of cartilage, the output of the heart, and the effect of barometric pressure on mental and bodily function, in which the recent work of, amongst others, Professor A. V. Hill, Sir Charles Sherrington, Sir F. G. Hopkins, Professor E. Mellanby, Dr. Barcroft, Professor Cathcart, Dr. John Haldane, and Dr. Banting is laid under contribution.

The observation suggests itself that, while it is apparently a relatively easy problem to correlate the processes of the human body with those of mechanical engines and instruments, this only applies to gross effects, for the moment we look beneath the surface and study them in their subtler action we at once see what would asunder they actually are. The attempt Sir Arthur Keith has made to correlate them has brought out their fundamental differences and has so served a purpose of the highest value. The work furnishes us with an admirable survey of all that is known on the subject of the actions of the human body, and will be found of very great interest to all those—and are there any others?—who are concerned with the question.

THE GROWTH OF THE JAWS

THE Dental Board of the United Kingdom has published, under the title *The Growth of the Jaws, Normal and Abnormal, in Health and Disease*,² a series of five lectures delivered under its auspices by Professor E. Fawcett of Bristol (development of the bones around the mouth), Professor Birch of Birmingham (the growth of the jaws and palate, and the genesis and growth of deformed jaws and palates), Mr. George Northcroft (the teeth in relationship to the normal and abnormal growth of the jaws), and Sir Arthur Keith (certain structural changes which are taking place in our jaws and teeth).

The project is ambitious, and the individual lectures worthy of all praise, but we have to confess to a feeling of disappointment that no definite conclusion is reached on the vexed question of the genesis of the so-called adenoid mouth, as Sir Arthur Keith summarizes in concluding his lecture, there is a feeling of disappointment because he tells us nothing which can be of use to us in practice. But this feeling quickly vanishes, giving place to a lively appreciation of the persistent endeavours of those who are seeking to elucidate one of the most difficult problems of human biology.

Professor Fawcett uses human facts almost exclusively, and is to be congratulated on his excellent choice of material. His description of the development of the vomer and of the palatal cartilages may perhaps help to an understanding of "deviated septum." We wonder whether his researches will supply an explanation of the occurrence of carcinoma originating in the bone beneath the orbit?

Professor Birch's two lectures offer us, besides their intrinsic interest, the advantage of a reasoned criticism of

The Engine of the Human Body. By Sir Arthur Keith, M.D., F.R.S., F.R.C.S. Second edition, completely revised and enlarged with new appendices added. London: Williams and Norgate, Ltd. 1925. (Demy 8vo pp. xiv + 343, 47 figures, 2 plates, 12s. 6d. net.)

² *Five Lectures on The Growth of the Jaws, Normal and Abnormal in Health and Disease*. Delivered under the auspices of and published by the Dental Board of the United Kingdom. London, 1924. (Roy. 8vo, pp. vii + 147, 5s. net.)

¹ *Manson's Tropical Diseases*. Edited by Philip H. Manson-Bahr, D.S.O., M.A., M.D., D.T.M., and H. Cantab, F.R.C.P. (Lond.). Eighth edition revised. London and New York: Cassell and Co., Ltd. 1925. (Demy 8vo, pp. xx + 895, 6 maps, 20 coloured plates, 7 half-tone plates, 287 figures, 38 charts, 31s. 6d. net.)

Sir Arthur Keith's and Mr J. Champion's recent paper on the growth of the jaws. We may be allowed a doubt whether he is right in his summary rejection of aduoids and mechanical influences as productive of jaw deformities. A fuller acquaintance with clinical facts might alter his views. Jaw deformities do not, as Professor British assumes, necessarily first make themselves strikingly evident at the time of the change of the teeth. They are often obviously and even strikingly present some years sooner, and can always be foretold by observation of a failure of growth of the maxilla, there are clinical facts of daily occurrence to indicate the mechanical powers of compression of the lips and cheeks.

Mr George Northeroft gives a valuable table of measurements showing that small deciduous teeth may be expected to be followed by small permanent successors. For this work, laborious and carefully executed, he will be heartily thanked by every dentist.

Sir Arthur Keith supports the thesis that definite changes of a measurable amount are affecting our teeth, jaws, noses, orbits, cheeks, and other parts of the structural conformation of our faces, but adds that they are not affecting everyone. An edge-to-edge bite of the incisors is the rule with ancient British peoples, as compared with our present overlap of the upper in front of the lower incisors. Third prominent molars were far less frequently absent. Contracted and irregularly developed palates are never seen in ancient skulls—but are they then a discrete change, or truly a developmental change? In spite of the fact that so little seems to apply to our daily practice, every thoughtful dentist will be grateful to the Dental Board for bringing together this series of lectures.

ANATOMY

IN the new (sixth) edition of Dr WILLIAM DAVIS's *Applied Anatomy*,⁴ edited by Dr G. P. MULLER, the applications of anatomy are considered in their widest aspect. The result is a book which partakes of the triple nature of a textbook of anatomy, of surgical pathology, and of operative surgery. It is a large volume of over 600 pages with 631 illustrations, most of which are coloured. Such a book, while it contains a great deal of very important and accurate information, suffers in that by its nature it is not always precise enough for the anatomist, thorough enough for the pathologist, or detailed enough for the operating surgeon. It is intended, we imagine, for the good all-round surgeon rather than for the specialist, and as an advanced student's manual rather than as a book of reference. The chapters dealing with cranio-cerebral subjects, with the anatomy of the upper abdomen, with fractures and dislocations, are particularly meritorious. The figures illustrating the displacements in these last two mentioned injuries are perhaps the most illuminating we have seen in any general textbook. We should like, however, to draw the attention of the editor to certain corrections and additions which we venture to think might be made in future editions, for such editions we feel will be indubitably demanded in view of the excellence of so much of the text and of so many of the illustrations. In figure 43, for example, a much larger area of the occipital cortex is allotted to visual function than is usually allowed, and no account is taken of the limiting nature of the sulcus lunatus. In the same figure the motor area for the trunk is placed quite rightly in the precentral convolution but in the following figure it is situated in the superior frontal convolution. In figure 45, again, the visual area is represented as stretching along the internal parieto-occipital fissure instead of along the external fissure. The important facts that the iliacus muscle crosses anteriorly the sacro-iliac joint and that the upper portion of the transversalis muscle remains muscular up to, or very nearly up to, the linea alba fail to be correctly represented. The ampulla of Vater is shown in figure 431 on the proximal side instead of on the distal side of the union of the common bile duct and pancreatic duct. The perirenal fascia of one side is stated on page 432 to be continuous across the midline with the perirenal fascia of the other side, a view which has recently been strongly controverted.

⁴ *Applied Anatomy*. By WILLIAM G. DAVIS, M.D. Edited by GEORGE P. MULLER, M.D. Sixth edition. London: J. I. Lippincott Company, 1925. (Sup. roy. 8vo pp. xii + 638. 64 figures. 42s. net.)

The one departure into comparative anatomy among the illustrations shows the pectoral girdle of an eagle with the coracoid bone labelled "precoracoid." Among omissions, or rather among matters to which greater prominence might have been given, are the important anatomical considerations involved in mobilization of the rectum, the variations which occur in the arrangement of the extraleptate biliary passages and the accompanying blood vessels, and, in view of its great importance, is shown by Kavanagh's work, the arrangement of the peritoneal spaces in the hand. Despite these failings, which are really trifles in so large and comprehensive a book and which have been brought together rather for correction in future editions than by way of serious adverse criticism, our opinion of the work remains a very high one, and we have no hesitation in strongly recommending it for a place on the bookshelves of the general surgeon.

Dr I. B. JAMIESON's little book, *A Companion to Manuals of Practical Anatomy*, has reached a second edition.⁵ As in the first edition the Byle nomenclature, or an English translation of that terminology, has been used throughout, but for the sake of the student unaccustomed to B.N.A. terms the old names are frequently inserted in brackets. The general arrangement of the second edition follows the plan of the first, and but little change has been made in detail. The book remains an easily portable textbook of medical anatomy, popular with students because of its condensed language and clear expression.

NOTES ON BOOKS

The Journal of Helminthology, edited by Professor R. T. LLEWELLYN, I.R.S., and published by the Institute of Agricultural Parasitology at the London School of Hygiene and Tropical Medicine, has reached the fourth number of its third volume. The articles published in it are of a very specialized kind, but this number contains one observation which may have a certain interest for medical readers. Mr D. O. Morgan, B.Sc., a field officer of the institute, is engaged in observations on animals slaughtered in the Aberystwyth abattoir. Lambs invariably harbour large numbers of intestinal worms whereas sheep are comparatively free. One lamb examined in August contained twelve individuals of one species of worm, seventeen of another, seventy-nine of another, seventeen of another, and twenty-two of another, and was also furiously heavily infected with six more parasites. This, it is stated, is by no means exceptional, and the lamb was not in low condition when slaughtered. A large number of observations were made on carcasses, but no definite relation was found between the amount of fat present and the number of helminths the host contained. Very heavy infection, especially with one or two species, however, was often associated with a low condition. A two-year-old wether fed on the same pasture as the lamb mentioned and slaughtered on the same day contained none of the larger worms and only a "fair number" of two species of other worms. The observations make it probable that lambs are exceedingly liable to heavy infection and tend to become immune as they grow older and to lose the greater part of the worms picked up during their first summer.

On January 31st (p. 26), a review was published of the first edition of *Recent Advances in Medicine* by Drs. BEAUMONT and DODDS, and the success was anticipated for it has been such that a second edition⁶ has already been called for. The authors in the course of revision have expanded and illustrated their description of the colorimeter, many more tests have been added, and considerable additions have been made to the sections dealing with glycosuria and gastric analysis. In a new chapter the Dick test for scarlet fever is described at some length.

The seventh edition of *Wheeler's Handbook of Medicine*,⁷ edited by Dr JACK, shows an increase in size over the previous editions, and alterations have been made in the classification of diseases. The sections on cardiac and on nervous

⁵ *A Companion to Manuals of Practical Anatomy*. By I. B. JAMIESON, M.D. Second edition. Oxford Medical Publications. London: H. K. Lewis, 1925. (Fcap. 8vo pp. xxvi + 558. 8s. 6d. net.)

⁶ *Recent Advances in Medicine*. By C. E. Beaumont, M.A., D.M.Oxon. F.R.C.P., D.I.H. Lond., and E. C. Dodds, Ph.D. M.B. B.Sc. Lond. Second edition. London: J. and A. Churchill, 1925. (Extra pp. 8vo pp. i + 364. 40 figures. 10s. 6d. net.)

⁷ *Wheeler's Handbook of Medicine*. By WILLIAM R. JACK, B.Sc. M.D. F.R.F.S.G. Seventh edition. Edinburgh: E. and S. Livingstone, 1924. (Crown 8vo pp. xi + 629. 30 figures. 12s. 6d. net.)

diseases have been enlarged, and the articles on diabetes mellitus and jaundice have been largely rewritten. A careful revision of the whole book has been effected, and it retains its characteristics of concentration and lucid description which have rendered it in the past so valuable to medical students.

Dr HENRI LECLERC's book on the fruits of France⁸ is a fascinating study which, as its subtitle suggests, will appeal at once to the dietitian, the therapist, and the medical historian. The work consists of a series of short chapters, each of which is devoted to the consideration of one or more of the fruits which grow on French soil. The book is written in a charming style in which learning, humour, and practical medicine are cunningly blended.

⁸ *Les Fruits de France. Historique, Dietétique et Thérapeutique.* Par Henri Leclerc. Paris: Masson et Cie, 1925 (5½ x 8½ pp 274 Fr 12).

PREPARATIONS AND APPLIANCES

The Chlorine Gas Process for Sterilizing Swimming bath Water

A CORRESPONDENT informs us that chlorine gas is being employed for the sterilization of water in place of sodium hypochlorite and bleaching powder (calcium chloro hypochlorite), one of its applications is for the continuous operation of swimming baths so as to enable the same water to be used for twelve months at a time. A measured trace of chlorine gas is applied with the aid of the Chloronome apparatus of the Paterson Engineering Co., Ltd. of London, the chlorine being supplied in cylinders. The general principle of the treatment is to circulate the water continuously by means of a steam or motor driven pump passing it first through a rough gauze strainer to arrest any large objects and then to treat it with an alumino ferric coagulant, so as to separate all the colouring matter and impurities. The water is next passed through Paterson closed pressure sand filters with dished top and bottom and compressed air cleaning, using a steam injector to provide the air blast; the resulting water is then aerated, using a closed aerator with the air under pressure. Finally, the water is treated with a measured trace of chlorine gas by means of the chloronome using about 1 part per 2,000,000 parts of water; the water is returned to the bath through a steam heated calorifier to maintain a constant temperature, say about 72° F in summer and 78° F in winter; the movement of the water being imperceptible to the bathers. A detailed analysis of water treated in this way at the St. Helens public baths after nineteen weeks running when thousands of bathers had passed through showed we are informed 112 bacteria per cubic centimetre on gelatin in three days whilst *B. coli* and *B. enteritidis sporogens* were entirely absent in 100 c.c.m. nitrites and free chlorine were absent also; the free ammonia was 0.0046 and the albuminoid ammonia 0.0058 per 100,000.

PRESERVATIVES IN FOOD

REGULATIONS ISSUED BY THE MINISTRY OF HEALTH

The new Regulations regarding preservatives in food which were published in draft in February, to give opportunity for criticism, have now been issued in their adopted form by the Ministry of Health. This result has been reached after what may be regarded as a normal progress from initiation to accomplishment, in matters of Government control, where many and diverse interests are concerned. The subject is of more importance in this than any other country, because of our quite exceptional dependence on importation for the supply of foods of many kinds. Some of the most essential articles of diet come from the most distant parts of the globe, and yet should reach Britain without having undergone any seriously deleterious change. Much home produce also requires protection against injurious influences in order that it may come to the consumer in safe and sound condition. Yet we have lagged behind most foreign countries in dealing effectively with the subject. In 1889 a committee was appointed to inquire regarding preservative and colouring matters, but no action was taken on the report. Ten years later Regulations were issued by the Local Government Board, and since 1908 foreign meat, and milk and cream, have been brought under some measure of control.

The very competent departmental committee appointed in July, 1923, issued its final report towards the end of last October. Its conclusions and recommendations have naturally been of much interest, and a cause of anxiety to food traders, and have been the subject of many questions in Parliament. Shortly stated, the committee is of opinion that cold storage should take the place of preservatives. But in equipment for cold storage this country is woefully

deficient, largely owing to the cost of motor power, as compared with natural sources of such power available in various places abroad. Methods of land transport also are defective in cold storage, no doubt because chemical preservatives have stood in the way of realization of the need for improvement. It may be assumed that the new Regulations will stimulate effort to overcome the difficulties that undoubtedly exist. In the homes of the people a similar effect may be looked for. As regards milk, pasteurization before sale will continue to be a main security, but both for it and other foods greater attention will come to be paid to coolness and cleanliness of the holder, however limited such accommodation may be in the smaller houses.

The Minister of Health, in the Regulations now issued, appears to have given very fair and reasonable consideration to representations as to possible hardships. Time is to be allowed for the clearance of existing stocks, and for adjustment of methods and processes. Also Mr Neville Chamberlain indicates to the local authorities that they ought to use discretion before instituting legal proceedings in the early days of the operation of the new rules. As regards the applicability to food preservatives of the defence of warranty available under the Sale of Food and Drugs Acts, it has been found that owing to legal difficulties this would not be practicable. Attention, however, is drawn to the fact that a local authority may proceed against the manufacturer or wholesaler instead of, or in addition to, the retailer, and that this provision may advantageously be applied where articles are put up in sealed containers bearing a name and address showing where the product came from. Every grocer's shop affords evidence of the great extent to which that kind of package sale now prevails.

The Regulations themselves demonstrate that the Minister has definitely concluded, notwithstanding all opposition, to give general effect to the report of the departmental committee, whilst he has paid careful heed to the representations of the objectors. Chemical preservatives are not entirely debarred. A schedule appended to the Regulations specifies a series of articles, seventeen in all, to which sulphur dioxide, including sulphites, or in a few cases benzoic acid or benzoates, may be added in proportions stated in the schedule. The articles include sausages, fruit (fresh or dried), unfermented grape juice and non alcoholic wines, cordials and fruit juices, jam, sugar, gelatin, beer, cider, alcoholic wines, and sweetened mineral waters. Ordinary metallic colouring matters containing arsenic, copper, mercury, lead, etc., are debarred, also gamboge and some coal tar colours. The due labelling of foods containing permitted preservatives is required, and both the preservative and its percentage are to be stated. Labelling is not to be necessary in hotels or restaurants.

As regards allowable preservatives, the main protests by traders have been in respect of the exclusion of boric acid from all foods. Up till now it has been debarred from milk only, whilst its presence in cream has had to be declared, but in future it is not to be used in any article for human consumption. The assertion that injury from its use is not proved has been insufficient to secure its retention. Boric acid has a cumulative action, and it is better to practise rigid cleanliness in the manufacture of food than to trust to an agent capable of counteracting or concealing possible uncleanness. It is very satisfactory that the Minister has had the courage to act on the recommendation of the departmental committee in giving effect to this important principle.

The Regulations are to come into operation generally at the beginning of 1927 but not until a year later as regards butter and cream. At present some articles of food contain as an ingredient preserved bacon, lard, margarine, or butter, and for such articles the Regulations take effect from the middle of 1927. These details help to show how carefully the effects of the Regulations have been considered prior to their issue. The hope of all concerned will be that by co-operation of manufacturers, distributors, and consumers the difficulties which are feared will not to any great extent be realized, and that in so far as they do arise they will be quickly and effectively overcome, so that the purity of the national food supply will reach a higher standard than hitherto it has ever attained.

British Medical Journal.

SATURDAY, AUGUST 22ND, 1925

THE TREATMENT OF FRACTURES

MORE than one of the discussions in the sectional meetings at Bath which we are now publishing were of great value and likely to have far-reaching results, and among them none, perhaps, was of more importance than that on the treatment of fractures, with special reference to its organization and teaching, at a joint meeting of the Sections of Surgery and Orthopaedics. The full report is printed in this issue (p. 317). It will be remembered that on May 16th we published (p. 909) a report of a lecture on this subject delivered by Sir Robert Jones in Liverpool, in which he severely criticized the existing state of things in the great teaching hospitals, and propounded the outline of a scheme for its improvement. Knowing well that you cannot make revolutions with rose water, Sir Robert stated his case as strongly as possible, because what he and others desire is in fact almost a revolution in hospital methods of coping with these injuries. For although in certain hospitals steps have been taken in the direction desired by him, in a large number, including some of the most important, no change has been made in the methods in vogue before the war, notwithstanding the object lessons which the special surgical hospitals afforded during and after the struggle. In a leading article in the same number of this JOURNAL, commenting on the contentions of Sir Robert Jones, attention was drawn to the solution of the problem which had been found to work so well at the Massachusetts General Hospital in Boston, as described in Dr. Wilson and Mr. Cochrane's book on fractures. Mr. Gask, who opened the discussion with an address conspicuous for its moderation and fairness, took strong exception to the statement in our article that most surgeons to general hospitals must be classed as abdominal surgeons. A glance at the programme of subjects for discussion at any meeting of a surgical society, such as the International Society of Surgery or the Surgical Section at Bath itself, will, we believe, justify our statement, and if for "the abdomen" we were to substitute "the cavities of the body" the word "most" would seem to be almost superfluous.

Mr. Gask may be presumed to have appeared as spokesman for the general surgeons to many of the hospitals to which medical schools are attached, and he is himself a teacher of eminence in one of the greatest of them, and an author of one of the best textbooks of surgery. The admission, coming from such a source, that something is lacking in our teaching and our way of treating fractures, and that a considerable amount of crippling results, and therefore that all is not well, but that reforms are necessary, at once reduced the questions at issue to one of how to reorganize treatment and teaching in the manner most beneficial to the patient and most efficient for the student. But Mr. Gask did not disdain the old argument which may be called "the thin end of the wedge" which has been used for at least half a century against proposals to form special departments of surgery, as it has been in politics against all manner of reform. Yet, as a subsequent speaker

reminded the meeting, the section on fractures in Gask and Wilson's *Surgery* was written by an orthopaedic specialist.

Admitting the need of a change, and coming to the question of what the remedy is to be, we are struck, in studying this discussion, with the extent to which speakers relied upon *a priori* arguments and neglected the evidence of actual facts which effectually dispose of some of those arguments. An outstanding exception was Dr. R. B. Osgood of Boston, who as a visitor made one of the best thought out and best delivered contributions to the debate. Dr. Osgood is one of the most distinguished orthopaedic surgeons living, with a wide and very exceptional knowledge of current practice throughout the world. He told the meeting that in the United States, so far from the segregation of fracture cases having increased specialism, it had had the opposite effect, and had created a much wider interest in such cases. Using a striking chemical metaphor, he said that the reform "had added a reagent which had dissolved some of the precipitate thrown down by the specialities, and made it again a part of the general solution."

Mr. Gask put his finger on a sore spot when he said that lack of beds prevented adequate treatment of fractures. The comparatively short time for which any case can be allowed to occupy a bed in our general hospitals has undoubtedly largely contributed to the apparent preference held by the general surgeon for cases which need little or no after-treatment. A case of abdominal section may be sent to a convalescent home as soon as the skin incision is healed, but a case of fracture needs supervision for weeks after the infliction of the injury. Thus the successes of Listerism, which in so many instances have greatly reduced the amount of treatment required after the proceedings in the theatre, have resulted in diverting attention from the necessity in such a condition as fracture of careful and thorough after-treatment. When Sir Arbuthnot Lane introduced his method of plating fractures, the general surgeons were enabled to practise it for this very reason—that the whole treatment seemed to consist of a cutting operation, so that after a week or two the limb could be put up in plaster and the patient discharged from hospital. Thus we find ourselves face to face with the difficulty caused by the lack of hospital accommodation, the Voluntary Hospitals Commission, an analysis of whose report appeared in our last issue (pp. 305 and 299), has estimated the number of additional beds required in England and Wales for the proper treatment of the sick and injured of the community to be not less than the large total of 10,000.

One speaker after another in the discussion, whether a general or an orthopaedic surgeon, stated his conviction of the need of a change, but many did not insist on the transfer of fractures to the orthopaedic department. The general feeling seemed to be that great advantage would be gained by segregation of cases in a special ward, with a well taught and experienced sister and nurses, but that the treatment in such wards should be under the care of general as well as orthopaedic surgeons, the essential being that the surgeon should be really interested in the work. Mr. Fullerton's statement of the results obtained by him and his colleagues in Belfast shows what may be done by general surgeons who possess the necessary qualifications. The interests of the patient must always outweigh those of the medical student, treatment must come first and teaching follow, but the better the treatment the better the teaching, as Mr. Wade of

Edinburgh pointed out in his eloquent and instructive contribution to the discussion

It is, however, unnecessary to insist further on the need for change when we have heard from Mr Gask, who was in some degree the apologist for things as they are, that he "would welcome the foundation of a special hospital in London for the treatment of fractures under the care of specialists, a hospital in which the best methods could be shown, and from which light would spread." Even thus is conservatism wounded in the house of its friends!

TOWARDS A SOLUTION OF THE POST-GRADUATE PROBLEM

A fortnight ago (August 8th, p 266) we gave particulars of the new committee appointed by the Minister of Health "to draw up a practicable scheme of post graduate medical education centred in London, mentioned that the Minister of Health would himself act as chairman, and gave the names of the other members. It will have to encounter many cross-currents, but we may hope that it will find it possible to steer a straight course. The whole story is rather complicated, going back to the armistice, and, indeed, earlier. We will not run the risk of wearying readers by repeating it, but the new committee will start from the point where the matter was left in May, 1921, by the Athlone Committee, which recommended that a school attached to a hospital centrally situated in London should be devoted solely to post graduate medical education, and that it should be a school of the University of London, receiving substantial financial assistance from the Treasury through the University Grants Committee.

The body which primarily ought to be interested is the University of London, but in spite of good intentions, unofficially expressed it has, so far, done nothing. Several Ministries are more or less directly concerned. At the meeting summoned by the Fellowship of Medicine last March statements were made by representatives of the navy and army on the arrangements made by those services for their medical officers, these arrangements seem to be regarded as adequate, but the conditions in these services are so special that they afford little guidance for the solution of the larger problem presented by the civilian profession. Every credit is due to the Fellowship of Medicine for its persistent efforts to supply the need, but, as Sir Thomas Horder said during the discussion to which we have referred, it was a severe blow to post graduate teaching when the deans and committees of the majority of undergraduate schools withdrew their active interest. What was wanted, he said, was a local habitation where tuition could go on by demonstration and lecture, and a hostel, where men from overseas or from the provinces could reside during their stay for post graduate study or at any rate in office by which they would be referred to places of comfortable lodging.

The action of the Minister in appointing a committee in 1921 and again this year has shown that the Ministry of Health recognizes that it has a responsibility, primarily perhaps because it is the central administrative body of the medical insurance system. The Board of Education might in theory be assumed to be interested, but in practice its contact with higher and professional education is, in the main, indirect and chiefly through the University Grants Committee. Another Ministry concerned is the Colonial Office, for under its general direction and supervision are several

medical services—in the West Indies and in East and West Africa, for example, it has, moreover, certain responsibilities towards the Dominions, for the Colonial Secretary is also the parliamentary head of the Dominions Office. We are very glad to know that the present Colonial Secretary recognizes this responsibility, and that he has discussed the matter with Sir Thomas Horder and evinced great sympathy and interest. Lastly we may mention the India Office, which also has an interest, because study leave is now granted to officers of the Indian Medical Service.

As has been said it is not to be expected that the new committee will have an easy passage, but before it assembles in October under the chairmanship of Mr Neville Chamberlain its members will have had the chance of digesting the Athlone report, and will doubtless have before them a sketch of the history of the movement, which will furnish sailing directions indicating rocks and shoals to be avoided. One of the first points to be decided will be whether to seek to adapt to the purpose of post graduate medical education an existing school, or whether to follow the example of the London School of Hygiene and Tropical Medicine and strike out for an entirely new institution. If a suitable existing school could be found a great deal of time and perhaps money would be saved, but emphasis must be put on the word suitable, no hospital or school on a cramped site, with small and perhaps makeshift laboratories, will serve.

We do not like to be too sanguine but certainly at the present moment there seems to be a better assured prospect of something definite being achieved than has been visible hitherto. The reference recently made by His Majesty the King to the need which all recognize, the personal effort put forward by the Minister of Health in assuming the chairmanship of an *ad hoc* committee, and the sympathetic interest shown by at least one of his colleagues in the Cabinet cannot but serve to give considerable momentum to the movement.

THE ANTITUBERCULOSIS CAMPAIGN IN GREAT BRITAIN

At the eleventh annual conference of the National Association for the Prevention of Tuberculosis on July 6th, an account of which appeared in our issue of July 11th (p 73), the value of the antituberculosis campaign in Russia and the United States was emphasized by the representatives of those countries. It may, therefore, be of interest to recall that in the *Edinburgh Medical Journal* for September, 1924, Sir Robert Philip published an address delivered by him to the fourth conference of the International Union against Tuberculosis at Liège in the previous August, in which he dealt fully with the effects of the antituberculosis campaign on the diminution of the mortality, with especial reference to Scotland. In Great Britain this campaign started as a small voluntary movement less than forty years ago, and was at first subjected to considerable criticism and opposition, but owing largely to the patient work of Sir Robert Philip, who has been elected President of the British Medical Association for 1927, these obstacles were gradually overcome. The opening of the Edinburgh Tuberculosis Dispensary in 1887 was followed, eleven years later, by the publication of the Edinburgh antituberculosis scheme (*BRITISH MEDICAL JOURNAL*, July 23rd, 1898, p 217), which included the co-ordination of such dispensaries, sanatoriums for early cases, hospitals for later cases, and working colonies. Royal Commissions inquired into the effect on human health of food derived from tuberculous animals (1890), the best administrative procedure to control the

risk of such infection (1896), and the relation between human and animal tuberculosis (1908). The legislative enactments with regard to tuberculosis embodied in the National Health Insurance Act of 1911 and the recommendation of the departmental committee formed to interpret the provisions of this Act that a co-ordinated tuberculosis scheme for the whole country should be adopted, provided the basis of the present system in Great Britain. Notification of pulmonary tuberculosis was made compulsory in 1912, and this was extended in 1914 to include all other forms of tuberculosis. The tabulated statistics for Scotland from 1871 to 1921, which form part of Sir Robert Philip's address, illustrate the practical results which have followed this campaign against tuberculosis. Throughout this period there was a steady fall in the tuberculosis death rate for Scotland, but the percentage reduction of mortality was remarkably pronounced in the later years: this was also the case in the corresponding figures for England and the United States. The tables show that while the general death rate in Scotland from all diseases was reduced by less than one-half during the fifty years 1871 to 1921, the total tuberculosis death rate and the rate for pulmonary tuberculosis diminished by more than two-thirds. Thus, for example, during the period 1911-21, whereas the death rate from all diseases decreased by 10 per cent, the total tuberculosis death rate showed a drop of 31 per cent, and the rate for pulmonary tuberculosis fell to the extent of 27 per cent. Again, in 1871 the total tuberculosis mortality in Scotland was 16.8 per cent of the general mortality, whilst in 1921 it was only 9 per cent; this reduction in mortality was conspicuously apparent in the age groups below 25, indicating the successful preservation of the lives of children, adolescents, and young adults. These gains cannot be attributed solely to improvement in sanitary conditions, since the statistics show that a greater influence has been exerted on tuberculosis than on other forms of disease. The suggestion that this improvement is to be attributed to progressive immunization of the population against tuberculosis is rejected on the ground that there is no evidence that the older civilizations presented any degree of uniformity in the diminution of the tuberculosis death rate; this rate remained high in many of the older nations where no active antituberculosis work is in progress. Again, presumption of some difference in racial susceptibility cannot, it is held, be seriously pressed as explanatory of this fall in the death rate in view of the universality of the disease throughout the civilized world, and the heavy toll that has been exacted by it from all nations throughout the ages. Sir Robert Philip therefore concludes that the interposition of some added influence must be postulated and there seems to be no alternative to the view that this influence is the campaign against tuberculosis.

THE DANGERS OF SANOCRYSIN TREATMENT

THE possibility of the occurrence of dangerous reactions during the course of sanocrysin treatment has received from the first the most careful attention of Professor Moellgaard, who dealt with the question of shock production at some length in his account of the theoretical basis of this treatment published in our issue of April 4th, 1925 (p. 643). Professor K. Friber, who has been associated with Professor Moellgaard's investigations, referred to these dangers in an address he delivered recently to the National Association for the Prevention of Tuberculosis (July 11th, 1925, p. 73). He has been conducting an extensive trial of sanocrysin at the University Hospital of Copenhagen, and in the *Ugeskrift for Læger* (April 16th, 1925) has made some observations which do not altogether tally with those recorded by Secher and Wurtzen in Moellgaard's book

on sanocrysin. Friber's first and most important point is that the danger of shock is particularly great if an injection is repeated before the febrile reaction provoked by a previous injection has completely passed off. He has found that a protracted febrile reaction may follow the first injection of even a small dose (0.5 gram), but may not occur directly after that or the second injection. From two to four days may elapse before the rise of temperature begins, and this interval at least must, therefore, be allowed before repeating the injection. Sanocrysin shock, I think, is most likely to occur in patients who are already febrile, and in such cases the initial dose should be small. Besides the danger of shock, early injections at too frequent intervals may cause hyperpyrexia, the case ending finally with signs quite distinct from those of shock. Albuminuria also seems to depend largely on the frequency with which the injections are repeated, for it is most severe and protracted when there is an interval of only four days between the injections; albuminuria is much less common when the interval is six days. Friber disagrees also with the opinions as to the connexion between albuminuria and shock expressed in Moellgaard's book, according to which the first sign of shock is albuminuria, the next manifestations of myocarditis, and the final sign a fall of temperature. The appearance of albuminuria is, therefore, supposed to be a signal for the immediate administration of serum. Later, however, does not accept this view, having found that the first signs of shock are a fall of temperature and manifestations of heart failure—notably tachycardia. Albuminuria may, indeed, appear with the onset of shock, but it may be completely absent or develop at a later stage. It is a very common sequel to sanocrysin treatment, and is observed quite independently of shock. When genuine signs of shock appear intravenous injections of serum are definitely indicated, and Friber thinks it probable that prophylactic injections of serum can avert or diminish renal disease in the early stages of treatment. But the advice given some time ago—that serum injections should be continued so long as albuminuria persists—is in his view not only useless, but even harmful, since such treatment is apt to make albuminuria worse or more prolonged. In the light of these observations Friber has found treatment with sanocrysin much simplified. The nurse must primarily watch for signs of collapse, such as general malaise, pallor, excessive perspiration, rapid pulse, and fall of temperature. The patient usually recovers from this shock when given serum by intravenous injection, oxygen with or without camphor—also by injection—and oxygen inhalation. The frequency of shock can be much reduced by increasing the intervals between the injections, a measure Friber prefers to reducing the dosage of each injection, even when the interval between the first two injections is only two days, thereafter a week should be allowed between the injections. Though the original large doses can still be given in febrile cases, patients who are already febrile at the commencement of treatment should be given small doses. Friber's closing statement is that he has become increasingly convinced of the beneficial action of sanocrysin in a certain proportion of cases of tuberculosis.

THE U.S. PHARMACOPOEIA

THE fact that preparations have begun for a new edition of the *British Pharmacopoeia* lends particular interest to the announcement that the tenth revision of the *United States Pharmacopoeia* has been completed, and that the new edition will become official in the United States at the beginning of next year. The duty of revision is entrusted to a corporate body with no direct Governmental affiliation, but when a new edition appears, every tenth year, it is

adopted by the United States Government as the official standard for medicines. Dr Robert A. Hitcher of New York read a paper on the new edition at the annual meeting of the American Medical Association last May,¹ from which it appears that the Committee of Revision is a composite body of clinicians, pharmacologists, chemists, and pharmacists. It appointed a subcommittee (on scope) of physicians to select the therapeutically active substances to be admitted. The pharmacists have been responsible for the selection of those articles which are included because they are pharmaceutical necessities, such as agents for testing chemicals, solvents, and menstruums, or substances for which standards must be provided but which the physician does not prescribe directly. The U.S. *Pharmacopoeia* of 1890 contained 994 titles, but the tenth revision will contain only 630 official crude drugs and preparations. It is, Dr Hitcher states, the duty of the clinician and the pharmacologist to select those therapeutic agents which are indispensable, and also to exclude those substances which are not indispensable. Of the articles official in the ninth revision 191 have been dropped, but 50 others have been added. Among the most important of those now admitted for the first time are acetylsalicylic acid, asphenamine, barbital, epinephrine, procaine hydrochloride, neo-asphenamine, quinidine sulphate, and mild and strong silver proteates. Congress has forbidden the manufacture of diacetylmorphine (or heroin) in the United States, and Dr Hitcher says that there is a consensus of opinion that it is fully replaced by morphine and codeine. Morphine, however, and stivamine, the alkaloidal bases, have been dropped, because these drugs are almost invariably used in the form of one or another of their salts. The Committee of Revision was much exercised in coming to a decision as to whether whisky and brandy should be admitted to the *Pharmacopoeia*. After long discussion they were omitted from the ninth revision, and after protracted consideration they have been admitted to the tenth. Their admission was, of course, almost unanimously favoured by those members of the committee on scope who are in general practice, and almost unanimously disfavoured by the laboratory workers. "The significance of this," Dr Hitcher rather cryptically says, "is left to individual consideration." He and Dr H. C. Wood, who took part in the discussion, laid stress on the importance of using the official names in prescriptions. "Manufacturers," Dr Wood said, "who sell their products under trade names are in no way bound to furnish products of standard purity; they modify their formulas at will, sometimes very considerably. These may have greater or lesser amounts of impurities, and whenever one orders a product by a proprietary name one has no guarantee of the quality of drugs or even of the kind of drugs that one's patient is going to receive, except the honesty of the manufacturer."

On the other hand," he continued, "when a drug is ordered by an official name, the druggist must dispense a drug that corresponds to the standards laid down in the *Pharmacopoeia*, or he is liable to prosecution by the Federal Government, and, in nearly every State in the Union, also by the State authorities."

ENDEMIC ROUND WORM INFESTATION

Dr Monckton Copeman has drawn timely attention in one of the Ministry of Health reports² to the intensive prevalence of the large human round-worm, *Ascaris lumbricoides*, in certain rural parts of England. The parasite was found to be endemic in a small hamlet in the

Beilhamsted district of Hertfordshire, and was responsible for a considerable amount of illness and even some deaths. It appears to have been present in this district for many years—at least sixty—and has been encouraged to remain there by the local method of using earth closets. The faecal contents of these closets are emptied regularly on to special plots and used as manure. Dr Copeman suggests that a second cause of the ascariid infestation may be traced to the presence of the morphologically identical worm in the local pigs, the manure from which is also used in the cottagers' gardens. He draws attention, however, to Professor R. T. Leiper's view that these two species are biologically distinct, and that the pig form will probably not infect man—at least in its adult state. This contention is confirmed by recent work in America and Japan. The question of biological strains of parasitic helminths is most interesting and important, because many human parasites are represented in the domestic animals by species morphologically identical. Some of these are undoubtedly transmissible to man, but in the case of the swine ascariid the available evidence points to the existence of two biologically distinct species which are not inter-transmissible. The pig form is extremely common in this country, and is responsible for much economic loss. Pig manure is extensively used for the production of food for human consumption, and yet it is only in certain areas that human infestations are found. The cause of the epidemic is accordingly almost certainly to be attributed to the use of untreated human excreta as manure. In addition to discussing the epidemiology of this subject, Dr Copeman gives a concise account of our present knowledge of the bionomics, pathology, and therapeutics of *Ascaris lumbricoides* in man.

SURSUM CORDA

In a small volume of seventy-five pages,¹ more than one-half of which are devoted to full page illustrations, Mr Grey Turner of Newcastle draws attention to an aspect of the surgical treatment of cancer which is apt to be overlooked. He addresses himself more especially to younger surgeons. Roughly speaking, it may be said that cancer is an inevitably fatal disease, and surgery cannot cure it, and in contemplating a series of brilliant excisions there is generally a tendency to ask doubtfully, "What about the after-histories of these cases?" This attitude is wrong, attention should be directed on what surgery can, not on what it cannot, do, and there is abundant evidence that in numbers of cases it can prolong life, relieve suffering, and practically extirpate the disease, so that the patient's life comes to a natural close through other causes. When one or other of these benefits is not obtained there is apt to be a depressing feeling of surgical failure, which is in fact unjustifiable, since the failure was inherent in the case and could not be avoided. The better course is to endeavour to sharpen our powers of diagnosis to enable a distinction to be made between cases in which one or other of the above-named benefits may be predicted, and those in which failure is certain. It is probable that, some day, a strictly scientific analysis of successful cases on the one hand and unsuccessful cases on the other will be made, and a comparison of the results should disclose valuable facts. Mr Grey Turner describes a series of cases in which distinct and often remarkable benefits resulted from the surgical treatment of cancer. Thus, among the excisions of the rectum by the perineal route cases are mentioned in which there was freedom from recurrence for 8, 9, 12, 13, 16, and 20 years. Out of 43 of the author's own cases who survived the operation of

¹ *Journ Amer Med Assoc* August 11 p 341.

² Ministry of Health Reports on Public Health and Medical Subjects No. 31. On Infestations of the Human Subject by the Nematode Worm *Ascaris lumbricoides*. By S. Monckton Copeman M.D. F.R.C.P. F.R.S. 1925 (Pp. 20. 6d net.)

¹ *Some Encouragements in Cancer Surgery*. By G. Grey Turner, F.R.C.S. Eng. Bristol J. Wright and Sons Ltd. 1925. (Roy. 8vo pp. 75. 4d figure. 7s. 6d. net.)

excision of the rectum for cancer and who were operated upon more than five years ago, 12 are known to be alive and well without recurrence, and 2 are known to have died without recurrence 16 and 13 years after operation. Down to the end of 1913 Mr. Gray Turner had operated on 114 cases of cancer of the breast, with 3 deaths immediately following. Of the remainder, 3 had to be discarded because there was no record of the microscopic examination. Of the 108 cases thus left available for the study of the after-history, 14 were ascertained to be alive and well 10 years or more after the date of operation, the respective periods being 11 years in two cases, 13 years in two, 14 years in three, 15 years in four, 16 years in two, and 18 years in one case. Other series are described in which the disease was situated in the colon, mouth, bladder, kidneys, genitals, oesophagus, or stomach. Two cases of sarcoma of bone are of particular interest. One was a chondrosarcoma surrounding the lower third of the shaft of the femur, and, judging from the figure, filling the medullary canal for several inches. The limb was amputated through the thigh, and the patient remains well without any suggestion of recurrence now twelve years after the operation. In the second case there was a central tumour of the upper end of the tibia, which was treated by enucleation on the supposition that it was a myeloma. It proved to be an osteosarcoma, and rapidly recurred. Amputation was performed, and some months afterwards the patient began to suffer from cough, shortness of breath, and blood-stained sputum. A diagnosis of tuberculosis was eliminated, and it was supposed that secondary deposits had occurred in the lung. However, the patient's health improved, and he is at present, seven years after the operation, in good health and free from all evidences of recurrence or dissemination.

THE DANGEROUS DRUGS ACT, 1925

A BILL to make minor amendments and some extensions of the Dangerous Drugs Acts of 1920 and 1923 was passed with amazing rapidity during the last days of the last session. Read a second time in the Lords on July 28th, it was introduced in the Commons on July 30th, read a second time on August 4th, and received the Royal assent on August 7th. As Lord Cecil of Chelwood explained in the House of Lords (as reported in our parliamentary notes on August 8th, p. 273), the need for it arose out of the opium conferences held in Geneva last winter, and anticipated the ratification of the convention dictated by the second conference. Down to June 17th last the Foreign Office was unaware that any ratifications had been deposited, and the convention will not come into force until ratified by ten of the signatory Powers. The Act brings coca leaves, and Indian hemp and resins obtained therefrom, under the same restrictions as raw opium. The inclusion of the latter was considered by the Hague Opium Conference in 1911-12, and the further study of its abuse advised before invoking national or international action. The requirement as to marking of packages of raw opium for export is repealed. Synthetic cocaine is included. The definition of "medicinal opium" is amended. Power is given to withdraw from the operation of the Acts any preparation of any drug named in Part III of the Act of 1920 which the Council of the League, as advised by the Health Committee, find cannot give rise to the drug habit and from which the ingredient dangerous drugs cannot be recovered. The Act is to come into force on such date as His Majesty may, by Order in Council, appoint, and different dates may be appointed for different provisions in relation to different countries. It will be seen that the amendments made in the principal Act (1920) are, for the most part, comparatively unimportant. The most serious

is probably that in Section 5, which provides for the removal from the operation of the Act of certain preparations, although containing dangerous drugs. It appears that the French and Belgian delegates at the conference also urged that chemists should be allowed in urgent cases to dispense "tincture of opium, Sydenham's Laudanum, and Dover's powder in doses not containing more than 25 centigrams of official opium." This was opposed by the British delegation as weakening the Hague Convention and enabling an addict to go from one chemist's shop to another, and so obtain large quantities of the drugs. It was nevertheless carried and included in the convention.

A HEALTH BULLETIN

THE Public Health Commission of the Government of Victoria has this year begun the issue of a quarterly bulletin of health. The first number begins usefully with a brief statement of some of the main provisions of the Victorian Health Act of 1919, under which the Commission is constituted and operates. The population of the State is 1,641,852, and its area 87,884 square miles. The Minister of Health is a medical man, and the Health Commission under him consists of seven members, of whom three are medical. The powers of the Commission are those usually appertaining to a central health authority. Its headquarters are in Melbourne. Local administration is in the hands of municipal councils, with such medical and other officers as are necessary. The State is divided into six health areas, whose boundaries may be altered from time to time. Each area has a whole-time district health officer. Local officers are removable, but appointments require the approval of the Commission. The duties of medical officers of health and sanitary inspectors are generally similar to those at home. The former are not required to possess a diploma in public health, which would no doubt be an impracticable condition at present. Sanitary inspectors must possess a certificate of competency after examination by the Commission, or a certificate of the Royal Sanitary Institute or other equivalent and approved authority, or have five years' experience. The bulletin contains also a series of articles on current health questions: the lessening of diphtheria prevalence, the Schick test and immunization, sanatoriums, the Spallinger treatment, anthrax, acute anterior poliomyelitis, and whooping-cough. Then follows a quarterly statistical tabulation of six of the notifiable diseases. The diseases notifiable, though not tabulated, include ankylostomiasis, anthrax, bacillary and amoebic dysentery, hydraditis, leprosy, malaria, and tetanus. Tables are given also of the distribution and age incidence of venereal diseases, whilst some small space is devoted to a note on the prevalence of infectious diseases in foreign countries. The Health Commission of Victoria is to be congratulated on its new publication. It will be of value, not only to the public health service, but also to the medical profession of the State and to the general public of Victoria.

THE HALF YEARLY INDEXES

THE usual half-yearly indexes to the JOURNAL and to the SUPPLEMENT and EPITOME have been published, they will, however, not be issued with all copies of the JOURNAL, but only to those readers who ask for them. Any member or subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a postcard notifying his desire to the Financial Secretary and Business Manager, British Medical Association, British Medical Association House, Tavistock Square, W.C.1. Those wishing to receive the indexes regularly as published should intimate this desire.

VACCINATION AND TETANUS.

BY

JOHN C. McVAIL, M.D., LL.D.

AMERICAN medical periodicals reaching this country have very occasionally contained references to the occurrence of tetanus after vaccination. These references have always been puzzling to readers on this side of the Atlantic. Dr. F. D. Acland, in reporting on the sequelae of vaccination to the Royal Commission, made mention of tetanus,¹ and in an article by him entitled "Vaccination in 1914" published in Allbutt and Rolleston's *System of Medicine*, while pointing out that tetanus may follow an accidental infection of any wound, he stated that as a complication of vaccination it was of the utmost rarity, and that he was acquainted with only one case in more than five million consecutive vaccinations in this country. Even in that case there was no evidence that the tetanus was unvaccinated.

Much light is now thrown on the possibility of the occurrence of post-vaccinal tetanus in America, in an article by Dr. Charles Armstrong, of the United States Public Health Service, in the *Weekly Public Health Report* of that service dated June 26th, 1925.² The article is entitled "Tetanus following use of bunion pads as vaccination dressing." It states that eleven cases of post-vaccinal tetanus which followed the use of bunion pads as a dressing have been investigated.

The eleven cases were distributed over seven States—two in 1921, five in 1924, and four (down to May 20th) in 1925. Of the eleven cases nine proved fatal. Bunion pads of the same varieties and from the same sources as those used in the cases which developed tetanus were collected and examined. In addition, 186 similar pads were purchased in Washington, D.C., and examined. In about 25 per cent of these pads the tetanus organism was found. "The criterion of infection of the pads was the development, on glucose broth or meat mash media, of an organism morphologically like tetanus, which developed a toxin lethal for mice and neutralizable with tetanus antitoxin." Six medical practitioners in whose practice seven of the above mentioned cases of post-vaccinal tetanus occurred estimated that they had vaccinated about 700 persons on whom bunion pads were used as a dressing in 1924-25 whilst the cases of tetanus were developing. If 25 per cent of these pads were contaminated by tetanus, then about 4 per cent of the cases in which the risk was run developed the disease. Of the total eleven cases, nine were primary vaccinations. Whether the other two were primary is not known. In all the eleven the cross patch or scarification method of insertion was employed.

As regards the vaccine virus used, the report states that inquiries were made. The product of three different manufacturers had been used, in two cases, five cases, and three or four cases respectively. For only one case could the exact lot of virus be definitely ascertained. "Bulk samples of this lot were carefully retested by different workers using various methods, but no tetanus could be demonstrated." In other instances it was possible to determine that the virus must have been from one of several lots, but similar sampling and testing demonstrated no tetanus. Also among some 25,000 vaccinations in 1924-25, in the localities where the seven tetanus cases specially dealt with had occurred, no definite case of tetanus developed, though in one instance of a severe leg vaccination antitoxin was given on account of pain and stiffness in the neck, and prompt recovery was

regarded as indicating that the ailment was probably not tetanus. Notes are given of each of the eleven cases, and in several of them it is clear that the vaccination had not followed a normal course, but had been followed by an open discharging sore, which might be infected by the tetanus organism if present. The ages of the cases ranged from 6 to 30 years, nine were males and two were females. In nine cases the bunion pad was applied at the time of vaccination, and in two on the fourth day afterwards. The interval between vaccination and the onset of tetanus was 12, 15, 16, 19, 20, 20, 23, 24, and 28 days respectively in nine cases. In two the interval was uncertain. One case was vaccinated on the thigh, all others on the arm. Dr. Armstrong's conclusion is "The facts revealed by this investigation clearly indicate that the use of bunion pads as vaccination dressings should be strongly advised against."

Concerning bunion pads as a vaccination dressing in this country I have asked a London public vaccinator of the highest standing and long experience. He tells me that he has never seen or heard of such a dressing. But it happens that in 1902³ the *Lancet* published a report of singular interest in its bearing on this question. Drs. William Findlay and J. W. Findlay of Glasgow there gave a full account of a case of post-vaccinal tetanus in their practice. A vaccination was done midway between the knee and the ankle of a young woman, who preferred that site to the arm in order to avoid interference with her work, and "a large adhesive thick felt or bunion plaster was then applied round the vaccination mark and was kept in position by a strip of adhesive plaster, the object being to prevent any contact of stocking or clothes with the wound on the way from the surgery to her home until it was quite dry." The vaccination had been done with calf lymph, and several others had been vaccinated from the same tube, with no subsequent tetanus. In a careful study of the case—the woman recovered under treatment—the authors suggest the patient's own skin as the source of infection, the long trailing dress might have swept up dirt from the earth. They regret that the vaccination was covered up at the beginning and the dressing kept on through misapprehension. It is not surprising that at the date they did not discuss the possibility of the bunion pad being responsible. They found reference in medical literature to ten other cases of post-vaccinal tetanus. Six of seven of them were in America and two in the West Indies, but they had not access to the journals in which these were reported.

Dr. Armstrong's article indicates unequivocally the bunion pad and not the vaccine as responsible for the tetanus. The remarkable coincidence of the use of a bunion plaster in what seems perhaps the only case reported in this country since Dr. Acland wrote is of manifest significance, but, remote though the chance appears of the relevance of the important American discovery to conditions here, it suggests that the matter should, without loss of time, be the subject of investigation in two directions: one as to whether in fact the tetanus organism can be found in bunion or corn plasters or other adhesive plasters on sale here, the other as to whether such plasters are used in connexion with vaccination. The Ministry of Health would naturally be the body to make such investigation. It was the Local Government Board and the Ministry which, during the war,⁴ established the fact that imported shaving brushes were in some cases infected with anthrax, the administrative result being that orders were subsequently issued prohibiting further importation, while every endeavour was made to trace brushes belonging to consignments known to be infected, and to secure the destruction of brushes already on sale. A circular issued in 1921 dealt with the disinfection of hair used for the manufacture of shaving brushes in this country. If it were found that any kind of corn or other plasters carry the tetanus organism, then independently of vaccination, such plasters should be prohibited.

¹ Case V, Appendix IV, Royal Commission on Vaccination, p. 6.

² Vol. II, 1925 edition, p. 709.

³ Washington: Government Printing Office, 1925. Issued by the Treasury Department.

⁴ *Lancet*, 1902, vol. 1, pp. 505-10 (referred to in a footnote to Dr. Armstrong's article).

⁵ Report by Francis J. H. Coulter, M.D., New Series (L.G.B.) No. 112, 1917.

THE GENEVA OPIUM CONFERENCE

A REPORT signed by Sir Malcolm Delevingne of the Home Office has been presented to Parliament by the Secretary of State for Foreign Affairs, giving, in account, from the British delegation's point of view, of the two opium conferences held at Geneva November, 1923, to February, 1925.

The report recites the provisions of the Hague Convention of 1912, and describes the work done by the Opium Advisory Committee of the League of Nations since 1920 and the efforts of a preparatory committee to prepare programmes for the two conferences which the Council of the League, at the suggestion of the Assembly, resolved to convene. Readers of the *BRITISH MEDICAL JOURNAL* have been kept informed of the proceedings and results of these conferences, and the difficulties they encountered which led to the withdrawal of the United States delegation. It will be remembered that "the American principles" were—

'1 If the purpose of the Hague Opium Convention is to be achieved according to its spirit and true intent it must be recognized that the use of opium products for other than medicinal and scientific purposes is an abuse and not legitimate

'2 In order to prevent the abuse of these drugs it is necessary to exercise the control of the production of raw opium in such a manner that there will be no surplus available for non medicinal and non scientific purposes

Now the Advisory Committee on Traffic in Opium accepted and recommended to the League of Nations the proposals of the United States "as embodying the general principles by which the Governments should be guided in dealing with the question of the abuse of dangerous drugs and on which, in fact, the International Convention of 1912 is based." This acceptance and recommendation were subject to a reservation in regard to the temporary legitimization of "prepared" opium. The committee further "expressed the belief that all the Governments concerned will be desirous of co-operating with the United States Government in giving the fullest possible effect to the convention." The representative of the Government of India, however, made a further reservation to the effect that the eating of raw opium, as practised in India, is not to be regarded as illegitimate under the convention.

The fourth Assembly of the League, when considering the report of the Advisory Committee, requested the Council "as a means of giving effect to the principles submitted by the representatives of the United States of America, and to the policy which the League, on the recommendation of the Advisory Committee, has adopted," to invite the Governments concerned to send representatives to a conference for this purpose.

The report then describes the prolonged and controversial proceedings of the two conferences—the first dealing with restriction of the production and distribution of "prepared," the second with the regulation of the drugs. The work of the two conferences could not be kept separate as it was part of the American case that the use of smoking opium should be brought to an end within a defined period, and implied a limitation of the production of opium for that purpose. The amalgamation of the two conferences was opposed by Great Britain, although it was recognized that the findings of the first might have a bearing on the work of the second. A joint committee of the two conferences failed to remove the deadlock, and this "negative result" led to the final withdrawal of the United States delegation. This was followed by the withdrawal of China also. The protocol resulting from the labours of the first conference, while purporting to strengthen and supplement the provisions of Chapter II of the Hague Convention, which pledged the contracting Powers to the gradual and effective suppression of opium smoking, included no provisions for the direct limitation of the production of and commerce in "prepared opium." The British delegation "regretted it had been unable to go further" and the results "greatly disappointed many persons interested in the Far East," the Missionary Council even asserting that "the British Government is con-

senting to what would be a backward step." The final and indefinite decision of the first conference was to undertake "to suppress the consumption of prepared opium within the period of fifteen years from the date, as determined by a League of Nations commission, when the smuggling of opium from the producing countries ceases to be a serious obstacle to the enforcement of restrictive measures."

The second conference, in which forty-one States participated, held thirty-eight sittings, of which nine were occupied with procedure and twelve with the difficulties raised by the American proposals. On a vote being taken on the question of dealing with the limitation of the production of opium to medicinal and scientific purposes, out of the 36 delegates present 26 including Canada, voted for the American "principle," 9, including Britain and Australia, abstained from voting, while the Indian delegate alone voted against. In regard to this, however "nothing in the end did happen." The scheme finally adopted for limiting the manufacture of the drugs was, the report asserts, "a much more modest one than the original British scheme proposed," and "falls very far short of attaining the object proposed to the conference of limiting the manufacture of morphine, heroin, and cocaine to the amounts required for medicinal and scientific purposes." The conference "failed to accomplish anything in regard to that part of the agenda which referred to the limitation of the production of opium for export," and this in spite of the British delegate "urging the conference not to lose the ground that had been gained," seeing that "the Hague Convention already requires the States to exert effective laws on the subject." The inclusion of cocaine and cannabis indica is a poor compensation for this regrettable omission. Lastly, the report states that the British estimate of the requirement per head of raw opium for medicinal and scientific purposes is very much less than that of 450 milligrams as determined by the Health Committee of the League of Nations.

On the whole, while recognizing that some minor amendment and extensions have been made upon the Hague Convention of 1912, it is not, we fear, possible to share the view that "a very great advance" upon that important international treaty has been effected. The failure to give effect to the American principles, behind which so large a volume of support had been collected, was lamentable, and should it lead to the lack of the co-operation of the United States in future effort would be disastrous.

While Professor Perrot, one of the French delegates writing in the *Revue Scientifique* of July 11th, finds grounds for modified satisfaction in the achievements of the conferences, Sir William Collins, who was a British delegate at the three international opium conferences at the Hague, writing in the *Contemporary Review* for August, takes a less sanguine view of the situation. A further article by Mr. C. F. Andrews in the same publication severely criticizes the position taken up by the Indian representative, and attributes to the obstructive tactics of the Indian Government some of the unfortunate failures which characterized the Geneva conferences.

NATIONAL VETERINARY MEDICAL ASSOCIATION

The annual congress of the National Veterinary Medical Association is being held this week in Cambridge under the chairmanship of Mr. ARTHUR GORTON, F.R.C.V.S., President of the Association, and chief veterinary officer for the city of Edinburgh. A considerable number of papers have been read which are of general medical interest.

Rations for Normal Animals

Professor T. B. WOOD, F.R.S., said that until towards the end of the eighteenth century, when the growing of root crops became general, farm animals were underfed throughout winter on straw and hay, with the occasional use of a little corn. Fresh meat and mill were practically unobtainable in winter, and the use of roots was the first step towards providing a supply. This was followed in about fifty years by the introduction of concentrated feeding stuffs, such as oil cake, but these were used more or less empirically and often extravagantly. It was not

Miscellaneous No. 8 (1925) Cmd. 2461 obtainable at H.M. Stationery Office price 1s.
BRITISH MEDICAL JOURNAL, December 6th 1924, January 10th 1925, January 31st 1925, February 14th 1925, February 28th 1925, March 28th 1925.

until quite recent years that scientific physiological investigations on living animals were begun to estimate the exact requirements of animals for the production of milk, beef, and work. Great strides had been made in "milk rationing," and had been attended by much improvement in the yield of milk. Much cows required just over half a pound of digestible protein for every gallon of milk produced, but in practice most cows were underfed in this respect and so did not give a maximum supply. Growing animals required, in addition to a definite amount of protein, a certain amount of ash constituents—more especially lime and phosphoric acid—and they, too, were generally below what was necessary. On the other hand, stock for fattening needed a diet very rich in carbohydrates, but were much more frequently given the protein which should be used for milk production and growth. Thus, Professor Wood said, was a dangerous as well as an uneconomical process. A diet, he observed, consisted of two parts: (1) the maintenance ration, which was definitely related to the live weight of the animal and provided for the normal vital functions, and (2) the productive ration, which was proportional to the result the feeder desired to produce—milk, meat, growth, or work. To provide these two rations successfully it was necessary to have a knowledge of the chemical composition of the various feeding stuffs, the practical application of this information could easily be ascertained from tables.

The Tuberculosis Order

Lieut.-Colonel J W BRITTEBAK, F R C V S, said that tuberculosis in animals—especially in milk cattle—had a twofold interest: it not only provided an undoubted source of infection for human beings, especially children, but it caused enormous direct and indirect losses in the animals themselves. Concerted action should be taken for its reduction and eradication. The reintroduction of the Tuberculosis Order of 1914 had become necessary, and it should be strictly applied. A definite policy with regard to the sanitation of cow-houses was a first consideration, for without it little could be done. He advocated the employment, by the administrative bodies concerned, of trained veterinary clinicians, and deprecated resort to the police, who could not be used without causing considerable resentment. He was not in favour of a non-contributory scheme for compensation, believing that it would tend to penalize the up-to-date scientific farmer at the expense of the negligent. Clinical examination of animals would be of much more value than the use of tuberculin in diagnosis, and he gave figures to show the successful application of such a system in Manchester in reducing tuberculosis in milk.

Recent Regulations for Food Inspection

Mr J McALLAN, M R C V S, expressed the opinion that Great Britain, which had been a pioneer in so many branches of hygiene, had lagged behind in the inspection of meat and food, only within the last year had any considerable advance been made. During that period some half dozen Regulations and Orders had come into operation. They were framed to secure more adequate inspection of animals slaughtered for food, and to ensure improvements in the handling and transport of food generally. One important consequence was the recognition that the veterinarian was the proper person to pass judgement on animal pathology and diseases. The Public Health (Meat) Regulations, which became operative on April 1st, 1925, while dealing to a certain extent with the actual slaughtering of animals and inspection of carcasses, treated more fully the problem of handling, transport, and distribution of meat to the consumer. The Regulations, if enforced, would do much to improve slaughterhouse control in England. The Rural District Councils (Slaughterhouses) Order, which came into operation at the beginning of this year, applied to the whole country the provisions of the Public Health Acts as to slaughterhouses already in force in urban areas. The Public Health (Meat) Regulations (Scotland), which came into force on August 1st, 1924, were more far-reaching than the corresponding English ones. They provided a uniform system and a uniform

standard of meat inspection throughout Scotland. The Public Health (Imported Food) Regulations (England) and the Public Health (Overseas Meat) Regulations (Scotland) both came into force on June 1st, 1925. They provided for the inspection of all meat landed in this country and insisted on a very necessary control over imported meat and on a uniform system of inspection. The Public Health (Unsound Food) Regulations (Scotland) became operative on the same date, they made it an offence to import for sale any article of food examined abroad by a competent authority and found unfit for human consumption. Other regulations dealing with the use of preservatives, etc., in food were in preparation and would soon come into force. This series of Orders would complete a series which, although far from attaining perfection, would do much to raise the standard of food inspection and control throughout the country.

Some Recent Advances in Veterinary Helminthology

Dr T W M CAMERON, M R C V S, said that the losses in stock in this country due to parasitic worms probably amounted to millions of pounds annually. Dr Cameron considered that certain broad general principles underlay the eradication and treatment of helminthic infections. Before an exact knowledge of prevention and treatment could be obtained it was necessary to have an exact knowledge of the morphology of each species. Two closely allied species might have very different life-cycles, and might react in different degrees to various anthelmintics. Identification must be considered an index to the available information on the life-history and susceptibilities of the parasite found. Once identified, from the adult or its ova, the next step was to study the life-history, and from it find how to adopt the measures necessary to prevent infection. It was necessary at this stage to remove the adult from the animal body in order to prevent the further spread of the infection, and the value of critically tested anthelmintics must be considered. It was important to regard an anthelmintic as a preventive rather than a curative agent. Thus, for example, the dog might harbour tapeworms without showing any symptoms, but such an animal might spread the ova throughout large areas, and so infect man and animals with the various cystic stages. Some of the important stock diseases due to parasites in Britain were then considered in detail, and in conclusion stress was laid on the value of the services of zoologists in the laboratory rather than the veterinary surgeon, for a breadth of view not otherwise obtainable was thus gained. This principle had been adopted to a considerable extent in the American medical schools, and was in operation in the Institute of Agricultural Parasitology in this country.

Victoria.

Puerperal Morbidity and Mortality

In June, 1924, the Victorian Branch of the British Medical Association appointed a committee to inquire into the conditions of midwifery work in the State. The committee elected Dr J W Dunbar Hooper to be its chairman, and subsequently appointed Dr J Ramsay Webb to be vice-chairman. It met weekly on twenty-nine occasions, and one of its first steps was to issue a paper of questions to all registered medical practitioners in Victoria, the number of replies received reached the gratifying total of 234. The committee was also assisted by a number of medical and some other witnesses, including the Government statisticians and the matrons of several hospitals. The report, which was presented at the end of March last, has now been published in a pamphlet, in it the answers mentioned above are analysed, and certain recommendations made by the honorary medical staff of the Prince Alfred Hospital are set out in full.

The report opens with certain tables giving maternal and neonatal mortalities during the last twenty-five years. Both sets of figures compare unfavourably with those of Great Britain, and indeed most other countries. The committee is of opinion that, as in other countries, the actual figures are even higher than these statistics indicate, and that this represents a serious state of affairs, clearly calling for urgent reforms in the maternity service.

Its consideration of the way in which the service may be improved led the committee to express the view that many of the deaths might be avoided by better management.

The importance of routine ante-natal work which by the early detection of such conditions as albuminuria, puerperal infection and malpresentation may avoid many disasters is emphasized. It is pointed out that other problems such as toxæmic pregnancy and puerperal infection require further research for their elucidation and later in the report research grant are recommended with this object in view.

The obstetric service is then criticized under a crop of headings.

Government Activities

It is recommended that the Government should spend money on the establishment of ante-natal clinics, welfare centres and more extensive hospital accommodation. In this connection the nationalization of the service is considered, but dismissed as a retrograde step. The notification of puerperal fever is criticized, some administration difficulties discussed and suggestions are made for increasing the efficiency of notification.

The Medical Practitioner

It is urged that more efficient training should be provided for students and nurses. It is noted that in Victoria the medical practitioner attends at least seven eighths of all the confinements—that is 87.5 per cent—as compared with about 40 per cent in England and Wales. The committee considers that the university curriculum does not afford adequate training of the practitioner, a complaint which is not uncommon in respect to many other curricula in older communities. It will be a surprise to all accustomed to British methods to learn that the general hospitals under take no obstetric service. It would seem as the committee points out, that this aspect of the subject must be considered along with the admittedly unsatisfactory state of the obstetric service in the community. Again in considering the practitioner, stress is laid on the need of better training particularly as to more extended practical experience before qualification. The appointment of a professor of obstetrics in Melbourne is urged and an extension of the extern midwifery service recommended. The present teaching in Melbourne is adversely criticized, the difficulty of increasing the time allotted to the subject in a curriculum already overcrowded is recognized, but the members of the committee express the unanimous opinion that more time must be found for the study of obstetrics.

The Midwife

In dealing with the work of the midwives the need of longer study (eighteen months is mentioned) and a higher examination standard are emphasized. A special course in ante-natal work is suggested in order to cope with the difficulties of the more sparsely populated areas and to supplement the ante-natal work of the medical practitioners. The opinion is expressed that puerperal fever should not be delivered by midwives or at any rate not unless they have been under the ante-natal care of a practitioner.

The work of the Irish nurse (who are general nurses qualified in midwifery) receives commendation.

Ambulances Transport

The remaining points are briefly dealt with and have regard to the problems of ambulances and transport especially in relation to the country districts.

The need of more money for more adequate hospital accommodation, and for the gradual education of the general public to the fuller appreciation of the requirements of a really good obstetric service and all it means to the community at large, are then stressed.

Though the dominant factor of sepsis is less directly dealt with than is common in reports on maternal mortality, it is implied and involved in the consideration given to the problems of the accidents, hæmorrhages, and complications of labour.

The report is of real value and will no doubt receive the careful consideration of the Special Committee on Puerperal Morbidity and Mortality recently appointed by the Council of the British Medical Association. It illustrates that we have here to deal with a world problem, for, as in all such reports and from all available countries, the essentials are reiterated, and, *mutatis mutandis*, they begin with the call for properly organized research and amended education to radiate through the whole gamut of the administrative machinery, even unto that ultimate out in the personnel—so difficult to materialize—the perfect “home help.”

The essential foundation upon which all successful schemes must rest has not been forgotten, and the view that an enlightened public opinion will remove much of the existing administrative difficulty and, in turn, exact a high standard of work from all concerned, is thoroughly sound.

Ireland.

MINISTER REGISTRATION IN THE FREE STATE

SOME astonishment not unmixed with apprehension has been caused in Dublin by a statement made last week on behalf of the Irish Free State Government to the effect that it had decided to set up a separate medical register for the State. The matter has been under discussion for about two years, and last February the Legislature of the Free State enacted that pre-existing arrangements should continue for another year. Mr Cosgrave, President of the Executive Council of the Free State, is reported to have said last week, “That an important profession within the State should have its centre of gravity and disciplinary headquarters in the capital of another country is felt to be so incompatible with our constitutional status that we must be prepared to face whatever minor and temporary disadvantages may accrue from the cessation of that arrangement.” He added that the Executive Council of the Free State anticipated no serious reactions from the establishment of a self-contained and self-controlled medical authority in the State, and that the alternative arrangement to the present system was one for negotiation between the Irish Free State Government and the British Government. From a statement made in the *Irish Times* by the President of the Royal College of Surgeons in Ireland, Mr R. C. B. Munnell, it would appear that this is intended to mean negotiations to establish complete reciprocity, and the suggestion has been made that graduates of universities and diplomates of licensing bodies in the Free State should be entitled to have their names placed upon the Colonial List of the *Medical Register*. Mr Munnell did not consider this to be a practicable solution. He went on to say that some two years ago the Government of the Free State had invited representatives of the National University, Trinity College, the Royal Colleges of Physicians and Surgeons of Ireland, the Apothecaries' Hall, and the University Colleges of Cork and Galway to discuss the matter. These representatives held several meetings and came to the unanimous decision that the relation of the medical profession to the General Medical Council should not be altered. As they had been invited to explore every avenue they reported that the next best thing would be that the names might be inserted on the Colonial List of the *Medical Register*. This committee of representatives afterwards met the Minister for Local Government, the Minister's attitude was sympathetic and he assured the committee that everything would turn out satisfactorily. This assurance was subsequently renewed to a deputation from the Royal College of Surgeons in Ireland. The Government, however, afterwards raised the point that the committee contained no representatives of the rank and file of the medical profession, whereupon a new committee was constituted, as stated in our issue of April 18th, consisting of Senator Dr O'Sullivan, Dr T. Hennessy, F.D., Prof. A. F. Dixon, Sir James Craig, T.D., Mr Munnell, Dr Coffey, and Dr Magennis. This committee Mr Munnell states, was not summoned until August 13th, when Mr O'Higgins, Vice President of the Executive Council and Minister for Justice attended on behalf of the President of the Free State, Mr Cosgrave. Mr O'Higgins said “that it would be unthinkable to let things remain as they were as it would not be in conformity with the status and dignity of the Free State. It would never do to have a body of responsible men scattered through the land who would look to London as the controller of their actions. We must,” he continued, “have a separate register, and if not that, the Government might, as a last resort, allow you to go on the Colonial Register, but certainly you shall not stay on the General Register. I know that the profession will suffer, that is, in its schools it will lose students, but you must be satisfied to suffer something for the sake of the status and dignity of our country.” After some discussion Mr O'Higgins said, “Any way the decision is final, and I advise you not to waste your time in trying to alter it.” Mr O'Higgins shortly afterwards withdrew.

The position for the moment is confused and until the opinion of the medical profession in the Free State has

been fully ascertained we are not prepared to comment upon it further than to say that it seems to raise some questions of constitutional law. Existing rights, we think it may be assumed, will be saved, but the position of those who are now students of Irish medical schools or may enter them in the future is not clear. It is stated that the universities and licensing bodies of the Irish Free State give qualifications to about 150 persons a year, and that the State itself only absorbs about twenty. The Medical Act of 1886 is, however, elastic, it will be a question first for the General Medical Council and then for the Privy Council. The proposal of the Government is, we are informed, condemned by newspapers of all shades of opinion in the Free State. It is being criticized in a very adverse sense by medical teachers in Dublin.

England and Wales.

A YEAR WITH THE METROPOLITAN POLICE

THE Commissioner of Police of the Metropolis in his report for 1924, recently presented to Parliament (H.M. Stationery Office, 1s net), states that the men are proud of their calling and of the trust reposed in them, and speaks also in complimentary terms of the fifty women police. The area for which the metropolitan police force is responsible is 700 square miles, and the strength of the force is 19,356, including 842 officers in the Criminal Investigation Department. A policeman's lot, whether or not a happy one, can scarcely be described as a healthy one. Last year 1,457 police were injured in the execution of their duty, and 832 were otherwise accidentally injured. Although a picked body of men, the average daily number on the sick list or on sick leave was 718 during 1924, and in addition to 43 who died, 194 left the force through medical unfitness or ill health. The number of policemen admitted to London hospitals during the year was 756, and x-ray examinations were made in 237 cases. Crimes of violence in the metropolis show, on the whole, a decrease. There were 16 cases of murder of persons above 1 year of age and 12 cases of infanticide during 1924, as against 27 and 15 respectively during 1923, in three of the cases the murderer remained untraced. Cases under the Dangerous Drugs Act showed a striking decrease. In 1923 there were 103 such cases, and the number of persons proceeded against was 72, in 1924 the numbers were 26 and 19 respectively. The decrease is ascribed by the Commissioner to the deterrent effect of the heavy sentences, in some cases penal servitude, imposed frequently during 1923. The number of prostitutes charged with offences actually connected with prostitution was 1,072, of whom 823 were convicted, this is a large increase on the previous year but a decrease on the average of recent years. A slight increase (24 in a total of more than 30,000) is reported in the number of convictions for drunkenness. A seasonal curve is presented showing the remarkable variations in the number of these convictions, they were low during the first four months of the year, reached a high peak in May and another in June, and then remained fairly low, though not so low as in the earlier months until Christmas, they reached their highest point for the whole year in Christmas week. One cheering fact for the reformer is that the number of persons apprehended for drunkenness in proportion to the population is now only about one half the average for the pre-war decade 1905-14. The Commissioner notes a relatively large increase in the cases of drunkenness due to the drinking of methylated spirit which appears to be more popular among females than among males. The traffic conditions are reflected at many points in the police figures. Motor-car offences totalled 40,230 or 11,246 more than in the previous year. Traffic fatalities numbered 844, as against 668 in 1923, and 675 in 1922. The victims in 70 per cent of the cases were pedestrians. Horse drawn vehicles accounted for only 51 of the fatalities, and pedal bicycles for 42. Mechanically propelled vehicles were responsible for the remainder. The private motor car has an unfortunate pre-eminence in this respect, especially in the case of the fatalities which occur

at night, but the motor cycle is coming along at a rapid rate. Last year it killed 66 persons, an increase of nearly 70 per cent on its toll of victims in either of the two previous years.

HEALTH PROPAGANDA BY LOCAL AUTHORITIES

The London County Council has decided to make application to Parliament in the session of 1926 for authority to enable the council to undertake, and contribute towards the cost of, health propaganda work, and also to enable the metropolitan borough councils to undertake such work. The council had previously by resolution expressed the view that it was desirable for local authorities to take up propaganda work on the preventive side of public health. In the committee stage of the Public Health Bill, 1925, a new clause was proposed for the purpose of giving powers to public health authorities to undertake such work, the later part of this clause, however, which proposed that in London such powers should be conferred on the county and the borough councils, was ruled out of order presumably because the main object of the measure is to confer new health powers on authorities outside London.

KIDDERMINSTER HOSPITAL EXTENSION

In two previous issues, April 5th 1924 (p. 642), and March 14th, 1925 (p. 526), we referred to the scheme to increase the accommodation for children and out-patients in the Kidderminster and District General Hospital. The estimated cost of this extension was £25,000, and of this sum approximately £22,500 has now been raised. The commemorative stone of the new buildings was laid by Mrs. Stanley Baldwin on August 13th in the unavoidable absence of the Prime Minister. The new building, which will adjoin the present block, will contain in the basement a laundry, and on the ground floor an out-patient department comprising consulting rooms, examination rooms for men and women, dressing rooms, dental rooms, a dispensary, an operating theatre, and a large waiting hall. On the first floor there will be a new ward for forty children, with an open air balcony. Part of the old block will be converted into a nurses' dining room, an x-ray room, and servants' quarters, and over the present out-patients' department a new ward for women is to be built. The Kidderminster Hospital dates back to 1821, when a dispensary was established, in 1850 it was enlarged for the reception of in-patients. In 1870 an extensive reorganization was effected by Mr. Samuel Stretton, surgeon of the institution, his son, Mr. J. L. Stetton, now president of the hospital, is promoting the present extension scheme, and his grandson, Mr. J. W. Stretton, is surgeon to the hospital. The president is appealing for the remaining £2,500 required, and it is hoped that within the next twelve months the extensions may be opened, fully equipped, and entirely free from debt. It is believed that the cost per bed will work out at considerably less than the £400 which was the original estimate of the Voluntary Hospitals Commission.

VACCINATION IN L.C.C. TRAINING COLLEGES

Some time ago the London County Council, in revising the regulation dealing with the vaccination of officers, teachers, and employees under the direction of the Education Committee when small-pox occurred in their homes, or in institutions in which they were working, laid down a uniform instruction that the vaccination should be carried out forthwith, without reference to any stipulated period. At the last meeting of the council before the summer recess it was resolved to make a similar instruction in the case of students in training colleges. The resolution was as follows: "That in the event of a case of small-pox occurring in the home of a student attending a training college, such student must be vaccinated forthwith if he or she has not been vaccinated within the preceding seven years, otherwise the facts must be reported to the school medical officer, who will decide what course is to be pursued." It was also provided that in the event of a case of small-pox occurring in a training college, hostel, or approved lodgings, all students therein, who had not been vaccinated within seven years, must be vaccinated forthwith, or the facts reported as in the other instance.

Correspondence.

THE ADDITIONAL VOLUNTARY HOSPITAL
ACCOMMODATION REQUIRED

SIR,—In the report of the Voluntary Hospitals Commission¹ the public and the medical profession have to thank Lord Onslow and his colleagues for a document of real and permanent value. It is infused by a breadth of outlook and a grasp of constructive policy which cannot be without effect in the future of our hospitals. It should be read in its entirety by all who are interested in the subject, but it raises certain points to which I should like to direct the attention of your readers.

In the problem before the Commission—the adequacy of hospital accommodation—they were immediately faced by the question of what adequate accommodation means, and their analysis of the problem is as interesting as it is instructive. They do not, however, appear to have asked themselves why accommodation has become inadequate or for whom further accommodation is required. If they had done so they would have found that it is demanded, in my opinion quite properly, by a class who until recently would never have been regarded as suitable subjects for hospital treatment, a class which by no stretch of the imagination can be regarded as necessitous poor. The advance of medical science has resulted in the development of methods of treatment more and more expensive, and less and less adapted for application to isolated individuals. It is only by institutional methods that they can be applied at a reasonable cost, or indeed that they can be at all applicable for any but the rich.

The provision of medical treatment for this class has no proper claim upon charity, and the claim for a State grant might be based on broader grounds of public policy. But as to the wisdom of the grant proposed there can be no question at all, whilst the limitation to half the actual expenditure involved is probably wise in what is essentially a new venture on the part of the State. It is indeed a new venture of momentous consequence, for if I am not much mistaken it is the beginning of a State endowment of the hospitals, as institutions open to all those who need their services and not restricted by mistaken sentiment to one class. Such an endowment must bring with it an entirely altered relationship to the hospital not only of its patients, but of its medical staff and the wisdom and foresight of the British Medical Association in formulating a Hospital Policy to meet these changed conditions is amply vindicated.

The Commission has recognized in a very striking manner the great services rendered by the large voluntary hospitals, urging that they should be used more and more in a consultative capacity and "be reserved for cases requiring special diagnostic facilities or a high degree of technical skill." The Commission urges this in the interests of economy, of the patients themselves, and of the students for whose training these large hospitals are almost entirely responsible. At the same time it points out that for the student a wide range of clinical material must be furnished, and it deprecates the entire removal from his view of such cases as surgical tuberculosis, pointing out that the tendency at the present day to relegate these to the local authority is not without its dangers.

A Government document which recognizes the importance to the State of medical education, the value to the State of the supreme technical skill to be found concentrated in the large voluntary hospitals, and the responsibility of the State for seeing that there shall be room in these and other hospitals for all who need their assistance, marks an epoch in the history of our medical services. It is to be trusted that it marks the end of that narrow policy which would restrict the services of our great hospitals to the "sick

pool," whoever at the present day they may be, and which would prohibit the use of their funds in any form whatever for the education of those very students upon whom the whole service of the hospitals must in the end depend.

I trust, too, that this document will do nothing to ally the eyes of Government control. To one who has seen with anxious eyes the superbly equipped clinics of Switzerland, Paris, Holland, and Belgium, all established and maintained by the State, there is something a little ludicrous in the assertion that we alone of all nations cannot be trusted to manage our affairs with reasonable intelligence, and that the hand of our Government—which is, after all, ourselves—must wither at it touches. I for one should be only too happy to entrust the affairs of our hospitals to the Commission which has drawn up this report, feeling well assured that we should receive nothing but support, encouragement, and inspiration—I am, etc.,

H. S. SOUTAR,
Chairman Hospitals Committee
British Medical Association

August 17th

SIR,—Members of our profession, whether in general or hospital practice, and particularly members of the British Medical Association, will not fail to be impressed by the report of the Voluntary Hospitals Commission on Voluntary Hospital Accommodation in England and Wales, of which you published in account in the JOURNAL of August 15th (pp. 305 and 299). Five years ago we were told that the voluntary principle in hospital management was dead and that we must prepare to submit it in early date to the embraces of an all-compelling State scheme. The JOURNAL has had their little day. Their voices are now hushed by the compelling logic of events. The report shows that the voluntary hospitals are not only holding their own but that they are advancing in efficiency and security. Debt balances have been converted into surpluses and large sums have been spent on improvements, mainly in that need and productive field of better housing for the nurses. The fact that so much has been accomplished in a time of such financial stringency is eloquent testimony to the vitality of the voluntary principle.

So far little or nothing has been done to overtake the accumulated arrears of the ten years' war period in new construction of patients' accommodation. The business of the Commission was to determine the volume of these arrears, and to suggest how these might be most readily made up. The inquiry carried out by the Commission shows that on a conservative estimate there are to-day needed no fewer than 10,000 new beds in England and Wales, including London, or, to put it in terms of money, at the low rate of £400 per bed, there is needed a capital expenditure of four million pounds. It would appear that this is a minimum estimate after allowance has been made for increasing expenditure of the accommodation provided in Poor Law infirmaries and for closer association between cottage and city hospitals, so that relief may be given to the strain felt by city hospitals.

A call for four million pounds of new money from the beneficiaries of voluntary hospitals is scarcely practicable at the present time. Yet the demand must be met if the voluntary hospitals are to be maintained in that high position of efficiency which will alone justify the retention of their priceless heritage of independent management and freedom from cramping statutory control. The Commission recommends "a grant of 50 per cent of the cost up to a maximum of £200 per bed, subject, of course, to the remaining 50 per cent of the expenditure being raised or being available from existing building funds." The experience of the usage of the grant from the State through an intermediary body to tide over the emergency of 1920 proves that this timely grant did not in any wise supplant the independence of voluntary hospital management, and the proof of its benefit is seen to-day. The provision of an emergency building grant is calculated to stimulate benefactions in the same way. But even so it may not be possible to gather in the near future the required two millions of new money to meet the provision of the like amount by an Exchequer grant, supposing that this grant were conceded. It seems to me that there is another mode whereby the urgency of the situation might be met. During the reconstruction

¹ Voluntary Hospitals Commission. Report on Voluntary Hospital Accommodation in England and Wales. London: H.M. Stationery Office. Cmd. 285. Price 6d. An analysis of the report was published last week (p. 305).

This has been set out in a pamphlet *Policy Affecting Hospitals* issued recently by the British Medical Association. It can be obtained on application to the Business Manager at the Association's House, Tavistock Square, London, W.C.1.

period some of the most successful business and manufacturing projects have been secured by private enterprise operating with Government credits obtained through the provisions of the Trade Facilities Act. The application of similar methods to the raising of the new money required for hospital construction would appear to be a feasible proposition. The issue of "hospital bonds" under the Government guarantee of the Trade Facilities Act, and bearing interest, would enable many to lend who could not give. The terms of such loans would be more favourable to the hospitals than the customary bankers' overdraft, and the existence of the bonds would be a special inducement to local patriots to aim at their early extinction. Time is an essential factor if the voluntary hospitals are to be re-established in their full efficiency. Such a scheme would allow the favourable hour to be seized. Delay might bring about a settlement in a period politically unfavourable to voluntary hospitals.

Section 21 of the report deals with a proposal for the reconstitution of the Local Voluntary Hospital Committees, which are the peripheral nerves of the Commission. This section is one that calls for special attention by the executives of every Division and Branch of the Association. The Commission recognizes "that the representation of the hospitals and the medical profession should be increased." The recommendation is on the lines of the policy of the Association. It is urgently necessary that each Division and Branch of the Association should put that policy into force. In each Local Hospitals Committee of the Association should be formed, representative of all sections of the profession, so that there may be a vigorous and instructed local medical opinion ready to assist the Local Voluntary Hospital Committees in their reconstitution and in the responsible tasks that may be committed to them. In recent years energetic laymen have launched schemes for improving hospital facilities to which medical practitioners have had to take exception *after these have been launched*. If now, at this critical period, we fail to be in the field early and before plans have crystallized, our views and our experience may be lost by default—I am, etc.,

London W Aug 15th

N BISHOP HARRIS

SIR—The articles in the JOURNAL of August 15th on the report of the Voluntary Hospitals Commission will be read with much interest by all general practitioners, and especially by those working in cottage hospitals.

Section 10 of the report makes one a little fearful lest anything should be done to interfere with the growth and development of this part of our hospital service. Its extension during the last few years has been so remarkable that it is to be hoped that its evolution will be encouraged and allowed to proceed on natural lines. Nothing would be more disastrous than to stereotype these general practitioner hospitals, or to attempt, at present at any rate, to fix a standard for their work.

The section referred to repeats the complaint made in Sir Napier Bunnett's report for 1922, and mentioned in a leading article in the JOURNAL for July 21st, 1923, that too large a proportion of beds in cottage hospitals are unoccupied. I attempted to show in a letter published on August 18th of that year that this want of use is rather apparent than real and there is no doubt that in general an increase in the number of beds in a small hospital is followed by a higher percentage of occupation.

If 10,000 extra beds are to be provided it is important that the small hospitals should share in any grant that is made. Then share should, in fact, be considerable, for it is probable that many large hospitals, if they were relieved of all the cases that could be treated adequately by general practitioners in properly equipped institutions of their own, could deal with the cases left without the addition of any, or at any rate many, beds. Also a larger number of cottage hospital beds would enable many cases to be treated at an earlier stage and so prevent the necessity for that more special treatment that, for want of this timely attention, is afterwards required.

I am fully in agreement with the report that much might be done by co-operation between the staffs of the large and the small hospitals, but this requires much careful consideration and discussion by all concerned in order to obtain

the full benefit of the mutual service and to prevent its misuse. The last four lines of the section (10) are open to serious criticism.

Furthermore the high proportion of empty beds in cottage hospitals suggests that so far as possible it is desirable to discourage the multiplication of small local hospitals which in regard to equipment and staff are bound to be at a disadvantage compared with the larger hospitals.

The first part I have already dealt with. The statement as to equipment and staff is surely not correct, if we recognize, as we certainly should, the different functions of these two classes of hospital.

It is satisfactory that the Commission recognizes the futility of the proposal to relieve pressure by the transfer of patients from one hospital to another, an oft-repeated suggestion that those actually engaged in the work must always have known to be impracticable.

The reconstitution of local committees, discussed in section 21, is highly desirable, and it is hoped that the general practitioners of the area, who are so largely concerned, will be well represented on these bodies. These committees will provide an opportunity for organizing what I believe to be the only sound financial system of maintenance—the promotion of local funds for hospital service, not for individual hospitals. Out of such funds would be paid the cost of the patients from the area of the fund, in whatever area they might be treated. Progress in this direction is already being made in many areas, and these local bodies will have great opportunities for developing the principle—I am, etc.,

Bradford on Avon Aug 16th

CHARLES E S FLEMING

INVESTIGATION OF RHEUMATOID ARTHRITIS AND ALLIED CONDITIONS

SIR,—We are much impressed with the valuable suggestion made by Dr Logan in his letter (JOURNAL, August 8th, p 271) as to the organization of research in chronic arthritis and allied conditions.

The importance of this subject is especially evident to us at the present time, as new laboratories were opened in this town at the Royal Bath Hospital on August 10th, liberally equipped for routine examinations and research in bacteriology and biochemistry. The hospital contains 150 beds, almost wholly allotted to victims of this group of crippling diseases, who thus afford an ample field for observation.

We are conscious of difficulties in making a full use of our opportunity—difficulties which will be obvious to those who work among these patients. These difficulties might well become less perplexing were there taken some co-ordinated action, as indicated by Dr Logan, or, perhaps even better, should the Medical Research Council offer some active interest in the group of disabilities which is such a wide spread cause of individual suffering, and also, as Sir George Newman has emphasized, of industrial unfitness—We are, etc.,

S MILLIP, M D

F B SMITH M B,

Honorary Pathologist, Royal Bath
Hospital

August 10th

THE POWER OF IRRATIONAL BELIEF

SIR,—Owing to the malevolent activities of certain evil forces I was unable to listen to Dr Barnes's sermon at Bath, but I have read your report of the sermon and your leading article. Clearly, both you and he are off the rails! You say that superstition is the bane of medicine. He deplores the recrudescence of "thick disguised magic in worship."

Where, SIR, should we be if the public ceased to be superstitious? At the moment those of them who are not panel patients do believe in us. They consult us, they accept what we say, they pay us fees. Why? Because they are convinced that we have certain occult knowledge denied to them, because we can supply them with diagnoses wrapped up in the most impressive terms. They do not ask us to be scientific. They are justly suspicious of us when we are scientific. They know that the "scientific" doctor will either (1) squirt things into them, or (2) cut things out of them. They do not want that. What they do want is a bottle. In other words, they ask for something

magical. And those of us who are sufficiently unscientific, and vain, to supply it get the results, though as a rule we remain miserably poor.

As for Dr. Barnes—he is up against magic. Strange! For magic means wisdom—the cult of the wise men. It has no concern whatever with cold material fact. It is almost as old as the human race. And magic is the fundamental basis of both religion and medicine.

But few realize this except parish priests, general practitioners, and wise old women—I am, etc.

Walsall, Aug. 5th

FRANK G. LAYTON

ULTRA-VIOLET LIGHT

SIR,—In reply to Dr. Blakiston's letter published in your issue of August 8th (p. 272) with regard to the cost of electrodes in a tungsten arc lamp.

1 The current passing through the lamp which we use is 5 amperes. The town's electrical supply is one of 225 volts direct current.

2 Two pure swaged tungsten electrodes are used.

3 We spent £9 16s. 10d. on electrodes from the opening of the clinic April 8th 1924 until June 30th 1925. There are two sessions per week and we estimated that the lamp was actually in use for 14 hours each session. There is a possible fallacy in that the length of time the lamp was actually burning during each clinic was overestimated but this cannot be serious, and the clinic nurses consider that two hours would be more accurate than 1½ hours. On the basis of 14 hours per session the estimated time the lamp was in use was 189 hours from which the figure of 1s. 0d. per hour was obtained.

The tungsten electrodes now cost 4s. an inch which would mean an average consumption of 1/8 in. per hour per electrode. An endeavour was made to check this by burning the lamp for an hour and measuring the loss. It was realized at once that this was an inaccurate method as the electrodes burned very irregularly and in a caterpillar-like fashion but even where the electrode had been burnt most the loss did not exceed 1/4 in. on one of the electrodes and less than that on the other.

It appears to be quite obvious that the lamp used by Dr. Blakiston which burns 1½ in. per hour must be dissimilar from that used at the Hull clinic—I am, etc.,

Hull Aug. 15th

W. ALLEN DUFFY

SIR—The correspondence in your columns on the cost of tungsten exposures has interested me.

For some time past I have been using electrodes of tungsten-steel in conjunction with pure tungsten one of each kind conjointly on a 5 ampere current. This has reduced the cost of working by, I think I can safely say 50 per cent. The efficiency is good, and whilst it may be necessary to give slightly longer exposures, even so the cost is less than when using pure tungsten only.

In view of the present position in the tungsten markets this information may be of use to other workers. These tungsten-steel electrodes can be obtained from Messrs Arnold and Sons, 50, Wigmore Street, London, W.1—I am, etc.,

London W. Aug. 12th

EDWARD JAMES DECK

PHYSICIANS OF MANKIND

SIR,—The interesting review in last week's JOURNAL of the life of Chadwick and the work of Southwood Smith brings to mind these lines, written by Leigh Hunt and inscribed on the tombstone of Dr. Smith in the English cemetery at Florence. They are applicable to both Chadwick and Smith.

"Ages shall Cherish in their hearts Fashined,
These Southwood Smith Physicians of Mankind,
Bringer of Air, Light, Health into the home
Of the Rich poor of happier years to Come."

Concise, happily expressed, and let us hope prophetic—I am, etc.,

London W., Aug. 17th

D. COLQUHOUN

DISEASES DUE TO FASHION IN CLOTHING

SIR,—To the current discussion on chlorosis in your columns the following extract from Falstaff's soliloquy in praise of sack (*Henry IV., Part II Act IV, Sc 3*) seems pertinent as indicating that the condition was of common

occurrence at the time the play was written (about 1593), and that it was popular belief that underfeeding was causal.

There's never none of these dainty boys come to any proof, for this drink doth so over-cool their blood and making many fish-morls that they fall into a kind of male green-sickness and then when they marry they get wench.

—I am, etc.,

Stafford Aug. 3rd

A. I. HODDER

REPRESENTATION ON THE COUNCIL OF THE SOCIETY OF MEDICAL OFFICERS OF HEALTH

SIR,—In the report of the meeting of the Council held at Bath on July 22nd (printed in the *STANDARD* of August 15th, p. 87), some observations with regard to the representation of the British Medical Association on the Council of the Society of Medical Officers of Health are attributed to me. The remarks were made, not by me, but by my colleague, Dr. C. L. S. Hemming and I am not in agreement with them as far as they refer to part-time medical officers of health. It seems to me that no man can better act as "honorary officer" between two such societies than one who has intimate knowledge of the views and outlook of the respective parties together with practical experience of the varied difficulties peculiar to each—unless indeed it is suggested that loyalty to the British Medical Association is, on the part of such, impossible—I am, etc.,

Bristol Aug. 17th

T. RIDLEY BARRY

The Services

DEATHS IN THE SERVICES

Surgeon Lieutenant Colonel Heinrich Friedrich Lwartz Mollath, A.M.D. and Royal Horse Guards (ret.) died at Chelsea on June 4th aged 82. He was educated at Edinburgh where he graduated M.D. in 1863 and took the L.R.C.S. in 1864. He entered the army as a student surgeon on March 31st 1864 and a regimental officer served for some years in the 12th Linc. R. On October 11th 1876 he was appointed surgeon to the Royal Horse Guards, the illness becoming surgeon-major on September 4th 1890 and surgeon lieutenant-colonel on March 31st 1894. He retired in July 1897. He served on the North West Frontier of India in the Bhutan campaign of 1865 receiving the frontier medal with clasp, in the Tirah campaign of 1870-71 with the British Field Ambulance and in the Nile campaign of 1895 with the desert force when he took part in the action at Korti and received the medal with a clasp and the Khedive's bronze star.

Major Charles Stuart Spang D.S.O. R.A.M.C. (ret.) died at Sargatta, Chaux, Switzerland on July 12th aged 66. He was born at Laversham the son of Mr. W. Nash Spang F.R.C.S. He was educated at Ipswich College and at Guy's, and took the B.Sc. Lond. in 1880 the M.B. Ch.B. and L.S.A. in 1884 and the L.R.C.S. in 1889. He entered the army as surgeon in 1887 became major after twelve years' service, and retired on August 16th, 1899. In 1899 he was seconded for service with the Egyptian army and saw much active service during the campaigns of the nineties of last century. The Dongola expedition of 1896 the Nile campaign in 1897, when the battle of Atbara was fought and Kitchener's final campaign of 1898 ending with the battle of Omdurman, where he was senior medical officer of the 1st Egyptian Brigade. He was mentioned in despatches on November 3rd 1896, January 25th May 24th and September 30th 1898. He received the Nile medal with six clasps, and the Khedive's medal also the Medjidie 4th Class in 1897 and the D.S.O. in 1898. After returning from the army he became medical adviser to the Egyptian railways. He rejoined for service in the late war and was mentioned in despatches on June 21st 1916. In 1900 he married Mary Barosky, daughter of the late Henry Pickering of Titusville, Pennsylvania, and leaves one daughter.

Major Joseph Ophimo Pinto Midway Medical Service (ret.) died on April 20th aged 64. He was born at Silvette Bombay and educated at the Grant Medical College there where he took the L.M.S. in 1883 and at St. Thomas's and Edinburgh, taking the Scottish triple qualification in 1887. He entered the I.M.S. as surgeon in 1887 became major after twelve years' service and retired in 1906. He served on the North West Frontier of India in the campaigns of 1897-98 taking part in the operations on the Samana range and in the Kurram valley (medal with two clasps) and in Tirah in the regions of Chagru Kotial and Dargu, and the operations in the Bazru Valley (clasp).

Captain John Power Carmody late R.A.M.C. died at London on June 14th aged 68. He was born on November 17th, 1856 educated at Queen's College, Cork, and graduated M.D. and M.Ch. in the Queen's University, Ireland in 1877. He entered the R.A.M.C. as surgeon in 1880, was placed on half pay, on account of ill health, in 1888, and retired in 1893.

Obituary

WALTER CARLESS SWAYNE, M D, B S Lond,
M D, Ch B Bristol,

Professor of Obstetrics in the University of Bristol,
Consulting Obstetrician and Gynaecologist to
the Bristol Royal Infirmary

We regret to record the death of Dr Walter C Swayne, professor of obstetrics in the University of Bristol, at the age of 63. He met his death in sadly tragic circumstances in his daughter's house at Sellick, near Ross, Herefordshire. It appears that his son-in-law, Mr R L Wreford Brown, on the night of August 13th, alarmed the household by firing revolver shots at random in his room. Dr Walter Swayne courageously attempted to disarm him, and received several shots in the abdomen, which proved fatal in a few hours. At the inquest on August 15th a verdict of murder was returned, but the coroner said that at the assizes evidence would certainly be put forward that the accused was insane.

Dr Swayne's death is a great loss to the whole profession, and more particularly to the West of England, where he occupied a leading position as an obstetrician and gynaecologist. He was born on April 19th, 1862, at Mathon in Worcestershire. He was the eldest son of Mr R A Swayne, of Tillington Court, Hereford, and a nephew of the late Dr Joseph Griffiths Swayne of Bristol. He received his education at King Edward's School, Birmingham, University College, Bristol, the Bristol General Hospital, and Guy's Hospital. He represented Guy's at Rugby football and on the river—in fact, it was due chiefly to his energy that the rowing club was revived at Guy's. In 1888 he was resident obstetric officer at the hospital. Shortly afterwards he commenced to practise in Clifton, and, following the example of his uncle, soon made his mark as an obstetrician. In 1891 he succeeded Dr J Wedmore as obstetric physician at the Bristol Royal Infirmary. This post was a comparatively new one, having been first created in 1887. Dr Swayne experienced at the Royal Infirmary the usual amount of opposition to the establishment of the specialty of gynaecology, and it was not until 1904 that the infirmary rules were altered to permit of the gynaecologist performing abdominal operations. When this permission was granted Swayne's operating theatre was organized by him on the modern aseptic lines, and his theatre "drill" was always unapproachable, even though the novelty of clothing the on-lookers as well as his assistants in gowns, caps, and masks excited at first some ridicule. It is worthy of note that although Swayne found himself opposing and opposed by his colleagues in his long struggle for the right of a gynaecologist to perform major operations, his friendships with them never suffered. He was always "Dicky" Swayne to his opponents in the midst of hot controversy. In the end he succeeded in establishing a model department of midwifery, both internal and external, and of gynaecology.

Dr Swayne contributed many articles to medical journals on obstetrics and gynaecology. Some of his more important dealt with eclampsia and its biochemical problems. He often expressed his regret that he had begun to grow old in his profession before biochemistry came into being, so that he lacked the requisite training for research in a subject that interested him so greatly. In 1913 he edited the eleventh edition of his uncle's famous book, *Swayne's Obstetric Aphorisms*.

Swayne was elected professor of midwifery in University College, Bristol, in 1902, and was continued in this chair when the university was incorporated in 1909. He was an admirable teacher and a most loyal graduate of the new university, for he took the *ad eundem* degrees of M D, Ch B, at the earliest opportunity in Bristol on the strength of the degrees he already held from London University. He was an enthusiast in fostering a corporate spirit amongst the new graduates of Bristol, and was an ardent champion of the rights of convocation, the representative body of the graduates. In the earliest days of the university he was unsparing in his criticism of the supreme authorities for their singular action in electing as pro-

fessors all who had occupied chairs in University College, with the one exception of the professor who had been secretary of the committee for promoting the foundation of the university. Swayne was keenly interested in the medical education of women, and the first woman resident at the Royal Infirmary was appointed to his obstetric department.

One of the most striking features in Swayne's professional career and in his character was his total lack of anything like jealousy for his younger colleagues and possible rivals in his own specialism, and it was with great pride that he used to watch the progress of his pupils, Miles Phillips and King in Sheffield, Giceu-Amytge in India, and Statham in Bristol.

Outside of his profession Swayne's chief hobby lay in soldiering. He was a keen student of military history, and early in life joined the Gloucestershire Artillery Volunteers as a boy trumpeter. He eventually rose to the rank of major in the Territorial Artillery, and received the Volunteer Decoration after twenty years' service. At the commencement of the war he was transferred for a time to command the Bristol University O T C and was instrumental in developing in connexion with it an enthusiastic company of "volunteers" amongst men who were over military age. Subsequently he raised the third line of the South Midland R F A, and finally commanded a battery of New Zealand artillery on Salisbury Plain, which he had the satisfaction of conducting overseas to France, although to his lasting regret his age debarred him from remaining to serve with the battery at the front. In addition, Swayne was a keen Freemason and had been master of St Vincent Lodge in Bristol and a grand warden in the province of Bristol. His chief sport in his later years was trout fishing, and in his country wanderings with his rod he used to search out and study any remains of the Roman occupation of Britain that came his way.

At the time of his death Dr Swayne still occupied his chair in the university and was in charge of the clinic for venereal diseases at the Bristol Royal Infirmary, a department which he had organized since the war with his customary thoroughness and administrative ability. He had retired from the active staff of the infirmary as obstetrician and gynaecologist in 1924, and held the office of honorary consultant to that institution.

In 1912 he occupied the presidential chair of the Bristol Medico-Chirurgical Society. He had been at different times an examiner in the Universities of London, Birmingham, and Leeds. Swayne was a man of most lovable disposition, who retained throughout life his boyish enthusiasms.

In 1894 he married the daughter of the late Rev R F Heath. His widow, with three daughters and a son, survive him, and we offer them our deep sympathy in their sad bereavement.

CHARLES LLOYD TUCKEY, M D

Dr LLOYD TUCKEY passed away at his residence, Ingaisby, Eastbourne, on August 12th, aged 70 years. He had retired from practice and had been in poor health for the past twelve years, but continued his interest both in psychotherapy and in psychical research.

He was of Anglo-Irish stock, and was the eldest son of his father—a graduate of Trinity College, Dublin, who practised at Canterbury. Lloyd Tuckey was educated there, at King's School, later at King's College, London, and at the University of Aberdeen. He graduated M B, C M in 1875, and M D in 1884. He was early attracted to treatment by suggestion. He studied hypnotism in 1888 under Liebreault at Nancy, and may be said to have been one of the pioneers of hypnotic treatment in England, being closely followed by the late Dr Milne Bramwell. Lloyd Tuckey started this work in London in 1878, and was always courteously willing to demonstrate his methods to medical men and students.

Lloyd Tuckey was a man of broad sympathies, wide culture, and distinct literary ability. A tall, genial, hand some man, he was quite a contrast to the popular idea of a professional hypnotist, and used to say that success in

his specialty was largely due to a kindly and sympathetic manner. This to an eminent degree he possessed, but had he been more mysterious, and commercially more acute, he would probably have been more financially successful. His book, *Treatment by Hypnotism and Suggestion, or Psycho-therapeutics*, now in the seventh edition, brought him international recognition. Articles from his pen appeared in the *Nineteenth Century* on "Hypnotism in chronic alcoholism," in 1888, and "Truth healing as a medical treatment," in 1892. In 1889 the *Lancet* published "Cases treated by hypnotic suggestion," and *Brain* in 1891 printed his "Critical digestion of hypnotism," and the *Practitioner* "Hypnotic suggestions in neurasthenia."

As the cases in his book show, he had some success in the treatment of alcoholism, and was elected an honorary member of the American Society for the Study and Cure of Inebriety. He was one of the founders of the Society for Psychical Research, and was for many years a member of the council of that body of which he was afterwards elected an honorary member. His retirement took place at a time when the newer psychotherapeutic measures were coming before the profession, and, though interested, he was chary of expressing an opinion as to their remedial value. The chronic cases he published in his book and elsewhere have particular value to those who knew him as a man of unerring truth and honour.

Late in life, in 1915 he married Beatrice Mary, daughter of the late Robert Wood Marsland, solicitor, of London, who nursed him with constancy and patience during his long illness.

Dr EDWARD JOHN LEWIS, who died on June 8th, aged 65, received his medical education at Cambridge and St. Bartholomew's Hospital. In 1883 he obtained the L.S.A., and in 1884 the M.R.C.S. diploma, he graduated M.B. Cantab. in 1887, and obtained the F.R.C.S. Eng. in 1890. He held the posts of house surgeon at St. Bartholomew's Hospital, and senior resident medical officer to the Hospital for Children, Great Ormond Street, and he was later appointed consulting physician to the Kilburn Dispensary and the Clergy Orphan School. His practice in Hamilton Terrace was very large and was chiefly devoted to diseases of children. In his younger days Dr Lewis was a Welsh international footballer, and in later years he distinguished himself at golf. He was a member of the British Medical Association.

We regret to report the death of Dr RICHARD MANNER HENRY RANDALL, at the age of 63, after a short illness. Dr Randall was a son of the late Surgeon-Major H. L. Randall of the Straits Settlements and received his medical education at Guy's Hospital. In 1884 he obtained the diploma M.R.C.S., and in 1885 the L.S.A., he graduated M.B. Lond. in the latter year, with honours in forensic medicine and materia medica, and took the M.D. in 1887. In 1888 he started practice in Beckenham and was associated with the local administration for many years, being chairman of the urban district council in 1902, and again in 1919. During the war he was for some time honorary medical superintendent of the Beckenham Red Cross Hospital, in 1918 he was mentioned in dispatches, was awarded the M.B.E., and received the King Albert bronze medal, of which only eleven were given, for his services in connexion with Belgian refugees. He was honorary consulting medical officer to the Beckenham Cottage Hospital, and medical officer to the Beckenham Provident Dispensary and Balgown Hospital.

Dr EVELYN OLIVER ASHF, who died at Kimberley on April 27th, aged 61, received his medical education at the London Hospital and Owens College, Manchester. He obtained the diploma L.S.A. in 1888, and graduated M.B. Lond. with honours, in the same year. In the following year he took the M.D. degree, and obtained the F.R.C.S. Eng. in 1892. After holding house appointments at the London Hospital he went to Kimberley in 1892, as senior house-surgeon to Kimberley Hospital, he

started general practice about two years later, but retained his connexion with the hospital as surgeon. He was also surgeon to the De Beers Consolidated Mines, Kimberley. He became a member of the British Medical Association in 1890. He was very highly esteemed in Kimberley, the funeral procession was nearly a third of a mile in length and included the mayor, ex-service men, nurses, and scouts.

A colleague writes: As a student Dr Ashf distinguished himself in everything that he took up, and those who knew him at the London Hospital will not easily forget the tall, manly figure and cheery face, he was always ready to help any fellow student in difficulties of any kind. He had an unborn love of the sea and took a long whaling trip before settling down in practice. Outspoken, bluff, fearless, adventurous, with a high sense of humour, great kindness of heart, and boundless generosity, he had all the qualities of the best type of Englishman.

Dr R. M. TAWSE, who died on March 5th at Cape Town after a long illness, received his medical education at Aberdeen, where he graduated M.B., Ch.M. in 1888, proceeding M.D. in 1891. He had been in practice in Rhodesia for twenty-seven years, was a railway medical officer, and justice of the peace in Matabeleland and the Bechuanaland Protectorate.

Professor AUGUSTUS STEVENS, a well known physiologist of Padua, has recently died.

Medical News.

THE second list of subscribers to the Sir John MacAlister memorial fund contains sixty-nine names. The fund amounts to over £700, and the committee is therefore now justified in taking steps to obtain a good portrait.

THE new quarters of the Marine Biological Laboratory at Woods Hole, Massachusetts, were formally opened on July 3rd. The laboratory, the *Journal of the American Medical Association* states, grew out of the influence exerted on biology by the little group Louis Agassiz assembled at Penikese Island half a century ago. After pointing out the relations of biology, even of the humblest organisms, to medicine, our contemporary states that with the plant and investments it now possesses "the Woods Hole organization approaches the foremost rank among the world shops devoted to the study of living nature. There investigators representing the advance guard of the biologic sciences can find welcome, opportunity, unique facilities, and personal stimulus for the exploration of protoplasm in its varied manifestations." We have received from the librarian of the laboratory a request for reprints, which will be filed in its library.

Dr W. H. DICKINSON, tuberculosis medical officer for Newcastle upon Tyne, has contributed to the issue of *Lubercle* for August an article on the interchange of specialist medical officers under a scheme of the League of Nations Health Organization. The first interchange of tuberculosis medical officers took place early in 1924. Delegates from thirteen countries, accompanied by Dr. Rulot of the headquarters staff of the Health Section of the League, visited eight countries, and studied the organization of the antituberculosis campaign in each. Dr. Dickinson was struck by the absence of any comprehensive system of notification in any of the Continental countries visited. He notes that the recumbent position is a much more prominent feature in treatment on the Continent than in Britain. He found that it was recognized everywhere that sanatorium treatment of definite (that is, sputum positive) cases of pulmonary tuberculosis, except for the purpose of isolation, plays a very minor part in the prevention of tuberculosis. He observes, also, that lack of sunshine is by no means the only factor adverse to the abolition of tuberculosis, since the mortality is lowest in Holland, Belgium, and Britain, all industrial countries with atmospheric pollution and damp, foggy weather. In view of the recent discussion on pure milk at the Annual Meeting at Bath, it is interesting to find that very little attention is paid on the Continent to the prevention of the sale of milk from tuberculous cows.

SIR STCLAIR THOMSON has been appointed honorary consulting laryngologist to the Italian Hospital, London.

THE Fellowship of Medicine announces that a two weeks intensive course in general medicine, surgery, and the specialties at the Queen Mary's Hospital, Stratford, will begin on August 24th. From September 21st to October 3rd the Brompton Hospital will hold a special course in the various phases of pulmonary diseases. The Infants Hospital and the Hospital for Diseases of the Skin, Blackfriars, both begin courses on September 7th for two weeks each. A course in ophthalmology will be arranged at the Royal Westminster Ophthalmic Hospital for three weeks from September 7th, and there will be a series of weekly lecture demonstrations on electrotherapy at the Royal Free Hospital from September 23rd to October 14th. An intensive course, covering general medicine, surgery, and the specialties, will be held at the Westminster Hospital from September 21st to October 3rd. Additional information about these courses may be obtained from the Secretary at 1, Wimpole Street, W 1.

THE Joint Tuberculosis Council has arranged two post graduate courses for medical officers engaged in tuberculosis work. (1) A fortnight's course, limited to six members, in the pathology and bacteriology of tuberculosis, conducted by Dr Roodhouse Gloyne at the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, from Monday, September 21st, to Saturday, October 3rd. The class will meet in the mornings or in the afternoons, according to arrangement. (2) A course, limited to thirty members, on non-pulmonary tuberculosis, and lasting one week. On Monday, September 28th, the members will visit Heatherwood Hospital, Ascot, and on the following day Queen Mary's Hospital, Carshalton. On Wednesday and Thursday the members will meet in the morning in the skin department of the London Hospital and on Wednesday afternoon at the Royal College of Surgeons. On Thursday afternoon they will visit All Saints' Hospital for Genito-Urinary Diseases. On Friday and Saturday they will visit the Wingfield Orthopaedic Hospital, Oxford. Further particulars can be obtained from the Honorary Secretary, Dr William Braud, 19, Brunswick Square, Cambridge, S E 5.

A COURSE of lectures on child welfare for health visitors, nurses, midwives, teachers, and voluntary infant welfare workers, will be given at University College, Nottingham, in the week beginning September 21st. Full particulars can be obtained from the Honorary Secretary of the National Association for the Prevention of Infant Mortality, 117, Piccadilly, London W 1, or from Miss Adams, Health Department, Guildhall, Nottingham.

INTERNATIONAL post graduate courses will be held in Berlin during October. They comprise medicine, surgery, and the specialties, including ophthalmology. Further details may be obtained from the Honorary Secretary of the International Post Graduate Courses, Kaiserin Friedrich Haus, Luisenplatz 2-4, Berlin, N W 5.

THE seventh international post graduate course in balneo-logy and balneotherapy will be held at Carlsbad from September 15th to 19th. Further information can be obtained from Dr E. Grunz, Carlsbad.

THE jubilee of the foundation of the French University of Beirut is shortly to be celebrated. The faculty of medicine was instituted in 1888, and since 1898 its medical students have been able to obtain the French diploma. The school of pharmacy was inaugurated in 1889, the antibiotic institute in 1913, a research institute in chemistry and bacteriology in 1919, a dental school in 1920, and a training centre for midwives in 1922. A fine modern hospital was added in 1923. The university receives students from a wide area extending from Cairo to Bagdad, and even Angola.

A PARTY of public health statisticians has recently visited Great Britain under the auspices of the League of Nations, the countries represented were Austria, Belgium, Denmark, Finland, France, Germany, Norway, Sweden, Switzerland, the United States, Chile, and Poland. There were also two representatives of the League of Nations. They had opportunities of conferring with Dr T. H. C. Stevenson, C B E., of the General Register Office, and Dr J. C. Dunlop, Registrar General for Scotland. The party was entertained by the Government at a luncheon last week, when Sir Kingsley Wood, who proposed the toast of "Our Guests," said he was glad to think that the important work the League of Nations was doing in the field of public health had taken its origin in conferences held at the Ministry of Health and that the British Government had always been in the forefront of the movement. Dr J. Stouman, a member of the Health Section of the League of Nations, in expressing on behalf of himself and his colleagues appreciation of the welcome they had received, said that the party, which had toured widely in Northern Europe, fully appreciated that it was in Great Britain that, by the work of an expert committee, the Health side of the League of Nations was first set afoot.

DR J. P. WALKER, Secretary of the South Essex Division and the Representative of the Division in the Representative Body of the British Medical Association, has been appointed a justice of the peace for the county borough of Southend-on-Sea. Dr L. Stanley Robinson of Stourport has also been appointed to the Commission of the Peace for the County of Worcester.

DR J. H. WILLIAMS, M.P., has issued a letter calling attention to the number of cases of suicide by poison. It is not, he says, the primary poisons that are guilty (their restriction has served its purpose well), but the ordinary "household" poisons, of which spirits of salt is the chief. This can be sold by any shopkeeper as long as it is contained in a poison bottle and labelled "poisonous," and with the name and address of the seller. These restrictions are not enforced and are consequently disregarded every day. This indiscriminate sale of poisons, for which there must be substitutes for household use, constitutes a grave public danger, and calls for the action of the authorities in enforcing the law as it stands or restricting the sale with the utmost stringency.

A COURSE of lectures and demonstrations in hospital administration for the diploma in public health will begin at the North Western Hospital, Hampstead, on October 1st. Further information can be obtained from the Clerk to the Metropolitan Asylums Board, Victoria Embankment, L C 4.

MR JOHN ROCKFELLER, JUN., has presented the Imperial University of Tokyo with 1,600,000 dollars to replace the library destroyed by the earthquake and fire. The new library will provide space for a thousand students.

THE Home Secretary has issued regulations, dated July 27th, limiting the weights which may be lifted by hand by any person engaged in the woollen and worsted textile trade.

MESSRS T. M. BERN, established as chemical manufacturers for more than half a century in Fenchurch Avenue, have removed their head office to 106, Fenchurch Street, E C 3.

THE Académie Française has awarded the Bordin prize to the well known psychiatrist Dr Maurice de Fleury, member of the Académie de Médecine.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **BRITISH MEDICAL JOURNAL** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

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All communications with reference to **ADVERTISEMENTS** as well as orders for copies of the **JOURNAL** should be addressed to the Financial Secretary and Business Manager.

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Drumshugh Gardens, Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central).

QUERIES AND ANSWERS

THE LOCOMOTENT'S OWN CAR

A CORRESPONDENT states that last year when acting as locomotient he found principals who would have been glad if he had brought his own car. He would like to have opinions as to the allowance which should be paid by principals to locomotients or assistants who may have to provide or advertise that they will provide their own cars.

PIGMENTATION AFTER DIPHTHERIA

DR J. EVANS (North) asks for suggestions with regard to the cause of pigmentation in the following case. A highly strung boy aged 7, the child of very nervous parents, contracted diphtheria, and was given 16,000 units of antitoxin intramuscularly.

No untoward symptoms supervened and the throat rapidly cleared. Seven days after the injection yellow staining of the circumoral and palmar regions was noticed, it lasted for four days but was not attended by signs or symptoms of any local or constitutional disturbance. It cleared completely, leaving neither pigmentary changes nor desquamation.

PNEUMOCOCCAL MENINGITIS

Dr DUDLEY GILL (West Bromwich) writes: Early in March a youth, aged 14½ years, fell from a ladder about 20 ft high whilst at work, he sustained cerebral concussion and superficial injuries to mouth and face. I attended him for about three weeks; he then returned to work and appeared to be quite fit and well. On April 29th he went home from the cinema and retired to bed. At about midnight he complained of severe headache, became restless and feverish, and at 12.30 vomited three times. When I saw him at 9.30 a.m. he was extremely ill, the temperature was 105½, pulse over 120, but a respiration was present. The muscles of the trunk and limbs were in a state of tonic spasm, the pupils were dilated and reacted sluggishly, head retraction was not marked. At noon on the same day his condition was considerably worse, he quietly became comatose and died at 9.20 p.m., the total duration of the illness was about twenty hours. At the autopsy there was no evidence of cerebral injury, inflammatory exudate was present over the brain, especially marked over the vertex. The cerebrospinal fluid was turbid, contained a large excess of albumin, a large number of polymorphonuclear cells, and numerous Gram positive diplococci, which proved to be pneumococci. In this case the meningeal infection was undoubtedly primary. In view of the fact of the boy having had an injury to the head six weeks previously, the question arose as to whether the cerebral injury had any relation with the death caused by the pneumococcal meningitis. It is a point I am doubtful about, and I should be very pleased to hear the views of any medical men who have had similar cases.

INCOME TAX Depreciation of Car

"S C" has agreed his average assessment for 1925-26 with the inspector of taxes, to include the deduction from the 1924 receipts of the cost of replacing his old car. Is he entitled to a depreciation allowance for 1925-26?

* * * Yes, the fact that the cost of replacing the old car has been dealt with as an expense does not affect the allowance due for his present car. The amount to be claimed is, as suggested, 15 per cent of the cost, £375—that is, without deducting the £100 received for the sale of the old car.

Change in Partnership Share

"PUZZLED" sends the following inquiry: A and B divided the profits for the year 1924 on the basis of half shares, in previous years the shares had been two thirds and one third respectively. How should the liability be divided?

* * * For 1924-25 each should account for tax on a half share of the gross assessment, deducting therefrom his own personal allowances, etc. The three years average is for the determination of the amount to be assessed on the firm, but it is provided in the income tax Acts that the assessment shall be divided between the partners in the same manner as the profits of the year.

LETTERS, NOTES, ETC

SUBNORMAL TEMPERATURE

Dr J. S. PEARSE (Plymouth) writes: With reference to "P. X. D.'s" inquiry (BRITISH MEDICAL JOURNAL, July 25th, p. 184), and Dr S. Vere Pearson's statement on the subject of subnormal temperature (August 8th, p. 278) may I draw their attention to a book recently published by Hutchinson entitled *A Doctor's Diary*, wherein the writer discusses various subjects, and states "that people with slow pulses and low temperatures are more likely to be intelligent than the ordinary run of humanity." If this is so "P. X. D." may take heart of grace and congratulate his patient on having a low temperature, with, peradventure, a slow pulse, being otherwise fairly fit he may be the possessor of more intelligence than his neighbours.

DRYNESS OF THE MOUTH

Dr JOHNSON SMYTH (Bournemouth) wishes to point out the efficiency of the mountain ash berry as a salagogue. It is perhaps the best of all salagogues. Now is the best time of year, before the berries get too ripe, to pluck them for preservation. A supply is being sent to Mr. Martindale 10, New Cavendish Street, London, W.1, who will preserve them and supply the profession.

RADIOTHERAPY IN MALIGNANT DISEASE

We have received from Dr S. P. IMPEY (Cape Town) some notes on 'A general survey of radiotherapy in malignant disease' by Dr S. Gilbert Scott, which was published in the JOURNAL of March 28th (p. 596). Dr Impey agrees with the author of the paper that to call cancer a local disease is only true within narrow limits, but considers that Dr Scott's further statement—that the cancer starts as a local disease but becomes general afterwards when the cancer cells are scattered through the body—is only part of the truth. In the course of his notes Dr Impey makes the following observations:

I believe cancer is a general disease from the start and the tumour a local manifestation of it. Cancer is due to certain changes in the blood, but, in addition to this predisposing cause requires an active cause to produce the tumour, and that is injury generally in the form of prolonged irritation. The changes in the blood which predispose to cancer are many, but may all be classed under one heading, and that is "blood poisoning." Some of the causes have been proved by experiment and observation, but I feel sure that there are many others which we do not now suspect. If cancer is a general disease, and only the local manifestation is treated, if a second proof occurs it may be only a continuance of the disease and not a recurrence. In the treatment of cancer it is, in my opinion, very necessary to attend to the condition of the blood, and even in very bad cases such attention causes a great amelioration of the symptoms, and in very mild cases seems to be almost all that is necessary to effect a cure. Dr Scott seems to imply that it is when a man becomes old and the tissues begin to degenerate that cancer is produced, but I think it is more likely that the real cause is overeating, which almost every old person indulges in. Dr Scott thinks that the morbid cells under the influence of the rays undergo a change which allows them to be absorbed and their place taken by healthy cells. I place is true, but I think not in the should in my opinion be treated. Inhibition of the growth of the cancer cells, and not their destruction. In all quick-growing tumours the rays act by inhibition and not by destruction. If no new cells are formed the old ones die and their place is taken by healthy cells. The healthy cells are not cancer cells which have been made healthy by the rays, but cells which have been supplied by the system. By using the inhibitive process in treating cancer nature is assisted, the cancer is cured without taxing the system to any dangerous extent, and the patient recovers without any bad effect.

TREATMENT OF TRACHOMA BY SUNLIGHT

Dr FORTUNATO PITTA (Lunchal, Madeira) writes: In 1917 I was called in to attend a young Portuguese child suffering from trachoma whose symptoms were getting progressively worse in spite of every treatment. I experimented the trachoma with carbonic acid snow and the condition improved to a certain extent, after two or three applications. I decided to try heliotherapy. The disease affected the upper eyelid, after protecting the globe as well as the lower eyelid I focused the sun's rays by means of a convergent lens on the trachomatous lesion. The first effect was a change in colour from red to chestnut and a profuse sero-purulent exudation, in a day or two the patient told me he was better and had awakened that morning without the eyelids sticking together, that the eyes were less red and that he could stand the light better. The application of the sun's rays was continued and the affection was rapidly cured. To day, some five years after, nothing is left of the trachomatous condition save a few quite superficial small white cicatrices. I have since used the same treatment in many cases of trachoma, none of which have lasted longer than three weeks, but the length of the cure depends upon the number of days on which it is possible to take advantage of the sun's rays, there should be applied in the early morning and if possible every day, this exposure should last one to two minutes. The disease here is widely spread in certain regions, and attacks a large number of persons.

THE POWER OF IRRATIONAL BRIEF

Dr J. KINELM RRID (Beckenham) writes: I read with much interest the sermon preached by the Bishop of Birmingham (JOURNAL, August 1st p. 225). There is one matter, however, which I suggest might with advantage be cleared up in order the case for freedom of thought, not even from an appearance.

Surely a very definite distinction can be drawn between (a) differences of belief and practice as evidenced among qualified members of the medical profession and (b) similar differences as evidenced among ignorant chaldeans. It is not suggested that the bishop is not keenly aware of this.

I know nothing of faith healing outside the profession of medicine, but I do know that it is practised by the successful physician. I know nothing of the merits of osteopathy, but I understand that cultured and fully qualified medical men have been known to practise it in all good faith. I know nothing of the different brands of chaldean psychoanalysis, but am convinced that it is not impossible to put psychoanalysis to good use in certain cases, indeed, it originated with our profession.

It seems to me that the force of the bishop's remarks would be enhanced rather than weakened if he made it quite clear that he was not in any way concerned with the profession's internal differences of opinion, but was simply championing the cause of knowledge and free thought as against ignorance and bigotry. It is unthinkable that he really intended his address to be a 'party address' rather than to represent the interests of the profession as a whole in relation to the question of ignorant quackery.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments in hospitals will be found at pages 32, 33, 36 and 37 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 34 and 35. A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 100.

British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BATH, 1925

SECTION OF THERAPEUTICS
(INCLUDING BALNEOLOGY AND
RADIOTHERAPY)

Professor R. B. WILD, M.D., F.R.C.P., President

PRESIDENT'S OPENING REMARKS

PROFESSOR R. B. WILD reminded his audience that it was in 1887 that he gave his first paper before that Section to show how modern some of their methods of treatment were. He recalled that Professor Lieberich, the discoverer of chloral hydrate, attended the meeting and brought with him a specimen of lanoline, which he demonstrated. He congratulated the Section on meeting in the historic city of Bath, a city more devoted to therapeutics than any other. Many forms of treatment were offered there, and they exemplified what he had taught for thirty years—that it was better to rely on natural agencies than on drugs. The discoveries of the present day were the result of careful research. It was only occasionally that a new remedy was discovered empirically. They were now reaping the harvest of organized research begun in 1911 by the Medical Research Council. It was time to take stock of their knowledge. Asthma was one of the most fascinating diseases for everyone except the patient. Much had been done to elucidate its etiology. They needed to sum up what was known concerning treatment.

DISCUSSION ON THE TREATMENT OF ASTHMA

OPENING PAPER

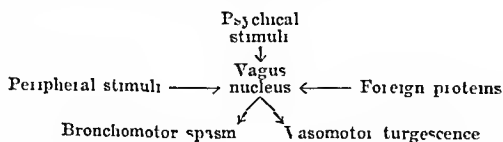
BY

W. LANGDON BROWN, M.D. (Cantab.), F.R.C.P.,

Physician, St. Bartholomew's Hospital

THE treatment of asthma summarizes in itself, as it were, the chief trends of modern therapy: psychotherapy, sensitiveness to foreign proteins, vagotomy, and endocrine balance. But there has been a tendency on the part of enthusiastic workers in some one of these fields to neglect due consideration of the other aspects. Successful treatment involves them all.

Asthma may be defined as due to an unstable or unstable condition of the bronchomotor and visomotor portions of the vagus nucleus, which causes it to react unduly to physical or peripheral stimuli, or to foreign proteins in the circulating blood. This reaction can be expressed diagrammatically as follows:



I will first consider the stimuli acting on the centre, and then some features of its response.

1. Psychological Stimuli

That asthma often occurs in neuropathic families, and that asthmatics are unduly suggestible are well known facts. The pruritus excited by artificial flower figures in every textbook. But what is not so clearly recognized is that the effective stimulus often arises from a psychic conflict. Various influences will help to decide in which way a psychic conflict reveals itself. Thus one suffers from a psychic conflict who has to face a hostile environment may escape through a hysterical paralysis, but another who has to face the internal disorder produced by sensitiveness to foreign proteins is more likely to develop asthma.

2. Peripheral Stimuli

I have little to add to the common stock of knowledge of this subject. The influence of exertion, hay fever, and other nasal troubles, sinus infection, gastric and intestinal disturbances, and of uterine disorders is well recognized. But I should like to call special attention to enlarged bronchial glands, especially in children, and to suggest that this may explain the liability of healed tuberculosis to excite asthma in susceptible subjects. Interesting observations by Breckenridge show that peripheral irritation of the pleura, such as pleuritis, may excite an attack of asthma. In the epileptic a fit can be similarly produced which leads him to compare bronchial spasm to a localized epilepsy. Other points of resemblance between epilepsy and asthma will readily occur to you.

3. Foreign Proteins

Of recent years great attention has been paid to this factor. Morley Roberts has made the profound remark that "immunity is assimilation." There is one flesh of birds and another of beasts. From the welter of immunities which result from the disintegration of food proteins each animal has to build up its own characteristic and specific tissues. Specificity is chemical as well as morphological. To some foreign proteins we are naturally immune—that is we can assimilate them automatically, to others we acquire immunity—that is we learn to assimilate them. But to some foreign proteins immunity is neither congenital nor acquired. The tissues continue to resent the intrusion of such. They will not assimilate them. Such proteins excite anaphylaxis in varying degrees. Richet has defined anaphylaxis as the last stand of the race against adulteration of its protoplasm. In extreme degrees anaphylactic shock is fatal because assimilation would mean too profound an alteration of bodily structure. In less degrees anaphylaxis declares itself in violent attempts to get rid of the foreign invader. The asthmatic shows a sensitiveness towards such substances to which others are strangers. These substances are not in themselves toxic. Freeman injected into his own veins twenty times the quantity of grass pollen extract that would kill a sensitive person, and yet felt no effects from it. 500 units of pollen extract would probably kill a hay fever subject, but 20 million units have no effect on a rabbit. Such a result would be impossible with a really toxic substance. It is well known that many substances can act in this way, such as emanations from cats, horses, roses and other flowers, feathers, fungi, etc. On these facts the skin tests have been based. The test material is either applied to the skin after it has been lightly scarified or it is injected intradermally. A large wheal indicates a positive reaction. Van Leeuwen found that, whereas a positive reaction after scarification means hypersensitiveness, a negative reaction does not exclude it. The intradermal method, on the other hand, is not sufficiently specific. Only 2 to 3 per cent of his cases were really positive to the scarification test, while all his asthmatics reacted to a number (sometimes more than thirty) of antigens by the intradermal method but normal individuals did not. He concluded that while all asthmatics showed signs of hypersensitiveness, he was only able to determine the real causative agent in a small number of cases. This would accord with my experience that an asthmatic will give a strongly positive reaction to one substance at one time, and to another at some other time. It would appear that the asthmatic tendency shows itself in a general difficulty in dealing with a number of foreign proteins and only occasionally in a high degree of sensitiveness to a particular one.

Sometimes a foreign protein is sufficiently irritating in its effects to provoke a reaction in anyone, when it must differ from those described by Freeman, and be truly toxic. Thus Ancon came across an epidemic of asthma in a village near Florence and found that the grain was badly infected that year with a parasite. Everyone who handled this grain developed eczema, urticaria, or asthma. A less extensive and more endemic infection has been described by van Leeuwen which occurred in a small Zealand island. Here 1/2 to 1 per cent of the inhabitants of some villages became asthmatic. The Dutch climate in the ordinary

sense of the word, does not vary enough to account for this. He found in the gum of the district mites and fungi which would soon sensitize a considerable proportion of the population and produce asthma. On moving the patient to Switzerland he got rid of his asthma but even while there the inhalation of dust from the infected gum would within eight minutes excite a recurrence which lasted twenty-four hours. That the sensitive material was particulate was shown by the fact that if a cotton wool filter were introduced between the dust and the patient's mouth the attack did not occur. Some of the substances which excite asthma are definitely toxic in character. We are all familiar with the cases of severe bacterial infection of the upper respiratory tract which by prolonged lowering of resistance produce a sensitiveness resulting in asthma. I have also seen several instances of asthma coming on in adult life apparently due to the toxin of syphilis. I am inclined to think that the more toxic the substance the more specific the reaction while with antigens which are only effective with predisposed individuals the reaction may occur with any substance from a much larger group. It has of course long been recognized that if one product of an animal excites a reaction all its products will. The horse asthmatic is sensitive alike to the serum, the hair, and the urine of the horse; the patient sensitive to chicken will react even more to a hen's egg.

The Influence of the Parasympathetic

As Drury has expressed it, these toxic idiosyncrasies are conservative, self-repairing mechanisms under parasympathetic control. The great function of the parasympathetic may be defined as promoting the assimilation of suitable and the rejection of unsuitable material. Thus it starts the secretory and muscular processes of digestion, while it empties the rectum and bladder, and can reject food by vomiting. The excitation of bronchial activity and cough is similarly a method of ridding the body of unsuitable material, and it is interesting to recall in this connection that drugs which are expectorant in small doses are emetic in larger ones. And as for bronchomotor spasm, as Morley Roberts says, what is it but the violent overacting, as face tension pulling every cell in the small bronchi and alveolar spaces into its last form, is it tries to squeeze out mucus tries to defecate, so to speak?

Without accepting the whole of Lippinger's and Hess's theories we may agree that the asthmatic is a vagotonic, and is liable to other manifestations of vagotonia.

The Sympathetic and Endocrine Balance

But vagotonia may be relative as well as absolute. In other words, it may well be that in overacting vagus is due to diminished action of the antagonizing sympathetic. One of the ways in which the sympathetic carries out its defensive function is by activating those endocrine glands which flood the blood with sugar, and B. C. Roy has shown that in asthma the blood sugar is usually lower than normal. I believe that just as myelitis is associated with vagotonia, the opposite condition of sympathicotonia is related to immunity through the endocrine system. Not infrequently hypoadrenalism follows or accompanies myelitis, and certainly adrenalin has a valuable action in myelitic shock. It has a similar effect in some cases of urticaria. Huist considers that the toxic idiosyncrasies, including asthma, produce their effect, at any rate in part, by depressing adrenaal activity. He believes that the influence of fatigue in producing the asthmatic pruritus is capable of a similar explanation. Morley Roberts suggests that so might be the apprehensiveness so common in asthmatics. The over-activity of the broncho-constrictor fibres of the vagus is kept in check by the broncho-dilator action of the sympathetic, which the secretion of adrenaaline would stimulate. Hence the effect of an injection of adrenaaline, or of sudden fright, in checking an attack of asthma. Asphyxia has a similar action and produces the same effect, no doubt it is thus a factor in bringing the attack to an end without a fatal issue. I am aware that Steen and Rogoff deny this emergency action of adrenaaline, but Cannon's recent experiments have disposed of much of their purely destructive criticism. The liability of asthma to come on during sleep, when the para-

sympathetic gains the upper hand, further points to the influence of disturbed balance between the two principal branches of the visceral nervous system. The counter-ment of the adrenaal effect by pituitary may be held as point in the same direction. The glands which co-operate with the sympathetic—that is, thyroid, adrenals, and posterior pituitary—appear generally to help in checking the asthmatic pruritus. Thus Wedl has reported a interesting case of a sensitive asthmatic who developed myxoedema. Treatment by thyroid extract greatly relieved both conditions. The stimulating effect of the gonads in the sympathetic endocrine group may account for the influence of intermenstrual disease in exciting asthma. Certainly gonadal deficiency may be associated with thymic asthma, which is comprehensible, since the thymus is in infantile origin, apparently antagonistic to the gonads.

In general terms it would appear that when the endocrine balance sways in the direction of the vagus, asthma is likely to occur in susceptible subjects when the balance is reduced in favour of the sympathetic, attacks may be cut short or prevented.

Asthma, Erythema, and the Skin

The skin undoubtedly has excretory functions. Erythema is not uncommon in asthma. The rashes of the exanthemata have often been compared with that produced by serum in anaphylactic subjects. This conception of an excretory mechanism is expressed in the popular idea of the benefit derived by "getting the rash out." The toxin which cannot be assimilated—that is, to which the body is not immune—must be got rid of somehow, and, at any rate, from the vital structures. In this connection it is interesting to note the occasional alternation of attacks of eczema and asthma.

The condition of laryngismus stridulus is recognized as the infantile equivalent of asthma. It is further of interest to recall that both in skin diseases and in asthma cosmophilia is a usual feature of the blood picture. As an attack of asthma goes on and expectoration becomes more abundant, the cosmophilous pass into the sputum. I should regard the skin reaction of an asthmatic to foreign proteins as an attempt to wash out the offending non-assimilable material from the skin. MacLenzie Wallis has observed cosmophilism in the interaural wheals produced by this test. I think this all accords with the observations of Kitchin and Hardy, thirty years ago, on the role of cosmophilism in bacterial infections and intestinal digestion, which have passed into undescribed oblivion.

Application to Treatment

These considerations help to provide a rational explanation for some methods of treatment which have been empirically used in the past. I hope also that they may help to coordinate the views of those working at different aspects of the problem, and to emphasize the necessity for all-round assault on every case of asthma from the various aspects. The suggestibility of a patient should be utilized to help him confidently to expect a cure. But search must also be made for deeper-seated psychological troubles. Notably some of peripheral irritation must be eliminated, thus includes avoidance of late suppers and cold bedrooms.

Methods of desensitization by injection of very small doses have naturally been tried. The difficulty about any specific desensitization is considerable, both because the actual cause cannot always be found by skin tests and because hypersensitiveness is not always constant for one substance, but may affect a whole group. This is not so important as might appear, since non-specific treatment may also be successful. Thus, indeed, is the basis of treatment by protein shock, where injections of T. A. B. vaccine may excite the production of an antibody capable of dealing with an infection of unknown origin. In the sensitized asthmatic much smaller doses must be used to this end, since too large a dose will increase sensitivity. Peptone has been used in this way by Ankl, while van Leeuwen has used tuberculin largely, in addition to milk and sulphur. Out of 300 cases thus treated by the latter 50 per cent were quite or almost cured, 15 to 20 were not improved, while the rest were distinctly improved. The chief difficulty is

in the selection of the appropriate desensitizing dose, which may, in part, account for the great differences of opinion as to the value of this method. If filtering the air through cotton-wool will prevent attacks, an extract of the cotton-wool filter will contain the substance responsible, and can be used as a desensitizer. The effect of climate is recognized as very capricious. One patient had attacks at Cambridge in college, but not in lodgings near by. A family accustomed to take a house in Scotland for the summer were obliged to send the asthmatic member of the family to sample it before deciding on it. London suits many asthmatics, and some were benefited by the mephitic atmosphere of the old unelectrified Underground. To some extent this may be due to suggestion. An asthmatic goes to a place and gets an attack, therefore each time he goes there he expects an attack and has it. But van Leeuwen found that at a height of 4,500 feet above sea-level attacks were very rare. A return to the old environment will probably be followed by a relapse, perhaps in an exaggerated form, since some degree of immunity may be lost in the pure air freed from the substance responsible. But desensitizing procedures can be applied more vigorously in the higher altitudes, during freedom from attacks. Treatment by oxygen inhalations has been much exploited of late. They may act in the same way as pure or filtered air, but I think suggestion plays a part here. Mont Dore, in the Auvergne, has long enjoyed a reputation for the relief of asthma. This may be due partly to its altitude and partly to the inhalation of thermal gases which contain a perceptible amount of arsenic. So far we have no explanation of the way in which arsenic acts in this disease, though ever since the days of the Romans it has often been found to help.

The universal belief in the efficacy of the belladonna group in asthma finds its justification in the paralyzing action of such drugs on the parasympathetic endings, just as the filip given to the sympathetic by adrenaline or cocaine helps to redress the balance in another way. A combination of adrenaline and pituitin helps some patients more than adrenaline alone. According to some, the influence of iodide is mainly to activate the thyroid, if this is so the benefit of this drug in asthma is comprehensible, since the thyroid secretion lowers the threshold to sympathetic stimulation. The importance of doing everything we can to restore an impaired endocrine balance is, I think, undoubted.

I would summarize the treatment of asthma thus: consider the physical aspects of the case, remove sources of peripheral irritation, especially in the upper air passages, employ chest development exercises, especially in the young asthmatic, whose respiratory intake is usually poor, desensitize where practicable, restore the balance in favour of the sympathetic, and attend to the general hygiene.

This all-round attack on the problems of asthma seems to me to afford the best chance of relief, especially if carried out before structural changes such as emphysema have occurred. After that a vicious circle is set up which is hard to break.

GENERAL DISCUSSION

Dr F. P. POUTON (London), defining asthma as a bronchial spasm and a vasomotor turgescence said that there were several causes of this condition, and he would urge that asthma due to infection, whether from bronchitis or nasal catarrh, or the cardiac asthma of elderly patients (best treated by morphine or oxygen), should be sharply separated from the "allergic" type of asthma due to hypersensitivity. This group, of course, included, besides asthma, the other well known toxic idiopathies. They must admit with van Leeuwen that skin reactions were of no value in diagnosing the cause of the asthmatic attacks, but his extract of human dandruff might be of great value in determining whether a case was really allergic, and besides asthma, it might be used to separate off the allergic cases of epilepsy, migraine, urticaria and so on, from the remainder of these groups. Asthma was not due to urticaria any more than histamine shock was due to urticaria. The very fact that allergic individuals might be sensitive to drugs, such as aspirin,

was also a proof of this. The treatment might be directed to (1) the condition of the patient—specific or non specific—as described by Dr Langdon Brown, (2) keeping away from the specific exciting substance in Switzerland or other places where it did not occur, (3) to altering the receiving mucous membrane of the nose—for example, by touching certain spots with a cauterizer, (4) altering the condition of the bronchial muscle by subcutaneous injections of 1 to 5 minims of adrenaline to stop spasm, or 1 to 3 minims of caffeine, or by oxygen inhalation. He suggested that the psychic factor had been exaggerated, and was merely subsidiary in causing attacks when the other factors, the exciting substances and so on, were also present. In a similar way an attack of angina or diabetic coma might be precipitated by an emotional disturbance.

Dr P. HAMIL (London) said that from the opening communication it was clear that in the treatment of asthma there were a number of factors to be considered. A careful history would often give a very strong hint as to the nature of the protein to which the patient was sensitive. He might have learned by experience that contact with horses or the presence of a cat precipitated an attack. There might be a seasonal liability, and certain localities might predispose. Protein sensitivity tests might throw considerable light on the case, but there were patients who were sensitive to several proteins, and in such it was probable that there were proteins widely distributed, but not represented in our test series, to which they might respond. Dust was particularly liable to affect such widely sensitive individuals. If a clear and definite cause could be detected they should endeavour to remove it or avoid it (hose, cat, dog feathers), and to immunize the patient very gradually either specifically with minute doses of the offending protein or non specifically—as, for example, by means of peptone intravenously or by the oral route. It should be borne in mind that sensitivity to bacterial proteins could occur, and probably this was in part, at least, the cause of the asthmatic attacks of elderly chronic bronchitics. It was important in all cases to examine the sputum. Where the dominant infection was the *M. catarrhalis* immunization by means of vaccines was often strikingly successful. In pneumococcal cases the benefit might be considerable, but the immunity was short-lived and courses of inoculation needed to be repeated at intervals. Chronic bacterial infection rendered the patient more susceptible to foreign protein, either by maintaining sensitivity or exhausting the defensive mechanism (exhaustion of the sympathetic and its associated endocrines). Accordingly, attention should be paid to the respiratory tract as a whole, the upper air passages should be carefully examined for evidence of sinus disorders, and any defects or chronic infection dealt with. Dust occupations should be avoided. Bronchitic infections should be treated specifically, a matter of great importance in avoiding secondary effects and changes in the lungs. On analogy with what occurred in animal experiments and in hay fever they inferred that during an acute attack there occurred spasm of the muscle of the bronchioles and turgescence of the capillaries of the mucous membrane of the bronchioles similar to that which occurred in the nasal passages in hay fever, with outpouring of lymph into the tissues, the whole being analogous with wheals in the skin in urticaria and after the local application of histamine. These produced obstruction to the entry and still more to the exit of air, and distension of the lungs. Defective ventilation followed, with cyanosis, etc. The bronchioles could be relaxed by paralyzing the vagal terminations (atropine or hyoscine), by stimulating the sympathetic (adrenaline or cocaine), and by relaxing the plain muscle (amyl nitrite, benzyl benzoate, papaverine). The drugs could be administered by injection (atropine, hyoscine, adrenaline, papaverine, caffeine), by inhalation or spray (atropine, cocaine, adrenaline, nitrites, benzyl esters), asthma powders should be avoided, for the smoke tended to set up bronchitis, and by mouth (atropine, belladonna, etc., benzyl benzoate). It had been shown that pituitary extract constricted capillaries, and whilst its action on plain muscle would appear to contraindicate its use,

experience showed that some patients derived greater benefit from a mixture of pituitary extract and adrenalin than from adrenalin alone. The interactions of adrenalin, pituitary extract, and histamine-like substances on the capillaries were very complex, and then knowledge was still far from complete, but he suggested that the action of pituitary extract on the capillaries in preventing turgescence of the mucosa was of some importance. It should be given only in the attack in order to abort it, the effects were less when once the attack had become well established—that is when turgescence was well developed. In this connection it should be pointed out that a mixture of adrenalin and pituitary extract did not keep well. When combined in ampoules the activity fell off considerably in the course of a few months. The drugs should be given separately. Probably of all remedies the most valuable was a hypodermic of adrenalin 1 to 2 minims with or without pituitum at the first onset of distress. Every endeavour should be made to improve the general nutrition and resistance of the patient. Ascenic was of value. Dirty occupations and windy localities where dust was abundant should be avoided if possible. In the matter of climate patients varied greatly, but in general mountain air was beneficial and a holiday in Switzerland might result in diminution of attacks for months. Oxygen therapy had advocates but it was doubtful if it had any direct effect on the disease. In patients with much lung changes in whom dyspnoea was readily produced oxygen inhalation was undoubtedly beneficial. They felt better for it, often for some hours. A period of inhalation after going to bed might aid sleep, and thus diminish stress and promote restoration of the body. Bromides were of value in many cases by diminishing the excitability and instability of the nervous system they conserved the resources of the sympathetic and the endocrine organs. Iodides and thyroid extract assisted in exalting the activity of the sympathetic. The chief meal should be taken in the middle of the day, a light meal only in the evening. Fatigue, especially in the latter part of the day, should be avoided. The respiratory tract as a whole should receive careful attention, and chest development exercises should be used to prevent deformity and check the development of emphysema. Bronchitis should be treated on the lines indicated above.

Dr. H. A. INGLIS (London) thought that Dr. Langdon Brown's paper marked the greatest advance in the study of asthma down to the present time. Asthma was, he believed, merely a symptom of vasomotor disturbance, and the main object of treatment should be to stabilize the vasomotor system. Various things, notably the smell of fresh paint, certain proteins, sudden changes of temperature, certain altitudes, climates and localities, had a specific effect in some cases in disturbing the equilibrium of the circulation, but these things were only side issues, and should not be allowed to obscure the main object of treatment. He was very pleased to hear Dr. Langdon Brown's remarks on the influence of the sympathetic and vagus nerves in the causation of asthma, because he was convinced that the solution of the "asthma" mystery would in the end come from an investigation of the action and interaction of the sympathetic and vagus nerves on the circulation. It was a big question, as it involved myofibrils, hypersensitiveness, the action of the endocrine glands, and, in fact, the action of every factor which was concerned in the proper working of the body mechanism. The vasomotor system was peculiarly and extraordinarily responsive to treatment of the sympathetic fibres running in the mucous membrane. The mucous membrane which he usually selected for treatment was that covering the nasal septum, but other areas could be utilized. He was supposed to advocate nasal catarrhization, but, as a matter of fact, he was of opinion that the ordinary catarrhization of the nose did much damage in many cases, and often seriously interfered with proper treatment subsequently. Guided by the sphygmomanometer one could, by gently touching certain spots of the mucous membrane with a galvano-cutaneous point, regulate the circulation and so put an end to asthmatic trouble in the majority of cases, provided there was no

history of nasal polyp. If nasal polypus cases could be eliminated, the successful results obtained by his method of treatment would exceed 80 per cent., however severe or long-standing the asthma might be. Polypus cases stood in a class by themselves and he was sure that they would never solve this asthma problem until they knew something of the etiology, pathology, and the significance of nasal polypus. He had evidence to show that nasal polypus was the result of an endocrine deficiency. At present he was forced to consider nasal polypus cases as outlaws. They were bound by none of the common rules of treatment, and it was not even known what effect simple drugs would have upon them. Some drugs such as aspirin, nitroglycerin, and oxygonethem, acted as violent poisons in most cases of asthma associated with nasal polypus, but, curiously, if such a case tolerated aspirin it no longer ranked as a polypus case, and the prognosis became hopeful. If the polypus were removed the asthma as a rule became worse, and still more intractable to treatment. An individual polypus or better still part of a polypus could in some cases be taken out with advantage, provided that it was done without producing any disturbance, but any extensive operation for the removal of polypus in an asthmatic subject was very apt to be followed by disastrous results as far as the asthma was concerned. If operators could save some of the many patients who came to him who had been made helpless asthmatic wrecks by nasal operations for the removal of polypus, they might possibly pause and think. The protein reaction tests were useful in finding out what things must be avoided, but as a means of treatment they were practically useless. Vaccines, autogenous and otherwise, in most cases were worse than useless. Their chief effect was in the end to reduce the patient's physiological resistance, and, as might be expected, this led to a greater instability of the vasomotor system and increased the asthmatic tendency. He constantly saw cases which had been made worse by months and months of protein tests and vaccine treatment, which could be and were relieved of their asthma in a short time by making the vasomotor system more stable. He could quote many cases to illustrate the various points he had raised but they would take up time needlessly. He would, however, like to mention one case which explained what he meant by asthma being merely a symptom of vasomotor disturbance, and was, he considered, interesting otherwise. Some years ago he saw a lady who stated that she had had asthma all her life, but during the last five years the asthma had alternated with other troubles. She had in turn severe headaches, copious running from the nose, asthma, and diarrhoea. She never had more than one trouble at a time, but was never free from one or another. Each lasted about two hours and she did not know in what order they would come. His explanation of the condition was that she had headache, vasomotor rhinitis, asthma, or diarrhoea, according to whether the turgescence occurred in the head, the nose, the bronchial tubes or the intestines. By treating her nasal mucous membrane he reduced the blood pressure 25 mm., and apparently stabilized her vasomotor system for when she came to see him again some weeks later her blood pressure had gone but 5 mm. only, and she stated that she had had no return of any of her troubles. She would remain free unless some circumstance again upset her vasomotor balance.

Dr. A. F. HURST (London) said that during the thirty years he had suffered from asthma he had learnt how to avoid it and how to treat it when it came, but he was still asthmatic. He believed that the authors who from time to time announced that they had discovered a cure for asthma had made this mistake: they had found how one exciting cause could be more or less successfully treated, but they had paid no attention to the essential underlying cause which must be faced still he regarded it as inevitable. The constitutional excessive irritability of that part of the vagal innervation which controlled the motor and secretory activity of the bronchus—the "asthma centre"—remained unaffected. The only cure of asthma was not to have it. The less frequently the centre was set into activity by chemical, reflex, and psychical stimuli the less explosive it became, but even after twenty years of complete freedom asthma might recur under unfavourable conditions. The

irritability of the centre was increased by the fatigue of each day, thus making asthma most common at night, and by the fatigue of succeeding days of strenuous activity, thus making it more frequent and severe as the time for a holiday approached. Consequently, in hours rest before dinner a complete rest from work each week end, and at least two holidays of not less than three weeks' duration every year would do much to damp the activity of the asthma centre. The ideal holiday was Switzerland in the winter. An asthmatic, who for weeks had scarcely been able to crawl from one room to another without panting, found himself after a couple of days able to ski, luge, and skate as well as any man of his age. He was, moreover, able to eat anything and to do anything with impunity, as the chemical and reflex causes of his asthma were only operative when his asthma centre was tired and irritable. On returning home he was likely to have three or four months of almost complete freedom before he gradually became fatigued and once more subject to asthma on exposure to the various exciting causes which operated in his case.

Dr Hurst had lived long enough to have passed through two waves of therapeutic enthusiasm. The arrival of Dr Alexander Francis from Queensland over twenty years ago seemed to promise a novel cure for all asthmatics. His treatment was helpful in many cases, but Dr Hurst was sure that neither this treatment nor any other intranasal treatment ever really did more than remove one reflex stimulus which could set the asthma centre into activity.

In 1919 Dr Hurst had visited Dr Chandler Walker at the Peter Bent Brigham Hospital in Boston and had been filled with enthusiasm for the prospects which his method of cutaneous tests for protein sensitization appeared to hold for the treatment of asthma. Dr Hurst was, he believed, the first to repeat this work in England, but he had regretfully come to the conclusion, after a prolonged trial, that it was of little if any practical value. He heard from many British physicians that their experience was identical using Walker's own proteins and those prepared by various English firms, and also the raw substrates themselves, he had hardly ever obtained a positive reaction in an adult except with pollen, and the pollen reaction had already been demonstrated by Freeman several years before the appearance of Walker's papers. There was of course, no doubt about the fact of toxic idiosyncrasies but a careful consideration of the history was of infinitely more use in recognizing their existence than the cutaneous reactions and with the exception of autogenous vaccination for chronic or recurrent nasal and bronchial infection specific immunization was rarely called for. Every case required a thorough investigation, as by this means alone was it possible to discover and deal with the various exciting causes peculiar to the individual, and to find out in what way the irritability of the asthma centre might be reduced.

Adrenaline

It was rare for the exciting causes to be so completely controlled that no further attacks of asthma occurred even when the individual was tired or otherwise abnormally susceptible. As nothing was more exhausting than frequent bouts of asthma with the loss of sleep to which they gave rise it was of the greatest importance to stop the retinal attacks as quickly and as completely as possible. Every asthmatic owed a debt of gratitude he could never repay to Dr Brian Melland of Altrincham, whose discovery in 1910 that adrenaline could stop an attack was the one great advance in the treatment of asthma since Sir John Flower wrote his monograph on the subject over two hundred years ago. Dr Hurst had developed the technique of the adrenaline treatment in his own case and in that of numerous patients who had come under his care, with the result that he believed it was quite unnecessary ever to have a bad night as a result of asthma. It was essential that the injection should be given directly the attack began during the night it should be given the moment the patient was sufficiently awake to realize that he required it. Adrenaline was the only drug administered subcutaneously which he always advised the patient to give himself, as otherwise it was impossible to inject it sufficiently promptly. If given without delay, the patient was often

asleep in less than five minutes from the moment he woke feeling dyspnoeic. Used in this way very small doses were sufficient. The speaker never gave himself more than 1 minim of 1 in 1,000 solution of adrenaline chloride, and he had rarely found a patient who required more than 3 minims, although in many instances he had been told by the patient's doctor that 5, 10, or 15 minims were needed or that adrenaline was entirely without effect. This was always due to the fact that it had not been injected until the attack was at its height. Under such conditions 15 minims might produce no other effect than tachycardia, tremor, and a feeling of collapse, whereas, given at the onset, 1 or 2 minims would have completely aborted the attack, without even producing any rise of blood pressure.

Status Asthmaticus

He had seen a few cases of status asthmaticus a condition in which the patient was in a state of continuous severe asthma, which lasted for many hours or even days in spite of the use of adrenaline and morphia, with the result that he became completely exhausted from want of sleep and the physical effort of forced respiration. Such attacks could always be stopped by the continuous injection of adrenaline. After injecting 3 minims the needle was kept in position. 1 minim was then injected every quarter of a minute until relief occurred. As many as 40, 50, or 60 minims might have to be given, but eventually the attack ceased and the patient fell asleep as the last injection was given. These enormous doses produced no unpleasant symptoms, although under ordinary conditions 5 minims injected in one dose might have produced tachycardia and considerable malaise as adrenaline was excreted so rapidly that no cumulative effect occurred, except curiously enough in relieving the asthma. When the attack was at last brought to a temporary conclusion, the patient should be moved without delay to some place where past experience had shown that he was likely to be free from asthma, as it was difficult to prevent repeated relapses after a very severe attack except by a change of environment.

Mr FRANK CORR (London) thought that he could make the best use of the few minutes at his disposal by somewhat dogmatically touching on a few practical points. Asthma was not a disease but only a symptom occurring in a great variety of complaints due to many totally different causes. The grosser symptoms were caused by a spasm of the bronchial muscle and a secretion from the mucous membrane. As both these could be made to occur in the lungs of a sensitized animal after their removal from the cause, the influence of the central nervous system was not essential, and should not form part of a definition of asthma. The majority of cases fell into more or less clearly defined types. There was the type sensitive to foreign proteins, the type due to overfeeding, or the wheel and type, types showing great seasonal variation, as hay asthma, a type which was always preceded by a cold, a periodic type, where the asthma reached its height, then diminished in severity before recurring again, the whole cycle taking a month or two to complete, an occupational type, where the patient after many years became sensitive to a protein with which he worked, bakers and millers being common examples. In another group of cases a rare type followed an acute bronchitis or some other bacterial invasion of the lungs, and was curable by an autogenous vaccine from the organisms present. The collagenolytic type was a clearly defined type of case which commenced with sneezing fits and, as the years passed, developed urticarial digestive disturbance and asthma. The patients were not found to be sensitive to anything, they bruised easily and were all of them fat, or at any rate well covered women. The first line of treatment then, consisted of tilting a very close history to discover what type of case was being dealt with. Next came the investigation of the dermal reactions. Every single case of asthma, no matter in what type it might be placed must be fully and properly tested to every protein with which the patient came in contact. In his book published two years ago he quoted statistics of 350 cases, claiming definite reactions in 52 per cent of cases. Although

exactly comparable to the figures of American workers, there had been considerable criticism of these figures. He had recently made out the statistics for a subsequent series of 500 consecutive cases of asthma, 58 per cent of these gave positive dermal reactions to one or more proteins. Thus, he considered it was due to the use of several rarer proteins not formerly in his possession and to which an occasional patient had responded. Cases of ordinary hay fever were, of course, excluded from both series but 12 cases of pure hay asthma occurred in the last series of 500. No less than 36 per cent of the first and 38 per cent of the second series gave a plus 3 or larger reaction. He did not suggest that every patient who gave a reaction would immediately be cured but he had cured dozens of cases with a plus 1 or even lesser reaction. He cited one case as an example. A patient from Newcastle aged 58 had had asthma for thirty-six years and gave a plus 1 reaction to goose feathers. He wrote to Mr. Cole eighteen months later saying that since he gave up his feather bed and pillows he had been entirely free from asthma. The general practitioner was handicapped, biased and perhaps disgusted with the skin reactions because the majority of test sets sold to him were completely valueless. Mr. Cole had had a small patient sent to him recently. The mother said the child had been fully tested in a university town in the North, no reactions had been obtained in spite of the fact that the mother had insisted that the child could not sit behind a horse without sneezing. The boy gave a plus 5 reaction to horse dander. Having found a reaction the method of avoidance must be most scrupulously undertaken. Cats, dogs, parrots, etc., must be given up and feather pillows replaced by paper substitutes. Alternatives could be found for most foods to which the patient was sensitive. He had tested a child a year ago who was covered with eczema and found her sensitive to wheat, eggs, and cow's milk. The child had not touched these foods for a year, and the eczema had gone. The better educated the parent the more easily were these children fed by alternative methods. Three classes of proteins could not be avoided—horse dander (especially in large cities), pollen, and those proteins causing the occupational asthma. For these, desensitization by small doses must be used. Skin reactions were taken with dilutions of the protein each one being ten times weaker than the other until a dilution was reached which gave no reaction. Treatment was commenced with this dilution and the dosage very gradually increased. He had also used this method successfully by giving minute quantities by the mouth with certain foods and in that pernicious type of asthmatic sensitive to ispirin. But to dispense ispirin in 1/100 grain pills required great accuracy and was expensive. Passing to methods of non specific desensitization, he did not think that the horse asthmatic was an individual needing a protection against horse dander any more than he could imagine a person being sent into the world with his equipment perfect except that he was minus a protection to cravat or face powder, or that during life he somehow mislaid his protection to Brazil nuts. Sensitization was something added to an individual, not something lost. But it was no less difficult to see how to manufacture what he called specific adzymes to these many different proteins of such an exact counterpart and such extraordinary specificity that they could distinguish between the proteins of a hen's egg and that of a duck. Lumiere suggested, however, that if we could split up these proteins into their component parts, a very few basic radicals would be necessary. Ten such would allow something like thirty-six million different combinations. If they looked round for something comparable to this in nature, he suggested that they could find it immediately in the sense of smell. What was the olfactory organ but the most perfect analytical chemical laboratory? The smell of an orange was always the smell of an orange and nothing else, that was absolutely specific. In the same book Lumiere proved, Mr. Cole thought very conclusively, that acute experimental anaphylaxis was due to a flocculation of the colloidal particles of the blood. This was caused by the specific adzyme reacting with fish protein to which the animal was sensitive and a precipitate forming. What practical indications for treatment could be deduced from these facts and

therein? They could by minute doses of the protein to which the patient was sensitive, use up this specific adzyme without at any time giving a dose large enough to cause fresh formation of the adzyme or just as the judges thought to nullify the foul smell of prisoners by the use of mosquitos, so they could remove the specific adzyme by superimposing another protein on to it. Practically any protein would do for this purpose, mill and horse serum had been largely used, due care being taken that the patient was not sensitive to the one selected. A bacterial protein such as the mixed coliform vaccine the method of Danysz was excellent for many cases. If they were to imagine that a specific adzyme had a composite structure like a telephone number, smaller compounds than full proteins such as the proteoses and peptones would serve to alter the specific adzyme beyond effectiveness, just as the smallest alteration at the telephone exchange would give a 'wrong number'. Hence possibly the value of the various peptone injections. Here there was also a considerable scope for trial of other protein fractions such as a protein from which the Vaughan's split protein the poison group, had been removed. Similarly different proteins and so also their specific adzymes being made up of different rings one form of injection might have a far greater nullifying effect when superimposed on a patient sensitive to one protein than on another case sensitive to another protein. They found that the results obtained with the same injection in apparently similar forms of asthma varied considerably. Another variation of this was the method of auto-hemotherapy—extracting blood from a vein and reinjecting it again subcutaneously before it had clotted. Here there could be no possibility of causing any anaphylactic symptom but the blood altered as it clotted and so perhaps became a mild foreign protein which, however, they could use in very much larger quantities than in other cases. In the case of a child who only got asthma with a cold but caught colds very frequently the dermal reactions must be tested, especially that for feathers. When the nose, throat, and lungs were raw with a cold feather proteins would press through but they would not do this at other times. Removal of the feathers would stop the asthma, but not the colds. Two things were required in catching a cold—a chill, or some lowering of resistance, and some micro organism. This was happily a rare combination for most people. If however, the patient carried his own organism, he would have a cold every time he became chilled. Search for the focus of these colds must be made, and in children, in nine cases out of ten this would be found in the tonsils. Nothing gave such good results in curing asthma as their emulsion. Failing the history of foods from patient after patient it was surprising how very consistent were their answers to questions. Pastry, cheese, heavy puddings, thick soups, were the foods they especially avoided, bearing out exactly the excellent dietary of Dr. Adams of Glasgow. Protein, starches and fats required entirely separate digestion by different enzymes for each. Therefore, starches cooked in fat as in the case of fried potatoes, suet or milk puddings, proteins in fat as cheese or all three as in nuts, must be completely excluded from the diet. In certain cases he added one day's starvation a week. He had many patients who had been free from asthma for many years and yet returned this diet continually because they appreciated the immunity it gave them. In conclusion he emphasized the great importance he attached to the dermal reactions and added that in their present state of ignorance when they did not know the mechanism of the sense of smell when the colloidal condition of the blood serum was not mentioned in the most recent work on haematology, when a biochemical explanation of the action of potassium iodide was difficult when they were rather doubtful as to what happened during a common cold or why corns ached when it was going to rain it was best not to call the asthmatic a neurotic, because he told them something they did not understand.

The Rev. Dr. BRIDGES (Greenwich) thanked Dr. Langdon Brown for his able paper, and said that inhalant therapy in the most distressing complaint had not had a fair chance. No doubt this was due, he thought, to the want of a proper inhalant apparatus. Most of the hand inhalers

or atomizers were unsatisfactory and very uncertain in their action, inasmuch as they did not regulate the dose of the drug used, gave no continuous stream of vapour, and did not convey the vapour to sufficient depth to reach the diseased parts. Oxygen inhalations had given good results, but usually these types of apparatus did not vaporize drugs. Lately he had come across an apparatus which was attached to an oxygen cylinder, through which valuable antisthmatic drugs, such as adrenaline, and a new proprietary remedy named apnoegene, had proved of great service in cutting down in a few minutes an attack of asthma. This apnoegene contained a synthetic preparation of adrenaline 1 in 1,000 and 1 per cent anæsthetic. He believed that this apparatus could be seen at the exhibition, it vaporized any liquid drug, and the dosage was regulated by a gauge showing the rate of the flow of oxygen. The vapour was extremely fine and of equal density throughout the administration of the dose, lasting from fifteen to twenty minutes. He spoke very highly of an inhalant mixture he himself had prepared, composed of oleum cypripati, oleum cinnamonomi, and camphor in liquid paraffin. He considered inhalant therapy more beneficial to the patient psychologically than injection therapy, particularly in cases of asthma, which had so considerable a nervous element in them.

A member said he had not intended to take part in this discussion, but having heard suggestions that the subject of true spasmodic asthma could not be permanently cured if his susceptibility to attack he would like to contribute a personal note. It must not be forgotten that asthma, in the great majority of cases, if not in all, was one of the well known symptom triad of inherited gout and in treatment due regard must be paid to this constitutional predisposition as well as to the immediate psychic or protein excitant. His own family history illustrated every phase and factor mentioned. In his own case it was two series of attacks every five or six days without a break, of true spasmodic asthma. Recovery from the effects of one attack appeared to be the signal for another. Permanent cure was effected over twenty five years ago by a variant of the method, but doubtless including the same physiological process as that mentioned by Mr. Frank Cole. The process of auto-therapy in his own case was effected by hydro-therapy and counter irritation prolonged over a sufficient period of time, and analogous to the series of peptone—on specific injections of Mr. Cole—which was the greatest advance in the treatment of this disabling affection. But for the results to be permanent due regard must be paid to every activity of daily life in relation to the constitutional diathesis. Thus every asthmatic might be given the hope of cure, so far as the attacks were concerned, and of relief, therefore, of the organic changes which resulted from long duration of the affliction.

The President spoke of the relation between eczema and asthma. Asthma might alternate with dermatitis in the same patient. He described a case of chronic eczema which, when cured, developed severe attacks of asthma. He thought that this connexion was more than a coincidence. Irritation of the skin might relieve irritation of the bronchi.

Dr. LONDON BROWN in reply thanked the speakers for their remarks. Many points had been raised during the discussion. In reply to Dr. Poulton, he thought that bronchial glands might act by damming up the secretions and this would lead to auto sensitization. Attacks might be relieved by preventing reflex irritation from the nose. For this purpose he used atropine, eucalyptol, and anæsthetic made up with paraffin. He approved of the term "allergy" which Dr. Poulton had introduced and agreed that fasting would relieve asthmatic attacks. Some of the speakers had misunderstood what he had said about oxygen treatment. He thought that exploitation was a fair term to use in criticizing the method as applied by certain people outside the profession. He wished to insist that no stigma attached to emotion or to psychic phenomena. He thought that skin tests had a general rather than a specific application. In reply to Dr. Hamill he thought that the value of amyl nitrite was somewhat uncertain, piperazine some-

times had good effect. The action of caffeine was probably due to stimulation of the higher centres, and with them of the sympathetic system. Cocaine also stimulated the sympathetic. He agreed with Dr. Hamill that the use of powders was undesirable. He thought that Dr. Francis's method of light cauterization had proved of great benefit. Dr. Hunt's experience had been of great value in the discussion. Dr. Hunt, like the poet, had learnt in suffering what he taught in song. He was much interested in Mr. Cole's treatment by auto-hæmotherapy. With regard to the relation between asthma and eczema, he gave the pedigree of a family where asthma and eczema had alternated in the different generations.

SECTION OF OPHTHALMOLOGY.

W. MURDOX BEAUMONT, M.R.C.S., President

PRESIDENT'S OPENING REMARKS

It has been decreed, happily for me, and still more happily for you, that no introductory address shall be given. This decision, however, does not preclude me from expressing the very great pleasure it gives me to welcome you very warmly to this

terraced hillside town
Where healing streamlets run
Still sparkling with their old renown,
'The Waters of the Sun.'

This reference to Bath especially appeals to us to-day because we are honoured by the presence of American guests. The lines which I have quoted were written by an American citizen who visited and loved our Queen City of the West. He was both a distinguished member of our profession and a great and genial poet. I need hardly say that I refer to Oliver Wendell Holmes. As one of 29,000 members of the British Medical Association I hold out the hand of fellowship to the representatives of the 90,000 members of the great American Medical Association. We rejoice to see them here to-day, and we offer them all the amenities which Bath can supply. Ladies and gentlemen, members of our American and British Ophthalmological Societies, I would remind you that our old city has had two glorious epochs before the present one. First, the Imperial era, illustrated by the Roman Bath. Coming down the centuries we arrive at the Renaissance in the eighteenth century, illustrated by the Royal Crescent, one of the finest specimens of residential architecture of modern times. You will not forget to see the Roman Bath, the touchmark of the Imperial epoch, but do not omit to visit the Crescent, the touchmark of the Royal epoch.

DISCUSSION ON EYE INJURIES AND INTERSTITIAL KERATITIS

OPENING PAPERS

I—W. T. HOLMES SPICER, F.R.C.S.,
Ophthalmic Surgeon and Lecturer on Ophthalmic Surgery to
St. Bartholomew's Hospital, Consulting Surgeon to
the Royal London Ophthalmic Hospital.

In a certain number of cases of interstitial keratitis the attack is said to have been caused by an injury, but frequently there is a close association between the injury and the disease. This association, if it could be established, would be of great importance in view of claims for insurance and workmen's compensation. The injury is often trivial—a foreign body on the corner, a splint from a railway engine or emery wheel in abrasion by a finger-nail or blade of glass. In all of these cases there is a breach of surface. In others, such as a blow by a fist or potato, there is no external wound. In another case there is a chemical injury to the eye from caustic potash, other attacks follow directly after carefully planned and well executed surgical operations on the eye. A typical case is that of a man grinding a tool, who got a spark of emery into his eye, it was removed after a short delay—a very common occurrence

having no after effects. In this case, however, the eye remained irritable, bloodshot, and intolerant of light for several weeks and gradually passed into a typical attack of interstitial keratitis, followed by a similar attack in the other eye. The patient bore the stigma of congenital syphilis which made it easier to determine the cause, but the stigma may be absent, and the ordinary person without knowledge of interstitial keratitis could not be blamed for regarding the keratitis as the direct result of the injury.

In 5 per cent. of the cases there is a direct association with injury—that is, the injury is seen to pass into interstitial keratitis while the patient is under observation. This percentage is in agreement with those of foreign observers and more recently with those of Cunningham.

Harrison Butler, from an examination of his records, gives a much higher percentage. He finds that at least 20 per cent. of the cases of interstitial keratitis are preceded by an injury. In a paper which he read recently before the Society of Medical Officers of Health, which he has kindly allowed me to see, he comes to the conclusion that an attack of interstitial keratitis may be precipitated by an accident to a corner predisposed to it by syphilis or tubercle, that a very slight trauma like the instillation of drops or a general anesthetic is enough in a corner, that the attack may follow in the other eye, that the injury may directly precipitate interstitial keratitis in the second eye without participation of the injured eye, and he asks whether some trauma is not always present before the attack. My percentages were taken from cases of injury to the eye which were watched and seen to pass into interstitial keratitis; the percentages would have been higher if the histories had been diligently inquired into. If every deviation from the normal and every injury to a remote part of the body is to be considered as a cause of interstitial keratitis, it will be possible to rope in a very large number of cases. But histories are fallacious; the patient is nervous and often honestly so, to provide what is needed in the way of history; it gives an explanation to his mind and relieves him of the unpleasant thought that there may be something constitutionally wrong with him. For this reason the nature and severity of the injury, the interval between it and the attack must be carefully investigated. Injuries to eyes occur daily in large numbers, especially in manufacturing towns, but the number of such cases followed by interstitial keratitis is quite small. When interstitial keratitis occurs, the injury is often very trivial, such as would be quite incapable of having any after consequences in healthy eyes; it always takes on characteristic features, and the patients generally bear on their bodies the peculiar marks of congenital syphilis. Then there is the further difficulty of explaining the attack in the other eye which commonly occurs.

The ordinary man has heard of sympathetic ophthalmia in which an injury to one eye is followed by serious inflammation in the other, leading often to complete blindness in both; the broad features of the two occurrences are enough alike to satisfy him. But the characters of the two diseases are entirely different in every stage of their course, no one with any knowledge of diseases of the eye could mistake one for the other.

It is not possible to give a satisfactory explanation of the upper race of interstitial keratitis in the second eye in those cases in which an injury is assumed to be the cause of the attack. But if injury be not the direct cause of interstitial keratitis, the explanation of the association between the two eyes is not difficult. A large number of those infected with congenital syphilis have the stigma of the disease upon them, in the shape and size of the teeth, the aspect of the face, the shape of the bones, and the like; those people are almost certain to suffer from interstitial keratitis some time in their lives. It is rare to find these stigmata in adults without finding traces of old interstitial keratitis in their corneae, whenever I have met a person of middle age with the characteristic features, I have, so far as I have been able, examined the cornea and have never failed to find the traces of past interstitial inflammation.

Some instructive cases bearing on this may be described

There are notes of several successive operations for congenital cataract in persons who bore all the marks of congenital syphilis, but in whom no interstitial keratitis occurred. There are notes of two cases of lamellar cataract occurring in one person which underwent successful operation. In one eye three needlings were performed, and in the other a needling was followed by cataract extraction, and in iridectomy for subsequent prolapse of the iris. Both eyes in a normal condition had no vision; they remained quiet for four years, then interstitial keratitis of severe gummatous kind followed—that is, repeated severe injuries such as the operations here did not cause interstitial keratitis, although all the conditions favorable to its occurrence appeared to be present. The protracted had not reached the required degree of maturity or evolution, but it did so spontaneously a few years later. On the other hand, in two eyes in different people, a simple first needling was immediately followed by severe interstitial keratitis, which was very alarming, but it matured was not it but unexpected. There are also many notes of cases in which no apparent deviation from health or exposure to weather or cold, or privation brought on attacks, and on the other hand there are notes in which serious diseases occurred in people showing the stigma of congenital syphilis, without starting the disease in the eye.

The conclusion seems inevitable. The interstitial keratitis depends on the presence in the eye of the organism of syphilis, the *Spirochaeta pallida*, and on its readiness for evolution; if that organism be present interstitial keratitis is practically certain to occur at some time. If the organism be present but the required state of evolution be not reached, there will be no attack. If the required state be not reached in the two eyes simultaneously there will be an interval between the two eyes in the occurrence of the condition. If the state of evolution has been reached there will be an attack in the absence of any stimulus, and in spite of anything that can be done.

This is in agreement with the occurrence of syphilitic manifestations in the body generally. There is the period of acute mitis in syphilitic infants, the period of affections of the choroid and retina, the mingled attacks, the skin eruptions, the bone diseases, the gumma, and the nerve degeneration; they cannot be hurried or brought on out of their proper sequence, and on the other hand, even with the present means of treatment at our disposal, they cannot be completely suppressed.

The inevitable occurrence of interstitial keratitis in the presence of the spirochaete does not exclude the possibility that in injury and an attack of interstitial keratitis may be a coincidence. We do not know how long the spirochaete can remain in a state of readiness for evolution without starting the attack. It is possible that the very slightest event, deviation from health or injury may determine the onset, the longer the period of readiness for evolution the greater is the possibility of the coincidence between an injury and an attack. If the injury were in every eye a coincidence and had no part in the attack we ought to find cases in which an injury to one eye has been followed by interstitial keratitis in the other.

I have no doubt this has occurred, but I have no record of such an occurrence. The effect of an injury on the tissues was described long ago by Pagen in his clinical lectures, when he said that the effect of an injury or operation or general disturbance of nutrition on a put was to bring out any latent constitutional tendency. He cites among other cases that of a man who bore his forearm, and within five minutes had a sharp attack of gout in the hand, and another case in which a well marked syphilitic eruption appeared in a man in whom no syphilitic symptoms had been observed for years, a day or two after a fight at seeing the death of a friend.

If we are called upon to give an opinion in a case where an attack of interstitial keratitis follows shortly after an injury, what is our duty? If the characteristic signs of interstitial keratitis are present, it is our duty to point out that the patient shows the signs of congenital syphilis. These signs are the Hutchinson teeth, the facial aspect, the shape of the bones of the skull, the high vaulted palate.

the periosteal nodes, Clutton's joints, nerve deafness, a positive Wassermann reaction, and a specific family history. The presence of these signs indicates that he is suffering from congenital syphilis, and that the interstitial keratitis is a manifestation of congenital syphilis; this keratitis is certain to appear at some time of life, which depends on the degree of evolution to which the *Spirochaeta pallida* has reached. If he has not the signs of congenital syphilis upon him, and if the attack in the eye is a typical one, it is equally certain that the attack in the eye is syphilitic. I believe that typical interstitial keratitis is always syphilitic. The injury would not have given rise to the involvement of the eye unless the spirochete was present in the tissues of the eye, and had reached the stage of evolution or readiness necessary for the outbreak of the attack.

It seems impossible otherwise to explain the occurrence of the disease in the second eye.

II—W. B. INGLIS POLLOCK, F.R.F.P.S.,

Surgeon to the Glasgow Eye Infirmary.

INTERSTITIAL keratitis is an inflammation of the middle and deeper layers of the cornea. It may commence at the centre of the cornea or towards the margin. When it commences at the centre it commences as small grey spots or maculae. As the spots increase in size they coalesce and spread towards the periphery. Between the different centres there may be a diffuse cloudiness. Where the disease develops from the periphery, the cornea looks grey and loses its lustre at the edge.

With a magnifying glass it can be seen that the spots are made up of separate maculae. As the disease spreads the spots increase in size and coalesce until they have covered the entire cornea. Vascularization rapidly develops, and at a certain stage the cornea appears to have a salmon tint. When the disease has reached its head the whole cornea becomes opaque, and the iris cannot be seen through it, the sight becomes so dim that the patient is only able to count fingers if they are held up before the eye. Pathologically it is found that the main lesion is a lymphocytic and vascular infiltration limited to the middle and deeper layers of the cornea.

SYMPTOMS

Interstitial keratitis is accompanied by photophobia and lacrimation. Upon examination it will be observed that there is no purulent discharge from the eye and on separation of the lids it will be seen that there is a circumferential congestion, a pink blush around the margin of the cornea. At the height of the attack the cornea has lost its lustre, although there is no distortion of the reflection of a window when this is looked for, because there is no lesion of the anterior surface of the cornea. As the condition improves the window reflex recovers its clearness, showing that the disease has been entirely under the surface of the cornea, there is always more or less mist.

Both of my cases following eye injuries began as simple traumatic ulcers, which commenced to clear up under the usual remedies, but by the tenth or fourteenth day were seen to have become worse. One patient was aged 18, and the other 22. The Wassermann reaction was found to be strongly positive. Treatment by stabilisation was commenced at the time when the blood was taken for the Wassermann test and resulted in nearly complete clearance of the first eye within a few months, while the second eye became slightly implicated, but cleared completely.

DIAGNOSIS

On examination of cases of keratitis interstitialis and indeed of all external diseases of the eye it is important to place a patient before a good light from a window so that the reflection made by the window can be observed on the cornea.

If inflammation is present in the middle and deeper layers of the cornea, such as in keratitis interstitialis, then the reflected image of the window will be perfectly clear and not distorted, as in the normal eye but in the acute stage it will be dimmed. Tuberculous interstitial keratitis may simulate syphilitic in all respects and be extremely difficult to diagnose. This variety of conjunctivitis accom-

panied by the formation of phlyctenules on the surface of the cornea and the limbus just outside the corneal margin may be mistaken for interstitial keratitis. It will be noticed, however, that the vascular infiltration is only conjunctival, and that there is no deep circumferential congestion, as in keratitis interstitialis.

A great deal of work has been done in France recently on examination with the slit lamp and binocular microscope, and shows the inflammation distinctly limited to the middle and deeper layers of the cornea, with the presence of deposits on the posterior surface of the cornea and sometimes on the anterior surface of the iris. Attempts have been made to diagnose the disease by the slit lamp, but it has not yet been possible to distinguish with certainty tuberculous and syphilitic cases.

In former times great stress was laid on Hutchinson's triad: keratitis interstitialis, the characteristic peg-shaped teeth, and the nodes on the tibia. Other writers have laid stress on the presence of osseous and rhagades.

The Wassermann test should be performed in every case. It is the only certain method of distinguishing these two affections although it must be always remembered that both may be present simultaneously.

TREATMENT

The treatment of syphilitic interstitial keratitis has for many years been carried out by the use of mercury administered either by injection or internally. It was not until I saw the results of Lees's work in Edinburgh that I realized what could be done by the administration of arsenical compounds. Since that demonstration I have put all my cases under the venereal specialists for treatment by modern methods. They use stabilisation, giving 0.015 gram intravenously. If neosalvarsan or novarsenobillon is employed and a portion escapes under the subcutaneous tissues it sets up more or less troublesome irritation. Stabilisation does not give any trouble if it escapes into the tissues from the vein and it seems to be tolerated very well by almost all the cases I have had under my care. The dose is repeated weekly for eight or ten weeks and is accompanied by the administration of mercury, hydriargyrum cicutæ, ferri et potassii tartarus, and milk sugar, 1 grain of each once daily, or the mercury can be given by injection. My usual practice is to ask for the blood to be taken immediately I have made my diagnosis and to have an injection given at the same time, after the blood is taken if possible. This is to save time, because if the treatment is commenced at once it is possible to save the disease from occurring in the second eye, and to prevent blindness of the first eye.

If both eyes are implicated, then the treatment must be commenced at once, because the longer it is left the more destructive have been the processes on the cornea, and consequently the denser the opacity left on the cornea. The rapidity with which the disease may advance shows that the treatment is urgent if blindness is to be prevented.

After a course of treatment such as indicated above, one may omit the treatment for a month, and then commence a second course. During the interim, the mercury and iron may be omitted, and the child put on milk, cod liver oil and syrupus ferri iodidi, some surgeons give in addition, thyroid extract 1 or 2 grains, if necessary.

The course should be repeated as long as there is any improvement in the cornea even after the blood becomes negative, and only when the opacity persists in spite of all treatment can one consider the question of stopping the courses. I am certain that by efficient treatment it is possible in certain cases to prevent the implication of the second eye.

Sometimes the courses have been substituted by silver salvarsan, this has been tried and recommended by Colonel Harrison, and it seems to do very well.

While the patient is under treatment with these drugs it is most important to watch continuously for the onset of jaundice. The venereal specialist to the Glasgow Eye Infirmary, Dr. Pinrose, has suggested that the child should be given sulphur with cream of tartar and treacle, a dessertspoonful twice a week. If jaundice supervenes the patient should be given intravenous or contraindicated. The

kidneys must also be watched and the urine tested regularly to see that no damage is being done there, in which case it is necessary to stop the treatment at once.

For local treatment I give atropine with diosmine 2 per cent and vasoline, and also belladonna lotion. The diosmine helps to clear the opacity in the cornea, and the atropine to relieve the iritis which always accompanies the condition, the sooner the pupils are dilated the sooner the inflammation and redness subside in the eye.

Tuberculous Cases.—For these cases I give injections of tuberculin 150 000 mg. for three weeks, then increase it to 1/25 000 for three weeks and up to 1/20 000 and 1/10 000. In cases where there is tuberculous infection with syphilitic basis the combined treatment is necessary. In cases where there are septic teeth removal of these is necessary and the internal treatment should be mercury, cod liver oil and iron.

Since modern methods have been employed the end results are much more hopeful than in the old days when mercury alone was used.

Note.—The substance of the report was communicated to a meeting of the Association of Ophthalmologists.

GENERAL DISCUSSION

Mr. A. LEITCH LEECH (Glasgow) said that in an examination as to the causes of blindness in some twelve hundred persons he had found that a fair number of cases of blindness resulted from the failure of cataract operations. Such cases were due either to sepsis from want of adequate aseptic precautions or to inflammation of some part of the visual tract. In these latter he had frequently found that the Wassermann reaction was positive. Was the disaster due to the trauma plus the presence of syphilis? He believed that it was—a conclusion which seemed to support the views which Mr. Holmes Spicer had expressed.

Mr. N. BRISTOL HARRIS (London) said all would agree with Mr. Holmes Spicer's statement. "The injury would not have given rise to the involvement of the eye unless the spirochaete was present" and so on. But could it be said that the attack would have occurred at the time it did occur, trauma or no trauma? On that turned the medico-legal issue. He did not think there was sufficient evidence, but it was needed before they could be sure of their ground in claiming that the eye manifestation was inevitable at a given date. He suggested that the allegation of injury needed investigation. He saw many school children who were blind from syphilis. It was remarkable how rarely parents alleged injury as a cause. Interstitial keratitis was attributed to a cold in the eye, but choroiditis never had an alleged cause. He wondered if the allegation by workmen of injury as the precursor of interstitial keratitis was always justified. It seemed possible that the common initial symptom of ocular inflammation as the feeling of "something in the eye" was responsible for the allegation of trauma.

Mr. C. H. WALKER (Bristol) commented on the fact that judged by an investigation of the records of ophthalmic clinics in Bristol thirty years ago, interstitial keratitis was often of frequent occurrence—severe, atypical, and untreatable. He had seen two cases which quite definitely seemed to be the result of trauma, and one which followed acute conjunctivitis in one eye. In each of these cases the keratitis was moderately severe, quite typical, and was only present in the eye which had been affected by the injury or inflammation. He could not say that he had ever seen interstitial keratitis in one eye as the result of injury in the other eye.

Dr. L. J. PRINCE (Glasgow) had seen a great number of cases of interstitial keratitis, both in children and adults. The diagnosis was mostly not in doubt. The Wassermann reaction was ascertained in almost all cases, in most it was positive in some, especially in adult, it was negative. Where the evidence of syphilis was clear it was important to disregard a negative Wassermann reaction and to proceed with the appropriate treatment. As to cases occurring

after trauma, sometimes the mother gave a definite report of this. He had examined such histories with great care, and had never found one in which the condition began in the eye not injured. Were it due merely to coincidence one would expect it to happen as often in the uninjured as in the injured eye. As regards the pathology, it must be remembered that it was generally accepted that the strain of the oil was as important as that of the mydriatic organism, and in the cases they had in the fact of trauma a disturbance of the seal. In many cases it was easy to distinguish between tubercle and syphilis but in not a few it was very difficult, and the diagnosis of syphilis was reached only after a period during which antituberculous measures were more or less ineffectual. On the other hand, cases definitely syphilitic were sometimes found in which any further treatment with antisyphilitic remedies seemed inadvisable and tuberculin did much good. In such a difficult case treatment by the most powerful weapons, such as the diosmine substitute, was to be used and pushed, sufficient dosage in the hands of one who was prepared to deal with any untoward effects must be begun without delay.

Dr. WALTER HENRY (Toronto) referred to a case of interstitial keratitis coming on in both eyes within ten days after an injury to one eye.

Dr. M. SCHWARTZ (Philadelphia) had not analysed his cases of interstitial keratitis with respect to injury and could not add anything from the clinical or statistical aspect of the subject. He thought it quite possible that a corneal injury, even a slight one, in a subject of inherited syphilis might assist a successful attack of *Spirochaeta pallida* on this susceptible tissue by lowering the resistance of the cornea. Such an injury might be regarded as an influence hastening the corneal disease, which without it, however, was practically sure to occur. It seemed to be analogous to the effect of injury in a tissue which, because of its failure to resist a bacterial attack from an area of local sepsis (focal infection) which previously had been ineffectual—for instance, an iridocyclitis following excessive strain on the ciliary muscle in a patient with dental sepsis.

Dr. R. KERRY (Montreal) said that if one excepted certain cases of infected suppurative lesions, he thought that all inflammations of the eye must be regarded as secondary. He had generally considered cases of interstitial keratitis to be either syphilitic or tuberculous, when the former was the case no benefit followed the use of iodine, but in the latter contingency the disease cleared up promptly, so that there was thus provided a rough and ready therapeutic test.

VISUAL HALLUCINATIONS IN SANE PEOPLE

BY

ARTHUR W. ORMOND, C.B.E., F.R.C.S.,
Ophthalmic Surgeon and Lecturer in Ophthalmology, Guy's Hospital.

I venture to bring to your notice to-day the subject of visual hallucinations in sane people, hoping to hear from you your own experience and the experience of others that you know concerning this very interesting subject. Some years ago I was asked by an old woman who came to see me in the out-patient department at Guy's Hospital, whether I could do anything for her with reference to the "faces" which used so frequently to annoy her. She saw them she said, silhouetted against a white counterpane or sometimes against the sky, as they peered in at her through the window and made grotesque grimaces at her, which in the first instance were not unpleasant but merely comical but later became revolting, and were of considerable annoyance to her. She was quite aware that they were not real, but only appearances, still they were unpleasant and disturbing. My attention was directed to the subject by the late Sir Anderson Crichton, who recounted to me one evening the history of a patient of his who had written asking him to be good enough, when in the neighbourhood of his home to call and see him. After a short talk the old gentleman suggested that they should retire to another room, where, having carefully

locked the door, he described to Sir Anderson the appearances which he saw and which were somewhat similar to those of my patient and inquired if they foreshadowed the onset of my definite mental trouble. In addition I received quite recently a very carefully written statement of certain phenomena experienced by a medical man who had consulted me about his eyesight, and I will read you his account of his troubles.

On March 17th while drying my clothes after my bath I suddenly felt there was something wrong with my sight. I did not see fully but I seemed to see less. At breakfast I began to realize more what was amiss for I could not see my fork when using it. I immediately tested my field of vision and found that the left area was quite blind. This blind area started from a vertical line immediately in front of me. I had no headache nor other abnormal symptoms. After breakfast I went out—on crossing the road I felt rather nervous owing to the new eye trouble. On coming out of a shop I pulled open the right hand door without seeing that someone was holding open the left hand door for me. On my way home I passed a friend without seeing her as she was walking on the left. When I returned home I sat down and tried to read but had to stop as I felt sick and had a severe pain across my frontal and right temporal regions.

Little later I vomited twice when the feeling of nausea left me. My headache increased however so I went to bed. For three days I had complete loss of appetite. I only took liquid food the second day of attack. March 18th Dr. W. saw me. He noted I had no temperature and that my blood pressure was 135. He suggested a slight hemorrhage in the region of the chiasm. I remained in bed until March 23rd my urine (specific gravity 1015) was free from albumin.

On Tuesday March 23rd there was some improvement of the left field of vision and on the following day it became normal and has remained so up to now (April 5th). My sight however has altered since the attack and my glasses are no longer sufficient for reading. I wish to note certain peculiar phenomena that occurred during the period of hemianopia.

1. In recurring periods I saw very distinctly numerical figures appearing on the ceiling and walls in front of me. Generally two numerical figures appeared in well defined black characters—for example 71 22—all parts of the numerical figures were equal and flat on the surface. These numbers kept changing and moving. I think they appeared more to the left than the right.

2. As a variation I saw what appeared to be half words in handwriting characters and I found myself guessing the missing part. I remember one word or part word particularly and I guessed this to be attrition. There were many other half words but I cannot now recall them but they were very distinct and their character was peculiar inasmuch as the lower parts of the letters were bowed and quite unlike my own handwriting. All letters had this peculiar characteristic of bowing below. All the half words were hand written not printed thus differing from the numerals which appeared to be in printed characters and in black.

3. There was another curious phenomenon—the appearance of queer faces moving in a sort of procession always from right to left. They were queer comical faces for the most part and the side on the right of the picture twisted in a peculiar way—a sort of contraction from below upwards which included the lower part. The general effect was comical rather than repulsive. These phenomena appeared with my eyes open but the faces were seen with open and shut eyes. I might add that previous to this attack I have seen with closed eyes on occasions these facial processions when half dozing before getting off to sleep and have remarked to my wife about it at the time.

4. There was also a fourth phenomenon seen only with my eyes closed—a crimson area with an ever moving pattern like a kaleidoscope. The effect was that of fluid in motion with the patterns in black lines. I had headache of a neuralgic character all through the attack. This is now slight only. I never had a similar attack before.

N.B.—As a possible contributing cause I might mention that the day before the attack I was chopping up a wooden box very close to a fire. I felt the strain of the exertion and the heat rather much. I felt well however later and also the next morning immediately before the onset of the attack.

With regard to Dr. V.'s ocular condition I had seen him on several occasions, and he had full vision on each side with correction but had myopic astigmatism and when I saw him twelve months after the attack which he has related in his letter I found his condition much the same. There was no albuminuria and his Wassermann reaction was negative. I think that in all probability he had in attack of "migraine" which was unusual in lasting so long a time, but I would remind you here that in 1913 I published some notes of patients suffering from hemianopia following migraine who still remain permanently hemianopic.

Mackenzie in his book on diseases of the eye published in 1854 (p. 973) recounts the case of Nicol, the Berlin book seller who for nearly two months was constantly affected with special illusions.

Though at the time says he "I enjoyed a rather good state of health both in body and mind and had become so very familiar with these phantasms that at last they did not excite the least disagreeable emotion but on the contrary afforded me frequent subjects for amusement and mirth yet as the disorder sensibly increased and the figures appeared to me for whole days together and even during the night if I happened to wake I had recourse to several medicines and was at last again obliged to have recourse to the application of leeches to the anus. The operation on April 20th at 11 o'clock in the forenoon I was alone with the surgeon but during the operation the room swarmed with human forms of every description which crowded fast one on another. This continued till half past 4 o'clock exactly the time when the digestion commences. I then observed that the figures began to move more slowly soon afterwards the colours became gradually paler every seven minutes they lost more and more of their intensity without any alteration in the distinct figure of the apparitions. At about half past 6 o'clock all the figures were entirely white and moved very little yet the forms appeared perfectly distinct by degrees they became visibly less plain without decreasing in number as had often formerly been the case. The figures did not move off neither did they vanish which also had usually happened on other occasions. In this instance they dissolved immediately into an of some even whole pieces remained for a length of time which also by degrees were lost to the eye. At about 8 o'clock there did not remain a vestige of any of them, and I have never since experienced any apparition of the same kind. Twice or three since that time I have felt a propensity if I may be allowed to so express myself or a sensation as if I saw something which in a moment again was gone.

Mackenzie gives in addition various references to the subject, which seems to have been one on which there was more written at the beginning of the nineteenth century than at the beginning of the twentieth.

Francis Galton, in his book *Inquiries into Human Faculty*, relates the instance of a lady who was able to visualize "faces." He says:

A near relative of my own had them in a marked degree. She was eminently sane and of such good constitution that her faculties were hardly impaired until near her death at 80. She frequently described them to me. It gave her amusement during an idle hour to watch these faces for their expression was always pleasing though never strikingly beautiful. No two faces were ever alike and no face ever resembled that of any acquaintance. When she was not well the faces usually came easier to her sometimes almost suffocatingly close. She never mistook them for reality although they were very distinct.

Galton, in 1880 circulated a number of questions, with the object of eliciting the degree in which different persons possess the power of seeing images in their minds eye and of reviving past sensations. They are published at the end of the Eyerman edition of Galton's book and the fourteen in number as a result Galton proved how large a number of people are visualizers—that is to say who can, and do depend largely on visualization of places, persons, and things, and to whom to memorize a fact or event is to see it.

Those of whom he wrote were sane and healthy people, but were subject to visual presentations for which they could not account and which in a few cases reached the level of hallucinations. These visual presentations comprised:

- (1) number forms—that is, about 5 per cent of adults always associated a number with its own particular position in the mental field of vision,
- (2) assertions of colour with sound,
- (3) visualized pictures connected with certain words,
- (4) visualized pictures obtained by mental concentration,
- and (5) moving processions of men and faces when in the hypnagogic state.

Galton again writes:

that the mere acts of fasting or want of sleep and of solitary musing are severally conducive to visions. I have myself been told of cases in which persons accidentally long deprived of food became subject to them. One was of a pleasure party driven out to sea and not being able to reach the coast till nightfall landed at a place where they got shelter but nothing to eat. They were mentally at ease and conscious of safety but they were all troubled with visions half dreams and half hallucinations.

The cases of visions following protracted wakefulness are well known and I also have collected a few.

As regards the maddening effect of solitariness it may be sufficiently inferred from the recognized advantages of social amusement in the treatment of the insane. It follows that the spiritual discipline undergone for the purpose of self-control and self-motivation has also the incidental effect of producing visions. It is to be expected that these should often bear a close relation to the prevalent subjects of thought and although they may be really no more than the products of one portion of the brain which another portion or the same brain is engaged in contemplating, they often through terror receive a religious sanction. This is notably the case among half-civilized races.

The form these visions take may have some relation to previous experiences. A "hoarse" man sees a procession

of horses. A patient of mine, who has a peculiar dislike of spiders and such like animals, always sees a spider like animal. This is probably the result of the disgust he experienced when viewing spiders on some previous occasion, and has resulted in a marked sensitization of his visual memory centre, whereby he was able to picture more easily what he would fain forget. Compare Lady Macbeth's remark to Macbeth as he visualizes the ghost of Banquo, "The very painting of your fear" (Act iii, Sc 4).

Mr. Bernard Shaw writes in his preface to the play of *St. Joan*:

"The most sceptical scientific reader may accept as a flat fact carrying no implication of unsoundness of mind that Joan was what Francis Galton and other modern investigators of human faculty call a visualizer. She saw imaginary sights just as some other people see imaginary diagrams and landscapes with numbers dotted about them and are thereby able to perform feats of memory and arithmetic impossible to non-visualizers. Visualizers will understand this at once. Non-visualizers who have never read Galton will be puzzled and incredulous. And a very little inquiry among their acquaintances will reveal to them that the mind's eye is more or less a magic lantern and that the street is full of normally sane people who have hallucinations of all sorts which they believe to be part of the normal permanent equipment of all human beings."

Recently a medical man sent me the following letter:

You asked me to send you a few notes of my visualization. My personal experience is confined to a somewhat definite period subsequent to the choroidal haemorrhage which occurred on October 1st 1922, not immediately but a few months after. As far as I can recollect it was about the time when you were afraid that some fresh activity might be going on in the eye. I have never had my tendency to visualize before nor have I had it lately. The appearances took the form of men's heads and faces only. They were of life size standing close to and immediately in front of me usually one at a time but others would come forward and take his place. All the faces were similar—grotesque and horribly ugly, making hideous grimaces and facial contortions. They were all of the same colour of a dingy brown. Their appearances were of short duration. I had several but perhaps not many of them. They looked absolutely real and definite quite unlike a memory picture. I could not associate these productions with any special condition of stimulus nor do I think they ever occurred in bed (I am not one to be awake). They always occurred with the eyes closed and never intruded into the ordinary field of vision. Another visual sensation I experienced was quite different in character and occurred at about the same period. It consisted of a reticulated pattern superimposed on the ground and walls. The pattern was quite regular and usually small but sometimes it formed a network of larger meshes but the size was the same on each separate occasion. I saw this always in dull light. I have had two other kinds of spectra which perhaps are not relevant to the point of inquiry but I will mention them. The first I have had throughout the whole period of my eye trouble. It was frequent at the beginning and for some time after and I sometimes get it now. Its appearance is that of a ring of very bright light with a black interior and a few loop like lines of light but not a network. The figure would remain near the centre of the field of vision in constant vibration for many seconds then disappearing and reappearing. These figures have always been identical except of late the light has been much feebler and sometimes the bright lines of the interior are absent. The second kind of spectrum is simply that of round oval or broad banded patches of light passing rapidly across the field and disappearing. These I sometimes get now.

The interesting point to consider is whether these hallucinations depend on pathological optical conditions—that is, on defective retinal impressions—or on a central cause. Although in some of these patients retinal troubles and uterine sclerotic changes have been present, in others, and those perhaps the majority, there has been no organic retinal or ocular disability at all. It seems more likely that the cause is oversensitiveness of certain areas of the brain. My visualizers recount that the power to visualize was always existent, and was developed during childhood. It is not only "visualizers" who suffer from these visual phenomena, however, is my patient D. F. V. definitely records that he was not as a young man a visualizer.

We have evidence, then, that under normal conditions as well as under pathological ones, some people, possibly a large number, can visualize more or less distinctly—that is to say, they can present to their mind's eye a definite picture of people or things, this presentation being entirely subjective. We also have a condition exactly the reverse of this—an absence of power to visualize objects which have been seen again and again, or to reproduce to the mind's eye letters, words, or figures which have been gazed at for a long time and on many occasions, this condition may be congenital, or may be the direct consequence of disease. If the sensations derived from visual stimuli are not retained

by the visual memory centres at all, we reach the condition of letter, word, or mind blindness. In the higher forms of visualization we have the reverse of the so-called "word blind" condition in the one case the centres, or their connections with the rest of the brain, are undeveloped or under-sensitive, and in the other they are unusually developed or over-sensitive.

Though there are very different degrees of retentiveness of visual memory, still every normal human being endowed with vision possesses some capacity and miles could it use of it, in the recognition and interpretation of objects which come within his field of vision.

Past visual impressions are arranged in definite groups within the visual memory area, so that one or more of these groups may disappear without any interference with the others, and in this way are produced the conditions known as aphasia, agnosia, amnesia, etc. It is probable that the visual memory centre for objects, places, form, and colour are in different areas from those for visual memory of words, letters and figures but that they are contiguous. We have different capacities for registering numbers, words, colours, places, etc., which also vary in degree but we should suspect an individual sensitiveness in certain areas or domains of the brain in visualizers, and in the word blind a defect in similar areas. The centres for visual memory, we believe, in the angular, inferior parietal, and occipital lobe on the convex outer surface of the brain, beyond but close to the centres for word blindness, etc., which are in the left angular gyrus. There must be a sensation fibres between these centres and the visual centres situated on the inner surface of the occipital lobe, the hallucinations of "processions" are probably subcortical in origin.

With regard to the patients commented on here, the visual hallucinations have been present in sighted people, and during my work at St. Dunstons among totally blind men I never had any patient who related similar symptoms.

I think there is not much doubt that in the case of D. I. V. the hallucinations were seen on the right side—that is, in that part of the field of vision which retained sight—and that they disappeared on passing to the left, and were not visible in the blind area. I am told, however, that visual hallucinations have been recorded as occurring in the blind area of a hemianopic patient. People who are born blind do not see visual hallucinations, but may suffer from auditory or tactile ones, and the statement that visual hallucinations occur in the blind is true only of those who have subsequently become blind, and then the visions are probably very indefinite in appearance.

In conclusion, then, we have a series of conditions beginning with those whose capacity to visualize is so great that they can reproduce in their mind's eye a "vision" which appears to them to be almost substantial. Others less acute can "see" faces, figures, etc., in a definite position in space, and sometimes at will, and there are others who memorize by a visual capacity, which is only possible by mental concentration and for a varying but limited time, this group probably comprises the majority of ordinary folk. Others, again, do not memorize by vision at all, then memory is consequently often a weak part of their mental equipment. Lastly, we have at the other end of the scale the "word blind," who cannot visualize words, letters, etc., in which they have been gazing for some time, and who are unable to retain any impression, even the most transient. We have, therefore, the Giltane visualizer at one end of the scale and the totally "word" and "letter blind" at the other, and all these differences may be present in entirely sane people. On the pathological side, however, the series would run from the cases of delusional insanity to that instance described by Huchelwood where, as a result of cerebral haemorrhage in the occipital cortex, a man, aged 58, lost the power of reading because he could not remember for even a second what was the special significance of the letter or word seen—that is to say, he had lost his visual memory for letters or words.

In conclusion, then, these patients who suffer from this unhappy fate of constantly seeing unwanted forms and faces have possibly some functional derangement of those

area in the cerebral cortex or subcortex which lie in the inferior parietal and occipital lobes on their convex surface, and I submit that the derangement is due, not to any definite organic cause, but probably to a hypersensitization, owing to which aberrant stimuli are able to produce effects which are usually the result of definite visual stimuli.

I cannot say that one obtains much success in treating this unfortunate malady. If, as I suggest, it is due to an over-sensitiveness of the visual memory areas, tonics, bromide, and other treatments directed to improving the general health seem to be the only method open to us, but we must remember that peripheral stimulation is capable of arousing this phenomenon, as in the case of Dr. L., who had a definite central choroiditis, and these pathological ocular conditions may be amenable to treatment.

REFERENCE

Ophthalmic Review vol. xxxv, p. 195.

DISCUSSION

Mr. P. G. DOWNE (London) said that he had investigated a certain number of cases (taken at random) to find out whether they projected or visualized the alphabet in any particularly definite way. He was induced to do so as he himself had a very definite projection picture of the alphabet. He always visualized the letters of the alphabet in the form of a spiral running from above downwards—A in the top left-hand corner, and Z down and to the right. He found that in about one-third of the cases examined there was a very distinct visualization of the alphabet in some definite arrangement.

Dr. A. E. DAVIS (New York) said that if patients suffering from delirium tremens might be considered sane he would like to report some observations made a number of years ago in conjunction with Dr. C. I. DANA in the delirium tremens wards of Bellevue Hospital, New York. In the ophthalmoscopic examination of these patients it was observed that the retinal veins were enormously enlarged, tortuous, full of dark blood, and pulsating. Many of these patients saw snakes and it occurred to him that these visual hallucinations might have a physiological basis, the retinal veins being so large, full of dark blood, and pulsating, the images of these vessels were perhaps projected into the field of vision, thus giving rise to the illusion of seeing snakes. Of course, the patients were much confused mentally, and the visual illusions or delusions were more easily accounted for by their mental condition.

Dr. L. WEBSTER FOX (Philadelphia) felt greatly indebted to Mr. Osmond for describing a series of cases paralleling patients of which they had many in America where their cases were separated into two divisions—those which could be relieved by wearing amethyst or Crookes's lenses, the refraction being fully corrected, and secondly, those benefited by medicinal and electrical treatment. They found the iodides of great value with the addition of small quantities of bromides, and the application of the constant current 3 to 5 milliamperes daily, the negative pole to the eye. They attributed much of this affliction to their bright climate coupled with a highly neurotic constitution.

PHLYCTENULAR CONJUNCTIVITIS AND KERATITIS CAUSES AND PREVENTION

BY

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MACKENZIE, writing in 1830, at a time when the remembrance of the terrible epidemics of Egyptian ophthalmia was fresh in his mind—for he dealt with these epidemics at length in his textbook—says of phlyctenular conjunctivitis:

Neglected or mistreated, it becomes the frequent source of permanent impaired vision, or even of entire loss of sight. In a later passage he describes the disease as 'the first manifestation of a scrofulous constitution.' My aim

in this paper is to examine these two statements. Is the disease still a frequent source of serious damage to the eyes, and is it the first manifestation of struma, which means to us tuberculosis?

Phlyctenular Lesions as a Cause of Blindness

In my return of the causes of blindness in school children, in a total of 3,300 children who had passed through the schools for the blind and the myope classes in London, there were 699 whose disability was caused by inflammation of the superficies of the eyes. Of these 357 had suffered from ophthalmia neonatorum, 90 from purulent conjunctivitis of later years, and 242 from phlyctenular keratitis. Amongst school children the disease we are considering ranks next to ophthalmia neonatorum as a cause of educational blindness from superficial inflammation, it damages many more eyes than purulent conjunctivitis following the exanthemata and streptococcal infections. Of the 242 cases recorded 69 had such badly damaged eyes that they needed to be turned in schools for the blind, whilst 176 had vision so much reduced that they had to be taught in the myope classes. These figures take no account of the many other children whose sight, of one or both eyes, had been slightly damaged, but who were considered capable of being accommodated suitably in the elementary school under conditions of "easy treatment as regards eye work." The 69 who were in the blind schools account for 3.56 per cent of the total blindness amongst the school children, or, if we take the total of 242 in blind schools and myope classes, the percentage reaches 7.3 of all included in the two types of school.

These figures show that Mackenzie's statement of the damaging effects of the disease is still true, and that his warning against neglect and mistreatment still holds.

Etiology

1 *Social Factor*—The general conditions in which the disease is found are easily determined. A comparison of the records of private cases and of hospital patients will show how rare is the disease amongst the middle classes, and how common it is amongst the poorer classes. Again, a comparison of its incidence amongst different types of hospital patients is informative. In one classification of cases a separation was made between native and alien (Jewish) hospital patients: native patients outnumbered aliens by 3 to 1. But infections, conjunctivitis, blepharitis, and the like were much more common amongst aliens than natives—5 to 4, whereas phlyctenules were more common amongst natives than aliens—3 to 1. The differences between private and hospital patients, and between native and alien hospital patients, make it evident that some social condition is a determining factor in the liability to the disease. It cannot be racial, for race does not divide private and hospital patients; it cannot be a difference in cleanliness, for that does not divide the native and alien patients—indeed, so far as dirt infections are concerned the aliens are the greater sufferers. The social condition must be the lack of something that is common to private patients and the alien hospital patients. I think there can be no doubt it is the food factor. Our children are well fed, they do not suffer from phlyctenules, the alien Jewish children are equally well fed with a diet into which oil largely enters, and these children escape the ravages of phlyctenules.

2 *Age Incidence*—The second point bearing on the causation is the age of incidence. Figures derived from both a children's hospital and from an eye hospital agree in showing that there is a high peak of incidence at the fifth year of life. At the children's hospital no cases were seen amongst infants under 1 year of age, 22 were of 2 years, 35 of 3, 43 of 4, 55 of 5, and thereafter there was as steady a decline as there had been an uprise. At the age of 5 years the months of these poor children are in a pitiful state, and therewith are found repeated attacks of nasal catarrh, herpes of the lips, impetigo of the face—all plentiful sources of irritation to the fifth year.

3 *Seat of Election*—The plotting out of the site of the initial lesion of phlyctenular attacks shows that the lower and outer sector of the limbus is the most common site of onset, for 38 per cent occurred there. A further 28 per

cent appeared on the cornea just internal to this same sector, so that together 65 per cent. more in this one region. Lesions arising in other parts of the cornea and conjunctiva were few and about equally distributed except that none were found on the conjunctiva under the upper lid, and very few on the conjunctiva of the nasal sector. The nerve supply of the area of the most common site of the phlyctenules is derived from the loop formed by a twig from the lacrimal nerve and from the second division of the fifth, so that irritation within the month will well explain the concurrence of these eruptions of the richly innervated limbus, and the link of connexion with the lacrimal nerve will well account for the profuse lachrymation that accompanies these attacks.

4 Bacteriological Investigations.—Results have differed in different hands. My own investigations show that the majority of the fresh smears on phlyctenules are sterile and that during the height of the attack the conjunctiva is more free from the common pus-forming organisms of the mucosa than at any other time. The finding is quite otherwise in the later stages, when the phlyctenule has broken down into a surface ulcer, then a variety of organisms are found, mostly staphylococci. The conclusion from the observations is that the lesion is not directly due to a microbial invasion of the ocular tissue affected.

5 Seasonal Incidence.—Conjunctivitis in this country is undoubtedly more common during the second quarter of the year, when the earth is drying, the winds are high, and the sun is getting hot. An epidemic of trachoma during 1924 amongst the children at the dock area of London illustrates this well, during the first quarter of the year 17 cases were reported, during the second 121, in the third 57, and in the fourth 20. The outbreak was at its height at mid-summer, when all forms of conjunctivitis were rare. It is otherwise with phlyctenules. There is no early summer peak and but little difference throughout the year except for slightly heavier incidence in the winter quarter of January, February, and March, so that this disease does not connect with the disease of dirt infection such as are the various forms of conjunctivitis.

Histology.—The earliest investigators believed the lesion to be a minute blister, hence the name. MacKenzie writes of the "thin and colorless" fluid that escapes from them. Later workers, on cutting sections of the lesions, found them, or judged them to be, solid. To the skilled eye investigator, who pricks these lesions under appropriate conditions, there can be little doubt that they collapse like blisters, but when hardened and cut they seem to be solid. Even then, however, there are evidences of fluid contents, for links of fibrin are to be found which indicate that there was a fluid content which has been coagulated by the method of preparation. The conclusion is that the earliest writers were correct in their description of the lesion. It is a blister.

Six points of evidence have been cited: (1) Poor ill-fed children are alone affected. (2) The age incidence coincides with chronic conditions in other areas of the fifth nerve. (3) The sort of lesion confirms a causal relationship. (4) The freedom from microbial contents eliminates local infection. (5) There is no seasonal outbreak. (6) The histology is that of a hepatic blister. These six points of evidence converge on a general conclusion: that the disease is primarily constitutional and not local, that it is a manifestation of some general disability and not a specific infection of the tissues of the eye.

Struma

The general conclusion so far is on parallel lines with that of MacKenzie, when he writes that the disease is "the first manifestation of a scrofulous constitution." But much will depend upon what he meant by scrofula, and what we mean by this term now. We mean tuberculosis due to bovine infection. It is by no means certain that there was any such general meaning in the term when he used it, altogether apart from the absence of knowledge of a specific bacterial infection. In some of the past usages it appears to have no more meaning than that of a general physical enfeeblement, and in that sense his statement will cover our findings. In other old statements the word did connote

what we know is bovine tuberculosis, thus in early encyclopaedia gave the following definition: "External scrofula, attended by glandular swellings, external ulcerations and indolent abscesses. Called also King's evil and tubercle glandularis." In my record of cases of phlyctenular disease I find no confirmation of the idea that a majority or even many of these cases are associated with tubercle. In the majority of cases recovered fit to testify for so serious a primary origin. Of the cases seen at the children's hospital built very well, often one well, and all except a small minority were well before one month had passed. A minority of 3 per cent. included all those severe and chronic relapsing cases which tend to drag on for many months.

Of the 242 cases admitted to the blind and myope clinics no fewer than 60 showed active nose, ear or throat trouble, and only 2 tuberculous lesions. Last year I examined 321 children with a view to their transfer to the country ophthalmic school. Of these 240, or 74 per cent., were cases of conjunctivitis, mainly trachoma or severe blepharitis, and 81, or 35 per cent., phlyctenular disease. Of the latter only one showed what was reported to be a lesion of surgical tuberculosis, but even that was proved on inquiry to have been primarily an accidental injury. At the examination of the children it is my habit to note associated conditions: state of mouth, throat, etc. The children come from the same districts and might be expected to show a general equality of associated symptoms at the basic constitutional symptoms are the same. Of the 240 cases of conjunctivitis 12.5 per cent. had enlarged tonsils and 87.5 normal throats. Of the 81 cases of relapsing phlyctenular disease 30 per cent. had enlarged tonsils and 69.9 per cent. normal throats. So that there was in the children collected from the same areas and of the same social status in the one group of phlyctenular disease two and a half times as frequent throat affections as in those suffering from dirt inflammations. Again 60 of such cases of relapsing phlyctenular disease with chronic throat affections were referred in the past two years for throat treatment before decision as to transfer to the country. Of these 45 did not need transfer after operation but were returned to the elementary schools under various arrangements, and 12 were ultimately sent to Swanley, for they were no better after operation. The effects of treatment of associated conditions in the relief of relapsing keratitis is demonstrated by this experience.

Occasional incidents in the use of tuberculin injections have been held to be evidence that the lesions are definitely tuberculous. The injection of tuberculin has been followed by a crop of phlyctenules and some obstinate cases of relapsing keratitis have been improved by the injection. But this is not conclusive evidence of the tuberculous origin of the lesions. Other and non-bacterial products will cause outbreaks of phlyctenules even the application of atropine. Also a stopping of relapsing keratitis may be secured by injections other than tuberculin through an action known as protein shock. A sudden change of treatment as from atropine to eserine will sometimes bring a cure, and, speediest of all, the singular blocking of the vascular loops penetrating the cornea by the touch of the actual cauterizer.

That phlyctenular lesions are as common or possibly more common amongst children affected with tubercle is likely because there is in these a lowered vitality and a great susceptibility to any lesions that enfeebled children are liable to. But the evidence given tends to show that the primary general condition is not tuberculous but feebleness due to lack of proper food, and perhaps also lack of sun and air.

Prevention

The prevention of these lesions which damage so severely the eyes of some school children and render them less capable citizens in after-life is bound up with the general social betterment of the people. To this end there is no better agency than the school medical service. The school doctors are daily engaged in seeing out children of feeble habit those with infected mouths and throats and in securing treatment for both general and local conditions.

The provision of open-air schools for the debilitated is better treatment than exempting them from school, when they will get no such conservative attention. Dental and throat treatment are better than much medication. The transfer of those with affected eyes to country hospital schools, through such an arrangement as there is in London between the County Council and the Metropolitan Asylums Board, is better than many months of hospital treatment as an out-patient or even as an in-patient in a city hospital. And the results obtained through these measures, expensive as they appear to be at first glance, render them economical in the highest degree when the saving in effective citizenship is cast into the balance.

AN INSTRUMENT FOR RECORDING LIGHT MINIMUM AND LIGHT DIFFERENCE

BY

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In the *Ophthalmic Review* of February, 1896, I published some notes on light perception as an aid in diagnosis and prognosis in diseases of the eye, and described a photometer which I had made which appeared to be free from the error which existed in most of the photometers at that time in use—namely, that the test involved, not merely light perception pure and simple, but also other form factors, such as reading letters, counting apertures, and the like.

That instrument was briefly as follows. There was a long box, open at one end, through which the person under examination looked, having one eye shaded, the whole head being covered by a hood, which excluded all external light. At the other end was an aperture opposite which were nine discs of "15 oz" standard opal glass, so arranged that they could be swung back one by one. Behind these ran a bar on which, distant one-third of a metre from the box, was fixed a standard candle in a spring holder, which kept the flame at a fixed level, behind which was a shield to prevent any flickering from draught.

The patient having been kept in the dark for five minutes, the eye not under examination being shaded, looked straight into the box, and, as the discs were swung back one by one, was told to say when a glimmer of light was detected. The number of discs through which the light was seen was entered the figure being his "light minimum."

The late Sir H. Swanzy, Mr. Snell, and Mr. Liles took a considerable amount of interest in my experiments, and asked if it would not be possible to have a test for light difference on the same instrument. Owing to various circumstances the question was put aside until just before the war when it was perforce again interrupted. I then tried to find a suitable test for light difference and used again the standard candle which I had originally used in my light minimum test. It was found necessary to have two candles, and I was greatly indebted to Messrs. Weiss for making an instrument which theoretically should have proved satisfactory, but which in practice failed to give a reliable test owing to the impossibility of ensuring that the light given by two candles even though "standard" ones, was identical. Messrs. Rayner, with whom I had also discussed the problem and its difficulties, took a great deal of interest, both in making and in carrying out suggestions, and the instrument which I am about to demonstrate is the result of their collaboration. Experiment with it shows, I believe, that it is an efficient test for "light minimum," "light difference," and also "light adaptation," the last being in some cases very different from "light minimum."

The instrument comprises an oblong wooden box containing the optical system, standing on another box containing the electrical resistance, on one panel of which are the controls for regulating the light of two electric standard lamps which form part of the optical system. On one side of the top box is a scale graduated in percentages of the light which falls on two opal plates about as he described. The light at its brightest is taken to be 100 per cent. In future instruments, for convenience of working this scale will be placed on the same side of the instrument as the electrical controls.

The top box is divided half-way across by a fixed partition, in which are two central square apertures, and at one end is an eye-piece, through which the square apertures are viewed. The other half is divided lengthwise by a fixed partition, on one side of which is an opal screen, fixed midway down the compartment, and on the other side a movable opal screen, which can be racked up and down the length of the compartment, and which is connected with a pointer running to a scale outside the box. At the opposite end of the box from the eye-piece is a standard 2-candle power lamp housed in a metal box, and so adjusted that half its light falls on one opal screen and half on the other, reflected light from one screen to the other being prevented by the partition. The illuminated screens can be seen through their respective apertures on looking into the eye-piece.

In the box containing the lamp is a slot into which a plate of "daylight" glass is inserted, and it is possible to insert plates of different colours so that the light minimum, light adaptation, and light difference of coloured light can also be observed. There is a shutter which is slipped over one of the apertures when light

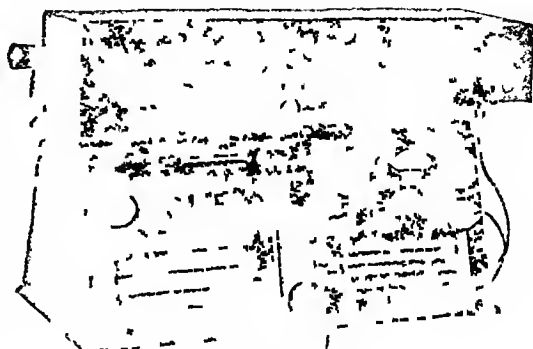


FIG 1.—The apparatus

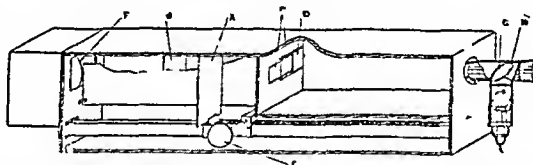


FIG 2.—a moving screen b fixed screen c aperture through which the two fields are examined d shutter to cut out field of fixed intensity for light minimum and light adaptation tests e pointer wheel for moving screen f standard lamp g plane glass screen reflecting light into the eye for light adaptation test h hanging lamp for light accommodation test

minimum and light adaptation are being tested. This shutter is controlled by a knob outside the box. Underneath the eye-piece is a small electric lamp, the light from which may be reflected into the eye at regular intervals, and so flooding it with light prevents, in certain circumstances, the illuminated aperture being seen. The lamp is switched off and on at regular intervals by a clockwork mechanism.

The instrument is designed to be run off any town current, and is supplied with resistances which may be varied to suit the current and which breaks it down to 6 volts. These are in the lower box. The control panel has on it a knob controlling a regulating main resistance, marked 100, 150, 200, and 250 volts. If it were known what resistance would be required the arrangement of the resistance would be simplified to some extent.

At the top left-hand corner is a long sliding resistance, for final resistance adjustments, while to the left is an ammeter, e, two switches, one controlling the standard lamp, the other the flashing lamp, and a short sliding resistance, d, beneath the ammeter which shuts the standard lamp, allowing it to be dimmed below its normal light. In the centre at the bottom, is a plug contact for the main, and there are two plug contacts one for each lamp. There is also a fuse in a convenient situation. The flashing

circuit has the same resistance as the other (with the exception of the shunt on the left-hand side of the box), and as the ammeter is in one circuit, the resistance controls are coupled together so that the adjustment of the one automatically adjusts the other. In the flashing circuit is a clock switch and lamp.

To adjust the instrument for use plug into the main current, place the pointer of the knob at the nearest voltage below that of the town circuit, for example if the town supply is 230 volts put the pointer at 200. Move the long resistance on the left to the maximum position, and switch on the standard lamp; the ammeter will now show a reading. The sliding resistance should now be moved until the ammeter shows a reading of 0.5 amperes. When dimming it is better to use the short shunt resistance and not the long one. When using the instrument I first test the light difference, then light minimum, and finally light adaptation.

I do not propose to say anything about the findings in diseased eyes but rather to indicate what one may expect to find in normal eyes. The intensity of the light used for the light difference test is 0.5 amperes, which gives approximately 2 candle power. The left eye being shaded and the movable opal square being placed in a position in which the patient can see that it is distinctly brighter than the other square, it is gradually moved nearer to it until it is thought to be equally bright. Then, moving it to a position in which it is distinctly duller than the fixed opal square, it is brought nearer until again it is thought to be identical in brightness. The two positions, as shown on the scale, are added together and then sum entered as the light difference of the eye. The same process is then gone through with the left eye.

Many persons with healthy eyes have a light difference of "3," while in a few cases I have found that they have a light difference of "1" or even three quarters. I believe that the average for a healthy eye is about "3," and I do not find that the light difference is affected, at my rate up to 55 or 60 years of age, by the advance in years. It is essential in all the tests that the patient should look directly forward, as the inner side of the retina is much more sensitive to light than the macula region.

In testing for light minimum push the square back so that only one square is visible. Move the square back to the position marked 100 on the scale. Commence with the ammeter registering 0.1 amperes and gradually increase the amperage registered by 0.05's until a glimmer of light is seen. When this is noted move the illuminated square back until no light is detected and enter as light minimum the amperage and the percentage of light seen. For example, 0.22—40 per cent, or 0.25—20 per cent, as the case may be. Healthy eyes at my rate up to 40 years of age, even usually begin to detect a glimmer of light with the ammeter reading 0.22 but as age advances the light minimum gets poorer. Frequently an amperage reading of 0.24 or 0.25 ampere is required when over 50 years of age.

The final step is to test for light adaptation. Wind the clock, switch on both lamps. A flash of light follows lasting two seconds, followed by three seconds' darkness. The patient is asked if he still sees the glimmer which was seen before, and is told he will see it best just before the flash returns.

It is often necessary to increase the amperage reading from 0.22 to 0.23 or even higher before the glimmer of light is seen. As soon as it is detected again move the illuminated square back from the 100 position until the point is found when the light vanishes. It is advisable to move it backwards and forwards several times, as the patients are usually more uncertain of the vanishing point than when testing for light minimum. The figure is entered, as before, as the light adaptation of the eye. It is interesting to note that patients who have a normal light minimum but a poor light adaptation will tell you that when they come out of the light into a dull room they have to wait a few minutes before they see clearly.

When I first used the instrument I quite anticipated that if the light minimum in each eye was the same, the light adaptation would also be the same in each eye. This is not the case. While often this is so yet in

some instances there was as much as 40 or 50 per cent difference in light adaptation between two eyes which had the same light minimum although in every way the eyes appeared normal. Why this should be so I have no idea and would be glad to have some explanation if this has been noted before.

DISCUSSION

Mr. A. S. PRINCE (Newcastle upon Tyne) said that without claiming scientific accuracy for Dr. Henry's instrument he had been amazed by the unfailing help afforded by his very simple method of testing the light sense by rotating discs which had so far never let him down. If the light minimum chiefly failed there was some defect in the receptive part of the visual apparatus—namely the bacillary layer of the retina, the visual purple, or the choroid. If the light difference (I D) chiefly failed there was some defect in the conducting part of the apparatus—namely the nerve fibres either the optic nerve, the nerve fibre layer of the retina or its trophic centre, the ganglionic layer of the retina. This could be easily remembered by ascribing I D with O D—the optic disc. I D failed in optic neuritis, retinobulbar neuritis, and what was now called toxic amblyopia. It would be found that if the eyes were covered with 03 or 04 neutral tinted glasses after a couple of minutes to get the eyes adapted to the diminished illumination the results of testing the light sense with his discs were exactly the same as with the uncovered eyes. This was of enormous practical importance in cases of cataract when no details of the fundus could be seen. Three years ago a patient came to him with cataract in both eyes, one mature, the other fairly advanced. In the "mature" eye he found I M far more reduced than the I D, he hence wrote to her doctor saying that he suspected a macular haemorrhage, and that in his opinion operation was inadvisable in that eye. Some six months afterwards she saw him again; her cataract had been removed quite successfully, so far as the operation was concerned, but with no visual success. Ophthalmoscopic examination showed the remains of a large macular haemorrhage.

A CASE OF PERFORATING WOUND OF THE EYE, WITH RETENTION OF A PILC OF GLASS

BY

R. COLLY, M.B. DOMS,

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The patient, Dr. C., was driving a car on the evening of January 1st, 1925 when he ran into a man whose head shattered the windscreen. The man was severely cut—the facial artery being severed. Dr. C. received a linear wound of the skin of the forehead and a perforating wound of the right eye.

On examination twenty to thirty minutes later there was an irregular perforating wound of this eye about 5 to 6 mm. long through the cornea sclera at the outer side, slightly below the horizontal, with a prolapse of the iris. There was a haze of the anterior chamber due to a hyphaemia, which was not a large one. The patient had only perception of light.

The prolapsed iris was removed, the pillars of the coloboma replaced as well as possible, and atropine instilled, with pad and bandage. I thought I saw an opacity of the lens. The eye did very well and a good view of the fundus was obtained by January 3rd. There was a star-shaped opacity at the posterior pole of the lens, and a piece of glass could be seen lying behind the outer part of the lens. The star-shaped opacity disappeared in a few days. The eye has remained quiet and white ever since, in fact, at no time was there any ebulgent injection except for the first few days. The vision, from being only perception of light, steadily improved as the hyphaemia absorbed, until it became as it is at present.

The condition on April 17th was R V 6/5 (less 4) c plus 05 vis 160° 6/5 L V 6/5. There was an irregular cono-scleral scar about 5 to 6 mm. long at the outer side of the right eye just below the horizontal, with a pear-shaped pupil—the point towards the wound. Both pillars of the coloboma

were slightly adherent to the corner at the site of the wound. The pupil reacted well to light, and tension of the eye was normal, the lens was clear. The piece of glass could be seen lying behind the outer part of the lens. The glass, as measured roughly through the corner, appeared to be about 7 to 8 mm. in length and about 4 mm. in width, and roughly triangular in shape. It was immobile during movements of the eye and had some pigment spots on it. The fundus was normal.

The condition on June 5th was R V 6/5 without glass, I V 6/5. Apart from slight improvement of vision, the right eye was as on April 17th.

The condition on July 10th was R V with and without glass = 6/5 and J 1 L V 6/5 and J 1. The piece of glass appeared to be a little further away from the lens than it was at the last examination, otherwise the condition of the right eye was the same. The x-ray examination was negative.

My reasons for showing the case are

(1) The happy result, in that the vision is normal, 6/5 and J 1, the cosmetic effect is good, and the patient suffers no trouble or inconvenience.

(2) The fact that the piece of glass can be seen behind the lens quite easily.

(3) It adds one more case to a long list showing that various injuries to the eye due to glass are often followed by good results. The reasons suggested for this are: Glass appears to be fairly aseptic—probably owing to the smooth and polished surface, as mentioned in respect to spectacle glass by D. V. Cuth in the *British Journal of Ophthalmology*, 1919 vol 3, p 159, where he quotes Harb, who states that a well polished surgical instrument can be rendered germ free or nearly so by simple mechanical rubbing. An ordinary windscreen, however, does not suggest asepsis, but possibly the piece of glass came from the deep layers of the windscreen. Being sharp, often a great force is necessary for glass to penetrate, and thus the eye is not disorganized. Glass is chemically inert.

(4) The prognosis seems good, for the following reasons. Apart from the first few days the eye has never shown any irritation and remained quiet ever since accident. The glass appears to be quite immobile during the movements of the eye to be in practically the same position as it was originally, and not to be pressing on any important structure. Judging from the literature on the subject, I think one is justified in giving a fairly good prognosis in this case.

Numerous cases have been reported in which a piece of glass has remained in the eye for years. In the *Transactions of the Ophthalmological Society of the United Kingdom*, vol xvi, p 290, Mr J. H. Fisher reports two cases of removal of glass from the eyeball. In the discussion which followed, the late Mr Devereux Marshall referred to a case which had been under the late Sir J. Tweedy in which a large amount of glass was left in the eye and the vision was 6/6 and J 1 twelve to thirteen years later but by this time the lens appeared to be becoming opaque. Also on the same occasion the late Mr Huxtridge mentioned a case of a piece of glass projecting above the optic disc of five years' standing and the vision was 6/5.

In the *American Journal of Surgery* vol xxxi, 1922, p 228 the late Mr J. H. Claiborne reported a case of removal of a piece of glass from the interior of the eye—the interior chamber—after thirteen years. The glass was originally in the lens which became opaque after some years, and was absorbed.

In the *British Medical Journal* of 1888 vol i pp 895 and 1215 Mr T. H. Bickerton reported two cases of removal of pieces of glass from the eye—in the first from the interior chamber where the glass had been for ten years, and in the second also from the interior chamber the lens had been injured and absorbed. In this case the glass had been in the eye for seven years.

Thus from the few cases I have mentioned it seems that the eye can tolerate glass for long periods if the glass is not pressing on important structures though in the first case mentioned by Mr Bickerton the glass was lying in the interior chamber and apparently only caused irritation when active exercise was taken.

In conclusion I should like to thank our President, Mr Beaumont, who saw the patient with me at the time of the accident, Mr Cyril Walker, who saw the patient on two occasions and examined him on the slit lamp and Dr Macleay for the x-ray examination.

DISCUSSION

Dr H. H. Tyson (New York) said that some twenty-five years ago he saw a case in the late Dr Horn in Knapp's hospital in New York in which a rectangular piece of glass had remained encapsulated in the retina for over ten years. As the eye was quiet and vision good no interference was attempted.

Dr CHAMBERS JAMESON (Brooklyn, New York) said he would like to discuss Mr Colley's paper in which he obtained such an excellent result, not so much from the standpoint of a returned foreign body but that of a perforating wound of the cornea with prolapsus or incarceration of iris. In the last ten or fifteen years he had many times adopted a method of replacement, which he had outlined in the *Archives of Ophthalmology* some years ago. It was adapted to select cases of prolapsus, principally where the wound was small and encircled, and in which the period of incarceration had been of short duration. The examination of cases had ranged from seven to forty-eight hours after the injury. The method consisted in making a counter opening in the periphery of the cornea, passing a delicate bent blunt hook around the neck of the incarceration within the chamber and by gentle pressure without, and still more careful traction on the hook from within, the prolapsus was reduced and the iris replaced unharmed. There was no danger of injuring the lens as the hook was introduced in front of the iris. He sterilized the prolapsed iris before replacement with a solution of silver nitrate. The method had several advantages: (1) It brought into use two forces for replacement instead of one—namely, slight pressure and replacement from without and moderate traction from within the chamber. (2) It equalized the flow of aqueous diverting it in part from the wound to the counter opening, thus lessening the danger of prolapse after replacement, as well as enabling the surfaces of the wound to approximate and heal. (3) It permitted free sterilization as saline solution could be passed from wound to counter opening. (4) It prevented mutilation of the iris, the leaving of an unsightly coloboma of the iris (in case of excision), and also the exposing of the vessel system to infection. In many cases the eye was restored to its normal appearance, with no detection of any evidence of injury.

Mr THOMAS H. BICKERTON (Liverpool) said that in several cases of acute glaucoma the constant application of ice had after some hours, reduced the tension to normal, which had remained permanent. In other cases, recurrence had occurred, and again been reduced to normal by ice. In other cases—and the majority—operation had become necessary.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

SPHEROIDAL CELLED CARCINOMA OF OVARY IN A CHILD OF EIGHT

IN Mr S. J. Cameron's paper on malignant disease of the ovaries and Fallopian tubes read in the Section of Obstetrics and Gynaecology of the Annual Meeting¹ the youngest case of carcinoma of the ovaries quoted was over 19 years of age. In view of this the following case may be of interest.

A girl aged 8 years was brought to the South Devon Hospital Plymouth in the spring of 1923. She had complained for four days of pain in the lower abdomen. It was constant and severe, increasing very much during defaecation. For two days the lower abdomen had been seen to be swollen. The bowels had been open once daily and there had been no vomiting. Micturition had been normal. The child had been getting thin during the last month otherwise nothing unusual had been noticed about her.

She was a well grown girl normally developed and fairly well covered. Her expression was anxious but she did not look ill.

¹ BRITISH MEDICAL JOURNAL August 15th, 1925.

Reviews.

MEDICAL SOCIOLOGY

A recent volume of the *Traité de Pathologie Médicale et de Thérapeutique Appliquée* edited by Professor L. SANCHEZ and Dr. R. BARRAS, is concerned with medicine in relation to social services (*Médecine sociale*) and is the work of twenty writers. An introductory chapter by Dr. Camou reviews the history and purpose of social medicine, the various institutions and services engaged in its work, and developing it and the need of co-ordinated effort by all employed in improving the social condition of the people. The volume is divided into two parts—preventive medicine and curative medicine. The first part is devoted to social hygiene and care of school children, child welfare, adolescence, care of the aged, hygiene and social services in connection with the working class, workmen's compensation and public health measures, organization and administration of hospitals, kindergartens, alcohol and narcotic drugs, prevention of mental disease and care of mental defectives are dealt with successively in the chapters of the first part. The second part consists of some seventy pages and is not separated into chapters. It details the systems of training and organizing social workers for hospital and domestic work and the methods of supervision of factories and factory girls by fully superintendents.

The immense importance of combating the decline of population in France gives special interest to the chapters on the social protection of the rising generation. In the chapter on maternity, Professor Concheville discusses the care of the mother from the time of conception to the time of weaning. He attributes the excess of deaths over births in several years since 1890 solely to voluntary control of conception. The chapter on child welfare contains an exhaustive inquiry, amongst other matters into the causes of infantile mortality in France and the influence of disease, season, sex, social condition of parents, environment, feeding and illegitimacy. In the chapter on school life reference is made to the importance of determining the pupil's aptitude or inclination for any special work or profession and of directing his studies accordingly, a point in education that is more often honoured in the breach than in the observance. The contributors to the chapter on moral education are a Roman Catholic, a Jewish, and a Protestant clergyman who describe the facilities for physical and moral culture of the young afforded by their respective religious institutions and social services, such as hostels for young people, young men's and young women's Christian associations, and boy scout and girl guide movements. The care of the aged is considered from the point of view of old age pensions and asylums, of which there are good descriptions and illustrations.

The chapters on the hygiene and social conditions of the working classes and on workmen's compensation and public health insurance are of special interest in view of the important place these subjects occupy in the politics of most civilized countries at the present time. They review industrial legislation in France, especially the system of medical arrangements in factories, provision of facilities for mothers and management of infants while at work, and the organization and management of creches. As regards workmen's compensation the French system of making the employer liable and leaving him to cover himself by insurance is compared with the German system of a contributory payment by wage-earner and employer to a State fund. The German system is still in force and is preferred in Alsace Lorraine and commerce and agriculture, and to insure all persons employed in industry, earning less than £400 a year. They would be insured not only against accidents, but also against sickness, maternity, and death. Although 10 per cent of the wages half by the employer and half by the employee, would be contributed

Traité de Pathologie Médicale et de Thérapeutique Appliquée Publié sous la direction de L. SANCHEZ et R. BARRAS. I. Médecine sociale. Paris: Maloine et Fils, 1925. (Demy 8vo pp. viii + 775. 10 figures. Fr. 45.)

The tongue was very full, the temperature was 96° and the pulse 96. A tumour was visible in the left groin and the pulse below the umbilicus. It was firm to the touch and highly tender. On rectal examination a mass was palpable in the pouch of Douglas. A tentative diagnosis of impeded growth was made. At operation a solid tumour was found growing from the left ovary but extending beyond its envelope. The tumour was made encased except the right extremity which was tumorous and becoming adherent to coil of small intestine. The tumour was both ovarian and tubal in origin. No other focus of growth was seen. On microscopic examination the tumour proved to be a spheroidal cell carcinoma.

Twelve days after the operation enlarged glands appeared in the right groin and two days later in the left groin. The child then went home with a bag of pus. A month later she was readmitted with a tumour similar to the original one and nodules, one of which was tumorous, through the wound in the abdominal wall. She was caesarean and died ten days later. Terms could not be obtained for a post mortem examination.

I am indebted to Mr. H. G. Pinker, who has kindly allowed me to publish this case.

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THE RECOGNITION OF LATENT JAUNDICE DURING TRIAL WITH ARSENICOBILIN

A paper on this subject by Surgeon Lieutenant-Commander W. I. GERRARD, Royal Naval Hospital Haslar, was published in the *British Medical Journal* last year (vol. ii, p. 224) and a little later (p. 542) Dr. A. M. STURRIT wrote to suggest that the cause of the frequency of the occurrence at Haslar was the intensity of the course. We have since received the following note:

During the past fifteen months at the Royal Naval Hospital Hong Kong 346 cases have been treated with arsenicobillin, three only have developed jaundice—an incidence of 0.86 per cent. Two were undoubtedly toxic in origin, the third doubtful. The cases are divided into three groups:

Injection No 1	A	B	C
No 2	0.45 gram	0.45 gram	0.45 gram
No 3	0.6	0.6	0.6
No 4	0.9	0.6	0.6
No 5	0.9	0.9	0.6
No 6	0.9	0.9	0.9
	0.9	0.9	0.9

Group A consisted of 123 cases, but as 14.6 per cent of reactions were occurring, the dose was reduced to that under Group B. In this group we still got 15.4 per cent reactions at the time and the dosage was further reduced to that under Group C. In 186 cases in this Group C the reactions at the time were reduced to 6.4 per cent.

In batches A and B no cases of jaundice occurred, but in the last batch, C—that is the batch given the smallest dose—all three recorded cases of jaundice occurred.

In every case the interval between the injections was the same (namely, three days) and the strength of the solutions used relatively the same—that is 0.45 gram arsenicobillin in 0.45 c.c. distilled water, 0.6 gram arsenicobillin in 0.6 c.c. distilled water, and 0.9 gram arsenicobillin in 0.9 c.c. distilled water. In every case the solution was filtered before injection through several thicknesses of gauze.

From the above experience it would appear that the intensity of the course has no bearing on the subsequent incidence of jaundice, in fact the smaller the total amount given the greater the incidence of jaundice. Possibly the reason for this Dr. Sturrit has recorded no cases of jaundice in following up the after-history in civilian practice.

H. W. FITZROY WILLIAMS, M.B., D.P.H.,
Surgeon Lieutenant-Commander R.N.

Hong Kong

to the compensation fund, the writer of this chapter considers that the State will have to contribute in addition some £20 000 000 annually (at par value of the franc) to meet the liabilities, and employ some 15,000 officials drawing £2,500,000 in salaries to administer the Act. This chapter contains much food for thought in connexion with the medical administration of workmen's insurance and the responsibilities it involves.

The chapter on hospitals contains some interesting tables, one of which compares the proportion of hospital beds to population in the principal cities of Europe. Rome has apparently the highest proportion, 9 per 1,000 inhabitants. Lyons with 8.7, Copenhagen with 8.1, and Brussels with 7.2 beds per 1,000 come next, while London with 4.2, Glasgow with 3.3, Liverpool with 3.2, and Manchester with only 2 beds per 1,000 inhabitants, the worst provided of all, compare unfavourably with the other cities. So far as the British hospitals are concerned these figures are, however, unreliable. They do not include for example, the accommodation in Poor Law infirmaries in the case of Manchester, where the number of Poor Law beds is nearly double that in the voluntary hospitals, and unless Poor Law beds are taken into consideration the hospital accommodation in Great Britain is not comparable with that of Continental countries.

The chapter on medical sociology in relation to alcohol and narcotic drugs is written by Dr Legrain, a strong advocate of prohibition. He has no faith in coercive measures, such as fines and imprisonment for drunkenness, and urges complete suppression of the manufacture of alcoholic drinks. In France, where viticulture is a national asset prohibition would appear to have no foothold, but Dr Legrain argues that neither the wine growers of the south nor the distillers of the north need suffer financially, for the grapes can be utilized profitably for the production of non-alcoholic foodstuffs, as is now being done in many parts of Switzerland, and the beetroot for increasing the production of sugar. His most impressive argument from a national point of view is that the production of wines, spirits, and beers uses up huge quantities of fruits, root crops, and cereals which would otherwise add to the food supplies of the country. The means of educating all classes to accept prohibition occupies a considerable portion of Dr Legrain's chapter. His remarks on the social evils of narcotic drugs and the means of suppressing them are comparatively brief. Eugenics and mental consulting clinics form a considerable section of an up to date chapter on the prevention of mental disease.

The volume contains a vast amount of useful information regarding the social institutions and social activities, both official and private in France and to some extent in other countries. It merits close study, not only by members of the medical profession, but also, and more especially, by statesmen, politicians, public officials, and all who are interested in improving the health and social conditions of the people. Lawyers, clergymen, public officials, and social workers, as well as members of the medical profession, have contributed to its pages.

THE ROOT CANALS OF THE TEETH

The shapes of the root canals have an obvious and important bearing on the vexed questions of the preservation of pulpless teeth and of the dangers of crowns. So long as a root canal was believed to be a single tube, more or less straight it was reasonable to assume that it, at least could be sterilized. But for some years evidence has been accumulating tending to show that simplicity is the exception rather than the rule. In a volume on *The Anatomy of the Root Canals of the Teeth* WALTER HERS and ERNST ZÜRCHER, both working at Zurich, publish the results of their extensive and laborious researches on this point. They have elaborated a method of using dental rubber which enables them eventually to dissolve

away the tooth and leave a accurate replica of the root canal and its ramifications. Their results show that simplicity is far from being the general rule. Simplicity is most likely to be found in early life before the closing of the apical foramen, and in late life when the whole pulp is calcified.

We must confess to being puzzled by what are called "marrow canals." These may connect the root canal with the periodontal membrane, and yet are described as absent in the earlier years of life. Are they, then, a result of absorption?

This small volume embodies a most valuable piece of work both for the dentist and the medical practitioner.

ANNALS OF MEDICAL HISTORY

The second quarterly instalment of the seventh volume of the *Annals of Medical History* contains ten original essays besides editorial articles and reviews, among the latter are two by the editor *A Surgical Pilgrim's Progress (1845-1925)*. *The Reminiscences of L. S. Pilcher* and the third edition of the late Sir Richard J. Godlee's *Life of Lord Lister*, while Dr F. M. Garrison speaks of Dr F. R. PICKARD's book on Guy Patin as written by "our best scholar in French and American medicine." The frontispiece represents the late Dr Robert Fletcher of the Surgeon-General's Library and the *Index Medicus* taken from a crayon drawing by the French artist P. Renouard. Dr Fletcher is supposed to be solemnly presiding at an anthropological meeting, and at his back are two diabolical faces by no means suggesting a serious assembly. The first article is on Chinese drug stores, which Dr K. K. Chen of Peking has illustrated by twelve figures including two prescriptions. Mr G. E. Bouquet describes the life and physiological researches of the Rev Stephen Hales especially his observations on arterial blood pressure which carried the study of the circulation beyond Harvey's work and introduced the method of quantitative investigation. Dr Jonathan Wright supplies a thoughtful essay on Plato's *Timaeus*, and Dr Louis J. Bragman gives the rules of physical hygiene formulated by Maimonides, the Jewish physician and philosopher of the twelfth century. Arminius Hansen (1841-1912), who was chief physician for leprosy in Norway from 1875, was, so his countryman Dr I. Kolbo tells us, a keen champion of Darwin's theory of evolution from the start, and was much influenced by D. C. Danielssen, the founder of scientific leprology. As showing the effect of Hansen's efforts, attention should be directed to the fact that there were 2,209 lepers in Norway in 1875, and only 140 in 1923. Dr J. Moores Ball gives an account of an "illegitimate son of Aesculapius," Samuel Thompson, who patented a "system" of medicine as set forth in his *New Guide to Health or Botanic Family Physician* (1835), to which was affixed a narrative of his life and "medical discoveries," which, Dr Ball remarks, amounted probably to nothing not previously known. Dr David Reisman, whose numerous contributions to the *Annals* are always interesting, writes on Thomas Sydenham, clinician and touches on the gulf that separates him from his great contemporary William Harvey. Perhaps the most attractive article in this number of the *Annals* is a selection from *Rambles in Europe in 1839* by William Gibson, professor of surgery in the University of Pennsylvania, published in 1841, this book is now so rare that Dr Pael and I have done well to present to us its pleasant personal sketches of the great men of that time, such as Sir Astley Cooper, Sir Benjamin Brodie, Samuel and Bransby Cooper, Liston, James Wardrop in London, and of Velpeau, Lisfranc, Ricord, Guerin, and Civiale in Paris. Elsewhere in this issue will be found an extract sent to us by Dr Rawson describing the annual meeting of the Provincial Medical and Surgical Association (which afterwards became the British Medical Association) in Liverpool in 1839. The reader will find in Dr Alexander Randall's notes on emphysemas in the collection of calculi in the Royal College of Surgeons of England some of the *spolia opima* of the surgeons described by Gibbon.

The Anatomy of the Root Canals of the Teeth of the Permanent Dentition. By Walter H. M.D. D.D.S. *The Anatomy of the Root Canals of the Teeth of the Deciduous Dentition and of the First Permanent Molars*. By Dr. Med. Dent. Ernst Zürcher. London: John Bale Sons and Daniels Ltd. 1925. (Roy. 8vo pp. 119, 1. 80 figures, 63 plates, 16 net.)

Annals of Medical History. June 1925, vol. vii, No. 2. Edited by Francis R. Pickard, M.D. New York: L. L. R. Hoeber, Inc. London: Baillière Tindall and Cox. (8½ x 11½, pp. 103, 202, illustrated. Subscription in Great Britain £2.2. for four numbers.)

THE MINISTRY OF HEALTH
Messrs PUTNAM have issued the second volume of their Whitehall series of handbooks. The subject of the first volume is the Home Office by a retired civil servant and the second devoted to the Ministry of Health, is by another retired civil servant, Sir Arthur Newsham, who was for seven years principal medical officer of the Local Government Board. In twenty chapters the author gives a succinct account of the development and operations of the central and local health authorities of England and Wales, a task for which he is well qualified by his own forty years' experience as a medical officer of health and as Principal Medical Officer to the Local Government Board. Apart from expressions of personal opinion on which there is always plenty of room for differences of view the book is a comprehensive and unimpeachable compilation of facts, and will be very useful to those for whom the Whitehall series is intended—members of Parliament, civil servants, municipal workers, journalists, students of administrative methods, young men and women thinking of the civil service as a career, and the general reader who is interested in the government of his country.

NOTES ON BOOKS

DR PAUL HAUDURY's recent monograph on *Le Bactériophage d'Hérèlle* is the first comprehensive study of this subject since the appearance of d'Hérèlle's work in 1921. Dr Haudury is specially qualified for this undertaking as he was one of the first to call to the importance of d'Hérèlle's phenomenon and has devoted particular attention to it in eight chapters, devoted respectively to the history of the bacteriophage, the phenomenon itself, the properties of the bacteriophage, and immunity with therapeutic applications, the technique of its isolation and the importance of d'Hérèlle's discovery. As Professor Bezançon says in the preface d'Hérèlle's discovery not only reveals a new invisible virus but also completely modifies the classical doctrine of immunity, and opens up new paths in prophylaxis and treatment. Dr Haudury's book is an admirably clear exposition of the subject which will be of interest alike to the bacteriologist and the clinician.

The work on the principal social narcotics by Dr LEGRAIN, the well known Parisian alienist, is based on his experience during the last thirty five years in his campaign against opium, alcohol, and tobacco. The first four chapters are devoted to the history and prevalence of the consumption of opium, special stress being laid on the part played by the European powers in pressing, as is alleged, the sale of opium in China. Then follows a short chapter on tobacco the use of which, according to the author, admits of no excuse whatsoever as it does not possess any therapeutic properties like opium, nor any alimentary properties like alcohol, but is merely a costly and dangerous narcotic. The remaining seven chapters deal with alcohol from the historical, sociological, and political standpoints. The second part consists of seven chapters in which the psychological aspects of endemic intoxication are considered. In the third part the remedies for these evils are discussed. Dr Legrain, who is an uncompromising advocate of total abstinence and prohibition, warmly upholds the preparation of non-alcoholic drinks from grapes, an industry which he says was first started in Switzerland in 1880. There are two appendices dealing respectively with the Opium Conference at Geneva in 1925 and the duties imposed on non-alcoholic drinks in various countries.

The recently published work on prostitution by the late Dr IWAN BLOCH and Dr GEORG LOEWENSTEIN represents the first half of the second volume on this subject. The first volume dealing with the history of prostitution from the earliest times until the end of the fifteenth century was

- * The Ministry of Health By Sir Arthur Newsham KCB MD
(Cr 8vo pp 271 5s net)
* Le Bactériophage d'Hérèlle Par le Dr Paul Haudury Préface du
Professeur Fernand Bezançon Paris Le François 1925 (Cr 8vo
pp vi + 212 Fr 10)
* Les Grands Vénéreux Sociaux Par le Dr Legrain Paris A Maloine
et Fils 1925 (Cr 8vo pp 459 Fr 20)
* Die Prostitution Zweiter Band By Dr med Iwan
Bloch and Dr med Georg Loewenstein Erste bis vierte Auflage Berlin
Louis Mareu 1925 (Med 8vo pp viii + 728 M 12)

published in 1912. It is entirely written by Dr Bloch, who died ten years later, and the continuation of the work was entrusted to Dr Loewenstein of Berlin. The present instalment, which consists of ten chapters dealing with the history of prostitution from the appearance of syphilis at the time of the Renaissance until the end of the eighteenth century, is a mine of information for the medical historian and the venereologist. The second half of this volume is promised for the end of 1925.

Yourself and Your Body written by Dr W. T. GIFFELL of Labrador, is a children's textbook of anatomy and physiology. The story is told with all the tricks of the fairy tale, and illustrated with ingenious diagrams drawn by Dr Giffell himself. It is astonishing to find what complicated things Dr Giffell can explain in simple language and illustrations by pictures. Thus the chemistry of respiration, the digestion of food, and the functions of the central nervous system are made as engrossing as the tale of Little Red Riding Hood or Jack and the Beanstalk. Like many other books written for children, this too might be read with profit by many parents.

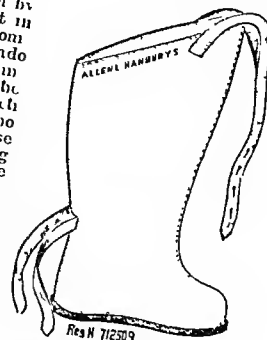
The eighth edition of *Income Tax and Super Tax Tabular* has been prepared with a view to providing information about income tax and super tax in a form which shall aid in the unravelling of tax liabilities and claims. Tables are provided showing the various allowances, and the money values of various totals of allowances, illustrations of the rules in operation, the actual return of dividend, with the tax at 5s, 4s 6d, and 4s respectively rates of super tax from its institution and the total super tax on various incomes. The particulars given cover this year's Budget. An abstract of the legal position is given in popular language, supplemented by a statement of nearly forty heads of repay, ment claims classified as relating to domestic concerns, land and buildings, and business. The publication should be found of considerable value, though it makes no claim to be a manual of income tax.

I lent Colonel SHAW, I.M.S., who has had experience as superintendent of three mental hospitals in India—Bangalore, Lahore, and Poona—successively, has written a *Clinical Handbook of Mental Diseases* in which an introduction on the nervous system and psychology, the different types of insanity are described. Three useful appendices deal with the transfer of Indian lunatics to England with military insane, and with the construction of mental hospitals in India. The work will be found useful by students and practitioners in that country. The type is clear, and we have noticed only two misprints.

- * *Yourself and Your Body* By W. T. Giffell M.D. (Cr 8vo pp viii + 317 1s 6d net)
* *Income Tax and Super Tax Tabular* Fifth edition. Edited by T. C. Giffell (Cr 8vo pp viii + 317 1s 6d net)
* *Clinical Handbook of Mental Diseases* By W. Shaw I.M.S. (Cr 8vo pp 202 + index R 3s)
* *Medical Practitioners in India* By W. Shaw I.M.S. (Cr 8vo pp 202 + index R 3s)

MEDICAL AND SURGICAL APPLIANCES

Operating Boots
Mr Eric Pearce Gwyn MCh FRCs (London) writes: The operating boots here illustrated are the outcome of an attempt to obtain a legging which could be worn if desired over outdoor shoes and repeated sterilization by dry or moist heat be easily kept in place and wrap up into small compact form. The sole of the boot is made of a kind of rubber which is unaltered by boiling or steam and the upper is of white coutil which is washed well and is attached to the sole by hand sewing without the use of rubber solution. The single long flap in front allows the boot to be attached to a front brace button and the ankle flaps tied over the instep keep the foot portion in place. I have had one pair in constant use at hospital for the last nine months and they show as yet no signs of wear. I am indebted to Messrs Allen and Hanbury Wigmore Street W1 from whom the boots can now be obtained for the trouble they have taken in finding the right materials to meet the objects I had in view.



Res N 712509

THE BRITISH ASSOCIATION

THE ninety-fifth annual meeting of the British Association for the Advancement of Science began in Southampton on Wednesday, August 26th, when Major General Sir David Bence, A.M.S., F.R.S., was succeeded as President by Professor Horace Lamb, F.R.S., who held the chair of mathematics first in the University of Adelaide (1875-1885) and then in the University of Manchester (1885-1920). Among the thirteen sections are those of physiology, anthropology, psychology, and zoology.

The President's Address

The address delivered by the President on Wednesday evening fell into two parts, the first consisting of some reflections on the nature and purpose of science in general, and the second dealing with geophysics, a subject on which he is in acknowledged authority. In his opening remarks he said that the answer to the question, "What was the general aim of science?" was usually the almost consecrated formula, "To subdue the forces of nature to the service of man," as it was impossible to say what abstract research might not provide a clue to something useful; the more speculative branches of science were not only to be tolerated but to be encouraged within limits as ancillary to the supreme end. The President professed himself dissatisfied with this answer, though he recognized that practical utility had been a conscious but not the sole aim in much scientific work and sometimes perhaps its main justification, and continued as follows:

The primary aim of science is to explore the facts of nature to ascertain their mutual relations and to arrange them as far as possible into a consistent and intelligible scheme. It is this endeavour which is the true inspiration of scientific work, as success in it is the appropriate reward. The material effects come later, if at all and often by a very indirect path. We may I think claim for this constructive task something of an æsthetic character. The provinces of art and science are often held to be then and even antagonistic but in the higher processes of scientific thought it is often possible to trace an affinity. The mathematician at all events is at no loss for illustrations of this artistic faculty. A well ordered piece of algebraical analysis has sometimes been compared to a musical composition. This may seem fantastic to those whose only impression is that of a mass of curious symbols but these bear no more resemblance to the ideas which lie behind them than the equally weird notation of a symphony bears to the sounds which it connotes or the emotions which these evoke. And it is no misplaced analogy which has led enthusiasts to speak of the poetical charm of Lagrange's work or the massive architecture of Gauss's memoirs or the classic perfection of Maxwell's expositions. The devotees of other sciences will be at no loss for similar illustrations. Is it not the case for instance that the widespread interest excited by the latest achievements of physical science is due not to the hope of future profit though this will doubtless come but to the intrinsic beauty as well as the novelty of the visions which they unfold?

To draw a sharp antithesis between pure and applied science would, Professor Lamb said, be mischievous. The most severely utilitarian result had often been reached through a long and patient process of study and experiment conducted on strictly scientific methods. The duty pure science owed to industry must also be recognized through the impulse derived from the suggestion of new problems and the extended scale on which experiments became possible. The National Physical Laboratory initiated mainly in the higher interests of industry, had, through the pressure of the matters submitted to it, grown into a great institute of theoretical as well as applied science, informed throughout by the true spirit of research. Nevertheless, the most momentous consequences of the increased scientific activities of our time had been on the intellectual side. There was reason to rejoice that the conflict at one time keen and bitter, between authority and science over matters entirely within the province of the latter had become obsolete. One side had become more tolerant, the other less aggressive and there was a disposition on both sides to respect each other's territories. The quarrels were political rather than ecclesiastical. The habit of sober and accurate analysis which scientific pursuits tended to pro-

mote was not always favourable to social and economic theories which rested mainly on an emotional if very natural basis. A certain dumb hostility was to be traced which, without venturing on open attack, looked coldly on scientific work so far as it was directed to purposes of obvious and immediate practical utility.

Science was also exposed to another and more open kind of criticism in quarters where it might fairly look for countenance and sympathy. Its burden was disappointment and disillusion, and there were some who spoke of the "bribe rupter of science." This seemed to mean that science at one time or other had held out promises it had been impotent to fulfil, and had inspired vague hopes that had proved delusive. It might be admitted that extravagant and impossible claims had sometimes been made on behalf of science, but not by the real leaders, who had always been modest in their claims and guarded in their forecasts. In the enthusiasm which attended the first sensational developments of modern industry hopes were conceived of a new era, where prosperity would ever increase, poverty would be at least mitigated and refined, and national antipathies would be reconciled. When these dreams did not swiftly come true there was a reaction, the idols were cast down, and science in general had rather unreasonably come in for its share of depreciation. Science, however ought not to be held responsible for the failure of hopes which it never authorized. Its province, though vast, had its limits. It could have no pretension to improve human nature, it might alter the environment, multiply the resources, widen the intellectual prospect, but it could never fairly be asked to bear the responsibility for the use made of those gifts, that must be determined by other and higher considerations. "Medical science, for instance, can give us longer and healthier lives, it is not responsible for the use we make of those lives. It may give increased vitality to the wielder as well as the just, but we would not on that account close our hospitals or condemn our doctors." In spite of criticisms men of science might claim without arrogance but with confidence that their efforts had a place, not a mean one in human activities, and that they tended, often in unimagined ways, to increase the intellectual and the material, and even the æsthetic possessions of the world. "In that assurance we may rejoice that science has never been so widely and so enthusiastically cultivated as at the present time, with so complete sincerity or (we may claim) with more brilliant success, or even with less international jealousy."

Professor Lamb then turned to the discussion of certain problems in geophysics, dealing in particular with the figure of the earth and the variation of gravity, and expressed regret that the observational side of geophysics had been so little cultivated in this country. In India with its wide opportunities, geodetic and gravitation work had long been carried on with high efficiency but in the home country, although it had an admirable topographical survey, nothing had been done towards a gravimetric survey since the time of Kater, more than a century ago. Proposals for the establishment of a formal geodetic institute had been made before the war, but had to be abandoned owing to the exigencies of the time. It was therefore some satisfaction to record that a modest beginning had been made at Cambridge by the institution of a readership in geodesy. Turning then to the age of the earth, Professor Lamb observed that radioactive speculation founded on a comparison of the amounts of uranium and of the end products associated with it, had led to estimates of the time that had elapsed since the final consolidation of the earth's crust. The conclusions drawn would be willingly accepted by geologists and biologists as giving ample scope for the drama of evolution. Geophysics afforded instances of a way in which speculations which appeared remote from common interests might ultimately have an important influence on the progress of science. The history of science was full of examples where one branch of science had profited by another in unexpected ways. To promote this interaction between different branches of science was one of the most important functions of the British Association and differentiated it from the various sectional congresses held from time to time.

British Medical Journal.

SATURDAY, AUGUST 29TH, 1925

PREVENTION OF TUBERCULOSIS IN CHILDREN

PROFESSOR CALMETTE came to the conclusion after many years of laboratory research that acquired immunity to tuberculosis could only be reached by vaccinating with a living virus deprived of its capacity for producing the disease tuberculosis by some device of the laboratory such as that used by Pasteur in the preparation of his anthrax vaccine. Since the publication of his masterly treatise on tuberculosis Professor Calmette has been directing his research towards the discovery of such a vaccine. This living yet non-tuberculous virus ought to have the quality of being non-poisonous to susceptible animals and yet have the capacity of protecting animals not hitherto exposed to the tubercle infection. The communication he and certain colleagues made to the *Académie de Médecine* on June 16th encourages a hope that the objective of many years' study is within sight even if it has not already been reached. The communication was founded on the experience gained over a period of three years with a new vaccine designed to prevent the development of tuberculosis in infants born of tuberculous parents.

Both in its manner of preparation and method of administration this vaccine differs from previous preparations. The original source of the vaccine he now advises was an extremely virulent strain of the bovine type of tubercle bacillus which after more than 230 successive cultures on an alkaline medium over a period of thirteen years has been deprived completely and hereditarily of its capacity of initiating tuberculosis yet the microbe remains toxic for tuberculous animals, scatters tuberculum, and provokes the formation of antibodies in the same way as a virulent tubercle bacillus. The vaccine is known in France as BCG. It can be given without risk by mouth, intravenously or subcutaneously.

The results so far obtained with this vaccine have been most promising. In the first six months of 1922 178 infants born of tuberculous parents were vaccinated and in the three years which have since elapsed not a single one of these has died of tuberculosis, though 15 have died from other causes. Some of these vaccinated children have remained in the same homes as their phthisical parents, but show no signs of the disease. Apart from tuberculosis, the general mortality of the 178 children has been 8.4 per cent, a figure considerably lower than the infant mortality of other children in France. A preliminary communication about this work was published last year and in the intervening twelve months numerous demands have been made for the vaccine but the general supply has been reserved for the protection of infants born of tuberculous parents or exposed to infection in their homes. The vaccine has been given before food on the fourth, sixth, and eighth, or the first, seventh, and ninth days after birth. During the last twelve months 2,070 newborn children have received this vaccine in Paris and other parts of France.

¹ Reviewed in the *British Medical Journal* December 11th 1920 (p. 894).

and Belgium. Up to June 1st 1925, Professor Calmette had been able to trace 423 of these infants vaccinated at least six months previously, and none of them had died of a tuberculous infection, 30 deaths had actually occurred among these 423 children, a mortality of 7 per cent, and the only cause of death which might possibly have been of tuberculous nature was meningitis reported in two cases. These facts are noteworthy in view of the heavy toll which tuberculosis ordinarily exacts from the offspring of tuberculous parents.

The value of this new method of treatment is being tested by clinical and experimental methods. Under the heading 'Clinical' Professor Calmette describes research which has been inaugurated to discover the usual mortality rate of tuberculous mothers and the tuberculous mortality rate of infants born of tuberculous mothers. Though still in a preliminary stage this investigation has already revealed some striking facts. Thus it appears that every infant of a tuberculous mother not removed to a non-infectious environment has at least one chance in four of succumbing to tuberculosis in the course of the first year of its existence. In comparison with this the tuberculosis mortality of children vaccinated in 1922 was not less than 0.5 per cent for infants vaccinated between July 1st and November 30th 1924 and not also for those children 137 in number who have lived more or less constantly exposed to family contagion.

Professor Calmette has not reported in full all the experimental work which has been carried out on monkeys and calves. He promises that this shall be published shortly. Inference is, however, made on certain experiments on monkeys which may be summarized in one sentence—none of the vaccinated monkeys experimented with since 1923 have died of tuberculosis while all the other experimentally infected monkeys and all controls have contracted tuberculosis and succumbed in periods ranging from two to five months. Similar support has been obtained from experiments on calves. This work is still in progress and we are glad to note the statement that the BCG vaccine is being tested by veterinary surgeons in England. In many parts of France other than Paris and also in the French colonies the vaccine is being tried on an extensive scale. Professor Calmette makes no extravagant claims about this new plan for the protection of children. He modestly states that the only conclusion which can be drawn is that the vaccine may safely be used for the prevention of human and animal tuberculosis. It has proved completely harmless to all the children vaccinated over a period of three years and its efficacy for the protection of newborn children has been shown by clinical experience and substantiated by experimental tests.

VITAL STATISTICS OF ENGLAND AND WALES

The Health Organization of the League of Nations has issued in its series of statistical handbooks one dealing with England and Wales. It should prove extremely useful not only to the foreign readers for whom it is intended but even to some Englishmen who—unless they are preparing for a general knowledge paper set by the Civil Service Commissioners—may not be quite sure of the distinctions between the four senses in which the word 'county' is used in

¹ League of Nations Health Organization. Statistical Handbooks. Series No. 3. *Official Vital Statistics of England and Wales*. Geneva 1925. London Agents: Constable and Co. (1 p. 115 1 price 6d net.)

official statistical publications. Indeed, to use intelligently the vital statistics of this country—statistics which now cover, so far as population figures are concerned, 120 years, and, so far as rates of mortality are concerned, nearly 90 years of national life—the reader must have knowledge of an internal organization which has developed gradually and without breach of continuity through many centuries, and is difficult to understand because there persist vestiges of once very real but now quasi-obsolete jurisdictions. On this account the handbook, which strictly follows the original plan of providing an index of the contents of all the official documents, gives much prominence to explanations of the meaning of terms and to descriptions of the functions of different departments, and appends a short but well selected bibliography of the more important works containing fuller details.

The development of English vital statistics is briefly described. In this matter, as in larger affairs, one feels that we have, as a nation, had extraordinarily good luck. No doubt the generalizations of national character which novelists and epigrammatists affect are superficial, but there is surely some truth in the common saying that the Frenchman is a greater lover of logic and the German a greater lover of tidiness than Englishmen, while both French and German are far more docile in the presence of the bureaucrat than we. First-rate vital statistics appeal to the logician, to the lover of neatness, and to the permanent official, long odds might have been given that both French and German vital statistics would be better found than our own. In fact they are worse found. The reason seems to be that if we do happen on an official who is eccentric enough to be an enthusiast we let him have his head provided, of course, that he is sufficiently eccentric not to demand any generally coveted

honour or a large salary. Again, if a man who will not be blamed for letting things slide does not let them slide we may not praise him, but we shall not obstruct him much. English vital statistics have profited immensely from these national habits. When we began census-taking the supervision of the work was entrusted to a clerk of the House of Commons—a highly paid official with a good deal of his own proper work to do. Nobody would have said anything if he had taken the job very easily. In fact the official—John Rickman, Charles Lamb's friend—took it very seriously indeed and laid excellent foundations. Thirty-five years later, when we instituted national registration of births and deaths, luck favoured us again. This time it was not a highly paid and slightly pompous official whose real work had nothing in the world to do with statistics who made good; it was a young, ill-paid medical man whose official status was very different from that of a clerk of the Honourable House of Commons. It was a Mr. Farr, a gentleman of the medical profession, for whom the friendly patronage of a court physician had secured the post of Compiler of Abstracts in the new General Register Office. He laboured forty years, and eventually secured that reward usually reserved for industrious clerks—as Mr. Lytton Strachey calls it—the C.B. The nation secured a system of vital statistics which the logical French and the tidy Germans will continue to envy for some generations.

The steps by which the present position was reached are carefully recorded in the handbook. The General Register Office is not architecturally a very imposing building; the Annual Reports of the Registrar General do not seriously compete with the daily newspapers for the custom of those who travel hopelessly and

arrive unpunctually by the Southern Railway. Yet the General Register Office and its works deserve more reverence, and are the objects of more admiration upon the Continent and even in the United States of America, than most Englishmen know.

A.M.A. AND B.M.A.

The Journal of the American Medical Association, in its issue of August 8th, published an editorial article, very cordially worded, congratulating the British Medical Association on its new home, on the recognition accorded by the head of the State by the visit of the King, accompanied by the Queen, on July 13th, and on the appreciation and approval of the Association's aims and objects expressed in the King's reply to the Address presented to him before he formally declared the building open. The constitutions of the two Associations present many points of resemblance, the differences are to be traced in the main to differences in the political constitution of the two countries. The aim of the two is identical—both, to use the words of our contemporary, have "stood always for service to scientific medicine and to the public."

HARVEY'S DISCOVERY OF THE CIRCULATION

In the Harveian Oration delivered on July 10th to the Edinburgh Harveian Society, Dr. P. McBride asks the question, "Why did Harvey discover the circulation?" We take it that, although he put his question in this form, Dr. McBride did not mean to inquire into Harvey's motives, but rather into the concatenation of personal qualifications and favouring circumstances which rendered Harvey's attempt successful. A clear and logical mind, well stored with the anatomical knowledge of that day, and a disposition to see for himself rather than to trust to the statements of others, and a consequent reliance on experiment rather than speculation—these were the main characteristics which enabled him to make his great discovery. Dr. McBride perhaps strikes too much of the dangers incurred in the fifteenth and sixteenth centuries by those who would pry into the secrets of nature. As long as the inquirer kept clear of metaphysics and theology he ran little or no risk of getting into trouble over any anatomical researches or speculations. The father of scientific anatomy, Vesalius, was the trusted attendant of the orthodox Emperor Charles V. It is true that Galileo suffered for contradicting a meaning commonly attached to a biblical statement concerning the earth, but, fortunately, physiological investigators did not run the same risk, for the statements on anatomy and physiology in the Bible are not explicit. Servetus might have advanced the most revolutionary and unorthodox theories of the circulation and escaped scot-free, but the moment he touched the Trinity he was lost. Dr. McBride contrasts the fate of witches in Scotland (and afterwards in England) with the good fortunes of astrologers, which may be accounted for by the relative repute of black and white magic. No doubt Harvey, as he himself said, owed a great deal to his frequent and repeated vivisections, but Galen and Vesalius practised vivisection before Harvey was born without making great discoveries in physiology, in the seventeenth century nobody entertained any objection to the practice. Even cruelty to animals was hardly objected to. Hogarth in the following century, in his *Stages of Cruelty*, depicts scenes of cruelty to animals, but his implied condemnation is on account of the indifference to suffering in mankind which follows on wanton infliction of pain upon brutes. Harvey's views were not accepted by all contemporary physiologists, and they resorted to every argument that they could find against them. But bitter as some of

them were, no one ventured to stigmatize his opinions as not new, indeed, the chief objection to them was their novelty. We are inclined therefore, to differ somewhat from Dr McBride in that we would ascribe little importance to the ripeness of the time for Harvey's discoveries and nearly all to the character and intellect of the man, which impelled him to persevere and enabled him to brush aside prejudices and to draw sound conclusions from facts. In the words of Professor William Stirling¹ Harvey did more than discover the circulation of the blood; he demonstrated by the experimental method that the blood moves in a circle; that the movement of the blood is due to the mechanical action of the heart as a pump; that systole is an active contraction of the heart and diastole a passive act of dilatation. He gave a true theory of the pulse. For all time he set the method—namely that of experiment and induction—which has led to all modern progress in physiology."

SPECIAL LIBRARIES AND INFORMATION BUREAUX

In September 1924, a small conference was held at High Leigh, Huddersdon at which a group of those interested in agencies for the collection, treatment, and distribution of information discussed some of the many problems involved in their special work. The conference was called at short notice, in the holiday season, and without any extensive advertisement, and the discussions were informal. Nevertheless it aroused keen interest, not only amongst the organizations engaged in industrial research, members of which were primarily responsible for its initiation, but in a far wider circle including scientific, educational, social, political, and commercial bodies of varying scope and character. There was a general demand for the creation of machinery to carry on the work of co-ordination suggested by the conference, and a standing committee was appointed for the purpose, under the chairmanship of Mr. J. G. Percie of the British Cast Iron Research Association, and with Mr. A. F. Ridley, F.L.A., librarian of the British Non-Ferrous Metals Research Association, as honorary secretary. On this committee the British Medical Association is represented by its Intelligence Officer. As a result, a body known as the Association of Special Libraries and Information Bureaux has come into being, and arrangements have been made for a second conference to be held at Balliol College, Oxford, during the week-end from September 25th to 28th. In the interval the standing committee has done some very useful work. It has secured the financial support of the Carnegie United Kingdom Trustees, has appointed an organizing secretary, published an extremely interesting report of the 1924 conference, with a foreword by Sir Philip Cunliffe Juster, President of the Board of Trade, and begun the collection of data for the issue of a directory of special libraries and information bureaux in Great Britain. The association covers the field of what may roughly be termed the special library movement, the development of which, already far advanced in America, is only beginning in this country. Its primary object is to co-ordinate, in the general interest, the many collections of specialized information already in existence, to promote the formation of new libraries where this seems necessary, and to act as a clearing house for the existing sources of information, and a medium of intercommunication between those engaged in their development and use. Its programme includes the indexing of sources of statistical and other data, co-ordination of abstracting services for scientific and technical societies, an increase in the accessibility of periodical and other literature in national and local centres, registration of classified panels of translators for the service of particular industries, sciences,

and arts, and an increased provision of photographic and other copying apparatus. The problem of avoiding waste of energy in the collection of data by securing the readiest possible access to all sources of information is one which in the multiplicity of existing agencies for investigation touches the scientific and the social order at least as closely as the industrialist. Any step towards its solution is welcome. We may recall the effort in this direction made by the British Medical Association by the publication of the list of periodical of medicine and the allied sciences in British libraries compiled under the direction of Professor R. T. F. C. P. R. S.² This list shows the libraries in which periodicals can be found in London, Cambridge, Edinburgh, Glasgow, Liverpool, Manchester, and Oxford classified under the countries in which they are published. We shall wait the report of the forthcoming conference with interest. Full information as to the activities of the Special Libraries Association and conditions of membership can be obtained from the organizing secretary, Mr. W. Keeling, 38 Bloomsbury Square, London W.C.1 to whom early application for accommodation at the conference should be made.

THE HOME AMBULANCE SERVICE

During the second quarter of this year the ambulance of the Home Service Ambulance Committee of the Order of St. John and the British Red Cross Society carried 18,026 cases exclusive of pensioner patients carried to Queen Mary's Hospital, Roehampton, they numbered 7,512. The committee now has 241 ambulance stations in the country and 34 other stations affiliated with it. Three new ambulance stations were established (Drif, Iodmorden and Woodford) two stations were transferred the one from Colyton to Hounston and the other from Newport (Mon.) to Llanelli. Three other stations were closed, but one of them only temporarily. The funds at the disposal of the committee render it necessary to limit the fitting up of the ambulance cars to what is absolutely essential to secure a reasonably comfortable vehicle for the removal of patients. In districts where funds can be found locally larger and more elaborate ambulances are provided, in this way very fine ambulances have been secured by Norwich and East Grinstead and others—for Jarlow and Southsea—are in the builders' hands. Thanks to the generosity of Mr. and Mrs. Ellis and Mr. Griffin, an extremely well built and thoughtfully designed ambulance has been presented to the committee for use at Havwards Heath. During the quarter the liaison officer, Major Piget, visited ambulance stations in North and South Lincolnshire, the North, East, and West Ridings of Yorkshire, Durham, Northumberland, Cumberland, and Westmorland. Such an extensive tour, which included some forty ambulance stations, afforded an opportunity for forming an estimate of the value of the service and of the manner in which the work is carried out. Major Piget was able to report highly of the efficiency of the ambulance service generally, and of the benefit it is proving to the community. From the members of the medical profession the officers of local authorities and from those concerned with the working of the service, the most gratifying testimony was received as to the great advantage that has accrued from the setting up of an ambulance service available day and night for the removal of cases of accident and illness. The work in some of the northern counties is not easy, owing to the severe gradients and the difficulties of approach to houses in moorland districts. Here, as in other parts of the country, road accidents are increasing and sometimes the demand on the ambulances is very heavy. As an instance the disaster at Dibbles Bridge on the Yorkshire moors may be mentioned, when a charabanc

¹ Some Apostles of Physiology. By William Stirling M.D. etc. Private, printed at London 1902.

² Periodicals of Medicine and the Allied Sciences in British Libraries. London: British Medical Association. Price 10. 6d.

carrying a party of twenty five persons got out of control on a hill, crashed through the bridge at the bottom, and fell down the rocky bank to the river below. Seven of the passengers were killed outright, and sixteen severely injured. As soon as a telephone message could be got through to Skipton (fifteen miles away) the ambulance, with a first-aid party, started and brought the injured people to the Skipton Hospital. This entailed four double journeys, covering 120 miles, which were completed without a hitch. This is good proof of the efficient state in which the ambulance was maintained. This is true of the majority of stations; it is noted that when ambulances are housed at fire stations they are particularly well looked after, but that in commercial garages also the proprietors take great care of the car and do not regard it solely as a commercial undertaking. At one place visited where the ambulance car was undergoing overhaul at the expense of the local committee, it was found that the body of the ambulance was being thoroughly repaired and repainted at the expense of the garage proprietor as his contribution to the service. Only in a small minority of the stations could any complaint be made as to the condition of the ambulances, in these it was generally the body-work or the springs which showed sign of neglect.

THE PROFESSIONAL CLASSES AID COUNCIL

THE report of the Professional Classes Aid Council for 1924-25 shows an increase in its activities. More adequate help has been given than in recent years, whilst at the same time administrative expenditure has been slightly reduced. Two thirds of the grants made are for the education of children or the training of young adults. This has been a great relief to harassed parents, and is of great future value. Where grants are made for the assistance of particular persons the aim is always to help the recipients to reach independence, and in this there has been much success. At present the finances of the society only allow it to deal with cases of the greatest difficulty and those which require a maximum of work and administrative expense. More money would enable it to deal with

those inexpressibly sad cases of elderly people whose power of self-support has failed, and to whom only a pension is of real value. The society has on its council representatives of all professional societies, including the British Medical Association. Its address is 251, Brompton Road, S W 3.

REPETITIVE WORK IN INDUSTRY

THE Industrial Fatigue Research Board of the Medical Research Council has published a report¹ on an industrial investigation of the effects produced on four girls of different degrees of intelligence by work entailing incessant repetition. The results of introducing various rest pauses into the work was also studied and a comparison was made of time-rate and piece-rate remuneration. The repetitive work consisted of cross stitching with a coarse silk thread on canvas squares. The output was measured by the number of stitches; the work could not become automatic, as it required constant attention. The girls worked for six hours a day, in two spells of three hours each, for four days a week. It was found that the two most intelligent girls were the most variable workers, and that the girl with subnormal intelligence showed a steady improvement in ability. The investigation thus supported the view commonly held that the highly intelligent individual is not suited to repetitive work, and it is suggested that it might be possible to distinguish these types in children while at school, with a view to preventing the individual from engaging later in unsuitable occupations. The introduction of rest pauses did not benefit the output, but it is pointed out that with an eight hours' day and a

week of five and a half days the results might have been different. Comparing the output of the time-rate and piece-rate bases of payment for output, it was found that under piece-rate conditions the output curves were on a higher daily level in all cases, but that with workers of approximately equal capacity the variation about the average was less. Competition between the more equally skilled girls aided output and occurred more frequently under piece-rate conditions, but the output of the less skilled workers seemed to be reduced owing to discouragement. Emphasis is laid on the importance of this point in the consideration of the many psychological problems raised by term work in industry. Term work may increase output in certain circumstances, but an effective term should consist only of workers of approximately equal abilities. Failing this the faster worker will be retarded by the presence of the slower, and the output of the latter will decrease because she is discouraged by the presence of the former, thus a vicious circle is created. The good effects of changing from time-rate to piece-rate conditions were more marked in the more intelligent and variable types of worker.

VERMOUTH

VERMOUTH wine has recently become a common article of commerce in this country, although it has been popular for many years on the Continent as a stimulant and an aperitive. Its use appears to be extending, and it is taken now not only with soda as a mild alcoholic beverage, but forms the basis of most cocktails. Recipes for its preparation are numerous, but the following will serve as a sample.

Wormwood, 4 oz, tansy, 4 oz, gentian, 2 oz, angelica root, 2 oz, blessed thistle, 4 oz, calamus aromatics, 4 oz, elecampane root, 4 oz, centaury leaves, 4 oz, germander leaves, 4 oz, nutmegs, 15, oranges sliced, 6, alcohol of 85°, 9 pints, sweet white wine, 20 galls, macerate fifteen days and filter. It will be seen from this that several of the plants contain principles which excite the cerebral cortex, especially as this is the case with wormwood and tansy, which contain a principle, thuyone, which is isomeric with camphor and which causes epileptiform convulsions in sufficiently large doses just as camphor does. It is for this reason that France has forbidden the drink absinthe, which is made largely from wormwood and contains a varying amount of thuyone. Over-indulgence in absinthe induces sleeplessness, a general condition of unrest, and sometimes vomiting. Later vertigo and tremors, especially of the head and tongue, are a foreshadowing feature, culminating in epileptiform convulsions in which consciousness is usually lost and clonic convulsions occur. The fits recur at short intervals. Recovery is complete if the habit is broken in the early stages. Besides wormwood and tansy, several other essential oils excite the cerebrum especially nutmeg, and from time to time cases of convulsions following the eating of nutmegs have been recorded in the *BRITISH MEDICAL JOURNAL*. Vermouth is thus a mild alcoholic beverage, containing about three-quarters as much alcohol as is present in sherry, but its action is fortified by thuyone and other principles from essential oils, and it is no doubt these substances which induce the exhilarating effects of the beverage. It should not, however, be placed in the same category as absinthe, although both contain the same principles, the relationship between these two drinks may be compared with that between a light wine and a spirit.

THE HOSPITALS OF LONDON

THE report of the King Edward's Hospital Fund for London for the year 1924 is a document of great interest. It contains general particulars of the work and accommodation of 113 hospitals. There has been a marked expansion of work. Beds have increased by 350 as compared with the

¹ Part No 39. London: H.M. Stationery Office, 1925. Price 2.6d net.

previous year, the average occupied beds by 360, new in-patients by 9,000, new out-patients by 60,000, and the total out-patient attendances by 204,000. The increase of beds is noteworthy in connection with the report on hospital accommodation by the Voluntary Hospitals Commission. Since 1913 there has been an increase of 1,620 beds and 760 average occupied beds. No reason is given for the increase in out-patients, and it would be interesting to know in what type of hospital or department this has occurred. The income for 1924 received no special augmentations, and is therefore comparable with previous receipts, the total was £2,918,000, an increase for the year of £58,000, or 2 per cent. Income from investments increased, that from subscriptions and donations fell slightly, patients paid more, legacies were about the same, 34 per cent of the total ordinary income was "earned"—that is, received as payments by patients or public authorities. Expenditure was less than income, but had increased for all purposes except establishment charges. There follows a series of most instructive comparative tables showing the income and costs of the various hospitals. Those of the same type are classed together—for example, hospitals with medical schools, ophthalmic hospitals, children's hospitals, etc. It is therefore possible to compare these hospitals. There are some curious differences in apparently comparable hospitals for which no explanation is suggested. For instance, we note that in the hospitals with medical schools the average number of days each patient was resident works out at the London at 14.35, whereas it is 23.73 at St Bartholomew's and 28.63 at Westminster, and the average for all is 19.51, amongst large general hospitals without medical schools the figure for the Royal Northern is 17.54 and for the London Temperance 31.76 with an average for all of 22.21. The reasons for wide differences such as these should be ascertained. In one point the report is much behind the times, for it writes of the Ministry of Health as the "Local Government Board."

WHAT TO DO WITH OUR BOYS

THIS is something like it was, if we remember correctly, the title of a book published some years ago. We forget whether emigration to one of the Dominions was among the careers suggested by the author, but we assume that it was, and if it was to be recommended in the past still more is it to be considered in the future. A very favourable opening for a lad from 15 to 17½ years of age, who is inclined to an outdoor life, is now offered by agricultural scholarships in New South Wales offered by the Fellowship of the British Empire Exhibition. The right to nominate to these scholarships was determined by the results of a ballot, and among those who drew lucky numbers were Mrs C. Paterson, the wife of Dr William Paterson, honorary secretary of the Willesden Division, and Dr A. Baldie, a member of the Association residing in Kensington, who has nominated a son of the late Dr Denis Flynn of Cork. A fortnight ago a Current Note was published stating that a vacancy had unexpectedly occurred, and that Mrs Paterson had offered to nominate a suitable boy who was a relative (or orphan) of a member of the Association. The offer is still open, particulars should be sent to the Medical Secretary, British Medical Association House, Tavistock Square, London, W.C.1. The lad, as has been said, must be between 15 and 17½, and of good character and physique. He must pass the tests, including the medical tests imposed by the Australian Government, and must be approved by the Central Committee of the Fellowship of the British Empire Exhibition. A successful candidate is given a free passage and one year's training at an agricultural college in New South Wales, and will afterwards be placed in suitable employment on the land

with a view to his acquiring ultimately a farm of his own. A better start for a suitable lad in Australia could hardly be imagined.

AUSTRALASIAN MEDICAL CONGRESS OF THE BRITISH MEDICAL ASSOCIATION

DUNEDIN, NEW ZEALAND, 11 FEBRUARY, 1927

The Second Session of the Australasian Medical Congress (British Medical Association) will be held in Dunedin, New Zealand, from February 2nd to 9th, 1927, in the new Medical School at present under construction, and will be opened by Sir Charles Fergusson, Bt., Governor-General.

The President of the Congress is Dr J. L. Barnett, C.M.G., Lecturer in Professor of Surgery in the University of Otago, and he will be assisted by an executive committee including Dr D. J. Cornhill-Jones as honorary treasurer, Dr W. P. Gowland as honorary general secretary, and Dr A. M. Dorman as honorary associate secretary.

The scientific proceedings will be conducted in twelve sections as shown below. Provision will be made for a trade exhibition of books, instruments, drugs, etc.

Further particulars will be given at a later date but those seeking further information in regard to the Congress and firms desirous of co-operating in this exhibition are requested to communicate with Dr W. P. Gowland, honorary general secretary, Australasian Medical Congress, Dunedin, New Zealand.

PRESIDENTS AND VICE-PRESIDENTS OF SECTIONS

Medicine

President Professor A. I. Mills (N.S.W.)
Vice Presidents Dr I. S. Latham (Vic.) Dr D. Gifford Croll (Bt.) (Q.) Dr C. J. Ch. de Crespigny (S.A.) Dr R. C. Mearns (W.A.), Dr Gibson (Wellington, N.Z.)

Surgery

President Dr B. Kilgallon (Vic.)
Vice Presidents Professor F. P. Sanders (N.S.W.) Dr F. A. Hadley (W.A.) Dr I. Sandford Jackson (Q.) Mr A. M. Cudmore (S.A.) Dr Acland (Canterbury, N.Z.)

Obstetrics and Gynaecology

President Dr I. W. Dunbar Hooper (Vic.)
Vice Presidents Dr I. C. Windward (N.S.W.) Dr D. P. Clement (W.A.) Dr W. A. Vero (S.A.) Dr I. Marshall Allan (Q.) Dr Jellett (Canterbury, N.Z.)

Pathology and Bacteriology

President Dr C. H. Mollison (Vic.)
Vice Presidents Dr J. I. Dunlop (Q.) Dr I. Dale O'Brien (W.A.) Dr A. H. Lebbitt (N.S.W.) Dr A. B. Pearson (Canterbury, N.Z.)

Internal Medicine

President Dr Huxley Sutton (N.S.W.)
Vice Presidents Dr R. W. Cleto (Q.) Dr R. C. Atkinson (W.A.) Dr T. W. Smelan (Vic.)

Ophthalmology

President Dr A. M. Moynan (S.A.)
Vice Presidents Dr C. C. MacLeod (N.S.W.) Dr J. I. Rudall (Vic.) Mr J. Lockhart Gibson (Q.) Dr D. D. Paton (W.A.) Dr J. Lenwick (Auckland, N.Z.)

Otology, etc.

President Dr R. H. Pullen (S.A.)
Vice Presidents Dr S. A. Ewing (Vic.) Dr W. C. Mansfield (N.S.W.) Dr H. B. Gill (W.A.) Mr W. N. Robertson (C.B.E.) (Q.) Dr J. Hardie Neil (Auckland, N.Z.)

Neurology

President Sir John Macpherson, C.B. (N.S.W.)
Vice Presidents Dr W. Ernest Jones (Vic.) Professor J. P. Lawson (Q.) Dr D. M. McWhane, C.M.C. (W.A.) Dr Chisholm (Canterbury, N.Z.)

Diseases of Children

President Dr A. Jefferys Turner (Q.)
Vice Presidents Mr H. D. Stephens (Vic.) Dr J. M. Gill (N.S.W.) Dr R. H. Crisp (W.A.) Sir Truby King (Wellington, N.Z.)

Naval and Military

President Dr G. W. Barber, C.B. C.M.C. D.S.O. (W.A.)
Vice Presidents Dr R. M. Downes (Vic.) Dr J. S. Purdy, D.S.O. (N.S.W.) Dr G. W. Macintyre, D.S.O. (Q.) Sir Donald McGavin (Wellington, N.Z.)

Orthopaedics

President Dr N. D. Royle (N.S.W.)
Vice Presidents Dr W. Kent Hughes (Vic.) Dr H. S. Newland, C.B.E. D.S.O. (S.A.) Dr A. J. Jett (W.A.) Dr A. A. McLean (Q.) Dr Wylhe (Wellington, N.Z.)

Radiology

President Dr S. S. Argyle, M.L.A. (Vic.)
Vice Presidents Dr H. L. Scar (N.S.W.) Dr A. J. H. N. Let (Q.) Dr H. C. Nott (S.A.) Dr D. I. R. Smith (W.A.) Dr N. Macdonald (Auckland, N.Z.)

We are indebted to Dr Noel R Rawson of Whitley Bay, Northumberland, for sending us an extract from Gibson's *Lambles in Europe* in 1839, describing the annual meeting of the Provincial Medical and Surgical Association, the precursor of the British Medical Association, it will, we believe, be read with interest by members to day.

We learn from an article by Dr Francis R Packard in the *Annals of Medical History* for June that Dr William Gibson was born in Baltimore in 1788, attended St John's College in Annapolis and Princeton College, and took a course in the University of Pennsylvania, but did not graduate there. Instead he went to Edinburgh, where he received the degree of M.D. in 1809. In 1811 he was active in establishing the medical department of the University of Maryland, in which he was professor of surgery until 1819, when he succeeded Physick in the corresponding chair at the University of Pennsylvania. Gibson, Dr Packard says, was a fine teacher, and a bold and dexterous operator, and possessed of considerable artistic ability. He retired from his chair in 1855 and died in 1868. He seems to have been an enterprising traveller, for while in Edinburgh he and some of his friends chartered a vessel, sailed to Spain to see something of the battle of Corunna (January 16th, 1809). In 1815 he was again in Europe and was a slight wound from a stray bullet. The full title of his book is *Sketches of Prominent Surgeons, Physicians, Medical Schools, Hospitals, Literary Personages, Sec.* etc. etc. it was published in 1841, and the following is the text of the extract Dr Rawson has made.

ANNUAL MEETING IN LIVERPOOL, 1839

Having formed the acquaintance and enjoyed the society of the most eminent of the London faculty, I felt a natural desire to see the provincial surgeons and physicians, many of whom, in almost every town and village of the kingdom, had attained distinction and were by then writings more or less known abroad. How to accomplish the purpose, however, I was much at a loss for, to proceed regularly from town to town with the view of prosecuting them up would have consumed so much time as to preclude the possibility of attaining my end. Whilst reflecting on the subject I called at Sir James Clark's and luckily met Dr Forbes of Chichester who in course of conversation mentioned that the 'Provincial Medical and Surgical Association' would shortly meet at Liverpool and gave me a pressing invitation to attend, assuring me that I should there see almost every eminent country practitioner of England, Ireland, and Scotland. This was too good an opportunity to be lost, and I had accordingly great pleasure in joining that illustrious body on the 25th of July, 1839.

This Association was established at the suggestion and chiefly through the exertions of Dr Hastings of Worcester in 1832—with the view of concentrating all the provincial medical and surgical talent, and directing it towards the investigation of disease, the diffusion of useful information through hospital reports, dispensaries, and private practice the laws of epidemics and their connexion with peculiarities of climate and soil or habits of the people, the laws of statistics, meteorological and botanical inquiries in reference to topographical information, the advancement of medical jurisprudence but chiefly towards the maintenance of the honour and respectability of the profession generally in the provinces, by promoting friendly intercourse and free communication of its members and by establishing amongst them the harmony and good feeling which ought ever to characterize a liberal profession.

¹ An address delivered at the first meeting of the Provincial Medical and Surgical Association by Charles Hastings M.D.

² This declaration was repeatedly made to me by the one who could afford to be candid.

Upon the foundation, thus laid, a most important institution has been reared, one calculated to exert immense influence, not only over the English provinces and the metropolis itself, but upon the medical literature and practice of almost every nation under the sun, for the great body of British physicians and surgeons, residing in the country or in country towns, being remarkable for their intellectual education and classical attainments, having the full advantage of well regulated and sufficiently large hospitals, and, withal, not so overwhelmed with the crowds of patients that infest and besiege the most eminent of them as in London brethren, a large proportion of whose time is consumed in riding slowly through streets choked with vehicles of every description, and so thronged by foot-passengers as to render progression extremely difficult, and sometimes and to the disadvantage of patients thus subjected to the advice and prescriptions of men so fatigued and worried as to be unable, confessedly, to remember the cases presented to them from day to day, or the remedies ordered for their relief, are acknowledged to be, as a body, the most learned and efficient practitioners in the kingdom. But if evidence were wanting to establish the fact, the numerous and voluminous writings of provincial men, though issued generally from the London press, would be amply sufficient to substantiate their claims. If such, however, have been the merits, almost from time immemorial, of the profession in the country towns where there was no connecting link to bind them to each other, or standard under which to rally and fight their way to the heights of fame for want of strength into metropolitan arms, how much more may now be expected from such professional combatants, who inspired by the enthusiasm that springs from the love and pride of native soil, heightened by the all-pervading influence of interest and community of design? That the anticipations of the few who assembled under the auspices of their enlightened and enterprising leader have been amply realized by the treasures so bountifully thrown within the last eight years, into volumes of 'Transactions of the Provincial Medical and Surgical Association,' the official list of professional worthies, from every nook and corner of 'English, Scotch, and Irish land,' there cannot be the smallest doubt. Of most of these it would be impossible to speak, but the names of Hastings, of Barlow, of Forbes et alius, are too intimately blended not only with the 'Provincial Association' but with the medical literature of England, to be passed over in silence.

"Dr Hastings is a native of Worcester, about 45 years of age, rather tall and slender, and but for a halt in his gait, the result probably of some accident might be said to possess an eminently handsome figure and carriage. His countenance is open, cheerful, and jovious, and remarkably stranger would instantly ask 'What kind hearted intelligent-looking man is that—so full of activity, enthusiasm, and humility combined?' I saw him for the first time in the crowd of medical men assembled in the hall of the 'Liverpool Medical Institution'—a splendid stone building of the Ionic order, designed by Rumphing—where the Association held its meeting and immediately exclaimed to my friend, Dr Smith of South Cheshire, 'where that man may be but am deceived if he does not play an important part in this assembly. Upon entering a few minutes after, the lecture room, our eyes were instantly turned to a magnificent full-length portrait of the person in question and beneath to a large superbly executed mezzotint of the same picture, with the name of Charles Hastings, M.D. upon its margin. Upon inquiry we found that the portrait had been painted at the expense of the society, and presented to the family of Dr Hastings, in commemoration of his very important services and the affectionate interest evinced by him upon all occasions for the welfare and happiness of his fellow-members. The point too we were told had been subscribed for, at an

additional expense, by numerous members anxious to possess some memorial of the man for whom they all entertained the highest respect and admiration. But notwithstanding the extraordinary hold thus possessed by Dr. Hastings on the affections of the society with a modesty and humility which reflect great honour upon his heart, it was soon discoverable that his services were the spontaneous offerings of disinterested benevolence, actuated solely by a deep and abiding sense of the duties he owed the profession, by disregarding the dictates of ambition which so often prompt the best of men to efforts of personal aggrandizement. Influenced by such feelings he has continued from the first to occupy the humble but important and arduous office of secretary to the Association instead of aspiring to the more dignified and elevated seat of president which he conceives should be reserved for the exclusive use of such elder members as are fully entitled to the honourable designation 'elder and venerable men.' There are occasions, however, when Dr. Hastings is drawn from the retirement he counts, by the recommending voice of the society that leave him no chance for escape. When he is called upon to enter the lists with disputants and discuss the merits of some important question, or to exercise his solid judgment upon points that try the understandings of his associates, or when selected to preside over the 'feast of reason and flow of soul' inspired by the splendid repast that crowns the festive board and terminates each annual meeting of the Association, when he is suit to make, in a strain of manly eloquence, such powerful appeals to the head and to the heart as never fail to carry conviction to the minds of his delighted hearers and to attach them, body and soul to his person and plans. Various demonstrations of the kind were afforded me, during debate at the regular sittings of the Association but it the public dinner served at the town hall where four or five hundred members, citizens and strangers assembled and listened to an extemporaneous address by Dr. Hastings is chairman upon the occasion the most thrilling, sensations were created in every bosom by the delicate chords touched by a master hand as it played over, with exquisite grace and felicity of expression, the various symphonies best adapted to warm the heart, enlighten the understanding and excite the ardour and enthusiasm of all present. It was then too he won golden opinions from every stranger by a display of unbounded liberality towards cultivators of science and particularly the science of medicine over the whole earth. It was then he awakened the sensibilities of every American present when he spoke of 'a country endeared to Britain by the ties of consanguinity, of a country in which the same language was spoken over a vast extent of territory, of a country of brethren towards whom England looked as her sons and descendants and for whom she entertained the feelings which ought to exist between parent and child' when he said he was glad to find that Americans visited the homes of their ancestors and mingled with their brethren on that side of the Atlantic and particularly glad they had upon that and other occasions honoured their medical Association by their presence, hoped they would repeat their visits, and others join with them hereafter from the same great country in celebrating their anniversary, and in cementing a bond of union that would prove equally honourable and beneficial to both and above all, that members of the University of Pennsylvania, so long and so favourably known would unite with them in harmony and good fellowship, and assist in extending the boundaries of medical science to the remotest corners of the earth. I should not have done justice to my country or to my own feelings, or to our University, had I remained silent after the loud, enthusiastic and reiterated cheers which followed that and some other portions of Dr. Hastings' address and trust that the sentiments and views I had then the honour to present, feeble as they were, and must have been after the waving of a magician's wand, may have served at least the salutary end of drawing closer and of strengthening the bond of union between the two great nations. A meeting which ought ever to exist between the two nations, and which ought to be the result of one year's training of professional men, who not only visit each other but also confer the same day the day on the land

my humble name to the list of their own distinguished members.

Independently of his connexion with the Provincial Association Dr. Hastings enjoys high reputation as a practitioner, and is not less distinguished as a fine scholar and classical writer, as is sufficiently proved by his valuable work on *Inflammation of the Mucous Membrane of the Tongue* and by various essays in the different periodical publications of the day.

Of the venerable Dr. Barlow of Bath who the year before had filled the honourable office of president of the Association I cannot but speak in terms of high commendation. Though approaching in appearance and garb, to the primitive simplicity of a Quaker or Methodist, there is an energy displayed in his fine regular features in connexion with a bald head and such development of the anterior lobes as a physiologist would associate with extraordinary moral and intellectual qualities, conjoined with uncommon vigour of frame, in shape of short well knit joints and bony muscles, it would induce even a careless observer to conclude at first sight, that he was no common man. Such was my own conclusion before he opened his lips, and by the time he had uttered a dozen words in returning thanks to the Association for the compliment paid in selecting him as last year's chairman, I was fully prepared to believe that few men could be found in that, or any other assembly, superior in vigour of intellect, clearness of conception, consistency of views, and dignity of mind and demeanour. And I was not mistaken for, afterwards, during the whole of the debate there was displayed a degree of intellectual composure and serenity, with quickness, sagacity and even sharpness—so visible in his piercing black eyes mixed with it but so tempered at the same time by kindness of manner and benevolent expression, as to impress irresistibly his hearers that he was not only a very sensible, highly cultivated and learned man, but a good honest truth-seeking plain dealing excellent Christian. By birth I believe Dr. Barlow is an Irishman. Certainly he ought to be judging from his short, compact figure, square shoulders and muscular powers. But he has not a particle of brawn nor any of that mercurial moisture of the eye and comeliness of countenance that stamp the Irishman on the contrary his speech and whole demeanour afford apparent evidence of the regular John Bull. His writings, by which he is well known in Europe and in this country consist of a work on pathology, published twenty years ago in essay on ovarian dropsy, another on the effects of Bath waters, and of various papers in different periodical publications.

Of Dr. Forbes of Gloucester whose name I have already mentioned it gives me peculiar pleasure to speak, not only on account of the great personal civility experienced at his hands in being made known, through his kindness to most of the distinguished members of the Provincial Association, and through his instrumentality, in the most flattering way, elected a member of that society, but for the rank he deservedly holds in the profession, to which he has raised himself by talents of very high order, conjoined with such excellent qualities of the heart as have endeared him to society and, above all for the liberality and good feeling he has uniformly displayed in speech and action, and in his numerous and diversified writings towards his American brethren and their country by using upon many occasions such language as the following. 'The love of science is too pure and elevating to permit those imbued with it to be contaminated by the narrower and baser feelings so mischievously encouraged by too many writers who have visited America and who have composed books apparently without entertaining any views worthy of the people of that enlightened country.'

Dr. Forbes is a tall stout, broad shouldered, powerful man, and looks as if he could not only endure great hardship and labour but judging from his quick step and activity would take great delight in encountering it. His head is large and well formed, his complexion healthy and ruddy and his features unmarred and agreeable. By birth he is a Scotchman, but has lived for a long time in England, first at Penzance, or the Land's End, on the climate of

which he has published a valuable dissertation, and subsequently at Chichester, where he still resides, enjoys extensive private practice, and has control of a well regulated infirmary. He is, moreover, the translator of Lenné, the author of an excellent work on medical bibliography, and one of the editors of the *Cyclopedia of Practical Medicine*. But he is better known at home and abroad by his valuable contributions to the *British and Foreign Medical Review* or *Quarterly Journal*, edited by himself in conjunction with his distinguished friend Dr John Conolly, formerly of Warwick, but now of Haver, near London, than by any other productions. Of this work it would be out of place to speak, further than to say that of all the foreign reviews, it is incomparably the best, being conducted on the fairest and most liberal principles, filled with details, theoretical and practical, of the most useful and interesting description, and breathing of a spirit of independence such as every educated and high minded physician must cordially approve, and as such deserving extensive circulation throughout every part of our extensive country.

Although no small share of the attention of the Provincial Association was directed during its attendance to medical reform and various other professional interests, general and local—the discussion of which drew forth the pen of numerous members, some of whom were not remarkable for grace of elocution, whilst others displayed in the extent of information, a tact and logical precision in argument, and in eloquence, combined with courtesy and respect towards opponents seldom met with in mixed assemblies—yet the highest degree of interest, it appeared to me, was elicited by the delivery of the Retrospective addresses, two of which we read annually, by distinguished members appointed previously to the task—the one embracing medicine, the other surgery, with all their concomitant relations, to associate sciences. These addresses upon all the occasions referred to, were delivered by Dr Synonds of Bristol, on medicine, and Mr James, of Exeter, on surgery.

Dr Marshall Hall who for the last twenty years has attracted so much attention by his voluminous practical and physiological writings was a close attendant upon the meetings of the Provincial Association. He is a man of striking appearance and of a list of fortunes so decided and remarkable as not to be overlooked even in a crowd. He commenced his career as a surgeon at Nottingham, but afterwards removed to London, where he is chiefly known as a physician, and a lecturer in St Andrew College, associates of unquestionable native talent and originality, joined to unflinching application, Dr Hall has pushed his way to eminence by his own individual merits and exertions—without any of the adventitious aids and trinkets which men of limited capacity and scanty requirements so often resort to, successfully, to blind and unbookish the public. I can before he graduated and whilst a student at the Royal Infirmary of Edinburgh he delivered lectures on diagnosis, and published reviews and essays in periodical journals. From that period to the present time, a space of nearly thirty years he has been a most diligent and laborious cultivator of almost every branch of medical science, as his works, which speak for themselves amply testify. It was with great satisfaction, therefore, I formed the acquaintance, slight as it was, of such a man.

"I cannot close my account of the Provincial Association and its prominent members, without referring to the efforts made individually and collectively by that great body, to accomplish three kind of important purposes—equally dear and interesting, as they ought to be, and will prove, no doubt, in time to ourselves and the profession at large, throughout the world. To wit: the extent, and evils of the profession to consider the nature, and evils of quackery, and to give to the profession, through the medium of reform, a sound and legal constitution." It would be impossible within the scope of my present undertaking, to enter into the details necessarily embraced by this important and interesting subject, and will therefore mention that immense efforts are making by the Provincial Association, directed by such men as Birlow Hastings Forbes

and by their distinguished associates in Ireland—Crimichael, M'Donnell, Osborne, Munsell, and others through the *Dublin Medical Press*, and by the London University, as must at no distant day bring about a revolution in the medical affairs of Britain, which may, eventually, extend to the whole world."

New Zealand.

MEDICAL RESEARCH

The past year has been marked by the special interest that has been taken in medical research. The Minister of Health of New Zealand (Sir Mun Pomare) has shown particular interest in keeping New Zealand in the foreground in matters affecting the public health. The Health Department is at present engaged on several separate investigations. The high incidence of goitre has for some time been the subject of considerable discussion, and the Government came to the conclusion that this malady might, if unchecked, assume such dimensions as to constitute a serious problem in public health, as it is present the everywhere in Switzerland. Knowledge of the means where goitre is endemic was provided by the medical officers of schools, and the Health Department, to supplement this information, made goitre, for a time, a notifiable disease. In addition it was decided, in view of the modern belief that a deficiency of iodine intake is responsible for this malady, to investigate the iodine content of soils and vegetables. In this investigation Professor Heiatus, of the department of public health in the University of Otago, with whom were associated Mr C L Carter, lecturer on chemistry. Then reports is of great interest. The incidence of goitre was shown to be very low in regions underlain by igneous rocks yielding clayey soils rich in iodine, and high in regions where the soil is very deficient in iodine. "Any deficiency of iodine in the soil is reflected in the vegetables grown therein, and is the latter constitute our principal source of iodine, and no amount of safety or below it. In the former case the border-line of safety or below it. This demand may be a physiological one, such as menstruation or pregnancy, or it may be due to infection or to an unbalanced diet, but the end result is always the same—namely, thyroid enlargement." At the Medical congress of the New Zealand Branch of the British Association in February, 1924, a resolution was passed urging the Government to introduce the use of iodized salt into endemic areas. As a result the Health Department inserted in its Food and Drug Regulations a definition of iodized salt, but no salt conforming to this definition appeared on the market. In view of the report, however, the Health Department will take further steps to ensure the use of iodized salt in areas where deficiency in iodine has been shown to exist.

Medical research is also being undertaken on a number of other problems. Professor Heiatus and Dr Hector are conducting an investigation into the origin and mode of spread of infantile paralysis, the Government having put aside a sum of £2,000 for this purpose. A grant has also been made to Dr Renfrew White, orthopaedic specialist, Dunedin Hospital, to enable him to conduct an inquiry into rheumatoid arthritis and allied conditions. A commencement has been made also of an investigation of the cruet problem. It will receive increased impetus from the brilliant work of Gye and Barnard in this country.

These activities demonstrate how keenly alive is the Health Department to the imperative necessity of the high standard of health throughout New Zealand, with so well organized and active a department of health, with its divisions of public hygiene, infant welfare, school hygiene, Maori hygiene, dental hygiene, and food and drugs, there is every reason to believe that the ahead very high average health in New Zealand will be more than maintained.

Scotland.

EDINBURGH DIVISION IN RADIOLOGY

In connexion with the new pathological department, which is under construction in the Royal Infirmary of Edinburgh, the University of Edinburgh proposes to institute a diploma in radiology. It is expected that a portion of the new department will be ready for occupation on January 1st, 1926, and the remainder, consisting of the electrical and massage sections at a later date. The course in radiology is expected to include instruction upon the uses of radium rays, and ultra-violet radiations for which there will be a full equipment. The course in physics will be conducted by the professor of this subject in the university and a series of lectures upon radiology will be delivered by Dr. Woodburn Morrison, the head of the department and lecturer on radiology in the university. The intention is to give an essentially practical course, which will take up the whole day, during a period of approximately nine months. During the medical terms it is proposed to consist of six lecture demonstrations, which will be occasional short courses for undergraduates, which will from time to time to conduct brief courses specially concerned with the working of a ray apparatus, for practitioners who may be interested in this subject but who have not at their disposal sufficient time to take out the complete course for the diploma in radiology.

SCOTTISH ASYLUMS' PATHOLOGICAL SCHEME

The twenty-eighth annual report of the Board of the Scottish Asylums' Pathological Scheme (1924) has recently been issued. It states that arrangements were completed during the year with the authorities of the University of Edinburgh for the recognition of the superintendent of the laboratory as lecturer in neuropathology to the university. The board elected to the post of superintendent Dr. J. L. Reynolds, senior assistant to the professor of pathology at the Egyptian Government School of Medicine, Cairo. He took over his duties at the laboratory in the beginning of October, 1924. For several years past a grant from the Asylums' Board has been paid by the Medical Research Council to the laboratory for scientific research work. Intimation was received last year from the secretary of the Research Council that, in future, grants would only be awarded for special research work which had received the approval of the committee of the Research Council. A grant of £200 for the current year was made to the superintendent in respect of his researches into the path of infection of the lepto-meninges. The laboratory in Frederick Street, Edinburgh, which had been occupied by the late Dr. Ford Robertson, is being continued for the present till more suitable premises can be obtained, but it is hoped that it will be continued for the laboratory will eventually be found in the university buildings. Meantime the work is being done in a room of the pathological department at the Royal Infirmary, Edinburgh. The board had been pleased to note that, in response to an application which it had made, a Civil List pension of £100 a year had been awarded to the widow of the late Dr. W. Ford Robertson in recognition of his services to science and medicine. The revenue of the board for 1924 amounted to £1201 17s. 5d., of which £792 17s. 4d. was paid by twenty contributing institutions, and £25 is one quarter's salary from the university to the pathologist and lecturer. At the annual meeting of the board Dr. G. Douglas MacRae was unanimously appointed chairman of the board in succession to Dr. Skeen, whose term of office had expired. Dr. R. D. Campbell was appointed honorary secretary and treasurer.

WESTERN ASYLUMS' RESEARCH INSTITUTE

The fifteenth annual report of the work carried on at the Laboratory of the Scottish Western Asylums' Research Institute, Glasgow, has been issued by Dr. William Whitelaw. The opinion is expressed that, owing to the increase of cases of typhoid fever in asylums, this disease

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will come to occupy the position held by diphtheria in asylum practice towards the end of last century. Attention is drawn to the need for the early recognition of cases of the disease and early isolation. Reference is made to the treatment of general paralysis of the insane by malaria inoculation, and to a later method which is under trial at present on some what the same principle. This consists in the development of protein shock, the aim is to cause the patient to develop rigour and a high temperature for some hours. Incoming results have already been obtained in the treatment of eight patients treated in this manner. The question of chronic infection from the alimentary canal as a cause of insanity is also being investigated.

Ireland.

THE ESTABLISHMENT OF A SEPARATE MEDICAL REGISTER FOR THE IRISH FREE STATE

The decision of the Irish Free State Government to establish a separate medical register for the Irish Free State to which we made reference last week continues to excite the very strong opposition of almost united medical profession and of a unanimous and influential body of the few medical members of the Dail had been decided for some time that the position was not satisfactory and that there had been a decided change of front in the attitude of the medical profession in the Executive Council of the Government. The decision of the Government to put up the best fight it can to bring about a change in the attitude of the Government. In this it will not only have the assistance of the daily press which generally supports the public, which believes that a serious error of policy has been committed by the Executive Council is the result of some mistaken idea in regard to the constitution of the Free State. It will be remembered that when the bill to confer registration in the Free State was being passed through the Dail, Mr. P. McCullagh, one of the representatives of the National University in the Dail and Minister for Commerce and Labour who had charge of the measure, in a speech in support of the bill said on July 17th, 1924:

We are only by a positive Act here continuing what we thought was continued by the Adaptation of Institutions Act. It may be said that there is some deterioration of status in accepting that but the other side of the question should also be considered that we get representation which is out of all proportion to our medical Council and that Council supervises the medical education not merely of the twenty-six or thirty-two counties, but of England, Scotland and Wales, so that we are getting definitely supervisory power really beyond our proper proportion.

There is reason to believe that the temporary bill would have been introduced in the Dail as a permanent measure if it were not for the opposition of the Irish leaders who opposed on economic grounds the continuance of the present arrangements for registration is encouraging the export of young medical men towards whose professional training the Free State contributed. The Irish have withdrawn his opposition when the Government agreed to pass the bill as a temporary measure. If the Government decided to make permanent the present temporary Act it is believed it could command a form to one majority in its favour. In the circumstances the change of attitude of the Executive Council of the Government is not easily understood.

Some professors of University College have stated that the hardships that would accrue to Irish graduates practising in England by the establishment of a separate Irish medical register have been unduly stressed, and that Australian and Canadian graduates may, without much difficulty, practise in England. In reply to this statement a prominent Irish member of the General Medical Council asks whether the Irish professors are fully cognizant of the provisions of the Medical Acts relating to the admission of medical graduates on the Colonial list of the General

register, and draws their attention to Sections 11, 14, and 17 in Part II of the Medical Act of 1886.

From these sections it will appear that there are two sides to the question of the application of the Colonial list to the Irish Free State. Let us for the benefit of these Galway professors go through these sections in their order. According to Section 11 which relates to the registration of a Colonial practitioner the applicant must prove to the satisfaction of the Registrar to the General Medical Council that the diploma or diplomas through which he wishes to be placed on the Colonial Register were granted to him at a time when he was not domiciled in the United Kingdom or in the course of a period of not less than five years during the whole of which he resided outside the United Kingdom. Section 14 which provides for a separate list of Colonial practitioners in the general Medical Register also enacts that the provisions of the Medical Act of 1886 relating to persons who are accused of penal cases of professional misconduct shall so far as they may be apply in the case of Colonial practitioners registered under the Medical Act of 1886. This means that these Colonial practitioners are liable to be tried by the General Medical Council for such offences. In Section 17 it is declared that His Majesty in Council shall define a colony to which the part of the Act (admission to Colonial List) shall apply. According to this the Privy Council (of England) will have to determine what shall be deemed to be a British possession to which this Act applies within the meaning of this part of the Medical Act. Until such Order in Council has been made in respect of any British possession then this part of the Act shall not be deemed to apply to any such possession. No more need be said beyond the fact that according to his interpretation the Irish State Government cannot obtain reciprocal arrangements with England as regards the Colonial Register unless—

- (1) They desire to be recognized as a British possession.
- (2) They wish to have their medical men tried by a foreign tribunal on which they have no representation.
- (3) They are content to wait until five years (one and a half years more) have passed since the setting up of the Irish State.

He would frankly advise the Executive Council of the Irish State—not to mention these Galway professors—to seek a legal opinion as to the bearing of these sections of the Medical Act on their proposals to establish a separate medical register and obtain reciprocity with the General Medical Council before they commit themselves to unforeseen and possibly disastrous pitfalls.

Dr. T. Hennessy, Irish Medical Secretary, made a statement last week to the *Irish Times*, in the course of which he said that it appeared that the only cause for the ruin of medical science in the Free State by the Executive Council was a mistaken notion of national dignity. So far as it was a gesture towards national independence it was ill chosen and futile. No doubt it would mean a self-contained and isolated medical profession in the Irish State consisting of some 1,500 independent and generally ill-treated medical practitioners for whom the present Government had refused to do anything to improve their condition. In a recent report, he said, the Government representative on the Committee of Inquiry devoted some columns to show that the dispensary doctors were too well paid when they received an average of £250 a year—less in many cases than their travelling expenses. He concluded his statement in the following terms:

As the result of the decision of the Executive Council doctors with Irish diplomas will have no better standing than quacks in those countries where hitherto they were with their colleagues on terms of professional equality. There are no new guards or old guards in the Irish medical profession although there is reason to believe that the graduates of our youngest university—the National University—will suffer not and that its medical school with its historic past will be only a shadow of its former self.

BELFAST MENTAL HOSPITAL

The ninety-fifth annual report of the Belfast Mental Hospital contains the reports of the committee of management of the medical superintendent (Dr. S. J. Graham), the memorandum of inspection of Colonel W. R. Dawson, Inspector of Lunatics and Principal Medical Officer of the Ministry of Home Affairs of Northern Ireland, the financial statements and thirty-two tables of various statistics of many kinds—for example, admissions, ages, forms of disease, deliriums and suicides. There are also several excellent photographs and a large bird's-eye view of the whole institution, which stands in some 500 acres of land in a beautiful suburb of the city. Attention is drawn to the constantly increasing need for more accommodation, four new buildings are already in course of erection. It would have been interesting to have had figures clearly showing whether this demand is due to past overcrowding of the wards and to increase of population of the district and not to increase of insanity. As no census was taken in the first year of the decade this is a difficult matter, but the views of the

medical superintendent would have been of interest. The necessity of an amendment of the lunacy laws is referred to, and here again the considered opinion and an outline of the hoped for changes would have been a useful guide to the profession in the province. At the end of last year there were 510 male and 531 female patients in the asylum, the admissions, discharges, and deaths differed little from those of the previous year. The treatment of general paralysis of the insane by the induction of malaria fever has been continued with satisfactory results, out of a total of 48 patients, 14 have been discharged, and 12 are marked as well improved. Emphasis is laid on the hereditary factor in the causation of insanity, mental stress, the critical periods, and syphilis come next in frequency in the records. Alcohol excess is given as a contributory cause in 6.8 per cent. The question arises whether the recent epidemics of encephalitis had any effect in the forms or numbers of insanity. It is very satisfactory to note that the number of patients to whom parole is granted is high, and that practically in no case is it abused, and also the freedom from suicide, homicide, mechanical restraint, and seclusion. A large amount of useful work was done by the patients. The inspector's report is uniformly favourable, and often laudatory. The suggestion may be made that many would like, in future reports, to have the professional part of the medical superintendent somewhat enlarged, annotated, and illustrated by his own personal views and framed so as to aid the profession in the endeavour to keep abreast of the study of a different and kaleidoscopic part of his work. Psychological medicine is increasing in importance and if the profession be not educated it will become a battle between the true specialists and the quacks, and the former will lose the aid of an educated body of opinion.

Correspondence.

SUCCESSFUL TREATMENT OF FIBROSITIS AT HARROGATE

SIR—Like many of my colleagues, I have hitherto been inclined to regard spa treatment more in the light of a diversion for the well-to-do than as an actual curative measure. Personal experience of Harrogate has quite eradicated this misconception, and I give the contents of your columns for a short account of my experiences at Harrogate.

For many years I have been subject to fibrositis in various forms and, about a month ago, while returning from a confinement in the "wee sm' boos," I was seized with severe disabling pain in the lumbar region. Acting on previous experience I at once took to bed, and applied hot fomentations, followed by strong iodine to the affected part. Massive doses of salicylates, saline aperients, dieting, etc., gave no relief, diathermy, ionization, radiant heat, etc., did not have much effect, so I decided to give Harrogate a trial, after two weeks of severe discomfort at home.

On arrival at Harrogate I at once sought advice from my old colleague Dr. R. A. Morris, who straightway gave me a general application of ultra-violet rays by means of the mercury vapour lamp—in passing I may mention that I had already tried the tungsten rays without appreciable benefit—and was surprised to find that I was able again to assume an erect posture and to walk home without severe pain. The following day I began to take the waters—sulphur at 8 a.m. and magnesium at 11 a.m. and 3 p.m.—and experienced no discomfort therefrom. At 3.30 p.m. I had the deservedly famous "Harrogate hot in bath," at a temperature of 300°.

I faithfully took the waters every day, and had hot and ultra-violet rays on alternate afternoons, with the pleasing result that I was able to play nine holes of golf, without apparent ill effect, within a week of arriving at Harrogate. After ten days' treatment I motored home in my open car, and have since experienced no harmful results.

I cannot speak too highly of the many advantages the Harrogate Corporation freely places at the disposal of members of our profession, and desire to recommend to my suffering colleagues the facilities which Harrogate offers gratuitously to them. Harrogate has numerous

comfortable hotels and hydropathics, first-class concerts may be enjoyed free by medical men three times daily and good orchestral music is played in various public places from 8 a.m. on. First-class facilities are provided for all kinds of sport, and medical people are allowed to play golf at Oakdale free of charge.

I think I ought to state, in conclusion that I have no financial interest whatsoever in Harrogate; my only desire is to express my gratitude for so much kindness and benefit received—I am, etc.,

Dudl. A. Whitby, Harrogate, Aug. 19th

INFORMATION

WRITINGS AIRIALS IN LIGHTNING STORMS

SIR—Dr. Jothagill of Harrogate has kindly drawn our attention to an item in your JOURNAL of August 15th (p. 294) under the heading of "Memoranda," dealing with the case of lightning striking an aerial and injuring a person standing close to the lead in wire of this aerial. The article states that apparently the form of protection against lightning risks by cutting an aerial is useless. Our opinion on this subject is that a wireless aerial properly erected and well earthed with a good cutting switch which is kept clean or by means of plug-in contacts, which the thundercloud will cause the potential stream between the thundercloud and the aerial to be lowered, due to discharge from the aerial, so that a lightning flash will not take place between the cloud and the points immediately in the vicinity. This is the principle of the lightning conductor.

However, it is possible, due to sudden changes in cloud formation during a thunderstorm, for the potential to rise so rapidly that even this protection will not lower the potential quickly enough to prevent a flash taking place and then, of course, a certain amount of damage may be done.

In the particular case quoted by your correspondent, had the earthed aerial not been there, there would seem every possibility of some other point on the house being struck, with results which would probably have done very considerably more damage and the person who was unfortunately slightly hurt might have been killed.

If the above contention is not correct then many structures such as church steeples, tall buildings, and high aeries, would be struck and partially demolished during a thunderstorm—I am, etc. (for the Maricomphone Co. Ltd.),

Marconi House, London W.C.2
Aug. 19th

C. H. JORD
Assistant Chief Engineer

THE MORTALITY AND COMPLICATIONS OF DIPHTHERIA

SIR—With great diffidence I should like to draw attention to three points in connexion with diphtheria and to ask for the opinion of others. The three points are shortly (1) The persisting mortality from diphtheria, (2) the apparent increase of post-diphtherial paralysis of all limbs, and (3) albuminuria and nephritis as sequelae of diphtheria.

I have been in charge of a joint isolation hospital serving four urban and three rural districts for twenty-seven years, and have been much struck by the changes which seem to have accompanied the modern treatment of diphtheria.

In the first place no one will I think deny that the promise of twenty years ago, when antitoxin treatment was first adopted that diphtheria mortality would be greatly diminished has not been fulfilled. A glance at any of the weekly returns of the Registrar-General will make this clear. Take the quarter ending June 20th, 1925 and the figures for London and the great towns, and compare the mortality from diphtheria with that from scarlet fever. The weekly average of cases of scarlet was 867 with an average of 12.6 deaths. The weekly number of cases of diphtheria was 551 with 28.5 deaths. If the case mortality of diphtheria had equaled that of scarlet fever the weekly average of deaths would have been 7.6 compared with 12.6 instead of which it is 28.5—practically four times as great. Now did we not all hope and expect

when antitoxin treatment was introduced, that the result in the near future would be a marked diminution in the diphtheria death rate as compared, for instance, with scarlet fever? Certainly I so hoped. There is no question of the effect of antitoxin when used early. One's confidence in it continues to be justified weekly. What then is the reason for this continued rate of mortality? Is it that antitoxin is not used soon enough? Is it that too much is given? Or is it the result of sequelae?

2 I have been greatly struck by the apparent increase of post-diphtherial paralysis. In the pre-antitoxin days one used to note cases in which the palate and limbs were paralysed as showing rather an unusual complication. Perhaps two or three out of ten cases would show some degree of paralysis. My experience is that now practically every case shows some degree of paralysis of the fingers and that more serious forms of paralysis are correspondingly more frequent.

3 In the old days, although urine was tested daily for albumin in every case of scarlet fever, no such daily testing was considered necessary in the diphtheria ward and a small amount of albumin in the urine of a diphtheria patient was regarded as being associated only with the initial fever of a sharp case and rightly so as far as my recollection goes. In other words, one was not so much afraid of albuminuria in the diphtheria ward. Now I have learnt to dread the appearance of albumin in cases of diphtheria almost more than in scarlet fever. The sequence is now so often—first albuminuria and then that horrible sickness that seems to presage heart failure in diphtheria.

When I look back on the promise of the opening century with phthisis showing a steady annual decline, housing improvement promising all over the country and antitoxin discovered for diphtheria, I am conscious of these housing troubles worse than we have ever known them and the continued mortality from diphtheria. The great war for the third. It may be that one was young and hopeful then and now is old and disillusioned. I used to think in 1898 when isolation hospitals were provided practically in every district that I should live to see scarlet fever—hitherto stamped out. But as regard diphtheria I hope to hem the opinion of others and shall be glad to be proved in the wrong—I am, etc.,

August 19th

H. CAMERON KIDD,
M.O.H. from 1901 and North
Brom. Prov. Urban Districts

* In order to clear the ground it may be useful to quote the statements with regard to scarlet fever and diphtheria in the annual report of the Ministry of Health for 1924-25 recently issued, they refer to England and Wales. As to scarlet fever, the statement is "84,654 cases of scarlet fever were notified during 1924, as compared with 85,603 cases in 1923 and 108,242 cases in 1922. The mortality rate continued to decline, being only 10.5 deaths per 1,000 of notified cases as compared with 11.6 in 1923." As to diphtheria the statement is "The prevalence of this disease continued low, although notified in excess of the previous year, 41,980 cases being notified as compared with 40,009 in 1923. The mortality rate, however, fell to 60 deaths per 1,000 of notified cases, as compared with 68 per 1,000 in 1923."

THE ADDITIONAL VOLUNTARY HOSPITAL ACCOMMODATION REQUIRED

SIR—Whilst not desirous of belittling the two eulogies appearing in your last issue on the recent report of the Voluntary Hospitals Commission, it should be obvious to all that the opinions appearing over the signature of the chairman of the Hospitals Committee of the Association are only to be taken as his own opinions, that committee not as yet having had an opportunity to consider the report. There are several fundamental questions to be asked and replied to before the medical profession should decide to give the report its blessing. The Hospitals Committee and the Council will see to this, no doubt, and will consult the profession.

In the meanwhile it would be foolish for the medical profession to fail to recognize that here we have yet another instance which goes to prove that it lives in a changing world and that it will be greatly affected by new conditions which may be developed. For the State to subsidize anything cannot but result in the formation of a combine in which the State will be one of the partners, and, despite the emphatic statements of this school of thought which lingers at such a possibility, this partner will inevitably, sooner or later, be compelled by the force of public opinion and of those providing the money to take an active and direct concern in all things affecting the voluntary hospitals so subsidized.

The definition of this "direct concern" is fundamental. Having in view that the profession advocates one centralized local health authority, the domestic service under the National Insurance Acts, the various State clinics now in being, it is no longer possible to ignore the fact that the provision of an efficient hospital service is the last requirement, and that this is about to come to pass.

It would therefore seem desirable that the medical profession should take, as soon as may be, the long view and see that the menace of State bureaucratic organization and control, however insidiously developed, or however attractively hidden, does not by its stranglehold bring about the hushening of a free and liberal profession.

The whole profession—not only the staffs of hospitals as the report recommends—should see to it that it is consulted in this the latest scheme by which the voluntary hospitals are to be developed, and by the State—I am, etc.,

Hove Aug 22nd

E ROWLAND FOTHERGILL

WHAT IS AN EYE SPECIALIST?*

SIR,—Dr A F Feigus's letter (April 25th, p 804) on the subject of "What is an eye specialist?" contains material which is of considerable interest to the profession and of great importance to the public.

In the future there is no doubt but that an eye specialist will be a registered medical man who holds a special diploma or degree in ophthalmology, but at present any registered medical man may lay claim to such description. It would be impracticable for obvious reasons to demand of the present generation of eye specialists a special diploma or degree, yet the public should be protected as far as possible in the General Medical Council.

A post graduate appointment (resident or non resident) in a recognized ophthalmic (teaching) hospital or a general hospital with a recognized ophthalmic department or hospital ophthalmic practice of five years' duration could, in equity be insisted upon. Such a standard might be recommended by the British Medical Association in its advisory capacity to the Ministry of Health. I think that many men who are interested in ophthalmology are of the opinion that some such definition would be accepted by the administrative bodies.

Dr Feigus does not take a very favourable view of school eye testing. He points out merely the flaws in the system, but surely the medical inspection of school children in the aggregate should not be condemned on that account, neither do I think, because a few children who have no symptoms and +2 diopters of hypermetropia are missed, that the system of school eyesight testing should be condemned or that examination of every child under mydriatic is warranted. Personally I offer to examine under mydriatic all children whose vision is not 6/6, and also all children who have symptoms of eye strain.

Under this scheme the number of normal eyes examined under mydriatic is sufficient to render the work of the oculist extremely tedious. All myopes and astigmats are observed and such hypermetrops as are manifestly suffering from their hypermetropia. In order to observe the few children with low hypermetropia and no symptoms it would be necessary to submit the whole school population to examination under mydriatic and such a course is not, in my opinion, warranted. It would be best to let parents, if it would be a waste of the oculist's time, and it would also be an unwarrantable expense.

The ocular examination of school children is one of the

greatest benefits to be derived from medical inspection of school children. The system should be extended, but only where it can be carried out by medical men with the necessary training, and for this reason the necessity for a definition of "oculist" or "eye specialist" by the General Medical Council is apparent—I am, etc.,

Education Department
Natal S A June 5th

C G KAY SHARI, M D,
Chief Medical Officer

REGISTRATION OF MIDWIVES AND NURSES IN SOUTH AUSTRALIA

SIR,—In the *BRITISH MEDICAL JOURNAL* of May 2nd (p 831) there appears a statement, reported to have been made by Dr B Dawson, relative to the control of midwives. The report states, *inter alia* "There was nothing in Australia corresponding to the Central Midwives Board and the country was in a similar condition to that obtaining in England twenty years ago, when a large number of entirely unsuitable and dangerous women were practising as monthly nurses."

As Registrar of the Nurses' and Midwives' Registration Board of South Australia, I would ask that this be corrected so far as this State is concerned. In South Australia there is a Nurses' Registration Act which includes the compulsory registration of general nurses and midwives, such registration being subject to a prescribed period of training having been undergone and prescribed examinations, set and conducted by examiners appointed by the Nurses' Registration Board, having been passed. This has been in operation here for the last three years and it is noted by latest advice from the Central Midwives Board that that body has recently adopted the same periods of training for midwives as have been in operation in South Australia for the last three years.

For your information I enclose copy of Regulations in operation in this State, relating to the training of midwives and nurses, also a copy of the Registration Act—I am, etc.,

C E SPILLER
Registrar

Adelaide June 18th

Obituary

J F GORDON DILL, M D, M R C P,
Consulting Physician Royal Sussex County Hospital Brighton

It is with great regret that we record the death of Dr John Frederick Gordon Dill at his residence in Hove on August 22nd, after a long illness borne with great fortitude and patience. He was 66 years of age, and was born in Brighton, being the son of Dr Richard Dill, who was in partnership with his uncle, Dr John Dill an old 1st Indian surgeon. Dr Gordon Dill was educated privately till he went to Cambridge. He completed his medical career at St George's Hospital, and spent some time in Paris. He graduated B A Camb, taking honours in natural science, in 1880, and M A in 1884. In the same year he took the degree of M B and also the diplomas of M R C S and L R C P. He proceeded M D in 1887, and took the M R C P in 1904. He started practice in Hove in 1884, and was soon appointed to the post of assistant physician to the Royal Sussex County Hospital later he became physician, and on his retirement from the active staff was elected consulting physician. He was a member of the British Medical Association; he had been chairman of the Brighton Division, and represented it on the Sussex Branch Council. He was also at the time of his death consulting physician to the Brighton, Hove, and Preston Dental Hospital, a Fellow and ex-member of the Council of the Royal Society of Medicine, honorary secretary of the British Provident Association for Hospital and Additional Services, and joint honorary treasurer of the Federation of Medical and Allied Services, he was also a member of the Brighton Insurance Committee and of the Brighton Panel Committee. He was recently appointed a vice president of the Fellowship of Medicine and Post-Graduate Medical Association. He had held the office of President of the Brighton and Sussex Medical-Chirurgical Society. He was surgeon major in the Hampshire Yeomanry, which he joined at

the time of the Boer war, and afterwards transferred to the Norfolk Yeomanry when the late King, Edward VII, raised the regiment. During the great war he served first with his regiment and later at the office of the A D M S for Sussex, for which services he was awarded the O B E. All those who had the privilege of working with him at the office of the A D M S remember with gratitude his kindly thought and consideration for them. He had of late years, recognizing the precarious position of the voluntary hospitals, interested himself in starting a scheme—the Sussex Provident Scheme—for the provision of hospital and additional medical services for those who were of the working class or were unable to afford the expenses of a serious illness, by means of the payment of a small insurance fee. Into this scheme he put his whole heart, and worked most energetically to make it a success. Starting with a few members in the first year, the scheme now numbers many thousands, and the result is due entirely to the energy and work of Dr Gordon Dill.

Dr Gordon Dill was well known to the practitioners of Brighton and Hove, his courteous and kindly disposition had endeared him to them all, and they recognized that in everything he did the interests of others were put before his own. There are many doctors in Brighton who could give examples of this great trait in his nature. He published many papers in the various medical journals, including "Some considerations upon the possibilities of future legislation in matters of public health" (presidential address), *Lancet*, 1891, "On pyrexial tachycardia and its relation to Graves's disease," *Proceedings of the Brighton and Sussex Medical-Chirurgical Society*, 1893, "Notes on some cases of skin diseases treated by thyroid extract" *ibid.*, 1894, "The plague of consumption" *Hospital*, 1895 "Pernicious anaemia treated by mill-sonning ferments" *Proceedings of the Royal Society of Medicine*, 1908, and others.

He married the daughter of Mr Simon Nicholson Martin of Hove, late of the Indian Civil Service, one of the defenders of Lucknow, where he served as a volunteer soldier. He had two sons—John Martin Dill, late of the 5th Lancers, and Richard Dill, late of the 1st Life Guards—both of whom are living. To his widow and his two sons our deepest sympathy is expressed in their great bereavement.

On the occasion of the death of a brother during the war, Dr Gordon Dill wrote the words and composed the music of a beautiful hymn, which was sung at his funeral on August 27th.

DONALD ACKLAND, L D S AND M R C S, L R C P, Bath

To the grief of all who knew him, Mr Donald Ackland died at Bath on August 17th at the age of 50. He was a son of Mr Robert Ackland of Exeter, brother of Mr J M Ackland of Exeter, of Mr W R Ackland of Clifton, and of the late Mr R C Ackland, dental surgeon to St Bartholomew's Hospital. Mr Donald Ackland was educated at Charing Cross Hospital and the Royal Dental Hospital, London. He obtained the diploma of L D S R C S Fng in 1897 and those of M R C S Fng and L R C P Lond in 1899. Shortly afterwards he began practice as a dental surgeon in Bath. His skill in his profession was quickly recognized, and he rapidly built up an extensive practice. He took an active but unobtrusive part in the medical life of the city. He was an original member of the Bath Clinical Society, as well as a member of the Bath Division of the British Medical Association. He was a regular attendant at the meetings of both and his contributions to their proceedings, both in the form of original papers and in participation in discussions, were greatly valued.

Mr WILFRID G. MILFORD, Acting President at the Annual Meeting at Bath, to whom we are indebted for most of these particulars writes "Quiet and somewhat reserved in manner, the unvarying kindness of his disposition endeared him to all who knew him, while his fine character rendered him universally esteemed and respected by his medical brethren. At the recent Annual Meeting of the Association in Bath he held the important post of

chairman of the Transport Subcommittee, and carried out the duties of that office with characteristic thoroughness and devotion. He organized personally all the arrangements for the various excursions in a most masterly manner. It was tragic irony indeed that he should have been struck down just when he had completed all the details of his scheme and should have been prevented from carrying out himself. How splendidly it worked and how greatly it contributed to the success of the meeting must always be remembered by all who attended. Mr Ackland's health had been indifferent for some years, and the fact that he never spared himself but always gave of his best, must have taxed further to weaken his constitution, but the sudden blow by which his career has been cut short in its prime has come a great shock to his many friends. The medical profession of Bath has sustained a great loss and one which will be long felt."

Mr Ackland leaves a widow for whom the deep sympathy will be felt in her great loss.

PIRCIVAL LANGDON LANGDON DOWN,

M B, B Ch Camb
Teddington Middlesex

We greatly regret to have to record the death on August 15th of Dr Percival Langdon Langdon Down at his residence at Teddington. He was a son of the late Dr Langdon Down, physician to the London Hospital and was born in 1858. He was at Harrow and Trinity College, Cambridge, and received his medical education at the London Hospital where he was house surgeon and house-physician. He graduated M B, B Ch Camb in 1893 and was also M A of that university. He was associated throughout his life with his brother, Dr R Langdon Down, in the direction of the well known institution for mentally defective children at Normansfield, Hampton Wick. He had long been a member of the British Medical Association, and at the time of his death was vice chairman of the South Middlesex Division. For over twenty years he had taken active part in the public work of the district. He became a member of the Teddington Urban District Council in 1905, and on six occasions between 1907 and 1924 was its chairman. In 1905, too, he became a member of the Thames Conservancy, and was chairman of the Lock Stiff Committee. He was also chairman of Richmond Bridge Commissioners and of the Thames Valley Councils Association since its formation in 1914. During the war he was chairman of the Local Control Committee. He found recreation in boating and was commodore of the Thames Sailing Club. He married in 1899 the second daughter of the late Mr James Bigwood of Wickenham, and leaves two daughters and a son. A memorial service was held at St Alban's Parish Church, Teddington, and the body was cremated at Woking.

We regret to record the death of Dr WILLIAM HERVEY PLAISTER on August 11th, at the age of 82, at his residence in Tottenham. Dr Plaister received his medical education in Bristol and Berlin, he obtained the diploma M R C S Fng in 1866 and the L S A in 1867. He commenced practice in Tottenham in 1868, and held the post of medical officer of the Tottenham and Edmonton General Dispensary until about two years ago, he was also district poor law medical officer for Tottenham. He had been a member of the British Medical Association for more than forty years. His son, Dr Geoffrey Plaister, who was killed in the war, had been previously in partnership with his father for ten years.

Dr JOHN DUFFY WINNE died on August 4th, at St Martin's, Guernsey, after a sudden illness lasting three days. Dr Winne received his medical education at Trinity College Dublin where he graduated M B, B Ch, I M in 1885, he obtained the diploma M R C S Fng in 1888, and the D P H (R C P S I) with honours in 1902. His appointments included house-surgeon to the Jessop Hospital for Women, Sheffield, resident to the Adelaide Hospital, Dublin, and medical officer of the Nottingham

Borough Fever Hospital Dr Wynne possessed considerable literary ability, and was for some time associated with the *BRITISH MEDICAL JOURNAL* as a reporter of Sections at the Annual Meetings. He contributed articles on tuberculosis in Ireland to the *JOURNAL* and other periodicals.

ALBERT JOHN OCHSNER, who died at Chicago on July 25th, was one of the leading surgeons in the United States. In 1900 he was appointed professor of clinical surgery in the University of Illinois, and held the chair until his death. In the same year he was elected chairman of the section of surgery of the American Medical Association. In 1910 he was president of the clinical congress of North America, in 1923 president of the American College of Surgeons, and in 1924 president of the American Surgical Association. He was an honorary Fellow of the Royal College of Surgeons in Ireland and of the Royal Microscopical Society. His numerous publications included a textbook of clinical surgery for practitioners and students (1905), a handbook on appendicitis (1906) and a treatise on surgical diagnosis and treatment (1918). He was the editor of the *Yearbook of Surgery* from 1917 to 1923.

Universities and Colleges.

UNIVERSITY OF DURHAM

In the list of those who received medical degrees on July 1st which was published in the *BRITISH MEDICAL JOURNAL* of July 11th (p. 94) it should have been indicated that Mr C C Ungley had obtained the M.B. B.S. with second class honours, he was also the recipient of the Philipson scholarship.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

Surgery—T K Clifford C D Cogswell V G Crowley S W Cuff
A L Evans W O H Evans T H Harrison A H Henson
J Herbert E P Hyde A P Osbourne W I Pierce F Reynolds
H A Sack G H Shanley N Schwartzman I Waynik
Midwifery—C D Cogswell W Hinds F P Hyde M V Roberts
Forness Munger—O Bastable E P Hyde L J Newman
M V Roberts I Waynik
Pharmacy—R F Ashkenasy A L Evans W Ier E H Rampling
M V Roberts C H Spencer

The diploma of the Society has been granted to Messrs A H Henson J Herbert W I Pierce A B Osbourne and I Waynik.

Medical News.

IN consequence of representations made during the debate in the House of Commons on the Diseases of Animals Act, 1925, the Minister of Agriculture and Fisheries has issued a new order (Tuberculosis Order of 1925 No. 2). It has been made after communication with the Ministry of Health and the Scottish Office, and applies to Great Britain. It provides that in any case in which a carcass slaughtered under the previous Order is intended to be used for human consumption, a copy of the notice of intended slaughter sent to the owner shall also be sent to the appropriate officer of the sanitary authority of the district, together with a statement of the address of the premises on which and the time at which it is intended to carry out the slaughter. The Order further provides that in any such case the carcass shall not be removed from the premises or be disposed of for human consumption without the consent in writing of the medical officer of health or other competent officer of the sanitary authority, or, in the case of Scotland, the meat inspector. The Minister of Health has sent copies of the Order to all sanitary authorities in England and Wales.

DURING the year ending March 31st, 1925 the Central Council for Infant and Child Welfare organized a day nursery at Wembley, in conjunction with the British Red Cross Society, and reorganized and extended its own travelling exhibition. A permanent exhibition is being established at Carnegie House, 117, Piccadilly, the headquarters of the council comprising model garments for infants and children, and the following sections: dental, clean milk diet riclets, tuberculosis and cripples. An arrangement has been made with the College of Nursing whereby its library has been placed at the disposal of infant welfare workers and students. Various courses of lectures have been delivered, and £450 has been given in grants to constituent societies of the council.

THE KING has promoted Sir William Maurice Abbot Anderson, VVO, physician to H.R.H. Princess Royal and household, to be a Commander of the Royal Victorian Order.

DR WALTER GRIPPER of Wallington, on the occasion of his retirement after forty years practice in the district, has been presented by his friends and patients with an illuminated address and a writing desk as a mark of their esteem and appreciation of his services.

THE KING has given directions for the appointment of Dr John Owen Shucore, Director of Medical and Sanitary Services, to be an official member of the Executive Council of the Panganyika Territory.

THE Indian Government has selected Lieut Colonel F P Mackie, director of the Bombay bacteriological laboratory, and Drs A Souza and B B Brahmachari, assistant directors of public health in the United Provinces and Bengal respectively, to take part in the tour in Japan this autumn of public health officers of the Far East. The tour is under the auspices of the League of Nations.

ON the occasion of the centenary of its foundation the firm of D Appleton and Co of New York has published a small book containing an essay entitled *Portrait of a Publisher* by Mr Grant Overton, and a chronological record showing how the firm began, how it was the publisher in America of the books of Charles Darwin and Herbert Spencer, and of Osler's *Practice of Medicine*, and how it also published books of lighter kind such as *Alice in Wonderland*, *David Harum* and *Uncle Remus* and many novels. The firm is perhaps best known to medical readers in this country by its encyclopedic works; it has published many of them, not a few in several editions.

MESSRS H K LEWIS AND Co will shortly issue a book on malignant disease of the testicle by H R Dew, and the second edition of *The Pathology of Tumours*, by Dr E H Kettle.

THE Transactions of the Eleventh Annual Conference of the National Association for the Prevention of Tuberculosis, which was held on July 6th and 7th, have now been published and may be obtained from the secretary at 20, Hanover Square, London, W1. On July 11th (p. 73) we gave an account of this conference, which considered in particular two subjects—tuberculosis in childhood and the sanatorium treatment. It is probable that many interested in these subjects will be glad to avail themselves of the opportunity of obtaining a full report of the speeches and discussions.

THE Rockefeller Foundation has decided to defray the expenses for ten years of a periodical entitled *International Biological Abstracts*, which will commence publication on January 1st, 1926. It has also presented 300,000 dollars to the Vaccine and Serum Institute of Copenhagen directed by Professor Madsen.

THE following have been nominated professors in Italian universities in dermatology and syphiligraphy, Ulder Capelli at Turin, Cosimo Lombardo at Pisa, and Alberto Seira at Cagliari in general pathology, Francesco Pentimalli at Cagliari and Alberto Varrasini at Sassari, in human anatomy Emerco Luna at Palermo, Nello Baccari at Catania and Giovanni Vitali at Cagliari, in histology and general embryology, Torni Inilio at Padua.

DR LINA STERN, formerly assistant to the professor of physiological chemistry in the University of Geneva, has been appointed to the chair of physiological chemistry in the University of Moscow.

THE *Archivos de gastroenterologia y nutricion*, the first issue of which appeared in May, is a quarterly journal devoted to gastrointestinal disease. It is published at Havana under the editorship of Professors Solano Ramos y Delgado and Leonardo Garcia Fox. The first issue contains original articles by Professor Ramos on the nervous system in digestion, by Dr C Flaudin on the treatment of amoebiasis by treparol by Professor Fox on the importance of diathermy, by Juan J Delgado on vitamins and nutrition, and by Dr Juan M Perez Boudet on the gastric symptoms of tuberculosis. These original articles are followed by abstracts from current literature and a bibliography.

THE Eleventh International Congress of Hydrology and Climatology will be held at Brussels from October 10th to 14th under the presidency of Professor Gilbert of Paris and Dr Terwinge of Brussels. The following subjects will be discussed: hydromineral and climatic treatment of cardiac vascular affections introduced by MM Cottet Mongeot and Piotot, hydromineral sulphur cure, introduced by MM Flamin, Liacre, and Lumorgue. The subscription is 50 francs for members of the congress and 25 francs for ladies accompanying them. Further information can be obtained from Dr Poirot Delpech, 3 Rue de la Planche Paris, VII.

AN Italian Society for the Scientific Study of Tuberculosis was founded at the Italian Antituberculosis Congress recently held at Naples.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

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All communications with reference to ADVERTISEMENTS as well as orders for copies of the *Journal* should be addressed to the Financial Secretary and Business Manager.

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Darnsleigh Gardens Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central).

QUERIES AND ANSWERS

ANATOMICAL NOMENCLATURE

DR A HARPISON WHITT (Cambridge) writes—In the review of Buchanan's *Anatomy* (*BRITISH MEDICAL JOURNAL* August 15th, 1925 p 296) the following statement occurs: "We are glad to see that the old nomenclature has been adopted in its entirety." I should like to know whether this voices the opinion of the majority of anatomists or whether the old nomenclature is likely to be retained in future in most textbooks.

* * We cannot say that the statement quoted voices the opinion of the majority of anatomists although we are informed that when the matter was considered at a meeting of the Anatomical Society of Great Britain and Ireland there was a very large majority in favour of retaining the old nomenclature. In consequence the University of London and the Royal Colleges of Physicians and Surgeons declared in its favour and adopted it at all their examinations. It would be hazardous to venture on a statement as to what will be the nomenclature of the future but we think it probable that a compromise will be reached with however the old nomenclature predominantly represented.

LETTERS, NOTES, ETC

SURGICAL EMPHYSEMA AFTER LABOUR

MR G W DANDO (Bexley) writes: The following case seems to be of interest owing to its comparative rarity. A primipara aged 28 after a prolonged labour which was ended by forceps delivery of a child weighing 9½ lb developed emphysema involving first the lower eyelids then the neck and upper part of the chest owing no doubt to a wound caused by staining. The left eyelid was very puffy before the forceps were applied. The condition caused her annoyance for some days. She had difficulty in opening her eyes in the mornings for a day or two and 'cracked' considerably but it cleared up completely in about ten days. The lungs are quite normal.

SUBNORMAL TEMPERATURE

P C D writes: In reply to my questions in the *BRITISH MEDICAL JOURNAL* of July 25th Dr S Vere Pearson asks (August 8th p 278) why one should trouble about a patient's subnormal temperature if he feels fit. This is a very good question. It is however far from disposing of the matter even if one discards the purely scientific consideration of subnormal temperature. The sense of well being is well known to be often very deceptive. For example people with quite advanced renal or arterial disease will often enjoy life so keenly as to be quite unaware of the dangers threatening them. If another example is needed one can point to puerperal sepsis where in some cases for a time the patient's sense of well being is perfect. Dr Pearson also gives it as his opinion that a temperature of 97.2° which I regard as subnormal is normal in cool weather in the state of rest. We are taught that the normal body temperature is about 98.5°. The questions that I originally propounded therefore remain unanswered interesting as they are—namely (1) Is a subnormal temperature regarding 98.5° as normal an indication of a pathological process and if so should it be regarded as an indication

tion for investigation and treatment (for example with thyroid extract)? (2) On the other hand can a subnormal temperature result from an inborn anomaly of the temperature regulating centres? Dr S Vere Pearson makes a very interesting reference to a book called *Doctor's Diary* wherein the opinion is expressed that people with slow pulses and low temperatures are more than ordinarily intelligent. The patient I have in mind would make an excellent example for the author—he is certainly more than ordinarily brainy.

MARINELLI'S CHILDHOOD

DR T H PIER (Loughborough) writes: When examining the refraction of a girl aged 8 at the school clinic I found +4.5 sph with 1 D cyl VV and prescribed +2.5 with a cylinder. With her glasses the child could or would see nothing. The father also brought a specimen of her writing. Without glasses it was quite good with glasses it was small and illegible. The father wrote to the headmistress that he had paid for the glasses and was bitterly disappointed. At a subsequent examination I found that even +0.25 lens had the same effect. I then tried the writing test. Without glasses writing was large and good with them it was small and illegible as before. I then convinced the lensless child she knew ledge and the small scribble persisted. This was proof even to the father that the child did not intend to wear glasses and would not acknowledge that she could see with them. The curious thing is that one so young should be so persistent in deception.

MISSES WHOOPING COUGH AND BRONCHOPNEUMONIA

DR SAMUEL SAMUEL (Leeds) writes: Dr Hugh Smith's note (August 15th p 316) is very interesting. Though I have not had an exact example like his in which whooping-cough has intervened. I have had several cases in which measles has been followed by bronchopneumonia and after resolution a fresh attack of measles has appeared. Bronchopneumonia in the fashion often interrupts a case of whooping-cough (as far as one can judge by the cessation of the spasmodic cough) and the whoop returns in full blast after the pneumonia has subsided. Dr Samuel thinks that the explanation is to be found in what takes place in a child when a second organism is superimposed upon the original one, the new organism asserts itself for a time and then the first organism re-asserts itself overcomes the new one and starts its life cycle over again.

TETANUS

IN use of a tetanus antiserum during the last war to a great extent mitigated one of its worst horrors but the serum was not always available and so search has been made to discover a suitable method of vaccination. A sporulating organism such as this offers almost insurmountable difficulties to the use of the bacillus as a vaccine owing to the high resistance of the spores and as research has had to be undertaken in other directions. Descombes (*C R Soc de Biologie* 1921 vol 2 p 239) also *BRITISH MEDICAL JOURNAL* 1st June August 9th 1924 para 165) has experimented with a tetanus antitoxin—the toxin deprived of its toxicity by heat and formaldehyde. Previous attempts have been made with analogous products—notably by Vallee and Bazy some years ago who used a mixture of the toxin with Crémé's solution. This however in addition to being not very satisfactory in operation rapidly deteriorated and soon lost its value. In the horse and man a good has been obtained by the injection of a serum on the discovery of a deep penetrating wound but there is still a considerable mortality in horses due to and so covered wounds. It is towards providing a vaccine for this animal that Descombes has directed his most recent researches (*Ann de l'Inst Pasteur* 1925 p 485). His experiments seem to show that the vaccination of the horse against tetanus is practicable and that injections of the antitoxin render the animal refractory to a very heavy experimental infection. The duration of the resulting active immunity has not been definitely established but it seems to be at least several months. The work is not yet finished and much has to be done before the antitoxin will be available for general use. If the ultimate results come up to expectations not only will a very considerable service have been rendered to one of man's best friends but it will open the way to very important consequences to man himself.

LAWSON LINT

IN the review of the book *Lawson Lint His Life and Work*, by Dr J Stewart McKay published about three years ago (*BRITISH MEDICAL JOURNAL* 1922 vol 1 p 1032) the revival of the gossip that lint was the natural son of Sir James Simpson was deprecated and dates were given which made it extremely improbable. The writer of the review has called our attention to an announcement of Mr T P O'Connor's reminiscences published in the *Sunday Times* of August 16th in the course of which Mr O'Connor states that Lawson Lint with whom he was on friendly terms volunteered the statement that the story was not true and that he came of perfectly respectable though not distinguished parents.

VACANCIES

NOTIFICATIONS of offices vacant in universities medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 28 29 32 and 33 of our advertisement columns and advertisements as to partnerships assistantships and locumtenencies at pages 30 and 31.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 104.

THE British Medical Journal.

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THE CHOICE OF MEDICINE AS A CAREER

BY

CHARLES BUTTAR, M A, M D CANTAB

Why does a boy decide to become a doctor? From the opening addresses still delivered each year at some of the medical schools by eminent leaders of the profession, who have long since forgotten their own motives, the answer would appear to be that the boy is inspired solely by the lofty ideal of helping suffering humanity. But human action is rarely the result of a single motive. With few exceptions the sequence of motives in the selection of the profession of medicine is, probably, the need for making a living, the influence of environment, such as contact with relatives who are doctors or schoolfellows who intend to be, the glamour of the respect shown to the doctor, emulosity. The instruction now given in schools in the elements of such sciences as biology and physiology must increase the strength of the motive of curiosity. The compound of these ingredients, spiced in many cases with the idealism of youth, is the primum on which the profession of medicine is nourished.

Idealism is a very valuable spice, but it needs tempering with the milder condiment, humility. Moreover, it is sublimated from the emotions, and therefore needs the corrective of reason. There is a tendency among medical men in their public utterances to make too much of the great and noble profession, with its hard work and scanty reward. Any occupation may be great or noble, hard and ill paid. The ideal prison can be just as noble, just as hard-worked, and worse paid than the doctor. Idealism is quite possible in the lawyer, perhaps even in the stockbroker. I have never ceased to marvel at the greatness of soul of the ideal serjeant, his work would revolt me more than the gruesome-ness of dissecting or *post-mortem* rooms. It is well to leave to the public the estimation of the greatness and nobleness of our profession, to admonish students privately on the maintenance of a lofty aim in life, and to limit our utterances in public and in the press to practical questions which must be answered by every student and practitioner at some time in his career.

QUESTIONS FOR THE ASPIRANT

The first question that a would-be medical student should put to himself—he will not do it, but his parents or guardians might do it for him—should be "Is my standard of general culture sufficiently high?" To avoid trespassing on the domain of idealism, this question may be dismissed at once with the answer that the standard of culture can never be high enough, notwithstanding the examination in general education which the student is required to pass. The second question is "In what kind of medical practice do I intend to engage myself?" The choice lies between public and private practice, though the two overlap. Public practice is salaried, and may be military or civil. Military service—in the Navy, Army, or Air Force—has certain limitations in the matter of the age of retirement according to the rank attained, and in its needs only lessened incentive to hard work. But pay and pension are assured, so that one of the anxieties of private practice does not exist. Civil medical service has a later age of retirement, less assurance of pension, and in many cases less pay, but

greater independence, and consequently larger scope for advancement. As socialization of the community advances more and more appointments become open to doctors. But the pecuniary possibilities are never likely to equal those of private practice. It is desirable that the highest type of doctor should enter the public services since it is through these men that the mass of humanity is ruled. A service of cultured and intelligent men is less likely than a mediocre service to make the community uncomfortable with harassing restrictions, cast-iron rules, or futile and expensive experiments.

The majority of students will become private practitioners. Private practice may be either special or general. Special practice is rightly regarded as a higher grade than general practice, its practitioners should be doctors of high intellectual capacity. Unfortunately success in this branch of practice involves considerable expenditure for the purpose of "keeping up appearances", so that high intellectual capacity needs, for comfort, to be combined with private means. This need, however, prevents overcrowding of the higher grades of the profession. It was recently the fashion amongst some specialists to adopt a tone of mock humility in talking of the general practitioner, and to suggest thereby that the general practitioner was a person much superior to themselves. This was mere hypocrisy, and therefore unseemly. It is true that many men of great intellectual capacity become general practitioners, some prefer this practice, others cannot afford the special practice they would prefer. The will of these men is of the greatest value to the department of general practice, in that it sets a standard for the branch of medicine in which the majority of students ultimately become absorbed. In a temporary lull into idealism it may be suggested that the general practitioner should be one who is capable, not only of selecting the specialist suitable for a particular case, but also of criticizing, in the light of his knowledge of the patient and his surroundings, the opinion of the specialist, and of advising the patient whether he shall adopt the specialist's advice or not.

The student who is destined to become a general practitioner has many questions to ask himself at one stage or other of his career. Let him not think that the National Insurance Department of the Ministry of Health has settled his status by defining the duties which are within the competence of the ordinary general practitioner. A general practitioner must be prepared to be faced with any and every ailment and accident that the human being is liable to suffer. Hence rises the danger that he may regard himself as a universal specialist. He must ask himself "Am I capable of judging my own limitations?" Unless he is capable of doing so, his patients will suffer from ill-performed operations, from prolonged courses of useless vaccines manufactured on erroneous diagnosis, from regimes of sour milk to satisfy baseless hypotheses, or from expensive health resort treatments for non-existent disease. To avoid these catastrophes the student must be well trained in diagnosis in every branch of medical practice. It is far more important that a general practitioner should be able to recognize early an attack of glaucoma than that he

should be able to perform circumcision or an amputation operation for adenoids. Yet eye work used to be regarded at hospitals as a luxury while countless students tried to scrape out the contents of the nasopharynx. There are some branches of medical practice in which the general practitioner should, as a rule, outshine the consultant, such are the management of confinements and the feeding of infants. But even in these matters the important things are the power of diagnosis and the recognition of limitations, so that a case of congenital stenosis of the pylorus, for example, may be referred for appropriate treatment.

The next question the student should ask himself is "Have I the courage to be honest?" This is a very difficult question. In all ages the human being likes to have somebody or something to look up to and venerate, to whom or to which he may attribute the power he would like to possess himself. Most people venerate politicians, and think that they must be made of some superior clay. In the Middle Ages the priest was regarded as all wise, the lawyer has had his turn, and the poet, painter, and composer have never ceased to emphasize the superiority of their mental powers. But in the home the doctor has been supreme, and the assaults of quacks and faith-healers of all descriptions throughout the ages have failed to displace him. The doctor has to keep up a reputation for wisdom, will he, by being honest, give the position away? When pressed with questions by importunate patients, a doctor should be strong enough to say, "I do not know."

Supplemental to this question of courage to be honest is the question "Am I truthful?" The probability is that the more truthful a doctor is the better for the advancement of mankind, for science, as Huxley said, has learnt that the foundation of morality is to have done, once and for all, with lying. Nevertheless, this question also is difficult, and perhaps, as another scientist used to say, not yet ripe for dogmatic statement. In cancer, is the sheep, hungry for life and looking up to the doctor, to be fed with lies or annihilated by the truth? And how many of these we try to spare would be annihilated by the truth? And shall the inquiring wife of a repentant, but gonorrhoea stricken, husband be lulled to peace, or stimulated to suspicion? For meeting such questions the student may well ask himself, "Am I the soul of discretion?"

INCREMENTS OF SUCCESS

If a young man, well educated, decides to enter the medical profession as a general practitioner, is willing to try to recognize his limitations, is honest, discreet, and, as far as possible, truthful, he may wish to consider some of the factors of success. No man can possess all these factors, nor is any man so insipid as to be able to please every patient. But the more of these factors a doctor possesses, the more patients he will please.

It is not possible to define personality, nor is it possible to describe or to cultivate the type that impresses. To assume the appearance of wisdom when no wisdom exists may not be strictly honest, but there is no doubt that an appearance of wisdom conferred by nature may be a valuable asset. The attraction of personality may be increased by attention to various details. Thus it is within the capacity of most men to cultivate some measure of sympathy and charm of manner. With an effort many can make themselves alert and businesslike. Attention to personal appearance, and to the ordering of the house from which the practice is conducted, is important. The medical man has too often tried to live up to his reputation of being unbusinesslike. He may be unpunctual, or careless about noting and keeping appointments. And apart from the effect on his practice, a lack of business capacity may have disastrous effects on the doctor and on his family.

It is sometimes said that the appearance of prosperity is often a better asset than the possession of knowledge. The public can recognize a smart motor car, but not the power of diagnosis. Hence a doctor may embark on expenses which his income cannot meet, and if he dies early his wife and family are abandoned to the charity of his friends and colleagues. From his earliest days the student should be impressed with the necessity when in practice of keeping his expenses within the limit of his means, and with making provision for contingencies. The cost of this provision should be a first charge on his income, and such provision should be made at the earliest opportunity—if possible, during student days. All medical men should have insured their lives, all should have insured against sickness and accident, all should have joined a defence society, all should subscribe to the medical charities, and all should be members of the British Medical Association.

PUBLIC HEALTH SOME GENERAL CONSIDERATIONS.

BY

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THE importance of developing the teaching of the preventive aspect of medicine in the ordinary curriculum of the medical student is now fully recognized. Sir George Newman in 1919¹ made an eloquent appeal to this end, and to the Educational Number for 1923 he contributed an article on the "permeation" of the medical curriculum by preventive medicine. He observed that the chief glory of the present age—which he called "the Golden Age"—of medicine has been the advance of prevention, and pointed out that "it is now generally acknowledged that the ultimate purpose of the science and art of medicine is not to cure the individual patient only, but to seek out the laws or principles which govern health or ill health for the human family." He appealed to the medical student to give attention to the subject. "There are," he said, "not less than a score of Acts of Parliament which impose public preventive duties upon the medical practitioner, and 'it is required of him that he shall take an essential part in the vast national and international machinery now in being for the conquest of disease.'" The General Medical Council by the date of the article in these columns from which I have quoted had revised the medical curriculum and had recommended that the preventive aspect of medicine "should be a pervading influence all through the curriculum, affecting every subject in it, so that the student naturally and almost unconsciously adopts in his daily practice of medicine the attitude and spirit of prevention." When this comes about

the medical practitioner will the better realize the responsibility attaching to his unique position for the application of effective measures of preventive medicine, and a better foundation than exists at present will be laid for the curriculum for the Diploma in Public Health.

The fact must be recognized that those who undertake the work of a medical officer to a public health authority devote themselves to a service which, to the very large majority, does not offer a prospect of pecuniary reward equal to that which attaches to successful private practice, but a medical official performs a valuable work in congenial circumstances, given that tact, consideration, and conscientiousness which command popularity and success, and the public health worker enjoys a greater freedom than the busy practitioner—a fact which has led many of the latter to join the ranks of the former.

A medical man who desires to enter the public health service as a career must, as a first step, obtain a Diploma in Public Health, and details of the way in which it may be obtained are given at page 447. The Regulations of the General Medical Council demand that the granting of such a diploma shall be proof of the "possession of a distinctly high proficiency, scientific and practical, in all the branches of study which concern the public health." Most of the universities and licensing corporations now grant such diplomas to candidates who pass the examinations provided by them, some universities grant degrees in the subject, but these are generally available only to their own graduates.

¹ An Outline of the Principles of Preventive Medicine 1919

In 1910-11 the Board of Studies of Hygiene of the University of London, of which I was chairman, prepared a report for the consideration of the Senate upon the need of a university centre in London for post-graduate instruction and research in hygiene and public health, and upon the desirability that all such teaching in London should be given in one centre, made worthy of the capital of the Empire. Ten years afterwards the Post-graduate Medical Committee, appointed under the chairmanship of the Earl of Athlone by Dr Addison, then Minister of Health, made a similar recommendation. Thanks to the munificent gift of the Rockefeller Foundation the scheme of a London School of Hygiene and Tropical Medicine is soon to be practically realized. When the building is ready, in about two years as is hoped, and the school is prepared to undertake post-graduate teaching in public health in all its branches, there is every probability that all such teaching in London will be concentrated within its walls. The new institute is to be a recognized school of the University of London, and the existing London School of Tropical Medicine, which has already done such good work, will be an integral part of the new school, which has the advantage of being under the able direction of Dr Andrew Balfour, C B, C M G, D P H. Not only will full emersion of study be provided for the Diplomats in Public Health and in Tropical Medicine and Hygiene, but special opportunities will be given to post-graduate students to receive instruction and conduct research in these subjects. "Refreshed courses" of instruction will also be provided. It is intended that a great graphic museum of hygiene shall be a notable part of the provision made. This will be of real value, and its section of tropical medicine and hygiene will certainly provide a source of interest and instruction to visitors from the dominions, colonies, and dependencies. The part in practical education which such a museum is capable of playing has never been fully exploited in this country.

Under the new regulations for a Diploma in Public Health the huge majority of students take Part I of the examination at the end of their first five or six months of special work and anyone may commence work with this object as soon as a registrable qualification in medicine, surgery, and midwifery has been obtained. The candidate will then have disposed of the more exacting part of the examination and be left with only six months of subsequent work before taking Part II of the examination, after the prescribed period of two years has elapsed since he obtained his registrable qualification. Formerly it was easy to obtain some kind of remunerative work during the period of training but under the new regulations the student is so fully employed that this is hardly possible. Where this is essential, however, it can be done by spreading the D P H work over the period of two years.

To the prospective medical officer of health the training and experience in administrative work is of first importance. It must be as comprehensive as possible, so as to include every variety of "setting." No one medical officer of health can provide this wide experience nor demonstrate every variety of public health provision well organized and completely equipped, and so it is desirable that special visits and demonstrations should be arranged by the training centre and that these should be recognized as counting in the 180 hours of work with a medical officer of health. Above all the student training with a medical officer of health should be given an opportunity of seeing something of both urban and rural conditions, and when he is being instructed in the subject of industrial hygiene, school hygiene, and port hygiene, he should see for himself the conditions obtaining in factories and workshops, schools, and ships.

A wise post-graduate student will set himself to learn much more than he is taught, and he will lose no opportunity of doing and seeing all that he can. He will find, for instance, that his knowledge of the "setting" of public health work will be more usefully obtained from his efforts to become thoroughly familiar with the circumstances and conditions of life among the poorer section of the community than from a textbook on sociology—although the latter can always be consulted with advantage.

In conclusion it may be said that the mere possession of a Diploma in Public Health is seldom sufficient to secure an

appointment. It is necessary in addition to build up a record of experience in one or more branches of public health work, by acting as an assistant to a medical officer of health, or by obtaining clinical experience in eye, ear, and throat work, or by assisting in the work of a maternity and child welfare centre, a tuberculosis dispensary, a sanatorium, a venereal diseases treatment centre, a fever hospital, or in several of these ways. One who, after obtaining his registrable qualifications, has made up his mind to embark upon public health work, would be well advised to devote twelve months to gaining some special experience in the matters above indicated. He would then have a good prospect of securing an appointment. It need hardly be added that if his taste lies in the work of a medical officer of health, a school medical officer, a tuberculosis medical officer, a maternity and child welfare medical officer, or a venereal diseases medical officer, he should concentrate upon the special experience, clinical and otherwise, which relates to the kind of office he desires, a course embracing as many of these experiences as possible will help him to the administrative appointment of a medical officer of health.

The Profession of Medicine.

INTRODUCTION

For long past it has been our custom to publish a special Educational Number of the *BRITISH MEDICAL JOURNAL* at this time of year, shortly before the opening of the winter session at the medical schools. The remarks that follow, on the profession of medicine, are addressed more particularly to intending students and their parents. While it would be out of place to discuss medical politics here, the occasion may be taken to touch on a few current matters affecting professional study and practice. Our object in doing so is to put certain considerations before those who think of devoting themselves to medicine, and thus help them to judge of their fitness for the profession and of the prospects it holds out, for there is no walk of life in which a special vocation is more necessary, and few about which so many misconceptions linger in the public mind.

The Educational Number is largely a guide to the steps that must be taken in order to become a legally qualified practitioner. With the passage of years the form and contents of this issue have undergone more or less change, but its primary object remains unaltered. It contains also certain sections intended for younger members of the profession who may be in doubt as to the path in medicine they should choose as a career, and a section on the existing opportunities for post-graduate medical study in Great Britain. The particulars given under these two main heads are founded for the most part on official information, and are arranged along the customary lines. We publish also in this issue two introductory articles—the one by Dr Charles Buttai, a general practitioner of large experience, on the motives which may lead to the choice of medicine as a profession, and the other by Professor Henry Kenwood, in which he briefly sets out some general considerations on the choice of the Public Health Services as a career. This should be read in conjunction with the article giving further particulars on page 445.

Apart from these and other special articles, the prospective student will find in subsequent pages an account of the course of education required of him, the places where this training can be obtained, and the universities and other licensing bodies which test the knowledge gained and issue degrees or diplomas entitling successful candidates to become registered medical practitioners. Here we draw attention to the need, which increases with the advance of scientific medicine, for a thorough grounding in the fundamentals of science. As Sir Ernest Rutherford said five years ago to the Section of Medical Education at

the Cambridge Annual Meeting of the British Medical Association "In order to maintain and raise the standard of the profession, the medical teaching must be based on a sound basis of scientific principle. Without that, the energy and enthusiasm of medical teachers is largely wasted."

PORTALS OF THE PROFESSION

Perusal of the articles in this issue will give the idea that there is an almost bewildering number and variety of portals through which admission may be obtained to the *Medical Register*.¹ Nevertheless, although there is no single State examination in medicine in this country, the medical courses of the various universities and schools in Great Britain and Ireland run on parallel lines, and the obligatory curriculum is much the same in all. Within these broad lines, however, there are many differences between the requirements of the individual teaching and examining bodies. The choice should therefore be made early, so that a definite plan may be followed throughout the years of study. To prevent a false step at the outset the student and his advisers should try to obtain a clear idea of the object to be aimed at, of the relative advantages of taking one or other of the degrees or diplomas open to him, and of the comparative difficulties they present.

All who wish to enter the medical profession must comply with certain conditions. These are prescribed by the General Medical Council, which is a statutory body established under the Medical Acts, a statement of its requirements is given at page 410. Many changes have lately been made in the medical curriculum, and this section should be studied with care. Every medical student, after passing examinations in the subjects of general education and in the preliminary sciences, must take a course of training at a recognized medical school, covering at least a period of five years, but usually extended to six years or more. The examination of candidates as to their fitness to practise medicine, surgery, and obstetrics is left to the licensing bodies, which are of two kinds—the universities, and certain corporations in England, Scotland, and Ireland. One of the functions of the General Medical Council is to make sure that the tests at each stage do not fall below a certain standard, and that the students examined have undergone prescribed courses of instruction at recognized institutions. Successful candidates at such examinations eventually receive from the body holding them either degrees, in the case of a university, or diplomas or licences in the case of a corporation; these qualifications entitle them to claim insertion of their names in the *Medical Register* kept by the General Medical Council. Holders of diplomas and licences once made up the great majority of all medical men, especially in England and Wales. But universities have greatly multiplied, and many practitioners are now graduates that a student of ordinary ability will be well advised to aim at a medical degree, though it may be desirable to take also a diploma or licence.

COST OF MEDICAL EDUCATION

The question, What does a medical training cost? cannot be answered in a single precise statement, because the outlay varies within wide limits. Besides differences in the charges made by medical schools for instruction there are differences in examination fees as well as in the fees for certificates of qualification, and those who aspire to the higher degrees and diplomas must expect to pay more for the additional courses and tests and certificates. Again, not all students, however industrious, pass examinations with equal facility, and every setback due to failure in the examination room or to illness means added expense. Since professional education must in any case continue for

five years at least (a period exceeded by the vast majority), and since the cost of living in different parts of the country varies much, while personal expenditure varies still more, it can only be said in a general way that anyone who thinks of entering the profession should reckon on an outlay—first and last—of at least £1,500. On the other hand, the number of scholarships and prizes now offered is larger than in the past, in the Scottish universities bursaries are numerous, and the Carnegie Trust (whose regulations are summarized at page 421) gives financial assistance to many Scottish students. The main thing to bear in mind is that, as compared with other professions, the period of training in medicine is long, and for most students costly. There is also to be remembered the time of waiting after qualification when income is apt to lag behind expenditure.

THE NUMBERS OF MEDICAL STUDENTS

One effect of the war and of after-war circumstances was a great increase in the number of medical students, both men and women, but especially women. The following brief survey of the position should be read in conjunction with the note on page 409 on the numbers of registered practitioners. In the thirteen years before the war the annual entry of medical students in Great Britain and Ireland averaged about 1,400, during the war period, although many students left to serve with the forces, the whole number actually studying in the schools was growing steadily larger. In 1914 the entries rose to 1,600, and in 1915 to 1,918, in 1916 they fell to 1,875, in 1917 they rose again to 2,150, in 1918 to 2,253, and in the following year, when demobilization was in active progress, as many as 3,420 new students were registered. After 1919 the number of entries rapidly fell. In 1920 there were 2,531 registrations of new students, in 1921 there were 1,808, and in 1922 there were 1,833.

In 1923 the number dropped to 545, and the reasons for the fall were discussed by Sir Donald MacAlister in his presidential addresses to the General Medical Council. In his address last May he recalled that, speaking in 1924, he had expressed the view that the sudden decline was more apparent than real, and had attributed it to the recent introduction of a pre-registration test in elementary physics and chemistry. "This test," he continued, "many students would not pass, and so could not register, until the end of their first term, at least, after leaving the secondary schools. The explanation would seem to be sound, for in 1924 the registrations were nearly doubled, reaching 1,043 by the end of the year. As the working of the new regulation is better understood in the schools, and as the general and scientific education of intending medical students is brought up to the higher standard now required, there is little doubt that the number of qualified entrants on the medical curriculum will approach the pre-war figure of 1,300 or 1,400, a number sufficient to supply the needs of the country for qualified practitioners." In his address in May, 1924, he had said that the period of strain created by the war on the teaching resources of the medical schools and colleges had practically come to an end, and expressed the hope that "in the comparative calm which now prevails the teaching institutions would have leisure to introduce the improvements in the medical curriculum which, with their assistance, the Council had laid down as necessary or desirable."

The recent fall in students' registration is to be welcomed for another reason. Excessive entries of students lead to overstocking of the profession. In 1922, 1923, and 1924, the numbers of new practitioners registered greatly exceeded the figure indicated by the President of the General Medical Council in the passage quoted above. In 1924 the number of registrations, which had been 2,482 in 1923, rose still further and attained the large total of 2,796.

¹ The *Medical Register* is the official statutory list of qualified medical practitioners kept by the General Medical Council.

These recent large increases have brought the total number of names in the *Medical Register* up to 49,958 at the end of 1924, and the ratio of qualified medical practitioners to population is now greater than at any previous time. The new regulations, which came into force at the beginning of 1923, should do something to keep the entries of students—and as a consequence, the numbers of the profession—within manageable bounds.

CHOICE OF A CAREER IN MEDICINE

The student, having passed all his tests and placed his name on the *Medical Register*, becomes a member of the profession and assumes the privileges and responsibilities that go with legal qualification. But the final examination, though a great event, is only the opening of a door into a wider field of training and experience. Education must continue throughout his career: a good doctor remains always a student. As an introduction to practice nothing is so useful to the newly qualified man or woman as a year or more spent in junior hospital appointments, and all who can afford the time should look upon the holding of such posts as a most valuable investment. Next comes the choice of a career in the larger world of medicine. Many paths are now open—for example, general practice, Government service at home or abroad, and special work in public health and mental disorder, in scientific research, or in one of the many modern subdivisions of medicine and surgery. Most of these careers are discussed in some detail in the later sections of this number, but a few words may be said here about general practice and the work of a consultant or specialist. A good deal of information on these and other cognate matters will be found in the *Handbook for Recently Qualified Medical Practitioners*, published by the British Medical Association.¹

GENERAL PRACTICE

General practice is still the goal of the great majority of all medical students. The life is onerous and exacting. It has been said with much truth that of all professional men the general practitioner is the worst paid and the hardest worked. Nevertheless, general practice has its compensations, and, for one reason or another, it appeals to many of the very best students. Thus it comes about that this country continues to produce the finest body of general practitioners in the world.

This career is usually entered upon in one of three ways. The newcomer may take a house and wait for patients to seek his services, he may purchase the goodwill of a practice rendered vacant by retirement or death, or—perhaps best of all—he may become a partner in an established practice. A well managed multiple partnership has obvious advantages over single-handed practice, for instance, it allows each partner leisure for recreation and for keeping up with the progress of medical art and science. Success in the work of a private practitioner demands a great deal of knowledge other than that gained at the medical schools, and consequently a man is more likely to be accepted as a partner, or to do well on his own account, if he has already some experience of family practice as an assistant or deputy. A large proportion of general practitioners, therefore, begin their work as assistants.

An all-round knowledge of practical medicine, surgery, and obstetrics should, if possible, be supplemented by skill in some particular branch of practice. Moreover (as already indicated) the value to a general practitioner of having held one or more resident hospital posts is incalculable. In after-life (we quote the words of a great surgeon and teacher) one can generally pick out those who have been thus trained, as they gain a confidence and reliance and experience which they cannot easily obtain elsewhere.

Before leaving this subject it ought to be added that the strain of busy general practice is so heavy and often so continuous that only those of sound physique can hope to last the course.

CONSULTANTS AND SPECIALISTS

For those who aim at becoming consultants or specialists success will depend in the long run not only upon mental gifts and capacity for hard work, but (as is true of practitioners of all branches) on the possession of those qualities which inspire confidence both in patients and in colleagues. In practice, personal tact and character are as important as scientific equipment. Moreover, since the consultant or the specialist can scarcely hope at first to pay his way by consulting work or by the exercise of his specialty, he must either have the means to support himself for an uncertain period or be prepared by teaching or in other ways to defray expenses. A successful physician, surgeon, or specialist is made, not born, and the process of making himself is not remunerative.

The question of additional degrees and diplomas is of special moment to those whose ideas turn in this direction, if only because these are important factors in securing election to the visiting staff of a hospital. Beyond the qualifications, such as Bachelor or Licentiate, which admit to the *Medical Register*, most of the licensing bodies bestow higher titles, such as Doctor, Master, or Fellow, after further tests. For the career of a consulting physician the M.D. degree of a university is usually necessary, and also the Membership of one of the three Royal Colleges of Physicians, according to the part of the British Isles in which practice is contemplated. In the same way, the Fellowship of one of the three Royal Colleges of Surgeons should be sought by those proposing to devote themselves to surgery. There are also diplomas in a growing number of special branches of work, such as public health, tropical medicine, ophthalmology, radiology, and psychological medicine, which are superfluous for most practitioners, but either useful or indispensable for the medical man or woman who wishes to specialize in these subjects. Information about the several diplomas will be found elsewhere in this issue. For all consultants and specialists ample occasions for exchanging ideas and information with their fellow workers are most necessary. Such opportunities are provided by the various medical societies, by the scientific sections of the British Medical Association's Annual Meetings, and by the medical journals, both general and special.

FINANCIAL AND SOCIAL CONSIDERATIONS

It has never been easy to assess the attractions of medicine as a means of livelihood, and at the present moment this would perhaps be more difficult than ever. On the financial aspect of our profession two or three general observations only need be made. Medicine is not to be regarded as a path to fortune, and anyone who enters it with the sole idea of making money has mistaken his calling. The competent practitioner can always make a living, but the main reward of the medical life is the knowledge of good work well done. Whatever the branch of medical work chosen, there are few doctors who become what a business man would consider even moderately rich by the practice of their profession.

But if medical practice, from the financial point of view, offers to the majority little more than a means of livelihood, in its social and intellectual aspects the prospect is brighter. The culture which once belonged to the physician alone, entitling him to his place among members of the learned professions, has spread, and is spreading further, into all ranks of the practitioners of medicine. The great improvement in the education, general as well as technical, of the practitioner has added much to his influence in public

¹ *Handbook for Recently Qualified Medical Practitioners*. British Medical Association, Tavistock Square, W.C.1. 2. 6d. J.L.

life, and has been a large factor in raising his social status during the sixty-seven years that have passed since the General Medical Council was constituted under the Medical Act of 1858. A family doctor of the kind that is well styled "the backbone of the profession" occupies an excellent position among his neighbours, and is the friend and confidant as well as the medical advisor of many of his patients.

PRIVATE PRACTICE THE OUTLOOK

The prospects held out by the various public medical services are indicated in later sections. Here may be noted very briefly some circumstances of to-day that have a bearing on private practice. In the first place, efforts are being made to bring professional training more into line with the growth and differentiation of medical science, and so to raise the level of medical practice, it was with this in view that the student's curriculum was lately reconstituted. Next, the fundamental importance of the work done by the general practitioner is better understood, and it is more fully recognized that an efficient medical service for the community must be based upon the individual skill and devotion of the family medical attendant, working in close touch with the aims and methods of preventive medicine. The private practitioners of to-day are taking a wider view of their duties towards the environment and the habits of their patients. On the other hand, increasing contact with public duties makes new demands on the practitioner. The multiplication of official requirements and tiresome administrative details has a tendency to cramp his independence of action, and there are those who see in the "officialization of medicine" the gradual undermining of professional freedom.

The National Insurance system, now more than thirteen years old, has already had a profound influence upon the private practitioner and his work, so much so that it needs some little effort to recall clearly the conditions of industrial practice before the year 1913, both as affecting the medical profession and the large section of the community which became insured under the Act of 1911. The Insurance Medical Service now comprises nearly 14,000 practitioners, some doing much work among insured persons, others little. If the freedom of family practice and the robust individualism of the private practitioner have been restricted by the Insurance Acts and Regulations, there is a general belief that the panel system has provided a better service than existed under the old "club" arrangements, though it is by no means as complete or as effective as it might be made. Whether the remuneration is adequate to the services required may well be doubted, but it is easier now for a doctor to make an assured income out of attendance on working class patients.

The full effect of the insurance scheme upon the medical profession as a whole, and upon the private practitioner as an individual, is as difficult to gauge as its effect upon the public health. Some of its most objectionable features have been removed through the efforts of the Insurance Acts Committee of the British Medical Association, which is the central executive of the Local Medical and Panel Committees of the country, and represents, with conspicuous success, the interests of insurance practitioners in all negotiations with the Government. A Royal Commission is now sitting to inquire into the existing scheme, and to report what, if any, changes, extensions, or developments should be made in its scope, and in the administrative, financial, and medical arrangements set up under it. The scheme may therefore be considered as still in the experimental stage, and the future of private medical practice as still rather obscure.

PROFESSIONAL ORGANIZATION

The strong sense of *esprit de corps*, which adds so greatly to the value and happiness of undergraduate medical study,

is equally an advantage to the qualified practitioner. In these days no doctor, whatever his position or the nature of his work, can safely stand aside from his fellow medical men and women must therefore band themselves together for the common protection of their profession and themselves. Experience shows that individuals and isolated bodies of medical practitioners are always handicapped when they attempt to defend their own interests unsupported by their fellows against organized bodies. This applies, whether the organized bodies are Government departments, local authorities or bodies of workmen. While the individual doctor is quite capable of dealing with the individual patient, he requires an organization at his back when he is dealing with other organizations. The first step after qualification should be to become an active member of the British Medical Association. A young practitioner will find in the meetings of the local Division of the Association, and in the Annual Meetings held in large medical centres, many opportunities, not only of keeping abreast with the progress of medicine but also of friendly intercourse with colleagues. Another thing that no new graduate should fail to do is to join one of the professional societies which undertake individual legal defence of their members.

The British Medical Association was founded in 1832 to promote the medical sciences and to maintain the honour and interests of the profession. It is the great general forum of the profession, and it is the one organization which acts for the profession as a whole in times of stress. A brief note on the objects and constitution of the Association, and the advantages offered to members, will be found at page 459. The record of ninety-three years' work shows that professional organization, directed with wisdom and imagination, can successfully combine service for its members with service for the public. Greater work remains to be done in each direction, and we look confidently to the rising generation of doctors to take their share.

THE NEW LRA IN MEDICAL EDUCATION

A full account of the resolutions and recommendations of the General Medical Council which have applied since the beginning of 1923 is given in the present issue of the *JOURNAL*. Here we propose to indicate some of the salient features of the scheme, both of study and of examination.

The Revised Curriculum

The minimum age for registration as a medical student has been increased from 16 years to 17 years. Formally, the length of the medical curriculum is not added to, practically it is, by transferring to preliminary study and examination the subjects of elementary physics and chemistry in their purely scientific aspects. In the applications to the professional courses—as in biophysics, biochemistry, and pharmacological chemistry—appropriate instruction is to continue throughout the curriculum, and is to be tested by examination, so that the student shall no longer be able to put behind him as passed and done with the knowledge which he acquired as a preliminary. If he has had no facilities at a secondary school or otherwise for obtaining what is necessary for the preliminary examination in these subjects, then he can come for it to the university or college, but study there will not count for the medical curriculum.

In biology it is understood that comparatively few secondary schools are equipped for elementary tuition, but the Council has suggested an ingenious arrangement for utilizing the work of such schools as are qualified for the purpose. The examination will not be "pre-curriculum," but the instruction may be so, and a licensing body can allow students who so desire to sit for the examination immediately after matriculation. Here again, however, the applications of biology to medicine, surgery, and midwifery will continue to receive attention throughout the courses.

The Council attaches great importance to the reservation of sufficient time for the later subjects of study, free from all worries about passing the examinations of the earlier parts. To that end it recommends what is practically a block system. A minimum of three years should be available not merely after the courses of anatomy and physiology have been taken, but after the professional examinations have been passed. The value of this proposal is

Examination Reform

Another notable feature is that in assessing marks in the actual examinations account may be taken of "duly attested records of the work done by the candidate throughout his course of study" in the subject. This is in effort to meet the long felt difficulty that a man's mental ability or the want of it, counts far too much in his being passed or rejected. The difficulty is real, but the remedy is not easy, and the Council is wise in the cautious approach it makes towards a solution. Where, as in the colleges a student will only by chance come before his own teacher as in examination, absolute impartiality in the attested records will be necessary. A teacher must not play for popularity with students by too easy certification of diligence or success in class. On the other hand, at the universities, where the teacher is always one of the examiners, no personal like or dislike of a student must influence the report of the internal to the external examiner. The class records should of course, be available, but the scheme will put a serious ethical obligation on all concerned, and the Council will doubtless watch its operation with keen and critical interest.

Besides the resolutions of the General Medical Council in regard to professional education and examination (see pages 410-412) a series of additional resolutions was adopted on May 26th, 1922, as follows:

- That throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspects of Medicine.
- That each Licensing Body should make adequate arrangements for the effective correlation of the subjects of study throughout its curriculum.
- That the teaching of Anatomy and Physiology should include as a regular part of the courses the demonstration on the living human body of structure and function.
- That the curriculum should be so arranged that a minimum period of three years shall in every case be available for study after the completion by the student of the Professional Examinations in Anatomy and Physiology.
- That the curriculum should be so framed as to afford sufficient opportunities for the study during the last three years of the course of Physics, Chemistry, Biology, Anatomy, and Physiology in their practical applications to Medicine, Surgery and Midwifery, and that the student's knowledge of these applications should be subject to test in the Final Examination.
- That before the student is admitted to his clinical appointments he should have received practical instruction in clinical methods and in the recognition and interpretation of physical signs.
- That instruction should be given in the courses of Forensic Medicine and Public Health or otherwise on the duties which devolve upon practitioners in their relation to the State and on the generally recognized rules of medical ethics. Attention should be called to all notices on these subjects issued by the General Medical Council.

Training in Preventive Medicine

The first of these resolutions should be borne in mind by every teacher throughout the whole curriculum and not merely in the clinical subjects. As indicated in a questionnaire issued by the Council in 1918 all the various subjects—physics, chemistry, biology, physiology, anatomy and, of course, pathology, bacteriology, and therapeutics—also—afford opportunities from the very beginning for instilling into the mind of the student the necessity for his keeping constantly in view in all the advice and treatment he may give throughout his professional life, the primary importance of promoting the general health of those who entrust themselves to his care, and of preventing trivial ailments from developing into

definite disease. In his presidential address to the Council in 1918 Sir Donald MacAlister pointed out that if "the efficient practice of their profession" by doctors was "to be judged by new civic standards, and to be carried out under new conditions," the student would have to be trained accordingly. The era of that training began formally in 1923. Though no details are given in resolution (a), and though it may require some change of orientation by teachers who have hitherto given no special heed to the bearings of their subject on the maintenance of health and the prevention of disease, yet they will doubtless join heartily in what will indeed be an epoch-making advance in medical education in this country. Its reflex and reward will surely be found as time passes in a diminution of sickness and prolongation of life, in the raising of the present standards of physical health and national welfare.

New Rules for the D.P.H.

It is important to note the bearing that this development of the teaching of disease prevention to all students of medicine has upon the stringent rules which came into force for new candidates at the beginning of 1924 for the obtaining of Diplomas in Public Health (see page 447). It is expressed that the stiffening of the requirements will discourage those who intend to go into ordinary medical practice from taking the additional qualification which would specially fit them for co-operation with the health officer of their district. The reply is twofold. Henceforward all new practitioners will have received tuition qualifying them generally for such co-operation, and in addition they are already being systematically educated in "the duties which devolve upon practitioners in their relationship to the State." The balance, therefore, seems clearly on the right side as to the ordinary practitioner, and there will unquestionably be advantages in strengthening the education of those who aspire to a life spent in the public health service.

THE NUMBERS OF THE MEDICAL PROFESSION

A REVIEW OF FORTY-NINE YEARS
 SINCE the year 1876 the General Medical Council has kept an analytical record of the number of names entered in, added to, or removed from the *Medical Register* in each twelve months. The *Medical Register* has been published annually since the Council was constituted under the first Medical Act of 1858, but before 1876 no such data as these were ascertained or preserved.

In order to gain a general view of the numerical strength of the medical profession during the past forty-nine years we have extracted from the tables and set down in parallel columns the total number of names in the *Medical Register* on December 31st of each year, and the numbers added annually by registration between 1876 and 1924.

Numerical State of the Medical Register		
Year	Names added in Year	Total No. on Dec. 31
1876	1 009	22 713
1877	910	22 811
1878	996	22 600
1879	996	22 516
1880	1 123	22 936
1881	1 053	23 275
1882	1 171	23 601
1883	1 304	24 517
1884	1 338	25 321
1885	1 377	25 998
1886	1 431	26 452
1887	1 531	27 216
1888	1 184	27 939
1889	1 305	28 348
1890	1 265	29 163
1891	1 513	29 555
1892	1 345	30 590
1893	1 513	31 614
1894	1 579	32 637
1895	1 426	33 601
1896	1 446	34 478
1897	1 335	34 642
1898	1 230	35 057
1899	1 210	35 636
1900	1 351	36 355
1901	1 345	37 355
1902	1 345	38 355
1903	1 345	39 355
1904	1 345	40 355
1905	1 345	41 355
1906	1 345	42 355
1907	1 345	43 355
1908	1 345	44 355
1909	1 345	45 355
1910	1 345	46 355
1911	1 345	47 355
1912	1 345	48 355
1913	1 345	49 355
1914	1 345	50 355
1915	1 345	51 355
1916	1 345	52 355
1917	1 345	53 355
1918	1 345	54 355
1919	1 345	55 355
1920	1 345	56 355
1921	1 345	57 355
1922	1 345	58 355
1923	1 345	59 355
1924	1 345	60 355

The following table indicates the rising proportion of registered medical practitioners to population during the

3 A candidate remitted in any subject of a Professional Examination should, before he is readmitted to examination, be required to produce satisfactory evidence that he has, during the interval of remission, pursued the study of the subject in which he was rejected. Candidates who obtain less than 30 per cent of the marks in any subject should be remitted for a longer period than three months.

4 In all the Professional Examinations sufficient time should be assigned to practical work, in order to test the thoroughness of the candidate's knowledge and to encourage practical methods of study.

The requirements of the preliminary examination in general education being satisfied, it is then necessary to pass an examina-

5 Candidates in all their examination work should be carefully supervised.

6 Two examiners should always participate in the oral examination of a candidate, except in subordinate parts of practical examinations.

7 In all written examinations the questions in each subject should be submitted for the approval of all the examiners in that subject.

8 In all written examinations an average of at least half an hour should be allowed for a candidate to answer each question.

9 It is desirable that examiners, and in particular those for the Final Examination in Medicine, Surgery, and Midwifery, should be appointed or re-elected for at least three consecutive years.

10 Whatever may be the system of marking, the percentage for a pass in each subject should not be less than 50.

11 In the regulations for the several examinations it should be provided that examiners, in assessing marks, be empowered to take into account the duly attested records of the work done by the candidate throughout his course of study in the subject of the examination.

12 The Final Examination in Medicine, Surgery, and Midwifery, with the exception of the Clinical and Practical Examination in Midwifery and Gynecology, must not be passed before the close of the fifth academic year of medical study.

13 The three portions of the Final Examination in Medicine, Surgery, and Midwifery should not be further subdivided into sections which may be entered for or passed separately.

14 Compensation in respect of marks as between the three different portions of the Final or Qualifying Examination—namely Medicine, Surgery, and Midwifery—is contrary to the intention of the Medical Act (1886).

15 The Final Examination should include clinical and practical examinations in Midwifery and Gynecology.

16 The clinical examination in Medicine, Surgery, and Midwifery should be held in properly equipped hospitals or examination halls well provided with suitable patients.

17 In the examinations in clinical medicine at least one hour and in clinical surgery at least half an hour, should be allowed to the candidate for the examination of, and report on, his principal case.

18 In Medicine, in Surgery, and in Midwifery no candidate should be allowed to pass who fails to obtain 50 per cent. of the aggregate marks assigned to the whole examination, or who fails to obtain 50 per cent. of the marks assigned to the clinical examination, or who fails to obtain 40 per cent. of the aggregate of the marks assigned to the written and oral examination. In Midwifery, where a clinical examination is not held, the duly attested records of the work done by the candidate in clinical midwifery must be presented to the examiners for assessment in the Final Examination, and no candidate should be allowed to pass who fails to obtain 50 per cent. of the aggregate marks assigned to Clinical and Practical Midwifery and Gynecology.

19 The Final Examination should include the examination of secretions, the testing of urine, clinical microscopy, and prescription writing, and there should always be an oral examination in Medicine, Surgery, and Midwifery, which should include an examination on pathological specimens.

20 At the Final Examination each candidate should be submitted to a practical and oral examination in Pathology (macroscopic and microscopic), unless this has been included in a Professional Examination preceding the Final Examination.

21 Whatever be the method of entry for the Final Examination all candidates should be required to complete the three portions of the Final Examination within a period of nineteen months.

The English Universities.

There are eleven universities in England and Wales, and some account of each of them follows. They all have now fully developed medical faculties. Until recently the only exception was the University of Wales, whose constituent colleges are those of Aberystwyth, Bangor, Cardiff, and Swansea. This university grants degrees, and has laid down a six years' curriculum for candidates for the MB and BCh degrees, and it now provides, at the Welsh National School of Medicine at Cardiff (see page 419), instruction in all the subjects of the medical curriculum.

UNIVERSITY OF OXFORD

The professional degrees conferred by this university are those of Bachelor of Medicine (B.M.), Bachelor of Surgery (B.Ch.), Doctor of Medicine (D.M.), and Master of Surgery (M.Ch.). It also grants a Diploma in Public Health and

a Diploma in Ophthalmology. On receiving the B.M. the candidate is entitled to registration by the General Medical Council. In favourable circumstances this degree and the B.Ch. may be obtained in six or seven years from matriculation. Before receiving either, the candidate must have taken a degree in arts (B.A.), for which three years' residence within the university is necessary. This, however, does not necessarily mean deferment of professional study for that period, for the subjects chosen for the arts course may be the same as those in which examinations would in any case have to be passed for the medical degree.

In accordance with a statute which came into force on October 7th, 1920, women may be matriculated and admitted to degrees in the university. The statute is retrospective under certain conditions. Before matriculation a woman must have been admitted as a member of one of the five societies of women students (Lady Margaret Hall, Somerville College, St. Hugh's College, St. Hilda's Hall, or the Society of Oxford Home Students). Women members of the university are admitted to all degrees, except the LL.D., under the same conditions as those laid down for men in regard to examinations, courses of study, and fees, and under corresponding conditions as to residence at the university. Among the university diplomas open to women are those in anthropology, ophthalmology, and public health.

A candidate may obtain the B.A. degree in either of the following ways of which the former constitutes the normal course for medical students:

(a) By passing Responsions (or one of the examinations which are accepted as equivalent) the Scripture examination (one of the preliminary examinations in the Natural Science School, or the Honour School of Mathematics in the first public examination), and one of the final honours examinations—the final Honour School of Natural Science (Physiology) is that usually taken.

(b) By passing Responsions (or one of the examinations which are accepted as equivalent) Moderations a Scripture examination or in the event of a candidate objecting an examination on some substituted book, and the final Public School in three subjects two of which may be the same as two of the preliminary examination in natural science.

Responsions and the preliminary examinations in Natural Science may be passed before a candidate is a member of the university, Moderations and Scripture can be passed in or after the second term, the final pass school may be taken any time after Moderations, a final honours school may be taken at the end of the third or fourth academic year—that is, within nine or twelve terms respectively, the preliminary examinations of the Natural Science School may be taken as soon as Responsions has been passed or exemption obtained.

PROFESSIONAL DEGREES

To obtain the B.M., B.Ch. degrees the candidate must first pass in four of the subjects of the Preliminary Examination of the Natural Science School—namely, physics, chemistry, zoology, and botany.

He then has two further examinations to pass—the First B.M. and the Second B.M. These take place twice a year, the first on the Thursday, the second on the Wednesday, of the eighth week of Michaelmas and Trinity terms. Every candidate at the First B.M. is examined in human anatomy, in physiology, and in organic chemistry, but is excused from physiology if he has obtained a first or second class in the Honour School of Physiology, and from organic chemistry if he has satisfied the examiners in Part I of the Honour School of Chemistry. Once he has passed this examination he can, on production of certain certificates, be examined as soon as he pleases* in pathology, forensic medicine and hygiene, materia medica, and pharmacology (subjects of the second examination), but cannot present himself for the remaining subjects—medicine, surgery, and midwifery—until the eighteenth term from the day of his matriculation, and not until a period of at least thirty-three months has elapsed from the date of his passing the first examination, and he must pass in all the three subjects at one and the same time.

* The four subjects of the medical preliminary examinations are four of the subjects in the natural science preliminary, and can be commenced directly after passing Responsions.

Membership is constituted by matriculation and by becoming either a member of a College or a Hall or a non-collegiate student.

Before admission to the second B.M. examination the student must produce certificates of instruction from a medical school recognized by the university, of having acted as clinical clerk and dresser, each for six months, and as post-mortem clerk for three months, of attendance on labours, of instruction in infectious and mental diseases and ophthalmology, and of proficiency in vaccination and the administration of anaesthetics.¹ He must also produce certificates of attendance in laboratory courses in pathology, bacteriology, and pharmacology, either in Oxford or in a recognized medical school.

D.M. AND M.Ch. DEGREES

A Bachelor of Medicine who wishes to proceed to the D.M. must have entered his thirtieth term and must present a dissertation for approval by the appointed examiners on a subject previously approved by the Regius Professor of Medicine. If a candidate for the M.Ch. he must have entered his twenty-first term and must pass an examination, which is held in June.

Examinations for the Diploma in Public Health are held in Trinity and Michaelmas terms, that for the Diploma in Ophthalmology is held annually, commencing on the third Monday in July. For the Diploma in Ophthalmology attendance on a twelve months' course of clinical ophthalmology in hospitals or institutions recognized for the purpose by the Board of the Faculty of Medicine, and on a course of instruction in Oxford lasting two months, is obligatory. Candidates must have their names on the *Medical Register* of the United Kingdom, unless, being Bachelors or Doctors of Medicine of universities outside the United Kingdom, they have obtained special permission from the Board of the Faculty of Medicine.

TRAINING

The several colleges provide their undergraduate members with tutors for all examinations up to the B.A. degree. In addition, the university provides certain courses of instruction including lectures, demonstrations, and practical work, which cover all the subjects of the Preliminary Examination and First B.M. and those of the Final Examination.

SCHOLARSHIPS

Most colleges grant scholarships open to intending medical students of £80 a year, tenable for four years in natural science, chemistry, physics and biology. Exhibitions of varying value are also awarded in these subjects. At two colleges (University and Pembroke) there are medical entrance scholarships of £100 a year. Particulars can be obtained on application to the college tutors. Scholarships for women are also offered by the various women's colleges from the principals of whom details of the examinations may be obtained. A Padeliffe Travelling Fellowship of £300 a year, tenable for two years, is conferred annually; candidates must have taken the B.M. degree. A Philip Walker Studentship in Pathology of £200 a year, tenable for two years, is awarded biennially for the encouragement of research in pathology; it also carries the Rolleston Memorial Prize and the Padeliffe Prize (£50) for research in natural science (including pathology) and the three Theodore William Scholarships in Anatomy, Physiology and Pathology of the value of £50 each, tenable for two years. A Padeliffe Scholarship in Pharmacology of £50 for one year, open to the University, is awarded annually by the Master and Fellows of University College. A Butney Leo King's College Hospital Scholarship of £20 is awarded annually.

FEES

An annual fee of £4 10s. is paid to the university for the first four years, being reduced to £1 when the B.A. has been taken. For the degree the fees are: the B.A. £7 10s., the B.M. and B.Ch. £14, the D.M. £25, the M.Ch. £12. College fees, varying in amount, are paid for the first four years of membership and in taking degrees. Tuition fees vary from £21 to £30. The minimum annual cost of living during the three university terms may be regarded as not less than £180 or for women not less than £110.

For further information application may be made to Dr. I. W. Anley Waller, Dean of the School of Medicine, University of Oxford.

UNIVERSITY OF CAMBRIDGE

THE professional degrees given by this university are those of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.Chir.), each of which entitles the possessor to admission to the *Register* by the General Medical Council, and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants Diplomas in Tropical Medicine, in Public Health, in Hygiene, in Psychological Medicine, and in Medical Radiology and Electrolgy to medical practitioners, not necessarily graduates of the university. In formation regarding these diplomas will be found in later sections under the headings Tropical Medicine, Psychological Medicine, Public Health, and Radiology. A candidate for the M.B., B.Chir. degrees need not possess a degree in arts, it is sufficient if he has passed the Previous examination or some other examination accepted by the university as its equivalent. Most students, however, are advised to take the B.A. degree, preferably by obtaining honours in the Natural Sciences Tripos at the end of the third year. Under the new regulations the attainment of a sufficient standard in chemistry or in physiology in this Tripos will secure exemption from the corresponding tests in the First and Second M.B. examinations. Women students, members of Girton or Newnham College, are now admitted to the M.B. examinations.

PROFESSIONAL EXAMINATIONS

To obtain the M.B. degree the candidate must pass three examinations, those who are finally successful may receive the B.Chir. degree (which is a complete registrable qualification) without further examination.

First M.B.—This comprises (1) general and inorganic chemistry, (2) mechanics, (3) physics, (4) elementary biology. The parts may be taken together or separately. In either case the candidate before admission to examination must have satisfied the requirements in respect of the Previous examination and paid the matriculation fee. Certain exemptions from the First M.B. examination are allowed, the regulations may be obtained from the Registrar. The complete examination is held twice a year—in October and June. An additional examination, in Parts 2 and 4, is held in December.

Second M.B.—This examination comprises Part I, organic chemistry, Part II, human anatomy and physiology, Part III, elementary pharmacology, including pharmaceutical chemistry and the elements of general pathology. No student is admitted to the first part of the second examination until he has passed the first part of the first examination. No student is admitted to the second part of the second examination until he has passed all parts of the first examination. No student shall be admitted to the third part of the second examination until he has passed the first and second parts of the second examination. No one may enter Part III unless he has passed Parts I and II. The candidate must be signed up in all three subjects and have dissected for one academic year. The examinations for Parts I and II are held in December and June, that for Part III in October and April.

Third M.B.—This is divided into two parts, to neither of which is the candidate admitted until he has passed the examinations previously mentioned. A candidate for the first part which deals with the principles and practice of surgery (including special pathology) and midwifery and diseases peculiar to women, must have completed five years of medical study and be signed up in these subjects and have completed two years and a half of hospital practice. Before admission to the second part the candidate must have completed five years of medical study and be duly signed up in all subjects and have completed three years of hospital practice. He must also possess certificates showing that he has fulfilled all the recommendations as well as the requirements of the General Medical Council. The examination is in the principles and practice of physics (including diseases of children, mental diseases, and medical jurisprudence), pathology (including hygiene and preventive medicine) and pharmacology (including therapeutics and toxicology). The Third M.B. examinations are held twice a year—in June and December.

¹ For the certificates that will be required for the new Regulations of the General Medical Council, Clarendon Press Oxford, 1925 edition.

The examination in Michaelmas Term is at present suspended.

Act for the M B—Before receiving his M B degree a candidate who has been successful at the final M B examination has to write a thesis. This he reads in public on an assigned day, and is then questioned concerning it and other subjects of medicine by the Regius Professor of Physic. If approved at this test he is then certified as having "kept the Act" satisfactorily, and in due course receives his degree. Medical degrees may be taken in absence by those living abroad, the candidate sending to the Regius Professor of Physic a dissertation, which is laid before the Degree Committee.

THE HIGHER DEGREES

The M D degree may be taken by a Bachelor of Medicine of three years' standing after writing a thesis approved by the M D Degree Committee, and keeping a further Act, at which he reads his thesis and is examined thereon. Previously to the Act being kept a topic taken from the general subject of his thesis (whether it be physiology, pathology, pharmacology, practice of medicine, State medicine, or the history of medicine) is submitted to the candidate, on which he is required to write an extempore essay.

The M Chir degree may be granted to a candidate who has qualified for the B Chir at least two years previously, he is then examined in pathology, surgery, surgical anatomy, and surgical operations. The tests are partly in writing, partly oral, and partly practical. They include the writing of an extempore essay.

FEES

In addition to college fees, tutorial fees and the expense of living the following examination fees are payable: First M B, £5 5s; Second M B, £5 5s; Third M B, £10 10s. For schedules referring to the examinations lists of schools recognized by the university and other information application should be made to the University Registry, Cambridge.

UNIVERSITY OF LONDON

UNDER the regulations of the University of London the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Surgery, Master of Surgery in two branches, and Doctor of Medicine in six different branches. The university has its own matriculation examination, and this is of so peculiar a kind that candidates should obtain and carefully study the booklets relating to it. The matriculation examination is open to any person, of either sex, who has attained the age of 16. It is held in January, June, and September, and lasts four days, the first two take place both in London and in certain provincial centres, the September examination is held in London only.

In no circumstances is a degree granted to anyone in less than three years after the date at which he passed the Matriculation Examination or obtained registration in some other way, and, unless they are already registered medical practitioners of a certain age and standing, all medical students must pass not less than five and a half years in professional study subsequent to matriculation, of which the last three years must be spent at a school of advanced medical studies.

PROFESSIONAL EXAMINATIONS

M B, B S—There are three examinations, the last two being subdivided. They are held twice a year.

The First Examination (held in July and December) covers inorganic chemistry, general biology, and physics, there being two papers, a practical test, and a possible oral test in each subject. The names of successful candidates are placed in alphabetical order, with a note as to any subject in which a candidate has distinguished himself or herself.

The Second Examination is held in March and July. Part I cannot be passed within six months of the passing of the First Examination. It covers organic and applied chemistry, the candidate's knowledge being tested as in the earlier examination. It is a pass examination, but a mark of distinction may be won. Candidates for Part II must have passed the First Examination at least eighteen months previously, besides having completed Part I of the Second Examination. The subjects are anatomy, physiology, and

pharmacology, the tests being written, oral, and practical. Candidates who fail in one subject may sit for re-examination in that subject alone if the examiners think fit.

No candidate is admitted to the Third M B, B S Examination within three academic years from the date of his completing the Second Examination. The subjects are medicine (including therapeutics and mental diseases), pathology, forensic medicine and hygiene, surgery, and midwifery and diseases of women. They may be divided into two groups, one comprising medicine, pathology, forensic medicine, and hygiene, and the other surgery and midwifery and diseases of women. Either group may be taken first at the option of the candidate, or the groups may be taken together. Only candidates who have a competent knowledge of all the subjects comprising a group are passed. There is no separate examination held for honours, but the names of successful candidates are divided into an honours list and a pass list, and a university medal may be awarded the candidate who has most distinguished himself in the whole examination.

THE HIGHER DEGREES

M D—An examination for the M D is held twice yearly—in December and July. Every candidate must have passed the examination for the M B, B S, unless he became M B before May, 1904. He may present himself for examination in any one of the following branches: (1) medicine, (2) pathology, (3) mental diseases and psychology, (4) midwifery and diseases of women, (5) State medicine, (6) tropical medicine, and, if he wishes, may pass also in another branch at a subsequent examination.

The period that must elapse between acquiring the M B and sitting for the M D in any branch varies between one and two years, according to the nature of the candidate's previous work, and in all cases evidence must be afforded of special study of the subject chosen, both written and practical examinations must be passed, though exemptions can be obtained from the former in exceptional circumstances. In each branch the scheme of examination is the same: two papers on its special subject, a paper on an allied subject—for example, medicine in the case of branch (4), pathology in branch (1)—an essay on one of two suggested topics connected with the special subject, and a clinical or other practical test. In any branch of the M D Examination a gold medal of the value of £20 may be awarded.

M S—The regulations with regard to the Mastership in Surgery are of a corresponding kind, but there are only two branches in which it may be obtained—General Surgery and Dental Surgery.

FEES

The examination fees have been raised from pound to guineas for all examinations held after September 1st 1918: for Matriculation 2 guineas for each entry. First Examination 5 guineas for each entry to the whole examination. For re-examination in one subject the fee is 2 guineas. Second Examination Part I 2 guineas for the first and each subsequent entry. Second Examination Part II 8 guineas for each entry to the whole examination. For re-examination in one subject the fee is 4 guineas. M B, B S Examination 10 guineas for each entry to the whole examination. M D and M S Examinations 20 guineas and 10 guineas on re-examination.

Inquiries should be addressed to the Registrar, the Inner office of London, South Kensington, S W 7.

UNIVERSITY OF BIRMINGHAM

THIS university confers the ordinary medical and surgical degrees—M B, Ch B, M D, and Ch M—and also diplomas and degrees in State medicine and dentistry. It has a plan, too, by which, extending his study to six instead of five years, the M B, Ch B candidate may become a Bachelor in Science as well. Of the five years' curriculum, the first four must be spent, as a rule, at the university itself, the fifth being passed at any approved school or schools. Occasionally, however, the Senate will reduce the period of enforced residence to three years and exempt from the First M B (Part I) those who have passed elsewhere an examination considered to be its equivalent. A degree of Ph D is also conferred for research study in medicine under special regulations. Candidates must be graduates in medicine of a recognized university.

Students entering the Medical Faculty for the M B, Ch B degrees must have passed—

(1) Either (a) the matriculation examination of the Joint Board of the Universities of Manchester, Liverpool, Leeds, Sheffield, and Birmingham, or (b) some other examination recognized as equivalent to the matriculation. Candidates for medical degrees are recommended to take Latin and a science subject—chemistry or physics—at the matriculation examination, although these subjects are no longer compulsory. The matriculation examination of the Joint Board is held in July and September. The regulations and the list of examinations accepted in lieu thereof will be sent on application to the Secretary to the Board, Joint Matriculation Board, 315, Oxford Road, Manchester.

(2) A recognized pre-medical examination in the subjects of chemistry and physics—for example, the Higher School Certificate of the Joint Matriculation Board, or a candidate may attend courses for pre-medical year in the university, October to June, taking chemistry and physics, and biology (optional).

PROFESSIONAL EXAMINATIONS

The candidate for the M B, Ch B degrees has five examinations to pass. In the second and final examinations the candidate must pass in all the prescribed subjects or undergo the whole examination again.

The First M B (Part I) deals with elementary biology, and physical and organic chemistry. The First M B (Part II) deals with anatomy and physiology, and the student must pass in both simultaneously. The Second M B deals with pathology and bacteriology, materia medica, and pharmacy. The Third M B takes place at the end of the fourth year, the subjects being forensic medicine, toxicology, public health, and pharmacology and therapeutics.

Final M B—This comprises medicine, surgery, midwifery and diseases of women, ophthalmology, and mental diseases. The candidate, in addition to more ordinary certificates, must be prepared with a certificate of having acted as a post mortem clerk for three months, and received special instruction in anaesthetics and clinical instruction in diseases peculiar to women, asylum ward work, ophthalmology, venereal diseases, ear and throat and skin diseases, etc. In respect to ophthalmology he must show that he has learnt refraction work. He also has to present to the examiners reports by himself on six gynaecological cases, and certificates drawn up by himself regarding four actual cases of lunacy and notes on two others.

M D—An ordinary candidate for this degree must be a M B, Ch B of not less than one year's standing. He presents an original thesis for approval, and then passes a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit. The regulations respecting the Ch M are of the same general character. Subject to certain requirements as to special research or other post-graduate study, graduates of other universities may obtain the M D and Ch M in the same way as holders of the Birmingham M B, Ch B.

FEES

The fee for matriculation is £2 £2 10/- for pre-medical examination (if taken in university) and £2 10/- for each of the first four professional examinations. M B, Ch B degree fee £10. M D and Ch M examinations £12 10/- each. For further particulars application should be made to the Dean of the Medical Faculty, University of Birmingham.

UNIVERSITY OF BRISTOL

In the Faculty of Medicine the following degrees are conferred: Bachelor of Medicine and Bachelor of Surgery (M B and Ch B), Doctor of Medicine (M D), Master of Surgery (Ch M), Bachelor of Dental Surgery (B D S), and Master of Dental Surgery (M D S). There are also the following diplomas: diploma in public health (D P H), diploma in dental surgery (L D S) and diploma in veterinary State medicine. All candidates for degrees in medicine, surgery, and dentistry are required to pass an examination called the School Certificate Examination, or to pass such examination as may be regarded as equivalent by the Senate. All courses, degrees and diplomas are open to men and women alike.

Conjoined Degrees of Bachelor of Medicine and Bachelor of Surgery—Candidates must be not less than 21 years of age and have pursued the courses prescribed by university regulations during not less than five years after passing the first examination in chemistry and physics, of which three shall have been passed in the university, and two of these three subsequent to passing the second examination. All candidates for the degrees of M B, Ch B are required to satisfy the examiners in the several subjects of three examinations.

The First Examination—The subjects of examination are chemistry (inorganic), physics, and biology, the courses pursued being those for the time being approved for the intermediate part of the B Sc curriculum. This part of the curriculum shall extend over one year. Candidates who have passed the Higher School Certificate approved by the Board of Education in these subjects will not be required to sit for the First Examination and will be regarded as having completed one year of study.

The Second Examination—The subjects of examination are organic chemistry and elementary anatomy (Part I) and advanced anatomy and physiology (Part II). Parts I and II may be passed separately or together.

The Final Examination—The subjects of examination are materia medica and pharmacy, pharmacology and therapeutics, general pathology, morbid anatomy, and bacteriology (Part I), special pathology, forensic medicine, toxicology, and public health, obstetrics (including diseases of women), surgery (systematic, clinical, practical and operative), medicine (systematic, clinical, and practical including mental diseases) (Part II). The subjects included in Part II may be taken in two groups—namely, Group I surgery and obstetrics, Group II medicine, public health, special pathology, forensic medicine, and toxicology. Candidates may pass Parts I and II together or separately, and the two groups of Part II may likewise be taken together or separately. Forensic medicine and toxicology may be taken either with Part I or with Group II of Part II.

Degree of Doctor of Medicine—Candidates must be Bachelors of the university of not less than two years' standing as such, and may elect either (1) to pass an examination in general medicine, or (2) to pass an examination in State medicine, or (3) to present a dissertation. The candidate who elects to pass the examination in State medicine must hold a Diploma in Public Health of some university or college, and the candidate who elects to present a dissertation may be examined in the subject thereof.

Degree of Master of Surgery—Candidates shall be Bachelors of not less than two years' standing as such, during which period they shall have attended the surgical practice of an institution approved for the purpose. They shall pass an examination in surgical anatomy, pathology, and bacteriology, and operative, clinical, and general surgery, and present to the university a dissertation on some subject of surgery. The degree may be taken also in general surgery, and a special subject—for example, oto-rhino-laryngology, ophthalmology, and gynaecology.

Diploma in Public Health—Candidates must be at least 25 years of age, be fully registered medical practitioners of not less than two years' standing as such, and have passed the examination prescribed by regulation. The examination is divided into two parts.

UNIVERSITY OF DURHAM

To its own undergraduates, who may be of either sex, this university grants the degrees of Bachelor of Medicine and Bachelor of Surgery (M B, B S), and Doctor of Medicine (M D), Master of Surgery and Doctor of Surgery (M S and D Ch), Bachelor of Hygiene, Doctor of Hygiene and Bachelor of Dental Surgery and Master of Dental Surgery (B D S and M D S), it also grants diplomas in public health, psychiatry, and dental surgery. The university accepts the Durham University School Certificate Examination (if the required subjects are passed with credit) for matriculation purposes, but also accepts the tests of a considerable number of

other educational bodies as a full or partial equivalent. A list may be obtained on application. In addition to satisfying the matriculation requirements of the university, every student must (1) pass a pre-registration examination in physics and inorganic chemistry conducted or recognized by the university, and (2) be registered on the books of the General Medical Council. To become a graduate, however, at the university it is not necessary to pass the major portion of the five years' curriculum within its precincts. It is sufficient if, before he presents himself for his final examination, the candidate has passed at least one year in study at the University of Durham College of Medicine, Newcastle upon Tyne, including the practice of the Royal Victoria Infirmary in the same city. The earlier examinations may be passed while the student works elsewhere.

PROFESSIONAL EXAMINATIONS

There are four professional examinations for the M.B., B.S. degrees. The First, Second, and Third Examinations are held in March, June, and December, and the Final Examination in June and December. The first deals with biology and organic chemistry, the second with anatomy and physiology, the third with pathology, bacteriology, materia medica, pharmacology, therapeutics, and pharmacy, medical jurisprudence, and public health. At the final M.B., B.S. the candidate is examined in medicine and clinical medicine, surgery and clinical surgery, midwifery and diseases of women and children, clinical and practical gynaecology, and clinically in psychological medicine, diseases of the throat, nose, and ear, diseases of the skin, diseases of the eye, and diseases of children.

M.D.—A Bachelor of Medicine who wishes to proceed to this higher degree must be of at least two years' standing, and must comply with the regulations printed in the Calendar of the College of Medicine. If the candidate is not a M.B. of the university, he must be a practitioner of fifteen years' standing, 40 years of age, and submit to special tests. (See under Degrees for Practitioners, p. 439.)

M.S.—Candidates for this degree must have been engaged in practice for at least two years subsequent to becoming M.B., B.S. Durham. They are submitted to an examination which covers the whole range of surgical knowledge.

D.Ch.—The university grants also the degree of Doctor of Surgery. Candidates for this degree must be registered medical practitioners, not less than 24 years of age. They must devote three years, subsequent to obtaining a registrable qualification, to the study of surgery and auxiliary subjects, one at least of the three years must be spent in the university. The candidate must submit to the professor of surgery the course of study he proposes to follow, and this course must be approved by the Board of the Faculty of Medicine.

One year must be devoted mainly to work in the departments of anatomy, physiology, pathology, and bacteriology, and the candidate must submit evidence of having so worked. Not less than six months of another year must be spent as resident surgeon in a recognized teaching hospital, and the rest of the year in the study of surgery in a recognized medical centre. Not less than six months of one of the three years must be spent in surgical study abroad.

Degree of Bachelor of Hygiene and the D.P.H.

No candidate is admitted to the final examination for the degree of B.Hy. unless he is a Bachelor of Medicine and Surgery of not less than two years' standing of a recognized university.

No candidate is admitted to the final examination for the D.P.H. unless he is a registered medical practitioner of not less than two years' standing.

The course of study for the B.Hy. and D.P.H. extends over a period of not less than twelve calendar months subsequent to the attainment of a registrable qualification. Candidates for the B.Hy. must attend this course at the University of Durham. Candidates for the D.P.H. may attend it at the University of Durham or at any medical school or institution which is recognized by the university.

The examination for the diploma or degree consists of Part I and Part II each of which extends over not less than two days and is conducted by examiners specially qualified. A candidate must pass in all the subjects of Part I before being admitted to examination for Part II. In Part I and also in Part II, a candidate must pass in all the specified subjects at one time.

The examination for Part I is practical written and oral and includes the following subjects: bacteriology and parasitology (including chemistry and physics and relation to public health). Candidates are not admitted to examination for Part II until after they have completed the prescribed courses of instruction in the subjects thereof.

The examination for Part II includes the following subjects: hygiene and sanitation (including sanitary construction), epidemiology and infectious diseases, sanitary law and vital statistics, public health, examination is written and oral and includes the following subjects: infectious disease, food inspection, wellings, factories, workshop schools, etc. Candidates are not admitted to examination for Part II until after they have completed the prescribed courses of instruction in the subjects thereof.

Doctor of Hygiene

Candidates for the degree of Doctor of Hygiene must be Bachelors of Hygiene of two years' standing and are required to satisfy the examiners that they have conducted original research in the subject of public health.

Diploma in Psychiatry

Candidates must be registered medical practitioners and unless qualified before January 1st 1911 must have attended subsequently to passing their qualifying examinations, courses of instruction in (a) anatomy, (b) physiology, (c) pathology, (d) psychology and experimental psychology, (e) psychiatry, (f) clinical psychiatry. The diploma is of two parts namely (1) anatomy, physiology, pathology, and bacteriology, (2) psychology and experimental psychology, neurology, and psychiatry (systematic and clinical) and candidates may present themselves for the whole examination or for either part separately.

Licence and Degrees in Dental Surgery

D.S.—Every dental student must at the commencement of his studentship, be registered in the manner and under the conditions prescribed for medical students.

The first examination consists of three parts which may be passed separately. Part 1, organic chemistry, Part 2, biology, Part 3 theoretical dental mechanics, dental metallurgy (theoretical and practical). Second Examination: Anatomy, physiology, (including biochemistry and biophysics), dental anatomy and dental histology. Third Examination: Pathology and bacteriology, practical dental mechanics, dental materia medica and therapeutics. Final Examination: Medicine, surgery, dental surgery and pathology, orthodontics, operative dental surgery and dental prosthetics, and anaesthetics.

A candidate before presenting himself for examination is required to furnish certificates of instruction in the required subjects attended after registration as a dental student at recognized colleges or schools.

Degree of Bachelor of Dental Surgery—1—Students taking their complete course of instruction in the university must pass the same matriculation tests as medical students, and the same pre-registration examination in inorganic chemistry and physics. After registration students must spend five years in the university. They must attend the practice of the Newcastle upon Tyne Dental Hospital for not less than two and a half years, six months of this time must be devoted to the study of the higher branches of dental science. There are four examinations. The subjects of the examinations are as follows: First, Biology, organic chemistry, and dental mechanics and metallurgy. Second, Anatomy, physiology, dental anatomy and histology. Third, Pathology and bacteriology, dental materia medica and therapeutics, and practical and dental mechanics. Final, Medicine, surgery, dental surgery and pathology, orthodontics and operative dental surgery. In this subject knowledge of a much higher standard and more advanced practical work, are required than for the Licence in Dental Surgery.

2—Candidates possessing a Licence in Dental Surgery of a study for at least one year in the year they must (a) attend a course of and bacteriology and (b) spend at Newcastle upon Tyne Dental Hospital in the study and practice of the higher branches of dental science. They must also pass the third and final examinations for the degree of Bachelor of Dental Surgery.

Degree of Master of Dental Surgery—Every candidate for this degree must be a Bachelor of Dental Surgery of the university of not less than two years' standing and present an essay embodying original work and research in some subject connected with dentistry. He must also perform to the satisfaction of the examiners a piece of special dental work demanding a high degree of skill and experience.

The examinations are held concurrently with the medical examinations.

The practical examinations in dentistry are conducted at the Newcastle upon Tyne Dental Hospital.

FEES

The following fees are payable: Matriculation £2 Examinations, First Second and Third M.B., B.S. each £5 Final M.B., B.S. £15 M.D. and M.S. each £5 B.Hy. D.P.H. and D.Psy. each £10 10s. and D.Hy. and D.Ch. each £20 First Second and Third L.D.S. each £3 10s. and Final L.D.S. £5 First Second and Third B.D.S. each £5 Final B.D.S. £8 and M.D.S. £5 For degrees and diplomas M.B., B.S., B.Hy., and B.D.S., each £6 6s. plus

the sum of 10s. if it is the initial degree taken in the university, M S. and M D S., each £6 6s. M D. D Ch. and D H., each £10, D P H., D P S., and L D S., each £3

Further information may be obtained from Professor Howden, Registrar, University of Durham College of Medicine, Newcastle-upon-Tyne

UNIVERSITY OF LEEDS

The degrees granted in the Medical Faculty of this university are Bachelor of Medicine, Bachelor of Surgery (M B and Ch B), and Bachelor of Dental Surgery (B Ch D), Doctor of Medicine (M D), Master of Surgery (Ch M), and Master of Dental Surgery (M Ch D). It also gives diplomas in public health, in psychology, in dental surgery, and in nursing.

Candidates for the M B must have attended courses of instruction approved by the university for not less than five years, two at least of such years having been passed in the university, at least one year being subsequent to the date of passing the first examination. They must also have matriculated by satisfying the examiners in

- | | | |
|-----|---|---------------------------------|
| I | Either English Composition and English Literature or English Composition and History | |
| II | Either Mathematics or Latin | |
| III | Three other subjects not already taken under I and II above, chosen from the following list | |
| IV | | |
| 1 | English Literature | 9 Mathematics |
| 2 | History | 10 Mechanics |
| 3 | Geography | 11 Physics |
| | | 12 Chemistry |
| 4 | Greek | 13 General Experimental Science |
| 5 | Latin | 14 Natural History |
| 6 | French | 15 Botany |
| 7 | German | |
| 8 | Some one other language approved by the Board | |

Provided that (a) candidates who take Mathematics under II above must include one of the subjects 4-8. (b) candidates who take Latin under II above must include one of the subjects 9-15.

Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination.

PROFESSIONAL EXAMINATIONS

The examinations for the M B, Ch B number three. The first deals with (1) physics and chemistry, (2) biology. In each subject laboratory work is included, but the two parts can be taken separately. For neither can the candidate present himself until after matriculation and a period of approved work in the respective subjects.

Second M B—This examination may be taken in two parts: (a) anatomy and physiology, including practical work, (b) medical medicine and pharmacy, including actual compounding of drugs. The candidate's certificates must show, among other things, that he has dissected during at least five terms.

Final M B—This may be divided into three parts. The first (pathology and bacteriology) may be taken at the end of the fourth term, the second (forensic medicine and public health) and the third (medicine, surgery, obstetrics, and pharmacology and therapeutics) cannot be taken before the end of the fifth year, before admission to the examination in its subjects the candidate, besides ordinary certificates, must produce proof that he has done both intern and extern maternity work, and received clinical instruction in gynaecology, in diseases of the eye, skin or larynx and in the administration of anaesthetics. This division covers all branches of surgery, medicine (including mental diseases and diseases of children), and obstetrics and gynaecology. First and second class honours may be obtained in this division.

M D—A candidate for this degree must be a M B, Ch B of the university of at least one year's standing. He presents a dissertation embodying the results of personal observation or original research, and, if this is approved he may be required to write a short extempore essay on some topic connected with medicine, and may be examined orally on the dissertation or other work submitted.

Ch M—The candidate for this degree must have been admitted to the M B, Ch B of the university not less than

a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery. He must also have attended certain courses, including one on bacteriology, one on bacteriology, he is then of surgery in all its branches.

FEES

The matriculation fee is £2 and on readmission £1 10s. For each of the other examinations £6 (£7 for Ch M) and £3 on readmission. On conferment of the degree of Ch M £7 is payable, and £6 for the M D degree.

UNIVERSITY OF LIVERPOOL

This university, besides granting degrees in medicine (M B and M D) and in surgery (Ch B, M Ch Orth, and Ch M), gives degrees in dental surgery (B D S. and M D S.), a degree in hygiene (M H), and degrees in veterinary science (B V Sc, M V Sc, and D V Sc). Diplomas are awarded in dental surgery (L D S.), tropical medicine (D T M), tropical hygiene (D T H), public health (D P H), veterinary hygiene (D V H) and medical radiology and electrology (D M R E).

MATRICULATION

The Matriculation Examination is governed by the Joint Matriculation Board, 315, Oxford Road, Manchester, which accepts, under certain conditions, the tests of several other bodies as its equivalent. Chemistry and physics are essential pre-registration subjects.

PROFESSIONAL EXAMINATIONS

Candidates for the M B, Ch B degrees have three examinations to pass, the first including (1) chemistry, (2) physics, (3) biology (zoology and botany).

Second M B—This test covers (a) (1) anatomy, (2) physiology, including physiological chemistry and histology, and (b) (3) elementary bacteriology, (4) clinical chemistry, (5) general pathology. Candidates may present themselves in (a) and (b) separately.

Final M B—The subjects of the Final Examination are (a) (1) special pathology and morbid anatomy, (2) forensic medicine and toxicology, (3) public health, (4) pharmacology and general therapeutics, (b) (5) obstetrics and diseases of women, (6) surgery—systematic, clinical, operative, and practical—including ophthalmology, (7) medicine—systematic and clinical—including therapeutics, mental diseases, and diseases of children. Candidates may take Parts (a) and (b) separately, but Part (b) may not be taken until five years of study have been completed.

M D and Ch M—Candidates for these degrees must have received the M B and Ch B at least two years previously. Students holding equivalent degrees of other approved universities may become candidates for the M D degree after two years' study in the university or clinical school of the university. The M D candidate submits for approval a thesis covering original work in some branch of medicine or so-called science directly relative to medicine, together with, if desired, copies of published work. The M Ch candidate undergoes an examination. Other information concerning the diplomas of this university and its medical school will be found on page 432.

FELLOWSHIPS, SCHOLARSHIPS AND EXEMPTIONS

The university awards Fellowships annually to students of distinguished merit as follows:

- (1) John Rankin Fellowships in Anatomy, two each of the value of £120 tenable for two years.
- (2) Ethel Boyce Fellowship in Gynaecology, value £100 and tenable for one year open to fully qualified medical students of either sex.
- (3) John W. Garrett International Fellowship in Bacteriology, value £100 and tenable for one year.
- (4) Robert Gee Fellowship in Human Anatomy, value £100 and tenable for one year.
- (5) Holt Fellowships in Physiology and Pathology, two in number, value £150 each and tenable for one year.
- (6) Johnston Colonial Fellowship in Biochemistry, value £100 and tenable for one year.
- (7) Thelwell Thomas Fellowship in Surgical Pathology, value £150 and tenable for one year.
- (8) Lady Jones Fellowship in Orthopaedic Surgery, value £200 offered every two years.

There are in addition scholarships and exhibitions open to medical students.

VICTORIA UNIVERSITY OF MANCHESTER

This university grants the four ordinary degrees in medicine and surgery—M B and Ch B and M D and Ch M, a degree and diploma in dental surgery, a diploma in public health, a certificate in factory and in school hygiene, a diploma in psychological medicine, and a diploma in bacteriology. Candidates for degrees must pass the special Matriculation Examination prescribed by the Faculty of Medicine (or some equivalent examination accepted in lieu thereof, see the prospectus of the Joint Matriculation Board), and study at the university itself for at least two years of the six years' curriculum, subsequent to the passing of the First M B Examination. The Matriculation Examination comprises (1) Latin, (2) mathematics, (3) the English language, its literature and history, (4) mechanics, (5) two subjects at choice as approved by the Joint Board. It is held in July and September.

PROFESSIONAL EXAMINATIONS

M B, Ch B—There are four examinations for this degree. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. The first M B is divided into Part I, chemistry and physics, Part 2, biology—(a) botany, (b) zoology. The parts may be taken separately or together. At the second M B the candidate is examined in anatomy (including histology) and physiology, at the third, in pathology and pharmacology (including materia medica and practical pharmacy). The Final Examination is divided into two parts, which may be taken separately, and includes medicine (systematic and clinical), mental diseases, and diseases of children, surgery (systematic, clinical, and practical), obstetrics and gynaecology, preventive medicine, forensic medicine, and toxicology.

M D—A candidate for this degree must be a bachelor of medicine of at least one year's standing. He has a choice between presenting an original dissertation or undergoing a written (as well as practical and clinical) examination in medicine, and a written and practical examination in pathology, and one other subject selected by himself.

Ch M—A candidate must have held, since becoming Ch B, and for not less than twelve months, a post in a public institution affording opportunity for the study of the branch of surgery in which examination is desired. The examination in Branch I comprises the general field of surgery, Branch II, obstetrics and gynaecology, Branch III, ophthalmology, Branch IV, otology, laryngology, and rhinology.

FEES

The following examination fees are payable. Matriculation £2, on readmission £1 10s. Each M B examination £8 8s., on re-admission, £3 3s. M D including the conferring of the degree, £15 15s. Ch M, £6 6s. for the examination and £9 9s. for conferring of degree. Application for further information should be addressed to the Dean of the Medical Faculty.

UNIVERSITY OF SHEFFIELD

The degrees of this university (M B, Ch B, M D and Ch M, B D S, and M D S), the diploma in public health, and the diploma of licence in dental surgery, are open to candidates of either sex. Candidates for a degree must have matriculated in the university or have passed such other examination as may be recognized for this purpose, and have passed the further examination in chemistry and physics.

PROFESSIONAL EXAMINATIONS

A candidate for the degrees of M B, Ch B must produce certificates that he will have attained the age of 22 years by the day of graduation, that he has pursued the courses of study required by the university regulations during not less than five years subsequent to the date of his matriculation or exemption from matriculation, and the passing of the further examination in chemistry and physics, three of such years at least having been passed in the university, one at least being subsequent to the passing of the First Examination. The following examinations must be passed in due order.

First Examination—The subjects are chemistry, physics, and biology. Candidates who have passed the Intermediate Examination of the Faculty of Pure Sciences in any or all

of the subjects of the First M B Examination, will, on payment of the fee for the latter examination, be deemed to have passed it when they have passed in such subjects as they did not take for the Intermediate B Sc Examination. Candidates on presenting themselves for this examination are required to furnish certificates of having attended for not less than one year approved courses of instruction, after matriculation, and the passing of the further examination in physics and chemistry, in (i) chemistry, inorganic and organic, (ii) physics, (iii) biology.

Second Examination—The subjects are anatomy and physiology. The candidate must have completed the second year of professional study, must have passed the First Examination, and must have attended (1) lectures on anatomy and dissections during three terms, (2) lectures on practical, experimental, and chemical physiology and histology during three terms.

Third Examination—The subjects are pathology and pharmacology, anatomy, and physiology. Candidates must have completed the fourth winter of medical study and the requisite courses in these subjects, including *post mortem* dissection for three months.

Final Examination—The subjects are—Part I, forensic medicine and public health, Part II, medicine (including mental diseases and diseases of children), surgery, obstetrics (including gynaecology). Candidates must have completed the fifth year of study.

M D—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M B, Ch B at least one year previously, must present a thesis embodying observations in some subject approved by the Professor of Medicine, and must pass an examination in the principles and practice of medicine.

Ch M—Candidates for the degree of Master of Surgery must have passed the examination for the degrees of M B, Ch B at least one year previously, and must, since taking the degrees of M B, Ch B, have held for not less than six months a surgical appointment in a public hospital or other public institution affording full opportunity for the study of practical surgery. The subjects of examination are systematic, clinical, and operative surgery, surgical anatomy, surgical pathology, and bacteriology.

Other information concerning this university will be found in the section devoted to Provincial Medical Schools.

UNIVERSITY OF WALES

The Charter and statutes of the University of Wales provide *inter alia* for a Faculty of Medicine and for the granting of the following degrees: Bachelor in Medicine (M B), Bachelor in Surgery (B Ch), Master in Surgery (M Ch), and Doctor in Medicine (M D).

A candidate for the M B, B Ch is required to pursue a course of study of not less than six academic years subsequent to matriculation in the university, and of these years at least three must have been passed in one of the constituent colleges of the university. These are the University College of Wales, Aberystwyth, University College of North Wales, Bangor, University College of South Wales and Monmouthshire, Cardiff, and University College, Swansea. He must also hold an arts or science degree of the University of Wales, or of some other university approved for this purpose. Certain of the courses of study pursued for a B Sc or B A degree may be counted as courses required for the degrees in the Medical Faculty.

The courses for the M B, B Ch are divided into two sections, of which the first includes the preliminary subjects—physics, chemistry, botany, zoology, and the ancillary subjects—organic chemistry, human anatomy, and physiology. Study of the preliminary subjects and of organic chemistry must extend over at least one academic year, study of physiology and anatomy must extend over at least two academic years, the first section of the course must occupy not less than three years, the second section includes courses in pathology, bacteriology, pharmacology, hygiene and forensic medicine, medicine, surgery, and obstetrics and gynaecology, and cannot be commenced, except in the case of pharmacology, until the examinations relating to the preliminary and ancillary courses have been

passed Examinations in all the subjects are held in June of each year.

The university also offers courses of study in public health and in tuberculosis. Candidates for the Diploma in Public Health (D.P.H.) and for the Tuberculous Diseases Diploma (T.D.D.) must possess a medical qualification registrable for practice in Great Britain and Ireland, and must have completed courses of study as prescribed by the regulations either at the Welsh National School of Medicine, Cardiff, or at another institution approved by the university.

WELSH NATIONAL SCHOOL OF MEDICINE

Students can complete the whole of their curriculum in the Welsh National School of Medicine, which is an integral part of the University College of South Wales and Monmouthshire, and qualify for the degrees of M.B., Ch.B. in the university.

Further information may be obtained from the Registrar, the University Registrar, Cathays Park, Cardiff.

English Medical Corporations.

THERE are in England three medical corporations which grant licences to practise—the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the Conjoint Board in England. Details concerning this body, its component Colleges, and the third licensing body here follow.

THE CONJOINT BOARD

THIS body—the Examining Board in England—deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study, and recommends those who pass the required examinations for the Licence and for the diploma of Member respectively. The successful candidate is then entitled to register as L.R.C.P. Lond., M.R.C.S. Eng. It performs the same task in connexion with diplomas in public health, tropical diseases, ophthalmic medicine and surgery, psychological medicine, and laryngology and otology—jointly issued by the two Colleges in question. Under the new regulations, which apply to all students who have not passed the required preliminary tests of general education before January 1st, 1923, every candidate for the M.R.C.S. and L.R.C.P. must (1) complete five years of professional study after passing a recognized preliminary examination and a recognized pre-medical examination in chemistry and physics, (2) comply with the regulations, which may be had from the Secretary, Examination Hall, Queen Square, Bloomsbury, London, W.C.1, and (3) pass the two professional examinations of which particulars appear below. The old regulations for the Conjoint diploma, of which an account was given in the Educational Number for 1922, still apply to students who passed their preliminary examination in general education before January 1st, 1923.

NEW REGULATIONS FOR THE CONJOINT DIPLOMA

The following is an outline of the regulations applicable to candidates for the L.R.C.P. Lond. and M.R.C.S. Eng., who passed the required Preliminary Examination in general education on or after January 1st, 1923. The full regulations and synopses and forms of certificate may be obtained from the Secretary.

PRE-MEDICAL EXAMINATION

Students are required to pass a pre-Medical Examination in Chemistry and Physics conducted by the Conjoint Examining Board. The curriculum of professional study recognized by the Board—namely the and Physics for the degree in Medicine of any university recognized by the Board, the Higher School Certificates of Oxford and Cambridge Universities and the Oxford and Cambridge Schools Examination Board, the Higher Certificates

of London, Bristol, Durham Universities, the Joint Matriculation Board of the Northern Universities, and the Central Welsh Board Higher Certificate.

A candidate must enter for Chemistry and Physics together and he will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other subject. He will be admitted to the examination on producing evidence of having passed the required Preliminary Examination in General Education and of having received instruction during 180 hours in Chemistry and 120 hours in Physics to the satisfaction of his teachers. These courses may be commenced or attended before the required Preliminary Examination in General Education is passed.

The examination is partly written, partly oral and partly practical. A candidate rejected in one or both subjects of the examination will not be admitted to re-examination until after the lapse of a period of not less than three months and he must produce evidence of further instruction in the subject or subjects of failure.

PROFESSIONAL EXAMINATIONS

There are two Professional Examinations called the First and Final Examinations. The courses of study for these examinations must not be commenced until the Pre-Medical Examination in Chemistry and Physics or some equivalent examination has been passed.

First Professional Examination.—The subjects of this are Section I, (a) Anatomy, including Histology and Embryology, (b) Physiology, including Biochemistry. Section II, Pharmacology, Practical Pharmacy and Materia Medica. A candidate must have attended at a recognized Medical School courses of instruction in Anatomy, including Embryology during five terms during which he must have dissected the whole body courses of instruction in Physiology, including General Biology, Biochemistry, and Bio-physics during five terms courses of instruction in Pharmacology, Practical Pharmacy, and Materia Medica. A candidate may present himself for the two Sections together or separately, but he must take parts (a) and (b) of Section I together until he has passed in one or both parts, but a candidate will not be allowed to pass in one part unless he obtains at the same time at least half the number of marks required to pass in the other part. Section II of the examination may be passed at any time before the candidate enters for the Final Professional Examination. A candidate who produces satisfactory evidence of having passed an examination in the subjects of Section I or of either part of Section I and of Section II in the examination for the degree in Medicine conducted at a university recognized by the Board will be exempted from further examination in such subject or subjects.

Final Professional Examination.—The subjects of this are Section I, (a) Pathology, including Morbid Anatomy, Morbid Histology and Clinical Pathology, (b) Bacteriology. Section II, Part I, Medicine, including Medical Anatomy, Forensic Medicine and Public Health. Part II, Surgery, including Surgical Anatomy and the use of Surgical Appliances. Part III, Midwifery and Gynaecology. The examination is partly written, partly practical, partly clinical and partly oral. A candidate may take Sections I and II and the three parts of Section II of the Final Examination separately or may take the whole examination together. He will be required to produce the certificates required by the regulations before being admitted to the respective parts of the examination. A candidate who produces evidence of having passed an examination for a degree in Medicine in the subjects of Pathology and Bacteriology at a university recognized by the Board is exempted from Section I.

FEES

The fee for the Pre-Medical Examination is three guineas, for re-examination in Chemistry two guineas, and for re-examination in Physics one guinea. The fee for the First Professional Examination is ten guineas for re-examination after rejection in Section I six guineas for re-examination after rejection in either part of Section I three guineas for re-examination after rejection in Section II three guineas. The fee for admission to Section I of the Final Professional Examination is four guineas, for admission to Section II Part I ten guineas Part II ten guineas Part III six guineas and the re-examination fees are respectively three guineas, six guineas, and four guineas.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

THIS College has three grades—its Licentiates, its Members, and its Fellows. The Licence is now only issued through the Conjoint Board. The Membership is only granted to those who have passed the final examinations for the Licence, or those who are registered practitioners and graduates of a recognized university, in any case they must be persons over 23 years of age. Candidates are examined in pathology and the practice of physic, partly in writing and partly viva voce, they are also examined in Latin, Greek, French, and German. The languages are not compulsory, but credit is given to those who show a knowledge of them. The fee for the Membership is £42, or in the case of a Licentiate £21. There is a fee of £6 6s. payable before entrance to the examination, which in the case of successful candidates is reckoned as part of the Membership fee. The body of Fellows is maintained by election from among the Members.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

This College has two grades—Members and Fellows. The Members are admitted as stated in the section dealing with the Conjoint Board. The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations for the Fellowship—the first in anatomy and physiology, which may be passed after the third winter session, the second, chiefly directed to surgery, which may be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of graduates in medicine and surgery of not less than four years' standing of universities recognized by the College for the purpose, who are required to attend for one year the surgical practice of a general hospital recognized by the College after obtaining their degrees.

Fees.—At first examination £8 8s. for re-examination £5 5s. At second examination £12 12s. Diploma fee for non-members, £10 10s.

SOCIETY OF APOTHECARIES OF LONDON

This body confers a registrable diploma in medicine, surgery, and midwifery, now known as the L.M.S.S.A. (Licentiate in Medicine and Surgery of the Society of Apothecaries), on those successful at the following examinations.

Primary Examination—This is divided into two parts, of which Part I includes chemistry, chemical physics, practical chemistry, biology, and pharmacy. Part II includes anatomy, physiology, and histology, and cannot be passed before the completion of twelve months' practical anatomy with demonstrations. Candidates will be excused any or all the subjects of the primary examination on producing evidence that they have passed equivalent examinations before an examining body recognized by the Society. Candidates referred in anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re-examination.

Final Examination—This is divided into three parts. Part I includes clinical surgery, the principles and practice of surgery, surgical pathology, operative manipulation, surgical anatomy, instruments and appliances. Part II includes clinical medicine (a) the principles and practice of medicine (including therapeutics, pharmacology, and prescriptions), pathology, and morbid histology, (b) forensic medicine, hygiene, theory and practice of vaccination, and mental diseases. Part III includes midwifery, gynaecology, and diseases of newborn children, obstetric instruments and appliances.

The fee for the primary examination is £5 5s. for the final £15 15s. The regulations and synopsis relating to the several examinations and other information may be obtained from the Secretary Court of Examiners, Apothecaries Hall, Blackfriars, E.C.4.

The Scottish Universities.

THERE are in Scotland four universities, each possessing a faculty of medicine, and having the right to confer degrees which admit the holder to the *Medical Register*. In essential points the regulations in their medical faculties for undergraduates are much alike, so that a general account can be given of all of them together.

The universities are those of Edinburgh, Glasgow, Aberdeen, and St. Andrews. The provision each of the cities in which these universities are situated makes for the education of medical students will be found in the section on Medical Schools in Scotland, here it need merely be said that degrees in medicine from Scotland as a whole have always enjoyed a high repute.

The degrees granted in medicine and surgery to candidates of either sex are four in number—Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.). The two former are not obtainable one apart from the other. Besides these

degrees a diploma in tropical medicine and hygiene is obtainable from the University of Edinburgh, and diplomas in psychiatry and public health. As for public health, registrable degrees in this subject are granted by the universities of Edinburgh and Glasgow, while diplomas in public health may be obtained from the universities of St. Andrews and Aberdeen.

The conditions for admission of graduating students of medicine are the same as those in the Faculties of Arts or Science (for degrees in pure science).

As from January 1st 1923 prospective medical students are also required to pass a pre-registration examination in chemistry and physics.

PROFESSIONAL EDUCATION

The regulations comply in all respects with the requirements and recommendations of the General Medical Council, and, in addition, necessitate definite study for stated periods of diseases of children, of the larynx, ear, and nose, of the skin, of ophthalmology, and of mental diseases. In respect of the various courses certificates must be obtained showing that the student has not only attended regularly, but has actually performed the work of the class. Out of the necessary five years of medical study, not less than two must be spent at the university whose degrees the student hopes to obtain, and the balance at any place officially recognized for such purpose. In each academic year there are two sessions—one lasting from the beginning of October to the middle of March, and the other from the beginning of May to the middle of July.

PROFESSIONAL EXAMINATIONS

The distinctive feature of the Scottish curriculum is that, though nominally there are only four examinations, each of these may be, and habitually is, split up by the student into sections. Hence, a student may complete some stage of his career during the course of nearly every session. Thus by the end of the first winter session the student may pass in zoology and chemistry. At the end of the first summer session he can finish with botany and physics and with anatomy and physiology at the end of the second. Pathology and materia medica he will pass at the end of the third year, and so on, until the final examination in midwifery, surgery, and medicine, and the corresponding clinical subjects, at the end of the fifth year of study. At each examination the candidate may pass "with distinction," and a record is kept of the merit displayed, so that, when the time comes for the candidate to graduate, one who has done well throughout can be declared as graduating with first or second class honours. A further point in the system is that the student's own teachers commonly take some part in his examination.

Of the four examinations, the first deals with physics, botany, zoology, and chemistry, the second with anatomy and physiology, the third with materia medica and pathology, the fourth with medicine and surgery (clinical and systematic), midwifery, clinical midwifery, and clinical gynaecology, and forensic medicine and public health. The first three examinations are held three times a year, the final twice a year.

Exemption from the first professional examination can be obtained by candidates who have passed an arts or science degree examination in its subjects at any recognized university. When a candidate presents himself for an examination in several of its parts but is not successful in all of them, he is credited at the next examination with those subjects in which he has already been approved.

THE HIGHER DEGREES

It is open to those who are already M.B., Ch.B. to proceed either to the M.D. or the Ch.M. A candidate for the former must have been engaged for not less than one year in work in the medical wards of a hospital, or in scientific research in a recognized laboratory, or in the Naval or Military Medical Services, or have been at least two years in general practice, and he must be 24 years of age. He has to write a thesis on any subject not exclusively surgical, and is examined in clinical medicine and in some one or other of its special departments. The regulations for candidates for the Ch.M. are of a corresponding character,

a period of surgical work in a hospital or elsewhere being substituted for medical work, and the thesis being on a surgical rather than a medical subject. He is examined in surgical anatomy, clinical surgery, operative surgery, and in some of the special departments of surgery.

FEES

It is estimated that the class examination and other fees for the M B Ch B come altogether to about £247, the separate examination fees included in this calculation being as follows:

First Professional	£	s	d
Second Professional	9	9	0
Third Professional	7	7	0
Final	6	6	0
	11	11	0

Re entry in any subject in which the candidate has failed entails a fresh payment of £1 1s. Candidates for the M D and Ch M pay £21, and on re entry £5 5s.

More detailed information with regard to the University of Edinburgh can be obtained from the *Medical Programme*, price 6d, which is published by Mr. Thun, 55, South Bridge, Edinburgh, or on application to the Dean of the Faculty of Medicine. Similar information about Glasgow should be sought from the Assistant Clerk, Matriculation Office, Glasgow. With regard to Aberdeen, application may be made to the Secretary of the Medical Faculty, Marischal College. In respect of St. Andrews information can be obtained either from the Secretary of the University, or, alternatively, the Secretary of the United College, St. Andrews, or the Secretary of University College, Dundee, these being the two constituent colleges of the University of St. Andrews.

Finally, it should be mentioned that in connection with all the Scottish universities there are valuable bursaries and scholarships, some information as to which will be found in the article on Medical Schools.

THE CARNEGIE TRUST

The following is a summary of the regulations made by the Carnegie Trust for the universities of Scotland for assistance in the payment of class fees in the universities and extra mural colleges of Scotland.

Applicants must be over 16 years of age; they must be of Scottish birth or extraction or have attended for two years after the age of 14 at a school or institution under inspection of the Scottish Education Department. Applicants so qualified who have been pupils of schools under the Scottish Education Department will be eligible for assistance in the payment of class fees if they have obtained the leaving certificate of the Department provided that it bears evidence of such preliminary education as is required by the universities for their graduation curricula or that it has been supplemented by such passes either in the Scottish Universities Preliminary or other examination as will satisfy the above requirement of the universities. Where applicants have not been pupils of schools under the Scottish Education Department or where other good ground for not having obtained the leaving certificate can be shown the Executive Committee has power to accept instead what it deems equivalent evidence of attainments.

Applicants in the Faculties of Arts and Science must have had their course of study for each academic year approved by the University Adviser of Studies and they must have passed the graduation examinations belonging to the previous stage of their curriculum before becoming eligible for assistance in the payment of fees of classes belonging to a further stage. Beneficiaries must submit to the Executive Committee at the end of each session particulars as to their attendance and work, any distinctions gained and any graduation examinations passed.

The annual allowance towards payment of class fees offered to beneficiaries by the Trust in the Faculty of Medicine is £19 for four years in all £76. Any unexpended part of a grant will be carried forward to the succeeding year. In combinations of Faculties the allowances available for beneficiaries are Arts and Medicine—two Arts grants of £8 and four Medicine grants of £19 in all £82. Science and Medicine—two Science grants of £17 and four Medicine grants of £19 in all £110.

Applicants in writing for application forms must name the university and faculty in which they intend to study and state whether they have previously obtained the benefits of the Trust. Applications must be lodged not later than October 25th for the winter session or May 10th for the summer session. Payments are made by means of fee coupons and fees already paid are not refunded.

The Scottish Corporations.

THERE are three medical corporations in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Their licences can be separately obtained only by persons who are already in possession of a recognized qualification—in surgery in the case of the College of Physicians, and in medicine in the case of the College of Surgeons and the Faculty of Physicians and Surgeons of Glasgow. All others must submit to the examinations held by the Conjoint Board which the three corporations have combined to form. Details concerning this Board and its component colleges follow. The conditions on which their higher qualifications are granted will be found set forth separately in connection with each corporation.

THE CONJOINT BOARD IN SCOTLAND

THIS body has charge of all questions connected with candidates for the Conjoint Licences of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Those finally approved by it are entitled to registration and to the initials denoting the Licences of the three bodies concerned—namely, L R C P Edin, L R C S Edin, and L R F P S Glasg. The Board requires all candidates to comply with the regulations of the General Medical Council. It has an arts examination of its own, but is prepared to accept in its place any of the other educational tests approved by the General Medical Council. All candidates must obtain registration with the General Medical Council.

Professional Curriculum for Candidates registered as Medical Students prior to January 1st, 1923

Subsequent to registration as a medical student the candidate must pass not less than five years in medical study, each comprising a winter and a summer session. The Board does not insist that candidates shall pursue their study at any particular place, and is prepared to accept certificates of having attended the necessary courses from any recognized medical school.

Its examinations are four in number, each of them being held four times every year, and these will fall to be held twice in Edinburgh and twice in Glasgow during the next period, it is open to candidates to present themselves for examination at either place. The first examination deals with physics, chemistry, and elementary biology, the second with anatomy and physiology, including histology, the third with pathology and materia medica, including pharmacy, and the final with (1) medicine, including therapeutics, medical anatomy, and clinical medicine, (2) surgery, including surgical anatomy, clinical surgery, and diseases and injuries of the eyes, (3) midwifery and diseases of women and of newborn children, including clinical gynaecology and practical midwifery, and, if it has not been passed previously, (4) medical jurisprudence and hygiene. Candidates may also be examined on diseases of children, diseases of the ear and throat, insanity, vaccination, etc.

These examinations must be passed in due order, and before admission to any of them the candidate must supply certificates showing that he has completed the due periods of study of their subjects. He can present himself in any single subject of the first three examinations. As regards the final examination, a candidate can present himself in medical jurisprudence and hygiene at any time after completion of the third examination and of his study of these subjects, but in medicine, surgery, and midwifery he cannot present himself until the completion of five years' study, and he must take them all simultaneously. A candidate who takes up several subjects of an examination or the whole of the subjects at one time, but fails in some of them, is credited at the next examination with those subjects in which he has been approved.

Part or entire exemption from the first three examinations may be granted to those who have already passed before other bodies examinations deemed by the Board equivalent to its own, but all candidates for the Conjoint licence must sit for the final examination, and at no examination can a candidate present himself within three months of his rejection by some other licensing body.

Professional Curriculum for Candidates registered as Medical Students after January 1st, 1923

The curriculum has been extended to meet the recommendations of the General Medical Council. Candidates when applying for copies of regulations should state date of medical registration.

FEES

It is estimated that the total cost of lectures and fees for the Conjoint licence is about £152. The separate examination fees are as follows: First Second and Third Professional £5 each; Final £15. On re-entry for any of the first three examinations £3 and on re-entry for the Final £5. If the re-entry is only in one or two subjects the fees are smaller.

Information concerning this Board should be sought either from Mr D. L. Laidie, 49, Lauriston Place, Edinburgh, or from Mr Walter Hirst, Faculty Hall 242, St Vincent Street, Glasgow.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

This College has three grades—Licentiate, Membership, and Fellowship—all of which are open to men and women. The regulations applying to candidates for the Licentiate have already been generally indicated. If desirous of receiving it apart from those of the other two corporations they must be holders of a surgical qualification recognized by the College, and must pass an examination corresponding to the medical part of the Final Examination of the Conjoint Board and conditioned in the same way, and also an examination in medical medicine. The fee for examination is 15 guineas, a special examination being obtainable on due cause being shown, and on payment of 5 guineas extra. Ordinary examinations take place monthly on the first Wednesday and Thursday, except in September and October. Candidates for the Membership must be either Licentiates of a British or Irish College of Physicians, or alternatively graduates of medicine of a university approved by the Council, and in either case not less than 24 years of age. Candidates are examined in medicine and therapeutics, also on one or more departments of medicine specially professed, and approved by the Council, in which a high standard of proficiency will be expected. The fee to be paid by a candidate for the Membership is £36 15s. The examination is held quarterly, and application for admission to it must be made a month previous to its date. For the Fellowship the candidate must have been a Member of the College for at least three years, and if accepted, pays fees, including £25 stamp duty, amounting altogether to £64 18s. Further details can be obtained on application to the Secretary of the College.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

This College has two grades—its Licence and its Fellowship. Licentiates may be of either sex, and for the Fellowship women are eligible also.

Licence

As an original qualification the Licence is only granted after fulfilment of the regulations of the Conjoint Board, but as an additional qualification it can be obtained by those already possessed of a registrable qualification in medicine. In this case the candidate has to pass a written, oral and clinical examination in surgery and surgical anatomy, and may be asked to operate on the dead body.

The fee is £15 15s. of which £10 10s. is returned to unsuccessful candidates. On due cause being shown a special examination may be granted the fee being £20 of which £10 is returned to a candidate if he is not approved.

Fellowship

Candidates for the Fellowship must be not less than 25 years of age, and have been in the practice or study of

their profession subsequent to registration for at least two years, and must hold either a surgical degree from a university recognized for that purpose by the College, or a registrable diploma obtained as the result of an examination which includes surgery as well as medicine and midwifery. Candidates are examined in (a) the principle and practice of surgery, including surgical anatomy, (b) clinical surgery, and (c) one optional subject, which they may choose from among the following: surgical pathology and operative surgery, ophthalmology, laryngology, otology, and rhinology, gynaecology, obstetric surgery, midwifery, and dental surgery and pathology. The examination is written, oral, and clinical or practical. A candidate who desires to be examined must give one month's notice, his application for admission being supported by two Fellows of the College, one of whom must be resident in Edinburgh, or, in default, by testimonials specially obtained for the purpose. Candidates are not allowed to appear more than three times at the examinations.

Licentiates of the College pay £35 and others £45. For further information application should be made to the Clerk of the College Mr D. L. Laidie, 49, Lauriston Place, Edinburgh.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

This body possesses two classes—Licentiates and Fellows. The regulations applying to the former correspond with those respecting candidates for the Licence of the Royal College of Surgeons of Edinburgh. Candidates for the single Licence are examined in surgery (including clinical surgery and surgical anatomy). The fee is £15 15s. and examinations are held quarterly. Candidates for the Fellowship must be qualified medical men of not less than two years standing, and 24 years of age. Candidates approved at this examination are then eligible for election as Fellows. Special regulations are in force for medical practitioners who served in the late war. The Faculty can also elect from Fellows annually without previously submitting them to examination, providing they "have highly distinguished themselves in medical science or practice." They must be of not less than ten years' standing and 40 years of age.

The fee for the Fellowship is £50. Further information can be obtained from Mr Walter Hirst, Faculty Hall 242, St Vincent Street, Glasgow.

The Irish Universities.

There are three universities in Ireland, each with a medical faculty. These are, in the Irish Free State, the University of Dublin (usually known as Trinity College, Dublin), and the National University of Ireland, and, in Northern Ireland, the Queen's University of Belfast. The Universities of Dublin and Belfast teach students, examine them, and grant degrees, the National University of Ireland is an academic body only, inasmuch as its practical work is divided among three constituent colleges situated, one at Cork, another at Galway, and the third in Dublin. Information as to the arrangements for the education of medical students will be found in the section relating to Irish Medical Schools.

UNIVERSITY OF DUBLIN TRINITY COLLEGE

This university grants two degrees in medicine (M.B. and M.D.), two in surgery (B.Ch. and M.Ch.), two in midwifery (B.A.O. and M.A.O.), and a post-graduate diploma in public health. It also grants a post-graduate diploma in gynaecology and obstetrics, for which nine months' study is required. The degrees are granted to those who, having passed the Professional Examination, have also graduated in arts.

PROFESSIONAL EXAMINATIONS

A candidate for the Final Examination for the M.B., B.Ch., and B.A.O. degrees must be a matriculated student of at least five years' standing. The examinations which students must pass are the Preliminary Scientific, the Intermediate Medical, and the Final. Before admission to

any of these examinations students must have completed the courses of study in the subjects involved

Preliminary Scientific—This covers (a) chemistry, (b) physics, (c) botany and zoology, the three divisions may be taken together or at different times

Intermediate Medical—This is divided into two parts: (a) anatomy, physiology, organic chemistry, and histology, (b) applied anatomy and applied physiology. The two parts may be taken separately or together

Final Examination—Part I Hygiene and medical jurisprudence, pathology and bacteriology, materia medica, and therapeutics. Part II (a) Midwifery and gynaecology, (b) medicine and mental diseases, (c) surgery in all branches, including clinical ophthalmology. The three sections of Part II may be taken separately or together. In either case the full curriculum must have been completed, and the final examination cannot be completed before the end of the fifth year

M D—The candidate must have passed all the qualifying examinations in medicine, surgery, and midwifery, and have taken, or have been qualified to take, the degree of B A three years previously. He must send in a thesis for approval. Subsequently the Regius Professor of Physic and an assessor will discuss with him questions connected with the thesis, and may also examine him *viva voce* on other medical subjects of a more general nature

M Ch—The candidate must be a B Ch of not less than three years' standing, and have been engaged in practice for two years

M A O—The candidate must be a B A O of not less than two years' standing and must produce satisfactory evidence of having been engaged for two years in obstetric science. The examination is specially directed to obstetrics and practical gynaecology

Further information regarding courses of instruction, etc., may be obtained from the Registrar of the School of Physic, Trinity College, Dublin

QUEEN'S UNIVERSITY, BELFAST

The degrees granted by the Medical Faculty of this university are as follows: Bachelor of Medicine (M B), Bachelor of Surgery (B Ch), Bachelor of Obstetrics (B A O), Doctor of Medicine (M D), Master of Surgery (M Ch), Master of Obstetrics (M A O). The university also confers a Diploma in Public Health. The first three degrees mentioned serve as a qualification for admission to the *Medical Register*, and are not granted separately. In addition to matriculating and passing his professional examinations, a candidate for these degrees must have passed three of the regulation five years as a student at the Belfast School of Medicine. Degrees in dental surgery (B D S and M D S) are conferred by the university, and also a diploma in dental surgery (L D S)

PROFESSIONAL EXAMINATIONS

The examinations for the M B, B Ch, B A O are four in number. The first deals with (1) inorganic, organic, and practical chemistry, (2) experimental and practical physics, (3) botany and practical botany, (4) zoology and practical zoology. It is divided into two parts, of which botany and zoology form one. The Second Examination covers anatomy and physiology, and may be taken at the end of the second year of the student's career. The Third Examination includes (1) pathology, (2) materia medica, pharmacology, and therapeutics, (3) medical jurisprudence, and (4) hygiene. To be valid a certificate in regard to the study of the subjects of this examination must show that the work has been done after the First Examination has been passed

The Final Examination includes (1) medicine, (2) surgery, (3) midwifery, (4) ophthalmology and otology. The student may pass in all subjects at once at the end of his fifth year, or he may divide the examination into two parts—namely, (1) systematic, (2) clinical, practical, and oral. The first part may be taken at the end of the fourth year, but for the second part the candidate may not present himself until the end of his fifth year, but students invariably take both parts at the end of their course. No certificate in regard to the study of the subjects of this examination will be valid unless the work was done subsequent to passing in all the subjects of the Second Examination

THE HIGHER DECREES

Candidates for the degree of Doctor of Medicine must be graduates in medicine of at least three years' standing, unless they hold also a degree of the university in arts or science, in which case a standing of two academic years will suffice. Moreover, candidates must be able to show that the interval has been passed in the pursuit of such courses of study or practical work as may be prescribed. The degree may be conferred either (a) after a formal examination, or (b) in recognition of the merits of a thesis or of some piece of original study or research carried out by the candidate, followed by an oral or other examination in its subject. When an ordinary examination is imposed it will include (1) a written paper on the principles and practice of medicine, (2) a commentary on a selected clinical case, (3) a clinical and *viva voce* examination, and (4) a written paper and clinical or practical and *viva voce* examination on a subject chosen from the following list: (a) human anatomy, including embryology, (b) physiology, (c) pathology, (d) pharmacology and therapeutics, (e) sanitary science and public health, (f) forensic medicine and toxicology, (g) mental diseases. The regulations for the degrees of M Ch and M A O are of the same general nature

NATIONAL UNIVERSITY OF IRELAND

The National University of Ireland carries on most of its educational work through three constituent colleges—one in Dublin, one in Cork, and one in Galway. Each of these provides a full medical curriculum, and all candidates for the medical degrees of the university must pass three of their five years of study at one or other of them. These years do not count except after matriculation or recognition as a student of the Medical Faculty obtained in some other fashion. The candidates at each constituent college are examined there by the university, and a common standard of education is secured by all courses of instruction and the regulations concerning them having to be approved by the Senate, after considering report thereon from the Board of Studies of the university. In addition to the ordinary degrees in medicine and surgery, the university grants those of Bachelor and Master of Obstetrics, Bachelor and Doctor of Science in Public Health, and Bachelor and Master in Dental Surgery, as well as Diplomas in Public Health, in Mental Diseases, and in Tropical Medicine

Application for other information may be made to the Registrar, National University of Ireland, Dublin

The Irish Corporations.

THERE are, in the Irish Free State, three licensing bodies other than the Medical Faculties of the universities, and in Dublin, just as in London, there is a Royal College of Physicians of Ireland, a Royal College of Surgeons in Ireland, and an Apothecaries' Hall. In Dublin, as in London and in Edinburgh, the two Colleges have formed an examining Conjoint Board, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall of Ireland, like the Apothecaries' Society of London, gives its licence separately

THE CONJOINT BOARD IN IRELAND

This body requires of candidates the passage either of its own preliminary examination in the subjects of general education or proof that the candidate has passed one of the tests accepted by the General Medical Council as well as passing in the Pre-Registration Examinations in Chemistry and Physics and Biology

PROFESSIONAL EXAMINATIONS

There are three professional examinations, the first of which cannot be passed earlier than the end of the second winter session, nor the final before the conclusion of full five years of medical study. Before being admitted to any of them the candidate must show that he has studied the

different subjects in practice and theory for the requisite periods, certificates to this effect being accepted from the authorities of most of the recognized medical schools at home and abroad. The first examination deals with (a) anatomy, and (b) physiology and histology. The second examination deals with (a) pathology, (b) materia medica, pharmacy, and therapeutics and ophthalmology, and may be taken separately.

Final Examination—This is divided into three divisions, which cannot be completed until at least five years have passed in medical studies other than those for the Pre-Registration Examinations, and five years at least since the beginning of the curriculum. The divisions are (a) medicine, including fevers, mental diseases, and diseases of children, (b) surgery, including operative surgery, (c) midwifery, including diseases of women and newborn children, and the theory and practice of vaccination.

Fees—Preliminary Examination £2 2s. Re-examination £2 2s. Pre-Registration Examination £3 3s. Re-examination in Chemistry, £2 2s. in Physics, £1 1s. First Professional Examination £15 15s. Second, £15 15s. Final, £6 6s. Re-examination fee is £2 2s. for each division.

Diploma in Psychological Medicine

There are two examinations in connexion with this diploma. Part I consists of (a) anatomy and physiology of the nervous system, (b) psychology. Part II—(a) neurology including clinical and pathological neurology, (b) psychological medicine, including its legal relationships.

Fees—£3 3s. for each part.

Further information can be obtained from Mr. Alfred Miller, Secretary of the Committee of Management, Royal College of Surgeons, St. Stephen's Green, Dublin.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND ROYAL COLLEGE OF SURGEONS IN IRELAND

The Diploma in Public Health

Every candidate for the Diploma in Public Health must observe the following rules:

Rule 1 A period of not less than two years shall elapse between the attainment by a candidate of a registrable qualification in Medicine, Surgery, and Midwifery and his admission to the Final Examination for a Diploma in Public Health.

Rule 2 The curriculum for the Diploma in Public Health shall extend over a period of not less than twelve calendar months subsequent to the attainment of a registrable qualification.

Rule 3 Every candidate shall produce evidence of having attended during a period of not less than five months at an institution approved by the Licensing Body granting the Diploma in Public Health in—

(a) Bacteriology and Parasitology (including Medical Entomology), especially in their relation to diseases of man and to those of the lower animals.

(b) Chemistry and Physics in relation to Medicine.

(c) Meteorology and Climatology in relation to Medicine.

At least 120 hours must be devoted to the study of these subjects.

At least 80 hours must be occupied in practical laboratory work.

At least 10 hours must be devoted to Course (c).

Rule 4 Every candidate shall produce evidence of having received during not less than 80 hours at an institution or from teachers approved by the Licensing Body granting the Diploma in Public Health in the following subjects:

(a) The Principles of Public Health and Sanitation (30 hours).

(b) Statistics (20 hours).

(c) Administration (including Public Medical Planning) (10 hours).

[The proportion of time to be given to each subject.]

Rule 5 Every candidate shall produce evidence that he has attended for three months on the clinical practice of a recognized Hospital for Infectious Diseases and has received therein instruction in the methods of administration. At least thirty daily attendances of not less than two hours in each week shall be required.

Rule 6 Every candidate shall produce evidence that he has during a period of not less than six months been engaged in requiring a practical knowledge of the duties routine and special of Public Health Administration under the supervision of a Medical Officer of Health who shall certify that the candidate has received from this Officer or other competent Medical Officer during not less than three hours on each of six working days practical instruction in the duties and also those relating to—

(a) Maternity and Child Welfare Service.

(b) Health Service for Children of School Age.

(c) Venereal Diseases Service.

(d) Tuberculosis Service.

(e) Industrial Hygiene.

(f) Infection and Control of Food including meat and milk.

Candidates of having received the prescribed instruction in Public Health Administration must be given by a Medical Officer of Health who devotes his whole time to Public Health work or by the Medical Officer of Health of a Sanitary Area having a population of not less than 50,000 or in Ireland the Medical Superintendent Officer of Health of a County or County Borough having a population of not less than 50,000.

Part I The examination for the Diploma shall be divided into two parts: Part I and Part II.

Part I The examination for Part I shall include the following subjects:

Bacteriology and Parasitology (including Medical Entomology), Chemistry and Physics in relation to Medicine, and Meteorology and Climatology in relation to Medicine.

Part II The examination for Part II shall include the following subjects:

Hygiene and Sanitation (including Sanitary Canon Law), Epidemiology and Infections in the Community, Sanitary Law and Vital Statistics, Public Health Administration.

The examination shall be written and oral and shall include practical examination in Infectious Diseases, Food Inspection, Inspection of premises—dairies, factories, workshop, schools, etc.

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MEDICAL SCHOOLS AND COLLEGES.

LONDON

Information as to the fees at each of the various metropolitan medical schools, and the scholarships, prizes, and junior appointments which they offer, will be found in the following pages. The courses they provide are fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the English Conjoint Board or the Apothecaries' Society, not less than of those who have London or other university degrees in view. At all, too, special facilities are offered to students who have commenced their professional education at Oxford or Cambridge, and are seeking the medical degrees of those universities.

CHARING CROSS HOSPITAL

This school, with its hospital, is situated in the centre of London, and is easily accessible. Primary and intermediate students attend lectures and practical work at King's College. The final studies are taken in the school and hospital, where systematic lectures, demonstrations, and tutorial classes are arranged to cover all the subjects necessary for the qualifying examinations. Departments are also available for the other final subjects of bacteriology, clinical pathology, biochemistry, materia medica, public health, operative surgery, and for research work. An Institute of Pathology, with a whole-time staff of scientific workers and fully equipped laboratories, has been established in the school. Students receive their training in preventive medicine, pathology, and bacteriology here, and are encouraged to undertake research.

Women students are admitted to the school and hospital upon the same terms and conditions as men, and after qualification are eligible for resident hospital appointments.

Fees—The fees are as follows—Entrance Primary and Intermediate 10 guineas Final 8 guineas Annual £42.

Further information may be obtained on application to the Dean of the Medical School, Charing Cross Hospital, London, W C 2.

Guy's Hospital

The hospital contains 616 beds in constant occupation. Twenty-six beds are set apart for diseases of the eye, and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. There is a special ward of 32 beds for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the throat and ear departments, the departments of orthopaedics, neurology, and dermatology, the department for the treatment of diseases of the genito-urinary system, and the children's department; there are also some special beds for the treatment of syphilis.

The residential college fronts the east gate of the hospital, providing accommodation for resident students. This contains a dining hall, reading rooms, a library of general literature, and a gymnasium for the use of the residents and of the members of the Clubs Union. The athletic ground at Honor Oak Park is reached from the hospital in twenty minutes. The Gordon Museum of Pathology, the Wills Library, the departments of chemistry, physics, pathology, and pharmacology, and the school buildings in general, afford opportunities for a liberal education and for research, and provide the full curriculum for a medical qualification. New departments of anatomy, physics, and biology were opened in July, 1923. They are equipped on modern lines, and provide ample accommodation for teaching and research. Special classes are held for the First and Second Examinations for medical degrees of the University of London, for the Pre-Medical Examination, and for the First and Final F.R.C.S. Eng. Special teaching is provided to meet the requirements of the Universities of London, Oxford, and Cambridge in general pathology and pharmacology.

Appointments—All appointments are made according to the merits of the candidates, as determined by a committee of the medical staff. Sixteen out-patient officers, eight house-physicians, twenty assistant house surgeons, eight house surgeons, four ophthalmic house surgeons, two genito-

urinary house-surgeons, two house-physicians (children's department), and nine resident obstetric assistants are appointed annually. The house-physicians and house-surgeons, obstetric residents, ophthalmic house surgeons, and genito-urinary house surgeons hold office for six months each, and receive free board and lodging in the college. Every student is provided with rooms and commons in the hospital during the period of his "take in" as senior dresser. In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynaecology, diseases of children, diseases of the nervous system, dermatology, otology, radiotherapeutics, anaesthetics, dentistry, orthopaedics, vaccine, tuberculosis, fractures, and genito-urinary and venereal disease, clinical assistantships in the various special departments are open to post-graduates.

Scholarships Prizes etc—The following scholarships in Arts and Science are awarded. A Open Junior Scholarships (1) An Arts Scholarship of the value of £100 (2) A Science Scholarship of the value of £100 these are awarded annually in July. (3) A War Memorial Scholarship of the value of £200 awarded alternately in Arts and Science. This Scholarship is open every other year the next award will be made in July 1926. B Confined Scholarship in Science. A Junior Science Scholarship of the value of £100 is offered for competition annually in September to candidates who have attended the preliminary science classes at this school. Candidates for these scholarships (male students only) must be under 21 years of age on October 1st of the year of the competition. C Open Senior Science Scholarships (1) A War Memorial Scholarship of the value of £200, (2) an Open Scholarship of the value of £200 both of these are awarded annually in September. Full particulars as to the scholarships may be obtained from the Dean of the Medical School. Junior prizes for general proficiency £20 £15 £10 Hilton prize for Dissection, £5 Michael Harris prize for Anatomy £10 Sands Cox Scholarship for Physiology, £15 for three years Woodbridge Memorial prize for Physiology £10 Beane prize for Pathology £34 Treasurers gold medal in Medicine Treasurers gold medal in Surgery and the Golding Bud gold medal and scholarship for Bacteriology (£20) are awarded annually after competitive examination. The Cull Studentship in Pathology of the value of £250 per annum, the Berney Scholarship in Materia Medica, of the annual value of about £50 and the Anderson Demonstratorship in Clinical Chemistry value £150 per annum are awarded without examination to enable research to be carried on in these subjects. An Arthur Durham Travelling Scholarship of £100 is awarded triennially. The Griffiths Demonstratorship in Pathology of the value of £320 per annum, and the Hilda and Ronald Poulton Fellowship value £150 per annum, are awarded without examination.

An annual composition fee is paid by all students until a registrable qualification is obtained. Further information may be obtained from the Dean of the Medical School, Guy's Hospital, London Bridge, S E 1.

King's College Hospital

The medical school of this hospital, which is situated at Denmark Hill, deals with the advanced or final subjects of the medical curriculum. The hospital was opened in 1913, and is one of the most modern and best equipped in England. The number of attendances in the casualty and out-patient departments during the year 1924 amounted to 196,211. In the education at the hospital a special feature has always been the individual attention given to each student. The studies are co-ordinated under the direction of senior members of the honorary staff, assisted by medical, surgical, obstetric, and pathological tutors. There are special departments for diseases of women and children, nervous diseases, ophthalmology, otology, laryngology and rhinology, dermatology, radiology, and physiotherapy. The laboratory and pathological department are specially noteworthy.

Appointments—Sixteen resident medical and surgical officers are appointed half-yearly, as well as dressers and clerks in the wards, out-patient departments, *post mortem* rooms, and special departments. Each of the special departments has several clinical assistants. There are three registrars and four tutors, all of whom receive salaries. The Clubs and Societies Union combines athletics, music, and other societies connected with the school, and provides also a common room.

Scholarships etc—At entrance Science Scholarship £50. At commencement of Final Studies Anatomy and Physiology Scholarship £50. Pathology and Pharmacology Scholarship £50. Two Raymond Gooch Scholarships each £50 a year for two years. Two Burney Yeo Scholarships each £80 (for Oxford and Cambridge students). Epsom College Scholarship £50. Senior Scholarship, £40, Todd Prize, Tanner Prize, Class Prizes and Medals.

Fees—The composition fee is 93 guineas if paid in one sum. Entrance fee of 10 guineas includes membership of the Clubs and Societies Union.

New Dental School—This school was opened in October, 1923, and provides complete courses for dental degrees and diplomas. The director of dental studies is Dr. A. Livingston, M.B., Ch.B., M.D.S. Liverpool.

The extension of the school can be obtained on application to the Dean H. Willoughby Lytle, M.D., F.R.C.S., or to the Secretary of the Medical School, S. C. Rammer, M.A., King's College Hospital, Denmark Hill, S.E.5.

THE LONDON HOSPITAL

This hospital, with its medical college and dental school, is situated in the Mile End Road, L.1. The hospital contains 950 beds, and during 1924, 17,975 patients passed through the wards and 131,969 out-patients received treatment. Of the latter number, 37,934 received treatment in the departments for diseases of the ear, nose, throat, eye, skin, and teeth, and in the pediatric, orthopaedic, venereal, radiological, electric, and physiotherapeutic, and inoculation departments. The number of major operations which were performed amounted to 7,656.

The hospital presents, therefore, a large field for clinical instruction, and in its wards and out-patient and special departments exceptional opportunities are afforded for acquiring an extensive and practical experience of all phases of disease.

A clinical unit in medicine, under the charge of a whole-time director, provides for the more advanced methods of diagnosis and treatment, and takes a leading part in the initiation and co-ordination of medical research. To each medical and surgical firm throughout the hospital there is attached a first assistant, who is responsible for instructing the clerks or dressers of the firm in elementary medicine and surgery, and who assists the honorary members of the firm in the preparation of their demonstrations. Special courses of lectures and demonstrations are arranged in medicine and surgery and in their ancillary subjects. Opportunities for research are provided under the supervision of the staff.

All the departments are modern and adapted for the teaching of all subjects in the various curricula. Special courses of instruction are held in preparation for the examinations of the University of London, for the Fellowship of the Royal College of Surgeons, and for the Membership of the Royal College of Physicians. Special entries can be made for the medical and surgical practice of the hospital. A residential hostel on hospital ground is provided for the convenience of students who wish to live near the wards and casualty departments. The athletic ground, of over thirteen acres, is at Highams Park, and is open to all members of the Clubs Union.

Appointments—The salaried appointments open to past students of the hospital are those of assistants to the medical unit, first assistants to the medical and surgical firms, obstetric registrar, medical, surgical, and obstetric tutors, clinical assistants in the medical, surgical, ophthalmic, aurial, light and skin, orthopaedic, and electrical departments, and in the Pathological Institute. There are appointed annually 4 resident accoucheurs, 14 resident house-physicians and 22 resident house-surgeons, 14 resident receiving-room officers, 8 resident emergency officers, 8 clinical assistants to the medical out-patient department, and 16 clinical assistants to the surgical out-patient department, also paid and unpaid clinical assistants in the various special departments. In addition, there are numerous assistantships, clerkships and dresserships in the departments of medicine, surgery, gynaecology, and obstetrics.

Scholarships and Prizes—The following is a list of scholarships and prizes.—At Entrance: Price Scholarship in Science £100; Price Scholar in Physiology, open to students of Oxford and Cambridge £75; Entrance Scholarship in Science £75; Free Medical Education. After Entrance: Buxton Prize in Anatomy and Physiology £40; Letheby Prizes in Organic Chemistry and Chemical Pathology £25; Prizes in Clinical Medicine, Surgery, and Obstetrics and Gynaecology £20 each; Duckworth Nelson Prize in Practical Medicine and Surgery £10; Hutchinson Prize in Clinical Surgery £50; Treves Prize in Clinical Surgery £15; Sutton Prize in Pathology £20; K. E. D. Payne Prize in Pathology £20; Sir Andrew Clark Prize in Clinical Medicine and Pathology £25; Anderson Prizes in Elementary Clinical Medicine £20; Dressers Prizes £40; Practical Anatomy Prizes, £10; Arnold Thompson Prize in Medical

and Surgical Diseases of Children £15; Liddle Prize £120; Francis Turner Scholarship in Dental Surgery £25; Harold Fink Prize in Dental Surgery £8; The London Prize in Dental Surgery and Pathology £5 5s.; and in Dental Practice £5 5s. Seven clinical examination prizes, each of the value of £3 3s., are offered for competition at the end of the courses of lecture in the dental curricula. Funds to the value of approximately £4,000 per annum for financial assistance being given to students and graduates engaged in medical research.

Fees—Entrance fee 20 or 15 guineas, according to examination; passed annual fee 40 guineas.

Full information may be obtained from the Dean at the London Hospital Medical College, Mile End, L.1.

THE MIDDLESEX HOSPITAL

This school and hospital are in Mortimer Street, W.1, close to Oxford Circus, Coombe Street, and Great Portland Street stations. There are a gymnasium, common room, and restaurant within the hospital precincts, and an athletic ground within easy reach. The hospital contains over 450 beds, including a wing containing 92 beds for patients suffering from cancer. There are special wards for maternity and gynaecological cases, for mental cases, for cases of venereal disease, and for diseases of children and of the skin and eye.

The medical school, which includes the Bland Sutton Institute of Pathology and the cancer research laboratories, is completely equipped for teaching the entire medical curriculum, including the pre-medical subjects chemistry, physics, and biology. The Bland Sutton Institute, under the charge of the Professor of Pathology, contains large pathological and public health laboratories, a separate department of biochemistry, and smaller rooms for original investigation as well as a pathological and anatomical museum. Bacteriological, chemical, and microscopical examinations of material from the wards, operating theatres, and out-patient departments are carried out in the laboratories, and senior students are eligible for clerkships in connexion with this work. Junior students in the pathological and bacteriological laboratories are elected annually from recently qualified students. Every facility is given for original research. The cancer research laboratories offer unlimited opportunities for the study of this disease, in both its clinical and pathological aspects.

Appointments—Twenty-two resident appointments are open annually for competition among students of the hospital. The officers reside and board in the residential college free of expense. Two casualty medical and two casualty surgical officers, and two resident officers to the special departments, are appointed annually. Eight house-surgeons are appointed every year at intervals of two months, after examination, six house-physicians are also appointed annually at similar intervals. An obstetric and gynaecological house-surgeon is appointed every six months. Eight registrars are appointed annually. In the out-patient departments the appointments are clerk and dresser to the physicians and surgeons to out-patients; clerk in the departments for diseases of the skin and nervous diseases, dressers to the department for diseases of women, to the ophthalmic surgeon, to the throat and ear department, and to the dental surgeon. External midwives, clerks and post-mortem clerks are also appointed. The appointments are so arranged that every student may, during his course, hold all the out-patient and in-patient clerkships and dresserships. Students must have held an out-patient clerkship and dressership before holding in-patient clerkships or dresserships. Non-resident qualified clinical assistants are appointed in the medical, surgical, skin, neurological, ophthalmic, throat and ear, odontological, children's, and electrotherapeutic out-patient departments.

Scholarships—There are two Entrance Scholarships, value £100 each. Two annual Entrance Scholarships of the value of £90 and £60 respectively are open to students of the University of Oxford and Cambridge who have completed the curriculum for, or passed the examinations in anatomy and physiology. Students joining the school in the previous April are eligible. The Peter Lucas Scholarship is annually awarded on the nomination of the headmaster to a pupil of Epsom College who has passed the first examination for medical degrees (Preliminary Scientific Examination). There is also a scholarship, value £50, awarded annually to students from New Zealand. In addition to the Entrance Scholarships there are numerous other valuable scholarships, prizes and exhibitions open to students of the hospital, including the Brodrip Scholarships, value £60 and £40; Lyell Gold Medal and Scholarship, value £55 5s.; Freeman Scholarship, value £30; John Murray

Gold Medal and Scholarship value £25, Hatley Clinical Prize, value £25, Leopold Hudson Prize value 11 guineas, and the Second Year's Exhibition, value 10 guineas.

Fees—(a) Pre-medical students for one year or less £21 (b) Students who have completed the Preliminary Science course Entrance fee 25 guineas five annual fees of £45. The annual fee for further attendance at the medical school, if a registrable qualification has not been obtained, is £23. Three quarters one half of one-quarter of the last annual fee may at the discretion of the School Council be returned if the student obtains a registrable qualification within three, six, or nine months of the annual payment becoming due. (c) Oxford and Cambridge and other students who have completed the Intermediate course Entrance fee 15 guineas two annual fees of £45 further annual fees as above. These fees are inclusive and cover the cost of instruction in vaccination fevers etc. and also the subscription to the amalgamated clubs and hospital Journal.

Further information may be obtained from the Dean or the School Secretary.

ST BARTHOLOMEW'S HOSPITAL

This institution fills one side of Smithfield and Giltspur Street, covering the greater part of a large island of ground separated practically from all other buildings, it is on the edge of the City, and easily reached from all parts of London. The hospital contains 757 beds. Extensive buildings, opened in July, 1907, occupy part of the ground acquired from the old Bluecoat School, and these materially enhance the attractions of the hospital as a place of medical study. The medical school buildings, including the library, the museum, and the chemical, biological, and anatomical departments, have now at their side a very large building, which includes club rooms for the Students' Union, a writing room, luncheon and dining halls, new quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any hospital in the kingdom. During the year 1909 a second block of new buildings was completed. These form the pathological department, and include, in addition to an extensive *post-mortem* room, large and well equipped laboratories for clinical pathology, pathological histology, bacteriology, and chemical pathology, altogether forming the most complete pathological department in the country. A further large block in Giltspur Street was required in 1923, and has been equipped by the construction of new lecture theatres and extensive laboratories for physics, chemical physiology, experimental physiology, histology, and pharmacology. Within the precincts of the hospital there is also a residential college for a large number of students. The Students' Union owns grounds of some ten acres in extent for recreative purposes at Vinchmore Hill, which is easily accessible from the hospital.

Special classes are held for students preparing for the Preliminary Scientific and other examinations, for the M.B. M.D. of the Universities of Oxford Cambridge, and London, and for the higher surgical degrees at the same universities, including the M.Ch. Oxon., M.Ch. Cantab., M.S. Lond. and F.R.C.S. Eng.

Clinical Units—Special clinical units have been established in medicine and surgery, each under the charge of a professor and director who devotes the whole of his time to the purpose of hospital practice teaching, and research. In each unit there are in assistant director and four assistants, for whom special laboratory accommodation has been provided by a gift from the Sir William Dunn Trustees. The appointments of clerks and dressers are open to all students in these departments and arrangements are made for all students to study in these units during a part of their clinical course.

Appointments—Clinical clerks to the physicians and to the physio-therapists, and dressers to the surgeons and in the casualty department, are chosen from the students, clerks and dressers are also selected from the students to attend in the out-patient rooms, in the special departments (ophthalmic, orthopaedic, gynaecological children's, laryngological, rural, dermatological venereal, electrical, and dental), and in the *post-mortem* room. Chief assistants and clinical assistants are selected from qualified men appointed yearly to help in the general medical surgical, and in the special departments. Ten house-physicians and ten house-surgeons are appointed annually. During their first six months of office they act as 'junior' house-physicians and house-surgeons and receive a salary of £80

a year. During their second six months they become 'senior' house-physicians and house-surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident midwifery assistant, an ophthalmic house surgeon, a house surgeon to the skin and venereal department, and a house surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Three resident administrators of anaesthetics are appointed—the senior for one year at a salary of £150, and two juniors for six months with a salary at the rate of £80 per annum—and all are provided with board and rooms. An external midwifery assistant is appointed every three months, and receives a salary of £80 a year.

Scholarships—Four entrance Scholarships are annually awarded after examinations held in September. The subjects of examination and conditions of eligibility for these scholarships are: (1) One scholarship value £75 in not fewer than two and not more than three of the following subjects—chemistry physics botany zoology physiology and anatomy limited to students under 25 years of age who have not entered on the medical or surgical practice of any London medical school. (2) One scholarship, value £100, in not fewer than three of the following subjects—chemistry physics botany zoology, and physiology limited to students under 21 years of age who have not entered on the medical or surgical practice of any London medical school. (3) An entrance scholarship in arts of the value of £100 in Latin and mathematics with one other language—Greek French or German. (4) The Jefferson Exhibition in Mathematics Latin and one other language—Greek, French or German—of the value of £50. The total value of the scholarships and prizes is over £1,000 annually.

Further information and a handbook can be obtained on application to the Dean of the Medical College, St Bartholomew's Hospital EC1.

ST GEORGE'S HOSPITAL

This school is at Hyde Park Corner, and is carried on in connexion with St George's Hospital, an institution having a service of 436 beds, of which 100 are at the convalescent hospital at Wimbledon. It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at the teaching centre of London University established at King's College. The school at Hyde Park Corner is devoted entirely to the teaching of clinical subjects, great attention being paid by the members of the staff to individual teaching. A number of special courses are given, in which the requirements of university and all other examinations receive careful attention.

The St George's Hospital Club consists of an amalgamation club, with smoking and luncheon rooms on the hospital premises, and other students' clubs, with an athletic ground at Wimbledon. Students have the advantage of a well filled library of medical and scientific books. A register of accredited apartments and a list of medical men and others willing to receive St George's men as boarders may be seen on application to the Dean.

Appointments—Two house-physicians, two house-surgeons, and two casualty officers are appointed every two months. The house officers reside and board in the hospital free of expense. The casualty officers are non-resident, and receive salaries at the rate of £100 per annum. After the student has held a house appointment, the following are, among others, open to him: assistant resident physician at £350 per annum, assistant resident surgeon at £350 per annum, medical officer to the Atkinson Morley Convalescent Hospital at £300 per annum, medical registrarship at £200 per annum, surgical registrarship at £200 per annum, medical officer to the biochemical department at £100 per annum, assistant curatorship of the museum, £100 per annum, obstetric assistantship resident, at £50 per annum, the post of resident anaesthetist at £100 per annum, the posts (two) of junior anaesthetist, each at £30 per annum.

Scholarships—The following Entrance Scholarships and Exhibitions in anatomy and physiology are awarded in July to candidates who have passed the second M.B. London or corresponding examination. Senior William Brown Exhibition of the value of £150. Senior Scholarship of the value of 90 guineas. Junior William Brown Exhibition of the value of £60. Junior Scholarship of the value of £70. Devitt Pendlebury Scholarship of the value of £50. and Exhibitions each of the value of £40 and up to six in number. Other prizes to the value of £200 are awarded annually to the students of the hospital.

Fees—First year (First M.B. or pre-medical course) £36 15s. second and third years £12 each. For the course of clinical

study in the fourth and subsequent years, entrance fee £10 10 annual composition fee £42. No entrance fee is payable by St George's students who have studied at King's College. Further information may be obtained from the Dean of the Medical School.

ST MARY'S HOSPITAL

This hospital and medical school are situated close to Paddington Station (G W R), having on one side a poor district of 500,000 persons, and on the other side the residential district of Kensington and Bayswater. The hospital contains 288 beds, and, by a scheme of affiliation, for teaching purposes, of several neighbouring hospitals, the teaching facilities extend over 1,000 beds. By arrangement with the Lock Hospital, students take the courses of instruction in venereal diseases there. The athletic ground (ten acres) is situated at Wembley, and can be reached in twenty minutes by a constant service of trains, a large pavilion has recently been erected.

Clinical Facilities.—Clinical units in medicine and surgery were established in 1920, and have now been formally recognized by the University Grants Committee, St Mary's being one of the six medical schools in London which enjoy this privilege. In addition to the lying-in beds at St Mary's, every student attends a short course at Queen Charlotte's Maternity Hospital (which is situated near to St Mary's) before holding a post on the maternity district of the hospital.

Institute of Pathology and Research.—Students specially interested in pathology and bacteriology have singular advantages at St Mary's. The Institute comprises seven special departments, the whole being under the personal direction of Sir Almroth Wright, F.R.S. Research scholarships of £200 each are awarded annually to students working in the departments of the Institute, and research beds are provided. Clerkships in pathology and bacteriology and chemical pathology, lasting for a period of three months, are open to students of the fifth year, and enable them to carry out the pathological and bacteriological investigations of the wards, and learn the necessary technique under supervision. Seventy-two of these posts are available annually.

Complete Curriculum.—The medical school provides complete courses of instruction, and students can join at once on passing a Preliminary Examination in Arts. Terms begin in October, January, and April.

Entrance Scholarships.—Three entrance scholarships of £210 each and one of £26 5s. are awarded annually in July by nomination on the lines of the Rhodes Scholarships. Two University Scholarships of £200 are awarded annually in July.

Fees.—Composition fees for entire curriculum (5½ years) £200 in one sum or £210 by five annual instalments. Composition fee for clinical curriculum (2½ years), 90 guineas in one sum, or 95 guineas by two annual instalments. As an alternative students may pay an annual fee of 40 guineas with an entrance fee of 10 guineas.

ST THOMAS'S HOSPITAL

This school and hospital are situated in Lambeth, on the south bank of the Thames, facing the Houses of Parliament, and form one of the well known architectural features of London.

The school buildings, which are separated from the hospital by a quadrangle, comprise lecture theatres, laboratories, and classrooms well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A splendid library and reading room and a complete museum are open to all students from 9 a.m. to 5 p.m., on Saturdays to 1 p.m. The Students' Club premises contain a dining room and smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. Good meals are obtainable at a moderate tariff. The terrace affords facilities for exercise and recreation. The sports ground, of more than nine acres in extent, is at Chiswick. It can be reached in forty minutes from the hospital, it is admirably adapted for football, cricket, lawn tennis, and athletic sports.

The hospital proper contains 644 beds. In addition to the ordinary provisions of a great hospital there are connected with the out-patient department physicians' and surgeons' rooms provided with ample sitting accommodation, so that students are enabled to follow closely the practice and

teaching of the out-patient staff. There is a full complement of special departments, and connected with the hospital a special tuberculosis department gives opportunity for instruction of students. There is a clinical theatre centrally situated, so as to facilitate the illustration of lectures by patients from the wards, and out-patient room. It is arranged also for lantern demonstrations. The maternity ward, containing 20 beds, gives students full facilities for maternity training under supervision, within the precincts of the hospital. This obviates any need for supplementary instruction elsewhere, and fully prepares the student for the external maternity practice of the hospital district. The revised regulations of the examining bodies can thus be fully complied with.

Appointments.—All hospital appointments are open to students without charge. A resident assistant physician, a resident assistant surgeon, and a resident anaesthetist are appointed annually at a salary of £200 each per annum. Two hospital registrars, medical and surgical, at an annual salary of £250 each, are appointed yearly. The tenure of these offices may be renewed for a term not exceeding two years. An obstetric tutor and registrar, an ophthalmic registrar (at an annual salary of £50 each) and an orthopaedic registrar (impud.) are appointed yearly. Ten resident casualty officers and anaesthetists (including two seniors) are appointed every six months. Seven house-physicians (including two obstetric house-physicians and one house-physician to the department of diseases of children) and nine house-surgeons (including two ophthalmic house-surgeons, one orthopaedic house-surgeon, and two house-surgeons to the ear, nose, and throat department) are appointed every six months. Eight or more clinical assistants in the special departments are appointed every three months, and hold office for six months if recommended for re-election. Clinical clerkships and dresserships to the in-patient and out-patient departments are available to the number of 400 each year.

Scholarships.—There are five entrance Scholarships. Two in art giving one year's free tuition, one of £150 and one of £20, in chemistry, physics and biology for students who have not received instruction in anatomy or physiology, one of £100 in any two of the following subjects: anatomy, physiology or chemistry for students who have completed their examinations in anatomy and physiology for a medical degree in any of the universities of the United Kingdom or the Colonies and have not entered as clinical students in any London medical school. The money value and subjects of examination of the remainder are as follows: (a) William Tite Scholarship for second year students £25. (b) and (c) Musgrave Scholarship or (alternately) Peacock Scholarship each for third year students and tenable for two years £35 each. (d) Mead Medal Medicine, Pathology and Hygiene. (e) Wainwright Prize Medicine, Pathology and Hygiene. (f) Toller Prize Medicine. (g) Cheselden Medal, Surgery and Anatomy. (h) Clutton Memorial Medal in Clinical Surgery, biennial. (i) Beaver Scholarship £50 biennially. Surgery and Surgical Pathology. (j) Soler Medal and Prize biennially. Reports of Cases. (k) Sutton Sam Prize, biennially. Reports of Cases. (l) Bristowe Medal, Pathology and Morbid Anatomy. (m) Hadden Prize Pathology. (n) Grainger Testimonial Prize £31 10. Anatomy and Physiology. (o) Louis Jenner Research Scholarship tenable for two years, £60 annually, Pathology.

Fees.—The annual fees are £50. These fees cover all tutorial classes, but do not include instruction in infectious fevers, pharmacy and vaccination. Qualified practitioners are permitted to attend the hospital practice on terms which may be ascertained from the Medical Secretary.

Special courses of instruction are given for various examination, and a register of lodgings is kept at the school. Further information may be obtained from the Medical Secretary of the School. St Thomas's Hospital, Albert Embankment SE1.

UNIVERSITY COLLEGE HOSPITAL

The school, which forms part of the Corporation of the University College Hospital, is in immediate proximity to the hospital in University Street, and opposite University College. It comprises departments of medicine and clinical medicine, surgery and clinical surgery, midwifery and gynaecology, pathology including morbid anatomy, chemical pathology, biochemistry and bacteriology, cardiography, forensic medicine, mental physiology and mental diseases, dental surgery, practical pharmacy, and other departments for the study of special diseases, such as those of the eye, skin, ear and throat, venereal diseases, and for instruction in anaesthetics, electrotherapeutics, and skiagraphy. The Hospital and School have acquired the National Dental Hospital and College as their dental departments thus

providing every facility for the study of dental subjects. The Royal Free Hospital, Dean Street, Soho, has also been incorporated as the Ear, Nose, and Throat Department.

The school thus provides the final course of study for the lectures of the Universities of Oxford, Cambridge, London, Durham and other British universities, and for the diplomas of the Royal Colleges of Physicians and Surgeons in Medicine and Dental Surgery, and the Licence of the Society of Apothecaries. Special bacteriological classes are also held in preparation for the various diplomas in public health. Each department is also equipped for more advanced work, and provides facilities for research.

Clinical units in medicine and surgery are now in operation. The whole-time directors of the units are concerned with the organization of the teaching generally, but the honorary staff is responsible for the largest share of the teaching in the wards and out-patient department of the hospital. A unit in obstetric medicine will be established as soon as the new obstetric hospital now in course of construction is finished.

The new buildings of the obstetric hospital of 60 beds (rendered possible by the Rockefeller benefaction), the new Residents' House (with accommodation for 30 residents and students), the extension of the Nurses' Home, and the new research laboratories for the Medical School, are well under way and these buildings should be ready for occupation by the end of the year.

Appointments—The qualified appointments in addition to a number of posts as house-physicians and house surgeons and obstetric assistants, include the appointments of resident medical officer, medical registrar, surgical registrar, obstetric registrar, Harter Smith radium registrar, casualty medical officers, casualty surgical officers, assistants in ear, nose and throat, ophthalmic skin and venereal diseases departments, and house anaesthetists.

Scholarships—The following scholarships and prizes are open to competition. Two Entrance Exhibitions of 112 guineas each awarded after a competitive examination in anatomy and physiology. Radcliffe Crocker Travelling Scholarship in dermatology for one year value about £280. The Graham scholarship in pathology of a sum not exceeding £100 per annum. Leslie Pearce Gould Research Scholarship in surgery for one year value about £200. The Atkinson Marley Scholarship of £45 a year for three years awarded after examination in the theory and practice of surgery. The Anderson Scholarship of £55 a year for two years for general proficiency in medical studies. The McGrath Clinical Scholarship value about £100. The Jilster Exhibition in pathology of £50. The Perci Allern Prize for the advancement of surgery by research value about £60. The Graham Gold Medal for research work. Four Fellows Medals in clinical medicine. Liston Medals in clinical surgery. The Bruce Medal in pathology and surgery. Two Tulke Medals in pathology. and the Druehlen Prize for practical surgery.

Fees—The fee for the full course of final studies at the school is 112 guineas if paid in one sum or 115 guineas if paid in two instalments. Fees for vaccination fevers, and pharmacy not included.

Particulars of general and special courses can be obtained on application to the Dean of the Medical School, University College Hospital, University Street, W.C.1.

WESTMINSTER HOSPITAL

This school with its hospital, situated in Broad Sanctuary, opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the University of London at King's College. The rest of the work is done in the school buildings near the hospital. The number of in-patients averages 3,000 and out-patients upwards of 50,000 annually, and the hospital and school afford ample facilities for instruction in all branches of medicine and surgery.

Appointments—A medical and surgical registrar are appointed annually, each with a salary of £150 and obstetric registrar with a salary of £50. Three house-physicians, three house-surgeons, one assistant house-physician, one assistant house-surgeon, and a resident obstetric assistant are appointed after examination and are provided with rooms, commons, and salary of £52 per annum, except the assistant house-physician and the assistant house-surgeon, who are provided with commons only. The assistant house-physician after three months' service becomes house-physician for a further period of six months and the assistant house-surgeon after three months' service becomes house-surgeon for a further period of six months. Clinical assistants to the resident phy-

sicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among the qualified students. Every student must perform the duty of out-patient dresser for three months, and afterwards he is appointed as in-patient dresser for three months. He is also required to serve two terms of three months each as medical clerk to the in-patient physician and one term as gynaecological clinical clerk. Two pathological clerks are appointed every three months to assist in the post-mortem room. No student is eligible as an in-patient dresser or clinical clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and dressers in the special departments of hospital practice are periodically appointed. So far as vacancies permit, students of other hospitals are admitted to in-patients' dresserships or clerkships.

The governors of the hospital have now completed the extensive improvements and alterations to the hospital which render it a still more efficient teaching institution with an increased number of beds.

Scholarships—The following open scholarships are offered for competition during the year 1925-26. In the winter session two scholarships in anatomy and physiology £70 each. In the spring two scholarships in anatomy and physiology £70 each. A certain number of scholarships have been allotted to universities of England, Wales, and the Colonies and to public schools. The scholarships are awarded entirely on the nomination of the Principal of the university or school.

Fees—The annual composition fee is 35 guineas. An entrance fee of 10 guineas is payable by all students—namely primary and intermediate students £10 10s. students entering for the first subjects £8 8s. These fees include subscriptions for membership of the Clubs Union.

Further information and a prospectus can be obtained on application to the Dean at the Westminster Hospital, Westminster, S.W.1.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN

The school is situated at 8, Hunter Street, Brunswick Square, W.C.1, close to the Royal Free Hospital. It is like all the other London schools which have so far been mentioned, one of the constituent schools of London University. The school buildings have recently been enlarged. The laboratories are extensive and well lighted, and are fully equipped for the examination courses of the University of London and the Royal Colleges of Physicians and Surgeons. Research laboratories are attached to all departments. A large, well equipped library, common room, union room and refectory are provided for the use of students. Resident accommodation for 60 students is provided in students' chambers attached to the school.

The Royal Free Hospital, Gray's Inn Road, W.C.1, has 240 beds, all of which are available for clinical instruction. A new block contains the obstetrical and gynaecological unit, which controls 68 beds. A large maternity district is served from the unit with a separate maternity hostel in the Essex Road, Islington. There are separate departments for diseases of the eye, ear, and skin, infant welfare, venereal diseases, massage, electrical and x-ray work, dentistry and casualty. The instruction given covers the full curriculum for the M.B. B.S. degrees of the University of London, including first medical courses. Students attend the practice of one of the fever hospitals of the Metropolitan Asylums Board and receive special instruction in January at Bethlem Hospital, they are also admitted to the practice of a number of special hospitals and hold clerkships and dresserships at the Elizabeth Garrett Anderson Hospital, the Cancer Hospital, Hospital for Sick Children, the National Hospital for Nervous Diseases, the South London Hospital, and the Royal Ophthalmic Hospital. The work of the school includes preparation for the Primary Fellowship examination and also for the Medical School and general hospital course for dental students.

Appointments—Qualified students of the school can obtain appointments as house-physicians and house-surgeons, obstetric assistants, surgical, gynaecological, and medical registrars, assistant pathologists, assistant anaesthetists, medical electrician, sphygmograph, and clinical assistants and demonstrators in various subjects.

Scholarships—The Isabel Thorne Entrance Scholarship value £50. The St. Dunstan's Medical Exhibition value £50 a year for three years which may be extended to five years, the Anne

Langton Scholarship of £50 a year for two years, the Flora Murray Bursary of £50, and the Mabel Sharran Crawford Scholarship value £20 a year for four years are offered for competition in each year. The Sir Owen Roberts Memorial Scholarship of the value of £75 a year for four years—the Mrs. George M. Smith Scholarship of the value of £50 a year for three years, which may be extended to five years—the Dr. Margaret Todd Scholarship of the value of £37 10 a year for four years and the Sarah Holborn Scholarship of the value of £20 a year for three years, which may be extended to five years, are awarded in alternate years. The School Jubilee Bursary of £50 a year or three years is offered every third year. The Bostock Scholarship value £90 a year for two or four years is awarded by the Reid Trustees on the result of an examination held in May by the University of London every fourth year. The holder of the scholarship must enter the London School of Medicine for Women. The Lieutenant Edmund Lewis and Lieutenant Alan Lewis Memorial Scholarship of the value of £25 a year for four years is awarded every fourth year. The John Byron Bursary of £20 a year for two years, the Julia Anne Hornblower Cook Prize of £75, the Helen Prideroux Prize of £60, the Mabel Webb Research Scholarship of £30 for two years, the Fanny Butler Scholarship of £14 10 a year for four years together with many other scholarships and prizes are offered on sundry conditions. The Dr. Edith Pechey Phipson Post Graduate Scholarship of £100 is awarded annually. Altogether the School offers annually £1350 in scholarships. Various missionary societies also offer scholarships on certain conditions and assist ladies who wish to go to India and other countries as medical missionaries.

Fees—Courses for the University of London degrees and the diplomas of the Conjoint Board in England and other qualifications £240 payable in five instalments. These sums include library and laboratory fees.

The Students Union exists to promote corporate action of the students on matters of common interest, to promote and maintain athletic and other clubs and to issue a school magazine. All students are required to become members of the Union. The students sports ground which consists of a freehold property of six and a half acres is situated at Sudbury.

Further information can be obtained from the Warden and Secretary.

KING'S COLLEGE

In the Faculty of Medical Science instruction is given in the preliminary and intermediate subjects of the first and second examinations leading to the degree of M.B., B.S. of the University of London, and of the corresponding examinations of other universities, and of the Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons, including the primary examination for the F.R.C.S. Eng. The courses are open to women students on the same terms as to men.

Regular students who have completed their preliminary and intermediate examinations proceed to a hospital to pursue their studies for the final examinations. The hospitals associated with King's College are King's College Hospital, Denmark Hill, S.E.5, Westminster Hospital, S.W.1, St. George's Hospital, Hyde Park Corner, S.W.1, and Charing Cross Hospital, Strand, W.C.2.

A course for the degree of the University of London and for the diploma of the Royal College of Surgeons in dental surgery in conjunction with King's College Hospital Medical School has been arranged. Full details may be obtained on application to the Secretary, King's College Hospital Medical School, Denmark Hill, S.E.5, or to the Dean of the Medical Faculty as below.

Scholarships—The entrance Scholarships are (1) Two Warneford Scholarships each £30 for four years subjects—selected from mathematics, classics, divinity and science. (2) One Sambrook Scholarship of £30 for three years subjects of examination selected from mathematics, classics and science. The holders of the preceding awards must proceed to King's College Hospital. (3) Worsley, £100 paid in five annual instalments. (4) Rabbeth Scholarship value £20, in July, for the best student of the first year. (5) Second year's scholarship value £20 for the best student of the second year. (6) Daniell Scholarship £40 awarded on the results of the University Honours Examination.

Full information as to admission fees and scholarships can be obtained from the Dean of the Faculty of Medical Science (Professor E. Barclay Smith), King's College Strand W.C.2.

UNIVERSITY COLLEGE

This institution, one of the principal component parts of the University of London, possesses a Faculty of Medical Sciences whose work covers all the subjects included in the group commonly known as the preliminary medical sciences—namely, physics, chemistry, botany, and zoology, and also the intermediate medical sciences—namely, anatomy, physiology, and pharmacology. The new anatomy building, provided by the munificent gift of the Rockefeller

Foundation of New York, was opened on May 31st 1923, by His Majesty the King. This building forms part of the block which includes physiology and pharmacology. The department of hygiene and public health prepares for the diplomas in public health of the Royal Colleges and of the various universities. Research work is undertaken in all the above named departments. The College undertakes the education of students in all the subjects mentioned, leaving them free to complete their education in the strictly professional subjects—medicine, surgery, and the like—at any one of the recognized schools of advanced medical studies. The work is somewhat differently arranged, according to whether the student has in view the degrees of the University of London or the diplomas of the Royal Colleges. In either case the whole work to be done is divided into courses devised to meet the requirements of different examinations, and students can join the College for any of them. Women students are admitted to all courses on the same terms as men. The general arrangements for the benefit of students include membership of the Union Society or the Women's Union Society with the College gymnasium and the athletic grounds. There is also a collegiate residence for about fifty-five men students at Laling, and for about seventy women students at Bang Place, Gordon Square.

Scholarships—The scholarships and exhibitions obtainable include the Bucknill Scholarship value 135 guineas, in chemistry, physics, botany, and zoology (the successful student must complete his work at University College Hospital Medical School) and two entrance exhibitions in the same subjects, each of the value of 55 guineas.

Fees—The fees for the courses covering the work of the First Examination for medical degrees of the University of London and in both parts of the Second Examination, amount to 115 guineas. The fees for the courses covering the corresponding examination held by the Conjoint Board in England also amount to 115 guineas. These fees may be divided into payments for the different courses which it may be desired to take out, but do not cover tuition for more than a stated period.

A handbook specially relating to this faculty may be obtained on application to the Secretary of University College, Gower Street, London W.C.1.

THE PROVINCES

There are in England and Wales, not counting London, ten medical schools, each supplying instruction in the full medical curriculum. Accounts of them here follow. In several cases there is appended information about hospitals other than those directly connected with the school in question, such hospitals, officially and unofficially, play a part in the education which the students of the school receive, and in any case serve as places of additional or post-graduate study.

OXFORD AND CAMBRIDGE

At both Oxford and Cambridge there are medical schools which furnish unsurpassed opportunities for obtaining a good knowledge of the preliminary sciences and of anatomy, physiology, and pathology. The laboratories are excellently furnished, and the teaching staffs most distinguished. Both schools provide a full medical curriculum, and there is no essential reason why the student should not complete his career at either of them, but this is not commonly done, and is never in the ordinary way advised by the university medical authorities. The local hospitals, though well equipped, are comparatively small. Students are therefore encouraged, as soon as they have completed the earlier examinations and taken a degree in arts, to join some London school, and thus spend the time of their preparation for the final examinations in a city where the opportunities for gaining clinical knowledge are greater and more varied. A considerable proportion of Oxford and Cambridge medical students take the London Conjoint diplomas before graduating in medicine and surgery at their own university. The experience gained by holding resident hospital appointments is naturally of much advantage when sitting for the Final M.B. examination and when engaged in composing a thesis.

BIRMINGHAM

The school in this city is carried on by the Medical Faculty of the University of Birmingham, its students having an adequate number of good laboratories, classrooms, and other

necessaries devoted to their use by the university. The clinical work is done at the General and Queen's Hospitals, which are amalgamated for this purpose. Together they have upwards of 600 beds for medical, surgical, and special cases, and with an array of special departments of all kinds, including one for lying-in women. Clinical instruction is given in the wards and out-patient and special departments daily, and formal clinical lectures delivered weekly throughout the winter and summer sessions. Special tutorial classes are also held alike for the degrees of Birmingham and some other universities and for the diplomas of corporations.

Appointments—The large number of appointments open to past or other students includes the following—At the General Hospital: surgical registrar, £200 a year, one resident medical officer, salary £155 a year, one resident surgical officer, salary £180 a year, one resident pathologist, salary £70 a year, two visiting anaesthetists, salary £50 a year, four house-surgeons, office tenable for nine months, £70 a year, one house-surgeon to the gynaecological and one to the special departments, each tenable for six months, £70 a year, three house-physicians, post tenable for six months, £70 a year. At the Queen's Hospital: one medical registrar and one surgical registrar, non-resident, tenable for three years, renewable, salary £100 per annum, three house-physicians, three house-surgeons, and one obstetric and ophthalmic house-surgeon, tenable for six months, salary £70 per annum, with board, lodging, and washing, one casualty house-surgeon, tenable for three months, salary £70 per annum, with board, lodging, and washing. At the Maternity Hospital: three house-surgeons, salary £50 a year. At the City Workhouse and Workhouse Infirmary: five resident medical officers. At the Birmingham General and Branch Dispensaries: twelve resident surgeons. At the Birmingham Mental Hospitals: five assistant medical officers. At the City Fever Hospitals: three assistant medical officers. At the Children's Hospital: one resident surgical officer, one resident medical officer. At the Birmingham and Midland Eye Hospital: four resident surgeons. At the Orthopaedic and Spinal Hospital: two clinical assistants (non-resident). At the Ear and Throat Hospital: one house-surgeon, £70 a year, four clinical assistants (non-resident). Four non-resident Poor Law appointments are in the gift of the Board of Guardians.

Scholarships—There are numerous money and other awards for students of sufficient merit among them being the following: The Walter Myers Travelling Studentship of £300 offered each alternate year and tenable abroad (offered in 1925); the Sanders Cox Scholarship of £42 (an entrance scholarship in the Faculty of Medicine awarded on Higher School Certificate Examination of the Joint Matriculation Board (July)); four Queen's Scholarships of £20 10s. each awarded annually at the first (Part II) second, third, and final university examinations respectively; one or more Sydenham Scholarships allotted on entrance to students who are the sons of deceased medical men; the Ingelby Scholarships (two) of £10 for proficiency in midwifery and diseases of women; the Arthur Foxwell Memorial Gold Medal (Clinical Medicine); the Sampson Gamgee Memorial Medal in Surgery (Final M.B.) and the Peter Thompson Prize in Anatomy (value about £6) for students in their second university year. There is also a scholarship of £37 10s. for students proceeding to a degree in dental surgery. University Clinical Board Prizes are awarded annually as follows: Senior Medical Prize, Gold Medal; Senior Surgical Prize, Gold Medal; Midwifery Prize, Gold Medal; Junior Medical Prize, Silver Medal; Junior Surgical Prize, Silver Medal.

Fees—The composition fee for university classes is £106 5s. This covers all the work required for the degrees of Birmingham and some other universities and for the ordinary qualifications of licensing corporations but not the additional courses required for the Fellowship of the Royal College of Surgeons of England, the diploma and degrees of the university in State medicine and some other special work. The total cost for the five years' curriculum including hospital and examination fees is estimated at £193 2s. 6d.

Other information should be sought from the Dean of the Medical Faculty, University, Edmund Street, Birmingham.

BRISTOL

The school is carried on by the Faculty of Medicine of the university, and provides full instruction for all its degrees and diplomas.

Clinical Instruction—The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them about 600 beds and extensive out-patient departments, special clinics for diseases of women and children, and those of the eye, throat, and ear, in addition to large and well equipped departments for dental work and large outdoor

maternity departments. At each of these institutions there are well arranged pathological museum, post-mortem rooms, and laboratories for morbid anatomy. There are also laboratories for work in clinical pathology, bacteriology and extology, in which special instruction is given in the subjects. Departments are provided and well equipped for x-ray work, both for diagnosis and treatment, the various forms of electrical treatment, including high frequency currents, electric baths,insen light treatment, and massage. The students of the school also attend the practice of the Royal Hospital for Sick Children and Women, containing 108 beds, and that of the Bristol Eye Hospital, with 40 beds. The total number of beds available for clinical instruction is therefore about 750.

Appointments—(1) Undergraduate. Clinical clerkships, dresserships, also ophthalmic, obstetric, pathological, ear, nose, and throat clerkships, are tenable at the Bristol Royal Infirmary and the Bristol General Hospital. In these institutions the dressers reside in rotation free of charge. (2) Post-graduate. At the Bristol Royal Infirmary: four house-surgeons, £80 each per annum, two house-physicians, £80, two resident obstetric officers, one of whom is also ophthalmic house-surgeon, £100 and £80, ear, nose, and throat house-surgeon, £80, dental house-surgeon, £80. All these appointments are made for twelve months. From the resident officers a senior resident officer is appointed at a salary of £200. At the Bristol General Hospital: Senior resident medical officer, £250 per annum, casualty house-surgeon, £80 per annum, two house-physicians, £80 per annum, house-surgeon, £80 per annum, special obstetric physician, £80 per annum, house surgeon to special departments, £80 per annum, dental house-surgeon, £300 per annum. All these appointments are for six months, except that of senior resident medical officer, which is for two years.

Scholarships—The following are among the scholarships and other awards open to students of the school: The Ashworth Hall Scholarship, value £45 open to women only; two Martin Memorial Pathological Scholarships of £10 each; the Tibbits Memorial Prize value 9 guineas, for proficiency in practical surgery; the Committee's Gold and Silver Medals for fifth year students for general proficiency; the Augustin Prichard Prize value about 6 guineas for proficiency in anatomy; the Henry Clark Prize, value 11 guineas for proficiency in gynaecology; the Crosby Leonard Prize value 7 guineas for proficiency in surgery; the Supple Surgical Prize a gold medal and 7 guineas; the Henry Marshall Prize, value £12, for dressers; the H. M. Clarke Scholarship, value £15 for proficiency in surgery; the Sanders Scholarship value £22 10s. for general proficiency; the Barlett Roue Scholarship for proficiency in diseases of the eye, ear, nose and throat, value £14; Lady Habersfield Scholarship value about 25 guineas; Phillips Seppman Prize for proficiency in diseases of children value £50; Bristol City Senior Scholarships and the Senior Scholarships offered by the counties of Gloucestershire, Somerset, Wilts, Devon etc. are tenable in the university.

Some of the Fellowships awarded by the Colston Research Society, for research in the university are allotted to the Faculty of Medicine.

Fees—The fee for all the courses required for the medical curriculum, including hospital practice, is 205 guineas paid by annual instalments.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE

THIS, the Medical School of the Faculty of Medicine of the University of Durham, is in the neighbouring city, Newcastle-upon-Tyne. Its classes and lectures are arranged to meet the requirements of the university in all the degrees which the latter grants, and also those of the other examining bodies. The students do their work in the preliminary sciences at Armstrong College, also part of the university, and their clinical work in the Royal Victoria Infirmary, an institution with about 550 beds and special accommodation for the benefit of students. Students do their practical midwifery at the Princess Mary Maternity Hospital, which contains 80 beds, is thoroughly up to date, and there is an annual indoor and outdoor attendance on 3,000 cases. In a Heath wing of the school itself there is the department of physiology. There are also in this wing a gymnasium and a set of rooms for the use of the Students' Union. A new bacteriological department has recently been erected adjacent to Armstrong College.

Post-Graduate Instruction—A comprehensive series of post-graduate courses has been arranged to enable practitioners to take advantage of the facilities for laboratory work and clinical study which are afforded by the College, the Royal Victoria Infirmary and other associated

hospitals, and in order to meet the varied requirements of practitioners there are general and special courses in the winter and summer session as well as an intensive course in the summer vacation.

Students' Union—Students' Union Buildings have been erected and furnished at a cost of over £40,000, and are now in daily use. Separate accommodation (non-residential) is provided for men and women students.

Appointments—Pathological assistants, and assistants in the eye department, throat and ear department, and department for skin diseases, are elected periodically. Clinical clerks and dressers are appointed every three months.

Scholarships—University of Durham Entrance Scholarship £25 a year for four years, Pears Entrance Scholarship, £40 a year for three years (awarded every third year), Province of Durham Masonic (Entrance) Scholarship £60, Health Scholarship for surgery £200 available every second year.

The following scholarships are tenable for one year—namely, Talloch Scholarship for elementary biology and organic chemistry £20, Dickinson Scholarship for medicine, surgery, midwifery and pathology Gold Medal and £20, Charlton Scholarship for medicine £25, Gibb Scholarship for pathology £28, Jule Armstrong Scholarship for comparative pathology £25, Stephen Scott Scholarship for surgery £40, Philipson Scholarships for highest marks in final M.B. B.S. Examinations two of £48 each, Cowder Memorial Scholarship for clinical medicine and clinical surgery interest on £325, Gibson Prize for midwifery and diseases of women and children £10, Turnbull Prize and Silver Medal for surface anatomy, and Outerson Wood Prize for psychological medicine £10. At the end of each session a prize of books is awarded in each of the regular classes.

Fees—The composition fee for lectures at the college is £122. Composition fee for hospital practice £46 plus £22 a year for three years payable to the Committee of the Royal Victoria Infirmary. Other information should be sought from the Registrar of the College of Medicine at New castle.

LEEDS

The School of Medicine—which is open to both male and female students—in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in immediate proximity to the General Infirmary, where students sufficiently advanced receive their clinical instruction. The buildings were opened in 1894, and contain excellent dissecting rooms, several well arranged laboratories for physiology, pathology, and bacteriology, three lecture theatres, and several similar classrooms. In addition, there are a library and reading room and two museums, one being devoted to pathology and the other to anatomy. The comfort of the students is secured by common rooms and a refectory in which they can take meals. The General Infirmary has 632 beds, and includes gynaecological and ophthalmic wards, a special children's ward, and a large out-patient department. The Ida and Robert Arthington Semi-convalescent Hospitals, Cookridge, attached to the infirmary have 88 beds. The West Riding Mental Hospital at Wakefield is open for the study of mental diseases. Students can, in addition, attend the practice of the Leeds Public Dispensary, the Hospital for Women and Children, and the Leeds Maternity Hospital, where the obstetric work is done.

Appointments—Surgical dressers are appointed every six months, physicians' clerks, ophthalmic and aural dressers, gynaecological ward clerks, gynaecological out-patient clerks, maternity clerks, assistant physicians' clerk, dermatological clerks and assistant surgeons' dressers. Dressers in the casualty room, post-mortem clerks, and laboratory assistants every three months, and dressers in the venereal clinic every month. After graduation there are a considerable number of residential and other appointments available in the Leeds General Infirmary, Leeds Public Dispensary, Hospital for Women and Children, West Riding Mental Hospital, etc., occupying periods of from six to twelve months at rates varying from £20 to £150 per annum.

Scholarships—The university awards annually a scholarship in the form of a free admission to the lectures and classes given in the university, which are covered by the composition fee. The university also awards a scholarship on the results of the first to the clinical teaching of the infirmary.

Fees—It is estimated by the authorities that the approximate cost of medical education to a student at this university is £360 plus of course the expenses of living during the five years covered

by the curriculum. The fee for a complete course for the first M.B. is £111, the composition fee for the course for the second and third examination, and for the clinical part of the infirmary is £171. The composition and clinical fee for those who have passed the second examination is £138.

Further information can be obtained from the Academic SubDean or Clinical SubDean, School of Medicine, Leeds.

LIVERPOOL

The Medical School of this city is part of the university, and, owing to the enlightened liberality of several men of wealth, is exceptionally well provided with special laboratories, as well as with ordinary spacious and well equipped classrooms and laboratories for the instruction of students proceeding to medical degrees and diplomas in special and ordinary subjects. All the laboratories and other rooms are situated close to one another and interconnected, together forming large blocks of buildings. The work of students throughout all stages of their career is arranged upon very satisfactory lines, and the teaching hospital, of which an account is given below, has amalgamated to form the clinical school of the university.

Appointments—The names of the appointments open to past and other students at this school will be gathered from the account which follows of the hospitals forming the clinical department.

Scholarships—The awards made each year to successful students total over £1500. They include the following: Two Holt Fellowships, one in Pathology, the other in Physiology, a Robert Gee Fellowship in Anatomy, two John Rankin Fellowships in Anatomy, a John A. Garrett International Fellowship in Bacteriology, a Johnston Colonial Fellowship in Biochemistry, an Ethel Lee Fellowship in Gynaecology, and a Thelwell Thomas Fellowship in Surgical Pathology. On Lady Jones Fellowship in Orthopaedic Surgery (value of Fellowships, one at £230, three at £150, one at £120, four at £100), a University Scholarship of £50 awarded on the results of the Second M.B. Examinations, a Scholarship in Mechanical Dentistry of £20, two Lyon Jones Scholarships of the annual value of £21 each for two years, one for the junior and the other for the senior students, the Dealy Exhibition of £15, Chemical School Exhibition of £15, the Owen T. Williams Prize for the Torr Gold Medal in Anatomy, John Rankin Exhibition in Practical Anatomy, £25, the George Holt Medal in Physiology, the Kinethack Medal in Pathology, Mitchell Banks Medal in Anatomy, the Robert Gee Prize of £5 5s. in Children's Diseases, Mary Firth Davies Memorial Scholarship, £60 per annum for four years, Robert Gee Entrance Scholarship, value of £40 per annum for four years, Dental Operating Prizes (four) Orthodontia £15, (two) Samuel Memorial Scholarships three at £20 each, a Thomas H. Boulton Prize in Anatomy, Dr N. I. Robert Prize in Zymotic Diseases, Ash's Prize in Dental Surgery, value £2, Gilmour Medal and other entrance scholarships.

Fees—Information as to the fees for the courses of instruction provided by the schools should be sought from the Dean of the Medical Faculty.

The Clinical School

As many as ten hospitals have combined to form the clinical school of the university, these being: The Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, the Stanley Hospital, the Royal Liverpool Children's Hospital, the Hospital for Women (with the Samaritan Hospital), the Liverpool Maternity Hospital and Ladies' Charity, the Eye and Ear Infirmary, St. Paul's Eye Hospital, and St. George's Hospital for Diseases of the Skin. Between them they provide about 1,445 beds.

MANCHESTER

The staff of the Medical School in this city constitutes the Medical Faculty of the Victoria University, all the arrangements for the instruction of students, both in their earlier and then later studies, being of an elaborate nature. The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains about 671 beds, and has associated with it a large convalescent home (136 beds), and the Mental Hospital at Priestwich. Instruction in practical gynaecology and midwifery is given at the Royal Infirmary and the St. Mary's Hospitals.

Appointments—The following are among the appointments open to past and present students of this school in connexion with its arrangements for clinical tuition: Two surgical registrars, at £150 per annum, two pathological registrars, at £100 and £50 per annum, one medical registrar, at £150 per annum, a radiological registrar, at £150 per annum, a surgical tutor, at £30 per annum, a director

for Clinical Work.—The Royal Eye Hospital, the Hospital for Diseases of the Skin, the Manchester Northern Hospital for Women and Children, the well known Hospitals for Children at Pendlebury, and St Mary's Hospital, for Women and Children, all make arrangements for the instruction of students.

University of Wales, and for the degrees and diplomas of other examining bodies. Hospital instruction is given at the Cardiff Royal Infirmary, at the City Lodge Hospital, and at other recognized institutions. The Cardiff Royal Infirmary has 370 beds, and is well equipped in all general and special departments, giving facilities for every branch of study. Medical practitioners wishing to prepare for the Diploma in Public Health or for the Tuberculous Diseases Diploma of the University of Wales can attend complete courses of instruction in the school. Prospectuses can be obtained on application to the Dean of the Faculty of Medicine, or to the Secretary, Welsh National School of Medicine, Newport Road, Cardiff.

SCOTLAND

As will be gathered from the following paragraphs, the facilities for acquiring a medical education in Scotland are very ample, whether the student be proceeding to a university degree or to a diploma. To the descriptions of the different Scottish medical centres in some cases added in account of hospitals which either play an official part in the education given to students as yet unqualified, or offer valuable opportunities for post-graduation work.

ABERDEEN

The school is conducted by the Faculty of Medicine. This comprises twelve chairs, from which instruction is given in all the main branches of medical science—namely, botany, zoology, physics (ordinary and pre-registration), chemistry (ordinary and pre-registration), anatomy, physiology, materia medica, pathology, forensic medicine, surgery, medicine, and midwifery. Courses of instruction in public health and infectious diseases, tropical medicine, medical ethics, and sanatorium treatment of tuberculosis, are conducted by lecturers appointed by the University Court. Special opportunities for practical instruction are afforded in the laboratories and museums attached to the departments.

Clinical instruction is obtained in the Royal Infirmary (accommodating 270 patients), the Royal Mental Hospital (900 patients), the Sick Children's Hospital (85 patients), the City Fever Hospital (250 patients), the General Dispensary, Maternity, and Vaccine Institution (10,000 out-patients annually), and the Ophthalmic Institution (3,000 patients annually). Courses of practical instruction are given in diseases of children at the Sick Children's Hospital, in fevers at the City Fever Hospital, in mental diseases at the Royal Mental Hospital, in diseases of the ear, nose, and throat at the Infirmary and Dispensary, in diseases of the eye at the Infirmary and Eye Institution, in venereal diseases and diseases of the skin at the Royal Infirmary.

The degrees granted in medicine are Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Surgery and Bachelor of Medicine (M.B., Ch.B.). A Diploma in Public Health is conferred after examination on graduates in medicine of any university of the United Kingdom.

The degree of Ph.D. is also granted in this faculty. Bursaries, scholarships, and fellowships, to the number of fifty and of the annual value of £1,180, may be held by students of medicine in this university. They range from £8 to £100 per annum, and are tenable in most cases for two or three years. The winter session begins on November 1, 1925, the summer session on April 20th, 1926.

The fee of 126 guineas is payable for instruction in the university, and the fee for the degrees of M.B., Ch.B. is a considerable sum. The fee for the degrees of M.B., Ch.B. is available in the university, including hospital fees, class and Public Dispensary, Hospital for Women, £236. Riding Mental Hospital, etc., occupy six to twelve months at rates varying per annum.

Scholarships.—The university awards annually of the form of a free admission to the lectures of the Royal the university, which are covered by the common university also awards a scholarship on the examination of the value of £58 in the form of addition to the clinical teaching of the infirmary. **Fees.**—It is estimated by the authorities that the cost of medical education to a student at this university, plus of course the expenses of living during the university year, is about £1,180.

Museum of Science and Art, Physical Laboratory, Chemical Laboratories, Dissecting Room, Bone Room, and Anatomical Museum, Physiological Laboratory, Medical Jurisprudence Laboratories, John Usher Institute of Public Health, Materia Medica Museum and Laboratory, Post-Mortem Department of the Royal Infirmary and University Pathological and Bacteriological Laboratory, Tutorial Classes of Practice of Physics, of Clinical Medicine, and Clinical Surgery, Surgery and Midwifery, and the practice of certain other hospitals.

Fees.—The annual fee for chemistry, anatomy, lectures, physiology, pathology, materia medica, surgery, medicine and midwifery is £6 6 each. Physics, botany, zoology, forensic medicine and public health, £5 5s. Practical zoology, practical anatomy (summer), morbid anatomy, practical materia medica, mental diseases, practical pathology, and medical entomology and parasitology, £4 4s. Experimental physiology, diseases of tropical climates, practical botany, histology, operative surgery, clinical surgery (per term), and experimental pharmacology, £3 3s. Practical anatomy (winter), £6 16 6d. Clinical medicine, £5 15s. 6d. First term subsequent terms, £3 3s. Practical chemistry, £4 11s. 6d. Regional anatomy, chemical physiology, surgical pathology, applied anatomy, and infectious diseases, £1 11s. 6d. Tuberculosis diseases of children, diseases of the eye, diseases of the larynx, ear, and nose, diseases of the skin and venereal diseases, £2 12s. 6d. Advanced bacteriology, £7 17s. 6d. Clinical gynaecology and clinical midwifery, £2 2s.

Scholarships.—There are many funds for the assistance of students by means of bursaries, scholarships, exhibition and money awards from the beginning to the end of their undergraduate career. In addition there are funds which help those who have taken a first degree in medicine and surgery to continue at work as research students. The value of these awards and the conditions attaching to them are so varied that those interested should consult the prospectus of the school itself. No other university is in a better even if as good a position to smooth the financial path of earnest students.

The School of Medicine of the Royal College.—This school is composed of lecturers licensed by the Royal College of Physicians and the Royal College of Surgeons, and also recognized by the university through their *licentia docendi* for the sake of convenience they lecture in separate buildings near to the Royal Infirmary, but form a single corporate body governed by a board consisting of five members elected by the Royal College of Physicians, five members elected by the Royal College of Surgeons, and five members elected by the lecturers in the school. This board, with the assistance of the standing committees of the school, supervises the whole management and especially the maintenance of the efficiency and discipline of the school. The different buildings at present utilized for the purposes of lecturing are the following: (1) Surgeons' Hall, Nicolson Street, (2) New School, Bristo Street, (3) Nicol on Square, (4) Marshall Street and other places. The teaching is similar to that of the Scottish universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the school. The fees payable for class and other instruction, and including the sums payable on admission to the examination of the Conjoint Board for the triple qualification, amount to about £180. The Calendar, giving full information regarding classes and fees, can be obtained (price 6d.) on application to the Dean of the School, 11, Bristo Place, Edinburgh.

Women Students in Edinburgh.—Until the close of the summer session of 1916 women students intending to proceed to graduation in the University of Edinburgh, as well as those entering for the triple qualification of the Royal Colleges of Edinburgh and Glasgow, received their training in the Edinburgh School of Medicine for Women. Now women students study under the same conditions as men, and may obtain either the university degree or the diploma of the Royal Colleges. In the university systematic lecture is given to them by the professors in the ordinary classes which are therefore mixed. In Clinical Medicine and Clinical Surgery, however, while the lectures are attended by mixed classes the women students are restricted to the wards of one charge. The particular ward is changed every session, each of the physicians and surgeons to the infirmary taking the women students in rotation. With

few exceptions, prizes, scholarships, bursaries, and similar distinctions are open to women under the same conditions as for men. The women students also have the same privileges as in the past have been given to the men of attending a certain proportion of the extra-mural classes taught by the lecturers of the School of Medicine of the Royal Colleges. Most of the Students' Societies are open to women, with the exception of the University Union and the Royal Medical Society. Their place is taken by the Women Students' Union and the Women's Medical Society. There is also a Women's Athletic Club, with playing fields gifted to it by the university. Information on matters connected with women's studies may be obtained from the Lady Warden, University New Buildings, Edinburgh.

GLASGOW

THE UNIVERSITY SCHOOL FOR MEN—The whole course of study required for graduation (M.B., Ch.B.) at the University of Glasgow can be taken here. Besides ample provision for lectures there is practical and clinical work at the hospitals, and practical courses are conducted in the Pathology, Public Health, Pharmacology, Physiology, laboratories of the following departments: Surgery, Anatomy, Chemistry, Zoology, Physics, and Botany, the Botanic Garden and the Hunterian Museum (Pathology) are also open to students. New buildings and equipments have been provided for botany, zoology, for practical anatomy, for operative surgery, as well as for pathology, the very large additions made a number of years ago to the chemical laboratory rendered it one of the most extensive in Scotland. The classrooms and laboratories for the departments of Physics, Physiology, Pharmacology, Materia Medica, Medical Jurisprudence, and Public Health are also of recent erection, and are elaborately equipped. Four additional chairs of Medicine, Surgery, Obstetrics, and Pathology have been recently established, the professors being specially attached to the Royal Infirmary, and a number of university lectureships in Clinical Medicine, Clinical Surgery, Venereal Diseases, Laryngology, Dermatology, Otolaryngology, Psychological Medicine, Tuberculosis, and Electrical Diagnosis and Treatment have been founded there. Five other chairs have been founded at the university, in Bacteriology, Organic Chemistry, Physiological Chemistry, Applied Physics, Public Health, and another in Pediatrics. There are also lectureships on the Surgical and Medical Diseases of Children and on Electrical Diagnosis and Therapeutics. The university, in short, has made great and successful efforts to extend and improve the accommodation of the medical departments, to strengthen the teaching staff and to encourage post-graduation and research work. A Diploma in Public Health is now also granted. Three very extensive general hospitals in the city afford exceptional opportunities for clinical instruction—namely, the Western Infirmary (600 beds), near the university, to which the Regius Professors are attached, the Royal Infirmary (630 beds), and the Victoria Infirmary (260 beds), while the Royal Mental Hospital, Gartnavel (460 beds), the Royal Hospital for Sick Children (270 beds), the Royal Maternity and Women's Hospital (108 beds), the Glasgow Eye Infirmary (100 beds), the Ophthalmic Institution (35 beds), the fever hospitals at Belvidere (680 beds) and Ruchill (540 beds), and other institutions afford facilities for the practical study of special branches. The large general hospitals of the parish council are now also available for clinical instruction in medicine and surgery. Information regarding post-graduate study will be found at page 441.

Bursaries—Bursaries confined to the Medical Faculty amount in annual value to about £1,000 while bursaries in any faculty amounting to about the same annual sum may be held by students of medicine a number of both sets being open to women. Several valuable scholarships may be held by medical students who have graduated in arts.

The following bursaries are open to undergraduates of both sexes. The Gibb Bursary, annual value £36 tenable for four years. This is open to medical students who are preparing for service as medical missionaries in connexion with the Church of Scotland and will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. The Arbuthnot Bursary, annual value £30 tenable for three years is awarded by the Senate on the recommendation of the Faculty of Medicine to the student who is of the highest

merit among the candidates as shown by their class records and their performances in the First and Second Professional Examinations. One Logan Bursary, annual value £16 tenable for four years appointment by the Senate. Six Lorimer Bursaries (each £20 and tenable for one year) are awarded to the best students in each of the following classes: botany, zoology, physics, chemistry, anatomy, physiology. The Macintosh Mental Science Bursary, a medicine of the value of £31 is awarded annually to the student (of either sex) attending the class of insanity who ranks first in an examination in that subject the bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The Gardiner Bursary, annual value £14 tenable for two years will be awarded after the autumn professional examination to the candidate who has passed in physiology at the Second Professional Examination and whose aggregate of marks in that subject and in chemistry and physics of the First Professional Examination is the highest. Of the eight James A. Paterson Bursaries two are awarded each year they are of the value of £30 and £20 respectively and are tenable for four years examination in mathematics and natural philosophy in June for students entering the first and second years of medical study. The following are tenable in any faculty: Four Neilson Bursaries (each £75 and tenable for four years) two Pratt Bursaries (each £20 and tenable for four years) and two Taylor Bursaries (each £10 and tenable for four years). Andrew and Bethune Stewart Bursaries (£50 each tenable for three years) candidates must have taken the M.A. degree of Glasgow. There is a special examination. Nine Glasgow Highland Society Bursaries for students of Highland descent of the annual value of £25 and tenable for five years two vacant each year.

The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the university ordinary class fees of students of Scottish birth or extraction under conditions given in the *University Calendar* and summarized at page 421 of this issue. The Dobbin Smith Gold Medal is awarded for the best essay on a prescribed subject within the science of botany. The Brunton Memorial Prize of £10 is awarded annually to the most distinguished graduate in medicine of the year. The University Commissioners have issued an ordinance to make regulations for the admission of women to certain bursaries, scholarships, and fellowships. Scholarships and fellowships are offered by the Carnegie Trust in science and medicine for post-graduation study. There are also four McCunn Medical Research Scholarships (two of £205 and two of £300) for graduates in medicine of the Scottish universities one Pauls Fellowship for Research in Medical Science of approximately £200 for three years and one Stangor Scholarship value £160 for one year. There is in addition the Caplan H. S. Rankin V.C. Memorial Prize in Pathology.

Fees—The matriculation fee for each year is £2 2s. In no cases the fee for each university class is £6 6s. but in some cases it is £4 4s. For hospital attendance at the Western Infirmary students pay £12 12s for a perpetual ticket or £1 11s 6d for a single term ticket with an additional fee of £5 5s for each winter and £2 12s 6d for each summer clinical course. The fees are the same at the Royal Infirmary. The university fee for the four professional examinations is £34 13s. For the whole curriculum the fees for matriculation class attendance hospital attendance and professional examinations amount to about £250.

For further information apply to the Registrar Glasgow University.

QUEEN MARGARET COLLEGE—In this, the Women's Medical School of the University of Glasgow, the courses of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with classrooms, reading rooms, library, etc. They are taught in some classes apart from male students, in others together with them but in either case have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards containing 520 beds are available for their use, and in its dispensary, and similarly in the Western Infirmary and in the Victoria Infirmary, also in the Royal Hospital for Sick Children, the Glasgow Eye Hospital, the Royal Asylum, Gartnavel, Hawkshead Asylum, the Ophthalmic Institution, the City of Glasgow Fever Hospitals, Belvidere and Ruchill, and the Glasgow Royal Maternity and Women's Hospital.

Scholarship—The Arthur Scholarship, annual value £20 tenable for three years. Open to competition by medical students of first year at the First Professional Examination in October, 1925. This scholarship is restricted to women medical students.

Full information can be obtained from the Mistress, Queen Margaret College Glasgow.

Board for Students—A house of residence for women students, Queen Margaret Hall, is situated near the college, in Bute Gardens. The cost of board and residence is from 32s 6d to 37s 6d a week, according to accommodation. Applications to be made to the Lady Superintendent. Another hostel near the college is South Park House, Ann Street, belonging to the Student Christian Movement, and open to women students of all colleges in Glasgow. Cost of board is from 28s to 30s weekly. Applications to be made to the Warden.

ST MUNGO'S COLLEGE—This is the Medical School of the Royal Infirmary, which is the largest general hospital in Glasgow. The infirmary is situated in Cathedral Square, Castle Street, and has communication with every part of the city. St Mungo's College is in the infirmary grounds, and affords full courses in all the subjects of the medical curriculum, and in all the medical subjects of the dental curriculum.

The infirmary has (including the ophthalmic department) over 700 beds, the average number occupied in 1924 being over 723. There are special beds and wards for diseases of women, of the throat, nose, and ear, venereal diseases, burns, and septic cases. In the out-patient department in 1924 over 44,000 patients were treated. In addition to the large medical and surgical departments, there are departments for special diseases—namely, diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. There is also a fully equipped electrical pavilion, with the latest and most approved apparatus for diagnosis and treatment.

Appointments—Five house physicians and eleven house-surgeons, who must be fully qualified, are appointed every six months, and board in the hospital free of charge. Clerks and dressers are appointed by the physicians and surgeons. As many cases of acute diseases and accidents of a varied character are received, these appointments are very valuable.

Fees—The average class fee is £3 3s for summer classes and £4 4s for winter classes. The fees for all the lectures, practical classes, and hospital attendance necessary for candidates for the diplomas of the English or Scottish Colleges of Physicians and Surgeons amount to about £120. The classes are open to male and female students.

A syllabus of classes can be obtained on application to the Secretary to the Medical Faculty, St Mungo's College, 86, Castle Street.

THE ANDERSON COLLEGE OF MEDICINE—This school provides education in all subjects of the curriculum for both medical and dental students. The school buildings are situated in Dumbarton Road, immediately to the west of the University and Western Infirmary. The hospital practice and clinical lectures are provided in the Western or Royal Infirmary, pathology in the Western or Royal Infirmary, vaccination and dispensary practice in the Western Royal Infirmary Dispensary. These classes are recognized by all the licensing corporations in the United Kingdom, also by the Universities of London, Durham, Glasgow, and Edinburgh (the latter two under certain conditions stated in the school Calendar). The courses (lectures and laboratory) in public health are recognized by the Scottish Licensing Board, the Universities of Oxford, Cambridge, and London, and the London and Irish Colleges.

Fees—The fees for the lectures and practical work required by ordinary students range between 2 and 5 guineas a session. In the Public Health Department the fee for a six months' course is £14 14s. The Carnegie Trust pays the fees of students at Anderson College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh. A Calendar will be sent on receipt of a postcard by the Secretary to the Medical Faculty, the Anderson College of Medicine, Glasgow, who will forward any further information which may be desired.

The Royal Samaritan Hospital for Women, Glasgow, with over 90 beds, offers facilities for clinical instruction in the diseases peculiar to women. Particulars may be obtained from Mr T. Mason Macquharrie, M.A., secretary, 149, St Vincent Street, Glasgow.

ST ANDREWS AND DUNDEE

The medical departments in these two teaching centres enter specially for students proceeding to the degrees of the University of St Andrews, but admit other students as well. In the former city the United College provides education in all subjects for the first two years. In Dundee, University College provides for the needs of students from the beginning to the end of the five years' curriculum. Its buildings are modern, and contain fully equipped laboratories. The clinical work of the school is facilitated by various institutions. The class fees are from £6 6s to £5 12s 6d for systematic classes, and from

£4 14s 6d to £4 4s for practical classes. The hospital ticket is £1 8s for three months, £4 4s a year, or perpetual, £13 6s 8d in one sum. The inclusive or composition fee for the curriculum is £182. In connection with both institutions there are bursaries and scholarships of considerable value, which are awarded after competitive examination. Information as to these can be obtained from the Secretary of the University of St Andrews. Information regarding the clinical facilities may be obtained from the Dean of the Medical Faculty, Medical School, Dundee.

Clinical Work

Good opportunities for clinical work are afforded by the Dundee Royal Infirmary, the instruction given therein being recognized for purposes of graduation by all the Scottish universities, the University of Cambridge, the University of London, the National University of Ireland, and by the Royal Colleges of England and Scotland.

IRELAND

There is a choice of six schools for those pursuing their medical studies in Ireland. For clinical instruction the choice is equally satisfactory and varied, though the hospitals themselves are comparatively small. Some account of the schools follows.

DUBLIN

School of Physics

This school is in Trinity College, Dublin, and is carried on under the joint auspices of the University of Dublin and of the Royal College of Physicians of Ireland. The King's professors of institutes of medicine (physiology), practice of medicine, materia medica, and midwifery being appointed by the latter. Clinical instruction is given at Sir Patrick Dun's Hospital, and some twelve other metropolitan hospitals and asylums are recognized by the Board of Trinity College. The courses of instruction are open to all medical students, whether they belong to the university or not.

The Schools of Surgery

These are carried on in Dublin under the supervision and control of the Council of the Royal College of Surgeons. They are formed of the College's own school combined with two famous old medical schools—Carmichael and Ledwich, they are attached to the College by charter. The buildings contain spacious dissecting rooms, special pathological, bacteriological, public health, chemical, and pharmaceutical laboratories. Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the College.

Prizes—Among the prizes annually awarded are The Barker Anatomical Prize (£26 5s), the Carmichael Scholarship (£15), the Mayne Scholarship (£8), the Gold Medal in Surgery, the Stoner Memorial Gold Medal in Anatomy, the H. McNaughton Jones Gold Medal for Midwifery and Gynaecology, class prizes accompanied by silver medals will also be given in each subject. A prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin.

University College, Dublin

This is one of the constituent colleges of the National University of Ireland, and at present conducts its work at buildings in Eustace Terrace. It possesses a good library, and the arrangements for the teaching of medical students from beginning to end of the curriculum are adequate. Applications for other information may be addressed to the Secretary and Bursar, University College, Dublin.

Clinical Work

There are numerous well arranged hospitals in and around the city, and almost all of these are recognized for teaching purposes by the Conjoint Board of Ireland, the University of Dublin, the National University of Ireland, and by the bodies elsewhere in the British Isles. Among them are the Mater Misericordiae Hospital, with 345 beds, Dr Stevens's Hospital at Kingsbridge, with 150, Meck's Hospital and County Dublin Infirmary, with 160, Mercer's Hospital, close to Trinity College, with 120, the Royal City of Dublin Hospital, with 124, the Adelaide Hospital, with

140, the Royal Victoria Eye and Ear Hospital, with 100 beds, Sir Patrick Dun's, which has a direct connexion with the School of Physics, and the combined institutions formed by the Hardwicke Fever Hospital, the Rehn and Surgical Hospital, and the Whitworth Medical Hospital, with an aggregate of 230 beds.

As for the famous Dublin medical institution known as the Rotunda Hospital, this practically consists of two distinct hospitals, and is believed to be the largest combined maternity and gynaecological hospital in the British Isles. It receives nearly 3,000 patients every year, and, apart from ordinary out-patient work of a gynaecological order, annually attends some 2,000 women at their own homes during their confinement. It possesses residential quarters for students, and, taken as a whole, offers exceptional opportunities for study both to ordinary students and to medical graduates of any nationality.

BELFAST

THE Medical School is part of the Faculty of Medicine of Queen's University, Belfast, and provides a complete medical curriculum for all purposes. The laboratories in connexion with the departments of biology, chemistry, physiology, pathology, anatomy, physics, and materia medica are all excellent, and there is a Students' Union which gives students the advantages of dining rooms, reading rooms, a library, and various recreation rooms. Women are eligible as students. Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 300 beds, and the Mater Infirmorum Hospital, which has 150 beds. Other hospitals open to the students of the university are the Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital, the Bessie Ulster Eye, Ear and Throat Hospital, the Union Infirmary and Fever Hospital, the Fever Hospital, Prindysburn, the District Lunatic Asylum, the Samaritan Hospital, Foister Green Hospital for Diseases of the Chest, and the Belfast Hospital for Skin Diseases.

Scholarships—(1) Twelve of the value of £40 each, are assigned as Entrance Scholarships in the Faculties of Arts, Science and Medicine tenable for one year. (2) sixteen Professional Scholarships value from £15 to £10 each. (3) one Hutchinson Stewart Scholarship £12 in mental diseases. (4) one Mackay Wilson Travelling Scholarship £100 awarded triennially. (5) Isabella Tod Memorial Scholarship tenable for three years awarded triennially to a woman student. (6) McGrath Clinical Scholarship awarded annually value about £112. (7) two Musgrave Studentships of £200 in Physiology and Pathology. There is also a post-graduate research fund open to all graduates of not more than three years standing. Gold medals are awarded at the M.D. examination.

Fees—The cost of the curriculum intended for students proceeding to the degrees of the Queen's University of Belfast is approximately £200. This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital or the Mater Infirmorum Hospital and fees for the special hospitals. The course for the Conjoint Board costs about the same amount.

The Regulations of the Medical Faculty containing full information can be obtained on application to the Secretary, Queen's University, Belfast, price 4d.

UNIVERSITY COLLEGE, CORK

THIS institution, formerly known as Queen's College, Cork, is one of the constituent colleges of the National University. It holds examinations for all the faculties of that university, in addition to continuing the work which it has hitherto performed—namely, that of providing education adapted to the needs of medical students at all stages of their career. Its first aim is to fit students for the degrees of the new university, but students proceeding for the examinations of the Conjoint Board of England, Scotland or Ireland, the Society of Apothecaries of London, or the Apothecaries' Hall of Ireland, or London University, can arrange the courses of lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance at the college courses are also accepted by the University of Cambridge. Clinical instruction is given at the North and South Infirmarys (each 100 beds) and at the Coll-Union Hospital (1200 beds). Students can also attend the Mercy Hospital (60 beds), the County and City of Cork Lying-in Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session extends from October to June.

There is a Dental School in which the degree of Bachelor of Dental Surgery of the National University of Ireland can be obtained. There is a large well equipped dental hospital in connexion with the school.

Scholarships—Over £4,000 is available annually for scholarships in the College. Particulars as to each of them can be obtained on application to the Registrar.

Fees—The fees for the lectures and hospital attendances required by the National University of Ireland course, including examination fees come to about £150.

Further information can be found in the college regulations or obtained on application to the Registrar.

UNIVERSITY COLLEGE, GALWAY

THIS institution is one of the constituent colleges of the National University of Ireland, and includes Faculties of Art, Science, Law, Celtic, Engineering, Commerce, and Medicine. The college buildings are well lighted and well ventilated, and contain dissecting rooms, an anatomical theatre, and laboratories for the study of physiology, chemistry, physics, and other departments of medical science. For pathology and chemistry new laboratories are now provided. It has good grounds surrounding it, and there are many arrangements, such as a library, a college union, and an athletic union, for the benefit of those belonging to the Medical Faculty, as well as for students in other departments of the college. The clinical teaching, which is recognized as qualifying not only for the degrees of the National University, but for those of London University and the diplomas of the various colleges in the three Kingdoms, is carried on at the Galway Central Hospital and the Galway Tuberculosis Hospital. The Galway Central Hospital is a general hospital, and at the two hospitals students have ample opportunities of studying acute and chronic diseases. The Central Hospital has a special ward for diseases of children. Each year the governing body offers about £1,500, and the County Councils of Connaught offer about £3,500, in scholarships. These scholarships are tenable in any faculty. Additional information regarding these scholarships can be obtained on application to the Registrar, and to the Secretaries of the Connaught County Councils.

CLINICAL HOSPITALS IN ENGLAND

MANY hospitals in Great Britain and Ireland, though not connected with any medical school, open their doors either to those who have yet to be qualified, to those who are doing post-graduation work, or to both. The facilities they offer for gaining practical clinical experience are very great, and should not be overlooked. Their honorary staffs commonly make a point of giving such instruction as opportunity offers, and at those situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition, they all have to offer, at shorter or longer intervals, appointments for resident medical officers, house-physicians, and house-surgeons. These are usually paid offices, which may be held for periods varying from six months to a year. Some of those situated in the great medical centres in the provinces, and in Scotland and Ireland, have already been mentioned in speaking of the medical schools in these localities, but it should be added that there are many other provincial hospitals where admirable work is done, and at which much valuable experience can be gained by both senior and junior students, and by those already qualified. Cases in point are the Royal Infirmary, Bradford, the Royal Sussex County Hospital, Brighton, the Royal United Hospital, Bath, the Kent and Canterbury Hospital, the Derbyshire Royal Infirmary, the Royal Albert Hospital and Eye Infirmary, Devonport, the Royal Devon and Exeter Hospital, the West of England Eye Infirmary, Exeter, the Gloucestershire Royal Infirmary and Eye Institution, the Royal Infirmary, Leicester, the County Hospital, Lincoln, the General Hospital, Northampton, the Norfolk and Norwich Hospital, the General Hospital, Nottingham, the Royal Portsmouth Hospital, the Royal Berkshire Hospital, Reading, the Royal South Hants and Southampton Hospital, the Staffordshire General Infirmary, Stafford, the North Staffordshire Infirmary at Hartshill, the Royal Hants County Hospital, Winchester, the Wolverhampton and Staffordshire General Hospital, the County Hospital, York, and the Coventry and Warwickshire Hospital.

London Clinical Hospitals

As for the hospitals in the metropolis, so many of these take a share in the giving of clinical instruction that it is worth while to classify them

General Hospitals—These include the Dreadnought Hospital at Greenwich, and its annex at the Albert Dock, which form the headquarters of the London School of Clinical Medicine, and the London School of Tropical Medicine (now amalgamated with the London School of Hygiene and Tropical Medicine) with its hospital at Endsleigh Gardens, the West London Hospital, Hammersmith, and the Prince of Wales's General Hospital, Tottenham, both of these being described in the article on post graduate work, the Royal Northern Hospital, Holloway Road, an institution containing 135 beds, and the London Temperance Hospital in Hampstead Road.

Children's Hospitals—There are at least seven of these the leader among them being the Hospital for Sick Children, Great Ormond Street, which has 240 beds. There are also the East London Hospital for Children, Shadwell, with 124 beds, the Queen's Hospital for Children Bethnal Green, with 131, the Victoria Hospital for Children, Chelsea with 104, the Belgrave Hospital for Children, which has a considerable out-patient department, but in patient accommodation for only 40 children, the Paddington Green Children's Hospital an institution of about the same size, and the Evelina Hospital for Sick Children, Southwark Bridge Road with 76 beds. The largest and the oldest of the hospitals for both women and children is the Royal Waterloo Hospital for Children and Women Waterloo Road S.E.1.

Hospitals for Women—Queen Charlotte's Maternity Hospital, Marlborough Road, with 70 beds and a residential college for students and practitioners, specializes in the teaching of midwifery. The Samaritan Hospital for Women, Marlborough Road, admits qualified practitioners as clinical assistants to both the in-patient and out-patient departments, demonstrations are given daily in both departments the fees—payable in advance—being £3 3s for three months, full particulars may be obtained from the secretary. In addition may be mentioned the Hospital for Women, Soho Square whose teaching is confined to post graduates in limited numbers, the Chelsea Hospital for Women Athlum Street, Chelsea, and the Elizabeth Garrett Anderson Hospital for Women in Euston Road, the latter being in the nature of a general hospital so far as concerns the class of cases treated.

Eye Hospitals—The largest of these is the Royal London Ophthalmic Hospital. At this hospital two complete courses are given during the year—October to February and the following subjects are taught:—

(1) external diseases, (2) motor anomalies and squint, (3) ophthalmoscopic conditions (weekly classes), (4) pathology practical refraction classes methods of examination (practical), operative surgery, practical pathology practical bacteriology, x-ray and radiotherapy clinical lectures, discussion classes. A fee of 21 guineas entitles the holder to one full five months' course (with the exception of practical pathology and practical bacteriology) together with a permanent ticket for the practice of the hospital. The fee for the practice of the hospital (permanent), £5 5s, for three or six months £3 3s, for two months £2 2s, for one month, £1 1s. Gentlemen are eligible, under certain conditions, for the posts of chief clinical assistant, clinical assistant and junior assistant. Clinical work takes place every morning at 9 o'clock, and operations at 10. An additional special course in the preliminary subjects (namely anatomy physiology and optics) for the D.O.M.S. and other examinations in ophthalmology will be held immediately preceding the date of the examination. The fees for this course will be 12 guineas or £5 5s for any subject separately. Further particulars may be obtained from the Dean of the Medical School. Other eye hospitals are the Royal Westminster Ophthalmic Hospital near Charing Cross, the Royal Eye Hospital, Southwark, and the Central London Ophthalmic Hospital, Judd Street W.C.1, each with about 40 beds.

Fever Hospitals—The Metropolitan Asylums Board has under its control a good many institutions in and around London for the treatment of the more serious zymotic disorders, it makes special arrangements for the instruction of students in this subject, and grants certificates at the end of the courses. Detailed information should be sought from the Clerk to the Board, Victoria Embankment, E.C.4.

Chest Hospitals—The largest of these is the Brompton Hospital for Consumption which has 333 beds and a large sanatorium at Primley with 150 beds. There is also the City of London Hospital for Diseases of the Chest Victoria Park, with 175 beds, and the Royal Hospital for Diseases of the Chest, City Road now amalgamated with the Royal Northern Hospital Holloway Road.

Nose, Throat and Ear Hospitals—The institutions which confine their work to disorders of the throat, nose, and ear all make special arrangements for the benefit of senior and post graduate students. They are the Metropolitan Ear, Nose and Throat Hospital Fitzroy Square, the Royal Ear Hospital, Dean Street, the Central London Throat Nose and Ear Hospital Gray's Inn Road and the Hospital for Diseases of the Throat Golden Square—the last which possesses 75 beds being the largest of the four institutions.

Miscellaneous Special Hospitals—Among these are the Bethlehem Royal Hospital St. Georges Fields S.E.1 which (like the Maudsley Hospital) confines its work to the treatment of mental disorders and includes a department for nervous and early mental disorders. St. Peter's Hospital for Stone and Urinary Diseases which devotes itself to the treatment of diseases of the rectum including cancer and fistula, the National Hospital for Diseases of the Heart in Westminster Street W.C.1, St. John's Hospital for Disease of the Skin in Leicester Square, the Hospital for Diseases

of the Skin Stamford Street Blackfriars, and the National Hospital for the Paralyzed and Epileptic Queen's Square, W.C.1, an institution possessing 200 beds and a world wide reputation.

Detailed information as to the teaching arrangements of all these institutions may be obtained on application to the secretaries.

WOMEN IN MEDICINE

The regulations of the General Medical Council and of the various universities and colleges set out in previous sections apply to women as to men.

Examinations

Women are admitted to all the medical examinations of the following qualifying bodies: the Royal College of Physicians, London, the Royal College of Surgeons of England, the Society of Apothecaries of London, the Conjoint Boards in Scotland and in Ireland, and all the universities of Great Britain and Ireland. The Royal College of Physicians has, during the past year, allowed women to be eligible for election as fellows.

Medical Education

The London (Royal Free Hospital) School of Medicine for Women, which is one of the constituent schools of the Medical Faculty of the University of London, is the sole school for medical education which admits women only. All the resident appointments at the Royal Free Hospital, of which there are nineteen yearly, are held by women. Arrangements are made for students of the School to obtain clinical instruction at the Hospital for Sick Children, Great Ormond Street, the National Hospital for Nervous Diseases, the Royal London Ophthalmic Hospital (Moorgate), the Elizabeth Garrett Anderson Hospital, the South London Hospital for Women, and the Cancer Hospital. Further particulars with regard to the London School of Medicine for Women will be found on page 429.

Women are also admitted to the following men's schools in London: University College Hospital (a limited number only), King's College Hospital, Charing Cross Hospital, and the Westminster Hospital. Further particulars about these schools will be found in the article on London Medical Schools at page 425 et seq. The medical schools of Birmingham, Bristol, Cardiff, Leeds, Liverpool, Manchester, Newcastle, and Sheffield admit women. In Scotland, the medical schools of Aberdeen, St. Andrews, Edinburgh, and Glasgow admit women, although they do not in every case accord them equal facilities with men. The Irish universities and colleges are open to women.

Openings for Medical Women

The London School of Medicine for Women celebrated its jubilee in October, 1924. During the fifty years of its existence over 1,000 women have graduated from this school. At the present time most of them are engaged in active medical work. Unemployment is apparent in all professions, and applies to both sexes, it is asserted that medical women are rather more fortunate in this respect than women in other professions. In private practice they do increasingly well, and are reported to be in great demand as locumtenents for medical men and women.

The Public Health Service, and especially its department of Maternity and Child Welfare, provides openings for women. In addition nearly all the voluntary welfare centres in the country are officered by medical women. The rapid growth in recent years of maternity and child welfare centres has given women, to whom such work is peculiarly suited, an opportunity of participating in this important branch of preventive medicine. Under the Board of Education there are appointments for women as medical advisors and school medical inspectors. The London County Council has medical women as lecturers and examiners on the care of children, home nursing, health, and first aid. Many of the venereal disease clinics have at least one medical woman on the staff. A certain number of appointments as tuberculosis officers are held by women. Appointments are held by women as residents in general hospitals, hospitals for women and children, sanatoriums, infirmaries, fever hospitals, and asylums.

Particulars of the Colonial appointments which may be held by women in British West Africa and the Malay States can be obtained from the Medical Branch of the Colonial Office. Information regarding the women's medical service for India may be obtained from the honorary secretary, United Kingdom Branch of the Countess of Dufferin's Fund, c/o General J B Smith, India Office, Whitehall, S W 1. Missionary societies also offer employment to medical women. Further particulars can, we understand, be obtained from Dr Webb Anderson, Medical Missionary Association, 49, Highbury Park, London, N 5.

Equal Pay for Equal Work

The British Medical Association was the first of all professional organizations to lay down the principle that no distinction should be made on the ground of sex as regards the emoluments to women members of the profession. Attempts are continually being made by public authorities to obtain the services of women doctors at lower salaries than those paid to men, and the Association looks to all medical women to help it in resisting such attacks upon the solidarity of the profession. In its constant efforts to maintain this principle the Association works in close co-operation with the Medical Women's Federation (9, Clifford Street, New Bond Street, W 1). In defence of the principle the British Medical Association has at various times fought—usually with success—Government departments and local authorities of all kinds. Where the authorities concerned have declined to recognize the justice of the claim that equal pay should be given for equal work the machinery, local and central, of the Association has been put into operation, and as a result the authority has generally seen fit to drop the proposed distinction between men and women practitioners or given up the attempt to fill the post. It is hardly necessary to add that the British Medical Association can only be successful in carrying out this policy if it receives the local support of all medical women.

DEGREES FOR PRACTITIONERS

At one time it was almost the universal custom for medical students educated in London and aiming at general practice not to seek a university degree, and as that custom still prevails to a considerable extent a large proportion of medical men in England possess diplomas or licences to practise but not degrees in medicine. This is a fact which they sometimes find reason to regret, and to such practitioners the following paragraphs may be of interest. It should be noted, however, that the M D Bux diploma, if obtained subsequently to June, 1886 is not registrable, and that the University of Brussels no longer holds special examinations for foreign medical practitioners.

UNIVERSITY OF DURHAM

The degree of M D is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice for that period upon the following conditions without residence. The candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. Should he not have passed an examination in arts previous to the professional examination in virtue of which his name was placed on the Register he is examined in classics and mathematics, if otherwise, he is required to translate into English passages from any one of the following Latin authors: Caesar, *De Bello Gallico* (first three books), Virgil, *Æneid* (first three books), or Celsus (first three books). Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India must produce evidence from an Indian university that they have passed within one year an examination in Latin.

Professional Examination—The candidate must pass an examination in the following subjects: (i) Principles and practice of medicine including psychological medicine, hygiene, and therapeutics, (ii) principles and practice of surgery, (iii) midwifery and diseases of women and

children, (iv) pathology, medical and surgical, (v) anatomy, medical and surgical, (vi) medical jurisprudence and toxicology. Candidates are examined by means of written papers, clinically, and viva voce, at the College of Medicine, Northumberland Road, Newcastle, and in the Royal Victoria Infirmary. The classical part of the examination may be taken separately from the professional on payment of a portion (£10 10s) of the full fee.

The examinations are held twice a year, towards the end of June and of December. Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Registrar of the University of Durham College of Medicine, Newcastle-upon-Tyne, at least twenty-eight days before the commencement of the examination.

Fees—The fee is 50 guineas, which includes the degree fee. If a candidate fail to pass 20 guineas are retained but if he present himself again 40 guineas only are required.

UNIVERSITY OF BRUSSELS

Dr Jern Willems Secretary of the University of Brussels, informs us that it is possible for a foreigner to obtain in Brussels a diploma of "Docteur en médecine, chirurgie et accouchements" which, though it does not entitle to practise in Belgium, is of the same standard as the Belgian legal diploma.

All candidates are required to submit their degrees or diplomas for consideration to the secretary of the university, and must be prepared to spend a period at the university attending the lectures, clinics, and practical work, before being allowed to enter for the examinations, which are conducted in French, viva voce. The period of residence required will vary according to the standard of the degree or diploma submitted by the candidate for the consideration of the university authorities and may be one, two, or three years. The fees for each year are: Courses, 525 francs; laboratory work, 250 francs; examinations, 110 francs. Dr Arthur Haydon, Honorary Secretary of the Brussels Medical Graduates' Association, 2, Crossfield Road, Eton Avenue, N W 3, will, on application, give further particulars with regard to the preparation for the degree.

POST-GRADUATION STUDY

Those who desire to see established in this country a great organization for post-graduate medical study must have been heartened by the announcement in our issue of August 8th (p. 266) that the Minister of Health had appointed a committee to draw up "a practical scheme of post-graduate medical education centred in London." Something has already been done to crystallize ideas on post-graduate education by the committee appointed by Dr Addison in 1921 with the Earl of Athlone as chairman. Since that committee reported, further experience has been gained by the Fellowship of Medicine and Post-Graduate Association, as well as by the now quite numerous universities, schools, and hospitals in London and the provinces which provide courses for graduates. Moreover, the British Medical Association has appointed a Post-Graduate Committee, which includes amongst its twenty-two members quite a large number of those members of the profession who have been chiefly interested in the question.

The Aim

The aim is to establish in London a real organization capable of affording facilities such as exist even in post-graduate study in Vienna—an organization offering provision for study which will attract men of capacity from the Dominions, America, and foreign countries, offering also courses which will benefit practitioners in this country, whether they wish to perfect themselves in special forms of treatment or to bring up to date their knowledge of general subjects in medicine and surgery. Hitherto progress in the attainment of this aim has been slow. Perhaps there has been a tendency in some of those interested to think in terms of one field of the endeavour rather than of the whole estate in providing for the individual practitioner anxious for a "refresher" course, the imperial idea may have been overlooked. With the evidence that has now been accumulated from all sides

it will be possible for the committee appointed by Mr Neville Chamberlain to take a comprehensive view of the problem. In this country there is no lack of material for post-graduation study, and teachers of outstanding ability are numerous. Moreover, if the ideal of a post-graduate hospital is unrealizable at the moment, for economic or other reasons, there are many institutions available for study, both general and specialized.

The Means

Judging from the discussions which have taken place, organization of post-graduate study would seem to require a central office to which inquiries may be addressed, and from which advice and information may be given, if possible this office should belong to a school with teachers and regular teaching by lectures and clinical work, and with laboratories attached, the school should preferably be attached to a post-graduate hospital for all ordinary clinical and pathological work, arrangements should be made with special institutions for courses in advanced work, there should be a linking up with provincial centres for those who wish to study under a special teacher and for the needs of local practitioners, and a centre for social intercourse, such as a hostel, should be part of the organization.

Many portions of this field have already been cultivated to some extent. Thus the Fellowship of Medicine was established in 1918 for the purpose of drawing together members of all the allied countries for the exchange of medical knowledge and the advancement of medical science. With this body the Post-Graduate Medical Association, founded in May, 1919, was amalgamated in the following October. The Royal Society of Medicine (1, Wimpole Street, W1) generously provided the combined body with an office, from which information regarding post-graduate facilities is given. Moreover, from this office courses of instruction at various hospitals scattered throughout London are organized, and a list of hospitals which welcome the attendance of graduates, with the names of teachers, is published in a *Bulletin*. Permanent schools for those who desire to revise or increase medical knowledge useful in their professional work exist in the West London Post-Graduate College and the North-East London Post-Graduate College. The last named is closely associated with the Fellowship of Medicine. Some of the large undergraduate teaching hospitals in London provide short post-graduate courses. In the provinces the Universities of Oxford, Birmingham, Bristol, Edinburgh, and Manchester, have organized post-graduate courses, general, special, and intensive. Similar courses exist at Glasgow, Newcastle, Leeds, and elsewhere. At Cambridge there is a course at Addenbrooke's Hospital during the Long Vacation. In many places practitioners, during the post-graduate courses, may attend the ordinary medical and surgical practice of the hospital in the locality.

Courses in special diseases can be obtained at a large number of special hospitals. Many of these hospitals are of world-wide renown, and are attended by post-graduate students from all parts of the world. Special note may perhaps be made of the London School of Tropical Medicine, which has now been incorporated in the new London School of Hygiene and Tropical Medicine, of the Liverpool School of Tropical Medicine, and of the Maudsley Hospital, Denmark Hill, S.E.5.

So far, however, there has been no system of linking up these numerous facilities for study, of systematically attracting students from all English-speaking countries to a great school, or of making post-graduate study take a place in civilian practice similar to that which it now takes in the army and navy. Much has been done by voluntary effort, it is to be hoped that the interest now shown by a department of State will succeed in moulding this effort into concrete form.

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION

The Fellowship of Medicine has arranged regular courses in general medicine and surgery, including special departments, each lasting two weeks, they are held once a month, and the fee for each course is 3 guineas (2 guineas for one

week). Courses in diseases of chest, children, heart, nervous system, throat, nose, and ear, dermatology, electrotherapy, gynaecology, proctology, psychological medicine, tropical medicine, ology and venereal diseases, are given from time to time at the special hospitals in association with the Fellowship of Medicine. The Fellowship Programme contains a diary of the arrangements available for post-graduates in various general and special hospitals in London. The programme for the immediate future includes a two weeks' course in general medicine and surgery, from September 21st to October 3rd, at the Westminster Hospital. There will also be special courses in diseases of the chest at the Brompton Hospital from September 21st to October 3rd, in infants' diseases at the Infants Hospital from September 7th to 19th, in dermatology at Blackfriars Skin Hospital from September 7th to 19th, in ophthalmology at the Royal Westminster Ophthalmic Hospital (Charing Cross) from September 7th to 26th, and a course in electrotherapy at the Royal Free Hospital from September 23rd to October 14th. The offices of the Fellowship are, by kind permission of the Royal Society of Medicine, at No. 1, Wimpole Street, W1 (telephone, Mayfair 2263). The secretary is in attendance daily from 10 a.m. to 5 p.m., excepting Saturday. The annual subscription for membership of the Fellowship of Medicine and Post-Graduate Medical Association has been fixed at a minimum of 10s.

WEST LONDON POST-GRADUATE COLLEGE

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men. The college started in 1895, it is provided with lecture, reading, writing, and class rooms, and accommodation of all sorts for the convenience of post-graduate students. In the five years before the war the work averaged over 220. The work of the college is eminently suitable for men who wish to revise their general clinical knowledge after war work.

As for ward work, the students accompany the senior staff on their visits to the wards at 2.30 p.m. daily, and also go round with the resident medical officers in the morning. Out-patient work begins at 2 p.m. This department is large, and affords ample facilities for post-graduates to see and examine patients. There are the usual special departments. Post-graduates are appointed to act as clinical assistants for three or six months, no charge being made. Special practical classes are held in medicine, general practical surgery, gastro-intestinal surgery, medical and surgical diseases of children, analysis of blood and urine, cystoscopy, venereal disease, tropical diseases, retinoscopy, ophthalmic operative surgery, and, when material is available, in operative surgery. The size of the classes is limited. A special clinic for the treatment of venereal diseases (male and female) is held every evening (Saturdays included) at 5.30. Graduates are admitted to the work of the clinic free, and certificates of satisfactory attendance and work are given.

Operations take place at 2 p.m. daily, the surgeons often availing themselves of the assistance of the graduates, and in any case making arrangements so that they can readily see what is going on. The anaesthetists give instruction in the administration of anaesthetics including spinal anaesthesia, on the operating days, students being allowed to administer them under supervision, while special classes are held in each session. The pathological laboratory is in charge of a pathologist who attends every day. Demonstrations are ordinarily given in the morning by the assistant physicians and surgeons, and by the medical and surgical registrars.

Fees—Hospital practice including all ordinary demonstrations and lectures £1 11s 6d for one week, £4 4s for one month, £7 7s for two months, £9 9s for three months, £15 15s for six months, £23 12s 6d for one year, and £45 for a life ticket. Instruction in the administration of anaesthetics is given at the rate of £3 3s a month.

The certificates of the school are recognized by the Admiralty, the War Office, the Colonial Office, the Indian Office, and the University of London (for higher degrees). A prospectus can be obtained on application to the Dean.

NORTH-EAST LONDON POST GRADUATE COLLEGE

The headquarters of this post-graduate school are situated at the Prince of Wales's General Hospital, in the midst of a densely populated North London district. It contains 200 beds, and is within a few minutes' walk of South Tottenham station, on the London, Midland, and Scottish Railway, and Seven Sisters and Tottenham Hale stations, on the London and North-Eastern Railway. It is readily accessible by electric tram from Finsbury Park and Hackney, and from Dalston, Edmonton, and other parts of North London.

The college is recognized by the Admiralty and the India Office for the purposes of study leave, and by the University of London is a place for advanced study for the M.D. and M.S. degrees, the course of practical teaching of bacteriology is approved by the University of Cambridge for its Diploma in Public Health, and there are ample arrangements for the convenience of men who are thus working, or who, being in active practice, are desirous of getting themselves into touch with modern methods. The hospital as a whole affords excellent facilities for qualified medical practitioners who wish to take part for a time in the work of an active general hospital or to obtain special instruction in the several branches of medicine and surgery, since it is open to them to study diseases of the eye, ear, throat, nose, skin, fevers, children's diseases, psychological medicine, dental surgery, radiography, the application of electricity in disease, and the administration of anaesthetics. Throughout the sessions into which the year's work is divided, clinics, lectures, and demonstrations are given by members of the teaching staff. Operations are performed every afternoon of the week except Saturday. Special vacation or intensive courses are held at intervals throughout the year each lasting two weeks, clinical instruction being arranged for each hour of each day.

Fees—Two guineas for a three months course of study in any one department which may be begun at any time; a fee of 5 guineas admits to the whole practice of the hospital for a similar term (one month 2 guineas and one year 10 guineas) and a perpetual ticket for the practice of the hospital may be obtained for 15 guineas.

The winter session will be opened on October 20th as regards clinical lectures, but the clinical work of the hospital is carried on continuously.

Additional information can be obtained from the Dean of the Post-Graduate College, at the hospital or at 19, Cavendish Square, London, W.1.

NEWCASTLE-UPON-TYNE

For the year 1925-26 the following post-graduate courses have been arranged by the College of Medicine, Newcastle-upon-Tyne (University of Durham):

1 General courses in clinical medicine, surgery and pathology at the Royal Victoria Infirmary meeting once weekly for ten weeks. One course will be held from October to December, and one from April to June.

2 Special courses of clinical instruction meeting once weekly for ten weeks in the following subjects: Gynaecology, diseases of the eye, diseases of the throat, nose and ear, diseases of the skin, venereal diseases, neurology.

Special courses in midwifery will be held at the Princess Mary Maternity Hospital.

3 An intensive course of fourteen days duration in the early part of the Summer Vacation 1926.

4 In addition to the regular post-graduate courses practitioners may attend the ordinary medical and surgical practice of the Royal Victoria Infirmary for specified periods.

COURSES FOR MEDICAL GRADUATES AT BRISTOL

The University of Bristol provides courses of post-graduate study for practitioners. Details of set courses at the Royal Infirmary and General Hospital are announced locally. In addition, practitioners may become clinical assistants in medicine, surgery, or special subjects for periods of a month or more.

The university also holds courses of demonstrations in outlying centres in the West of England. Resident practitioners form themselves into a committee and consider the type and extent of demonstrations required. The university furnishes the lecturers and makes all the necessary arrangements. All inquiries should be addressed to the Director of Post-Graduate Studies, Pathological Department, Bristol University.

Daily Post-Graduate Study—For those who are able to devote several hours each day to hospital practice the university offers special facilities for post-graduate work. Qualified medical practitioners may be appointed as clinical assistants for a period of one or more months. They may act as assistants, if times permit, in more than one department and in any of the hospitals during their period of study. They will be entitled to the use of the clinical laboratories and medical library, and have the right to attend in all departments, including operations, post-graduate and ordinary clinical demonstrations, and post-mortem examinations. Fee £3 3s a month.

Post-Graduate Clinical Work—Demonstration courses with weekly lectures are held during May, June, and July. Fee, £2 2s. All inquiries and applications for admission should be addressed to the Director of Post-Graduate Studies (Clinical Section), Pathological Department, University of Bristol, who can be seen on any day by appointment at the Pathological Department.

Further information as to scholarships, curricula and fees can be obtained from the Dean of the Faculty of Medicine, or the Registrar of the University, Bristol.

EDINBURGH POST-GRADUATE COURSES

In connection with the University and Royal College post-graduate courses are arranged every year, from about the middle of July to about the middle of September, comprising: (a) This year a course in obstetrics and gynaecology was held from July 13th to August 7th, (b) a course on diseases of children from July 13th to 24th, (c) a general medical course, (d) a general surgical course. Courses (c) and (d) extended for four weeks from August 10th to September 5th. Similar courses are held each year.

The course in obstetrics and gynaecology comprises instruction in clinical midwifery and clinical gynaecology, obstetrics and gynaecological pathology, child welfare and ante-natal clinics, etc.

The course on diseases of children includes medical and surgical clinics and special clinics on diseases of the skin, venereal diseases, child welfare, mental defect and throat, dental clinics, and ante-natal clinics. The general medical course includes lecture demonstrations, and, where possible, practical instruction on medical anatomy, medical side-room work, examination of the blood, x-ray and electrical therapy, morbid anatomy, and post-mortem examinations, clinical instruction in medicine, diseases of children, diseases of the skin, and infectious diseases, and special instruction in the diseases and methods of examination of the nervous, circulatory, respiratory, alimentary, and renal systems, and in diseases of the ductless glands. The general surgical course includes lecture demonstrations or surgical anatomy, surgical pathology, and surgical x-ray diagnosis, clinical instruction in surgery at the Royal Infirmary and Royal Hospital for Sick Children, clinical instruction in venereal diseases, surgical out-patients, surgical and gynaecological operations and special instruction in abdominal and genito-urinary and other branches of surgery.

A series of special lectures open to all graduates, is delivered three weeks on subjects of general medical and surgical interest, including recent advances in treatment. Among the special courses also arranged are examination of the blood, vaccine therapy, clinical chemistry, diseases of the ear, nose, and throat and venereal diseases.

Particulars regarding the courses, dates of commencing fees, etc., may be had on application to the Honorary Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

POST-GRADUATE MEDICAL TEACHING IN GLASGOW

Organized post-graduate medical teaching is available in Glasgow under the auspices of the Post-Graduate Medical Association. This association is composed of practically all the teaching institutions in Glasgow and the various teachers giving post-graduate instruction, and its business is managed by a board elected periodically by them. The chairman of the board is Principal Sir Donald MacAlister, Bt., and the vice chairman Sir Hector C. Cameron, D.M.D., the winter months special courses in various subjects are

conducted, and there is a series of weekly demonstrations especially designed for local practitioners. A comprehensive scheme of clinical courses is carried out during the summer months, from May till October, and arrangements have also been made whereby a limited number of graduates may become attached to wards or out-patient departments nominally as clinical assistants for definite period throughout the year. As such they work under the direct supervision of the physician or surgeon in charge, and carry out such detailed investigations as directed.

A general medical and surgical course is now held each year during the last two weeks of August and the first two weeks of September, which is arranged to include most of the subjects of interest to the general practitioner. This year the course is being conducted from August 17th to September 12th. The forenoons are occupied with general medicine and surgical diagnosis and minor surgery, in the Royal Infirmary and in the Victoria Infirmary. In the afternoons special subjects are dealt with in the special hospitals and in the special departments of the general hospitals, two subjects being dealt with each afternoon. On the four Saturday forenoons tuberculosis and infectious fevers are demonstrated at Ruchill Fever Hospital.

Further information may be had on application to Dr James Cusick, Secretary, Post-Graduate Medical Association, 6, Woodside Crescent, Glasgow, C3.

AUSTRALIAN AND NEW ZEALAND MEDICAL ASSOCIATION

The Australian and New Zealand Medical Association gives information and advice to medical visitors from the Commonwealth and Dominions with regard especially to attendance at special clinics, post-graduate work, and facilities for preparing for examinations such as the M.R.C.P., F.R.C.S. (England and Edinburgh), and the D.P.H., and also as to house appointments and clinical assistantships in London and the provinces. Information will also be given as to lodgings, sports, and social opportunities. All medical graduates or undergraduates born in Australia or New Zealand and resident in or visiting England are eligible to become members. The fee is one payment of 5s. Further information can be obtained from the joint honorary secretaries, Mr E. T. C. Miligan, F.R.C.S., and Mr Bedford Russell, F.R.C.S., 86, Huxley Street, London, W 1.

TROPICAL MEDICINE

THERE are large and important schools of Tropical Medicine in London and Liverpool, and several universities and other examining bodies have instituted diplomas or degrees in the subject. The Colonial Office now expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and commercial firms engaged in tropical enterprise commonly demand from medical applicants for employment corresponding evidence of special knowledge. Information with regard to these schools and diplomas and degrees follows.

DIPLOMAS AND DEGREES

LONDON UNIVERSITY—Tropical medicine is one of the six branches in which the M.D. degree may be obtained. The regulations relating to the curriculum and examination correspond to those applying to the other branches.

LONDON JOINT BOARD—This body grants a diploma in tropical medicine to candidates after an examination held in the months of February and July. Candidates must present evidence of having attended, subsequently to obtaining a registrable qualification in medicine, surgery, and midwifery, (1) practical instruction in pathology, protozoology, helminthology, entomology, bacteriology, and hygiene in relation to tropical medicine in an institution recognized for this purpose, during not less than five months; (2) the clinical practice of a hospital recognized for the study of tropical diseases during not less than five months. These conditions may be modified in the case of candidates who have had practical experience in tropical countries. The fee for admission to the examination is £9 9s. The Board also grants diplomas in psychological medicine in ophthalmic medicine and surgery, and in

laryngology and otology. Candidates must hold a medical qualification registrable in the United Kingdom or be graduates in medicine of an Indian, Colonial, or foreign university. Particulars and conditions of admission to these examinations, fees, etc., may be obtained from the Secretary of the Examining Board Examination Hall, Queen Square, Bloomsbury, London, W C 1.

UNIVERSITY OF LIVERPOOL—A diploma in tropical medicine is given by this university to students who have been through the course provided by the Liverpool School of Tropical Medicine and have passed the examination held twice yearly by the university examiners. The subjects of examination are (a) tropical pathology, parasitology, and entomology, (b) tropical and applied bacteriology, (c) tropical hygiene and sanitation, (d) tropical medicine including etiology, symptoms, diagnosis and treatment of tropical diseases. Further information can be obtained from the Dean of the Faculty of Medicine, University of Liverpool. A diploma in tropical hygiene (D.T.H.) has recently been established. The subjects of examination are bacteriology, chemistry (including meteorology and climatology), entomology, protozoology and helminthology, tropical sanitation (including sanitary engineering), practical sanitation. Fee for the course, £15.

UNIVERSITY OF CAMBRIDGE—This university grants a diploma in tropical medicine and hygiene to any person whose name has been on the *Medical Register* for not less than a year provided that he passes the examination of the university in this subject. Previous to admission to the examination he must produce approved evidence that he has studied pathology (including parasitology and bacteriology in relation to tropical diseases), clinical medicine and surgery at a hospital for tropical diseases, and hygiene and methods of sanitation applicable to tropical climates. Examinations are held in January and August each year and last four days. The fee for the examination and diploma is 9 guineas on admission or re-admission. Application for further information should be made to Dr G. S. Graham Smith, Pathological Laboratory, Cambridge.

SCHOOLS

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The London School of Tropical Medicine formerly under the auspices of the Serpentine Hospital Society, was on August 1st, 1924, incorporated by Royal Charter in the London School of Hygiene and Tropical Medicine, and the work of the School continues as the division of Tropical Medicine and Hygiene of the new institution. By the generosity of the Rockefeller Foundation a large sum has been provided for new buildings in Bloomsbury, and for the present the work of the School is carried on in hitherto in the Serpentine Hospital Society's buildings at the Hospital for Tropical Diseases, Lindsley Gardens, N.W. 1, where the specially equipped laboratories, museum library, and clinical facilities afford excellent opportunities to the student and others who may be desirous of studying diseases incidental to tropical climates before entering the service or going abroad. In the wards of the Hospital for Tropical Diseases are to be found cases such as may be met with in actual practice in the tropics. There are two courses in the year, each lasting twenty weeks, beginning October 5th, 1925, and March 15th, 1926, respectively. The course is so arranged as to equip men for the D.T.M. and H. of the Joint Board. There are also advanced courses and a special course in parasitology for D.P.H. students and for the first part of the D.T.M. and H. Camb. Clinical instruction is also provided for the second part of the D.T.M. and H. Camb. Tropical medicine is a sixth alternative subject for the M.D. of the University of London, and the school curriculum is adapted to afford facilities for candidates desirous of taking the M.D. in this subject. Further information may be obtained from the Secretary, London School of Hygiene and Tropical Medicine, 23, Lindsley Gardens, London, N.W. 1.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE

This school is affiliated with the University of Liverpool and with the Royal Infirmary of Liverpool. The university now grants diplomas in tropical medicine (D.T.M.) and in tropical hygiene (D.T.H.).

Two full courses of instruction, each lasting about eleven weeks, are given every year for the D.T.M., commencing respectively October 1st (Autumn term), and January 7th (Lent term), and two courses of the same duration for the D.T.H., beginning on January 7th and April 24th (Summer term). The D.T.H. can only be taken by those who have obtained the D.T.M. Students who do not desire to take the diploma examinations held by the university at the end of each term are given a certificate if attendance has been satisfactory. In addition to these courses, an advanced course of practical instruction in tropical pathology and medical entomology, lasting a month, is given every year in June, it is so devised as to meet the requirements of medical men returning from the tropics on short leave.

Fees—(1) For the D.T.M. or D.T.H. course 15 guineas. (2) For the short advanced course, 6 guineas. (3) For the diploma examinations 5 guineas. An extra charge of one guinea is made for the use of a microscope if required.

The new laboratories of the school adjoin the university and the tropical ward of the Royal Infirmary. The dimensions of the building are 162 feet in maximum length by 84 feet in width. In addition to the basement, in which are accommodated the photographic department and large storage rooms, there are four floors. The ground floor has (1) lecture theatre, with accommodation for about seventy students, (2) library, (3) a spacious museum with preparation room adjoining. The first floor has twelve rooms, in which are housed the Departments of Tropical Medicine and Entomology. The second floor has the main class laboratory, 69 feet by 58 feet, excellently lighted, and three other rooms, devoted to the Department of Parasitology. The third floor has a large research laboratory and two research rooms. On the roof is an insectarium, a mosquito-proof house, and other accommodation.

Since its foundation the school has dispatched to the tropics thirty-two scientific expeditions, many of the workers having been taken from among its students. The work done by the staff has been published in twenty-one special memoirs—in the *Annals of Tropical Medicine and Parasitology*, issued by the school, and in numerous articles in the scientific press.

The school has also two laboratories in the tropics. The Mantos Research Laboratory in Brazil, and the Sir Alfred Lewis Jones Tropical Laboratory in Sierra Leone which was opened on January 10th, 1922, and is staffed by the school. Further information may be obtained from the Honorary Dean, School of Tropical Medicine, Pembroke Place, Liverpool.

PSYCHOLOGICAL MEDICINE

It cannot be impressed too strongly upon the medical student that a knowledge of mental disorder is just as essential as a knowledge of the other forms of disease which he will be called upon to treat in the routine of general practice. It must be understood that by the term "mental disorder" is not only meant those severe forms which are to be found in asylums, but the term also includes mental defectives of all grades, nervous, difficult, and backward children, the mild and often unrecognized psychoses, and also the various types of psychoneurosis. Such disorders provide the general practitioner with a large proportion of his most difficult cases, and he will find a good knowledge of mental disorder invaluable in his work. Apart from general practice, the student who proposes to take up a career in the prison service or, still more importantly, the school medical service, will find a knowledge of psychological medicine an almost essential part of his equipment.

Instruction

Though at the present time the instruction given to the student is far from adequate to supply the knowledge of mental disorder requisite for the needs of the general practitioner, the facilities for the study of psychological medicine in the general hospitals are now much greater than in former years. Thus many of the teaching hospitals have out-patient departments for the treatment of mental cases, and in some of these hospitals special lectures are

given on psychopathology. These facilities need not be utilized by the student, however, and the compulsory part of the curriculum is confined to formal lectures and a few attendances at some mental hospital. Here the student is apt to see mainly the terminal states of mental disease, and he is also apt to gain the impression that mental disorder is necessarily related to segregation and custody. We would therefore impress upon him the importance of attending the out-patient department for mental disorders, where he will be able to observe the mild and early cases such as he will hereafter meet with in general practice.

The Ministry of Health issued in 1923 a memorandum by Sir George Newman on *Recent Advances in Medical Education in England*.¹ The inadequacy of the facilities for the teaching of psychopathology is there commented upon, and it is pointed out that the general practitioner must be competent to diagnose all the chief forms of mental disease and defect (Lunacy Act, 1890, Mental Deficiency Act, 1913, Elementary Education (Defective and Epileptic Children) Acts, 1899 and 1914). The certificates under those Acts are shown to necessitate a diagnosis, a record of the clinical grounds for it, and in some cases the medical reasons for detention or custodial care. It is evident, as Sir George Newman points out, that these requirements are sufficiently exacting to render necessary the proper education in this subject of every medical student, and it should be practical and the subject of examination. The curriculum in mental diseases suggested is as follows:

(i) A short course of lectures in normal psychology, preferably as part of the course in physiology (reflexes, habit, instinct, emotion, intelligence, the conscious and the unconscious mind, Binet tests, investigational methods, etc.).

(ii) Half a dozen explanatory discourses in abnormal psychology, to be taken concurrently with clinical work in mental disease.

(iii) Ten or twelve systematic lectures on mental disease concurrently with clinical work and clinical demonstration at a mental hospital of in-patients pronounced cases (acute or chronic), and the usual types of insanity.

(iv) A series of demonstrations in the out-patient clinic for nervous and mental disorders at the general hospital.

What the student needs is instruction in the etiology, symptoms, diagnosis, treatment and prognosis of the morbid mental states most commonly met in general practice. The student must also be trained in case-taking, the examination of patients dealing with relatives of patients, certification, precautions, etc.

A scheme is now in actual operation at the Middlesex Hospital in which a small number of mental cases are treated in the hospital as in-patients. This is an important move from the teaching point of view, because the student will gain true insight into the relation between mental disorder and medicine as a whole, and he will realize that it is a form of illness to be studied with other diseases and to be treated along similar lines.

In London post-graduate courses of instruction of a comprehensive kind are given at the Maudsley Hospital and at Bethlem Hospital, and at the National Hospital for the Paralyzed and Epileptic, Queen Square, courses are arranged to meet the requirements for the diploma in psychological medicine in regard to nervous diseases. Courses in mental deficiency are arranged by the University of London. There are also post-graduate courses at the Universities of Glasgow, Cambridge, Edinburgh, Birmingham, Leeds, Manchester, Durham, and elsewhere.

Diplomas

Those who are taking up psychiatry as a career will find it desirable to obtain a diploma in psychological medicine. Such a diploma is not at present compulsory for a permanent position on the staff of all mental hospitals, but it will probably become so in course of time, just as it is now essential to obtain the D.P.H. if a career in public health is contemplated. Psychiatry is one of the branches of medicine which candidates for the M.D. degree of the Universities of London and Edinburgh can take up, and, in addition, diplomas in psychological medicine, to which reference has been made, can be obtained from the Universities of Cambridge, London, Edinburgh, Durham, Leeds, Manchester, and the National University of Ireland, and from the Conjoint Board in England. The Medical-Psychological Association of Great Britain and Ireland also

¹ H.M. Stationery Office 1923. To be purchased through any bookseller L. 3d. net.

grants certificates of proficiency after examination, and encourages the study of psychiatry by the offer of prizes for original and research work.

The requirements for a diploma differ to some extent in the various universities and colleges, but the following model scheme suggested by the British Medical Association, and already adopted by the Association of Physicians of Ireland, will give an indication of the scope of the examination for a diploma.

Model Scheme for a Diploma in Psychological Medicine

1 The candidate must be already a registered medical practitioner.

2 The candidate may present himself for examination on the subjects detailed under Part I of the curriculum (see para 4) immediately he has concluded the prescribed courses of instruction, or can produce such other evidence of diligent study of the subjects to be examined upon as may be demanded. Part I must be passed save by special permission at least three months prior to entering for examination on Part II of the curriculum.

3 The candidate may not present himself for examination on the subjects detailed under Part II of the curriculum (see 4) until he has been a registered medical practitioner for not less than two years. He must, subsequently to qualification, have been in the practice of an approved mental hospital for not less than two years or have attended for six months at a hospital, mental or general for clinical instruction in psychological medicine and subsequently held a resident appointment at an approved mental institution or mental wards of a general hospital for not less than six months. In both cases he must produce a certificate from a recognized source that he can apply his theoretical knowledge, and has practical acquaintance with and is well and adequately versed in, the current clinical methods of examination and treatment of nervous and mental disorders. In the case of mental deficiency the certificate should include a practical knowledge of the various intelligence tests and other methods of ascertaining the degree of mental defect. He must also produce evidence of having attended subsequently to qualification courses of lectures demonstrations or other evidence of diligent study of the subjects upon which he presents himself for Part II of the examination as may be demanded.

4 Curriculum. Part I—(a) Anatomy histology and physiology of the nervous system, including the autonomic system anatomy and physiology of the endocrine glands chemistry and cytology of the cerebrospinal fluid. (b) Psychology systematic and experimental. Part II—(a) Verbal anatomy histology and pathology of the systems mentioned under Part I. (a) *post mortem* and laboratory technique. (b) neurology and clinical neurology. (c) psychiatry (including the psychoneuroses) clinical psychiatry and the medico legal relations of mental disorders and mental deficiency. In addition the candidate for Part II will need to show special knowledge of any one subject to be selected by him from the subjects comprising Part I or Part II or may choose to be examined in any one of the following subjects: (d) Mental deficiency and the mental disorders of childhood and adolescence and the duties of school medical officers in relation thereto. (e) Bacteriology as applied to mental and nervous disease. (f) Psycho pathology and psychobiology and their application. (g) The principles of diet vitamins and basal metabolism. (h) Eugenics and vital statistics. (i) Criminology and the jurisprudence of criminal responsibility.

5 The diploma by request may be endorsed that special knowledge has been shown in the subject selected.

6 It is suggested that any compulsory attendance at lectures or demonstrations and clinical courses should be limited to the subjects detailed for Part II and that the course for Part I or Part II should not exceed eight weeks.

Mental Hospital Appointments

Those who take up psychiatry as a career work as medical officers of public or private mental hospitals or similar institutions. Except in the larger institutions, such as those under the control of the London County Council, where a number of the medical officers are allowed to live out if married, the medical staff are resident officers, having board lodging, etc., either in the hospital itself or in residence in the grounds. Junior assistant medical officers receive about £300 to £400 per annum and senior assistant medical officers about £500 to £700, in both cases with board, lodging, laundry, etc., in addition, if married, the board, etc., is commuted for cash. As the mental hospitals are under local control the salaries vary much in different asylums. Medical superintendents, whose pay commonly ranges between £800 and £1500 per annum, are provided with a house in the grounds of the hospital and draw various allowances.

Since the passing of the Asylum Officers' Superannuation Act of 1909 all officers and others of the established staff of a public (county or borough asylum) mental hospital may retire at the age of 55 on a pension varying from one-half to two-thirds of the value of their pay and emoluments, or one-fiftieth for every year served, paying as contribu-

tion 3 per cent of the value of their appointments annually. This very favourable prospect may not appeal to junior practitioners joining the service, but will eventually prove to be a valuable asset.

Prospects in the Public Service

Appointments to the public mental hospitals are made by the visiting committees, and in most cases only the junior posts are open to those who have not had previous experience in psychiatry. Since the public mental hospital service is a local one, except indirectly, not an imperial one, the promotion tends to be slow and uncertain, and the higher positions are not always advertised and thus thrown open to competition. For this and other reasons mental hospital work has undoubtedly not been in favour with newly qualified men in recent years, but the general conditions of service have tended to show a progressive improvement and will in all probability continue to do so in the future.

In March, 1920 the Board of Control did useful service by issuing to visiting committees of asylums a circular upon the three following matters: (a) the dearth of suitable applicants when vacancies occur for the post of assistant medical officer, and the probable causes thereof, (b) the need of provision for the more effective treatment upon modern lines of recoverable cases of mental disorder, (c) the necessity for raising the standard as to the training of existing and future assistant medical officers in asylum practice, and of affording facilities for such training.

Under (a) the Board of Control, after pointing out some of the disadvantages of the present state of affairs, made the following suggestions:

(i) That an improvement be made in the salaries of the assistant medical officers at least to such an extent that in the cases of all those who have been in the service above a certain number of years and are regarded as permanent officials the salary should be reasonably sufficient for a married medical man, and that in the case of the deputy superintendent it should more closely approximate than at present to that of the superintendent.

(ii) That in the case of a permanent official application for permission to marry be not required that according to circumstances proper recommendation for a married man be provided and that subject to rules approved by the Secretary of State for the protection of the patients and with due regard to the proper administration of the institution permission to live out may be granted.

(iii) That to the title of assistant medical officer the words and deputy superintendent should be added to that of the one selected to be in charge during the absence of the medical superintendent.

(iv) That the use of the title "senior assistant medical officer" should not be restricted as at present to the post of first assistant but should be extended and be indicative of a certain standing and expert knowledge. By the adoption of this suggestion there would in many asylums be two senior assistant medical officers and perhaps one or three or four in the largest asylums.

(v) That except where there has been previous asylum experience appointments to posts of assistant medical officers should in the first instance be temporary in character.

Under (b) the Board suggested that the treatment of recent recoverable cases should be carried out by members of the medical staff conversant with modern methods, and that the number of the medical staff should be sufficient to ensure that none of them is required to undertake the treatment of more than fifty recent cases at any one time. Under (c) suggestions were made with a view to encouraging assistant medical officers to obtain a diploma or degree in mental diseases, including provision for study leave on full salary. The attitude of the Board of Control is clearly shown in the following sentence:

If the welfare treatment and recovery of patients is not to be jeopardized and the study of mental diseases is not to lag behind the study of other branches of medicine the Board feel the necessity of initiating measures to maintain progress and to secure the best possible treatment of the patients.

Both the British Medical Association and the Medical Psychological Association are working separately and together to improve present conditions of service, and have, for example, already removed the "celibacy" objection to the service. The salaries have also been considerably increased, especially in the junior ranks, and contrast favourably with those which were paid before the war. During the next few years considerable progress may be anticipated in the conditions under which the insane are treated. The asylums will tend to develop an

atmosphere approximating more closely to that of the general hospitals. If these most desirable changes are brought about, the mental hospital service will become more attractive, and will afford greater opportunities for the medical graduate who proposes to specialize in psychiatry. It may be said that while routine, administrative, and clerical work bulk largely in mental hospital duties, as they do in other public medical services, there is ample material, difficult as the subject may be—in psychiatry as one of the branches of medicine open to young graduates. A change in the law, in which power was given to local authorities to make provision for the treatment of early and acute cases of mental disorder without certification, would do much to make psychiatric work more attractive to medical men. If this alteration in the law were made, hospitals, either in the precincts of the grounds of the county or borough mental hospitals, or in adjacent towns, would be erected in course of time, or winds in general hospitals might be utilized for the same purpose. Such clinics would render appointments in mental hospitals more attractive because the work would be entirely free from the custodial aspects of mental disorder, and attention could be given by the physician to purely medical problems without inhuman legal restrictions.

MAUDSLEY HOSPITAL, DENMARK HILL

A number of courses of instruction for the Diploma in Psychological Medicine have been given at the Maudsley Hospital, the details of the last course being as follows. The course consisted of two parts, Part I being conducted by Sir Frederick Mott, Dr F. Golla, and Dr Henry Deyne. Sir Frederick Mott gave eight lectures on the anatomy of the nervous system, followed by practical distinction and demonstrations on methods of staining nervous tissue and preparing it for microscopical examination. Microscopic sections were distributed, illustrating the principal diseases of the nervous system for mounting as a permanent collection. Dr Golla gave eight lectures on the physiology of the nervous system, followed by practical distinction and demonstrations on physiological chemistry (including the chemistry of the nervous system, physiological contents of reflexes and tremors in man and the action of drugs on the autonomic system). Similarly, Dr Deyne gave eight lectures on psychology, followed by practical instruction and demonstration of psycho-physical methods (including the chemistry of the nervous system, physiological contents of reflexes and tremors in man and the action of drugs on the autonomic system). In Part II of the course Sir Frederick Mott gave six lectures on the pathology of mental diseases, including brain syphilis, its symptomatology and treatment. Dr Bernard Hart gave eight lectures on the psychoneuroses. Sir Frederick Mott and Dr F. Golla gave twelve clinical demonstrations in neurology, the first six demonstrations were given by Dr Golla at the Hospital for Paralysis and Epilepsy, Maudsley, the last six demonstrations were given by Dr Golla at the Hospital for Paralysis and Epilepsy, Maudsley. Dr F. C. Shrubsole gave eight lectures on the practical aspect of mental deficiency. Dr W. C. Sullivan, medical superintendent of Broadmoor Asylum, gave four lectures on crime and insanity. Dr L. Mappothel gave a course of lectures on the differential diagnosis and treatment of mental disorders. The fee for the whole course (Part I and Part II) was 15 guineas, or for either part separately 10 guineas, for one single series of lectures in Part I the fee was 4 guineas and in Part II 2 guineas. Inquiries as to lectures, etc., should be addressed to the director of the pathological laboratory, Maudsley Hospital, Denmark Hill, S E 5.

BETHLEM ROYAL HOSPITAL

A course will be held at Bethlem Royal Hospital, commencing on September 14th of lectures and practical instruction for the Diploma in Psychological Medicine. It is proposed in future to give two courses each year—an autumn session of intensive character commencing in September and completed in early December, and a spring session, commencing in the middle of January and completed in the middle of April. Each course consists of two parts. Part A includes lectures and demonstrations on

the anatomy, histology, and physiology of the nervous system, with lectures on psychology and demonstrations in experimental psychology. Part B comprises lectures and clinical demonstrations in psychology, including lectures and demonstrations in the morbid anatomy of the nervous system, a series of lectures, with clinical demonstrations on different branches of psychological medicine, and lectures, with clinical demonstrations, on mental deficiency. Entrants for the course who pay a composition fee of 15 guineas may, if due notice is given, attend either Part A or Part B of one course and postpone the other part until the next session. An entrant who wishes to attend one part only pays a fee of 10 guineas. An entrant who takes the complete course can attend the general clinical practice of the hospital on payment of 5 guineas for six months, or 10 guineas for one year, but an entrant who does not take either part of the course and desires to attend the clinical practice of the hospital must pay a fee of 5 guineas for each three months of attendance. To enable post-graduates to obtain special experience in this branch of medicine clinical assistants are appointed from time to time. Further particulars may be obtained from the physician superintendent, Bethlem Royal Hospital, S E 1.

NATIONAL HOSPITAL FOR THE PARALYSED AND LEPLECTIC, QUEEN SQUARE

A post-graduate course, which fulfilled the requirements of the regulations for the Diploma in Psychological Medicine in regard to instruction in nervous diseases, was held at the National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W C 1, in May and June, 1925, and other courses will be duly announced. Lectures on the pathology of the nervous system and various clinical lectures were delivered and demonstrations were given, and out-patient clinics were held at the hospital on the afternoons of Mondays, Tuesdays, Thursdays, and Fridays. An inclusive fee of 9 guineas was charged for the whole course, but any part of the course could be taken separately at a special fee. A special arrangement was made for those unable to attend the whole course, and for details applications should be made to the dean of the medical school. Similar courses are held three times a year—namely, January, May, and October. Special arrangements are made throughout the year for work in the laboratory. Fees are payable to the secretary of the hospital on entering for the course.

THE PUBLIC HEALTH MEDICAL SERVICES

The central authority to secure the preparation, effective carrying out, and co-ordination of measures conducive to the health of the people, and to promote research work and a proper training of persons for health services, is the Ministry of Health.

For the purpose of local public health administration the whole of England and Wales is divided into counties, county boroughs, boroughs, and urban and rural sanitary districts. The administrative County of London, exclusive of the City of London, is divided into twenty-eight metropolitan boroughs.

The public health medical services for Great Britain embrace between three and four thousand medical men and women who give whole-time services, and in addition a large number who give part-time services. The medical officers appointed for these services may be either medical officers of the Ministry of Health for England or of the corresponding Boards of Health for Scotland and Wales, or—and these form the large majority—they may be medical officers appointed by the many local public health authorities. These latter appointments include medical officers of health, tuberculosis medical officers, maternity and child welfare medical officers, venereal diseases medical officers, and school medical officers—for the education authorities must now be regarded as health authorities in respect to the health interests of the school child. By

the larger public health authorities assistant medical officers are also appointed, and these posts often serve as stepping stones to the higher offices as vacancies, which are required to be advertised, occur.

THE MEDICAL SERVICES OF THE CENTRAL AUTHORITY

The Medical Department of the Ministry of Health for England has been organized under the control of a chief medical officer. It contains six sections, with a senior medical officer at the head of each, and altogether fifty medical officers. The sections deal with general health and epidemiology, maternity and child welfare, tuberculosis and venereal diseases, the supervision of food supplies, and sanitary administration in relation to infectious diseases. There is in addition a section concerned with insurance practitioners. Appointments to these posts are not as a rule open to public competition, they are made by the Minister of Health. They are civil service appointments, and come under the civil service superannuation scheme. Medical officers are also employed by the corresponding Boards of Health for Scotland and Wales.

MEDICAL OFFICERS OF HEALTH

The duties of the medical officer of health are to inform himself upon all influences affecting, or threatening to affect, injuriously the public health within his district, to advise his sanitary authority upon all matters relating to health, and to perform all the duties imposed upon him by statutes, by-laws, and regulations. He must prepare and submit to his local authority special and annual reports, give immediate information to the Ministry of Health of any outbreak of dangerous epidemic disease, and, subject to the instruction of his sanitary authority, he shall direct or superintend the work of sanitary inspection.

By the Sanitary Officers Order of 1922 no person is qualified to be hereafter appointed or reappointed as a medical officer of health of any district or combination of districts unless, in addition to the qualifications prescribed by any statute, he is also either registered in the *Medical Register* as the holder of a Diploma in Public Health, Sanitary Science, or State Medicine, or has had not less than three years' previous experience of the duties of a medical officer of health.

The Public Health (Officers) Act, 1921, which was promoted by the British Medical Association, provides that a whole-time medical officer of health of a county borough or urban and rural district in England and Wales, a part of whose salary is contributed by the Exchequer, shall not be appointed for a limited period, and shall not be removed from his office except by or with the consent of the Minister of Health. A similar security of tenure also applies to the medical officers of health of county councils and of London boroughs.

Under the Sanitary Officers Order, 1922, a medical officer of health who does not devote his whole time to the duties of his office, but a portion of whose salary is obtained from Exchequer grant, may be appointed without limit of time, in which case he cannot be removed from office without the consent of the Minister. If he is appointed for a specified term, say one year, he continues to hold office from year to year unless the Minister consents to his removal. Where the electing body pays the whole of the salary of a medical officer of health he may be dismissed from office without reference to the Minister of Health.

A considerable number of authorities have now adopted the Local Government and Other Officers Superannuation Act, 1922. Under this Act if an officer is incapacitated by ill health after ten years of service, or if he has reached 65 years of age, he is entitled to superannuation on the following scale: after ten years' service, 10/60 of the average salary which he received during the last five years of employment, after eleven years, 11/60, and so on up to a maximum of 40/60 after forty years or more of service. The Act, however, remains permissive, and it fails to make due allowance, in computing service for purposes of superannuation, for the more advanced age, as compared with other officers, at which the medical officer of health can enter the public service. In these two respects the position reached falls short of that for which

the British Medical Association has been working for many years.

In Scotland the position is different in some respects. The central authority is the Board of Health, with a staff of medical officers for insurance work. Under the Public Health (Scotland) Act, 1897, no one can be appointed a medical officer of health for any area unless he possesses the Diploma in Public Health. No medical officer can be removed from office except with the sanction of the Board of Health. A "proper" salary must be paid, and the local authority may not bring about the resignation of the officer by indirect means, such as reducing the salary or attaching conditions to the appointment. The Act says nothing about superannuation or the age of retirement.

SCHOOL MEDICAL OFFICERS

School medical officers are appointed by local education authorities. Primarily their duty is to detect among the children attending the public elementary schools any physical or mental defect which may retard education, and to inform their parents of its existence. Most approved schemes of medical inspection include systems of work which facilitate the task of parents in obtaining for their children the necessary treatment, check the results of the treatment, and keep each defective child under skilled observation both at home and at school until it has passed altogether out of the education authorities' hands. Indeed, it is now the practice for the education authorities themselves to provide for certain remedial work, notably the prescription of glasses where necessary, the removal of adenoids and tonsils, and treatment in connexion with certain diseases of the skin. The general object of all schemes alike is to make the inspection imposed by law of benefit, not merely to the individual child, but to the community at large, by preventing conditions which lead to the existence of a large proportion of inefficient citizens among the adult population. The work is so related to that of medical officers of health that, as a rule, the senior school medical officer fills both appointments, his work, when necessary, being supplemented by that of whole- or part-time assistants. A Diploma in Public Health is almost always required of those entering the school medical service.

In Scotland, while the statutory authority for the work of the school medical service is different, the effect is broadly the same.

TUBERCULOSIS MEDICAL OFFICERS

A tuberculosis medical officer is a whole-time officer with special training and experience in tuberculosis work, and of a suitable age and attainments to command general confidence. In England and Wales such officers are appointed by county councils and county borough councils, and their duties are to carry out the work of inspection and diagnosis of tuberculous patients, to advise as to treatment, and to take charge of the work of tuberculosis dispensaries and sanatoriums where these are in operation. The work under tuberculosis schemes is co-ordinated with the general public health work of local authorities, and so the medical officer of health is often appointed as the chief tuberculosis officer when a special tuberculosis officer is on the staff of the local authority. The arrangements in Scotland are very similar.

MATERNITY AND CHILD WELFARE MEDICAL OFFICERS

Any public health local authority, however small, may make arrangements for maternity and child welfare work within its area, although very generally the smaller local authorities are embraced in county council schemes. For the schemes of the smaller local authorities the services of a part-time medical officer are obtained when the medical officer of health does not himself undertake the duties, but for the larger schemes special whole-time appointments are made. The maternity and child welfare medical officer is responsible for the work at the centres provided and for directing the home visitation, and the whole of his work is closely co-ordinated with the other branches of public health work directed by the medical officer of health.

Much of this work was commenced in different parts of the country by voluntary organizations, some of it still

remains in their hands, and is only loosely linked up with the public health local authority, but the tendency is for the whole of it to be undertaken by the local authorities. A large number of women medical officers have been appointed to these posts during recent years.

VENEREAL DISEASES

Schemes for the diagnosis and treatment of venereal diseases are provided and administered by county councils and county borough councils. In some cases the officer is on the staff of the medical officer of health, and in others he is an independent official. Special knowledge and practical experience in the treatment of venereal diseases are essential. The officer appointed for either whole-time or part-time services works at one or more clinics, and also gives instruction and assistance in the treatment of venereal diseases to general practitioners, who are allowed to attend the clinics.

REMUNERATION FOR SERVICES

If we are to have skilled and highly trained medical officials of public authorities it is of course essential that they should receive salaries commensurate with their attainments and bearing a reasonable relation to the amount of time and money that have been expended in fitting them for their important and responsible duties. At present, no standard scale of remuneration for whole-time services has been adopted by public health authorities, although the British Medical Association and the Society of Medical Officers of Health—and more recently the Ministry of Health—have endeavoured to bring this about. The present-day rate of remuneration for the whole-time services of a medical officer of health may be said to vary from £600 to £2,000 per annum, according to the dimensions of the population served and the officer's experience, while the maximum salaries of the principal officers of the medical services are somewhat lower. The whole-time medical officer working under a senior medical officer in most cases receives a commencing salary of £600 per annum, with bonus in some cases. There are good prospects of the adoption in the near future of a recognized scale of remuneration, which will provide a minimum commencing salary of £800 for a chief medical officer of health, of £750 for a chief medical officer of the allied medical services, and of £600 for all medical officers working under senior medical officers—when the officers are not resident in an institution provided by the local public health authority and when they give their whole-time services.

THE REGULATIONS FOR THE DIPLOMA IN PUBLIC HEALTH

By the Regulations or Rules of the General Medical Council, which came into force on January 1st, 1924, the examination for the DPH is divided into two parts, and no candidate is allowed to sit for the final part of the examination until two years have elapsed since a registration qualification was obtained. The object of this two years' interval is "to provide opportunity for candidates for the Diploma or Degree in Sanitary Science, Public Health, or State Medicine, to pass from the state of pupilage to that of responsible practitioners, to give mature consideration to the obligations and duties involved in the work of the Public Health Service, and to require direct experience of medical work in a responsible capacity either in practice or in hospital or laboratory appointments." The examination is both written and oral, and must include practical examination in infectious diseases, food inspection, inspection of premises, dwellings, factories, workshops, schools, etc. Any candidate from the Dominions who possesses qualifications registrable in this country is eligible as a candidate for the examination, given that he has received such a course of training as that defined by the Regulations, at an institution on which is approved by the General Medical Council.

The Curriculum for the Diploma in Public Health. The curriculum must extend over a period of twelve months, and a candidate is admitted to either part of the examination after he has completed the prescribed courses

of instruction in the subjects thereof. At least five months must be given to practical laboratory instruction in an institution approved by the licensing body, in the subjects:—
(1) Bacteriology and parasitology, including entomology, especially in relation to diseases of man and to those diseases transmissible to man from the lower animals (180 hours of such instruction is required).
(2) Chemistry and physics in relation to public health (90 hours of such instruction is required).
(3) Meteorology and climatology (10 hours of such instruction is required).

Therefore at least 280 hours of practical instruction, extending over a period of at least five months, is demanded before a candidate is eligible for Part I of the examination. For a candidate to become eligible for Part II of the examination he must first receive instruction in

- (1) Principles of public health and sanitation (for approximately 30 hours)
- (2) Epidemiology and vital statistics (approximately 20 hours)
- (3) Sanitary law and administration, including public medical services (approximately 20 hours)
- (4) Sanitary construction and planning (approximately 10 hours)
- (5) Every candidate must also have made thirty attendances, of not less than two hours in each week of a three months period at the clinical practice of a recognized hospital for infectious diseases and he must have received instruction in methods of administration
- (6) Every candidate must produce evidence that he has during a period of not less than six months been engaged in acquiring a practical knowledge of the duties routine and special of health administration under the supervision of a medical officer of health who shall certify that the candidate has received from this officer or other competent medical officer during not less than three hours on each of sixty working days during not less than these duties and those relating to:—
(a) Maternity and child welfare service
(b) Health service for children
(c) Venereal diseases service
(d) Tuberculosis service
(e) Industrial hygiene
(f) Inspection and control of food including meat and milk

Certificates of having received the prescribed instruction in public health administration must be given by a medical officer of health who devotes his whole time to public health work, or by the medical officer of health of a sanitary area having a population of not less than 50,000, or in Ireland by the medical superintendent officer of health of a county or county borough having a population of not less than 50,000.

Training Centres for the Diploma in Public Health. Most of the universities of Great Britain and Ireland are training centres for the Diploma in Public Health. The University of London provides an M.D. in State Medicine to its own M.B., B.S. graduates. Candidates who in London at the present time there are few training centres for the DPH than formerly. Candidates who desire to train in London can do so at University College and the Royal Institute of Public Health, and also at the Medical Schools of St. George's and Middlesex Hospitals if a sufficient number of candidates apply for the training.

THE PUBLIC SERVICES. THE NAVY, ARMY, AIR FORCE, AND INDIAN MEDICAL SERVICES

The Medical Departments of the Royal Navy, of the Army, and the Indian Government normally employed between them before the war some 3,000 medical men, and vacancies in the ranks of these services were filled by offering commissions for competition once or more each year. In the abnormal circumstances arising out of the war and the period immediately following it the usual regulations for recruiting the permanent medical staff of these services were, for the most part, in abeyance. The British Medical Association has been for some time, as explained below, in communication with the War Office in regard to several matters in which it considers that medical officers in the Royal Army Medical Corps have been inequitably treated. As no satisfactory reply has been received, young practitioners cannot be advised to join that service. The Association is not satisfied with the conditions offered by the Medical Department of the Royal Navy, but

has agreed for the meantime to waive its objections. The uncertainties of the position with regard to the Indian Medical Service are also explained below. A full statement of the mode of admission and conditions of service in the Royal Air Force Medical Service is given.

ROYAL NAVAL MEDICAL SERVICE

In January, 1920, new regulations for retirement of officers came into force in the Royal Navy, and new rates of pay were laid down. The new regulations inflicted a great injustice upon a considerable number of surgeon commanders who were nearing, or had passed, the new retiring age. The grievances arose under two heads—age of retirement and rate of pension—and frequent remonstrances were addressed to the Admiralty by the British Medical Association.

Very briefly stated, these medical officers, who had entered the service on the understanding that they would be allowed to serve until the age of 55, were compulsorily retired at 50, and their maximum pension was fixed at £600 a year, representing an increase of but 10 per cent on the former retired pay of their rank, it should be particularly observed that officers of other branches got increases of pension varying from 26 to 100 per cent. In reply to representations by the British Medical Association the Admiralty admitted the grievance, and eventually made certain proposals which, after full consideration, the British Medical Association has accepted.

Examinations for direct entry into the Medical Service are at present in abeyance. Letters are made by means of the short-service scheme, and the regulations provide for the transfer to the permanent service of desirable short-service officers. A short-service surgeon lieutenant, after six months' service, may be considered for transfer to the permanent service, and would be permitted to count his seniority from the date of entry for short service for purposes of promotion, increment of full pay, and for retired pay.

General Conditions

A candidate must be registered, must be under 30 years of age, and must be recommended by the dean of his school. Unmarried candidates will be preferred. A candidate will be interviewed by the Medical Director General R.N. and will undergo a physical examination. If considered eligible by the Medical Director General his name will be submitted to the Board of Admiralty, and he may be appointed surgeon lieutenant for short service. A candidate must engage for three years with the option of continuing for a further period of twelve months if his services are still required. The rate of pay is 25s a day or £455 5s a year, with the same allowances as are payable to permanent officers of the same rank. Lodging money at the rate of £80 a year is usually allowed when employed on shore without quarters in the United Kingdom and £56 10s a year in lieu of rations when not victualled in kind. In cases of temporary employment on shore not exceeding thirty days the lodging and provision allowances will be at the rate of 8s and 3s 6d a day respectively. On joining an allowance of £50 for uniform will be made. When the new rates of pay were fixed it was decided that 20 per cent should be considered as due to the then high cost of living. The rates set out above represent a reduction of approximately 54 per cent owing to the decrease in the cost of living. The whole 20 per cent is to be regarded as variable and subject to change on July 1st, 1927, and triennially thereafter either upwards or downwards according as the cost of living rises or falls.

An officer engaged for three years is entitled to receive two months' notice of his services being no longer required. A gratuity of £8 6s 8d will be payable to officers for each completed month of service on completion of their period of service or who are invalided for causes not within their own control before the completion of the prescribed period.

Surgeon lieutenants R.N. for short service intending to apply for transfer to the permanent list must have been under 28 years of age at the time of their entry into the Royal Naval Medical Service.

Full particulars and a form of declaration can be obtained from the Medical Director-General, Admiralty, 68, Victoria Street, London, S.W. 1.

ROYAL ARMY MEDICAL CORPS

The British Medical Association has for some time past been in communication with the War Office with regard to its failure to carry out undertakings it had given as to conditions of service and the amount of pension or gratuity payable on retirement. The Association is anxious that the War Office should be able to recruit suitable medical

men for the Royal Army Medical Corps, and the Naval and Military Committee had an interview with the Secretary of State for War about a couple of months ago. No satisfactory answer has been received, and the matter was discussed at the Annual Representative Meeting on July 21st, when the following resolution was adopted unanimously:

That inasmuch as the provision for a 20 per cent reduction in the retired pay of majors after twenty years' service and the R.A.M.C. Warrant can have the effect of reducing the pension of many of these officers below the sum of £1 a day which was provided by the Warrant under which they joined the Service, the Representative Body is of opinion that a serious breach of faith has been committed by the Government and that therefore the Association is unable to recommend recently qualified doctors to enter the R.A.M.C., and declines to publish the terms and conditions of service in the P.A.M.C. in the Educational Number of the *British Medical Journal*, or in its other publications until the Council is assured that this and other matters under negotiation have been dealt with to its satisfaction.

ROYAL AIR FORCE MEDICAL SERVICE

The Royal Air Force Medical Service offers a career for medical men which should prove both attractive and interesting. The rates of pay and allowances are good, and a new field of scientific interest is opened up by the manifold problems which the circumstances of aviation produce. The physical and mental fitness for, and reaction to, the varied conditions under which the flying personnel perform their functions provide much scope for research.

As promotion to the higher ranks of the service is by selection from officers who are eligible by reason of length of service, and as a certain proportion of the higher ranks will be reserved for purely scientific as opposed to administrative appointments, it will be seen that there are excellent prospects for the young medical officer who exhibits ability and energy in scientific research, as well as for those who develop a talent for administration.

Commission

The establishment will consist partly of permanent and partly of short service officers.

An officer will on first entry be granted a short service commission for a period of three years on the active list (which may be extended to five years at the discretion of the Air Council on the recommendation of the Director of Medical Services) and of four years in the Reserve of Air Force Officers. Selections for permanent commissions will be made from officers holding short service commissions, and those who are not selected will be transferred to the Reserve at the expiration of their period of service on the active list.

Short service officers who are approved for permanent commissions but for whom there are not vacancies in the Royal Air Force Medical Service, may under certain conditions be considered for transfer to the Royal Army Medical Corps. If transferred, their service in the Royal Air Force Medical Service would count towards increments of pay and towards retired pay in the Royal Army Medical Corps.

Officers who have been selected for permanent commissions may be permitted to attend for a period not exceeding nine months a post graduate course in general medicine and surgery, tropical and preventive medicine, and other special subjects. Such permission may be granted during the first six years of permanent service, and when attending these courses officers will receive full pay and allowances.

New entrants into the Royal Air Force Medical Service will be commissioned as Flying Officers (Medical) and will be eligible for promotion to the rank of Flight Lieutenant (Medical) after two years' service. Officers selected for permanent commissions will normally be promoted to the rank of Squadron Leader after ten years' total service. Accelerated promotion may be granted on a limited number of cases, of officers who show exceptional ability after the completion of eight years' service. Promotion within establishment to the rank of Wing Commander will be by selection at any period after sixteen years' total service, and to that of Group Captain by selection at any period after twenty-two years' service.

There will be no competitive examination on entry, and candidates must be under 28 years of age, be British subjects, the sons of British subjects and of pure European descent, be nominated by the dean of a recognized medical school or teaching hospital, and will be interviewed personally by the Director.

TABLE I—Royal Air Force Medical Service Rates of Pay and Allowances

	Pay			Allowances (Daily Rates at Home)						Total Allowances at Home				Total Emoluments at Home			
	Daily		Yearly	Lodging	Fuel and Light (Average)		Ration	Servant	Daily		Yearly		Daily		Yearly		
	Stand- ard Rate	Rate from July 1 1924			M	S			M	S	M	S	M	S	M	S	
Flying Officer	£ s 1 4	£ s d 1 2 8	£ s d 413 13 4	s d 3 6	s d 1 7	s d 0 9	s d 1 8	s d 2 0	s d 8 9	s d 7 11	£ s d 159 13 9	£ s d 144 9 7	£ s d 1 11 5	£ s d 1 10 7	£ s d 573 7 1	£ s d 558 2 11	
Flight Lieutenant	1 6	1 4 6	447 2 6	4 6	3 3	0 9	1 8	2 0	11 5	8 11	208 7 1	162 14 7	1 15 11	1 13 5	655 9 7	609 17 1	
Ditto after 2 years service in the substantive rank	1 8	1 6 6	483 12 6	4 6	3 3	0 9	1 8	2 0	11 5	8 11	208 7 1	162 14 7	1 17 11	1 15 5	691 19 7	646 7 1	
Ditto after 4 years ditto	1 10	1 8 4	517 1 8	4 6	3 3	0 9	1 8	2 0	11 5	8 11	208 7 1	162 14 7	1 19 9	1 17 3	725 8 9	679 16 3	
Squadron Leader	1 14	1 12 2	587 0 10	4 6	3 3	1 5	1 8	2 0	11 5	9 7	208 7 1	174 17 11	2 3 7	2 1 9	795 7 11	761 18 9	
Ditto after 2 years service in the substantive rank	1 16	1 14 0	620 10 0	4 6	3 3	1 5	1 8	2 0	11 5	9 7	208 7 1	174 17 11	2 5 5	2 3 7	828 17 1	795 7 11	
Ditto after 4 years ditto	1 18	1 15 10	653 19 2	4 6	3 3	1 5	1 8	2 0	11 5	9 7	208 7 1	174 17 11	2 7 3	2 5 5	862 6 3	828 17 1	
Ditto after 6 years ditto	2 2	2 19 8	723 18 4	4 6	3 3	1 5	1 8	2 0	11 5	9 7	208 7 1	174 17 11	2 11 1	2 9 3	932 5 5	898 16 3	
Wing Commander	2 6	2 3 6	793 17 6	4 6	3 3	2 1	1 8	2 0	11 5	10 3	208 7 1	187 1 3	2 14 11	2 13 9	1002 4 7	980 18 9	
Ditto after 2 years service in the substantive rank	2 10	2 7 4	853 16 8	4 6	3 3	2 1	1 8	2 0	11 5	10 3	208 7 1	187 1 3	2 18 9	2 17 7	1072 3 9	1050 17 11	
Ditto after 4 years ditto	2 12	2 9 2	897 5 10	4 6	3 3	2 1	1 8	2 0	11 5	10 3	208 7 1	187 1 3	3 0 7	2 19 5	1105 12 11	1084 7 1	
Ditto after 6 years ditto	2 14	2 11 0	930 15 0	4 6	3 3	2 1	1 8	2 0	11 5	10 3	208 7 1	187 1 3	3 2 5	3 1 3	1139 2 1	1117 16 3	
Group Captain	3 0	2 16 8	1034 3 4	5 6	4 6	3 0	1 8	4 0	15 8	14 2	285 18 4	258 10 10	3 12 4	3 10 10	1320 1 8	1292 14 2	
Ditto after 2 years service in the substantive rank	3 4	3 0 6	1104 2 6	5 6	4 6	3 0	1 8	4 0	15 8	14 2	285 18 4	258 10 10	3 16 2	3 14 8	1390 0 10	1362 13 4	
Ditto after 4 years ditto	3 8	3 4 4	1174 1 8	5 6	4 6	3 0	1 8	4 0	15 8	14 2	285 18 4	258 10 10	4 0 0	3 18 6	1460 0 0	1432 12 6	

M = Married S = Single

of Medical Services, Royal Air Force, before acceptance. Each candidate must produce

1. Birth certificate
2. Medical registration certificate
3. A declaration containing the following information:
 - (a) Age and place of birth. (1) That he is a British subject, the son of British subjects and of pure European descent. (c) That he is ready to engage for general service at home or abroad as required. (d) The qualifications he is possessed of and what medical or other appointments he has held (if any). (e) That he is willing to fly whenever called upon to do so.

Each candidate will be required, before acceptance, to pass a medical examination to ensure that he labours under no constitutional or mental disease or diseases or weakness, nor any imperfection or disability which may interfere with the efficient discharge of the duties of a medical officer in any climate, in peace or war.

An officer granted a short service commission who, at the time of application for such commission held or was about to hold a resident appointment in a recognized civil hospital, may be seconded for the period not exceeding one year from the date of the commission during which he shall hold such appointment. Whilst seconded he will not receive pay from the Air Ministry funds, but the period of secondment will otherwise count as service in the Royal Air Force, provided that he will be required to serve for a minimum period of three years on the active list from the date on which he ceases to be so seconded.

Uniform and Equipment

Medical officers will be required to provide themselves with the uniform of their rank, and with the distinguishing badges of the Royal Air Force Medical Service. They will be required to provide themselves with service dress and mess dress. The provision of full dress is entirely optional at present. An allowance towards the cost of uniform will be made when the officer has been gazetted, as follows: (a) If he has had no previous service as an officer in H.M. Forces or if any such previous service was terminated more than three years before the date of joining for duty, £50. (b) If he is commissioned within three years of the termination of any previous service as an officer in the Royal Navy, Army, Indian Army, or Royal Marines or any of the auxiliaries of those forces, but not in the Royal Air Force or its auxiliaries, £25. (c) If he is seconded from the Royal Navy, Army, Indian Army, or Royal Marines, £25.

Rates of Pay and Allowances

The rates of pay and allowances at present in force are given in Table I and the standard scale of retired pay for Group Captains and lower ranks in Table II.

TABLE II—The Standard Scale of Retired Pay for Group Captains and Lower Ranks

Age on Retirement	Standard Yearly Rate of Retired Pay	Years of Service	Addition for each Extra Year of Service*	Deduction for each Deficient Year of Service
40	£ 300	17	£ 15	£ 15
41	337	17	15	15
42	375	18	15	15
43	412	18	15	15
44	450	19	15	15
45	487	19	15	15
46	525	20	15	15
47	562	20	15	15
48	600	21	15	15
49	637	21	15	15
50	675	22	15	15
51	697	22	22	15
52	720	23	27	15
53	742	23	22	15
54	765	24	22	15
55	793	24	22	15

* Limited to five years.

The rates of pay (Table I) are liable to revision. The standard rates were drawn up in 1919 in the light of the then high cost of living and 20 per cent of each of the standard rates is regarded as detachable and subject to alteration either upwards or downwards as the cost of living rises or falls. The first revision took effect from July 1st 1924 when a reduction of approximately 5½ per cent was made in the standard rates. Subsequent revisions will be made at intervals of three years.

It must however be clearly understood that while every consideration will be given to the reasonable and legitimate interests of individuals, it will be competent for the Air Council at any time to modify the regulations under which the emoluments of the Royal Air Force are drawn and no officer will be entitled to claim any pay, gratuity or other advantage conferred by a provision being at any time added to, varied, or cancelled.

For the purpose of the issue of allowances a "married officer" is one who is married and has attained the age of 30 or the substantive rank of Squadron Leader or who, irrespective of age and

rank was attained on or before September 15th 1919, and was serving in the Royal Air Force on June 8th, 1922.

As allowances are given for specific purposes the cost of which may vary at comparatively short intervals the rates of allowances are liable to be reviewed as circumstances may require.

A colonial allowance is granted in certain commands abroad in aid of the expenses of living in the countries where the cost is higher than in the United Kingdom.

For periods of service given under Indian administration and payment officers will come under the rates and conditions authorized from time to time by the Indian Government in so far as these rates and conditions may differ from those in this scheme. The Indian rates are at present under review.

Group Captains retire at 55—maximum retired pay £900. Wing Commanders retire at 51—maximum retired pay £600. Squadron Leaders retire at 48—maximum retired pay £500. There will be a minimum qualifying period for retired pay of twenty years.

The rates of retired pay (Table II) (including the maximum rate) are standard rates which will be subject to revision as follows: 20 per cent of each of the standard rates will be regarded as detachable and subject to alteration upwards or downwards as the cost of living rises or falls. The first revision took effect from July 1st 1924 when a reduction of approximately 5½ per cent was made. Subsequent revisions will be made at intervals of three years. The revision will apply to all retired pay which is being drawn at the date of revision as well as to subsequent awards.

Gratuities.—Short service officers will be eligible for gratuities on passing to the reserve on the scale of £100 for each of the first two complete years of service and £150 for each of the third, fourth and fifth complete years. These gratuities will not be payable to officers granted permanent commissions, but the period of service under the short service commission will count for retired pay. Medical officers holding permanent commissions may, at the discretion of the Air Council, be allowed to retire voluntarily from the service after ten years' commissioned service with a gratuity of £1,250 or after sixteen years with a gratuity of £2,000 in lieu of retired pay.

INDIAN MEDICAL SERVICE

As is known from the ordinary sources of information, British rule in India is going through a long period of crisis. The future of all the British services in India is uncertain, and that of the Indian Medical Service not least so. Medical and sanitary subjects were among those specifically mentioned as suitable for transfer to provincial governments in the Montagu Chelmsford report which it may be recalled, was issued over seven years ago. This transfer was effected by the Government of India Act (1919). The Lee Commission, which visited India in the cold weather of 1923-24, to inquire into the prospects and remuneration of the European services, made certain recommendations with regard to the Indian Medical Service in its report issued in May, 1924. They have been considered both by the Government of India and by the Secretary of State for India, but it appears abundantly clear that they will not be accepted by either.

In his speech opening the new session of the Indian Legislature at Simla on August 20th, the Viceroy said that the Government was now taking steps to give effect to the principle laid down by the Joint Select Committee of Parliament that a Minister should have the fullest opportunity of managing that field of government which was entrusted to his care. After stating that recruitment by the Secretary of State for the Indian Educational, Agricultural, and Veterinary services had already ceased, he said: "The problem presented by the Indian Medical Service is more difficult but here, too, the principle of establishing provincial medical services has been accepted, subject to certain conditions, which are still under consideration." This statement leaves many essential points unexplained, and it is to be presumed that publication of the official proposals in their entirety will not be long delayed. When issued they will be examined by the Naval and Military Committee of the British Medical Association, and the decision of the Council of the Association on the advice it gives will be published in due course.

As a matter of fact the India Office is not at present asking for candidates, although it is true that a few commissions have been granted during the last year, one in December, three in January, and nine in March—thirteen in all, a total far from adequate to replace the year's wastage. These commissions have been given on a five years' contract system, which may have a certain attraction for some possible candidates, but is open to many objections, to which due consideration should be given.

Until the facts are fully known and completely discussed it will be inadvisable for a British-born medical man

to become a candidate for the Indian Medical Service offer more than on a short contract, if the objections to that system can prudently be set aside. Remembering what a fine service it has been and what it has done for the people of India, for the profession in India, and for science, it is a sad thing to have to say

PRISON MEDICAL SERVICE

Candidates for the medical staff are approved by the Secretary of State for the Home Office on the recommendation of the Prison Commissioners. The Chairman of the Board is Mr M. L. Waller, C.B. Application for employment may be made to the Board on a special form, which can be obtained from the Secretary, Prison Commission, Home Office London, S.W. 1.

In the smaller prisons the medical officer is usually a local practitioner, but in the larger the members of the medical staff are required to devote their whole time to the service. In the case of those required to give their whole time to the service the appointment in the first instance is to the post of medical officer Class II, and from the seniors of this rank the medical officers Class I are selected as vacancies occur.

In February, 1923, the then Home Secretary appointed a committee to report on what changes, if any, should be made in the remuneration or other conditions of service of officers at the prisons and Borstal institutions in England and Scotland and at Broadmoor Criminal Lunatic Asylum. Evidence was given on behalf of the British Medical Association by the Medical Secretary, who pointed out that the salary offered to Class II medical officers—namely, a basic salary of £300 rising by annual increments—was, even when the allowances and bonus were reckoned in, less than the £500 given the Association looked upon as the minimum commencing salary which should be given to a whole-time medical man holding such a responsible office. The committee issued its report in November 1923. It recommended that officers of both classes should receive an additional £50 a year and from a communication received from the Prison Commission we understand that the pay of the whole-time prison medical staff is: Medical officer Class II, £350 rising by annual increments of £20 to £600; medical officer Class I, £650, rising by annual increments of £25 to £800. Unfurnished quarters are provided or an allowance in lieu is made. The Civil Service bonus is paid on the salary. There are 13 medical officers Class II, 12 medical officers Class I, and 25 part-time medical officers.

The number of vacancies is never large, and promotion is slow.

MEDICAL PRACTICE IN BRITISH DOMINIONS AND FOREIGN COUNTRIES

Medical Acts have now been passed in almost all places forming part of the British Empire beyond the seas and registers of duly qualified practitioners are consequently maintained. To these registers medical men educated in the United Kingdom are always admissible merely on payment of a registration fee, providing they produce evidence that they are of good repute and are either registered or eligible for registration in the United Kingdom, as the local requirement may be. The only exception to this statement that need be made relates to the Dominion of Canada. Each of its provinces acts in medical matters as an independent State. The result has been that reciprocity of practice has been established between this country and all the provinces of Canada except British Columbia, where certain obstacles still remain to be overcome. We would advise any medical man proposing to practise in Canada first to communicate with the Provincial Registrar, stating what degrees or diplomas he holds, and asking for information as to the precise steps he must take in order to obtain admission to the Provincial Register.

Italy and Japan are the only two foreign States with which complete medical reciprocity has been established,

though there are other countries which grant a limited recognition to British qualifications. Generally speaking, in Continental countries (with the exception of the kingdom of Italy) a British medical man desiring to exercise his profession therein must pass practically the same examinations as those imposed on natives of the country. The same observation applies to all foreign States in the South American continent. Each of the United States of North America has its own laws and regulations governing medical practice, some of the States admit any holder of a degree or diploma to their Register, but the majority require a candidate for registration to submit to an examination.

A pamphlet showing the conditions under which medical and dental practitioners legally qualified in their own country may practise abroad can be obtained from the office of the General Medical Council, 44, Hallam Street, Portland Place, London, W.1, price 2s 6d, or 2s 9d post free in the United Kingdom. Practitioners who think of going abroad to practise will find therein much useful information, including the name of the official in each country to whom requests for further particulars should be addressed. The last edition was published in January, 1921.

THE SUDAN MEDICAL SERVICE

THE Sudan, perhaps to a greater extent than any other British possession, is entering on a period of rapid development and expansion, and with this expansion the medical services of the country must necessarily keep pace. The Sudan Medical Service offers many attractions to a young doctor who is interested in his profession and is anxious for professional experience, and to a man fond of an open air life the country offers, in addition, opportunities for every kind of shooting, for fishing, and polo. The staff consists of

- (a) Director Sudan Medical Service Pay £1 500 to £1 600
- (b) Senior Physician Khartoum and Omdurman Civil Hospitals Pay £1 200 to £1 750
- (c) Senior Surgeon Khartoum and Omdurman Civil Hospitals Pay £1 200 to £1 750
- (d) Medical Officer of Health Khartoum Province and Assistant Director Pay £1 200
- (e) A number of senior medical inspectors and medical inspectors who are all British and senior from the outset rises by two yearly increases to £1 080 and thence after three years to £1 200
- (f) A number of Syrian medical officers trained at one of the Syrian medical schools
- (g) A number of assistant medical officers natives of the Sudan

A candidate, on being accepted for the service, becomes a medical inspector. Soon after his arrival in the country he is generally placed in charge of the medical and public health work of a province. His headquarters is the chief town of the province at which there is a general hospital. There are usually smaller hospitals or dispensaries at less important centres in the province, which are under his charge, and which it is his duty to supervise. He will probably have two or three medical officers under his supervision and several assistant medical officers, as well as a sanitary staff.

Besides the ordinary provincial work, there are certain special lines of work. For instance there is a hospital ship working along the various tributaries of the White Nile among the pagan and completely uncivilized natives in those regions, a post which offers great scope for original medical work, and incidentally provides opportunities for big game shooting. There is also the work of organizing campaigns against special diseases endemic in certain parts of the country, such as bilharziasis, anklostomiasis, and yaws.

The country also affords opportunities for research into many interesting problems which urgently need solution in connexion with certain tropical diseases. Kala-azar and the Tropical Research Laboratories afford most ready and cordial co-operation in all such work.

The Sudan comprises an area of over a million square miles, extending from the southern confines of Egypt to the

borders of Uganda and Abyssinia, and from the Red Sea to Vidai and the French and Belgian Congos. In this enormous area are found a variety of different races and a considerable variation of climate. The Sudan may roughly be divided into three zones—a northern, a central, and a southern zone.

1 *The northern desert zone* is hot and dry in the summer, but with cool nights. In the winter the climate is pleasant, and often cold. This region is mainly inhabited by Arab tribes, either sedentary cultivators settled along the river or nomad tribes wandering in the desert with their flocks and herds. There are a few large towns, of which Khartoum, Atbara, and Port Sudan are the most important. Khartoum, with its adjoining towns of Omdurman and Khartoum North, has a population of about 120,000. There are large hospitals at Khartoum and Omdurman. Khartoum has a good electric lighting system and water supply. Many of the gardens have excellent grass tennis courts. Khartoum is connected to Khartoum North by a bridge over the Blue Nile, and a bridge is being constructed over the White Nile, and a bridge Omdurman. An electric tram system is being installed. Port Sudan is a rapidly growing port on the Red Sea. It has a large, well built hospital. Twenty years ago where Port Sudan now is there was only a long creek, with a few nomad Arab tents and some cattle grazing. Now between seven and eight hundred large vessels enter Port Sudan in the course of the year, and this number is steadily increasing. Behind Port Sudan, and parallel with the sea, runs a chain of mountains inhabited by the Hadendaa tribes (the Fuzzy Wuzzies of Kipling's verses), an attractive people, still very independent and shunning contact with civilization. In these mountains, too, the wild sheep can be obtained.

2 *The central zone* for eight months in the year has much the same climate as the northern zone, but has a rainy season of four months (more or less). In this region rain crops are grown over wide areas, and the grazing is excellent. The inhabitants are for the most part Arabs, nomad and sedentary, but with a larger admixture of the black races of the south in their breeding, and in consequence a darker colouring. The area the largest towns are Wad Medani, El Obeid, Kassala, and Gedaref. Wad Medani is the centre of the Gezira irrigated area, an area at present comprising 300,000 acres, but which will eventually extend over an area of three million acres. At Wad Medani there is a newly constructed up to date hospital of two hundred beds, with excellent operating theatres and laboratory. Electric light is being installed. The public health work in the irrigated area is of very great interest. Malaria and dysentery have to be taken against the canals, and precautions have to be taken against the canals becoming infested with bilharziasis. A large sanitary staff is employed for this purpose. Wad Medani is the centre of a considerable English population employed on the irrigated area, and tennis, and, in particular, polo, are played with enthusiasm. About one hundred miles south of Wad Medani at Makwar the Blue Nile dam has been constructed to provide water for the irrigated area to the north. The dam is three kilometres in length. Its construction involved most careful sanitary and anti-malarial precautions, without which the work could not have been carried out. Here, too, is a well built, up to date modern hospital, with accommodation for one hundred and twenty beds.

3 *The southern zone* becomes increasingly tropical in character as the southern boundary of the Sudan is approached. This area is inhabited by negroid peoples, for the most part quite uncivilized, and in many parts difficult to get in touch with, except by means of medical work. Here the sandy soil and the sparse acacias of the northern Sudan are replaced by forest trees and elephant grass. In the place of the gazelle, ibex, and wild sheep of the north are the elephant, the buffalo, and the sitatunga, and the other numerous tropical fauna. There is a large modern hospital at Malakal, a town not far from the old Tashoda, where Marehand and his Cingalese troops fortified themselves after their remarkable journey across Africa, and where they were met by Lord Kitchener after his victory at Omdurman. Excellent medical work, too, is carried out by a hospital ship, which works along the White Nile tributaries. A commencement is being made in the introduction of rain grown cotton cultivation among the more civilized of these tribes, an industry that will in time render this southern area rich and prosperous. In the meanwhile, the region is most interesting, like to the doctor from the point of view of medical work and research, and to the anthropologist, the naturalist, and the hunter.

It will be seen from the above that the Sudan presents a variety of climate, variety of work, and variety of sport, the comforts and opportunities of civilization, often almost side by side with the most primitive conditions, opportunities for medical and surgical work, and for

Inquiries regarding the medical service should be addressed to the Civil Secretary, Sudan Government, Khartoum.

The bulk of the medical appointments made by the Secretary of State in this country are to the Services in the East and West African Colonies and Protectorates, the Straits Settlements and Malay States, the East Indies, and Fiji and the Western Pacific. In general, candidates for such appointments must be between the ages of 23 and 35, and whilst these limits are not for the moment absolute, an officer over 35 years of age on first appointment may be required to serve on a temporary and non-pensionable footing, regular appointments are, subject to a varying period of probation, for the most part, nominally at least, permanent and pensionable. There is no entrance examination, but practitioners selected for appointment must obtain a certificate of physical fitness from one of the Medical Advisers of the Colonial Office. In the case of the West African Medical Staff and the East African Services successful candidates are required to undergo an approved course of instruction in tropical medicine.

While colonial service offers undoubted attractions to some practitioners it also presents very definite disadvantages, and not the least of these is, at the present time, uncertainty as to the future. Before the war, conditions in several of the Services gave rise to considerable anxiety, the greatly enhanced cost of living during the war resulted in a great increase in the cost of living, and the Committee considered the inadequacy of temporary advances in pay. Until the succeeding period of reconstruction, the interdepartmental committee under the leadership of Sir W. Egerton was appointed to consider the means of increasing the remuneration of colonial service generally, and the maintenance of the position of the candidates. The committee recommended that the remuneration of colonial service should be increased by competitive examination, which staff of the Colonial Office by the Director General of the Colonial Service, and more particularly in the East African and Malayan groups.

The condition of the Colonial Medical Services has for some time been a matter of the gravest concern to the British Medical Association, which gave evidence on the subject before the Fegion Committee and has been in constant communication with the Colonial Office on matters touching them well as since August, 1921. During this period the Association has, in effect, been recognized as the mouthpiece of the Services, and has received copies of all official documents primarily affecting medical officers, and also the gazettes of the various local Governments. It has therefore been possible to supplement the activities of the Overseas Branches by the exercise centrally of unceasing vigilance over all tendencies likely to affect the development of the Colonial Services. Present conditions render advisory impracticable in certain branches of the Colonial Service, and especially is this so in the Windward Islands, where three years of unmitting effort on the part of the British Medical Association, both centrally and locally, ended in 1923 in failure. The Representative Body of the Association, after full consideration of the facts of the case, and with a due sense of the responsibility involved in any action tending to hinder the supply of qualified candidates for the Services in the islands, passed at Paris month a resolution regretting that the Colonial Office had

declined to press the claims of the Windward Islands medical officers with regard to their terms and conditions of service, and thoroughly endorsing the action taken by the Council in support of those claims. Such a resolution is the best possible commentary upon the opinion expressed in the *BRITISH MEDICAL JOURNAL* of June 30th, 1923, that no qualified medical practitioner aware of the conditions of service will accept an appointment in these islands. The position in this respect has not been bettered by the modification of the local Medical Ordinance to permit the employment of practitioners not qualified for admission to the *Medical Register* of the United Kingdom.

Our information in respect to the Malayan Medical Service is incomplete, but from that in our possession we are driven to the conclusion that the position is not such as the British Medical Association could approve. The services are under strength, the salaries paid are inadequate, and the administration chaotic. The Colonial Office has had the facts before it for some considerable time, and has in its possession, or ought to have in its possession, reports of commissions of inquiry, but so far has not made public, nor has it communicated to the Association, any decision at which it may have arrived.

East African Medical Service

Beyond the brief reference to this subject on the previous page, attention may be called to the opportunities offered to recently qualified medical men by the East African Medical Service. This service includes Kenya, Uganda, Tanganyika Territory, Nyasaland, Zanzibar, and British Somaliland. In East Africa there is very wide scope for clinical work both medical and surgical, as well as for preventive medicine and sanitation. The field of research is unbounded. The service as a whole is fully alive to its responsibilities and opportunities, individual initiative is encouraged, and the career of a medical officer depends, not on seniority alone, but to a large extent on his own capability. As a rule it is preferable that medical officers on first appointment should not be married, although in all but a few stations conditions allow a medical officer's wife to accompany him. Many posts entail a considerable amount of travelling, which is usually undertaken by motor car. An officer is encouraged to use his own car, and a liberal allowance is granted for running expenses. A large increase in staff of the medical service of Kenya Colony is contemplated for 1926, and there is every likelihood of a number of vacancies for suitable candidates from now onwards. The proposed increase includes both the medical and sanitary divisions of the service, the former is open to those holding ordinary medical and surgical qualifications, post-graduate experience in a hospital appointment being an advantage, posts in the sanitary division will as far as possible be filled by those holding a Diploma in Public Health. Kenya, in the climatic conditions of the greater part of the colony, approximates more to the temperate than the tropical zone. There are many opportunities for all forms of sport and recreation, and life generally is full of interest.

Reference having been made to Kenya Colony in particular, it must be mentioned that a candidate can only apply for appointment to the East African Medical Service in general, he may, however, express his preference for any particular colony, and his wishes will as far as possible be met. It should also be mentioned that the regulations allow for a transfer of a medical officer from one dependency to another, but as a rule such transfer only takes place on promotion or at an officer's own request.

Official Sources of Information

All inquiries in connexion with colonial medical appointments made by the Secretary of State for the Colonies should be addressed to the Assistant Private Secretary (Appointments), Colonial Office, Downing Street, London, S.W.1. Any vacancies occurring in Iraq, Palestine, and Aden are recruited through the Colonial Office, and information can be obtained at the same address. Inquiries about any medical appointments made by the Egyptian Government should be addressed to the Director-General, Public Health Department, Cairo. The Sudan Medical Service is referred to in the article at page 451.

Information as to medical appointments in the self-governing Dominions and their dependencies can be obtained on application to the High Commissioners or Agents General for the Dominions. Intending applicants are also recommended to consult the Colonial Office List and the Professional Handbook (price 6d) issued by the Overseas Settlement Office, 6, St. James's Square, London, S.W.1.

There remain a number of medical appointments made by mining companies and other commercial undertakings in various parts of the tropics. Much caution should be exercised in accepting such posts, and the form of contract should be subjected to very careful scrutiny. Advice in this connexion should always be sought from the Medical Secretary's Department of the British Medical Association, British Medical Association House, Tavistock Square, W.C.1.

MEDICAL RADIOLOGY AND ELECTROLOGY

THE CAMBRIDGE DIPLOMA

A Diploma in Medical Radiology and Electrology is granted by the University of Cambridge. The primary object is to provide adequate training in a branch of medical work which is becoming increasingly important and difficult, and which is outside the ordinary medical curriculum. The diploma is open only to those who hold a medical qualification, and includes a course of lectures and practical work in Physics (Part I) and in Radiology and Electrology (Part II). Attendance at the necessary courses of lectures in both subjects, and in addition six months' clinical experience in an adequately equipped hospital recognized by the Diploma Committee, is essential. The whole course of study takes six months, the lectures, practical work, and hospital attendance running concurrently.

The courses carried out by the University of Cambridge are at present arranged to begin early in January. Three months are spent at Cambridge doing the lectures and practical work in Part I, and attending the systematic lectures in Part II and the practice of Addenbrooke's Hospital, where there is a fully equipped and up-to-date x-ray and electriological department. The remaining three months can be completed at any hospital recognized by the Diploma Committee for this purpose, a list of which can be obtained, but special arrangements are made for students to continue their studies in London, where demonstrations at various hospitals are arranged, in order to give a wide experience.

In addition, an independent course is arranged by the British Institute of Radiology. This course is held entirely in London, but is recognized by the University as qualifying for the examination, it begins early in October.

Further particulars as to the Cambridge courses can be obtained from F. Shillington Seales, M.A., M.D., Medical Schools, Cambridge, and of the London courses from Stanley Melville, M.D., at the Offices of the British Institute of Radiology, 32, Welbeck Street, London, W.1.

MEDICAL MISSIONARIES

Missionary societies are in constant need of qualified men and women to fill vacancies as they occur in their hospitals, and also to enable them to take advantage of fresh openings. To those suitably endowed the mission field offers unique opportunities for interesting work, and the development of native medical schools, as training institutions in connexion with some of the larger mission hospitals, affords excellent scope for valuable work to medical men and women who are qualified to teach. It is not usually expected that medical missionaries should take a position such as would otherwise be occupied by an ordained clergyman or minister, but it is essential that they should be prepared to exert their influence in any hospital to which they may be sent so that a Christian atmosphere may be maintained and the work of evangelization be carried on through the ministry of healing.

As for scientific and other qualifications for the work, medical missionaries, in addition to being physically capable of sustaining a life which makes a great demand upon their strength, should be thoroughly well trained physicians and

surgeons. It is very desirable that they should have held a resident appointment at a general hospital, and have a good knowledge of practical surgery, gynaecology, tropical medicine, and the treatment of eye diseases. Useful information can be obtained from the secretaries of the various Missionary Societies, or from Thomas Cochaine, M.B., C.M., Honorary Secretary British Advisory Board on Medical Missions, 3, India Street, London, E.C.4

Dental Surgery.

UNTIL the passing of the Dentists Act, 1921, the profession of dentistry in this country was regulated by enactments very closely similar to those relating to the practice of medicine—that is to say, there was no direct prohibition of the act of practice, and the Dentists Act of 1878 gave the same degree of protection to legally qualified and registered dentists as was accorded to registered medical practitioners—namely, the reservation of the use of certain titles. This Act also provided (1) that no person should take or use the name or title of "dentist" (either alone or in combination with any other word or words) or of "dental practitioner," or any other name, title, or description expressed in words or by letters implying that he was specially qualified to practise dentistry, unless he was registered, under a penalty of £20, and (2) that an unregistered person could not recover any fee or charge in respect of any dental operation, attendance, or advice. But, in the case of the practice of medicine by unqualified and unregistered persons, certain deterrent factors came into play—such as the inability to give a death certificate—and these did not operate to the same extent in the case of dentistry, hence, unqualified practice has been far more prevalent in dentistry than in medicine, and this increased after a decision of the House of Lords placing a narrow interpretation upon the words "specially qualified to practise dentistry," by defining the word "qualified" as not referring to competence but to the possession of a recognized diploma.

THE DENTISTS ACT, 1921

This unsatisfactory position has now been remedied by the passing into law of the Dentists Act, 1921, its provisions are based largely on the recommendations of a departmental committee appointed in 1917 by the Privy Council "to investigate the extent and gravity of the evils connected with the practice of dentistry and dental surgery by persons not qualified under the Dentists Act." Since November 30th, 1922, no person has been permitted by law to practise or hold himself out, whether directly or by implication, as practising or as being prepared to practise dentistry unless he is on the *Dentists Register* provided for by the Dentists Act 1878. The practice of dentistry is defined as including the performance of any such operation and the giving of any such treatment, advice, or attendance, as is usually performed or given by dentists, and the performing of any operation or the giving of any "treatment, advice, or attendance on or to any person as preparatory to or for the purpose of or in connexion with the fitting, insertion, or fixing of artificial teeth." The maximum penalty incurred by an unregistered dentist is £100 for each offence. There are, however, certain important exceptions to the requirement of registration. A registered medical practitioner may practise dentistry without being on the *Dentists Register*, and a registered pharmaceutical chemist or chemist and druggist may extract a tooth where the case is urgent and where no dentist or dentist is available, but the operation must be performed without any kind of anæsthetic further, any person may carry out minor dental work in a public dental service under the personal supervision of a registered dentist provided it is in accordance with conditions approved by the Minister of Health after consultation with the Dental Board.

Certain persons other than those qualified by examination were entitled to be registered under the new Act. They had to be of good personal character and 25 years of age before July 28th 1921

(the commencement of the Act) and to have been engaged for five of the seven years preceding that date as their principal means of livelihood in the practice of dentistry in the British Isles or have been admitted to membership of the Incorporated Dental Society not less than one year before the commencement of the Act. The passing of the prescribed examination in dentistry within two years of the commencement of the Act is considered as equivalent to practising for five years, and a registered pharmaceutical chemist or a chemist and druggist who immediately before the commencement of the Act had a substantial practice as a dentist including all dental operations, was treated as though he had practised for five years. A dental mechanic who for the five years had been carrying on his work as such and has secured the entry of his name on the list of candidates for examination can be registered provided within ten years of the commencement of the Act he passes the prescribed examination.

Dentistry may be carried on by a corporate body provided the majority of the directors and all the operating staff are registered dentists, and that no business other than dentistry or only as business ancillary to dentistry is carried on by the company. Companies carrying on the business of dentistry at the present time are permitted to continue to do so with certain restrictions provided that the names of the directors have been entered in a list kept by the Registrar for that purpose. Every director or manager of a company convicted of an offence under the Act will be held to be guilty of the offence unless he proves that the offence was committed without his knowledge and the court may in addition to a fine order that the name of any director convicted shall be removed from the list of directors aforesaid.

A subsequent Act passed in 1925 made provision for the registration of persons who were 21 in November 1921 who had served during the late war in His Majesty's Forces and were on that date engaged as their principal means of livelihood in the practice of dentistry in the British Isles. The Board however has now power to consider any further applications under this Act.

THE DENTAL BOARD

The Dental Board of the United Kingdom was established for the purpose of administering the new Act. The first members of the Board, who held office for three years, were all appointed, but their term has now come to an end. The Board consists of the chairman, appointed by the Privy Council, three members appointed by the General Medical Council, who must be members of the Branch Councils for England, Scotland, and Ireland, respectively, three persons who are neither medical practitioners nor dentists, appointed to represent England, Scotland, and Ireland, and six elected members, one of whom represents the qualified dentists in England and Wales, one those in Scotland, and one those in Northern Ireland, and two all the dentists registered under the Acts of 1921 and 1923.

On the establishment of the Dental Board in 1921 certain powers and duties of the General Medical Council were transferred to it, including the duty of erasing from the *Dentists Register* any entry which has been incorrectly or fraudulently made. An inquiry into the case of a person alleged to be liable to have his name erased from the *Register* will be made by the Board, which will report its findings to the General Medical Council, the order directing the erasure being made, as at present, by the Council. A name erased from the *Register* can only be restored by the Council upon a report made by the Board. An appeal to the High Court may be made by any person aggrieved either by refusal of the Board to register his name or by the removal of his name from the *Register*. The administrative expenses of the Board are defrayed from the registration fees and annual retention fees, but any surplus may be allocated to purposes connected with dental education and research or to any public purpose connected with dentistry. The office of the Dental Board is at 44, Hallam Street, London W.1.

The *Dentists Register* for 1925 contains the names of 13,818 persons, of whom less than a half are registered with qualifications, 7,296 names having been registered under the Dentists Acts, 1921 and 1923.

DENTAL EDUCATION AND EXAMINATION

The preliminary examination in arts is the same for medical and dental students, and the early stages of their education embrace much the same subjects, and, as the dental student is required to obtain a knowledge of the broad principles of medicine and surgery, it is necessary for him to pursue some portion of his studies at a medical school as well as at a special dental school, the latter not

¹ See the Registrar's Memorandum printed in the article on the General Medical Council at page 411.

undertaking the teaching of these subjects. Registration of a dental student is not in all cases compulsory, though it is to be advised as convenient as affording proof of the commencement of professional education, and it is required by most of the licensing bodies, all of whom insist upon a curriculum covering four academic years.

Qualifying licences are granted by the Royal Colleges of Surgeons of England and of Edinburgh and of Ireland, by the Royal Faculty of Physicians and Surgeons, Glasgow, and by certain of the universities in Great Britain and Ireland.

Recognized dental schools are numerous. In London there are those connected with the Royal Dental Hospital, Leicester Square, the National Dental Hospital (now the University College Hospital Dental School), Great Portland Street, Guy's Hospital and the London Hospital. In the provinces there are the Birmingham Dental Hospital, the Royal Infirmary and the General Hospital, Bristol, the Dental Hospital and the Public Dispensary, Leeds, the Dental Hospital, Liverpool, the Dental Hospital, Manchester, the Dental Hospital and School, Newcastle upon Tyne, the Royal Hospital, Sheffield. In Scotland there are the Dental Hospital, Dundee, the Incorporated Dental Hospital and School, Edinburgh, and the Incorporated Dental Hospital, Glasgow, and in Ireland the Incorporated Dental Hospital of Ireland and the Royal College of Surgeons in Ireland.

Study may also be commenced in the dental department of any university of the United Kingdom. The universities mentioned in the *Medical Directory* as possessing dental schools or departments are Birmingham, Leeds, Liverpool, Manchester, and Sheffield.

There are considerable variations in the order in which the different licensing bodies require the various subjects of the curriculum to be taken up, and every prospective dental student should study, not only the regulations of the General Medical Council, but also those of the body whose licence he hopes to obtain. Thus, as the more important as in the case of some licensing bodies changes in the curriculum have been made or are contemplated.

Recommendations of the General Medical Council

The Dentists Act still leaves to the General Medical Council the duty of controlling the course of study and examinations required for dental qualifications.

The following recommendations as to the course of study and examinations to be required of candidates for degrees or licences in dentistry or dental surgery were adopted by the Council on May 27th, 1922.

Preliminary Examination and Registration

1. That every dental student shall at the commencement of his studentship be registered in the manner and under the conditions prescribed for medical students.

2. That before registration in the *Dental Students Register* every applicant shall be required to have passed in addition to the examination in general education which shall be the same as that required for medical students an examination in Elementary Physics and Elementary Chemistry conducted or recognized by one of the licensing bodies which shall also be the same as that required for medical students.

3. That before registration as a dental student every applicant shall produce evidence that he has attained the age of 17 years.

Professional Study

4. That every candidate for a degree or licence in dentistry or dental surgery shall be required before admission to the final or qualifying examination to produce certificates showing

- (i) That he is at least 21 years of age.
- (ii) That he has been registered as a dental student.
- (iii) That he has subsequently to the date of registration as a dental student been engaged in professional study for at least four years of which three years at least shall be spent at a school or schools recognized for professional study by one of the licensing bodies.
- (iv) That subsequently to the date of registration as a dental student he has attended at a recognized medical school courses of instruction which shall be the same as those required for medical students in the following subjects: (a) Chemistry, and (b) Physics in their application to Medicine, (c) Elementary Biology. That he has attended at a recognized medical school courses of instruction in the following subjects: (d) Human Anatomy (with dissections and demonstrations) for three academic terms, (e) Physiology (with laboratory instruction including Practical Histology) for two academic terms, (f) General Pathology (including Bacteriology) for two academic terms, (g) Medicine for two academic terms, (h) Surgery for two academic terms, (i) the practice of a recognized general hospital or hospitals of not less than eighty beds with certified instruction in Clinical Medicine and Clinical Surgery for four academic terms.
- (v) That he has attended at a recognized dental school courses of instruction in the following special subjects: (a) Dental Anatomy and Physiology, human and comparative. The course should comprise a minimum of twenty meetings of the class. (b) Practical Dental Histology and Micro-bid Histology. The course should comprise a minimum of sixteen meetings of the class. (c) Dental Pathology and Surgery. The course should comprise a minimum of twenty meetings of the class. (d) Dental Materia

Medica and Therapeutics. The course should comprise a minimum of sixteen meetings of the class. (e) Dental Metallurgy (with practical work and demonstrations). The course should comprise a minimum of twenty meetings of the class. (f) Dental Mechanics (with practical work and demonstrations). The course should comprise a minimum of twenty meetings and twenty demonstrations. (g) A course of instruction in the use of anaesthetic general and local, employed in dental practice. (h) A course of instruction in Radiology as applied to dentistry.

(vi) That he has for at least twenty-four calendar months attended, during the ordinary academic terms, the practice of a recognized dental hospital or of the recognized dental department of a general hospital.

(vii) That he has received for not less than twenty-four calendar months, or for 2,000 hours, practical instruction in dental mechanics.

Professional Examinations

5. That the examination for a degree or licence in dentistry or dental surgery shall be partly written, partly oral, and partly practical, and shall include the following subjects: (a) Chemistry, Physics and Biology, in their bearing on Medicine and Dentistry, (b) Human Anatomy and Physiology, (c) General Pathology, including Bacteriology, (d) Medicine and Surgery, (e) Dental Anatomy, (f) Dental Pathology, Dental Surgery (including Dental Medicine and Therapeutics), (g) Dental Metallurgy, (h) Practical Examination in Dental Mechanics and Metallurgy, (i) Anaesthetics general and local employed in dental practice.

6. That the prescribed subjects of examination may be combined or distributed at the discretion of the licensing bodies and may be taken at two or more successive stages during the course of professional study provided that no candidate shall be admitted to any final examination in dental surgery and dental mechanics until he shall have completed the required four years' course of study.

MEDICAL REGISTRATION IN THE IRISH FREE STATE

DECISION TO SET UP A SEPARATE REGISTER

An announcement was made on August 15th on behalf of the Free State Government to the effect that it had decided to set up a separate *Medical Register* for the Irish Free State. The matter had been under discussion for about two years, and last year a bill was introduced into the Dáil sanctioning the continuance of the powers of the General Medical Council in respect of the Irish Free State for a period of twelve months. On February 23rd last this measure, continuing the pre-existing arrangements as to medical registration for a year from that date, was enacted by the Free State Legislature. The effect of the Act (to quote the words of Sir Donald MacAlister in the course of his Presidential Address to the General Medical Council last May) was to provide that in Southern Ireland the Council's constitution and powers, and the powers and responsibilities of its universities and corporations, should, so long as the Act was operative, continue to be regulated by the Medical Acts, as they were regulated before the Irish Free State was established. "It is, of course" (Sir Donald MacAlister continued), "open to the Free State, if it thinks fit, to renew the Act for a further period before its expiry in February, 1926. No similar Act has been passed relating to the dental profession, and accordingly the jurisdiction of the Council and of the Dental Board over dentists in the Free State has come to an end."

The unexpected decision of the Executive Council of the Free State Government to establish a separate *Medical Register* for the Irish Free State has aroused the very strong opposition of an almost united medical profession. Medical protests have been supported by the daily press in Dublin and elsewhere, and the general opinion is that a serious error of policy has been committed by the Executive Council. The situation has been described and discussed in recent issues of the *BRITISH MEDICAL JOURNAL*—August 22nd (p. 353) and August 29th (p. 356). As the matter is one which concerns very closely the future of medical education in Ireland, it seems appropriate to include in this Educational Number further expressions of opinion of which reports have come to hand this week from responsible medical quarters in the Irish Free State.

PROTEST BY THE PROFESSION IN IRELAND

Members of the medical profession in Cork, including professors of University College, Cork, have addressed the following circular to candidates who are seeking election to the Senate of the Free State

The Executive Council, in the alleged interests of our national status has expressed the intention of setting up a separate Medical Council for the Irish Free State. It certainly seems far fetched to introduce politics into this professional question. Everyone admits the right of the Oireachtas to put an end to the jurisdiction in Ireland of the joint British and Irish body known as the General Medical Council. What we, and the medical profession generally, ask is that the Oireachtas should freely and voluntarily continue to validate this jurisdiction. Once it is admitted that such validation comes from our own legislative assembly, it is hard to see what national claim we are repudiating. We are not asking to hand the educational, ethical and scientific interests of the Irish medical profession over to an outside body. We demand merely that Irish medical men should not be isolated from and placed in an inferior position to their British colleagues but should, in the interests of humanity and efficiency, continue to be associated with them on a status of perfect equality, and that the profession in these islands should be empowered to continue as a professional unit governed by a joint body in which Ireland has more than generous representation. In the history of the General Medical Council there has never been the smallest national discrimination. Such racial or national or political questions never arise and are entirely alien to the purview of the Council. At present most of our medical graduates must seek a livelihood outside the country. The fact may be deplorable but to send them abroad uneducated or with an inferior status is not to provide a remedy. With the emergence of alternative professions with the development of commerce and industry many who now take up medicine will naturally enter for other courses. This readjustment cannot be violently and suddenly effected; it must be left to the course of time. Even if all our present medical students were diverted to Arts or Science, most of them would still have to emigrate to earn their living, whether they leave as teachers and engineers or as doctors makes no difference to the country. Nor must we assume that doctors who emigrate are all a dead loss to the country. Many of them minister to Irish communities in England and Scotland, many of them are centres of Irish influence, some of them return to this country after valuable experience gained abroad and very many of them contribute largely to relatives living in Ireland. What is the alternative to the present system? Probably many of our students will go to Belfast or to Great Britain. Our justly renowned medical schools will become depleted, with the consequent loss to Dublin and Cork not only in money spent in these cities but in gratuitous medical service to the poor. The Irish medical profession, largely deprived of the stimulus of teaching and research, will become isolated and retrograde. If our students enter for other courses they will in any case have mostly to emigrate after graduation so long as the present deficit of professional openings exists. And if they continue as graduates in medicine in any numbers they will be permitted to practise in Great Britain only on sufferance and with an inferior status; they will be quite ineligible for many appointments. They cannot even get on the Colonial Register—the very name is an opprobrium—unless the Irish medical schools are recognized. This last point makes it quite clear that, so far from increasing our national status, the proposed action of the Executive Council will merely degrade and humiliate us. Every single Irish medical school which survives the present shock at all (and some will financially collapse) will be compelled in self-defence to supplicate humbly the British General Medical Council (on which there will then be no Irish representation) to recognize it to examine and inspect it. At present the Council has no such inquisitorial rights of visitation. But when we adopt the 'colonial' status, the Council will have much more authority over our Irish medical schools. So the last condition will be much worse than the first. Such recognition will be a favour to be humbly sued for; it may be withdrawn at any time. The University School of Saskatchewan in Canada for example has just been suspended for midwifery by the General Medical Council. It is plain then that instead of eliminating British control (which does not exist) we shall simply be introducing it in a very drastic form. So much for our national dignity. That our whole system of university and medical education in Ireland needs inquiry and readjustment is willingly conceded. At least one of our university colleges has repeatedly requested the Government to institute such an inquiry. The proposed action is merely a destructive bombshell which will suddenly bring financial ruin to several of our university and medical institutions, one cannot suddenly withdraw the fees of a thousand medical students from financially pressed colleges without producing a crisis. The action of the Government projected without consultation or inquiry is entirely too precipitate and hasty. Such amateur and ill-considered tampering with higher education is to be seriously deprecated. We maintain that the

present system of medical registration and education should be continued, it certainly should not be abolished by a stroke of the pen in the face of all available expert advice, until all the possible reactions and remedies have been thoroughly explored. We therefore request you to sign and return the attached declaration which we have already signed in order that we may have your support and influence in connexion with this vital matter.

The declaration runs as follows:

I, the undersigned hereby express my disagreement with the proposed abolition of the jurisdiction of the joint British and Irish professional body known as the General Medical Council. I consider that such a hasty and premature decision involves serious national educational, humanitarian and medical reactions. I therefore call upon the Executive Council and the Oireachtas to avoid ill-considered action and to validate the jurisdiction of the General Medical Council in the Irish Free State.

STATEMENT BY THE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS

In the course of a recent statement Mr R. C. B. Munnell, President of the Royal College of Surgeons in Ireland, says:

'For years to come the profession in the Free State will if the Government do not change their attitude be fully occupied with agitation instead of calmly advancing their scientific work and prospective medical students will depart to seats of learning which can offer them a certain entry to the *Medical Register*. The only reason for this tremendous change with all its loss to the doctors to the students and most of all to the public is that the present system is not in accord with the status and dignity of the Free State. Our Government now says that if it is found impossible to form an Irish Medical Council with an Irish Medical Register, they would rather ask the English Government to admit our doctors to the Colonial List of the *Medical Register*. What does this mean? It means (1) Our representatives on the General Medical Council would cease to exist as members of that body and it would consist exclusively of English, Scottish and Welsh representatives. (2) Our Government would petition the English Government to give our practitioners a place on the list which contains the names of Canadian, Australian and Indians who have taken out their qualification abroad. (3) The English Government would most probably agree to this provided that our universities etc. became subject to inspection by the inspectors appointed by the General Medical Council which would then be purely British. (4) Any physician or surgeon whose name was thus included in the Colonial List would in the case of an accusation of professional misconduct having been lodged against him be summoned to London to be tried by the General Medical Council. There would be no preliminary investigation by an Irish Branch and when he stood before the Council there would be no eight Irish representatives to mitigate his feeling of being a stranger in a strange land. What about the constitutional status and the dignity of the Free State under this arrangement which our Government had said they are perfectly willing to accept rather than submit to a renewal of our present honourable arrangement, which has elevated our profession into the proud position which it now holds? In any case unless the Free State claim recognition as a British Dominion no Free State medical man will be eligible for the Colonial List.'

It may be well to state here the terms of the Medical Act passed in February, 1925, by the Free State Legislature. This Act authorizes the General Medical Council to continue temporarily to exercise authority in respect of medical practitioners in the Irish Free State (Saorstát). It gives to persons registered under the Medical Acts in the Saorstát the same rights, powers, and immunities, and makes them subject to the same obligations as in Ireland before the Saorstát came into existence. The General Medical Council has in relation to persons and matters in the Saorstát, all the old powers, jurisdictions, and authorities, the Branch Council for Ireland similarly retains its powers, the General Council and the Branch Council continue to be constituted and elected as before, and universities and medical corporations in the Saorstát retain their powers of granting diplomas and holding qualifying examinations under the Medical Acts.

We understand that a meeting of medical practitioners, to protest against the decision of the Free State Government to set up a separate *Medical Register*, has been summoned for Tuesday next, September 8th, at 4.30 p.m., at the Royal College of Surgeons, Dublin.

ROYAL MEDICAL BENEVOLENT FUND

At the last meeting of the Committee fifty-four cases were considered and £663 was voted to forty-three applicants. The following is a summary of some of the new cases received.

MRS C. L. R. C. P. 1893 aged 59 married with six children aged 5 to 18 years. The eldest is employed abroad but the rest live at home and attend school. Income from practice and panel dispenser about £230 a year rent and rates £66 per annum. The applicant was taken suddenly ill in July and was operated on for gangrenous bladder. Nursing home fees were paid by his colleague but it was discovered that the wife and family were without means. The Fund lent £10 at once.

Widow aged 58 of L.R.C.P. Edin who was a ship surgeon and died abroad in 1923. The applicant has managed to keep her self and invalid sister on the little money left and by the sale of trinkets and jewellery. This being exhausted a debt was accumulating for board and lodging when a doctor on the committee of the Fund heard of the case and referred her to the Fund. An immediate grant of £5 was made for food. The Professional Classes Aid Council was asked to contribute towards the maintenance of the sister of the applicant who is the unmarried daughter of a solicitor. A vote from it enabled the sister to be sent away to be looked after as she is an invalid and crippled with rheumatoid arthritis. The Guild found a post for the applicant and made a grant towards the debt outstanding for board and lodging. The Fund and Guild and Professional Classes Aid Council are working together to get this sister permanently looked after so that the applicant will be self supporting.

Widow aged 45 of L.R.C.P. Edin who died this year is left with three children aged 6, 9, and 12 who are all at day school. After the practice was sold £500 was left and War Loan purchased. Applicant hopes to augment income by letting apartments. A report from the local branch of the Guild supported the application and the Fund voted £18 towards education and referred the case to the Guild to consider a similar grant.

Widow aged 36 of M.B. who died in 1916. The applicant has been able to support herself and son who is now 9 years of age up to last November when her mother who looked after the boy whilst the applicant was at work died. Help is asked for the child. The Guardians have been applied to and a grant was made by them of 7/6d a week for five weeks. The Fund voted £10 to a local doctor who is interested in the case to be administered for the benefit of the child.

M.R.C.S. Eng. aged 62 who is in practice asked the Fund to help him while getting established. The practice is increasing but he has only £42 in hand. Fund voted £40.

Widow aged 54 of L.M.S.S.A. who practised as a ship surgeon and died suddenly leaving applicant and daughter, aged 17 totally unprovided for. She has been working as a servant but at present is staying with friend. Voted £26 in six monthly instalments.

Subscriptions may be sent to the Honorary Treasurer, Sir Charles Symonds, K.B.E., M.S., at 11, Chandos Street, Cavendish Square, London, W.1. The Royal Medical Benevolent Fund Guild receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for secondhand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 58, Great Marlborough Street, W.1.

Medical News.

The Fellowship of Medicine announces that an intensive course in general medicine, surgery, and the various special departments will be held at the Westminster Hospital from September 21st to October 2nd. At the Infants Hospital a two weeks' comprehensive course in diseases of infants commences on September 7th, on which date also at the Seamen's Hospital a five weeks' course in operative surgery begins. In dermatology an afternoon course will be provided at Blackfriars Skin Hospital from September 7th to 19th, with a special demonstration on September 8th. The Royal Westminster Ophthalmic Hospital has arranged a three weeks' course from September 7th. From September 21st to October 3rd the Brompton Hospital provides a special course in the various aspects of pulmonary disease. On four successive Wednesdays, beginning September 23rd, there will be special demonstrations on treatment by electrotherapy at the Royal Fico Hospital. Full particulars of the courses may be obtained from the Secretary at 1, Wimpole Street, W.1.

The Royal Sanitary Institute, 90, Buckingham Palace Road, S.W.1, has arranged a course of lectures and demonstrations for sanitary officers, commencing September 23rd, and for meat and food inspectors, commencing October 2nd.

APPLICATIONS are invited for the post of Director of the Pharmacological Laboratories of the Pharmaceutical Society of Great Britain. The laboratories are being established to meet the requirements of manufacturing chemists and pharmacists who have not the necessary facilities for such biological tests as are to be imposed, under the new Therapeutic Substances Act, in the case of preparations scheduled by Government authority under that Act. The duties of the director will be to supervise and take responsibility for all work of this nature undertaken by the society, and to carry out researches in pharmacology, including the methods of biological assay. It is the aim of the society to promote research of the highest order by giving ample facilities and opportunity, and especially by appointing as many qualified

assistants as may be needed to relieve the director of purely routine work in connexion with the external obligations of his department. The post is not a teaching post, but the society may request the director to give, from time to time, courses of lectures for advanced students of pharmacy. The salary offered is £1,200 per annum, with provision for superannuation under the Educated Universities Scheme. Candidates should be not more than 40 years of age. Every application must be accompanied by three testimonials, and, in addition, by the names of two persons willing to act, in confidence, as referees with regard to the applicant's qualifications for the post. Applications should be sent to the Secretary, Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, W.C.1, before October 5th, 1925.

At a meeting in Geneva of the executive committee and the council of the International Anti Tuberculosis Union, Dr. Theobald Smith, president of the American Association, was nominated president of the union. It was decided that the next international conference should be held at Washington, from September 30th to October 2nd, 1926. The following three questions will be presented for discussion: the part played by contagion in tuberculosis among adults, the anatomical structure of the tubercle from histogenesis to cavity, and tuberculosis and milk. At the scientific meeting of the union held on July 21st Professor Knud Faber of Copenhagen read a paper on the chemotherapy of tuberculosis treated by sanocrysin. A report of the meeting will be published in the next number of the *Bulletin of the International Union*.

The issue of the *Nederlandsch Tydschrift voor Geneeskunde* (the organ of the Dutch Association for the Advancement of Medicine) for August 22nd contains a cordial appreciation by Dr. H. L. W. Droogleever Fortuyn of the new building of the British Medical Association.

The *Bruxelles Medical* is organizing a medical tour to the East, including Syria, Palestine, and Mesopotamia. Further information can be obtained from the secretary of the journal, Dr. R. Bernard, 117, Rue du Trône, Brussels.

The number of students recently enrolled in the medical school for women at Tokyo is 130. There are already 1,200 women doctors in Japan.

The number of medical students enrolled last summer term was 1,126 at Munich and 202 at Königsberg.

The detailed information published in this Educational Number of the *BRITISH MEDICAL JOURNAL* for the benefit of intending students of medicine and newly qualified practitioners has been revised throughout with the co-operation of the deans and secretaries of the medical schools and kindred institutions and of officials in the several Public Services, to all of whom we wish to acknowledge our indebtedness.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE

T. K. MACLACHLAN, M.A., M.B., B.Chir., of Pembroke College, has been elected to the Fearnside Chair of Diseases of the Nervous System. The award is made annually for the encouragement of research in these subjects.

ROYAL COLLEGE OF SURGEONS IN IRELAND

Medical Registration in the Free State

The following resolution was unanimously adopted at a special meeting of the President, Vice President, and Council of the Royal College of Surgeons:

That we desire to express our high appreciation of the conduct of our President (Mr. R. C. B. Maunsell) in the recent controversy, and our confidence in his defence of the interests of our College.

The Council then considered the whole situation, and also suggestions from various sources that it should make a political matter of it. The Council decided that as the medical profession has never interfered in any way in politics it was determined to fight this by educating public opinion and only thus influencing politicians. As a beginning of the education of the public it has decided to hold a meeting of medical practitioners on September 8th in the Examination Hall of the College (see page 456).

DENTAL EXAMINATIONS

An Addendum to Minutes of the General Medical Council for 1925 has been issued. It contains a report by the Dental Education and Examination Committee on the inspection of the qualifying examinations in dentistry and dental surgery that were held during the years 1913 and 1924. The inspector, Mr. J. Howard Munnery, contributes also a general account of the final examinations in dentistry of the licensing bodies of the United Kingdom and Ireland, and individual reports of fifteen universities and training centres are appended.

¹ Addendum to Minutes of General Medical Council for 1925. London: Constable and Co. Ltd. 1925. (Extra post 8vo pp. 275. 7s. 6d. net.)

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The Editor, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6, Drumshugh Gardens, Edinburgh (telegrams *Association Edinburgh* telephone 4361 Central).

QUERIES AND ANSWERS

DIVERS' PARALYSIS

Dr H. E. S. STIVEN, P.M.O. Government Hospital Port Said, Egypt, asks for information about divers' paralysis. He has met with three cases—one in a Greek sponge diver and two in Japanese divers working in 40 fathoms (240 feet) of water; they did not wear divers' dress, but had a mask fixed over the face and used compressed air for respiration. Of the Japanese the first had been down for forty-five minutes and had come struggling up to the surface, not following the British naval practice of divers (in diving dress) to rest twenty minutes half way. The second Japanese was down for fifteen minutes, about ten minutes after coming to the surface he lost consciousness; he was admitted to the hospital about forty-eight hours afterwards with a temperature of 106° F. and complete paralysis from the waist down. He died six hours later. Dr Stiven states that he has read that the symptoms are due to bubbles of nitrogen released from the blood when the pressure is removed but does not understand why death may ensue so long afterwards.

* It is fully established that the cause of divers' paralysis or caisson disease is the liberation of bubbles of nitrogen from the blood and tissues during decompression. The severity of the symptoms depends, first on the degree of saturation with nitrogen and therefore upon the depth reached and the length of time spent below and secondly, on the rate of decompression. Sudden decompression from the great depth of 40 fathoms must be extremely dangerous. Whether the symptoms are immediately fatal or not depends upon the situation reached by the nitrogen emboli but as a rule these are most abundant in the lower part of the thoracic cord hence the characteristic paraplegia. Immediate relief is generally obtained even from severe symptoms by recompression if practised at once. It is carried out in bridge building by having a compressed air chamber available known as a "medical air lock." Such a chamber ought also to be provided on ships engaged in deep salvage. Accounts of this disease may be found in the textbooks of medicine by Osler, Taylor, and Price.

INCOME TAX

Purchase of Share in Partnership

W. A. J. took over, as from August 1st, 1924 the half share in a practice. What is his position as regards the 1924-25 assessment?

* He cannot introduce his previous earnings into the computation of the average for assessment, which must be based on the earnings or profits of the practice. Assuming that the average earnings of the practice in the three years 1921, 1922 and 1923 were £x, he must account for the tax due in respect of eight twelfths of one half £x—once third £x—eight twelfths being the proportion of the year 1924-25 during which he was entitled to half the profits of the practice. If it should be found that the profits have fallen short of the sum assessed from some specific cause since or by reason of the change in proprietorship of the practice an adjustment can be obtained by way of repayment or otherwise at the end of the financial year. There is no fixed scale for depreciation of cars, but we believe that 15 per cent of the net cost is a common basis.

Income from Abroad

"X Z" has recently come to this country for the combined purposes of a holiday and postgraduate study. He is in possession of an income of £600 a year from Australian property but is expending £500 a year while temporarily residing here.

* Our correspondent is liable to account for tax on an investment income of (say) £600 per annum; he cannot deduct the Australian tax in computing the amount of that income but is entitled to an allowance for the double tax. Apart from that relief which would depend partly on the amount of Australian tax paid on the income, the amount of tax payable for 1924-25 would be approximately £40.

Cash Receipts

"J. A. S." has been in the same practice since 1903, and so far has made his returns on the basis of the cash receipts and payments of each year. He has now been requested to supply accounts showing the bookings and expenses incurred, whether paid or not.

* The request is proper in circumstances in which the cash receipts are expanding or contracting so rapidly that the cash receipts do not properly represent the value of the bookings, but if there are no such circumstances we see no reason why the existing basis, which has been in operation for a considerable length of time, should be discarded. It is very much more convenient for both parties, and in the long run should produce the same result. We suggest that "J. A. S." should press the Inspector of Taxes to say why in his case he is not prepared to accept the usual basis of assessment. A claim for depreciation of motor car may be made, the appropriate amount being deducted from the average assessments.

LETTERS, NOTES, ETC.

THE FUTURE OF CHIROPRACTIC

UNDER this heading the *Journal of the American Medical Association* recently (August 8th p. 449) published an account of the present position of "chiropractic" in the United States. From this it appears that in three States statutes have been passed to regularize the position of the chiropractic group. In Mexico (1921) chiropractors were authorized to diagnose and treat all infirmities provided they did not use drugs or perform surgical operations. In California a chiropractic license was established (1922) authorizing the holder to practise chiropractic in the State as taught in chiropractic schools or colleges. In the State of Maine (1923) a statute was passed following, in a general way, the California Act. It entitled the holder to practise "chiropractic" in any country in this State in all its branches as taught and practised by the recognized schools and colleges of chiropractic but it shall not authorize the holder to practise obstetrics so far as the same relates to parturition nor to administer drugs or perform surgical operations with the use of instruments except as now allowed by statute. In concluding its article our contemporary writes: "The first annual report of the Board of Chiropractic Examiners of the State of California, 1923-1924, closes the fact that any chiropractic school in order to be in good standing and to have its graduates admitted to examination in California must include in its curriculum the study of elementary chemistry and toxicology 100 hours, bacteriology, 100 hours, and obstetrics and gynecology, 100 hours. An 'hour' is defined as forty-five minutes or the equivalent thereof. Once chemistry, toxicology, bacteriology, obstetrics and gynecology are established in the chiropractic curriculum pharmacology, therapeutics and surgery will promptly follow. Then will follow the era of chiropractic, echom, the present era of osteopathy. For the substantially unrestricted right to enter the practice of medicine and surgery, by its own carefully planned back door."

A BREAST FEEDING CAMPAIGN IN SWITZERLAND

A SWISS medical woman, Dr Imboden-Kaiser, has published in the *Schweizerische medizinische Wochenschrift* of June 25th statistics of an educational campaign in regard to the infant welfare centre. She was able in the course of ten years to raise the frequency of breast-feeding among the mothers from 53 to 86 per cent. The average duration of suckling among the mothers who gave breast was raised from 2 to 2.7 months and among all the infants including those who were not suckled, this average was raised from 1.1 to 2.3 months. These results were achieved, not by giving drugs, nor by feeding the mothers better, but by an educational campaign each mother being taught exactly what to do and how to avoid the many errors which lead to a failing milk supply. One of the measures advocated in cases of a deficient milk supply (as shown by inadequate gain of weight of the infant) was to continue every one of the six breast meals and to supplement the last two or four by artificial feeding.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 71, 72, 73, 76 and 77 of our advertisement columns and advertisements as to partnerships, assistantships and locumtenencies at pages 74 and 75.

A short summary of vacant posts notified in the advertisement columns appears at page 460.

The British Medical Association:

ITS AIMS, WORK, AND CONSTITUTION

The British Medical Association was founded in 1832 to promote the medical and allied sciences, to maintain the honour and interests of the profession, and to foster a feeling of friendship among its members. To attain these objects it holds periodical meetings for the discussion both of medical and scientific subjects and of professional affairs, it publishes the *BRITISH MEDICAL JOURNAL*, it maintains a reference and lending library, it has instituted lectures, and scholarships and grants for research. It thus concerns itself with every side of medical work—science, clinical medicine, public health, and the material interests of professional life. The British Medical Association, with a membership now of more than 30,000, is the oldest, largest, and most powerful British organization devoted to the welfare of the medical profession. It has recently acquired a fine building in Tavistock Square, London, for its headquarters, providing ample accommodation for immediate needs and space for future developments. These new premises, designed by Sir Edwin Lutyens, R.A., were formally opened by His Majesty the King, accompanied by the Queen, on July 13th last, and the beautiful wrought-iron gates erected as a memorial to the 574 members who fell in the war, by which the quadrangle is completed, were dedicated on that occasion by the Archbishop of Canterbury. A full description of the new buildings and of the opening ceremony, with many illustrations, appeared in the *BRITISH MEDICAL JOURNAL* of July 18th. The need for larger accommodation had become insistent owing to the remarkable growth in the central work of the Association during recent years, which had far outstripped the capacity of the premises at 429, Strand.

Constitution and Administration

The Association has Branches and Divisions throughout Great Britain and Ireland, and also in the Dominions, Colonies, and Dependencies. The Divisions are arranged territorially, and number in all, 283. For certain purposes of administration or of scientific and clinical work, the Divisions are combined into 95 Branches. Members of Divisions elect representatives on the Branch Councils and also a member or members of the Representative Body, which is the governing body of the Association and determines its policy.

The Council is the executive of the Association. It is elected partly by the Divisions and Branches and partly by the Representative Body, and includes representatives of the Navy, Air Force, Army, and Indian Medical Services elected by the Representative Body. The Representative Body and Council elect standing committees to take charge of different subjects. Among these may be mentioned the Science, Medico-Political, Ethical, Hospitals, Public Health, and Naval and Military Committees. There are Committees also for the Dominions, Scotland, Ireland, and Wales, and for the working machinery of the Association such as the Organization, Finance, and Journal Committees. The Insurance Acts Committee, elected partly by the Association and partly by insurance medical practitioners, is financed by the Association, it is the recognized executive and mouthpiece of the insurance practitioners of Great Britain.

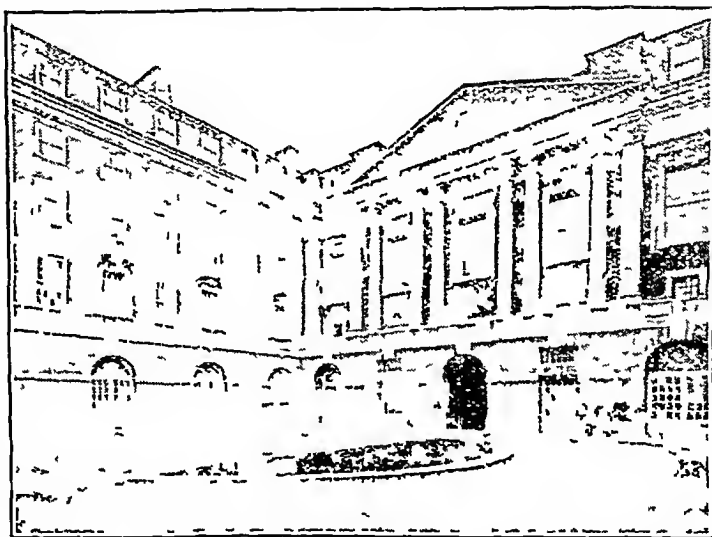
Privileges of Members

A member of the Association has the right—

- 1 To attend the annual and other general meetings of the Association and the meetings of the Division and Branch to which he or she belongs.
- 2 To take part by personal vote (or in some Divisions by voting paper) in the election of the representative of his or her Division in the Representative Body and also in the election of members of the Council.
- 3 To receive by post the *BRITISH MEDICAL JOURNAL*, published weekly, which gives a full record with commentary of progress in clinical and scientific medicine and of medico-political affairs throughout the British Empire.
- 4 To receive the help and advice of the central office in any professional difficulty.
- 5 To use the Library as a reading room and to borrow current medical or scientific books on payment of postage. Besides modern works and periodical medical literature—foreign as well as English—the library contains many books of historic interest.

The full benefits of the Association can only be secured by the co-operation of large numbers of the medical profession for the greater the membership and the funds the more

efficient and influential the organization. The Association during the past ninety-three years has been the direct means of benefiting every class of medical men and medical women. In asking for new members it looks not only to the older practitioners but also to those recently qualified. To these a generous concession is made as regards subscription, and there is a special claim to their recognition of the work of the Association in improving the conditions under which they may hold appointments in the public services or in civil life. The Association's work for



[photo]

COURT OF HONOUR, FROM SOUTH WEST ANGLE

[Country Life]

the services is well known. It considers itself to be in a special sense the guardian of the interests of those members of the profession who by reason of their position are precluded from taking common action.

Subscriptions and Applications for Membership

The ordinary subscription to the British Medical Association is 3 guineas a year for members resident in the British Isles, but this is subject to various exceptions. Thus, newly qualified practitioners elected within two years of registration pay half this sum up to the end of the fourth year after registration, medical officers on the active list of the R.N., R.A.F., R.A.M.C. (Regular), and I.M.S. pay 2 guineas; concessions are made also to members (in the British Isles) of forty years' standing, to members of ten years' standing who have retired from practice, to medical married couples residing together, and to whole-time teachers and research workers. The ordinary subscription for members living abroad is 1½ guineas, but some Branches have special local subscriptions. A member elected after June 30th in any year pays for that year one-half the current annual subscription.

All duly qualified British medical practitioners are eligible for election. Full particulars can be obtained from the Medical Secretary, British Medical Association House, Tavistock Square, London W.C.1, the Scottish Medical Secretary, 6, Drumshugh Gardens, Edinburgh, or the Irish Medical Secretary, 16, South Frederick Street, Dublin.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BATH, 1925

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE

SIR MAURICE CRAIG, CBE, MD, FRCP, President

DISCUSSION ON CAUSATION AND SYMPTOMATOLOGY OF MULTIPLE NEURITIS

OPENING PAPER

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When opening a discussion it is prudent to formulate some definition of the subject. We must first agree as to what conditions or diseases we will include under the term "multiple neuritis." The honorary secretaries have not furnished me with a definition, and I have sometimes regretted that I did not ask for one. I feel, however, that we will all find ourselves on more or less common ground if we take a wide view and define multiple neuritis in clinical terms as a condition, rather than as a definite morbid entity, which a strict application of the term would entail.

Definition.—I propose to include under the term "multiple neuritis" all cases in which as the result of a general cause—toxic, infectious, or metabolic—the symptoms present point to a more or less simultaneous affection of many of the peripheral nerves, or of their associated peripheral neurones, as manifested by disturbance or abolition of their functions. By thus defining multiple neuritis I exclude all cases of neuritis directly due to local traumatism or compression but I do not exclude those in which the neuritis arises as the result of the general action of a toxin, developed locally in connexion with a local lesion. Further, it permits us to include cases in which the symptoms point to an involvement of the peripheral neurones rather than of the peripheral nerves proper. The expediency for widening the definition becomes apparent when we consider the difficulty there is in determining in many cases whether the initial changes occur in the nerves themselves or in their central connexions.

Classification.—It is quite impracticable in the present state of our knowledge to attempt to classify multiple neuritis on any other than an etiological basis for although the symptoms and the clinical picture in certain forms of multiple neuritis are distinctive yet in the majority of cases no clinical differentiation is possible. Nor can we adopt a pathological classification, as the morbid changes present exhibit certain general features common to all forms, and the discrimination between the finer changes has not yet progressed sufficiently to afford a basis for classification.

CLASSIFICATION

A *Exogenous Poisons*—Lead arsenic mercury etc Alcohol carbon monoxide carbon bisulphide trinitrotoluene sulphonal trional chloral chloroform anilin Serum etc etc with multiple neuritis

B *Endogenous Toxins*

- 1 Metabolic diabetes beriberi bromatophyphimie during pregnancy
- 2 Cachectic malignant disease acute chronic anaemia etc
- 3 Infective
 - (1) In association with many acute infective fevers as an occasional feature typhoid paratyphoid scarlet fever etc tubercle, syphilis gonorrhoea septicaemia, puerperal
 - (2) In certain epidemic—for example influenza as a predominant feature
 - (3) In infective diseases in which the neuritis is an essential part of the clinical picture—for example uveo parotitic paralysis pink disease

(4) In organismal infections in which the toxin developed has a special affinity for the nervous system—for example diphtheria

(5) In acute subacute or chronic infectious whose incidence is chiefly on the nervous system acute toxic polyn neuritis acute febrile polyn neuritis acute infective polyn neuritis Landry's paralysis recurrent multiple neuritis

C *Multiple Neuritis of Obscure Origin*—Rheumatic from exposure to cold

D *Local Infections of Nerve*—Leprosy Interstitial hypertrophic neuritis (1) juvenile (Dejerine and Sottas) (2) adult (Dide and Courjon)

Pathogenesis

An inquiry into the causation of multiple neuritis involves the consideration of the following points

- 1 The nature of the poison or toxin
- 2 How it is produced
- 3 How it gains entrance into the body
- 4 How it is absorbed within the body
- 5 The effect it has on the tissues and organs of the body generally as regards function and structure
- 6 Its effect on the nervous system
- 7 The paths by which it gains entrance into the nervous system

Before referring in detail to the various types set out in this classification let us consider briefly what are the principal factors which determine the mode of onset and the distribution of the symptoms in multiple neuritis. The two factors which determine the mode of onset and the distribution of the symptoms in multiple neuritis are (1) the selective action of the poison, (2) the distribution of the poison within the nervous system.

1 *Selective Action.*—We know that the nervous system has the property of fixing certain toxins and poisons, and that this depends upon a special chemical affinity between the toxin and various chemical constituents of the nervous system. The toxins of tubercle and diphtheria, for example, become fixed in the nervous system, either *in vivo* or *in vitro*, and this is apparently due to their forming a complex with the phosphorylated lipoids. It has also been demonstrated that the violence of these toxins is increased as a result of this fixation. The toxin of tetanus also is fixed by the nervous system, but in this instance the fixation is brought about by the protein elements and apparently exercises some neutralizing action on the toxin. These observations serve to show how varied may be the chemical processes underlying the selective action of any poison, and may also in part explain the fulminating character of the symptoms occasionally seen in the acute forms of multiple polyn neuritis.

2 *The Distribution of the Toxin.*—This will, of course be influenced by the selective factor, but its incidence will be determined in the first place by the paths by which the toxin reaches the nervous system. We know that toxins and bacteria may enter the central nervous system by two channels (1) by way of the blood, (2) by way of the nerves (neural lymphatics). I need only say that their passage by the latter path has been demonstrated by many pathological and experimental investigations. Orr and Rows showed conclusively that toxins and bacteria could pass into the central nervous system by way of the perineural lymphatics and spread in the lymph spaces of the perirachnoid and in those of the substance of the cord. The effect was to produce an inflammatory reaction in the connective tissue elements, chromatolysis in the nerve cells and myelin degeneration in the spinal roots, limited almost entirely to the intramedullary course of the nerves from the point where the neurolemma sheath is lost. Greenfield and Carmichael state that there is evidence in cases of interstitial neuritis of the passage of inflammatory exudate from the nerves into the subarachnoid space. Feale and Embleton have made special investigations as to the paths by which tetanus toxin spreads to the central nervous system. They confirm the view held by Marie and Morry and Mayer and Pansom that it can ascend by way of the axo-cylinders of the motor roots, but hold that it passes chiefly by way of the perineural lymphatics of the anterior roots. Lastly we must always bear in mind that the distribution of the toxin may be prevented or modified by the resistance offered by the natural defences of the body.

I now pass to the consideration of the first group of our classification—exogenous poisons

EXOGENOUS POISONS

Our knowledge regarding this group is fairly complete, not only as regards the poisons themselves and the chemical combinations in which they are most dangerous, but more especially as to the channels by which they enter the body. For this we are indebted chiefly to the labors of industrial toxicologists. The application of regulations based on the result of their work has materially reduced the number of cases of industrial poisoning, lowered the mortality, and lessened the disablement. I will refer only briefly to three varieties of multiple neuritis which fall into this group—namely, alcohol, lead, and arsenic.

ALCOHOLIC NEURITIS

Alcoholic neuritis, formerly the commonest variety of multiple neuritis met with in this country is now comparatively rare.

Etiology

It occurs most frequently in chronic alcoholics, especially in persistent and secret drinkers and those addicted to spirit drinking. Women are more affected than men. It is often associated with obvious disorders of the digestive, respiratory, cardiac, and renal systems.

In Scotland—a whisky-drinking country—alcoholic neuritis and alcoholic cirrhosis of the liver are uncommon. This would appear to contravene the statement that spirit drinkers suffer more than beer drinkers, but the explanation lies in the fact that drinking in Scotland is mostly confined to Saturday nights and the week-end, and that frequently most of the alcohol is ejected before it is absorbed into the blood. In England, where drunkenness is less obtrusive, alcoholic neuritis and cirrhosis of the liver are more common. Statistics from the National Hospital, Queen Square, however, show that the great majority of cases of alcoholic neuritis admitted to the hospital were due, not to drinking beer, but to the continued abuse of spirits—gin, whisky, and brandy. In many instances the fact that the patients were in the habit of taking alcohol was only discovered when the neuritis was diagnosed. In beer-drinking countries neuritis is usually only one of many obvious signs that the patient has for long been seeking himself with beer.

Experimental work upon the absorption and elimination of alcohol by the body throws light upon the etiology of multiple neuritis.

Alcohol is rapidly absorbed from the stomach and small intestines, in from half an hour to two hours, and undergoes no change in the process. Absorption takes place more rapidly if the alcohol is in strong solution, or when the stomach is empty, more slowly if it is diluted or taken with food. It passes directly into the blood stream, and therefore the amount circulating in the blood varies according to the quantity taken. It is more or less evenly distributed to the tissues of the body, and its presence has been detected in the cerebro spinal fluid after its administration by the mouth.

Only a small proportion of the alcohol is excreted as such by the kidneys and lungs—generally about 2 per cent, and never more than 10 per cent. The remainder is eliminated as water and carbonic acid gas, these changes being effected by the oxidation of the alcohol in the body tissues. Thus, after taking a dose of alcohol, there is a period in which it reaches its maximum concentration in the blood, after which it diminishes, but the rate of diminution is not influenced by the size of the dose. It follows that the larger the dose the longer will be the time required for its elimination. Mellanby has calculated, as a result of experiments in man, that 10 ccm of alcohol is oxidized in an hour. He points out that until elimination has taken place the absorption of even a small quantity, which otherwise would have had no ill effects, may immediately induce intoxication.

If we take all these facts into consideration we must agree that the most potent factor is the continued presence of alcohol in the blood. Whether the neuritis results directly from the action of the alcohol on the nerves or indirectly from the associated action of other toxins and

a lowered state of nutrition, is a debatable question, but personally I incline to the opinion that the neuritis is primarily due to the alcohol.

Clinical

Precursory signs may be present for a long time before the onset of definite paralysis. These include numbness, tingling, and paresthesia in the feet and fingers, pains in the limbs, especially at night, cramps in the muscles, muscular tenderness, and hyperaesthesia of the soles. There may be tremor and clumsiness in the finer movements, and even transient weakness of all four extremities. If the cause of these symptoms is recognized and removed recovery may take place without any further developments, if not, the symptoms progress and the patient develops the typical signs and symptoms.

Of the various clinical types which have been described I will only refer to two: (1) a pseudo tabetic sensory type, in which pain is the prominent symptom and is associated with an acute ataxia of the lower limbs due to loss of the sense of position at a stage when the patient is still able to use his legs, (2) an acute type, usually fatal, in which the paralysis is severe, affecting not only the limb, but the heart and other muscles, and occasionally the cranial nerves.

In all cases of alcoholic neuritis certain characteristic features will be noticed:

- (1) The severity of the pain and sensory disturbances.
- (2) The acute tenderness of the nerves and muscles on account of which the patient may cease to use his limbs before there is any definite paralysis.
- (3) The tendency for the lower extremities to be affected earlier and more severely than the upper.
- (4) The peripheral distribution of the symptom with weakness predominating in the extensor muscles.
- (5) The rapid onset of contraction and deformities due to fibrosis affecting the muscles, tendon sheaths and fibrous tissue generally.
- (6) The occurrence of mental changes, often associated with a more or less typical psychosis.

The basis of this psychosis, which Korsakoff described in 1837, is an amnesia for recent events combined with a disorientation in space and time. The effect of this retrograde amnesia is that the patient forgets from one minute to another what he has said or read, and he may continue to repeat the same question or statement over and over again. Vague memories of the past persisting in his disoriented mind are woven into the present, he cannot distinguish fantasy from reality. This leads to the third characteristic of the psychosis—fabulation. In this stage the patient will maintain a conversation full of plausible fictions which his imagination and surroundings may suggest.

LEAD NEURITIS

Lead palsy is only one of the manifestations of lead poisoning, and although it generally arises during the course of a chronic intoxication it sometimes supervenes on an acute. A number of cases have been reported in which the paralysis has developed months, or even years, after the patient has ceased to be exposed to the risk of infection.

Lead poisoning results from ingestion of the poison itself or of food or water contaminated with lead, from inhalation of lead in the form of fumes or dust, or, more rarely, from absorption through the skin. Oliver considers that the greatest amount is absorbed by the digestive tract, Legge and Gordby by the lungs. The hydrochloric acid of the gastric juice is a potent solvent, and may convert the lead into a chloride, in which form it is supposed to be absorbed into the blood stream. In the lungs it is subjected to the action of moisture and heat. The fluids secreted are all alkaline, and, as carbonic acid gas is present, it is conceivable that the lead is changed from lead carbonate into bicarbonate, dissolved and absorbed. It is excreted in the faeces, by the kidneys, and by the skin.

Oliver points out that lead chloride, when in intimate contact with proteins, combines to form albuminate, a rather insoluble substance, and that a considerable amount of protection may be afforded by insisting on those exposed to the risk of poisoning taking good and regular meals.

Symptomatology

The special features of lead neuritis are

(1) The absence of sensory symptoms—the only subjective sensations being cramps in the muscles. Examination fails in most cases to reveal any sensory loss and where such loss has been found it has been patchy and indefinite.

(2) There is never any tenderness of the nerve trunks.

(3) The palsy generally affects the upper extremities rather than the lower, is bilateral and segmental, and is often localized in a special manner to certain groups of muscles.

(4) Associated with the palsy there is evidence of lead intoxication either in a previous history of headache, gastric disorder, constipation, colic, or the presence of uræmia—pale, yellow tinted complexion, a lead line in the gums, pigmentation of the mucous membranes of the mouth, enlargement of the parotids and the characteristic renal and vascular changes.

Various types have been described according to the distribution of the palsy.

The commonest is the *radial type* (Remak)—seventh cervical—in which the extensors of the wrist and fingers, the extensors and long abductor of the thumb are paralysed, causing drop-wrist. The supinator longus muscle, innervated from the fifth cervical root, generally escapes—a point which serves to distinguish lead palsy from a simple musculo-spiral paralysis. The extensor communis is first affected, followed by paralysis of the extensors of the index and little fingers, and of the thumb and wrist. Associated with this there may be paralysis of the anterior tibial and peroneal muscles, causing foot-drop and steppage gait. The *tibialis anticus* muscle, like the supinator longus in the upper extremity, is seldom affected.

The *Asian-Duchenne type*—eighth cervical and first dorsal—is characterized by weakness and wasting of the small muscles of the hand. As a rule the atrophy precedes any definite loss of power, the onset is slow and fibrillation is often present. In the *Duchenne-Erb type*—fifth and sixth cervical—which is not common, the muscles affected are the deltoid, biceps, brachialis anticus, and supinator longus, and occasionally some of the shoulder girdle muscles.

In the *progressive muscular atrophy type*, which clinically resembles progressive muscular atrophy, there is a progressive degeneration of the muscles. Weakness and wasting may first be noticed in any of the muscle groups commonly affected in lead paralysis, but tends to spread and involve, not only the muscles of the upper and lower extremities, but sometimes those of the neck and trunk. It is of interest to note that quite a number of cases have been reported in which, in addition to the affection of the upper motor neurones, there has been involvement of the pyramidal system.

The clinical picture in lead palsy points to an affection primarily of the lower motor neurone—both cells and fibres—and its segmental or radicular distribution to a neuronic rather than to a neuritic affection.

ARSENICAL NEURITIS

Arsenical neuritis is rarely met with, but has always attracted public interest, as arsenic has frequently been administered with criminal intent. It was known as a criminal poison to the Chinese over a thousand years B.C., and was the principal ingredient of the celebrated aqua tofani, a notorious poison in the fifteenth and sixteenth centuries. Arsenic may be inhaled or ingested, and may be found in the hair and epidermis many months after it has disappeared from the urine and faeces. Its toxic action is due to the arsenious acid ion, which has an affinity for the neurokeratin of the nerve sheaths. Arsenical compounds from which this ion is only slowly dissociated are therefore less toxic, and for this reason the organic arsenic compounds do not often cause typical poisoning.

Etiology

Arsenical neuritis may arise as a result of acute or chronic poisoning, accidental or intentional. It occurred in epidemic form in Manchester in 1900 as a result of the consumption of beer brewed with glucose which had been contaminated with arsenic. Sporadic cases have been reported from time to time in which the patients have been poisoned by inhaling or absorbing arsenic from wall papers or articles impregnated with it. Its occurrence in industrial occupations is rare since its use as a pigment has been restricted.

Apart from its occurrence as the result of acute poisoning, accidental or intentional, arsenical neuritis may arise from the prolonged use of the drug in the treatment of such diseases as cancer and the severe anaemias. Cases have also occurred during the treatment of parasitical diseases with the organic arsenic compounds, *arsol* (sodium arsinate) has occasionally caused ichthyoid neuritis and optic atrophy.

Clinical

In arsenical neuritis all four extremities are commonly affected. The sensory disturbances are severe, pain is a prominent feature, and the muscles and nerves are always exquisitely tender on pressure. On the motor side the paralysis not only affects the extensor muscles, causing wrist-drop and foot-drop, but also the small muscles of the hands and feet. In severe cases the calf muscles and the quadriceps extensor may also be affected. Recovery is always slow, and wasting may be extreme.

The trophic changes are outstanding. The finger pads are wasted, the nails become brittle and brittle shaped and striated longitudinally or transversely, the hair falls out, there is hyperkeratosis of the skin of the soles and palms, and various skin eruptions may appear. Most striking, however, is the occurrence of pigmentation due to the deposition of an organic pigment in the deeper layers of the corium. It is most marked in those areas naturally pigmented and where the clothing comes into close contact with the body. Over the lower chest and abdomen the skin has a mottled appearance, and within the pigmented areas there are small patches in which the skin looks whiter than normal. General manifestations of arsenical poisoning are often present, such as a gradual loss of flesh and a state of malnutrition, signs of coma, and severe gastro-intestinal irritation.

ENDOGENOUS POISONS

METABOLIC GROUP

Diabetes

In diabetes mellitus evidence of affection of the nervous system, more especially of the sensory functions, is present in about 50 per cent of cases. The patient may come complaining of symptoms of multiple neuritis, which draw attention to the diabetes, or the systematic examination of a diabetic patient may reveal a co-existent neuritis. The neuritis in diabetes mellitus may be multiple or local.

In the multiple form the prognosis of the neuritis is essentially that of the diabetes. There is no evidence to show that the severity of the neuritis is proportional to the degree of hyperglycaemia, but it would appear to be influenced to some extent by the duration of the disease. Sensory symptoms predominate. The patient complains chiefly of pains, often deep-seated and invariably associated with tenderness of the muscles. Examination reveals little disturbance of the cutaneous sensibility, but grave defects in the deeper forms of sensation. Williamson has drawn attention to the loss of vibration sense, and regards its early disappearance as a point of some diagnostic significance. The loss of sense of position may be extreme, and gives rise to a clinical picture more closely simulating tabes than that seen in any other form of multiple neuritis. It is rare to find complete paralysis, although definite weakness is easily demonstrable. The disability of the patient may be much greater than is accounted for by the paralysis, partly because of the muscular tenderness, and partly because of the associated uræmia. The lower extremities are more often affected than the upper, and the earliest sign may be the loss of the ankle-jerk, which usually precedes the diminution or disappearance of the knee-jerk.

Local neuritis is of common occurrence in cases of diabetes, and most frequently affects one or both external popliteal nerves. As a rule it is of a benign type, and I have seen many cases in which complete recovery has taken place. I have seen in long-standing cases of diabetes with arterio-sclerosis a sudden onset of sciatic paralysis with pain and tenderness of the muscles, complete sensory loss, and abolition of the ankle-jerk. This condition is always monoplegic in distribution, and recovery of function rarely occurs. The wasting is extreme, and the case may be complicated by the development of trophic sores. It is not due to a simple neuritis, as *post-mortem* examination of

some of these cases has revealed a thrombosis of the main arterial supply of the affected nerve.

Trophic changes are frequently associated with diabetic multiple neuritis, they may, however, in part be due to the diabetic ulcer, but differing in that they are painful, and localized patches of gangrene may occur at any time, and are occasionally the earliest manifestations.

Beri-beri

This disease is characterized by the onset of the typical signs of multiple neuritis, and occurs in two forms—the dry, in which there is a simple multiple neuritis, and the wet, in which there is an associated anaemia and exudation into the serous cavities. Death may occur suddenly from cardiac failure.

This disease occurs in epidemic form in certain tropical countries where the staple food consists of rice or wheat, and occasionally on sailing ships supplied with canned food. It is now known that the cause of the disease is the absence of an essential vitamin—the antineuritic or water-soluble B vitamin. This vitamin is present in the germ and aleurone layers of rice and wheat, and in less degree in fresh food; it is destroyed at a temperature of 120° C.

Where epidemics have occurred it has been found that the vitamin has been destroyed either by the polishing of the rice, the over-milling of the wheat, or by excessive heat in the canning process, if the diet is rectified complete recovery will take place.

INFECTIVE GROUP

The association of multiple neuritis with various known forms of infectious disease, its occurrence as the sequel to febrile disturbances of unknown origin, and, lastly, its appearance as the main clinical expression of an acute infectious illness, have given a special stimulus to the investigation of what may be termed the acute toxic groups of multiple neuritis.

We find multiple neuritis occurring in association with well-known varieties of infectious diseases—for example, typhoid—either during the course of the illness or supervening upon it. Although these cases are not uncommon they are relatively extremely rare, and must be attributed to an exceptional and adventitious invasion of the nervous system rather than to any selective action on the part of the organism or toxin.

Influenza does not usually cause multiple neuritis, but certain epidemics of this disease have been notable for the constancy with which the nervous system has been involved, and one of the commonest manifestations of this has been the occurrence of multiple neuritis. Are we to regard this as being due to a special neuro-selective quality in the variety of the organism or to the special incidence of the disease affording an easier path for the invasion of the nervous system by the organism or toxin?

Multiple neuritis occurs in certain infective diseases, in which it forms an essential part of the clinical picture, as examples of this the following may be mentioned.

Uveo-parotitic Paralysis

This is a rare disease, in which an inflammatory process of the anterior segments of the uvea and of the parotids is associated with a neuritis affecting the facial nerves, occasionally other cranial nerves, and rarely the nerves of the limbs and trunk. It was first described by Heerfordt in 1909. Cases have been reported in this country by Feilding and Viner, Mackay, Biewerton, and McBride. It belongs to the toxic infective group, and is more common than would appear from the literature.

Erythroedema Polynucleitis

Cases of this disease have been reported in Australia (Swift), in this country (Still and Gamod, and Patterson and Greenfield), and in North America. It affects children between the ages of 4 months and 3½ years. Two to three weeks after an initial fever with catarrhal symptoms the child becomes miserable, irritable, and sleepless. A diffuse erythematous rash appears. The hands, feet, cheeks, nose, and forehead become red and swollen, but do not pit on pressure. There is excessive sweating and extreme irritability of the skin. The hair drops out,

and the nails become soft and may fall off. The muscles become tender, the deep reflexes are abolished, and there is general weakness and hypotonia without actual paralysis. The jaw drops and the head may droop. The patient lies crouching and curled up in bed. Photophobia may be present. There is extreme anorexia which may cause death, but, generally speaking, the mortality is low.

Diphtheria

Diphtheria provides us with another example of multiple neuritis occurring in association with an infectious disease, but here we have an organismal infection developing its local lesion on a surface of the body, and at the same time evolving a toxin which has a selective action on the nervous system. Paralysis occurs in about 20 per cent of cases of diphtheria, and the frequency and severity of the paralyses in faucial diphtheria, as J. D. Rolleston has shown, is always in direct proportion to the severity of the local lesion. Its incidence in 800 severe cases was 48.1 per cent, in 498 moderate cases 13.6 per cent, and in 1,899 mild cases 2.4 per cent.

Experimental proof that early injection of antitoxin can prevent paralysis has been given by Rosenau and Anderson. From statistics furnished by Rolleston and others it would appear that in those cases in which the bacilli were destroyed early no multiple neuritis occurred. It is only when the local lesion has been missed or neglected that severe paralysis follows a mild infection. The association between diphtheritic infection and subsequent paralysis was pointed out by Mangin in his Paris thesis of 1854, and later he published an important work on diphtheritic paralysis, in which he described an instance of paralysis following cutaneous diphtheria.

Diphtheritic paralysis may be local, affecting parts related anatomically by nervous connections to the site of infection, or general and widespread, affecting parts not in direct nervous connexion with the site of the diphtheritic lesion. Its most characteristic manifestation, however, is the paralysis of accommodation, which is rarely absent in cases with local paralysis, whether of faucial or cutaneous origin, and occurs quite independently of the general paralysis. The paralysis of accommodation, therefore, may be regarded as the specific sign of diphtheritic paralysis.

Local Paralysis.—Instances of local paralysis are familiar to all, the most common example being the palatal palsy in faucial cases. Guérin advanced the view that the toxin spreads to the central nervous system by an "ascending neuritis," using this term as meaning the ascent of the poison, later he and Laroche demonstrated the affinity of the toxin to the phosphorized lipoids of the brain, which are present in greatest quantity in the grey matter. Confirmation of the neural transmission of toxins was forthcoming when Orr and Rows demonstrated that toxins and organisms could ascend to the central nervous system by way of the perineural lymphatics. Walshe in his interesting papers upon the pathogenesis of diphtheria accepts this lymphogenous infection as the probable explanation of the local paralysis. As clinical evidence he cites cases reported in literature, and brings forward new evidence as the result of his observations upon numerous cases of wound diphtheria, in some of which he was able to establish definitely the local association between the point of infection and the initial paralysis.

The specific paralysis—the paralysis of accommodation—which occurs irrespective of the site of the local lesion, and generally before the third week, appears to be due to the selective action of the toxin on the ciliary muscle. The reaction of the pupils to light is never affected, and the interference with the power of accommodation is manifested by the difficulty the patient experiences in reading small print rather than by any demonstrable paralysis of accommodation.

Multiple neuritis is a later development, and may follow any local infection. Its onset is insidious, and its presence may not be suspected until the patient attempts to walk during convalescence, long after he has recovered from his palatal paralysis, although examination might have recorded a loss of the deep reflexes. It is characteristic of the disease, therefore, for the paralysis to be developing in one part while it is retrogressing in another. The

changes are more pronounced in the nerves, especially at the periphery, than in the ganglion cells, and this is borne out clinically by the fact that complete recovery may take place even in severe cases. It has always been difficult to explain the generalized paralysis on the basis of a local ascending infection. It seems to me possible that the toxin in the blood invades the nervous system by way of the neural lymphatics generally, and that its incidence upon the nervous system is due to its selective action. The whole question, however, requires further investigation.

Acute, Subacute, or Chronic Infections with their Incidence chiefly on the Nervous System

I have selected this title for the group in which I have placed those cases which have been described under various names—such as acute toxic polyneuritis, acute febrile polyneuritis, acute infective polyneuritis—and I propose to add to them cases described as Landry's paralysis, which I submit are essentially similar.

In Landry's paralysis the onset may be abrupt, with the characteristic ascending paralysis commencing at the periphery of the lower extremities, and ascending to involve the trunk and upper limbs, and even the facial muscles, provided death has not resulted from respiratory paralysis. The paralysis is of the flaccid type, is painless, the superficial and deep reflexes are abolished in the affected areas, and transient difficulty with micturition occurs when the paralysis invades the trunk muscles. Sensory disturbances are minimal, rarely exceeding a mild paraesthesia in the extremities. These may be followed by slight impairment of cutaneous sensibility, and pruritus and cramps in the muscles, with a moderate degree of tenderness.

In many instances the onset is not so abrupt, and may be preceded or accompanied by feelings of malaise, headache, pruritus in the back and limbs, gastric disturbances, and slight fever. The paralysis may be of a descending type, and may even in some cases appear to spread from the site of onset both upwards and downwards. As a rule its spread is continuous and steady, but sometimes a halt is observed, to be followed later by further extension. The weakness is more apparent in the proximal muscles than in the distal, but I think that this is due to a gravity effect, for if the limb is supported it is often possible to demonstrate movement in muscles which were apparently completely paralyzed. Muscular atrophy is never severe, and recovery takes place first in the last affected muscles.

If we compare this with the descriptions of acute febrile or acute infective polyneuritis given by Holmes, and by Birdford, Bishford, and Wilson, we find no material difference. Holmes describes a rapid onset with malaise and slight fever, followed two or three days later by pruritus in the legs and lower part of the back, and paresis of the lower extremities with toneless muscles. Extending from the toes upward the paralysis affects the trunk muscles, arms and face, the facial palsy being a characteristic feature, although sometimes of slight degree. Occasionally ocular palsies were observed, but the other cranial nerves were not affected. The deep reflexes were abolished, and there was transient difficulty in passing water. The sensory disturbances were never marked, pain was not severe, and there was only slight tenderness on pressure. Some loss of sense of position and of vibration was present in the feet, and some cutaneous stimuli were painful. The paralysis reached its maximum in from seven to ten days, and recovery was well advanced by the fourth week.

Birdford, Bishford, and Wilson's series of cases were essentially similar, but in some instances there was evidence of an initial illness preceding the onset of the paralysis, the latent period between the fever and paralysis varying from five days to six weeks. The paralytic stage in its mildest form was little more than a more or less rapid onset of general weakness with involvement of the face. In severe cases the onset was sudden, affecting first the legs, and rapidly ascending to the trunk, arms, and face within two or three days. They noted weakness, especially in the proximal muscles, but no paralysis of special muscles

or groups of muscles. The bilateral facial palsy was the most distinctive feature. The palsy was of the flaccid type with abolition of the deep reflexes. Micturition was only interfered with slightly. There was never any paralysis of the pupillary reactions. The sensory symptoms were pruritus in the head, back, and limbs, at the onset, pruritus and paraesthesia in the extremities. Anaesthesia and analgesia were detected in the distal segments of the limbs, occasionally in the face, and rarely in the distribution of various spinal roots. The mortality was high, eight deaths occurring in thirty cases, generally before the seventh day, and often suddenly without previous warning. In the non-fatal cases recovery took place slowly.

As a result of their investigations they concluded (1) That so-called acute febrile polyneuritis is a very definite clinical entity, capable of being separated clinically from other diseases of the nervous system. (2) That it is a diffuse affection of the nervous system, affecting the spinal cord, spinal ganglia, and the peripheral nerves. (3) That the lesion essentially affects the nerve elements and fibres, with but a slight incidence on the cortex. (4) That it can be transmitted experimentally from man to monkey and the characteristic lesions reproduced.

I have personally observed several cases of Landry's paralysis, and over twenty cases of acute toxic polyneuritis. In some of the latter the diagnosis was based solely upon the development of sensory disturbances ten or fourteen days after the onset of the paralysis, and had death occurred before they would certainly have been accepted as being typical of Landry's original description.

Now in all these cases we have the following resemblances:

(1) An acute ascending paralysis of the flaccid type, with abolition of the deep reflexes. (2) A febrile onset. (3) Only slight disturbances of sensibility. (4) A moderate degree of pruritus and tenderness of the muscles at the onset. (5) Slight and transient interference with the sphincters. (6) An absence of mental changes. (7) No constant change in the cerebrospinal fluid, which is often normal, or may contain an excess of protein.

Cases of recurrent multiple neuritis have been described. It is to be noted in these cases that the symptoms are predominantly motor, that each attack leaves the patient weaker than before, that there is always more wasting than is usually found in multiple neuritis, that the attacks occur without any known cause and at irregular intervals, and finally, that in the intervals certain of the tendon reflexes cannot be elicited, and indeed seem to be permanently abolished.

Acute interstitial poliomyelitis has, as a rule, a perfectly distinct and definite clinical picture, but in its typical forms it may resemble acute febrile polyneuritis—as, for example, in acute ascending poliomyelitis, and again, some cases have been reported in which it has been associated with multiple neuritis. The cases which Brines described under the name of "toxic degeneration of the lower neurones" were not unlike cases of recurrent polyneuritis, and the question as to the incidence of the affection upon cell or fibre only emphasizes the neuronic aspect of all forms of toxic multiple neuritis.

In view of all these facts we must agree that it is no longer possible to limit our conception of multiple neuritis to one in which the peripheral nerves alone are affected. We must force ourselves to think in terms of neurones, not of nerves, and to study cases clinically from the point of view of functional disturbance or, more correctly, interference with function. It is illogical to separate a nerve cell from its fibres, they are essentially one from the point of view of function, and interference with either must, and does, affect both.

In all cases of toxic affection of the nervous system the element of selectivity is present in greater or less degree, and the greater the degree the more specialized will be the functional disturbance. Further, the selective action is not necessarily directly due to a primary action on the nerve elements proper, it may be to its affinity for the chemical elements of the tissues in which they lie. The other factor, the path of infection and its influence in determining the clinical function, has already been referred to.

SYMPTOMATOLOGY

In our review of some of the various forms of multiple neuritis we have noted the special features—motor, sensory, or trophic—typical of each. It only remains for me to sum up those features which are common to all and upon which the diagnosis of multiple neuritis must be founded.

General Features

- 1 The spontaneous onset of the symptoms, which may develop rapidly or slowly
- 2 The evolution of the clinical picture, which is characteristic and occurs in three stages
 - (a) A stage of invasion
 - (b) A stage of elaboration, in which the symptoms and signs are fully developed, this may end in the death of the patient or, more frequently, in
 - (c) A stage of recuperation, which may be prolonged
- 3 The symmetry and bilaterality of the symptoms in each individual case as regards—
 - (a) Their distribution
 - (b) The character of the functional disturbance
 - (c) The time and order of their recovery

GENERAL DISCUSSION

Dr WILFRED HARRIS (London) suggested that Dr Cragie Stewart's classification might be further simplified by leaving out Groups C and D. Group C for neuritis of obscure origin, including rheumatic, would appear to be sufficiently provided for under the metabolic and infective groups of endogenous toxins, while Group D—local infections of nerves (leprosy and chronic interstitial hypertrophic neuritis)—should not be considered as instances of multiple neuritis, which essentially meant a toxic neuritis, not a local damage to nerves, even though many be affected. The psychosis described by Korsakoff nearly forty years ago was certainly not limited to polyneuritis of alcoholic origin. It was doubtless an example of the toxemia affecting cortical cell groups, in encephalitis, and was evidence that the circulating toxin might damage two distinct parts of the nervous system at the same time. Some cases of polyneuritic psychosis left a sequel permanent mental enfeeblement, so that the man might be capable of only the very simplest work, his memory for orders and his capacity for detail or for initiative being almost nil. A parallel condition was seen in saturnine encephalopathy, in which convulsions, delirium, and coma occurred, indicating a form of encephalitis while at the same time spinal nerve cells and peripheral nerves might suffer from the lead poisoning. Dr Stewart was attracted to the generalization of the lower neurone as a whole, nerve cell as well as peripheral fibre being the victim of the toxemia of polyneuritis, and he had instance lead neuritis as an example of segmental neurone disease of nerve cells as well as of nerve fibres. With this thesis Dr Harris could not agree. In severe wrist-drop of lead palsy the radial extensors of the wrist were completely paralysed, though the supinator longus escaped, yet both were equally supplied by the fifth cervical segment. Indeed, the motor palsy of lead wrist-drop, with no sensory involvement, was clearly a posterior interosseous neuritis. Again, in the upper arm type, in Dr Harris's experience, it was especially the deltoid that suffered, the biceps very little, and the supinator longus not at all. Textbooks seemed to copy one another in describing the upper arm type of lead palsy as resembling Erb's palsy, though there was a type of progressive atrophy due to lead in which this segmental distribution of the muscular paralysis was found. When the toxemia struck the nerve cells in the anterior horns, then the resulting paralysis was segmental in distribution, and might be stationary or progressive, but did not recover, though lead neuritis, which was neuritic in distribution and non segmental, did recover. A good instance of this was the subacute paralysis and atrophy of the intrinsic muscles of the hands which sometimes accompanied the wrist-drop of lead palsy. The wrist-drop ultimately recovered, but the atrophy of the hand muscles, being due to a subacute polymyositis of the distal segment, was permanent. Serum disease had often

been alleged as a cause of multiple neuritis, but these cases required careful scrutiny, and in cases of septicemia, typhoid, diphtheria, etc., in which polyneuritis had followed the administration of serum, it was more than probable that the neuritis should be ascribed to the toxins of the primary disease, and not to the serum used in the treatment. During the war, when such vast numbers of men were treated with antitetanic serum, Dr Harris was one of the two tetanus inspectors for the London area, and he came a great deal into contact with tetanus cases and the routine use of antitetanic serum, both for wounds and in the treatment of tetanus, yet he saw no case of polyneuritis follow in any case of myophaxia or other phenomena due to serum treatment. Dr Stewart's reflections on Landry's paralysis interested Dr Harris much, and he congratulated him on including such cases as instances of multiple neuritis. The speaker had never seen a case of so-called Landry's paralysis which could not better be described either as polyneuritis, polymyositis or as an ascending myelitis. As a separate clinical syndrome he did not believe that Landry's paralysis existed.

Dr W. JOHNSON (Liverpool) proposed to limit his part in the discussion to the consideration of a few special points. As regards the causation of multiple neuritis, they were all agreed on the main principle that toxins—whether chemical, metabolic, or bacterial in origin—were the essential factor in the production of the disease. Comparison of statistics by different individuals was certain to show slight variation as regards the relative frequency of any particular toxin as the causative factor. In his own practice he found lead palsy formed a prominent group, and that, indeed, lead formed a serious rival to alcohol, which was commonly accepted as the most frequent cause of multiple neuritis. Following them, but represented by only a few cases, came diabetes, influenza, diphtheria. Other causes, in his experience were extremely rare. Usually in every case of multiple neuritis systematic examination of the patient led to a hint which enabled them to identify the toxin which was responsible. At the same time, one continually came across cases which were definitely atypical. It was the atypical cases to which Dr Johnson wished to draw attention. They were accustomed to teach that it was the "selective action" of the various toxins that produced the differing forms of peripheral neuritis, and then conception of modern neurology demanded that they accepted this principle of "selective action." Actually, however, certain of the atypical cases seemed to flout this theory and they were compelled to look round for some additional explanation. Dr Johnson had always been interested in such cases and it seemed to him that they were obliged to consider the influence of an additional factor—namely, fatigue. The late Professor Edinger of Frankfurt attached great importance to the effect of fatigue on nervous structures in predisposing them to the action of toxins, and his view might be summarized as follows: "In any condition, where toxins were circulating generally through the system, the poisoning effects were liable to occur chiefly in those structures which had been the seat of fatigue." Many other workers too had laid stress on the deleterious effect of fatigue on nervous structures. He thought lead palsy formed a good example of Edinger's theory. The textbooks stated "Lead chiefly affects the musculo-spiral nerve, but differs from musculo-spiral paralysis in sparing the supinator longus and sometimes the extensor ossis metacarpi pollicis." Then a little further on—"There is another type of lead palsy, however, in which the shoulder and upper arm muscles are mainly affected, the wrist extensors being only slightly paralysed." In the light of the fatigue theory, inquiry into the exact occupation of the atypical cases formed by this second group had frequently proved of real interest. For the occupation leading to the common type of lead paralysis—namely, wrist-drop palsy—was that of the ordinary printer, who used a free flexion and extension movement of his wrist. This type was commoner in the right hand, but if the patient was left-handed, as occurred in one of Dr Johnson's patients, then the paralysis was most marked in the left hand. When they considered that it had been estimated that a printer performed no fewer than 3,000 extensions of his wrist each hour in the performance of his work, it would surprise no one that in the presence of a toxin the neuromuscular

mechanism of the wrist extensors should give out. Such a statement clearly meant that the question of fatigue was not one which could be ignored. The upper arm type of lead palsy, on the other hand, occurred in an entirely different form of occupation—one which, he was told, was known as "puddling"—in which the work consisted in using a heavy scraper requiring considerable strain on the shoulder muscles. Again—as a blow to the "selective action" theory—in the textbook they read "But in some cases the supinator longus is also involved in the paralysis." In one such case which Dr. Johnson saw it appeared that the man was a printer using a heavy form of brush necessitating a movement in which the supinator longus was used. In this case too there was complete weakness of the flexor pollicis, which muscle was also much involved in the movement. Finally, it might be noted that those muscles which were specially liable to fatigue—that is, the extensors of the wrists and ankles—which were anatomically set at a mechanical disadvantage as compared with the flexor muscles—were the ones which exhibited the most severe degree of paralysis in multiple peripheral neuritis. These points might not be altogether beyond controversy, and it would be interesting to learn whether other members present had anything in their own experience which could be advanced in favour or otherwise of the relative importance of this "exhaustion" theory. The President, by his writings in the realm of psychology, had made the theme of the importance of fatigue and exhaustion very much his own. It seemed to Dr. Johnson that observations in neurology were tending to make them follow along the lines of his teaching—which to his own knowledge went back over twenty years. It was now recognized that fatigue undoubtedly had a deleterious effect on the neurone, and he believed it played an important part in undermining the resistance of nervous structures to any toxin which might be present and in this way determined the distribution of symptoms in individual cases.

Turning to the symptomatology of multiple neuritis, Dr. Johnson proposed to give in short detail a brief account of the somewhat rare condition, namely infective polyneuritis, two cases of which had come under his notice recently.

The first was that of a man aged 35. One week before his symptoms appeared he had a slight chill sustained after sitting on some damp grass. The chill however, was very transient and unfortunately his temperature was not taken. When he consulted his doctor he complained that for two days his legs had been lightly weak and painful and his walking unsteady. He was kept in bed and on the fourth day after the onset of the weakness the pains had extended to the sacral and lumbar regions and were so severe as to keep him awake all night. On the sixth day the pains were still present and facial weakness had appeared. On the seventh day—which was when Dr. Johnson saw him—the legs showed flaccid paresis, the knee jerks and ankle jerks were absent, the arm jerks were diminished and were barely elicited. Both sides of the face were almost completely paralysed, the paralysis being of the infranuclear type. There was some subjective numbing of the extremities experienced by the patient but no absolute loss of any form of sensation could be demonstrated. Ordinary stimuli applied to the hands and feet showed the presence of slight hyperaesthesia.

A gradual improvement was noticed up to the end of the second week—the only untoward symptom being the rise of the pulse rate to 120. The facial weakness notably improved, and the patient was enabled to swallow better and to speak more distinctly. The deep reflexes however did not return. On the sixteenth day following the onset of his neuritic symptoms he was seized with severe respiratory embarrassment, the diaphragm became paralysed in the course of twenty-four hours and death resulted.

The second case that of a lady aged 33 recovered after passing through a very critical illness. The history was that three weeks after a very difficult labour in which the child was stillborn she commenced to run an irregular temperature, which mounted to 103° for the space of about a week. At the end of this time she began to notice paraesthesia of the hands and she described the sensation as everything she touched seemed to be hot, even a glass of cold water felt hot. There was shooting pain in both upper arms and the legs felt slightly weak. In the third week of the illness—during which Dr. Johnson saw her—the arms and legs were pronouncedly weak and flaccid. The tendon reflexes were much diminished and facial palsy had suddenly appeared on the left side and within a day or two had spread to the right side. Sensation was markedly defective to cotton wool, pin prick and vibration over fingers and toes and the skin was smooth and glossy. The diminution of sensation was variable, and affected some digits more than others. During the fourth week the pains continued and were very severe in the legs. Both arms and legs now showed slight general wasting. From this time on slow improvement occurred, the left side of the face being practically recovered by the sixth week, but the right side

remaining partially paralysed. Power in the legs was much improved by the tenth week and during the twelfth week the patient was able to stand a little.

The ultimate history in this case was that the patient made a slow recovery and now was able to go about ordinarily but tired very easily. The right side of the face still remained partially weak and—an interesting point—she still suffered from recurring periods of tingling and a cold sensation in the feet and hands. Considering the severe degree of paralysis which had occurred one must regard her recovery to her present stage as very satisfactory.

As regards the electrical reactions in this case it might be added that the weak muscles never at any time ceased to react to faradism, although in certain instances the response was very meagre.

One other case of this interesting disease had come under Dr. Johnson's observation. It was that of an officer in France during the war. The history obtained was that he had suddenly collapsed whilst on parade, and when seen by Dr. Johnson three or four days later he had flaccid paralysis of all four limbs, together with slight facial weakness. He was evacuated to the base, and unfortunately no information as to the further developments in his case were available. Prior to the description by Gordon Holmes, Rose Bradford, and his colleagues these cases were included under the term "Laudry's paralysis", Dr. Goring Stewart had already dealt with that question. The etiology of all three cases described was of interest, because there was a definite connexion with war service abroad, two had been officers serving in France, and in the third case—that of the lady—the symptoms followed the transfusion of blood from her husband, who had also served abroad.

Dr. F. J. NATTRASS (Newcastle-on-Tyne) drew attention to the occasional occurrence in cases of multiple neuritis of enlargement and hardening of the peripheral nerves, a condition he had met with in two cases. One of the cases was also remarkable by reason of its recurrent or relapsing character.

The first case was a male aged 22, whom Dr. Nattrass first saw four years ago. A fortnight before admission to hospital he began to have pains and numbness in all his limbs, rapidly followed by loss of power first in the legs and then in the arms. He became almost completely helpless in three days. On admission he presented the evidences of a widespread peripheral neuritis. There was marked weakness of the facial muscles and some difficulty in articulation. Nearly all the muscles of the upper and lower limbs showed atrophic paralysis. Weak voluntary power was present in the upper limbs but there was complete flaccid paralysis below the knees. In addition there was much weakness of the trunk muscles. All the tendon reflexes were absent. There was a degree of reaction of degeneration in the muscles of the limbs which became complete in the hands and in all the muscles below the knees with characteristic slow response to galvanism; the peronei and calf muscles gave no response to either current. There was no objective loss of cutaneous sensibility, but some loss of vibration sensation in the legs. The weak voluntary movements of the upper limbs were accompanied by a coarse tremor and the sense of position was very defective. Astereognosis was well marked in the hands, together with defective tactile discrimination. There was great tenderness of the muscles. On palpation such peripheral nerve trunks as could be felt—namely, the median ulnar and external popliteal—were extremely tender and were very definitely enlarged and felt hardened. The enlargement was uniform and the nerves appeared to be about one and a half times to twice their normal diameter. There was no fever, the Wassermann reaction was negative and the blood and cerebrospinal fluid showed nothing abnormal. Slow recovery occurred in three months functional recovery was complete within six months, the tendon reflexes had returned and the electrical reactions were normal. Also the nerve trunks returned to their normal size.

A year previously this man had been in hospital with a precisely similar attack from which he had recovered completely. At the age of 4 he had apparently exactly the same illness and recovered in six months. He had had a slight relapse a year ago which was apparently arrested by massage and electrical treatment and this year was again in hospital with a severe attack. The clinical features of the latest attack were exactly as before and he is now again almost recovered. The hypertrophy of the nerve trunks was again obvious and on this occasion there was a similar enlargement and hardening of a few superficial nerves in the neck and legs. Portions of the left great auricular nerve and of the musculocutaneous nerve of the right leg were removed for histological examination which was carried out by Dr. A. T. Bernard Shaw. The histological examination was very complete but largely negative. Sections stained by Gram showed no microorganisms and no evidence of nerve degeneration was observed by Weigert's method. Some hundreds of serial sections stained by haematoxylin and eosin or haematoxylin and van Gieson were made without revealing any anatomical changes except some oedema of the nerve sheath. However, in a longitudinal section of a portion of the great auricular nerve a precapillary venule situated in the adventitial tissue at some distance from the nerve showed perivascular infiltration with inflammatory cells of large mononuclear type.

The second case a man of 42, was recorded by Dr I. G. Hobson of Oxford. The case was shown to the Association of Physicians at Oxford in 1922, when Dr Nattrass had the opportunity of seeing it. Following an attack of influenza this patient developed widespread peripheral neuritis affecting the cranial nerves and all the limbs; sensory disturbance was marked as well as atrophic paralysis. Associated with this was obvious hypertrophy of nerve trunks chiefly in the upper limbs and also of superficial nerves. The cutaneous nerves of the cervical plexus stood out prominently and formed a striking picture. This man made a slow but complete recovery. He had a slight relapse of the symptoms and returned for treatment, but he had again recovered and was back at heavy work.

Dr Nattrass could offer no explanation of the recurrent attacks seen in the first case. He could find no evidence of focal sepsis and no indication of intestinal toxæmia. Dr Wilfred Harris had considered the question of recurrent polyneuritis in his presidential address to the Section of Neurology of the Royal Society of Medicine, pointing out that lead and alcohol were occasional causes, and that after lead poisoning recurrences of palsy might take place without any fresh exposure to the poison. Dr Harris referred to seven or eight cases of recurrent polyneuritis of doubtful etiology which had appeared in the literature during the past thirty years; the description of some of these read very similarly to this case, especially one that had been described by Dr F. G. Thomson, the President of the Association. The explanation generally put forward was that the first attack left the nerves with a lowered power of resistance, or hypersensitive, to an unknown toxic factor. The absence of any definite inflammatory reaction in the nerves examined histologically suggested the possibility of an exudative condition of interstitial type rather than an inflammatory process, and that was supported by the complete resolution between the attacks. Apart from leprosy, hypertrophy of the peripheral nerves appeared to be a rare condition. So far as Dr Nattrass knew it had not been recorded in any of the well recognized forms of multiple neuritis such as plumbism and alcoholism. In 1893 Dejerine and Sottas described two cases under the name of "progressive interstitial hypertrophic neuritis of infants," a family disease in which hypertrophy of the nerves, superficial and deep, of a uniform character was well marked, one case was examined pathologically, and in interstitial fibrosis of the nerve trunks and posterior nerve roots was found, together with consecutive sclerosis of the posterior columns of the cord. Those cases were, however, very chronic and showed no tendency to remission. Similar cases, in adults as well as children, had been published by Pierre Marie, Dide and Courjon, and Schaller. That of Schaller approached more nearly the two cases Dr Nattrass had described as it commenced at the age of 13 years, there was no family history, and considerable improvement followed the administration of arsenic by the month and galvanism to the muscles. In that case the superficial cervical nerves and the cutaneous nerves of the forearms were enlarged, and sections of a portion of one of them removed during life showed the appearances of interstitial neuritis described by Dejerine.

Dr S. A. Kinnaird Wilson (London) considered that the term "multiple neuritis" in many of the cases under discussion was a misnomer. In addition to the peripheral nerves, there were often changes in the cells of the anterior horns and even in the muscles—for example, in lead neuritis. When no sensory symptoms were present a better term was "neumonitis," or if multiple lesions "polymyoneuritis." He was not impressed by Edinger's theory of fatigue, in the example of the printer mentioned by Dr Johnson the flexor muscles contracted just as much as the extensors. No mention had been made of the condition known as "central neuritis," in which the medullated fibres of the central nervous system were involved, normally as part of a toxic process.

Dr Worster-Drought (London) referred to the occurrence of nystagmus as an occasional phenomenon in multiple neuritis, more particularly in the alcoholic form. At the present time he had under his care a case of alcoholic neuritis, that of a woman aged 36, addicted to spirit drinking who also exhibited Korsakoff's psychosis and pronounced nystagmus. He had also met with

nystagmus in cases of lead, diabetic, and post diphtheritic neuritis. With regard to a question raised by Dr Granger Stewart, he (Dr Worster-Drought) had seen the actual symptoms of diabetic neuritis improve both on diabetic treatment alone and on insulin injections, but there was no return of the deep reflexes. An interesting although somewhat infrequent form of polyneuritis—or more strictly polymyoneuritis, as the anterior horn cells were probably affected and sensory changes often absent—was syphilitic neuritis. This condition, when it developed, usually appeared rather late in the secondary stage and was characterized chiefly by muscular weakness and atrophy, changes in electrical excitability, and loss of deep reflexes. On appropriate antisyphilitic treatment (not a combination intravenously, etc.) the prognosis was exceedingly good and most cases recovered completely, although the ankle jerks might be permanently abolished. Of two cases which Dr Worster-Drought had had under his care during the past few years, both occurred in young men five and eight months after infection respectively. In the first case the upper limbs were the more affected, and there was some loss of cutaneous sensitivity; under treatment however, complete recovery ensued within three months. The second case was more profound, the lower limbs being chiefly involved, but no sensory changes were present. Apart from absent ankle jerks, this case also recovered within three months. One must be taken not to confuse syphilitic polyneuritis with the neuritis that might result from treatment with arsenic and/or compounds, in the latter the ankle jerks were usually lost, and occasionally the knee jerks, but there was very rarely any muscular weakness or atrophy. The polyneuritis could scarcely be mistaken for early tabes dorsalis as in the former pupillary changes were absent, and the period from the original infection to the date of onset was too short for tabes. In Dr Wilfred Harris, he (Dr Worster-Drought) had also acted as a tetanus inspector during the war, and he entirely agreed with Dr Harris as to the extreme rarity of neuritis resulting from serum injections. In many serum-treated cases of tetanus and cerebrospinal fever, and innumerable patients who had received a prophylactic dose of antitetanic serum as well as a dose of mephitoxin he had never met with an example of multiple neuritis that could be attributed to serum. Recurrent multiple neuritis was an interesting form of polyneuritis, but the etiology was most obscure. For the past fourteen months Dr Worster-Drought had had under observation a case of this type.

A man aged 40 in whom the original attack started with acute gastric symptoms—vomiting for three days followed by light jaundice—and the subsequent recurrence eight months later had appeared in an exactly similar manner. Following the original attack of vomiting paresthesia developed in the hands and feet the deep reflexes were rapidly lost the limb muscles became flabby, parietic, and later somewhat atrophied with diminished or absent reactions to faradism; loss of cutaneous sensibility and defective deep pressure and postural sense also developed in the distal portions of the limbs. Neither the face nor other cranial nerve were involved the liver was not enlarged or tender and the other systems showed no abnormality. No hypertrophy of the peripheral nerves such as Dr Nattrass had described was present. After three months the patient had made a good recovery, was walking and using his hands normally and felt quite well. Five months later the recurrence took place, the onset being accompanied by intense nausea and vomiting for two days. Again paresthesia and all the previous signs of multiple neuritis rapidly developed. On this occasion there were certain definite though slight mental changes—depression slight confusion and a loss of memory for recent events. With this second attack even after five months, recovery was not quite complete, a certain amount of muscular weakness in both arms and legs persisting.

The case was investigated as fully as possible. The man had never been abroad, arsenic administration could be definitely excluded, and at no time had there been contact with lead. No focal sepsis could be demonstrated the tonsils were and accessory sinuses of the nose all being normal and x-ray examination of the feet showing healthy alveoli and periodontal membranes. The urine showed no abnormality chemically or bacteriologically. Bacteriological examination of the faeces revealed nothing of note—streptococci were fewer than normal cultures on McConkey lactose agar plates grew only lactose fermenters. A negative Wassermann reaction was obtained in the blood and cerebrospinal fluid and the latter was normal in all respects. The blood count only was of interest owing to the marked reduction in the number of polymorphonuclears and the relative increase of the small lymphocytes—namely, red blood cells 4,620,000 and white blood cells 6,200 per cubic millimetre polymorphs 35 per cent lymphocytes 63 per cent (small 61.5 and large 1.5) eosinophils 0.5 per cent mast cells

15 per cent Colour index 0.82, and haemoglobin 75 per cent. The causal factor in this case appeared to be some unknown toxic agent.

Dr A F HURST (London) drew attention to the important subject of latent neuritis. It was not uncommon to find in alcoholic individuals definite signs of peripheral neuritis which had given rise to no symptoms of any kind. In a suspected case of alcoholism the diagnosis received very strong confirmation if the ankle-jerks were found to have disappeared. Less frequently the knee-jerks were also lost, but they were often normal or only slightly reduced and were sometimes even exaggerated when the ankle-jerks were unobtainable. It was very rare for the reverse to occur and the knee-jerks to be absent when the ankle-jerks were still present. Associated with the loss of tendon reflexes there was more or less tenderness of the calves, in contrast with the analgesic calves with which the lost jerks of tabes dorsalis were associated. Several years ago,¹ with Dr W. Johnson and Dr Gordon Goodhart, Dr Hurst had pointed out how rarely alcoholic neuritis, whether latent or obvious, occurred in association with alcoholic gastritis and cirrhosis of the liver. On the other hand, his experience was in complete accordance with that of R. T. Williamson,² who observed that latent neuritis was invariably present in cases of alcoholic heart. The pathological basis of the heart failure occurring in chronic alcoholism had long been a mystery, as there was no anatomical evidence to support the theory of myocarditis or even of myocardial degeneration. As these cases were always associated with latent neuritis, and as, so far as Dr Hurst's experience went, obvious alcoholic neuritis was always associated with some degree of persistent tachycardia, it seemed not unlikely that the cardiac condition depended upon a vagal neuritis. A further point of interest was that alcoholic heart was very rarely associated with cirrhosis of the liver, in the only two cases he had seen in which an alcoholic heart appeared to be associated with cirrhosis of the liver, the large, hard liver was found, *post mortem*, to be nutmeg and secondary to heart failure and not cirrhotic. It appeared, therefore, that the poisons which produced alcoholic cirrhosis were not the same as those which produced alcoholic neuritis and the frequently associated cardiac condition. The former were almost certainly toxins, which resulted from the disturbed digestion caused by the gastritis with which it was always associated, the gastritis was a direct result of alcoholic irritation, and the toxins which were produced in the alimentary tract gained access to the liver by the portal vein. As Dr Grainger Stewart had pointed out, the neuritis was probably directly due to the action of the alcohol circulating in the blood on the nervous tissues. Chronic cerebral alcoholic poisoning was probably caused in the same way, as those cases in which obvious symptoms of neuritis were not present were almost always associated with evidence of latent neuritis. In contrast with this Dr Hurst had been surprised to note how often the ankle- or knee-jerks were still present in patients with delirium tremens or in dipsomaniacs. Latent neuritis was also very common in diabetes, as Williamson³ was the first to show. Wherever cramp or more serious symptoms of neuritis were not very common, loss of deep reflexes and some tenderness of the calves were present in over 40 per cent of cases.

As in alcoholic neuritis the ankle jerks were almost always lost earlier than the knee-jerks, it was regrettable that the importance of the ankle jerks was still not recognized as widely as it should be, if the state of the ankle-jerks as well as that of the knee-jerks were asked for by insurance companies, many cases of early tabes and of chronic alcoholism would be recognized, which at present passed as first class lives. Lastly whenever arsenic was given medicinally in large doses the ankle-jerks should be tested at least once a week, as their disappearance always preceded the occurrence of obvious symptoms of neuritis. If this precaution were always taken, the severe cases of arsenical neuritis which occasionally developed in patients under treatment in bed for skin disease, chorea, or Addison's anaemia would never occur.

REFERENCE.

- ¹ A. F. Hurst and W. Johnson, *Curr. Hosp. Reports* 1911, lxx, 45.
- ² R. T. Williamson, *Lancet* 1907, ii, 1774.
- ³ R. T. Williamson, *Trer. of Neur. and Psych.* 1903, i, 557.

In the unavoidable absence of Dr JAMES COLLIER (London) his contribution to the discussion was read by Dr E. M. POTHER. Dr Collier considered that it was peculiarly fitting that Dr Grainger Stewart should have opened that discussion upon multiple neuritis for he was carrying on the tradition of his father, Sir Thomas Grainger Stewart, who wrote the very first monograph upon the subject in the English language, forty-five years ago, and thereby set up a milestone in English neurology. There was little or nothing in Dr Stewart's opening address with which Dr Collier was at variance or which he could not cordially endorse. In the picture which had been given of polyneuritis as a neuromic affection, and not as a systemic affection, and, further, not of the lower level of motor and sensory neurones only, but indeed always potentially pan-neuromic, he would like to bring into the discussion the frequency with which one saw myasthenia in conditions of polyneuritis—already mentioned by Dr Woistell-Drought—and suggest that there was an affection of the cerebellar neurones. He also had at the present time under his care a case of severe alcoholic neuritis with Korsakoff's syndrome in which there was myasthenia so marked and of such a type as to leave him with the absolute conviction that it was only explicable on the ground of an affection of the cerebellar neurones. Again, as regards the affection of the cerebellar neurones in polyneuritis which was productive of Korsakoff's syndrome and the various mental disturbances and reductions seen in alcoholic neuritis and of the "encephalopathies" met with in polyneuritis from lead, copper, and other metallic poisons, Dr Collier wished to submit his opinion that like symptoms pointing to derangement of the functions of the highest part of the nervous system were to be expected and should be sought for in every form of polyneuritis, from any cause whatsoever, and if sought for they would be found much more often than was at present generally recognized. He had encountered such symptoms in almost every variety of polyneuritis that he was acquainted with, and he thought that they should be placed upon the roll in the descriptions, as possible symptoms of every form of polyneuritis. Concerning the symmetry of distribution of the signs of polyneuritis upon the two sides of the body which was so deeply impressed upon students of Dr Collier's day by the term "multiple symmetrical peripheral neuritis" which headed the monographs written at that time upon the subject, for the purpose of freeing their minds from any necessity of symmetrical distribution in this malady, he wished to say that he once admitted under the care of the late Sir William Gowers a case of typical lead polyneuritis confined to one side, and this patient made complete recovery without the slightest sign of affection of the other side, leading that distinguished neurologist to withdraw the law he had laid down—that if a wrist-drop did not become symmetrical within six weeks it could not be caused by lead poisoning. Dr Collier had seen alcoholic neuritis strictly confined to one side of the body for the first few days of the symptoms. Now these were cases in which a blood distributed poison had produced an asymmetrical affection. When they considered those forms of polyneuritis in which a local dose of a poison was delivered along the nerves into one definite spot of the nervous system, perhaps on one side only, they would not expect the resulting paralysis to be symmetrical, if the poison spread but slowly within the nervous system and the advent came to an end soon. That was what was always seen in the external ophthalmoplegia of diphtheria, which Dr Collier submitted, was never symmetrical, and again in the common paralysis of a wounded limb alone when diphtheria had infected a wound. He had during the past few years come across five cases of polyneuritis in which the asymmetrical distribution was very striking. They were examples of the spreading variety of polyneuritis akin to the Landry type in which paralysis commencing in the shoulder spread to the fire and hand of one side. In all of them there was rapid and complete recovery and a suggestion that the origin of the toxin was in the throat. They were not in reality unilateral cases for the reflexes were lost in the opposite arm, but the complete paralysis upon one side and the unimpaired movement upon the

other presented a picture which a great many people would refuse to accept as that of a polyneuritis. The nature of the affection of the neurone in polyneuritis must surely be that of fixation of the poison in the protoplasm, whereby the metabolism was so changed as in some instances to abrogate function very rapidly, in others more slowly, in a few to kill the neurone outright. In some examples there could be no structural change in the affected neurones, for the paralysis, so rapid in onset and so complete, might pass off in so short a time as to preclude any question of degeneration and regeneration. For example, the facial polyneuritis in tetanus from a wound of the face did one ever see more complete bilateral facial palsy than in that condition? Yet it might be all recovered from in three weeks. Again, in diphtherial palsy it was common to see rapid recovery of the palatal palsy. Landry's paralysis, which he was glad to see placed in its proper position as a polyneuritis by Dr Stewart, might also recover very rapidly and completely. He had seen arsenical neuritis from a single dose of poison, and also alcoholic neuritis from medicinal administration in an unsuit subject, recover with altogether unusual and startling rapidity.

Dr Collier was convinced that when there was a strictly nematic distribution of the affection in polyneuritis, as when the face alone or the face and arms alone, or the trunk alone, were affected, the rest of the body completely escaping, and also in the "ascending," "descending," and "spreading in both directions" types of polyneuritis, that these were always matters of a local dose of poison delivered into the nervous system at that metameric level which was first and most affected, and he theorized that it was from the alimentary canal that these local poisons started. He would warn against the set types of symptoms and signs which they all had to cling to in writing textbooks and in teaching students, and would ask acceptance of a lead paralysis with deep sensory loss, a diphtherial paralysis with absolute "glove and stocking" loss to all forms of sensibility, a lead paralysis with no diplopia but with complete flexor paralysis in alcoholic paralysis with a similar flexor paralysis, an alcoholic paralysis with deep sensory loss and great pain and tenderness, yet with no paralysis whatever and with all the deep reflexes intact, as examples of the varieties of polyneuritis, which in the past had been driven along the confines of too narrow a description. Lastly, Dr Collier drew attention to a new variety of polyneuritis which he hoped would not remain long with them that variety due to the too enthusiastic and unduly prolonged administration of bacterial toxins in the form of vaccines. Those who were acquainted with the works of Rothman, of Orr and Ross, and of E. Long and Midline Long upon the effect of prolonged administration of bacterial toxins in animals, in causing appalling and unhealable degenerations within the nervous system would, he was sure, be very careful with regard to the prolonged administration of bacterial vaccines. He had not seen a fatal case, but he had seen two cases which were so nearly fatal as to necessitate a warning when speaking upon the subject of polyneuritis.

Professor EDWIN BRIMWELL (Edinburgh) emphasized that in many cases of multiple neuritis the etiology was most obscure, and in a considerable proportion it was impossible to find the cause. He believed that more than one factor might be active—for example, influenza might determine the onset of palsy in a victim of lead poisoning. Professor Brimwell also drew attention to the occurrence of polyneuritis in association with hyperemesis gravidarum, and described a case he had recently met with. In addition to the usual signs of multiple neuritis, the patient also showed nystagmus, aphonia, bilateral facial paralysis, and Korsakoff's psychosis. In the etiology of some obscure cases of polyneuritis, was it possible that a food factor—a deficiency of vitamins—might be of etiological moment?

The President (Sir MORRIS CHUTE) ventured to think that if this subject were discussed again, as it no doubt would be, in some years' time the mental aspect would take a much larger place in such a discuss. The influence of poisons and toxæmia upon the mental state of the patient was becoming increasingly interesting to him, as

it must be to anyone whose work lay in psychological medicine. He referred not so much to the more gross forms of poison, which could be, and not infrequently were, detected by simple means, but to those toxins which were of a much more subtle character. In the meanwhile he appealed to those neurologists who worked in the general hospitals to observe any minor mental changes in patients who were suffering from the conditions which they had had under discussion. It was the early minor mental changes, if any were found, that would have a double value from the psychiatric side, for they would indicate the order of failure, and in this way point to the most likely methods of avoiding the development of the more serious symptoms. Sir Maurice had always felt the importance of fitting states in exposing the patient to the danger of infection. They had heard during the discussion how selective some of these poisons were, and he had listened with great interest to the remarks on this point, as he had long appreciated that it was a certain type of nervous system which was more prone to suffer when exposed to toxic elements. Dr KUMNER WILSON had objected to Dr Johnson's example of much fatigue on the ground that the flexor muscles of the arm should fatigue as well as the extensor, but this would by no means follow, as the flexor were the stronger owing to their anatomical advantage.

SECTION OF PUBLIC MEDICINE.

T. EUSTACE HILL, OBE, MB, President

DISCUSSION ON INFLUENCE OF SUNLIGHT AND ARTIFICIAL LIGHT ON HEALTH

OPENING PAPERS

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(From the National Institute for Medical Research.)

RADIATION, according to modern theory, is a phenomenon arising from changes in the position of electrons which fly round the central nucleus of each atom in a variety of orbits. When radiation is absorbed by an atom certain electrons are moved from inner to outer orbits, and radiation must be absorbed in certain well defined quanta to effect this change. When electrons pass from outer to inner orbits radiation is emitted, this change can be brought about in atoms by electrical energy, by heat, or by chemical reactions of molecules, which are, however, probably in all cases started by radiation.

Radiation is a vibration transmitted with the velocity of light and differing in kind according to wave length. Thus the Hertzian waves used in radio-telegraphy have wave lengths hundreds of metres long. The shortest of these merge into the infra-red 60,000 to 760 μ or dark heat rays found beyond the red end of the spectrum ($\mu = 1/1,000,000$ millimetric).

The visible rays have wave lengths from 760 to 400 μ , extending from red through orange, yellow, green, blue, to violet. Beyond the violet end of the spectrum, if a rock crystal or quartz prism be used, extend the ultra-violet from 400 to 180 μ . A glass prism absorbs all except the longest of these, all rays shorter than 330, and absorbs those shorter than 185 μ .

Beyond the shortest known ultra-violet rays (about 100 μ) come the softest x-rays, and these merge into hard x-rays and gamma rays with wave-lengths shortening to 0.01 μ . To have any action rays must be absorbed. For example, the visible rays pass through the transparent media of the eye and are absorbed by the retina, and it is on the retina that they have action resulting in excitation of the optic nerves and in turn of the visual centres in the brain.

The Hertzian waves have no effect upon us until transformed by special apparatus into auditory waves. The dark heat waves are readily absorbed by water and warm the surface layer of the body, penetrating less deeply than the visible rays, many of which pass through the epidermis and warm the blood in the dermis, the red rays even penetrating to and warming the subcutaneous tissues, such as the more superficial muscle.

The eyes have been evolved with transparent media and retinae sensitive to visible rays so as to secure acute sensibility to changes in the environment, recognition of food and injurious substances, of friend, mate, and enemy. Of the ultra-violet rays we have no sense, and have to use special means such as quartz prisms and fluorescing screens, or photographic films, to make evident their spectrum. These rays have very little power of penetration and are absorbed largely by the epidermis, the longer ones only passing through with the visible rays to be absorbed by the blood beneath. The shorter ones are absorbed by the horny surface layer of the epidermis and so have no effect on the deeper lying living cells. The middle ultra-violet rays act on these, and if intense in energy value kill the cells and produce "sunburn." Here is the experimental proof of these statements.

A powerful long flame arc is focused by means of a large quartz lens the central part covered with a disc of black paper. The ultra-violet rays being shorter in wave length are more refracted and come to focus a little nearer to the lens than the visible rays. Let the beam of light from the arc pass through a chamber with parallel sides of quartz (rock crystal) filled with distilled water to cut out heat rays and let the focus be brought on to an area of white skin and the skin be irrigated with cold water to prevent burning by the visible rays. Let the exposure be, say, for two minutes. There follows some few hours later an intense erythema with soreness and still later desquamation.

Substitute a 3 per cent quinine solution for the distilled water and repeat the experiment but let the exposure be, say, for fifteen minutes. Nothing follows. Now a quartz spectrograph shows that the quinine solution takes out all ultra-violet rays shorter than 330 μ . It follows then that the visible and long ultra-violet rays if their heating effect is stopped by irrigation of the skin have in themselves no power to produce erythema. Without cooling the visible rays at once burn the skin. It may here be mentioned that the visible rays allowed to play on the uncooled skin until the point of unbearable burning is produced will heat up the subcutaneous tissue 0.5 mm deep to about 47° C. Dark heat will only raise the temperature correspondingly to 45° C. (Sonne, Argyll Campbell, and L. Hill).

Let us substitute for the quinine solution a saturated solution of uric acid (1 in 40,000). This in a stratum 6 cm broad absorbs all ultra-violet rays shorter than 306 μ (Dhere). A very slight erythema in this case results from a fifteen minutes exposure. For the uric acid let us substitute a saturated xanthin solution which in sufficient depth absorbs all ultra-violet rays shorter than 287 μ . A five minutes' exposure is in this last case followed by an intense erythema.

Using a very powerful spark with cadmium poles and a quartz spectroscope one gets an ultra-violet spectrum visible on a fluorescent screen. There is a well marked band with wave length approximately 275 μ , another 257 μ , another 232 μ . Exposing the white skin of the arm for thirty minutes a slight erythema follows in the region of the 275 and 257 bands but none at 232.

Placing a drop of water containing infusoria in the 275 band one finds the infusoria killed in about thirty minutes in the 232 band in about three minutes. The 232 band then which is far more lethal to microbes has no effect on the skin. This is because it does not penetrate through the horny layer of the skin. The shorter the ultra-violet rays the less transparent is the epidermis to them. A thin film of the horny layer of the skin taken from a desquamating area or the mesentery of a rabbit will prevent most of the active ultra-violet rays passing.

Hausser and Vahler, using a large quartz spectroscope and a mercury vapour lamp, have measured the intensity of various bands with a bi-thermopile. Using equal intensities they found band 297 μ gave a maximal erythema effect, calling this 100, band 313 gave 4.5 per cent, band 302, 58 per cent, band 289, 30 per cent, band 280, 28 per cent, band 265, 19 per cent, and band 253, 16 per cent of the maximal. We see, then, that the ultra-violet rays which act on the skin are restricted between, say, 320 and 240 and far the greatest effect is produced by just those rays which come through with the high sun and clear sky—namely 305 to 295. No rays shorter than 290 are found in the sunlight when examined with optical apparatus and shorter than 280 using a photo-electric cell, for shorter rays are all absorbed in the high regions of the atmosphere.

With arc lamps we have rays as short and shorter than 200 μ but probably none of these shorter than 240 penetrate the horny layer of the skin. The difference between the high clear sun and the arc, then, depends on the presence of shorter rays in the arc—namely, from 290 to 240. To sum up the long ultra-violet rays—for example, longer than 350—penetrate to the blood and are absorbed with the visible rays there and converted into heat, the middle ultra-violet rays penetrate to the deeper living cells of the epidermis, the shorter ultra-violet rays only to the more superficial living cell, while the shortest do not penetrate to these, but are stopped by the horny layer of

the epidermis. It is on the living cells of the epidermis that the ultra-violet rays act. According to modern theory they knock electrons off atoms and alter the electrical charge of the ultra-microscopical particles in the colloidal protoplasm, which results in an aggregation of these particles. There follows chemical (molecular) change which is of such a nature as to provoke, after a latent period of some few hours, erythema, oedema, and lymphoexiosis. Some small portion of the biologically active ultra-violet rays may reach the blood vessels beneath the epidermis and thus act directly on endothelial cells, but most of the effect is undoubtedly indirect and through excitation of chemical changes in the epidermal living cells which, if carried far enough, result in death of these cells and a burn.

The curative effect of the sun on the erythema is undoubtedly can be brought about by exposures short of production of actual erythema, and for general light baths no more than the first degree of erythema should be produced. Given such erythema there results an increase in the haemo-bactericidal power of the blood as tested *in vitro* (Colebrook, Edinow, and L. Hill) which seems to be significant. Such rise can also be produced by heat or a mustard poultice, but only if these agents produce a lasting erythema.

The epidermis offers a vast field of living cells exposed to the insults of the world under the protection of the horny layer. Such insults seem to provoke the immunizing powers, probably through absorption of damaged tissue products, and excitation of reactions in the blood-forming and other organs of the body. Excessive damage and reaction will be harmful, a small amount stimulating and useful. If the body is already fighting an acute disease—for example, active febrile tuberculosis—very great caution must obviously be taken in exposing the skin to ultra-violet rays and the heating effect of visible rays. Reaction from damage to the skin may reduce immunity in such cases, while in chronic infections it increases the immunizing defensive powers and stimulates the function of the body.

Owing to the smoke pollution of the atmosphere in big cities, the ultra-violet rays are cut down by one half and even two thirds in comparison with clean country and seaside places.

A standard acetone methylene blue solution is exposed by us in a standard quartz tube to uninterrupted sky and sunshine during each day, and the fading of the depth of the blue measured against a set of standard blue tubes. The scale of these is biologically standardized. One degree signifies twice to four times as much ultra-violet radiation as is required to produce a slight erythema of average white skin. Skins vary in sensitivity. Smoke pollution cuts out shorter rays, so that fewer rays of greater biological power—namely, those about 300 μ —come through even on sunny days. What with mist, cloud, and smoke, glass windows which cut out rays shorter than about 330 to 320 μ , and clothes, city people get almost no exposure to ultra-violet rays during the winter, and while every effort should be made to prevent the smoke pollution by use of smokeless fuel, and to educate people to expose their skin to the sunlight whenever opportunity occurs, a great deal can be done for the general health by means of arc baths. These should be instituted, not only in hospitals, but in schools and public baths.

A skilled attendant, teacher, or nurse is required to control their use, but they are no more dangerous than a public swimming bath. Given a long flame arc, 1½ to 3 kilowatts, with "white flame" carbon poles, and a wire net screen a yard away from it, children can dance within one or two yards of such safely for five minutes under save for a loom cloth. As acclimatization comes on and the skin browns, the time can be lengthened to ten or fifteen minutes. Such baths once or twice a week would, I believe, do much to maintain good health and prevent diseases such as tuberculosis, rheumatic fever, skin diseases, lesser catarrhs, etc. By using tungsten cored carbons in place of "white flame" the ultra-violet intensity is greatly increased, and the above exposure times could be reduced to one quarter, or even less. Coggles or screens for the eyes must, of course, be worn to prevent conjunctivitis.

A great many lamps are at present on the market many of which are so weak in respect of ultra-violet radiation as to

be of little use. Some arc quartz instruments giving only violet light. At the Finsen Institute lamps are used which are relatively weak, in comparison with long flame arcs, in ultra-violet rays and which in visible and heat rays, and exposures as long as two hours are given in shut-up rooms where the patients sweat profusely. We have secured excellent curative effects from short exposures to long flame arcs powerful in ultra-violet rays, and obviously there is great economy in these short exposures. The ultra-violet ray intensity depends on the temperature of the arc and the nature of the pole. The carbon poles should be not too thick and should contain a suitable metal core, and the energy put through the poles should be sufficient—for example, 2½ to 3 kilowatts for "white flame" carbon arcs, the core of these contains aluminum and magnesium. Using tungsten-coated carbon poles arc lamps taking much smaller amounts of energy suffice, but tungsten is expensive. With "white flame" carbons and the long flame arc taking 2½ to 3 kilowatts, half a dozen patients can sit around and be treated for five minutes on the front and five minutes on the back of their bodies. Using two such lamps in series and the patient being between the two lamps, the whole body can be treated at once in five minutes. With a 220 volt current and each lamp taking about 100 volts and 30 amperes, this is the best arrangement. These lamps are made equally good for alternating or direct current.

The sensitivity of new patients can be tested by putting a cuff round the arm and exposing an area of skin through a hole in it for five and another for ten minutes, and seeing the resulting degree of erythema next day. Only the first or very slight degree of erythema should be produced. The exposure can be lengthened gradually to fifteen minutes, and, finally, if the case is resistant to the curative influence, tungsten coated carbons may be brought into play when the skin has become hardened to "white flame" carbons. For lupus a local treatment of the nodules with a water cooled mercury vapour lamp accelerates the rate of cure produced by the general light baths. Ultra-violet radiation puts up the general resistance of the body to disease, and promotes good health and sexual power of citizens who by sedentary indoor lives during the winter have become depressed and out of condition. Such baths have power to cure in many cases skin diseases which prove resistant to other methods of treatment, such as ichthyosis, psoriasis, eczema, and boils. They help many chronic infections and anemias resulting therefrom—thus, for example, arthritis, chronic bronchitis, and colitis may be relieved. Marasmus and delicate children may be made better, and mothers who cannot nurse their babies may be made more efficient. The general arc bath affords a natural, simple, and valuable stimulant of the health functions of the body. It is possible that the increase of cancer is associated with sunless conditions of life. Protection of rabbits against inoculation of a malignant tumour has been obtained by keeping them in cages lit with a mercury vapour lamp (glass bulb) and incandescent filament lamps (Pearce and van Allen).

Downes and Blunt in 1879 showed that the ultra-violet rays kill bacteria. The shorter of the rays are more powerful than the longer. I found that infusoria in a droplet of water were killed in thirty minutes by the 275 band of the endium arc, and in three minutes by the 232 band. As already stated, the shorter rays have very little power of penetration. Mr J E Barnard has found even that one ultraviolet bacterium may screen another, lying beneath it, from these rays. The sterilizing power of the rays, owing to the small penetration, is, then, limited to the surface layer either in case of the skin or of unclean objects. Skin excised from lupus patches just after a local Finsen light treatment and injected into guinea-pigs has infected these animals—the tubercle bacilli were not killed (Jesonek).

Sir Henry Gaurain tells me that he has evidence that radiation of excised bits of lupus skin compressed between quartz may kill the bacilli within them. He thinks that by pressing out the blood in the living skin with a quartz-water-cooled compressor and by repeated radiation the longer ultra-violet rays may reach the bacilli sufficiently to destroy them. They are however, probably destroyed by the inflammatory reactions of the tissues. While the skin is sensitive to the middle ultra-violet rays, infusoria and bacteria exposed in a droplet of water are far more sensitive to the short

ones. Infusoria are, however, also killed by long exposure to the longer rays—for example, those not filtered out by a solution of quinine, and which do not produce erythema on the skin. Sensitivity to longer rays—for example to the visible rays—may be brought about by a titer, such as eosin or hematomorphyrin. After injection of a minute quantity of the latter, severe cutaneous lesions and death result in albino animals on exposure to visible rays. In those rare cases of hydroa aestivale the persons are sensitized by the presence of porphyrin in their blood—in unborn abnormality of a most uncomfortable kind, requiring careful avoidance of bright daylight.

Owing to lack of penetration of any but longer ultra-violet rays through the cornea and lens we must attribute injury to the retina by exposure to excessive light to the visible rays. The conjunctiva is very easily inflamed by the ultra-violet rays. The effect comes on usually at night after first closing the eyes in sleep. Perhaps the secretion of tears and washing of the eye then falls off and the irritation produced by the rays has thus greater play. Melanin—the pigment in the skin—is in particulate form. It is not a sensitizer, but a screen protecting the deeper epidermal cells and the subcutaneous blood. It appears to be a derivative of tyrosine and such like amino acids. By melanin converting the visible into heat rays and warming the epidermis the nerves therein are excited, and sweating and dilatation of the cutaneous vessels provoked together with a diminution of body heat production. The body is thus kept cool by diminished production of heat and increased loss through evaporation, also by increased reflection of rays from the wet surface of the skin. People who pigment well appear to be cured by light treatment more easily than those who do not. Dark-skinned people who freckle only. The latter are biologically more susceptible to tuberculosis. The ultra-violet rays, by acting on the blood spread in a thin film in a rotating quartz flask, not only coagulate some of the proteins but destroy antibodies, antigens, complement factors, hormones, proenzymes, and enzymes. Red cells are protected by the serum from hemolysis, but when suspended in saline they are hemolysed by these rays.

The ultra-violet rays by acting on the skin of an animal have no effect on the content of the blood in specific antigens—for example, typhoid agglutinins or diphtheria antitoxin (Hartley). But the bactericidal power of the blood is put up an hour or two after exposure to the rays when a sufficiently extensive area of erythema is produced (Colebrook Fidinow, and L Hill). By radiation of blood in a quartz flask and the return of this to the animal the haemo-bactericidal power is also put up while that of the irradiated blood itself is destroyed (Fidinow).

The infra-red rays have no bactericidal action other than that due to heat. These heat the surface of the skin mostly. Red rays penetrate much deeper, and may be used to produce the effect of heat (for example, of diphtheria) on mussels, etc. Murray Teich reports good results from red light. Warm visible rays from incandescent lamp are well combined with the cold mercury vapour lamp. Warmth accelerates and cold retards the action of the ultra-violet rays on the skin, but these rays, if intense enough, can burn the cooled skin. They kill bacteria frozen to the temperature of liquid air (Dewar).

Some evidence has been put forward to show that visible rays interfere with the biological action of ultra-violet rays, and some clinicians therefore exclude daylight from arc lamp rooms. Further and more exact experiment has failed to confirm the existence of such interference (Atwell Campbell and L Hill).

It is quite easy by local concentration of an arc, or by a very hot sun, to heat parts of the body—for example, the head—to a high febrile temperature. Exposure in sun boxes or under glass may easily heat up the whole body. Overheating should be most carefully avoided. Cool open air and sun are good, hot midday sun bad, for the treatment of surgical tuberculosis, as Rollier has found in the Alps. Chronic phthisis cases must be protected from heat and given exposure to cool morning sun or arc lamps in cool places. Active febrile cases should be treated by light with very great caution, by minimal doses—for example, sky shine, not sun—and by exposure to cool air on verandas. Cases of arthritis, on the other hand, may be benefited by

heat and ultra-violet rays together. Wounds and fevers do wonderfully well out of doors, as shown by war experience, and all hospitals should no longer be brick buildings, but bungalows with open air wards, verandahs, and unroofed open-air courts about which the beds can be run according to weather. To build new brick hospitals in cities on the old plan is out of date and unjustifiable. We must teach people to get rid of smoke pollution, wear less clothes, and expose more of their skin to light, and then, with the help of arc baths and more playing fields, we can improve health a great deal in spite of the thousands of miles of mean streets which cover our manufacturing districts. Girls by wearing low open-necked blouses and short skirts with artificial silk stockings secure more ultra-violet rays. Men might well alter their dress and get rid of the close collar and long trousers. While exposure of the lower part of the leg to light and cool air has proved to be a preventive of varicose veins, overexposure in cold winter weather alternating with heat of fires may produce a kind of chilblain-like erythema. Physiological knowledge as well as fashion should rule dress, and prevent both over- and under-exposure.

Immunity to ultra-violet radiation is set up in the epidermis by one exposure to a subsequent one, before pigment is formed (Perthes). Thus if the area of the skin be exposed for five minutes, and again for five minutes some hours later and a second area be given ten minutes all at one time, the erythema will be much more marked in the second area. Choosing a small dose, a second one given a few hours later increases erythema and soreness. Maximal erythema, of course, cannot be further increased by a second dose, but this seems to be true for soreness also. The immunity is due, I think, to coagulation of the outer layer of living cells, whence comes peeling. When pigmentation is still well marked weeks after an exposure, susceptibility of the epidermis may be shown to have returned by the erythema following a further dose of ultra-violet rays.

The defective calcification of the growing bones in rickets results from a diet deficient in antirachitic substance and lack of ultra-violet rays. If young rats are put on a diet deficient in antirachitic substance and having a minimum of salts of phosphorus the latter is not absorbed from the gut. Either the addition of antirachitic substance in cod liver oil or ultraviolet radiation for a few minutes a day will wholly stop rickets developing, and cause a minimum amount of phosphorus in the diet to be absorbed and utilized in bone building (A. Webster). It has been proved that the antirachitic substance present in cod liver oil is not vitamin A, and that it can be put into an inactive food by ultra-violet radiation (Hess, Steenbock). Oils retain the required antirachitic power for months. It has been claimed that "active" food substance on oxidation gives off ultra-violet rays but this is not so. The error has arisen through the fluorescence of certain quartz screens used in the photographic tests (A. Webster). The antirachitic substance is produced by radiation of cholesterol or a vegetable sterol (Steenbock, Hess, Dunnington).

We have no evidence so far that radiation can endow an inactive food with the growth qualities pertaining to vitamin A. If this prove possible, the margarine makers will have found a fresh source of fortune in being able to claim that their product is made equal to butter. Rickets can be prevented by making the diet more adequate—for example, by cod liver oil—and also by teaching mothers the need of exposing infants' and children's bodies to the sunlight, and by the use of artificial sunbaths at infant welfare centres. Ultra-violet rays improve the growth and breeding power of fowls. Acting directly on embryos they produce monsters. The loss of breeding power in man and domestic animals such as cattle and tuberculosis in cattle as well as in men are probably due largely to indoor life.

A distinction is made by several writers between "biotic" and "abiotic" ultra-violet rays—those which are beneficial and those which are harmful or lethal. This distinction is I think an artificial one. Any ultra-violet rays, even those longer than 330 mμ of sufficient intensity and acting for sufficient time will destroy infusoria. If the intensity is too weak the amount of energy required to displace electrons and start secondary chemical change either does not suffice or the process of building up

in the protoplasm suffices to balance the process of breaking down induced by the feeble ultra-violet radiation. It is easy to arrange the intensity just so that no effect is produced on infusoria or the skin. In the case of the skin short ultra-violet rays have no effect because of the screening effect due to absorption by the horny layers of the epidermis. It is this which limits the erythema-producing rays to a special part—namely, from about 320 to 240 mμ. Whatever part of the ultra-violet spectrum be used, the biological effect, if any, seems to be the same—namely, aggregation of granules in infusoria and erythema production in the case of the skin. The reaction of the skin appears to have the same curative effect however produced by any one of the various lamps which give varying intensity of different wave-lengths—the mercury vapour, the "white flame" carbon arc, the tungsten arc or the tungsten filament incandescent lamp with quartz globe, the last a very weak source, but effectual in very long exposures.

One clinic uses lamps weak in ultra-violet rays and strong in heating effect, and gives very long exposures five days a week. Another uses lamps powerful in ultra-violet rays, and gives very short exposures once or twice a week. One believes in doses which produce a mild erythema, another avoids the production of erythema. One thinks the production of pigment hastens the curative effect, another believes it screens off the radiation and should be avoided. Varied and unstandardized as are at present the methods of treatment, yet all claim that they secure equally good curative effects. The need of the moment then, is to standardize the lamps for treatment and find out the most economical methods of exposure. Dosage can be easily measured by the degree of fading in a given time of a 30 per cent acetone methylene blue solution put in a standard quartz tube and placed at the same distance as the patient from the lamp. To make the 30 per cent solution fade one degree on the scale it takes two to four times the amount of ultra-violet radiation which is required to produce a slight erythema of the average white skin. In the choice of clothing material artificial silk has an advantage in being the most transparent to ultra-violet rays. Any loosely woven garment, such as a zephyr with a large amount of openings in the mesh, lets these rays through, but the artificial silk fibre, being an acetate cellulose product, is more transparent than protein products such as silk or wool fibres. For heliotherapy, then, one layer of an artificial silk zephyr-like material can be worn when modesty requires it but much longer exposures will then be required.

It has been stated that artificial sun treatment cannot approach the real article in curative effect. Our experience, however, has shown us that arc-light baths, properly regulated and accompanied with advice as to position, cool open air, exercise, and diet, can effect cures in London which appear to be no less good than those reported from Alpiro sanatoriums. To eliminate tuberculosis from cattle, just as from human beings the important point is to secure adequate exposure to light and air. The practice followed by many farmers of shutting milch cows up in byres during the winter and limiting ventilation, with the idea of promoting a bigger yield of milk by warmth of the byre, should be prohibited. Cattle might be given arc-light baths in winter no less than children in schools. For cattle it is of no less importance to give food in winter which is rich in fat-soluble vitamin A. Grass fed cattle give milk much richer in this vitamin than cattle fed on dry winter fodder.

II—G. B. DIXON, MRCS, LRCP, LSA,

Medical Superintendent Birmingham City Sanatorium

Those of you who, like myself, are engaged in the treatment of tuberculosis in localities where the sun's rays are only sparingly available, will appreciate the necessity for some form of artificial light as a substitute. Our knowledge of the effects of heliotherapy only serves to emphasize this need. You have doubtless experienced the satisfaction of seeing cases of lupus and of bone, joint, and glandular tuberculosis improve considerably as the result of heliotherapy, practised during a favourable summer, and have perhaps been equally disappointed at the lack of progress or even

retrogression, shown by the same cases during a subsequent prolonged and sunless winter. Fortunately, as a result of the pioneer work undertaken in this country by Professor Leonard Hill, Dr. Sequeira, Sir Henry Grayson, and others, our knowledge of the possibilities of treatment by artificial light has been greatly increased.

Technique

My experience of treatment by means of artificial light has been mostly in connection with tuberculosis, by exposing gradually the whole body to the light from short flame carbon arc lamps, consuming 75 amperes. Our installation includes four of these lamps, two being used in a room. Around each pair of lamps it is possible to treat from six to eight ambulatory patients, or two or three recumbent patients. The initial dose, which is determined after exposing small areas of the skin, for varying times, and noting the reaction, is evidenced by the presence of erythema, is usually from ten to fifteen minutes.

Treatment is commenced by exposing the different limbs, and then various aspects of the trunk, until the whole body has been exposed. A complete exposure of the whole body is usually attained in four or five sittings. Our patients wear wooden pattens, a loin cloth, and either an eye shade or goggles. Irradiation is given usually on alternate days, and a maximum dose of two or two and a half hours may be eventually given with this type of lamp. After irradiation our patients take a shower bath and have a rub down. Many of those attending for "light" treatment are outpatients, and in spite of the fact that they are receiving treatment in a warm atmosphere for two hours, or two and a half hours in some instances, the occurrence of so called "chills and colds" is rare, even during the winter months.

Pigmentation

Pigmentation, which varies in different individuals, is said to be a guide as to progress and prognosis, it has been stated, too, that the degree of pigmentation is proportionate to the gain in the patient's power of resistance to disease, and has some rough ratio to his progress towards recovery. Whether this is so in every case is doubtful. A certain percentage of patients exposed do not pigment, although their lesion shows progressive though slower improvement than occurs in those who pigment well.

In the use of the general (carbon arc) light (short flame) bath for tuberculous lesions, I would not personally in every case discontinue irradiation because of non-pigmentation alone, if the lesion were showing definite progress and the general condition and tone of the patient improving. Non-pigmenters certainly require more than the usual care in treatment, and the period of exposure must be less than for those who do pigment, if burning is to be avoided.

Pigmentation has been regarded as an autogenous method of protection, and where it occurs satisfactorily increase in exposures may be more frequent, and a longer maximum exposure may be given than should be attempted in the case of non-pigmenters.

Type of Cases Treated

Opportunity is afforded in sanatorium and tuberculosis clinic work for the treatment of most varieties of tuberculosis, and in the light department we have treated cases of lupus, adenitis, tuberculous laryngitis, bone and joint tuberculosis, and a few uncomplicated and also associated cases of pulmonary tuberculosis.

Cases of lupus vulgaris in the majority of instances do well, and, like all other tuberculous lesions, the earlier they come under light treatment the better the prospects of recovery. Dr. Sequeira, who has had extensive experience in the treatment of this type of case by the carbon arc light bath, claims 70 per cent of permanent cures. Dr. Revn of the Finsen Institute advocates the use of local light treatment, combined with the light bath, and claims 96 per cent of cures as a result.

Results from the treatment of cervical adenitis by the light bath are also good. After an initial and temporary increase in size, many glands become gradually less, and harder, possibly as a result of absorption and fibrosis. On the other hand, large indurated and adherent glands

may break down and fluctuate, aspiration and a continuance of light treatment generally giving satisfactory results. The lupoid condition of scars resulting from the breaking down or incision of cervical glands is usually greatly benefited by the light bath.

In many children suffering from the different forms of non-pulmonary tuberculosis, enlargement of the tracheo-bronchial glands can readily be demonstrated by radiographic examination, and in a certain number of these cases treatment by means of artificial light associated with sanatorium treatment results in the disappearance or a diminution in the size and number of the glands, which is a matter of importance in relation to laryngeal tuberculosis. The results of treatment in bone and joint tuberculosis by means of the general light bath are good, particularly in children, when treatment is undertaken before the occurrence of abscess and sinus formation. Tuberculous distichs, and tuberculosis of the carpus, elbow, ankle, and knee joints, I have found to respond well to light treatment.

I have not seen such good results in connection with tuberculosis of the hip and sacro-iliac joints, or in cases of spinal tuberculosis, but in these instances most of my patients have been cases of extensive and long-standing disease, many of them presenting multiple discharging sinuses. Even amongst these there have been some strikingly good results.

A female patient aged 22 who had suffered from tuberculosis of the hip joint for six years in connection with which were five profusely discharging sinuses when first seen was given treatment by the general light bath for nine months. At the end of that time the patient had gained a stone in weight, and there had been no discharge from any of the sinuses for three months. Although there was marked erosion of the bone, and one or two inches of shortening on the affected side, there is now an improvement in the mobility of the joint, and the patient is able to get about on crutches.

An interesting case was that of a child aged 9 years. She was referred to us after having had one arm amputated above the elbow for tuberculous disease of that joint. When I saw her she had tuberculosis in one knee joint, and a tuberculous lesion of the bones of the face which had involved the supramaxillary antrum, from which there were sinuses discharging into the mouth, and externally through the cheek. The child's mental condition was much below the average. After some months treatment in the sanatorium by means of general light baths the sinuses in the face and mouth healed, and the disease in the knee joint became quiescent, pain and wasting of muscles disappeared and mobility almost equal to that in the sound joint was restored. Even more striking was the improvement in her mental condition, she is now apparently a child of good average intelligence.

A fact to be observed in the artificial light treatment of bone and joint tuberculosis is the marked improvement which occurs in the tone of the muscles generally, which, prior to treatment, have been wasted and flabby.

In connection with the artificial light treatment of surgical tuberculosis, it is well to remember that tuberculous abscesses may form in regions where nothing abnormal has been noticed previously. N. P. Ernst calls attention to this, and records the fact that he has observed fresh cases of tuberculosis of the joints occur in patients who were having light bath treatment, there being no previous evidence of disease.

Treatment for tuberculosis of the larynx has been systematically carried out by means of the general light bath (carbon arc) by Dr. Strandberg of the Finsen Institute, Copenhagen, for some years past. He states that, even if combined with no other treatment, it is effective in itself. In many of his cases he uses electro-coagulation simultaneously. By this method he claims cures in about 50 per cent of his cases. When we recall the fact that, excepting tuberculous meningitis, tuberculosis of the larynx is the most fatal complication of pulmonary tuberculosis we have to deal with, Strandberg's figures are startling and encouraging. Many of his patients whom I had an opportunity of seeing were attending the clinic as outpatients, and were exposed to irradiation with a temperature of about 100° F.

In describing the cases of tuberculous laryngitis which he treated, Strandberg emphasizes the fact that these were not cases of simple laryngitis, with congestion only, which frequently occurs amongst those suffering from pulmonary tuberculosis, but were cases showing definite infiltration or ulceration in the larynx. I have treated, so far, a limited number of cases of tuberculosis of the larynx by the general

light bath. The time elapsing since treatment has not been sufficient to allow me to judge whether the resulting improvement is of such permanency as to justify the use of the term "cure."

The results where the associated pulmonary tuberculosis has not been acute, and where the patient's general condition and resistance to the disease were good have been satisfactory. More than one laryngologist who has referred cases to me for treatment has expressed gratification with the results produced. I mention this merely to show that the assessment in most of my laryngeal cases has been made by those who are qualified to speak authoritatively.

One patient, a man aged 36, had suffered from fairly extensive pulmonary tuberculosis for about five years. At the end of this period his larynx showed evidence of tuberculous infiltration with loss of voice. His treatment was supervised by a laryngologist and the electrocautery was used. The patient's disease became progressively worse and the prognosis was serious. He then had a severe and prolonged haemoptysis for which I induced an artificial pneumothorax as an emergency measure about two years ago. After this some improvement occurred as evidenced by loss of fever, diminution in cough and expectoration and slight gain of weight. Following this the patient was given light baths, when a remarkable improvement in his laryngeal and general condition occurred, the improvement in his voice being very noticeable. The artificial pneumothorax is still being maintained, the light treatment continued, and the improvement persists.

An authority of such eminence as Rollier² says that he is convinced that heliotherapy should be a useful factor in the treatment of the great majority of cases of pulmonary tuberculosis, if properly applied. It may well be asked if treatment by artificial light might not therefore be expected to benefit cases of pulmonary tuberculosis. Schmidt,⁴ a Danish worker, considers that pulmonary tuberculosis remains unchanged as a result of light treatment, whereas Oldenburg⁵ claims to have obtained favourable results.

Personally, I have had only limited opportunities so far of treating this disease. Several of those whose surgical tuberculosis I have treated by means of artificial light have had associated pulmonary tuberculosis in varied pathological stages, such as early infiltration, fibrosis, and cavity formation. In none of these have I seen bad results, either in the form of extension of the disease or in the occurrence of haemoptysis, two ill effects which it has been suggested occur when heliotherapy is utilized.

One of my patients, a nurse suffering from pulmonary tuberculosis with a moderate amount of disease in one side and a small localized apical lesion in the other, failed to do well after twelve months sanatorium treatment and was given light baths with quite good results. There has been an improvement in the physical signs, sputum has almost disappeared, a slight but persistent evening temperature has settled down and her general condition has improved.

Conclusions

The general carbon arc light bath, when judged by results, seems to be a suitable form of light treatment for cases of tuberculosis. The spectrum of this light is said to approach more nearly to that of sunlight than does the spectrum of either the mercury vapour or tungsten arc lamp, which is possibly a recommendation.

It is a type of lamp which, when used with care, is perhaps less likely to produce severe burning and other ill effects than are some of the other lamps.

It is particularly suitable for clinics, hospitals, or institutions where large numbers of patients have to be treated.

The carbon arc lamp has its disadvantages, but what type of lamp has not?

The initial expenditure is large. The heat given off from the lamps necessitates careful ventilation if inconvenience to the patients is to be avoided. Two 75 ampere lamps should be used in a room of not less than sixteen square feet, with a ceiling elevation of twelve and a half or thirteen feet. Windows should be placed at such a level that they are well above the highest point in the range of the lamp's movable adjustment. An electric exhaust fan, placed above the ceiling, in the centre of which there is a piece of metal gauze will be found useful as aid to ventilation.

The length of time occupied in treating patients who are receiving the maximum dosage of two or two and a half hours is not economical. This may possibly be reduced

considerably where the walls of the light bath rooms are treated in such a way, or when reflectors of such materials are used, that the rays we wish to utilize are reflected and not absorbed to such an extent as they are at present.

The cost of current per hour for four lamps consuming 75 amperes I have found to vary between 1s 9d and 1s 10d.

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III—DORA C COLEBROOK, M.D., B.S., M.R.C.S., L.R.C.P.

North Islington Infant Welfare Centre

The application of light treatment to welfare work is, I think, a very important subject.

At North Islington, where I have been working since September, I have the great advantages of an excellent organization, a large number of children (1,800 on the books) from whom to draw my material, and the close co-operation of experienced medical officers in charge of the centre clinics. There are also on the premises twelve cots for babies and three beds for nursing mothers with their young babies.

In this paper I shall deal only with artificial light, and with that as carried on during the colder months only. In the warmer days our children are all exposed to open-air sun and shade baths in the garden, and the lamp is seldom used.

The more I hear about light treatment, the more I feel the need for full and full reports of work, for details as to routine followed, lamps used, etc., for dispassionate statements which take into account all the circumstances contributing to the progress of the case, and, perhaps above all, for records of failures and of any untoward symptoms arising during treatment.

I do not propose to submit anything sensational in the way of results, for, though there have been remarkably successful cases, I should not like to describe them here, where you have no opportunity of satisfying yourselves that the success was entirely due to the use of the lamp. I make no claim to lightning cures, but rather to some very satisfactory progress in the attempt to raise the standard of health in those children who have fallen behind, to tide them over critical periods, and to make up to them, in such measure as is in our power, for the light which they lack. I look forward to the extension of the work more and more on the preventive side, to seeing in the department not only the bad cases, but those who are beginning to flag, and even especially those whose home conditions deprive them of the minimum of fresh air, sunshine, and exercise. It is my ambition to irradiate in the winter all available babies born during the summer and autumn months, in the hope that the incidence of rickets in these may be lessened.

In the preventive aspect of light treatment—that is, in welfare centres—certain obvious difficulties, which at times seem almost overwhelming, present themselves: (1) that of securing attendance sufficiently regularly for clinical results or for useful records, (2) that of assessing the influence on the treatment of all the potent factors supplied by the child's environment, and (3) that of getting antagonistic influences removed.

In North Islington we see these difficulties clearly in the case of children suffering from rickets. I should say that we have no facilities for x-raying the children, so that the diagnosis rests on clinical evidence—evidence well known to be controversial and unsatisfactory. I have seen very few cases of acute rickets, though in the chronic cases, which we see in fair numbers, there may be, and often is, an active element. The rickety child is not usually a regular centre baby, it is frequently not brought to the centre at all until the shape of its legs compels the attention of the mother, and even when she does appear she is a bad attender—the circumstances which have contributed to the disease are just the ones that militate against us in our efforts to deal with it. And if this is so in the case of rickets, where regular light treatment is a specific how

much more so is it in cases where its effect is less decisive. Some system of transport would revolutionize the outlook, we are pining for a detachable Ford car and driver.

I am using a long-flame carbon arc lamp. In the few minutes allowed to this paper I cannot go into our methods of administration, which I have described elsewhere.

My patients fall into three categories: (1) nursing mothers whose breast milk is failing, or whose baby, though breast-fed, is not thriving; (2) babies of any age and toddlers up to 2 years who are temporary residents in our wards; and (3) babies and children up to 5 years attending the centre from their own homes.

I consider it to be of the utmost importance that there should be close co-operation between the light department and the other departments of the centre. In our case a ship for the interchange of opinions and criticisms is incorporated with the medical officer's record cards, and a weekly record of light treatment is entered there. By this means I am able to know of any change in general treatment which may have a bearing on the progress of the case, and the centre doctor is able to follow the treatment, and on her side to assess progress. Her opinion is particularly valuable as a check to our perhaps prejudiced impressions.

In my initial records an attempt is made to describe, not only the child's physical and mental state, but the essential factors, as far as we can realize them, of its environment. With a mental picture of these things at the start, one hopes to be able to some extent to prognosticate one's chances of success, or to console oneself for the lack of it. The question of diet and all treatment is left to the centre medical officer, my note merely stating whether cod liver oil is taken, and in what form and quantity. In subsequent records exposure times, weekly weights, and heights are noted, as well as all health incidents whose significance though not apparent at the time, may declare itself later. Lapsed and irregular cases are visited by the visiting nurses, and discharged cases are followed up, so that they may report to me at intervals, for six months. Success or failure depends on our power to impress the mother, and—a far more difficult task—the father too. Prevention may be in itself more easy than cure, but it is far more difficult to demonstrate, and we must admit to many failures to do so. On the other hand, one can hardly realize the tremendous effort which these busy mothers have to make to attend at all. On them, however, as well as on the children, we observe the salutary effects of regular attendance, especially during our sun and shade clinics in the garden, where the practice of hygiene replaces precept.

In final records, where figures are available, I make a general survey of the weights, taking them for a few months before, during, and a few months after treatment. At present I am doubtful as to how much direct effect the light has in the case of the older children.

A clinic dealing with fifteen to twenty children daily, and perhaps four to six mothers on alternate days, seems to absorb a number of workers. In my department though we are well provided for with an efficient full-time nurse and the help of London County Council scholarship pupils, we have a reputation for stealing everybody and everything from the other departments. This I welcome as evidence of our enthusiasm.

In summing up my impressions of results, among successes I put firstly all the smaller babies suffering from simple dietetic troubles, either those in the wards or outside. In the wards, whereas previously improvement in function rather than gain in weight was the rule, now with the added light, after three to six treatments, the gain is steady and often striking, and the babies are noticeably happier and brighter. In some cases I have deliberately left a baby who was not doing well for two, three, or four weeks before I started, and by recording the weights all the time, before as well as during the treatment, I seem to see that the start of improvement is definitely associated with the start of irradiation. This may still be due to coincidence, only a large number of cases will help to establish a conclusion. We have also a very definite impression that in those cases where malnutrition is associated with vomiting the effect of the lamp is quickly to stop the sickness. Plabby, soft babies certainly improve in muscle tone

speedily achieving powers and movements which were long overdue.

The older children attending from outside present a variety of different conditions, and with these in many cases a change of type would almost be involved before one could pronounce a complete success. These children are suffering from general debility and backwardness, catarrhal conditions, restlessness, irritability, sleeplessness, and more or less (which, with all due deference to Dr. Cameron, to whose wise words I owe very much, is all too common among the poor, and even the very poor). The cases of rickets I have already mentioned.

The immediate effect of starting light treatment in the majority of cases is a marked increase in vigour and brightness, this is accompanied in most by greater contentment and better sleep, and in some, though by no means in all, by better appetite. Later, improvement in physique follows on these preliminary manifestations. Children referred for constant colds and chronic coughs respond very differently, doubtless according to their pathological condition, but in some the effect is certainly gratifying, while in others it is disappointing. Chronic glands of the neck have shown little response, even though the general condition may have satisfactorily improved.

In an appreciable number there is at first increase in irritability, which only yields to very small doses very cautiously increased.

Relapses with cessation of treatment are not uncommon. This, however, seems to me to be the natural event substantiating our claim we are only supplying a natural demand—"let there be light"—and in the case of a child of this type one might as well expect a few weeks of light to last it for a year as expect one meal to last it for a month. The lesson I learn from the relapses is that we need light more, and not less.

With the nursing mothers treated so far our results have been very encouraging. Among the 16 who have attended at least eight reasonably consecutive times, with only 4 have we had failures, and I am sure that in the case of 3 of them the lactation had been failing gradually for too long a time, supplementary feeding was established and the baby was determined to take the line of least resistance—namely, the bottle. In most cases, where the mother is sufficiently intelligent and not too overburdened with work, we teach her the use of scales, weighing the baby before and after feeds, so that we may get some idea of quantity during the twenty-four hours. In other cases we are obliged to rely on the evidence of the baby's condition in our judgement of progress. My aim with the mothers as with the children, is to give the shortest possible exposure and series of exposures to produce the effect. Directly the supply seems to be re-established the treatment is stopped, while the mother is kept under observation. If failure again threatens, or if the baby again hesitates in weight another short course is instituted. A few of these mothers are taken for a short time into the wards for rest and education. The helpful influences here tend to obscure the reason under consideration, but I have so far found that a mother who responds well in the wards will again respond if she afterwards lapses when out. I must say the figures are interesting and suggestive.

Even after so short a period of work, I feel satisfied that there is a place for light treatment in our centres, but I have so far no conviction as to the best type of lamp or the best system of dosage to use for the purpose. The excellent results obtained by the use of the very long intensive treatment with the Copenhagen type of installation are well established. Retiring from that the very latest school claims to cure almost anything by almost no exposures. In preventive medicine the former method is impracticable while the latter, in my opinion, must lead to disillusionment and despair.

The urgent need is for exact information which shall lead to the discovery of the most economical lamp that will give the maximum results in the minimum time. For this in all probability, we may have to wait till scientific research has established more exactly the biological action of all the different rays concerned. In welfare centres especially, where we have no opportunity for scientific investigation we look eagerly for help from other workers.

GENERAL DISCUSSION

Dr JOHN BROWN (late M.O.H. Bury) said that in temperate climates flowers, vegetation, and children thrive under substantially identical conditions of sunlight and air. When vegetation was grimy to the touch it was stunted, and children were physically deteriorated. Some of our industrial towns remained virtually under a sunblind, with serious results to health. He believed that the generation of electricity at large centres would make for economy in industry as well as improvement in the public health. The diminished market value of property in the immediate vicinity of gasworks and similar undertakings was a measure of their cost to the public, and this would be saved by placing the power-generating stations of the future at a distance from towns.

Dr EIDMOW (National Institute for Medical Research), who had been closely associated with much of Professor L. Hill's recent work, described the action of ultra-violet radiation on chronic fibroid phthisis and tuberculous adenitis. He was satisfied that one of its effects was to promote calcification in tuberculous lesions. The reaction of the skin and other tissues differed in adults and children, and he considered that in the latter exposures should be very brief.

The PRESIDENT (Dr Eustace Hill) said that Professor Hill's paper had revealed what would have seemed not long ago like a scientific revolution. The great benefits that had already accrued from the application of light, both natural and artificial, were due mainly to the labours of Professor Hill and his colleagues in research. He considered that the Section was to be congratulated in having had the opportunity of listening to an account of his own work from so eminent an authority.

Professor HILL, in replying briefly to the discussion, said he regretted that Dr Eidmow had not referred to the observations he had recently made on the increase of the bactericidal power of the blood as a result of ultra-violet irradiations. This was very marked in certain experimental animals. In human blood the bactericidal power was already high, but it also was increased by irradiation.

During the week the medical officer of health for Bath, Dr J. F. BLACKETT, kindly provided opportunities for members of the Section to visit the various child welfare centres in the city, the school medical department, the municipal fever hospitals, waterworks, sewage disposal works, and the meteorological department.

THE EXTENSOR PLANTAR RESPONSE (BABINSKI'S SIGN) IN THE PRESENCE OF COMA

BY

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THE extensor movement of the great toe in response to plantar stimulation is frequently accepted, and rightly accepted, as a proof of the existence of organic change in the pyramidal tract. There are, however, exceptions to this conclusion, and the recognition of these exceptions has considerable diagnostic importance.

In 1911, in a communication¹ made to the Association of Physicians, I suggested (1) that a unilateral extensor response present in a comatose patient does not necessarily mean an organic lesion, and (2) that coma, however produced, may be sufficient to establish in the nervous system the conditions (whatever these may be) upon which the extensor response potentially depends, and in support of these propositions I quoted certain experiences recorded by various authorities, together with some clinical observations of my own. Since 1911 observations on the plantar reflexes have been multiplied, and among these are cases of coma consequent on various narcotic poisons, not associated with evidences of organic disease but accompanied by an extensor response. For the most part writers have been disposed to suggest that the extensor response in such circumstances is to be explained by a direct and specific action of the toxic agent on the appropriate portion of the central nervous system. In each instance, that is, the coma and the extensor response are placed as separate and independent consequences of the poison—the coma from the action of the poison on the cerebral cortex and the extensor response from some other action of the poison on the part of the nervous apparatus related to the mechanism of the plantar reflex. As, however, the agents or poisons so accused are numerous, and as in some of their properties they differ widely from one another, this hypothesis of direct or specific action may reasonably excite some degree of doubt. In any event, the facts leave room for an alternative suggestion—namely, that the agents concerned produce an extensor response because they produce coma; that is, that coma is the common agency through which they reach the common end. It will be generally accepted that the circumstances in which the extensor response appears include influences that disturb the functional relations normally existing between the cerebral cortex on the one hand and the motor cells of the spinal cord on the other. The

suggestion here made is that coma may be one of these disturbing influences, and that therefore coma *per se* may be sufficient to explain the presence of an extensor response.

It is certain that an extensor response may result from an abnormal functional state existing in the cerebral cortex and unattended by any evidence of organic change either in the cortex itself or in any other part of the nervous system. Such a possibility is illustrated in the occurrence of Babinski's sign as a temporary event after an epileptic or other convulsive seizure. Recently I have seen a young man the victim of severe and periodic attacks of hemianopia associated with homonymous hemianopsia and an extensor response, the visual fields and toe movements becoming normal when the headache ceased. Such an experience may be quoted as a convincing proof of the ability of a pathological state limited to functional disturbance of the cerebral cortex to explain the appearance of an extensor response. But if the functional disturbance of the cortex unannounced by convulsions, or, as just described, by homonymous hemianopsia, may cause an extensor toe movement, it is surely not improbable that the cortical condition unannounced by coma may equally produce this result. And the position is carried a stage further when it is remembered that the extensor response may sometimes be elicited during sleep—for the most part in young children but in occasional instances quite definitely in an individual who has reached maturity. Of particular significance in this respect are some observations made by Kleitman (quoted in a recent paper² by Professor T. R. Elliott and Dr F. M. R. Walshe) to the effect that an extensor response was present in healthy young men during the deep sleep that followed deprivation of sleep for a period of 40 to 110 hours. Between the effect exercised on the rest of the nervous system by the cortical condition existing in deep sleep, and that associated with coma, it is difficult to believe there is any essential difference, and if one is an efficient cause of the extensor response why not the other?

When coma and an extensor response follow the administration of a drug or poison it is of course possible to regard both the one and the other as equally independent and specific results of the drug action. Yet the very number and variety of the agents which have to be included in this group (morphine, hyoscine, sulphonal, veronal, coal gas, trinitrotoluene, chloroform in the delayed form of poisoning) render not unlikely the suggestion that the extensor response which may follow their administration is due to some influence that they share and exercise in common. Coma is such an influence, and as the extensor response is here, in view of recorded recoveries, certainly not due to organic change, it is, in the circumstances, not unreasonable to claim that each of the drug agents

above named produces an extensor response because it establishes a condition of coma, and that in this fashion the normal relations between cerebral cortex and spinal centres are prejudiced.

The position is somewhat less confident when coma and an extensor response appear in the course of a general toxæmia, indeed, short of a complete and microscopic examination of the nervous apparatus, the exclusion of the possibility of organic change can in such circumstances hardly be an unqualified one. Even here, however, there are experiences which suggest that coma may play an important part in determining the extensor response. In this relation may be briefly stated the case (acute atrophy of the liver) of a woman, aged 37, who, as later information showed, had recently been treated by intravenous injections at a hospital clinic. When first seen she was jaundiced and unconscious, and ankle clonus and an extensor response were obtained in each lower limb. After three days the coma disappeared and each plantar response became flexor. It is at least within the limits of the possible that the coma was here the agency responsible for the extensor response. In the paper already quoted Professor F. R. Lillott and Dr F. M. R. Walshe record four cases of hepatic atrophy, each patient showing a double extensor response, and they argue that this response in cases of hepatic disease marks the onset of "chocemia." It is noteworthy that in each instance the extensor response appeared only when the patient's consciousness was more or less seriously compromised. The descriptions run (1) "semi comatose double extensor response", (2) "plantar flexor next day mild coma and double extensor response", (3) "plantar flexor next day lethargic with double extensor response", (4) "plantar flexor two days before death coma and an extensor response." Similarly Sir William Willcox in describing cases of icterus gravis writes (1) "comatose extensor plantar response", (2) "comatose in morning extensor plantar reflex 10 p.m.", (3) "unconscious in evening ankle clonus and extensor plantar reflexes present." These experiences obviously are not inconsistent with the suggestion that coma due to hepatic disease, even as coma due to other causes, may determine an extensor response, and this proposal is strengthened by the record above quoted where on disappearance of the coma the extensor response also disappeared and was succeeded by the ordinary flexor movement.

Another toxic state in which unconsciousness may be associated with the extensor response is uræmia. But the association can hardly be pressed into the present argument, for uræmia is often manifested by convulsive seizures, and these, even as in epilepsy, may explain the extensor movement. Moreover, uræmia may be accompanied by organic changes in the central nervous system, including the pyramidal tracts, so that here also a possible explanation of the extensor response other than coma presents itself.

So far as changes in the pyramidal tract are concerned the toxæmia known as diabetic coma may perhaps stand in much the same position as uræmia. Personally I have recorded a case of diabetes, the patient a child of 3 years, with bilateral extensor response not associated with coma, and the explanation would appear to be either pyramidal degeneration or the re-establishment under some unknown influence of the ordinary infantile extensor movement. In the adult I am able to mention two examples of diabetic coma each with a double extensor response. One, a woman aged 56, brought into hospital in a state of unconsciousness and found to yield a bilateral extensor response, later, glycosuria was discovered, and a history of treatment for diabetes during some five years. At the outset the case was regarded as one of cerebral hemorrhage, but post-mortem examination showed the brain and other organs to be free from obvious disease. Whether there were or were not microscopic changes in the spinal cord must remain an open question, but the record plainly announces that diabetic coma must have a place among the clinical possibilities marked by coma and a double extensor response, and it admits the suggestion that such a response may owe its existence to the presence of coma. For the notes on a second case of this order I am indebted to Dr P. P. Dalton.

The patient, a woman aged 36, had been under treatment for diabetes for some months, when, somewhat suddenly, she became very excited and, later, comatose, there were evidences of acidosis and a bilateral extensor response.

In opposition to all that has here been written it may be said, and said truly, that in many cases of coma the plantar response is not of the extensor type. But this negative admission by no means destroys the positive evidence. The exact mechanism of the extensor response may be outside a confident definition, but it is not difficult to believe that to set it in readiness, some definite degree of adjustment or of maladjustment is required. In sleep, for example, the issue is plainly a matter of degree or measure, not sleep, but a certain depth of sleep, is essential to the extensor response. Such a consideration must apply equally to coma, and indeed with greater force, for coma varies not only in its degree but also in its associates, and some of these include agencies that in the highest degree of probability affect widely and in various fashions the several parts of the nervous apparatus, including that (whatever it may be) on which the extensor response directly depends. Hence it is possible to picture a degree or phase of coma which allows a flexor response, or one which decides an extensor movement, or a third, in which the plantar response is altogether abolished. The unquestioned experience that in many cases of coma, in the large majority indeed, the extensor response is not obtained, does not destroy the claim that, given the appropriate conditions, coma may determine this response. Granted a suspension of the cortical functions in the form of a particular degree or depth of sleep and the demonstration is simple, but amidst the conflicts and complications so frequent in clinical cases an experience far from uniform must be judged inevitable. Further, while the extensor response is not always present in coma, neither is it always present in pyramidal disease. Yet no one on this account will deny pyramidal disease to be potentially a cause of the extensor response, and if negative experiences do not exclude the one claim neither can they be quoted as conclusive against the other. The positive evidence broadly presented shows that coma arising in many and varied circumstances and apart from organic disease is, as a matter of confirmed clinical observation, not infrequently associated with an extensor response, and it is on this generalization that the thesis presented in this paper mainly rests.

A few further notes may be permitted. First, while recognizing that an extensor response may occur apart from pyramidal disease, it is well to remember that this response may be the sole objective evidence of such disease, perhaps in an early stage, perhaps for the time being latent. In a series of cases collected to illustrate this proposition I suggested that an investigation of the plantar responses was a necessary part of any satisfactory scheme of clinical examination. Professor Lillott and Dr Walshe think that the "general physician" is in this respect less thorough than the "neurologist," but I hope that few of us come under this reproach. I agree, however, that in so far as we do so we run the risk of serious error.

A second practical point is that when, in testing the plantar reflex, there is so much movement of the foot and toes that it is difficult to be sure whether there is or is not an extensor response, help may be obtained by applying the stimulus along the groove below the external malleolus instead of along the sole. By this method the toe movement may sometimes be obtained free from the confusion which is apt to follow stimulation of the sole in a highly sensitive and explosive patient. It has further been claimed that an extensor response following a stimulus applied below the external malleolus may detect a pyramidal lesion which might escape the test applied in the more usual fashion. Whether this is so or not the method is certainly a useful one, and particularly in the presence of the difficulties and ambiguities just suggested.

As a third memorandum it may be added that an extensor response may be produced voluntarily and for purposes of deception. Some few years ago I was asked to see a man who, after an alleged accident in a railway station, was said to be hemiplegic, incontinent, and unconscious. No signs of injury to the head could be detected,

but the man appeared to be only partly conscious and to be paralysed in his right limbs, and certainly his right pupil was dilated and fixed and his right plantar response was extensor. After some weeks he began to get about in a halting fashion, and in due course he advanced a claim on the railway company. For various reasons this claim was questioned, and an examination in the presence of several practitioners was arranged. At this examination the patient appeared to make two blunders. First, on request, he promptly protruded his tongue, and this with a pronounced deviation, but the deviation was not toward but away from the paralysed limbs. Secondly, he produced unfaithfully a right extensor response, but he did this on the slightest provocation and almost without regard to the site of the stimulus—elf, shin, sole, dorsum, each alike received the characteristic reply. In the first examination the possibility of the man being a malingerer never occurred to me, and the majority of my colleagues at the later consultation concluded that an ingenious patient by the aid of tropine and of some carefully garnered medical knowledge had proved too much for me and for some others equally guileless. Assuming them to be right, I registered a mental note that among the possible causes of an extensor response a place must be found for the deliberate malingerer. Certainly the trick, if once known, is easily repeated, and the experience is worth adding to a list of the circumstances in which an extensor response does not mean organic disease.

REFERENCES

¹ Practitioner vol. xciii p. 330 *Lancet* January 10th 1925 see also *Diseases of the Liver* (Sir Humphry Rolleston) second edition p. 587
² *Medical Society's Transactions* vol. xlii p. 114 ³ *Medical Press and Circular*, August 11th 1915 ⁴ *Lancet* December 16th 1911

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

WEBBED HAND WITH ABNORMALITIES
OF BONES

A boy, aged 4, presented webbing of the left hand as to digits 2, 3, 4, and 5. The webs between 3 and 4 and 4 and 5 were complete up to the tip of the nails. That between 2 and 3 was less complete. The palm of the hand appeared long in comparison with the fingers, and only one row of joints distal to the metacarpal phalangeal joints could be made out. X rays showed that one row of phalanges, presumably the middle, was absent. The ossification centres for the metacarpal of the thumb are abnormal. Usually the shaft and head of this bone are developed from a primary centre, while the base has a secondary centre, appearing about the third year. In this respect therefore, ordinarily, metacarpal 1 differs from metacarpals 2, 3, 4, and 5, and resembles the ossification of a phalanx, a circumstance which has given rise to discussion among anatomists as to whether the thumb consists of three phalanges and no metacarpal or one metacarpal and two phalanges. In the present case metacarpal 1 has a primary centre for the shaft and base, and a secondary for the head. Ossification centres are present for os magnum, unciform, cuneiform, semilunar, trapezium, and lower end of radius. As there was no bony fusion between the individual fingers, separation of the soft parts was performed by Didot's method, in two stages. Digits 4 and 5 were first separated, and afterwards 2, 3, and 4. The anatomical and functional results have been good.



Rnabon

A H TURNER, M B, B S Lond

ACUTE INTESTINAL OBSTRUCTION DUE TO A GALL
STONE VOLVULUS OF SMALL INTESTINE
ABOVE THE OBSTRUCTION

Impaction of a gall stone is one of the rare causes of acute intestinal obstruction. As the grouping of the symptoms is frequently unusual, the exact diagnosis is often very difficult. It seems right, therefore, to report the following case, which occurred in the practice of the West London Hospital. I am indebted to Mr. Donald Armour for permission to do so.

A woman aged 54 was admitted on May 6th, 1925 complaining of abdominal pain. The pain had come on suddenly three days previously, was colicky, and situated round the umbilicus and in the hypogastrium. Vomiting had commenced shortly after the onset of the pain and had been repeated several times daily. The vomit was at first bilious but had become feculent. Absolute constipation of faeces and flatus had existed from the onset. She had had occasional attacks lasting one to two days of slight epigastric pain, unaccompanied by vomiting for the past seven years, but no symptoms between the attacks. The abdomen was only moderately distended. Coils of gut were visible through the thin abdominal wall, and there was shifting dullness in both flanks. There was no visible peristalsis, tenderness or rigidity. No mass was felt on palpation of the abdomen or on rectal examination. Shock was absent, except for slight lowering of the temperature (97° F) and raising of the pulse rate (100).

I opened the abdomen by a right paramedian incision, its centre opposite the umbilicus. Free serous peritoneal fluid immediately escaped. Distended and congested small intestine was traced to a point 9 inches from the ileo-caecal junction, where a gall stone was found loosely impacted in the gut. The bowel below was pale and collapsed. The loop of ileum immediately above the site of obstruction had undergone axial rotation in a clockwise direction, forming a volvulus with one complete twist, presumably from the irregular muscular movements set up in the intestine by the presence of the gall stone. Owing to the position of the incision examination of the gall bladder region could not be satisfactorily performed. The wall of the gut at the site of impaction of the stone appeared undamaged and the stone was easily displaced upwards. After unwinding the volvulus this was done and the stone removed by opening the bowel. The stone was ovoid 1½ inches long, with a diameter of 1 inch and tuberculated except at its narrow pole which was smooth and presumably had projected into the fistulous communication between the gall bladder and the small intestine which doubtless existed before the stone escaped to bring about the obstruction. The abdominal wound was then closed with a drainage tube to the site of enterotomy.

The patient made an excellent recovery.

London W 1

N ROSS SMITH, F R C S Eng

ACUTE APPENDICITIS IN THE AGED

The following case seems worth placing on record because of the unusual features which were present.

At 10 a.m. on April 6th I was summoned to a frail old lady, aged 75 who about twelve hours previously, had been seized with vomiting and abdominal pain which had gradually become more severe in the right iliac region.

When I saw her the physical signs were rigidity of the abdomen and pain and tenderness (this last very marked even on gentle palpation) over the appendix area. The temperature was 99.2° and the pulse rate 58. Her normal pulse is 60 and her normal temperature 98°. There were no signs of any external hernial strangulation and the very definite local signs made the diagnosis of acute appendicitis fairly certain.

Dr. Morland Smith saw the patient with me at midday and agreed with the diagnosis and necessity for immediate operation. This was performed in the early afternoon as soon as the patient had been removed to the Southbourne nursing home.

The appendix was found to be very distended and discoloured and tortuous, with commencing ulceration near its base. The usual operation was performed, the appendix removed, and as investigation showed nothing abnormal elsewhere in the abdomen or in the pelvis the wound was closed. Convalescence was uninterrupted and she left the nursing home quite well four weeks later.

The unusual features which make this case interesting were (1) The pulse rate did not increase, and the rise of temperature was negligible. A marked increase in the pulse frequency is often insisted upon as an indication for operation. Possibly the slow pulse and low degree of fever may be explained by the way aged persons react to a toxæmia. (2) The advanced age of the patient, acute appendicitis is rare in patients over 70. When the local signs are definite, to wait for a marked rise of temperature, or an increase in the pulse rate, or to deem the age of the patient as beyond the probability of an acute appendicitis may lead to grave consequences, in this case delay would certainly have been serious. The happy result obtained was due to the speed of the operation (fortunately the absence of any complication assisted in this, because the patient's frail condition demanded quickness), and the careful nursing the patient received.

Bournemouth

FREDERICK C FORSTER

Reviews.

THE WAR HISTORY OF THE CANADIAN MEDICAL SERVICES

Two important volumes dealing with the history of the Canadian Medical Services during the great war have been published recently by authority of the Canadian Minister of National Defence. They differ, however, materially from one another in character and in the ground they cover. The first and more comprehensive of the two is by Sir Andrew Macphail, professor of the history of medicine in McGill University, who served first in France, and then with the medical headquarters staff in London. It is the official Canadian medical history of the war, and is the first of a series of volumes now in course of preparation by the historical section of the Canadian General Staff on the history of the Canadian forces during the war. The second of the two volumes is subsidiary to it, is regimental in character, and is restricted more or less to a detailed account of the Canadian Army Medical Corps units with the Canadian Army Corps during the last hundred days of the war. It is written by Colonel Snell, who was Deputy Director of Medical Services of the Army Corps during practically the whole of that period.

The opening chapter of Sir Andrew Macphail's volume discloses his general theme, and indicates the standpoint from which he approached his task. He enters at once, and courageously, into the arena of political controversy. We gather that his main object is to emphasize the lessons that are to be learnt from the difficulties with which the Canadian medical services had to contend in the earlier years of the war because of the failure of the Canadian Minister of Militia to observe the fundamental contrast between the civil and military function or to recognize that the medical service of the army has no existence in itself but is a vital part of a living fabric. Until this lesson was learnt the medical services were the object of unjustifiable attack, for the reason that they were more accessible to criticism than other technical branches of the army. This accessibility of medicine to attack has often, says the author, "proved too strong a temptation for the mingled motives of pride, chagrin, or malice." He develops this theme later in chapters in the middle of his volume, where he enters into a critical account of the origin and results of the bitter political and medical controversy which arose in Canada in 1916, mainly in connection with the attempt then made to segregate the medical services and concentrate the Canadian sick and wounded for treatment in Canadian medical units only. On this subject Sir Andrew Macphail's words do not lack force of expression. He also refers to the conditions created by the hasty preparation of the Canadian expeditionary force in the Valenciennes Camp on the outbreak of war, to the lack of equipment and the supply of unsuitable material such as boots with heels made of paper and wagons of all possible types, "so that each man and every town might have a chance to profit by public funds." Valenciennes was a mistake, Salisbury Plain, where Canadian equipment had to be scrapped and replaced, was the consequence.

Sir Andrew Macphail has purposely avoided writing a chronology of events and personal eulogy of those who took part in them. Consequently he concentrates into less than eighty pages the history of the Canadian medical services from the time they went overseas in 1914 till the close of the fighting on the Ypres front in 1917. The brief account of this long period of trench warfare and the battles of the Somme, the Ypres front, and Vimy Ridge in which the Canadians played so prominent and distinguished a part, is of interest, because of the vivid and picturesque descriptions of the conditions under which the Canadian medical services, in common with all others, lived and worked. The

operations during the advance from Amiens to the Rhine are dealt with in a chapter of some twenty pages at the end of the volume. Between it and the previous operations the author has interpolated chapters on the surgery of the front, on the conditions already referred to, on the diseases of the war, on medical services, on the Red Cross, and on various details, including poison gas, together with brief allusions to Canadian units with the Mediterranean and Siberian military forces, to medical services in Canada, to statistics of establishments, and to mortality and strength, he gives a nominal roll of members of the Canadian medical services who received decorations and of those who were killed in action or died while serving. In the chapters on the surgery and diseases of the war he deals briefly with matters that have already been treated more at length in other publications, but his statements are occasionally sweeping and dogmatic, such as "shell shock is a manifestation of childishness and femininity" against which "there is no remedy," and enteric fever "is about to drop out of the nomenclature of military medicine," the statements are not likely to be generally accepted. A special reference is made to the wide prevalence of "trench mouth" or septic stomatitis, amongst Canadians, but it is scarcely correct to say that it was practically unknown prior to the war. It was fairly common in civil life, although rare in armies.

A chapter of great interest is that on mortality and strength. The number of Canadians admitted to hospital for wounds was 144,656, and for sickness 595,684 equal to admission rates respectively of 245.90 and 945.05 per 1,000 of the strength of the Canadian forces. A table comparing the deaths from wounds and from disease amongst Canadians, Americans and British gives the American deaths from disease as 51,532, in remarkable contrast with 4,660 amongst the Canadians and 32,423 amongst the British. The deaths from battle casualties were 47,940 amongst Americans, 51,678 amongst Canadians and 532,262 amongst British and Dominion troops together. These figures give a percentage of deaths from disease to total deaths of 51.8 amongst American troops, compared with only 8.7 amongst Canadians and 5.7 amongst British combined forces. The strength of the Canadian medical services overseas expanded from 575 officers, 555 nursing sisters, and 3,620 other ranks in 1915, to 1,451 officers, 1,886 nursing sisters, and 12,245 other ranks in 1918. Of these, 30 officers, 21 nursing sisters, and 453 other ranks were killed or died of wounds, and 99 officers, 6 nursing sisters, and 569 other ranks were wounded. The hospital and convalescent hospital accommodation in Canadian units overseas expanded from 3,484 beds in 1915 to 36,609 in 1918, the latter figure being equal to 14.1 per cent of the Canadian strength. In addition, 12,531 beds were provided in Canadian in 65 hospital units.

Sir Andrew Macphail has not entirely escaped the pitfalls that beset the path of the historian, when he states that the casualty clearing station came into being during the South African war, and that at every base hospital there was an annex for the treatment of fractures. But inaccuracies such as these are few and far between and are more than compensated for by the literary excellence and the vigorous style of the author, and the clear-cut lessons he teaches.

Colonel Snell's subsidiary volume calls for little criticism. It is a straightforward and valuable record of the administration and handling of medical units within a corps area of operations and during a war of movement. In a brief introduction to it Major General Fotheringham states that it is full of the kind of experience that will make it valuable, if not exactly as a manual, yet as a source from which tactical and administrative problems can be studied by commanding officers of medical officers. Every army medical officer who makes its acquaintance, as he ought, will endorse these remarks.

The publisher is to be congratulated on the excellent paper, printing, and binding of both volumes. What one misses most are good maps. The official Canadian medical history contains no illustrations, diagrams, or charts, and one map only, a trench map showing the medical situation on the Vimy front in 1917. Colonel Snell's volume has seven maps in a pocket of the cover. They are apparently photographic reproductions of the 1/100,000 black and white General Staff maps, with conventional signs added showing

¹ Official History of the Canadian Forces in the Great War 1914-19. The Medical Services. By Sir Andrew Macphail, OBE, MD, LL.D., etc. Published by authority of the Minister of National Defence under direction of the General Staff. Ottawa: The King's Printer, 1925. (Roy. 8vo. 11 pp. + 428 1 map.)

The C.A.M.C. suggestion, Corps during the Last Hundred Days of the War. By Colonel F. Snell, C.M.G., D.S.O. Published by authority of the Minister of National Defence. Ottawa: The King's Printer, 1925. (Roy. 8vo. 11 pp. + 282 4 diagrams in text.)

the position of medical units. One map, No 6, is photographed down to a small size, the consequent concentration of detail in this map, the dark tone, and absence of distinctive colouring detract from its value. A good key map and sketch maps in the text with less detail would have been easier to follow. The official volume has a good index, Colonel Snell's has none.

In conclusion, it may be said that these two volumes form an important and valuable addition to the medical history of the war, and are a fine record of the splendid courage, intelligent initiative, and untiring devotion to duty of the Canadian medical services.

THE MALARIA TREATMENT OF GENERAL PARALYSIS

The improvement often brought about in patients with chronic mental disorders by various febrile processes was known to Hippocrates, and has frequently been noted since his day. Many essays in the infection therapy of general paralysis of the insane have been made during the last forty years or so, and a general account of the whole subject is given by Dr GERSTMAN in a book dealing with treatment by infection with malaria, his own experience with this treatment begun in 1917, when nine general paralyses were infected with tertian malaria, three by vaccination, and six by the injection of 1 ccm of blood from a malarial patient. One of the nine died early in an epileptiform attack before the treatment was finished. Two were not improved at all by the malaria, four were improved, and three were cured and still remain so ten years later, cured and able to do their work. In 1918 a second series of patients was inoculated with what was believed to be "malaria tertiana"; it proved, however, to be malaria tropica of a pernicious variety, and the result was unfortunately as much as three of the four patients treated died of malarial cachexia in twenty-four, thirty-one and thirty-nine days respectively. In 1919 the treatment was begun again, and since that date has met with an ever-extending application in Vienna.

Discussing the type of case suitable for malaria treatment Gerstman notes that the patients should be in fairly good condition, the presence of syphilitic arthritis is not necessarily a contraindication, as a few juvenile cases are not much benefited by the treatment, whereas a man aged 62 was cured by it. The earlier in the course of the general paralysis the treatment is undertaken the better the result is likely to be, cases with sudden onset and rapid progress are likely to do badly. Great stress is laid on the importance of choosing a pure tertian malaria and not a tropical malaria as the source of infection, it is noted that the infection can be handed on from one paralytic to another experimentally, as a convenient way of transmitting it and that after over a hundred such passages the malarial parasite itself and the type of malarial fever it produces remain quite unchanged. The malaria is transmitted from one patient to another by the subcutaneous injection of from 2 to 4 ccm of blood, taken from a vein in the arm and injected deeply in various directions at a spot under the skin of the back. It is indifferent whether the donor has or has not got fever at the moment; it is important that he should give his blood before he receives his quinine. The incubation period of malaria thus inoculated varies between two and twenty days and is usually from three to eight days. Its onset and course are unlike those of ordinary tertian malaria, and is a rule after four or five attacks of tertian fever it becomes quotidian in type, with the temperature often very high. This fever is very readily controlled by quinine, more so than is malaria occurring naturally, in a general way the drug is given to the paralytic patients after they have had from eight to twelve attacks of fever and it is found that the patient is cured by as little as 7 grams of quinine bisulphate twice a day for three days and then once a day for four days, he is then altogether free from malarial parasites. After this the patients are generally given a course of six neostyram injections (0.3-0.45-0.6 gram) spaced over six weeks.

Many interesting observations made in the course of the extensive treatment of general paralysis by malaria as practised at Vienna, where over a thousand cases have been dealt with, are recorded by the author, and the already extensive literature of the subject is reviewed and quoted. Discussing the form of treatment that employs African recurrent fever (caused by *Spirochaeta duttoni*) in place of malaria, he states that the results in general paralysis and other mental patients are less good, and that the spirochaetal infection is less under control than is the malarial. He lays stress also on the fact that after repeated passages from one human being to another, the malarial parasite changes in such a way that it can no longer be transmitted by the mosquito *Anopheles maculipennis* to human beings. He gives no general statistics as to the percentages of cures and remissions and so forth resulting from the malarial treatment of general paralysis of the insane, but shows good reason for the view that here at last we have a treatment well worth trying in that hitherto incurable disorder.

THE CAUSE OF BILIARY CALCULUS

In 1880 the French surgeon Galippe advanced the theory that all forms of calculus, including biliary calculus, were due to infection. Six years later the view, now so widely held, that biliary calculus were due to infection of the gall bladder was promulgated by the German clinician Nannig. This view has been stoutly combated by Professor ROYING of Copenhagen ever since the year 1899, and his book on the pathogenesis of biliary calculus and the indications for operation on it dated 1924, has recently been translated into French by Dr SAINT-CANE. Professor ROYING argues that biliary calculus are of two kinds, of black calcium salts of biliary acids in the cells of the liver. These pass into the bile capillaries, and there form tiny concretions—black, irregular, and pointed. These agglomerate in the gall bladder, or less often in the bile ducts, and increase in size by the deposition of cholesterol, lime salts of bilirubin and bile acids, and a cement of mixed epithelial cells, fibrous, and blood due to the irritation and tearing of the mucous membrane to which they give rise. They are thus the cause and not the consequence of the infection of the gall bladder and biliary stasis with which they are associated. In the large majority of cases the biliary calculus thus formed remain fixed in the gall bladder, and give rise to no symptoms of disease. If they migrate and cause temporary or permanent occlusion of the cystic duct, the disease of biliary lithiasis appears, with bilious colic, fever, jaundice, and other symptoms of an acute disease that calls for immediate surgical interference.

Professor ROYING writes with clearness and great conviction, and his book is illustrated with two coloured plates of biliary calculus and a photographic plate showing stages in the development of a calculus. He submits the somewhat combative literature of the subject to a critical analysis, and brings forward good evidence in support of his view as to the pathogenesis of biliary calculus. His book may be commended to the attention of pathologists and surgeons interested in cholelithiasis.

FORENSIC MEDICINE

PROFESSOR SYDNEY SMITH's book forms a valuable contribution to the literature on forensic medicine and toxicology. He begins with the signs of death, sudden death from natural causes, and post mortem examination of the body. He has four chapters on different varieties of wounds and two chapters on deaths from asphyxia. The chapter on examination of blood stains deserves special mention because it contains a masterly review of a difficult branch of forensic medicine to which Dr Sydney Smith's researches have made a notable contribution. Impotence, rape, pregnancy, abortion, infanticide, each forms the subject of subsequent chapters. The last quarter of the book is devoted to toxicology, and here the author discusses corrosive

Pathologie des Calculs Biliaires et Indications Opératoires. Par Thorild ROYING. Traduction du Dr Saint-Cane. Paris: Masson et Cie 1925. (Roy 8vo pp 125 3 plates. Fr. 20.)

Forensic Medicine. By Sydney Smith M.D. Edin. D.P.H. With an introduction by Prof. C. Harvey Littlejohn F.R.C.S. Edin. F.P.S.F. London: J. and A. Churchill 1925. (Denit 8vo pp vii + 433 117 figures. 21 net.)

*Der Progre. von Lateral. Ven. Privatdozent
einem Vorwort v. N. 1106. R. Dr. Julius
J. Springer 1925. (Roy 8vo 11 + 29)*

Nova et Vetera.

ROYAL BANQUETS IN THE SIXTEENTH CENTURY

It is always interesting to learn how our forefathers lived, and such interest has led to the publication of many old domestic account books of the middle and upper classes, while no doubt there is still more material hidden in country houses which has not yet been published. Some years ago the Jesuit father A. Hamy produced a substantial volume on the interview between Francis I of France and Henry VIII at Boulogne in 1532, in which, among more weighty matters, we to be found lists of the various articles of food provided on that occasion, together with the cost of the whole entertainment on the French side at Boulogne and on the English side during the return visit at Calais. This is not the place to try and unravel the tortuous diplomacy of the time, suffice it to say that neither monarch nor the advisers of either seem to have believed that honesty was the best policy or to have had any idea that the royal word was of value except as a means of deception. According to Pere Hamy, Henry's real motive in seeking this interview was the hope of persuading Francis to use his influence at Rome in favour of the divorce from Queen Catherine. The interview in question cannot be compared in magnificence with that twelve years before on the Field of the Cloth of Gold, but it cost both monarchs a pretty penny nevertheless. In hard cash the Boulogne entertainment seems to have cost 200,000 livres, or £8,000, while the English estimate amounted to £4,053 18s 3d, not including transport. It is clearly impossible to estimate the value of the contributions in kind which certainly formed part of the provision made.

Pere Hamy has availed himself largely of the documents, at that time unpublished, which had been preserved at Longleat by the Marquess of Bath. In these we find detailed bills of fare as follow:

An ordinance for the Kinges highnes and the frensche kinge and their traines at Calais for the space of IIII days

The first Course

Potage
Brawn
Venusonne in breues
Pestells of red doi 1 giosse
Langquette vel young vele
Swannys 1 gees
Capounes of gr
Picaunts
Conyes of gr
Gullets 1 shovellers
Pies of Paris
Custards
Leche
Ffrittes

The second Course

Jely Iporas
Cranes vel Stor[h]
Curlews vel Bustards
Pitches [partridges]
Brewes
Pyjones
Chickins
Quails
Cocks Plovers
Snyle
Laicks Stint
Venusonne in paste
Tarte
Frittoires
(13 Plats)

Souper

The first cour e

Pot
Stewed hark Chickens
Jogons of venison moton
Capounes gr
Conyes
Herous
Pches [partridges]
Snite
Malards Teles [teals]
Chickins baked f Caude
Doucette

The seconde course

A second potage
Gulles shovellers
Curlews
Peasaunts brewes
Pyjones
Chickins
Quails
Laicke stinte
Venison
Tartre

The occurrence of similar dishes in both courses seems to indicate that that word is not to be given its modern significance but that the second course was a second dinner or supper for those of inferior rank or those for whom there was no room at the first meal.

The meaning of most of these items is obvious, but *leche* is puzzling as it cannot be supposed that any species of Hundo formed an article of diet. The word *brave* gave Pere Hamy a great deal of trouble, but a reference to the *New English Dictionary* shows that it was the name, now obsolete for a small bird of the snipe tribe. In a fifteenth century cookery book we are told "A Biew slew him in the mouth as a curlew." This seems to be a perversion of the celebrated hue recipe and to amount to "Just catch your brewer then slay him!" *Stint*, of course, is a term for sandpipets in general and the dunlin in particular.

Doucette is corn salad. It will be noticed that in these menus there is no mention of beef and only one of "moton," which no doubt means mutton. Perhaps it was thought unnecessary to mention such everyday pieces of resistance. There is little doubt that the national dish was provided, for 1,000 cattle were taken to Calais on this occasion and 300 sheep were killed, as well as 336 does for venison. It is further noticeable that no fish is included in these lists, probably these meals were for ordinary days and fish was reserved for fast days. There was no lack of it, for there is a list of twenty-nine items under this head, from shrimps to seals and porpoises, costing £284 6s. Everything that lived in the water and came on their net was fish for our forefathers, despite the obviously mammalian appearance of the seal.

One is struck by the number of birds which are now not thought worth eating but which were then considered worthy of a king's table. We must confess that we have not experimented with swan, stoik, seagull, or bittern, although we have tasted curlew. Father Hamy tells us, apparently with some feeling, that the bittern is unactable unless it is skinned before being cooked. No mention is made of peacocks—formerly a royal dish. Besides deer the only wild land quadrupeds mentioned are rabbits. Bores, probably wild boars, are, however, referred to. As for dessert, apples, pears, oranges, peaches, medlars, and nuts appear in the provision lists. As it was October it was too late for the softer succulent fruits except grapes.

As a rule the spelling in these accounts does not widely differ from modern practice. There is one interesting instance of phonetic spelling—that is, *saucyges* for "sausages," which shows that the pronunciation of this word has not changed in four hundred years.

The estimate at Calais for wine and beer amounted to £4,800 13s 4d, but we are told that this enormous total was not actually reached. The French account for wine at Boulogne amounted to 68,652 livres, or more than £2,746. It is of interest to note that Francis was accompanied by two doctors (*medecins*). No mention is made of any medical attention upon Henry, but it is very likely that one at least, perhaps Dr. Butts, was with him.

There is much else of general interest in this book, and we cannot take leave of it without remarking on the charming panoramic sketch of Boulogne, with the figure of the artist seated sketching in the foreground, it was drawn by Joachim Deviert in the reign of Henry of Navarre.

The reverend author of this book is not altogether free from the prejudices of a Frenchman and a Jesuit, and Henry emerges from his pages very black indeed, while Francis is most completely whitewashed and appears as an almost saintly character and loyal son of Holy Church.

L. MURKIN LITTLE

THE WORLD EPIDEMIOLOGY OF 1924

THE Health Section of the League of Nations has issued its second annual report on the prevalence of epidemic diseases.¹ The data relate to notifiable diseases in no fewer than 83 countries—29 in Europe, 17 in Africa, 20 in America, 16 in Asia, and Australasia. They may be regarded, therefore, as covering practically the civilized regions of the world, excepting that returns are received from only a small part of South America. Of 42 of the countries, including nearly all the most important, the statistics have been verified by the authorities concerned, and the British Ministry of Health has done this for 24 colonies and protectorates. A result is that some of the totals for the year differ from some of the figures contained in the monthly reports.² The great bulk of the volume consists of statistical tables, in some cases illustrated by maps and diagrams, but interspersed there are many interesting and valuable notes on prevalence. Some of these notes are as follows:

Plague
More cases of plague occurred in 1924 throughout the world than in any of the previous five years this was largely due

¹ *Epidemiological Intelligence* Geneva 1925 (Large 4to pp 1-11)
² Monthly Epidemiological Reports of the Health Section of the Secretariat Geneva London agents Comtable and Co. Annual subscription 10s single number 1s.

The highest numbers of *Anthrax* and those reported from Russia (6 929 cases) and the Ukraine (4 848) as against 4 450 and 2 309 respectively in 1923

British Medical Journal.

SATURDAY, SEPTEMBER 12TH, 1925

MULTIPLE NEURITIS

THE complex subject of multiple neuritis abounds with problems, the solution of many of which remains for the future. The discussion opened by Dr Granger Stewart at the Annual Meeting of the British Medical Association at Bath, and reported fully in our columns this week, serves to restate some of these problems and to summarize the present state of knowledge.

The term 'multiple neuritis' is itself essentially clinical rather than pathological: it represents a syndrome or clinical picture which is more or less characteristic while due to widely differing causes. There would seem to be general agreement that the conception of multiple neuritis must be extended to include a pathological state of the whole of the lower motor neurone, and not its peripheral part alone. In a considerable number of cases of so-called peripheral neuritis the distribution of the motor changes and the absence of sensory loss suggests an implication of the central origins of the motor nerves rather than a truly peripheral lesion, and Dr Kinnier Wilson would prefer to call such cases examples of 'neuritis'. Clinically the cases may be divided into groups which show every gradation between conditions where there is obvious involvement of mixed nerves, as in alcoholic neuritis, and conditions which approximate closely to a pure cell affection, such as acute anterior poliomyelitis. To the latter group belong the cases of acute infective polyneuritis described during the war by Dr Gordon Holmes and Sir John Rose Bradford and Drs Bashford and Wilson. In these cases sensory disturbance was never marked, the main feature following a febrile onset, was flaccid paralysis, starting in the legs and rapidly ascending to involve in succession the trunk muscles and those of the upper limbs and face. The paralysis reached its height within a week, and was accompanied by transient bladder disturbance. In the non-fatal cases slow but ultimately complete recovery followed. Several speakers in the discussion referred to cases of this kind occurring in civil life, and drew attention to their essential similarity to the acute ascending paralysis known for so long under the name of Landry's paralysis. All were agreed that Landry's paralysis ought to be included within the category of toxic polyneuritis in which the brunt of the infection is borne by the more central parts of the lower motor neurones. Acute anterior poliomyelitis itself in its earlier stages is clearly not limited strictly to the anterior horn cells of the spinal cord: subjective sensory symptoms are often severe at the onset, and occasionally there is definite evidence of involvement of the upper motor neurones in the form of transient extensor plantar responses.

While therefore, it is agreed that there is no clear demarcation between lesions affecting the central and peripheral parts of the lower motor neurones, nevertheless it remains to explain why certain poisons exert a selective incidence on the lower motor neurones as a whole and in particular why a general systemic poison should pick out for special attack certain segments or peripheral nerves more than others. As Dr Granger Stewart observed, in some cases the

explanation of this is to be found in a proved chemical affinity between the particular toxin and either the fatty or the protein elements of the nervous tissues, this was demonstrated experimentally by Guillam and Laroche. It is probable, however, that other factors play a part in determining this specific incidence, and reference was made to the interesting observations of Dr F. M. R. Walshe on the local paralyses occurring in diphtheria. In a number of cases of local diphtheritic infection of gunshot wounds he found that the initial paralyses occurred in muscle groups adjacent to the infected wound, while the palatal paralysis seen in faucial diphtheria was absent. At a later stage paralysis of accommodation nearly always occurred, irrespective of the site of the wound, while in some instances a third stage of generalized neuritis appeared. The conclusion seems inevitable that the diphtheritic toxin is conveyed primarily to the nearest parts of the central nervous system, and it is probable that the route of infection is by way of the perineurial lymphatics. That toxins and organisms can reach the central nervous system by this route has already been demonstrated by Drs Orr and Rows. Whether the perineurial infection alone accounts for the wide spread involvement of the nervous system seen in multiple neuritis remains to be decided, while this may be the route in the case of the diphtheritic toxin, infection by the blood stream must often be the more important process. Another possible factor in determining the particular neurones affected in multiple neuritis was referred to by Dr W. Johnson—namely, the influence of fatigue. The late Professor Edinger of Frankfurt laid great stress on this factor in determining the site of toxic lesions, and Dr Johnson found evidence of its influence in cases of lead neuritis. By investigating the type of work performed by men suffering from lead poisoning he was led to conclude that the incidence of the paralysis fell most heavily on the muscles which were in most constant use by the workman. It is clearly desirable that further observations should be made on this possibly important factor.

Certain other points in a long discussion can only be referred to briefly. The well known association with polyneuritis of mental changes, and especially of Korsakoff's psychosis, is not limited to cases of alcoholic neuritis, mental disturbances of this kind are to be referred, as Dr Wilfred Harris pointed out, to a simultaneous affection of cerebral neurones—that is, an encephalitis, and Dr James Collier would include such symptoms in the complete clinical picture of polyneuritis from any cause. Dr F. J. Nattrass and Dr Wooster Drought referred to the rare and obscure cases of recurrent multiple neuritis, in which prolonged attacks of widespread peripheral palsy occur with more or less complete recovery in the intervals. Dr Nattrass mentioned also two cases in which multiple neuritis was accompanied by a uniform enlargement and hardening of the peripheral nerve trunks and cutaneous nerves. Dr A. F. Hurst drew attention to the importance of latent neuritis as evidenced by diminution or loss of tendon reflexes, especially the ankle jerks. In cases of suspected alcoholism strong confirmation of the diagnosis might be obtained if the ankle jerks were found to have disappeared. Similar evidence of latent neuritis was often present in diabetes. Finally, in patients receiving large doses of arsenic Dr Hurst urged the importance of frequent testing of the ankle jerks, as the disappearance of these always preceded, in his experience, the occurrence of obvious symptoms of multiple neuritis.

MENTAL DEFECTIVES IN NEW ZEALAND

RATHER more than a year ago the Minister of Health of New Zealand appointed a committee to inquire into the questions of mental defectives and sexual offenders in that dominion. The committee included, as medical members, Sir Donald McGavin, Director General of Medical Services, Defence Department, Sir F. Truby King and Dr. Adair Paterson, of the Department of Health, and Dr. J. S. Elliott, the Chairman of Council of the New Zealand Branch of the British Medical Association. The report of this committee has now been received. In it the committee expresses itself as 'especially grateful to the British Medical Association for its willing co-operation and assistance,' and to Sir George Newman for a valuable memorandum on the care of mental defectives in England and Wales.

The report is an interesting and valuable document, though it does not add materially to the sum of knowledge on the subjects considered. It is, of course, directed primarily to the question of how this knowledge, and the experience of other countries, can best be applied to the circumstances of New Zealand. Though the immediate cause of the setting up of the committee appears to have been the occurrence of a number of sexual offences which had attracted wide spread public notice, and though it seems to have been assumed that there was at least a probable connexion between the two matters which were directly referred to it, the committee at once realized, and expresses quite clearly and emphatically, that the questions of mental deficiency and of sexual offences are 'entirely separate and distinct from each other. It is true that a certain proportion of mental defectives show then lack of self control in regard to sex instincts and functions as in other respects, but it is very far from correct to suppose that all feeble minded persons are sexual offenders, or that all sexual offenders are mentally defective. On the contrary, among sexual offenders of the worst type, those convicted of unnatural offences are occasionally found to be persons possessing intellectual and artistic powers above the average.' This is a fact which might well be borne in mind by certain speakers and writers on the subject in this country. With regard to sexual offenders the two important recommendations of the committee are that sentences passed upon convicted offenders should be of indeterminate duration, and that full provision should be made for examination into the physical and mental condition of accused persons and of prisoners.

It is somewhat surprising to learn from the report that the proportion of mental defectives to the total population is as high in New Zealand as in other countries (2 or 3 per cent), and that so little has yet been done in the dominion to deal with the problems presented by this class. There are two residential schools, providing accommodation for 195 boys and 80 girls, and special classes have been established in connexion with public schools in each of the large centres of population, but such educational provision is even less complete than in England, and there is as yet no special arrangement for the education of epileptic children or for the establishment of special courts for children or juvenile offenders.

The problem of mental deficiency is not merely educational and social, but also racial or eugenic, and it is with this aspect that the report is largely concerned. The question of sterilization is discussed, and reference is made to the admirable pamphlet issued by the Central Association for Mental Welfare on

Sterilization and Mental Deficiency, which we have previously noticed. An important legal opinion on the question of sterilization in this country will be found in the *SUPPLEMENT* of June 27th (p. 286). The report is rather more favourable to sterilization as a preventive measure than is the pamphlet referred to, but it is recognized (1) that anti-social conduct would not be prevented by sterilization, and might even be increased by a false sense of security, (2) that for those who had to be segregated for antisocial conduct sterilization would be unnecessary, (3) that the greater number of mentally defective children are not the offspring of obviously defective parents. The preventive results of sterilization would therefore be very limited, but they might nevertheless be useful if the procedure were restricted to suitable individual cases among such defectives as did not require segregation by reason of their anti-social conduct. The work of the committee should have early and valuable results, and it may be noted that though the report states that New Zealand has now the reputation with the Imperial authorities of being the hardest and most exacting of all Dominions regarding the health and physical fitness of immigrants, it recommends that the requirements should be made more stringent and the supervision even closer.

THE EXTENSOR PLANTAR RESPONSE

EXTENSION of the great toe on stimulation of the sole of the foot, or Babinski's toe phenomenon, has come to be widely recognized as the most important of all indications of disease of the pyramidal system. Since the reflex was first discovered other methods of eliciting it have been described—for example, Oppenheim's reflex is extension of the great toe produced by firm pressure from above downwards just behind the internal border of the tibia, and the same effect, known as Gordon's reflex, is caused in some cases of pyramidal disease by deep pressure between the heads of the gastrocnemii. There are several other methods, each named after its author, but the multiplication of methods is merely confusing unless it is recognized that the end result—extension of the great toe—is common to all, and that each has the same significance—namely, an indication of disordered function of the pyramidal tracts. Further, the upward movement of the hallux under these conditions is invariably accompanied by a contraction of the hamstring muscles of the same limb—that is, a constant part of the reflex is a tendency to withdrawal of the whole limb from the stimulus. The investigations of Marie and Foix, Walshe, Riddoch, and others have shown that the Babinski sign is, in fact, part of a reflex which is analogous to the flexion or withdrawal reflex found so constantly by Sherrington in animals with completely divided spinal cords. This reflex, Sherrington found, could be elicited from a wide area of the limb if the stimulus was of a harmful (nociceptive) character, and this explains the existence of so many different ways of obtaining the reflex in conditions of disease in man. There are grounds for believing that the movement which we call extension of the great toe is physiologically flexion, and it would therefore be more correct to speak of the extensor plantar response, with its associated contraction of the hamstrings, as the flexor reflex of the lower limb. The reflex is normal during the first year of life, but after this age it is an indication of the release of spinal activity from cortical control through disturbance of the pyramidal tracts. In the large majority of cases such disturbance is due to organic disease, but there are certain conditions in which the disturbance may be of a transient nature. Collier pointed out that the sign is constant after severe epileptic fits.

and it is also frequent after uraemic convulsions. A recent paper by Elliott and Walshe deals with its occurrence in other toxic states, and the subject is also reviewed by Walshe in the number of *Medical Science* for July. The sign has been observed in a few cases of strychnine poisoning and of tetanus without loss of consciousness, but it is much more common in association with the state of coma from different causes—for example, in poisoning by sulphonal, morphia, and coal gas. It is found to be specially frequent in the toxic coma due to severe impairment of liver function, and is therefore met with in delayed chloroform poisoning, acute yellow atrophy, severe infective jaundice, and eclampsia. Lastly, the sign is present during deep sleep in a considerable proportion of normal people. In a contribution to our columns this week Dr C. O. Hawthorne discusses the question whether the occurrence of coma is in itself sufficient to account for extensor responses, or whether the various toxins mentioned have some specific effect on the nervous mechanisms concerned. He also records an example of an extensor response in one foot being voluntarily produced by a ringer. These observations do not detract from the value of the sign, but they indicate that in the case of unconscious patients its significance should be interpreted with caution, with very rare exceptions the presence of the sign in a conscious patient means structural disease of the upper motor neurone.

RESEARCH IN FOOT AND MOUTH DISEASE

THE first progress report of the Foot-and-Mouth Disease Research Committee¹ makes somewhat disappointing reading. The committee was appointed in March, 1924, but owing to the illness of the chairman, Sir Charles Sherrington, and the appointment of Sir William Leishman to fill his place, it was not until two months later that it was able to get to work. It has now been in existence for eighteen months. Laboratory work has been conducted almost entirely at the laboratory of the Ministry of Agriculture at Weybridge and at the Lister Institute in London, but it is hoped that in the future other laboratories will take part in the research. The Ministry possesses at Pirbright, near Woking, a cattle-testing station which has been adapted at a comparatively slight cost to form an experimental station for the use of the committee, and here, and only here, will experiments with ruminants and pigs be carried out. Small mammals may be used for research in specially selected laboratories throughout the country, but only under strict conditions laid down by the committee. The Treasury has sanctioned grants amounting to £25,000, but in the event of more being required the committee will "not hesitate to approach the Ministry for a further grant." Apparently the "virus" which destroyed the former committee has been definitely abandoned. We have from time to time detailed the advances which have been made abroad—there have been none of any moment in this country—and readers will find little that is new in the present report. The committee has repeated the work of Frosch and Dahmen (two members journeyed to Germany to study the technique), but, with two possible exceptions, its experiments have been negative. The two apparently successful experiments could also be explained by the survival of minimal amounts of virus rather than by multiplication, and accordingly the committee is in general agreement with the German committee that the claims of these two workers have not been substantiated. The committee has also been unable to concentrate the virus by centrifugalization, and it cannot find any confirmation of Vallee and Carre's

statement that it is fixed by blood cells or bacteria. It has confirmed the belief that the effects of cold on the virus are slight—lymph was found to be still infective after 180 days at 4° to 7° C. Glycerol was confirmed as a good preservative, while the resistance to ethyl alcohol and chloroform was found to be high. The question of plurality of strains of the virus is still being investigated, but the committee inclines to the view that more than one strain exists, a view which we have previously discussed.² One strain was not transmitted to guinea pigs, while the other was, both were transmitted to cattle. The susceptibility of small animals has been carefully considered. Guinea pigs are easily infected with at least one strain of the virus. The symptoms in these animals are very regular, the mortality is low (about 5 per cent), and a high degree of immunity is conferred. Infection experiments with rats showed that these animals were much more refractory, but were not immune. On the other hand, field mice could be infected with great regularity. However, it was found that under laboratory conditions the disease was only very rarely transmitted spontaneously from one small mammal to another. Apart from Professor Bentham's laboratory at Liverpool, research has been entirely confined to the two departments under the control of the committee. Work of such an urgent nature as is the foot-and-mouth disease problem should not be restricted to one group of laboratories, and we feel that every effort should be made to extend the sphere of the research to "external" laboratories. The present lull in the foot-and-mouth epizootic does not mean that all anxiety is at an end. It means that every effort should be intensified to extend our knowledge of the cause and mode of transmission of the disease, so that when it does again become rampant, as it assuredly will, we may be in a very much stronger position to bring it under control.

THE THERAPEUTIC SUBSTANCES ACT, 1925

IN the SUPPLEMENT this week we publish an article summarizing the main provisions of the Therapeutic Substances Act, which received the Royal assent on August 7th, and giving some account of the circumstances that led to the placing, after long delay, of this much needed measure upon the statute book. The object of the Act, in the words of its short title, is to provide for the regulation of the manufacture, sale, and importation of vaccines, sera, and other therapeutic substances. Manufacture or the scheduled substances (and of substances added from time to time by regulations made under the Act) is to be conducted only by persons and on premises specially licensed for the purpose, and under such conditions as may be laid down by the licensing authority. This authority is for England, the Minister of Health, for Scotland, the Secretary of State for Scotland, and for Northern Ireland, the Minister for Home Affairs. The duty of framing regulations under the Act and of securing uniformity of standards is delegated to a Joint Committee consisting of the three authorities named (or deputies appointed by them for the purpose), and acting after consultation with an expert advisory committee. The advisory committee will consist of a chairman appointed by the Minister of Health, and one member each appointed by the Scottish Board of Health, the Minister for Home Affairs of Northern Ireland, the Medical Research Council, the General Medical Council, the British Medical Association, the Council of the Pharmaceutical Society, and the Council of the Institute of Chemists. The work incidental to the determination of the required standards will be carried out in the laboratory of the Medical Research Council and under its direction. All regulations under the Act must be laid before both

¹ Ministry of Agriculture and Fisheries. First Progress Report of the Foot and Mouth Disease Research Committee. 1925. H.M. Stationery Office. Pp. 43 with two plans. 1s. 3d. net.

² BRITISH MEDICAL JOURNAL, July 12th, 1924, p. 116.

Houses of Parliament, and the Act will be brought into operation by Order in Council not earlier than one and not later than two years from its original date. In the meanwhile interest naturally centres upon the duties entrusted to the advisory committee and the Medical Research Council, and it may be hoped that the former will be constituted with a minimum of delay, for there is much preliminary work of the highest importance to be done. The inclusion in the committee of representatives of the British Medical Association, of the Pharmaceutical Society, and of the Institute of Chemistry is, moreover, a useful reminder that the official system outlined in the Act must to no small degree depend for its final efficacy upon the fullest possible development of pharmacology in this country. The work directed by the Medical Research Council must be supplementary to, and not a substitute for, independent research. We have reason to believe that both the Council of the British Medical Association and the Council of the Pharmaceutical Society are fully alive to this aspect of the matter.

QUININE AND QUINIDINE

Clinical Comparisons of Quinine and Quinidine is the ninety-sixth of the series of special reports issued by the Medical Research Council; it gives an account of investigations undertaken to determine the relative efficiency of quinine and quinidine in the treatment of malaria. This work was organized by a special committee consisting of Dr Andrew Balfour, Colonel S. P. James, Major H. W. Acton, and Dr H. H. Dale. At an early stage in the proceedings Major Acton had to return to India, and the other three members are responsible for the report. The committee sent out specially purified samples of quinine and quinidine to eleven centres in different parts of the world, and drew up a schedule of suggestions designed to secure that each patient of two comparable series received one or other of the alkaloids in the same definite dosage, administered by the same technique and at the same intervals. The supplies and forms were sent out two years ago, and five reports have been received, the most complete is that by Dr William Fletcher of the Institute for Medical Research, Kuala Lumpur, Federated Malay States. This report is published in full. The reports altogether deal with about two hundred cases. The chief conclusions drawn by the committee are as follows: "The conclusion that quinidine is at least as efficacious as quinine is suggested by the results submitted by all the observers. Further, there is no clear evidence of any difference between the two alkaloids in toxicity for the patient. This point, therefore, of the practical equivalence of quinine and quinidine as antimalarial agents may be regarded as definitely settled. On the other hand, the reports provide no evidence at all in favour of Acton's suggestion that the curative actions of these alkaloids are specifically different for the different kinds of malarial parasites. The reports deal with mixed groups of cases, and there is no indication whatever of a preferential action of quinine on benign tertian or of quinine on subtertian infections." The committee points out that there is no likelihood with public opinion regarding quinine to any large centres of population, and suggests that the use is even less complete than may limit its use as an antimalarial. The importance of the conclusion is yet no special importance of the conclusion for epileptic children, or for quinine from the position of counts for children or juveniles and tradition have accorded to it. The problem of mental aids. This conclusion is, of educational and social, but also because the combating of it is with this aspect that the edicts is in the main concerned. The question of sterilization largely upon our ability reference is made to the admiral remedy at a cost low by the Central Association for

enough to make it available for the poverty-stricken tropical peoples who are the worst sufferers from the disease. The committee promises further investigation upon the antimalarial action of cinchonine and cinchonidine, and remarks that, if it should be found that these alkaloids also have the same remedial and toxic actions as quinine, then it would be possible to replace quinine by a mixture of the crystallizable cinchona alkaloids, and the problem of cheapening the supply of antimalarial remedies would be greatly simplified.

THE SPAHLINGER TREATMENT IN BOVINE TUBERCULOSIS

The question of bovine tuberculosis is so closely bound up with that of human tuberculosis that any attempt to unravel the mysteries of the disease in cattle must inevitably react on the disease in man. It is therefore of interest to observe that a committee (according to the *Times* of September 3rd) has been formed in Cheshire to test the value of the Spahlinger treatment as applied to cattle. The composition of the committee is peculiar and its origin somewhat obscure. It consists largely of lay persons, together with Sir John McIndoe, principal of the Royal Veterinary College (not of the Royal College of Veterinary Surgeons, as the *Times* has it), and Drs. T. Watts and J. H. Williams, two medical members of Parliament who have abundantly had experience of M. Henri Spahlinger, now at Geneva in June of this year. Apparently a technical subcommittee is to be appointed to supervise the actual work. A vaccine, at present being prepared by M. Spahlinger, is to be injected into a number of calves, which subsequently—together with the controls—will be inoculated with virulent bacilli and at a later date slaughtered. More elaborate experiments are promised for the future. Nine years ago M. Spahlinger vaccinated a number of cattle at Geneva, and it is claimed that such as are still alive are immune to tuberculosis. It is out of a desire to test this statement that the committee has been set up. Many references to the Spahlinger treatment of human tuberculosis have appeared in our columns during the past two or three years. On May 12th, 1923 (p. 830) we published a general review of the position with regard to this method, and on June 2nd, 1923 (p. 938), we gave some further particulars about the various products, classifying them under two headings—vaccines and antisera. There are a considerable number of other vaccines which have been used in recent years, one of the latest being that of Dr Guerin of the Pasteur Institute of Lille; the composition of this is known, and promising results have been recorded. Some of these vaccines might well be tested in this country by some official committee. The great disadvantage of the Spahlinger vaccines and sera is our lack of precise knowledge as to their composition and method of preparation. The treatment may be all that is claimed for it, but it is contrary to the scientific and medical traditions of this country to conduct a critical investigation into what is virtually a secret remedy. Considerable disappointment was felt in many circles at the failure to guarantee a supply of sera and vaccines to conduct an exhaustive test in this country. A satisfactory advance can be made only when the full details of the composition, mode of manufacture, and technique are placed before the scientific world, and are then examined by an impartial committee of bacteriologists and medical men. It is quite possible that the Cheshire committee has in the meanwhile taken a step which may yield fruitful results, but we feel that the wiser course would have been to investigate first of all those vaccines the makers of which have taken the medical and veterinary professions into their confidence.

SCIENCE AND ATHLETICS

AMONG the many papers read at the meeting of the British Association in Southampton few have aroused so much public interest as the presidential address of Professor A. V. Hill in the Section of Physiology on the physiological basis of athletic records. Hitherto athletic events have been recorded solely from a statistical point of view. Professor Hill has endeavoured, in the light of recent developments in the scientific study of muscular effort, to get at the physiological principles that underlie them. Fatigue is, of course, the dominating factor in determining the duration and extent of athletic effort, but only one form of fatigue—the fatigue that results in a short time from extremely violent effort—is as yet susceptible of exact description and measurement. Other forms of fatigue—such as the wear and tear shown by nervous exhaustion, metabolic changes and disturbances, and sleeplessness—are too indefinite and complex to permit of measurement and accurate definition at present. Professor Hill's physiological estimate of muscular effort is based on the three factors of oxygen intake, oxygen requirement, and oxygen reserve, or the amount of oxidation which may be put off until after the exercise and is used in the recovery process. This delayed oxidation is, he says, as important to the muscle as recharging is to an electrical accumulator. But it can be drawn upon to the extent of some 15 litres of oxygen only before complete exhaustion sets in and no further effort is possible. The extent to which it is drawn on is described as the oxygen debt. The maximum oxygen intake for a man of average size is 4 litres a minute, but the oxygen requirement increases rapidly in proportion to the increase in speed, and it is on these factors that an athlete can determine the speed at which he can run in a given time until he is run to a standstill. Professor Hill explains this by taking the case of a man running for fifteen minutes with a maximum oxygen intake of 4 litres a minute and a reserve of 15 litres to draw on. His total available oxygen would be $(4 \times 15) + 15$, or 75 litres, and he would consequently be able to make an effort requiring 5 litres a minute. Similarly, a two-minute effort would have available $(4 \times 2) + 15$, or 23 litres, and this would permit of the still greater effort of 11.5 litres of oxygen a minute. By plotting out athletic records on graphs for running, rowing, swimming, walling, bicycling, and horse-racing to show the relation between speed, time, and distance, and by using the ingenious device of a logarithmic graph to bring distances from 75 yards to 100 miles into the same picture, Professor Hill was able to show how the speed effort was greatest in the short distances and times, the physiological reason for which is to be found in the above illustrations. An interesting point brought out by him was that a uniform speed throughout is the optimum. He explains this by the illustration of a mile run in four and a half minutes at a uniform speed of 6.52 yards a second. The energy expended, on the basis of the energy output being taken as the square of the speed, would be $4\frac{1}{2} \times 6.52^2$, or 191.3 arbitrary units, whereas if 665 of the yards were run at 5 yards a second and 1.096 at 8 yards a second, the time for the mile would still be four and a half minutes, but the energy output would have risen to 201.5 of the arbitrary units. There were several other points of interest in the address, but they did not affect to the same extent the physiological measurement of effort. Women, for example, do not seem to be capable of prolonging their athletic effort to the same degree as men except in swimming, but the oxygen requirement in proportion to speed has not been determined in swimming and the maximum oxygen intake and oxygen debt are not known for certain in the case of women. Athletes are sure to find in this address something which will not only add fresh interest to their efforts, but may

also enable them to beat the records. As the lecturer said in his concluding remarks, physiology can aid the development of athletics as a science and an art, while in the data of athletic records a store of information is available for physiological study. The reward to physiology and athletics is thus reciprocal.

GLASS PARTICLES IN PRESERVED FOODS

It has often been suggested that particles of glass detached from bottles used nowadays for various sorts of preserved foods may produce lesions of the gastro-intestinal tract. The facts brought forward in support of this suggestion have been scanty, and very little has hitherto been known as to the frequency with which glass particles occur, and of their size when present. Tunkard and Stock have contributed to the *Analyst* (August, 1925) a paper giving the results of a long series of observations made independently on the presence of fragments of glass in samples of food they have been called upon to analyse. Both have found them in a considerable number of samples of bottled foods. Both found splinters and minute particles in jams and marmalades. Stock found particles of appreciable size in twenty-nine out of thirty-one specimens of fish and meat pastes, and Tunkard large files and particles of appreciable size in four out of six samples of lemonade crystals and powders. Minute particles were found by both in a number of other preparations, including pickles and sauces. Tunkard found such particles in eight out of twelve specimens, and Stock in nine out of eleven. In commenting upon the results of their observations they say: "At the present time the cheap glass jar has largely ousted the safer but more costly stoneware jar for the packing of jams and similar articles of diet. These glass jars are in some instances faultily made, and contain air bubbles which easily break down when the jar is filled with a hot liquid. We have, during the last four years, come across several samples of 'lemonade crystals' which were appreciably contaminated with glass particles in this way. The bottles showed many air bubbles, some of which readily broke down internally on lightly rubbing with a glass rod. There is no doubt that the common glass jar at present made is often unsuitable for the reception of foods, especially for food such as jam, which is packed in hot. There are, of course, glass jars of superior make, but these are costly and not commonly used. Glass frequently contains lead, arsenic, and boric acid, and glass of this material may yield up any of these constituents, the amount and nature of which will vary with the contained food. Our examinations have revealed the fact that many foods contain also quite appreciable quantities of siliceous matter, some of the particles of which were sharp-edged and pointed. If the quality of the glass containers used for packing many foods to-day can be improved, so as to remove the obvious objections, well and good, if not, it would be better for the purity of our food supply if we could get away from such containers altogether." In concluding their article the authors state that since the vogue for glass jars arose jams and similar products are now almost invariably coloured with a coal-tar dye, whereas formerly they were often prepared without any added colouring matter.

CHILD LIFE

THE annual report of the National Society for the Prevention of Cruelty to Children is entitled *In Enduring Life*. That is the aim of the society's work for the child. There are not a few school medical officers who can testify to the success of the society in securing it for individual children. The report shows that no fewer than 95,512 children were involved in the cases investigated during the year—nearly 1,000 more children than the combined

population of the cathedral cities of York and Winchester. A healthy sign of public interest in child welfare and of confidence in the work of the society is that the proportion of cases reported by the general public was larger than ever before (62.5 per cent), and that discovered by the society's inspectors lower than any previous record. The bulk of the cases were instances of neglect, but prosecutions were fewer, and it is significant that 3,325 parents, on their own initiative, went to the society during the year in the hope of securing advice and direction in the treatment of their children. There was a falling off in the number of cases in which it became necessary to remove children from their parents. This is one of the best tests as to whether life is being made endurable for the child. But there is always conflict between the advocates of reform in the home where the children live and the people who favour the easier plan of removing the children from parental control. The idea that the home is the best and right place for children may be old-fashioned, but it is standing the test of time and of experience. The balance sheet of the society stands at £121,422, and on this there is a deficit of £5,849—thus despite the fact that income had increased by £3,197 and expenditure had gone down by £5,849. The work of the society deserves the support of every lover of children. Its address is Victory House, London, W.C.2

A CLIMATOLOGICAL CONGRESS

THE climatological congress held in Davos from August 17th to 22nd was attended by 500 members from twenty-three nations, including Great Britain, Germany, Austria, Holland, the United States of America, South America, and China. It was initiated by Dr. Vogel-Eisen of Davos, Professor Loewy, director of the new Swiss institute at Davos for the study of physiology of high altitudes and of tuberculosis, and Professor Dorno, director of the Davos Meteorological Institute. Among those present were Dr. Beinhard, who preceded Rollei in applying sun baths to the treatment of tuberculosis and wounds, Professors Abderhalden, Klaus, Biedl, Stadelin, Schloetter, Koranyi, Grünbaum, Lusk, and Asher. Great Britain was represented by Professor Leonard Hill, Dr. King-Brown, Dr. Peckworth, and Dr. Bernard Hudson of Davos. Professor Hellpach, lato candidato for the presidency of the German Republic, and Professor Abderhalden gave public addresses. Professor Dorno, by untiring patience and energy, and the devotion of his private fortune to the purchase and perfection of instruments, has for many years carried on at Davos the study of the heat and light of the sun, the energy of the ultraviolet rays, the cooling and evaporative power of the air on the human body, and the electrical state of the air, and compared high altitudes with other climates. Free railway passes on the Rhätian railway allowed excursions to be taken to St. Moritz and other places in neighbouring valleys. The Davos valley, lying north and south and protected by mountain ranges, experiences little wind, and its altitude ensures cold dry air and abundant sun. Professor Loewy took a party up to a hut adapted for experimental work which has been built at an altitude of about 9,000 feet. He has made the observation that it is much more difficult to get drunk at high altitudes, because the alcohol rapidly evaporates from the lungs owing to the greatly increased ventilation of the lungs and the thin air. He showed, too, how the tremor of the muscles manifest in involuntary movements in newcomers, unacclimated to altitude, is abolished by oxygen. Over fifty papers were read at the congress, and there was an exhibition of apparatus. Hospitality was extended to all those invited to read papers, and enjoyable concerts and conversaziones and a banquet were provided for all the members. At the final meeting a committee, with Dr. Vogel-Eisen as general

secretary, Professor Abderhalden as chairman, and Professor Leonard Hill as the English representative, was appointed to arrange for congresses of biological climatology, to be held every third year in a different country.

Victoria.

[FROM OUR SPECIAL CORRESPONDENT]

OBSTETRICAL RESEARCH

THANKS to the generosity of the Edward Wilson "Argus" Trustees, who have just given a sum of £10,000 for obstetrical research, the Council of the University of Melbourne has been enabled to announce that it is about to appoint a director of obstetrical research, for two years, at a salary of £2,500 per annum. The applicant is to be a legally qualified medical practitioner, and one who can show evidence of an extensive experience of obstetric practice, gained in Australia. The successful candidate will be required to devote the whole of his time to obstetrical research, to make a survey of obstetric work in Victoria, and to carry out investigations which will have as their object the discovery of the causes of maternal mortality and morbidity in the State of Victoria and the promotion of methods for prevention and treatment. The director's inquiry is to include an examination of the methods of teaching obstetrics to medical students and the training of nurses for obstetric work, the conditions of obstetric practice in hospitals and in urban and country districts, and the conditions of post-graduate study and ante-natal work. He is to visit other States of the Commonwealth if such visits will in any way advance his investigations. The university has formed a special committee, representative of the Faculty of Medicine and the Victorian Branch of the British Medical Association, with executive powers to co-operate with and assist the director.

FURTHER ADVANCES IN THE MEDICAL SCHOOL

A few weeks ago the Governor of Victoria, the Earl of Strathmore, opened (unfortunately in the presence of a small audience) the new department of biochemistry and the new library of the Medical School. The notable additions are a further result of the rebuilding of the anatomy department and the evacuation of the buildings formerly used by this department. The upper story of the old anatomy building, formerly employed for practical anatomy and histology, has been completely altered and redesigned for biochemistry, and placed under the charge of Associate Professor Young. At the official opening of this laboratory Professor Young gave an interesting account of the department, its objects and uses to the medical profession. The ground floor of the old anatomy department has also been redesigned, and the greater portion of it transferred to the ever-growing requirements of the Medical School Library, to which all journals have now been transferred. The convenor of the Library Committee, Professor Osborne, briefly described the changes which had been made in the library equipment, and outlined his policy for its future direction.

THE TEACHING OF PATHOLOGY

The chair of pathology has now been taken over by Dr. Peter MacCallum, who arrived in Melbourne from Edinburgh last March. With the object of associating pathology much more closely with clinical practice, Professor MacCallum has been appointed honorary pathologist to the leading clinical hospitals, and the clinical pathologists of these same hospitals have been added to the staff of the university pathology department, in this way there results a much closer liaison between university and hospital. Weekly demonstrations on clinical pathological specimens have been arranged which all members of the medical profession are invited to attend.

MENTAL DEFECTIVES BILL

A bill is to be introduced in the present session of the Victorian Parliament for the notification and segregation of mental defectives, and the Government has announced its intention of securing an adequate amount of land for the purposes of establishing a colony.

Ireland.

MEDICAL REGISTRATION IN THE FREE STATE

AN article giving some account of the present position in regard to medical registration in the Irish Free State appeared last week in the *Educational Number* of the *BRITISH MEDICAL JOURNAL* (September 5th, p. 455). Mr. S. L. Brown, K.C., member of the Free State Senate, and one of the best known lawyers in Ireland, in the course of a recent statement made with regard to the proposed separate *Medical Register* for the Irish Free State, says he greatly regrets the decision of the Government not to renew or make permanent the Medical Act of 1925. It seems, in the opinion of those best able to judge, irreparable injury to the medical schools and incalculable injury to the prospects of all future and many present students in these schools of obtaining employment or advancement in their profession outside the Free State. He does not think that the advantages which a doctor educated in an Irish medical school obtains by registration are generally understood. The right to practise in Great Britain or in any British dominion or colony is not one of them, for the quack without any qualifications can do so, with the same civil and criminal liability for negligence as the registered practitioner. The only legal advantage which the medical practitioner gains by registration is the right to sue for his fees. The real advantages which he gains by registration are the assurance which it gives the public of his professional qualifications and the assistance which it gives him in obtaining professional appointments. In each of these important matters the value of registration on the general *Medical Register*, as distinguished from the Colonial Register, is enormous. It is for this reason that suggestions have been made that, for the purpose of avoiding the serious results of the decision of the Government some arrangement might be entered into between the General Medical Council and the medical schools in the Free State under which it will still be possible for their graduates to obtain admission to the general *Medical Register*. If the Free State Government adheres to its decision, that is the only mode of saving the situation. It is therefore of vital importance. Mr. Brown urges to consider what any such arrangement involves and whether it is practically possible. Assuming that the General Medical Council were willing to enter into such an arrangement, it could only be carried into effect by means of legislation in the British Parliament amending the existing Medical Acts and conferring on the General Medical Council the necessary powers. No bill for this purpose would have any chance of getting on the statute book unless it were introduced, or at least blessed, by the British Government, and no such bill would be introduced or blessed by the British Government unless it had the active approval and support of the Free State Government. The possibility, therefore, of any such arrangement depends in the end on the active co-operation of the Government of the Free State with the British Government and the General Medical Council. Mr. Brown assumes that the Free State Government will be willing to co-operate to this end. If it will do so, the suggested arrangement is, he maintains, at least a possible one. If not, it would be only fun to say so, and to make it clear beyond question that the only refuge of the Free State doctor qualifying after January next will be the Colonial Register. No matter what may be the attitude of the Executive Council towards the suggested arrangement he would very earnestly join in the plea for delay, and for the continuance of the *status quo* by the renewal of the Medical Act of 1925 for some reasonable period. This would give time for due consideration of the whole question which involves more than the fate of Irish medical schools and of the medical profession of Southern Ireland. It would also give the members of the Free State Government an opportunity of ascertaining the real views of the people. If, in the end, they feel justified in adhering to their present intention, the continuance of the existing arrangement would enable some hundreds of students who

entered Irish medical schools in the expectation of gaining admission to the general *Medical Register* to do so before the present system comes to an end.

President Cosgrave's Statement

By invitation, a deputation of the President and Fellows of the Royal College of Physicians of Ireland met the President of the Irish Free State in the Government Buildings on Thursday, September 3rd, to consider a memorandum which they had forwarded to the Government urging the retention of the existing conditions of medical registration in the Free State. Mr. Cosgrave met the deputation most courteously. He stated that the Government had definitely and finally decided to promote a bill in Parliament for the establishment of a Medical Council and *Medical Register* for the Free State. He pointed out that the provisions of his bill had not yet been finally decided upon, and that in the framing of these provisions he was in hopes of obtaining the co-operation and advice of Irish doctors. He stated further that, as soon as the bill had been framed, it was the intention of the Government to approach the British Government with the view of obtaining some form of reciprocity between the two countries, and he believed that he would obtain such a measure of reciprocity as would not endanger the status of persons seeking Irish medical qualifications. The deputation urged that, if the Government was determined to set up a Medical Council and Register in the Free State, the existing conditions should be allowed to continue until such time as that had been accomplished. Mr. Cosgrave was sympathetic towards this view, but he pointed out that any such continuance of the existing conditions would be granted only on the condition that such a continuance was not used for the purpose of delaying the establishment of an Irish Register. If the medical profession was willing to co-operate with him he said he would be willing to meet it otherwise the Government was prepared to go to the country and fight the matter on the hustings. The members of the deputation having thanked the President for receiving them, then withdrew.

VITAL STATISTICS IN NORTHERN IRELAND

During the quarter ending June 30th, 1925 7,414 births were registered in the twenty-seven superintendent registrar's districts of Northern Ireland, this number being equivalent to an annual birth rate of 23.2 per 1,000 of the estimated population. In England and Wales during this quarter the birth rate was 19.4 per 1,000, and in Scotland 22.9. The population of Northern Ireland in the middle of 1925 is estimated as 1,281,000, including the military forces. Deaths in Northern Ireland in the same period numbered 4,913, representing an annual rate of 15.3 per 1,000. The death rate in England and Wales during this quarter was 11.7, and in Scotland 13. The death rate in Northern Ireland was 0.3 below the corresponding quarter in 1924, and 2.2 below the average rate for the second quarters of the years 1915-24. Of the total deaths registered 550 or 11.2 per cent., were uncertified there having been no medical attendant during the last illness and no inquest held.

DOWN DISTRICT LUNATIC ASYLUM

The fifty-fifth annual report of the Down District Lunatic Asylum contains, in addition to the report of the resident medical superintendent (Dr. M. J. Nolan) the report of the Inspector of Lunatics of the Ministry of Home Affairs for Northern Ireland (Dr. N. C. Patrick). Dr. Nolan provides a large number of statistical tables showing the admissions, discharges, ages at death, and dietaries, and his report is illustrated by many excellent photographs. The Inspector's report bears witness generally to the satisfactory condition of the institution the deaths numbered 42, giving a percentage of 5.9 on the daily average number of patients resident, the lowest since the opening of the institution the average cost per head was £58 10s 5d, the farm account showed a profit of £1,633. Dr. Nolan emphasizes the features of treatment adopted—hospitalization, segregation of mental classes, and suitable

occupation and recreation to the widest possible extent. A dentist visits the institution weekly, and he had 264 patients during the year, and performed 1,111 extractions. 31 dentures were provided and numerous minor repairs. Dr. Nolan draws attention to the delay in the consideration of the report of the Conference of the Asylums Committee of Northern Ireland—it reached some very practical conclusions as regards pressing difficulties, yet the Departmental Commission on Local Government Administration in Northern Ireland has issued a set of questions covering much the same ground, and inviting evidence on allied matters. Everyone recognizes the necessity for reform in lunacy laws, and this reform is of interest to all members of the profession, the delay is injurious to the best interests of the patient and the cause of much worry to medical men. The inclusion of the views of the medical superintendents in these annual reports would help to bring home to the profession, and to the public, the advisable lines of advance.

Scotland.

LUNATICS AND MENTAL DEFECTIVES

THE eleventh annual report of the Board of Control for Scotland, dealing with the year 1924, has just been published. The number of insane and mentally defective persons under the supervision of the Board on January 1st, 1925, was 20,850, of whom 18,398 persons were certified insane, an increase of 9 as compared with the previous year. Certified mental defectives had increased from 2,308 to 2,452. During the year 3,176 lunatics were added to the register, 1,541 were discharged and 1,625 died. The percentage ratio of deaths to the average number of patients was 8.9 which was 1.6 per cent lower than the average for the past five years. The proportion of recoveries was 33.4 per cent of the admissions during the year, which was 3.4 per cent above the average of the last five years. During 1924, 431 persons were admitted to asylums as voluntary inmates compared with 381 in the preceding year. The tendency of parish councils to pay the cost of voluntary patients in district asylums has continued to develop, and a number of other parishes have followed the example of parishes in Argyllshire by giving facilities for persons from their districts to enter district asylums voluntarily as rate-aided patients. The practice of placing adult mentally defective persons in asylums still continues, although there are evidences that it is undergoing a change, and it is hoped that the scheme, at present under contemplation, for the establishment of colonies for the adult mental defective will reduce this practice to a minimum. It is pointed out that asylums are tending more and more to become hospitals for the reception for care and treatment of those persons only who having been of normal mentality have become temporarily or permanently abnormal through disorder or disease. On the other hand, institutions for the mentally defective are broadly speaking of an educational nature, intended to develop the limited faculties of the mentally defective to the fullest extent. It is therefore desirable that the two types of institution should be kept separate as far as possible. It is however impossible to draw a hard and fast line between the classes of cases to be admitted to the two types of institution. The increasing prevalence of encephalitis lethargica is instanced as an example of this difficulty. It is often followed by serious mental symptoms when it affects children and produces mental defect and disorder. In this connexion it is suggested that local authorities should have a children's ward attached to the excellent observation wards which have been established in several large cities for cases of incipient mental disorder. The Edinburgh District Board of Control has submitted to the Board plans for a pavilion providing all varieties of hydrotherapy, light treatment, x-ray treatment and ophthalmological and gynaecological departments in its institution at Bangour. The number of typhoid "carriers" traced in Scottish

asylums was 16 in the year of whom 15 were female patients. The danger to the community arising from the carrier is shown by one female "carrier" who was responsible for a hundred cases of enteric fever in the general community before her pathological state was discovered in an asylum. Fifteen "carriers" had typhoid bacilli, while one of the "carriers" had a paratyphoid bacillus. Reference is made to the excellent work done during the past year by the observation wards established in the general hospital at Stobhill and Duke Street, Glasgow, where mental patients are treated for a period not exceeding six months. The general result of this work was that the number of persons treated in these wards was 1,293, of these 500 recovered, 214 improved, 411 were sent to asylums and other institutions, and 91 died. With regard to the statistics of the establishments for lunatics, out of the total number of patients admitted to various institutions 2,707 were pauper patients, which was 152 less than in the preceding year, while 525 were private patients which was 34 less than in the preceding year. The number of patients who had never previously been registered and who were admitted for the first time to establishments for the insane during the year was 2,446, including 2,022 pauper patients and 423 private patients, both these figures showed substantial decreases on the corresponding figures for the previous year. There was considerably less transference of patients from one establishment to another during 1924, the number of patients so transferred having been 294 which was 475 less than in the previous year. Attention is drawn to the increasing number of voluntary patients as compared with certified cases. These are persons who with the sanction of the Board granted on simple application signed by the patient voluntarily enter asylums for treatment of mental disorder and who cannot be detained for more than three days after giving notice of their intention or desire to leave. They are not certified as insane and are not registered as lunatics but a record is made of their names and other particulars. The total number of such persons admitted into asylums during 1924 was 431, and 556 were resident on January 1st 1925. The average number admitted for the ten years 1915-24 was 280. With regard to the distribution of mental defectives, 567 were maintained in certified institutions for adults, 932 in certified institutions for juveniles and 953 in private dwellings, making a total of 2,452.

England and Wales.

THE ORDER OF ST. JOHN OF JERUSALEM AND THE BRITISH RED CROSS SOCIETY

THE wide range of activities of the Joint Council of the Order of St. John of Jerusalem and the British Red Cross Society is well illustrated by the fifth report of the council, which covers the period from April 1st, 1924, to March 31st 1925 and includes ten departmental reports, the reports of the finance committee, and a statement of account. The military hospital for officers department dealt with 21 new cases during the year, making a total of 17,302 as at the beginning of the year, the main work has been in connexion with officers suffering from tuberculosis. Grants are made from a special fund to Ministry of Pensions hospitals and other institutions to provide materials and training for ex-service men confined to bed in hospital, the industries including basket making, leather work, wood carving and glove making. Gifts were sent to 7,221 ex-service patients who were in hospital on Christmas Day, with the intention of providing some of the comforts that would have been available had the men been at home. Approximately 35,000 ex-service patients were taken for drives or conveyed to theatres, concerts and other entertainments during the year, Wembley Exhibition authorities presented 2,200 free tickets, while on Derby day and for the boat race stations were retained for several car loads of these patients. The Emergency Help Committee provided temporary relief to 19,130 men, pending the allocation of pensions. During the year under review over £21,000 of

such advances were refunded by men previously assisted—evidence of the excellent spirit shown by those receiving this help. Wireless apparatus, musical instruments, cinema apparatus, and various kinds of games were provided, the number of grants being 360, and approximately 8,500 ex-service patients benefited from them. The Home Ambulance Committee has now established 341 stations, and 70,532 patients were carried by the ambulances during the year, the service has proved itself specially valuable in rural areas. The mobile x-ray service, the installation of which we announced a year ago, has already proved its usefulness. The car contains a radiographic couch, and a 6-inch induction coil outfit, which is supplied by a 10-hp dynamo, developing a pressure of 125 volts, with a maximum current of 70 amperes. When the apparatus is withdrawn for use the car serves as a dark room and the development of the plates can be at once carried out in it. The apparatus is capable of dealing with all general work necessitating a very short exposure, such as the examination of the chest, it can also be used for the spine and hip, for investigation of the frontal and lateral sinuses, radiography of the urinary tracts, for which special compressors are available, and for affections of the liver and gall bladder. The demand for this mobile x-ray unit is rapidly increasing, both for private patients in their own homes and for work in the smaller hospitals in and round London. A home for ex-officers suffering from advanced tuberculosis has been established in Putney, and accommodates sixteen patients.

ASSOCIATION OF POOR LAW MEDICAL OFFICERS.

At the annual meeting of the Poor Law Medical Officers' Association, held recently in London, the President (Sir Arthur Newsholme) gave an address on "The future of Poor Law medical officers." He felt confident that the members of the association when contemplating forthcoming changes would desire to regard their official future as determinable by what was best for the impoverished poor, with due regard to the conditions of their permanent appointments and pension rights. A duty devolved upon the public of expressing their indebtedness to the district medical officers who for many decades had tended the sick poor in their homes. Invaluable services had in the main been rendered for quite inadequate remuneration, often disgracefully so. There had been a great increase in the work in regard to certification but reduction in the amount of continuous domiciliary attendance. It was not sufficiently recognized to what extent treatment was becoming institutional. He suggested an exhaustive survey of the present institutional treatment, voluntary and official, within each area to ascertain what was the amount, also the amount of provision for each chief class of disease, acute and chronic, mental and other infectious and non-infectious, the arrangement of this provision geographically and in relation to population. The survey should also include an inquiry into the arrangements for specialized diagnosis and treatment of difficult problems and what provision existed for consultations with specialists in difficult cases and the extent of the provision for cases needing operative intervention and the working arrangements, if any, between voluntary and official hospitals when specialized treatment or difficult operations were needed. In regard to the treatment of tuberculosis and venereal disease, with the entire removal of special Poor Law conditions, the available institutional provision for satisfactory treatment could be vastly increased. To those causes of disability and destitution combined remedial and preventive measures could be applied, only possible when those who treated preventable disease were also immediately concerned in the adoption of every practicable measure for its prevention. He was strongly of the opinion that a chief means for securing the needed co-ordination of domiciliary and hospital treatment would be through increased use of nurses, both in hospitals and in the homes of the sick. It was desirable that there should be exact information as to the present amount of such attendance and its character for every union in the country. Such an inquiry would be helpful to county councils and county borough councils when they had added to them the present Poor Law functions. He considered it would be a calamity

if in such transfer two conditions were not fulfilled (1) There should be grateful acknowledgment of the increasingly efficient and valuable work which boards of guardians had done for the helpless poor. (2) The public should realize that although on its medical side this work, for the sake of efficiency and in order to develop its preventive potentialities, must be made part of the work of public health authorities, there would be an irreparable loss in continuity and efficiency unless the workers in present Poor Law administration remained to take an important part in the work of the future.

MENTAL HOSPITALS

Birmingham

The city of Birmingham mental hospitals comprise Winson Green and Rubery Hill and Hollymoor. At the former the recovery rate in 1924 was 45 per cent, calculated on the direct admissions. Almost all the recovered cases had previously been allowed leave of absence on trial before being discharged. The forms of disorder most frequently resulting in recovery were confusional insanity in 51.2 per cent, melancholia in 21.9 per cent, mania in 10.9 per cent, dementing psychosis in 7.3 per cent, and delusional insanity in 6.1 per cent. At Rubery Hill and Hollymoor the recovery rate was 48.6 per cent on direct admissions. Amongst factors militating against successful treatment mention is made of the reluctance of relatives to seek hospital treatment for the patient early enough, and the hindrances to such treatment caused by the necessity of certification. Stress is laid on the importance of discovering and treating chronic septic infections and in this work a staff of consultants is engaged with notable results. Pathological investigations and research work are being carried out under the guidance of Sir Frederick Mott, honorary director of the Joint Board of Research for Mental Diseases of the City and University of Birmingham, reference to which was made in our issue of August 15th (p. 308).

Cardiff

At the City of Cardiff Mental Hospital there were 567 cases resident at the beginning of 1924. The recovery rate calculated on direct admissions was 45 per cent. It is pointed out that too few "first attack" cases are brought early enough for treatment. The hospital has now the advantage of the services of two consultants appointed last year—Dr Gilbert Strickland as psychiatrist and Dr Mason Jones as otolaryngologist. The medical superintendent, Dr Edwin Goodall, referring to the work done in the out-patient clinic for psychiatry at Cardiff Royal Infirmary, mentions the need of an indoor department, as the majority of patients attending for treatment cannot otherwise be satisfactorily dealt with.

Extensive chemical and pathological investigations are being carried out, a report of which has already been sent to the Medical Research Council and will shortly be published. These investigations include blood sugar analysis in epileptics and sugar tolerance tests in epileptics and in cases of general paralysis. A new test for the diagnosis of neurosyphilis, first described by Dr Oswald Boltz of Manhattan State Hospital is being studied and has so far yielded excellent results, the technique being very much simpler than that of the Wassermann test.

Herefordshire

The Hereford County and City Mental Hospital provides accommodation for 535 patients. The number of patients in residence at the beginning of the year was 471. Of the direct admissions 29.6 per cent were discharged recovered. The hospital is entirely free from syphilitic disease during 1924.

Shropshire

At the Salop Mental Hospital there are 786 patients of whom 73 are of the private class. The proportion of recoveries to admissions was 37 per cent. During the past year four patients suffered from typhoid fever all recovered. Only one case of dysentery, a disease which formerly caused much mortality, occurred. Extensive redecoration and improvements have been carried out during the year.

Correspondence.

THE DIVORCE OF SURGERY FROM MEDICINE
 Sir,—In the report of Mr G. E. Gask's paper (British Medical Journal, August 22nd, p. 317) the following passage occurs

The first great division in the profession dates from 1163 and was brought about by Pope Alexander III at the Council of Tours, when an edict was enacted pronouncing that a practice which involved the shedding of blood was incompatible with the holy office of the clergy and forbade them to interfere with any matter of surgery. The effect of this edict was that the practitioners of medicine who then almost all belonged to the clergy, had to abjure manual occupation and to content themselves with syllogisms and inspection of urines.

I confess that this very definite and precise statement surprised me, as it was at variance with my own general impressions. As the writer, however, gives a reference to Sir Thomas Clifford Allbutt—*clarum et venerabile nomen*—my first idea was that he must have strumed or misread what the Regius Professor had stated. A perusal of the original (Clifford Allbutt, *The Historical Relations of Medicine and Surgery*, Macmillan, 1905) negatived that view. Allbutt there (p. 22) says "some fair surgery persisted even in the cloister until it was handed over to the 'secular arm' in 1163", and in a footnote on the same page, after referring to the Councils of Rheims and Lateran, he says "It was at Tours, however, that the sinister and perfidious *Ecclesia* abhorret a sanguine was first pronounced."

As Sir Clifford gives no references in regard to his statements I was forced to look up the original documents. In Labbe and Cossart's monumental work (*Concilia Sacrosancta*, etc., 16 tomes, Paris, 1671) ten canons passed by this council are recorded (tome x, col. 1421) and Martene and Dand, on the basis of two manuscripts, have been able to add twelve additional ones (*Thesaurus Anecdotorum*, etc., tome ii, col. 143). I am not aware if any more authoritative account of the proceedings is to be found elsewhere, but perhaps some of your readers may be able to enlighten students on this point.

I may say, however, that so far as my authorities go there is nothing to warrant Sir Clifford Allbutt's statement. The phrase *Ecclesia abhorret a sanguine* does not occur anywhere, nor any variant or translation of it, nor is surgery mentioned at all. The only canon bearing on the healing art is No. 8, which has the heading "Ut Religiosi Sacerdotes Studia Vitent," and refers to monks and canons regular only, and not to the clergy as a whole. Now, monks were men who had left the affairs of the world and definitely vowed themselves to a cloistered and sequestered life. They were not necessarily priests, probably at that time only a small proportion were ordained. The enclosure of the canons regular was not so strict, but in any case theirs was a community life, and they had deliberately cut themselves off from secular occupations.

Men do not always keep their promises, not even when these take the form of solemn vows. Thus it was found that some of these religious had become barristers or physicians, and were following these professions like lay persons and for gain. The ninth canon of the Lateran Council, 1139, thus refers to them: "*gratia huius avitatio flammis recens neglecta numerum curat pro detestanda pecunia sanitatem pollicentes, humanorum curatores se frequent corporum*" Other councils have a similar tale to tell, so that this state of matters was no new thing in 1163, and the Council of Tours was merely following precedent when it decreed that "no one who has taken vows and made his profession in a religious house shall be permitted to leave his cloister for the purpose of learning to be a barrister or a physician." And the canon ends thus:

If however he leaves his cloister and does not return within two months let him be avoided as if he were an excommunicated person, and if he presumes or attempts to take part in a legal action let him not be listened to, and when he does return he must take the lowest place in choir or chapter or at table and renounce all hope of ever rising to a higher position unless he be so permitted by the clemency of the Apostolic See.

In conclusion it may be noted that this assembly at Tours though attended by some Italian and English

bishops, St Thomas of Canterbury being one, was after all a merely national and not an Occumenical Council. However, a canon, with its thin blooded minority clause, is effective in restraining the monks and canons regular, and not prepared to say. One thing is certain—namely, that for hundreds of years thereafter the ranks of the clergy, what names in surgery belong to the ranks of the clergy. What ever date, therefore, may be chosen to indicate the first great division between medicine and surgery, it is clear that the decree of divorce was not pronounced by Alexander III at the Council of Tours in 1163—1 am, etc., G. MATTHEW GILLES
 Edinburgh Aug 27th

SPECIAL DEPARTMENTS AND MEDICAL EDUCATION

Sir,—Without venturing to give an opinion as to whether the treatment of fractures should be dealt with in a special department or by the general surgeons, I write to put the other side of the general question of which one view is expressed by Professor Cist in his opening paper before the combined Sections of Surgery and Orthopaedic at the Annual Meeting, when he said "I do not think that the [that is, specialists] should have a directive charge of the undergraduate student."

I believe that my aim in the teaching of undergraduate students is the same as that of Professor Gask, being that laid down by Huxley—that we must organize our teaching for the ninety-eight average medical students and not for the two phenomenal ones. To reach this aim, I maintain that the students must come in their undergraduate period under specialists as well as under the general physician and surgeon.

The general principles of the art of medicine are well illustrated by diseases of one special part as they are by that of any other, and therefore "a firm grounding in the fundamentals" can be learnt as well in the special department as they can in the general wards. Taking as instances examples from the part of the body with which I am concerned, the principles of the natural and surgical arrest of hemorrhage can be as well exemplified by operations on the tonsils as by operations done by the general surgeon, and the dangers consequent upon inflammation of bone are more often seen from osteomyelitis of the maxilla process than they are from the same disease of any other bone. When the student goes to each special department after he has done his training in the general ward he has the opportunity there of revising the fundamentals which he has learnt in the general ward.

If the student goes out into the world trained only by general physicians and surgeons, he is very deficient in knowledge of just those diseases of the special parts which it is most important for him to know. Again, taking instance from diseases of the throat and ear, where even the student learns to distinguish the different types of acute inflammation of tonsils and the pharynx except in the throat or patient department? He certainly never learns any of it either in the surgical or medical wards or out patient departments. He acquires a little knowledge of it in his special course at the fever hospital, but he there sees only the cases already diagnosed as suffering from diphtheria, and has no chance of gaining experience in suffering from to whether a patient who first comes up is suffering from this disease or from an acute follicular tonsillitis or other acute inflammation of the pharynx. So also with the ear. When the present regulation that every student before he presents himself for the final examination must have been through our special departments has been given time to take effect, I believe that every practitioner should be—no of them will be—able to examine a dimmied of tonsils whether it is normal or not, and, if it shows signs of acute inflammation, either to incise it himself or to call in someone who is capable of doing so. This "fundamental" principle of treatment of a disease at its earliest stage will only be learnt in the special department, and can never be taught by the general surgeons and physicians.

It is in the special department that we are compensated for that dissociation between general medicine and surgery which Professor Gask so rightly deplors. Although my department is classed as a surgical one there is an

enormous amount of material which passes through it where the patient is treated medically rather than surgically, and a very large number of these patients suffer from the trivial complaints which form a large part of the work of the general practitioner.

It may seem unnecessary for a teacher in a department which has already required the right to teach every undergraduate student to write such a letter as this, as Professor Gask's opinion cannot possibly affect their status. But I write because his views appear so reactionary that it is very difficult to discuss, with one who would appear to wish to go back over the past twenty years, the developments of medical education for the future. We have got to decide in the future, not whether there shall be any specialist teachers, but what subjects shall be allowed by their importance still to evolve and be split off from general medical and surgical teaching—I am, etc.,

T B LAYTON,

Recognized Teacher in Otology and Laryngology
University of London

Guy's Hospital S.E.1 Sept 1st.

THE TREATMENT OF FRACTURES

SIR,—Mr Gask, as a general surgeon (and a very eminent one), and Sir Robert Jones, as a specialist, have spoken (*BRITISH MEDICAL JOURNAL*, August 22nd, p. 317). As a general practitioner, may I crave space for a line? I was Sir Albinus Lane's house surgeon at Guy's, and I was under Sir Robert Jones (as consulting surgeon to the Western Command) when, during the first three years of the war, I was chief surgeon to the Lord Derby War Hospital, Warrington.

Two points strike me: the extreme necessity of every medical man being taught that the successful treatment of a fracture is as important as in abdominal success, the second is that the public should appreciate this point, and in all equity pay for it. It is very anxious work. The comparison between abdominal surgery and fractures seems ironical when my old teacher and master, Lane, is mentioned. War fractures and peace fractures in private practice are different propositions.

I base my fracture treatment on Scudder, Thomas's knee splint, and Jones's elbow sling. I am not certain how far plaster-of-Paris is useful, it has grave disadvantages. Simelun's methods for the femur (I visited his wards at Wimercux) are seldom needed in peace—I am, etc.,

Sevenoaks Aug 23rd

GERALD SICHEL

THE TREATMENT OF EMPYEMA

SIR,—After reading the discussion on the treatment of empyema in the *BRITISH MEDICAL JOURNAL* of August 22nd (p. 331) I noticed that one detail of the after-treatment appears to have escaped mention. All the speakers were agreed on the application of the general surgical principle of free drainage, and in achieving this object I have found posture a great help.

The position of the opening in the chest wall may vary according to the case, and it is usually, if not always, inexpedient to place it at the lowest point of the pus-containing cavity, but by varying the patient's posture one can bring the opening to the most dependent point. I usually open the chest wall, either with or without rib resection, well back, at or near the line of the angle of the scapula, as high up as practicable, and as soon as the breathing will allow it, often as early as the third or fourth day, raise the foot of the bed and remove all but one pillow for a considerable part of the twenty-four hours. I feel that by so doing the risk of failure to close the cavity is much diminished.

In scattered country practice with inefficient nursing, open drainage is the only course one can adopt, sealed drainage, with an attached tube draining into a bowl of lotion on the floor, as recommended by most of the speakers, requires two skilled nurses—I am, etc.,

Gillingham, Dorset, Sept. 5th.

W. W. GIFFIELD

TESTS FOR DRUNKENNESS

SIR,—I cannot help feeling strongly that the time has come when the ordinary tests for drunkenness should be examined, and if possible improved or added to. Dilated pupils, shaly hands, inability to walk a chalk line, and even the smell of alcohol, are not necessarily signs of drunkenness by themselves, or even if associated, as the questions of emotional stress and temperament have to be taken into consideration. If a committee of medical men with special experience in these matters, including possibly one or two magistrates, who have this class of case constantly before them, could survey the whole ground, and issue an authoritative report, stating the best tests, their order of value, and possible fallacies, I feel sure it would be of great value, especially to those medical men who may only occasionally be called upon to decide these questions, and naturally have not got the experience of divisional police surgeons in big centres. Since motor car driving has become so general the question has assumed great importance.

The drunk and incapable cases are a comparatively simple matter, it is the border-line cases that are the difficulty—I am, etc.,

HOWARD M. STRATFORD, F.R.C.S. Edin.,
L.R.C.P. Lond.

London N.6 Aug 19th

ULTRA-VIOLET LIGHT

SIR,—In defence of my statement that the ultra violet lamp costs £300 per 1,000 hours' run, the catalogue issued by Messrs. Watson (Bulletin No. 67), manufacturers of Dr. Hall's lamp, states:

Cost of cheapest tungsten rod, 4s. per inch
Cost of better quality tungsten rod, 6s. per inch
Rate of burning, 1½ inches per pair per hour

These figures apply to currents of 5 to 10 amperes at a voltage of 110.

A simple calculation will show in these figures the cost as above stated. The only way to use such a lamp at less cost is to lower the amperage input, and consequently the ultra-violet output, as this varies with the current consumed, but this would, of course, mean an increased time of exposure to get the same erythema. Alternatively one tungsten and one carbon might be used, but this also would imply an increased time of exposure. It would be interesting to know whether other users have kept records and how their experience compares. Could Dr. Daley have by any chance overestimated the number of hours the lamp was burning?

With regard to the life of the mercury vapour quartz lamp, the makers guarantee an effective life of 1,000 burning hours for ultra-violet treatment, stating that the original ultra-violet output is reduced by about 35 per cent. only in this time, the sole difference being that at the end of this period some of the lower wave-lengths are not transmitted. These figures are based entirely on the operation of the lamp at very high voltage, whereby the length of exposure may be reduced to a minimum. The mercury vapour lamp has an almost indefinite life when used for lighting, when visible radiations only are desired.

It is not necessary to provide a new lamp when the ultra-violet output is diminished. All that is required is for the quartz to be rebled at a cost of about £3—I am, etc.,

Birmingham Aug 20th

A. BRADSTON

SIR,—It may interest ultra-violet light workers to know that my expenses for running a K.B.B. 440 volt atmospheric quartz mercury vapour lamp for 542 hours have amounted to £5 1s. 7d., or about £9 10s. for 1,000 hours.

There is no question of replacing this lamp, as it can be cleaned at the cost of a few shillings when necessary—I am, etc.,

Smethwick, Aug 22nd.

CLYDE MCKENZIE, M.B.

TAR CANKER AND THE KANGRI

SIR—The kangri is a fire basket used during the cold weather by almost everyone in Kashmir, where the temperature often falls to 20° below zero—eggs are frozen so that they will stand up on a table without their shells—and the poor people have but one garment. The kangri is an earthenware bowl enclosed in a wicker-work basket with

a handkerchief over the top. To fill it hot wood embers taken from a fire are placed in the bowl and covered with a layer of ashes. Water is then sprinkled on the top to prevent the combustion becoming too active, and the bowl is held under the clothing by one hand withdrawn from the loose-sleeved garment. Children play in the streets barefoot in the snow with this basket held against the stomach and learn to arrange it skilfully at night under the one blanket which envelops the whole body and head. Accidents are frequent; fearful burns result from the upsetting of these basins, and fires are not unknown where houses are built of wood with thatched roofs.

Krangui cancer, which is an epithelioma, is fairly frequent but not common. The cases I have seen were in old women and involved the skin of the thigh, where the basket is often held in the sitting posture. The tumour and skin surrounding it and the fold of the gown were begrimed with black, looking like soot or fat, which resisted soap and water.

Krangui cancer is often quoted as an example of cancer produced by heat as an irritant, but it seems more reasonable to consider it as an example of cancer produced by trauma as the irritant. The wood used in the krangui is of many kinds, but one of the most popular for this purpose is the pine fuel washed down by the Sind river in its course from the glaciers through the hills covered with pine forests. At Ganderbal in summer men may be seen standing naked in the river up to the armpits with fishing nets much like those we use here for catching shrimps. With these they dredge the river for pine debris, which is sold as a popular fuel. It consists of small pieces rounded by the water, and when dried is a cheap and very hot fuel much liked for the krangui.—I am, etc.,

Horsesham

KATHLEEN VAUGHAN, M.B. Lond

SIR HARRY THOMPSON MEMORIAL FUND

SIR—A wish has been expressed by relatives of the late Major General Sir Harry Thompson, K.C.M.G., C.B., D.S.O., late R.A.M.C., that his services should be commemorated. They will contribute to that end. Knowing that, in addition, there are many of his friends (civil and military) who desire to join in some material tribute to his memory, I venture to ask you kindly aid in publishing this appeal for funds for this purpose.

The decision as to the most suitable form for the memorial to take should, it is considered, be left in the hands of the Harry Thompson Memorial Committee, who will be guided by the sum collected and the wishes expressed by the subscribers. Subscriptions should be sent to Messrs Glyn Mills and Co (Holt's Branch) 3 Whitehall Place, S.W. 1 who have very kindly accepted the trusteeship of the fund, and to the undersigned. All contributions will be acknowledged.—I am, etc.,

Osborne House East Cowes
Isle of Wight Aug 28th

S. G. GUISE MOORES,
House Governor

Obituary

JAMES STEWART FOWLER, M.D., F.R.C.P. Ed.

Consulting Physician Royal Hospital for Sick Children Edinburgh
Secretary Royal College of Physicians of Edinburgh

The death occurred on August 24th, with startling suddenness of Dr J. S. Fowler, consulting physician to the Sick Children's Hospital, Edinburgh. Dr Fowler, who was 54 years of age, had appeared to be in his usual health, and a few hours before he died he was engaged in what formed his favourite summer recreation of boating with his daughter and some friends in the Firth of Forth, near Fife. After returning to his residence at Banchard, Elche, he became ill, lapsed into unconsciousness, and passed away in the evening.

James Stewart Fowler was born in 1871 and was the son of Dr J. S. Fowler of Glasgow, Demetrius. He was educated at Edinburgh Academy and later took his medical course at the University of Edinburgh, where he graduated M.B., C.M., with honours, in 1892. In the same year he took the English conjoint qualification of M.R.C.S., L.R.C.P. Lond. After graduation he acted as resident

physician in the Royal Infirmary of Edinburgh to the late Sir James Adcock, and as resident surgeon in the following summer to the late Dr P. H. MacLaren. At the same time he acted as President of the Royal Medical Society, to which he had been elected by his fellow students. Subsequently he spent a short time in post-graduate study at Vienna where he devoted himself particularly to the diseases of children. On returning to Edinburgh he became assistant physician to Leith Hospital and physician to the New Town Dispensary, Edinburgh. In 1895 he became a member of the Royal College of Physicians, Edinburgh, and in 1897 proceeded to the fellowship. In recent years he succeeded the late Dr Harry Murray as secretary to the Royal College of Physicians, a post he held at the time of his death. Becoming physician to the Royal Hospital for Sick Children, he completed his term of office in that capacity, and shortly before his death had been appointed consulting physician to this institution. He also held the post of physician to Chalmers's Hospital, Edinburgh, and was honorary pediatrician to the Royal Simpson Memorial Maternity Hospital. During the war he went out with a general hospital to Salomon, where he held the rank of temporary captain in the Royal Army Medical Corps.

For many years Dr Fowler had acted, along with Mr Alexander Miles, as joint editor of the *Edinburgh Medical Journal*, a publication which, under their able guidance, has attained its present high position of attractiveness and influence. Dr Fowler was a prolific writer on medical subjects, and among his publications were a clinical hand book on *Diseases of Children* published in 1899, and a smaller textbook on *Artificial Feeding of Infants*, published in 1909. Among his shorter publications were the article on mumps in the *Encyclopaedia Medica* (1901), on disease of the genito-urinary system contributed to *Curod Britten and Thomsen's Diseases of Children* on splenic anaemia of infancy, published in the *British Medical Journal*, 1902, on epidemic cerebrospinal meningitis in the *Review of Neurology and Psychiatry*, 1907 and on tuberculous sclerosis, which appeared in the *Quarterly Journal of Medicine* in 1910. Many other papers and articles from his pen appeared from time to time in the *Edinburgh Medical Journal*, dealing especially with diseases of children.

Dr Fowler was a man with a cultured, philosophic, and broad-minded outlook upon medical subjects which was greatly appreciated by colleagues who called him in consultation. His eminence as an authority upon recent diseases in children and his skill in treatment of this class of patient were universally recognized. He possessed a wide circle of friends in the medical profession and outside, by whom he was much beloved and who will greatly deplore his early death. He took an active part in the work of the Royal College of Physicians, and was identified with many other medico-social enterprises in Edinburgh, where his valued help and interest will be greatly missed.

He married, in 1902, Miss Edith Hudson, who was also a medical graduate, a daughter of Mr P. S. Hudson of Hyderabad. Mrs Fowler predeceased him in 1924, and he is survived by an only daughter.

ELIZA WALKER DUNBAR, M.D.,

Senior Surgeon Bristol Private Hospital for Women and Children

THE recent death in her 80th year of a medical woman who was practising so long ago as 1873 calls to mind the outstanding courage needed to break through the rigid conventions of that mid-Victorian era. Dr Eliza Walker Dunbar died suddenly on August 25th at her home in Oilfield Road, Clifton, where, despite her advanced age, she was still engaged in practice. Her long and varied experience, always at the disposal of the medical women of a younger generation, made her universally popular among them.

Eliza Louisa Walker (she assumed the name of Dunbar in 1874) was born at Balaram, Bombay, in 1845. She was a daughter of the late Alexander Walker M.D., of the Bombay Military Department, and sister of Dr A. Dunbar Walker. She had the advantage of completing her education begun at the Cheltenham Ladies' College, at Farnham-on-Moore. Thus, with a thorough knowledge of German, and already having an interest in things medical, it is easy to understand how she was attracted towards

the study and practice of medicine. This she relieved at the University of Zurich, where she studied from 1868 to 1872. She was granted the degree of M.D. of the university in 1872 on her thesis "Limbohe der Hun-Arten". After obtaining the doctorate she took a post-graduate clinical course in Vienna for a year, and on her return to Lugano in 1873 was appointed house-surgeon to the Bristol Royal Hospital for Sick Children. When, after the passing of Mr. Russell Gurney's Enabling Act in 1876, the King's and Queen's College of Physicians, Ireland, admitted women to its examinations, Dr. Dunbar, with four other women, obtained the qualification of the college. This entitled her to register her degree and diplomas in the Medical Register of the United Kingdom, which she did in 1877.

In 1874 Dr. Walker Dunbar, together with Miss Read and other supporters of the independence of women, had founded the Reid Dispensary for Women and Children at Hotwells, Bristol. In addition to being engaged in private practice she interested her friends in a project she had much at heart, and in 1895 succeeded in starting the Bristol Private Hospital for Women and Children in Berkeley Square, Clifton. She continued to serve on the surgical staff of that institution up to the time of her death. She was also for many years medical officer to the Red Lodge Reformatory for Girls, and to the Bristol Training College for Elementary Teachers, now the Department of Education (Women), Bristol University. In 1906 she published an article in the *Bristol Medical-Chirurgical Journal* on "The new theory and prophylactic treatment of puerperal eclampsia."

This wonderful and kindly old lady will be much missed by all who had the good fortune to know her or be under her care. To quote the words of a colleague, "Dr. Dunbar was essentially a pioneer, and to the end of her career she showed as outstanding qualities courage, perseverance, and pluck. She gathered round her, and retained throughout her life, a devoted band of friends and supporters, by whom the news of her sudden death was received with deep regret." Her remains were cremated at Golders Green on August 31st.

WILLIAM ODELL, M.D., F.R.C.S., Torquay

We regret to announce the death, on August 21st, of Dr. William Odell, at the age of 74, at his residence in Torquay. Dr. Odell received his medical education at St. Bartholomew's Hospital, he obtained the diplomas M.R.C.S. and L.S.A. in 1872, the F.R.C.S. in 1876, and graduated M.D. in 1901. After acting as registrar in the ophthalmic department at St. Bartholomew's Hospital and house-surgeon to the Hertford Hospital from 1873 to 1878, he carried on private practice first in Hertford and later in Toronto until 1889, when he took up residence in Torquay. Dr. Odell held the appointments of honorary consulting physician to the Western Hospital for Consumption, honorary consulting surgeon to the Louth House Institute, and honorary physician to the Temple Lodge Home. He was an honorary life member of the St. John Ambulance Association, and as local secretary of the Lpsom College Foundation he devoted a considerable amount of time and energy to its support. During the war he was physician to the Western Auxiliary Military Hospital in Torquay. He was an ex-president of the Torquay Medical Society and the Natural History Society.

Dr. Odell was elected a member of the British Medical Association as long ago as 1874. He was the Representative of the Torquay Division in the Representative Body from 1904 to 1909, where he was a great favourite, and held office as chairman of the Division 1906-07. When his death became known, a special meeting of the executive committee of the Division was held and a vote of condolence sent to his widow. Members of the Division attended the funeral and a wreath was sent. Dr. William Odell was a fine example of all that was best in "the old school of family practitioner"—kindly, courteous, dignified, the friend of all his patients, holding fast to good traditions and old ways of life.

Medical News.

THE annual dinner of past and present students of University College Hospital will be held at the Hotel Cecil, Strand, on Friday, October 16th, at 7.30 p.m., with Dr. Herbert Spencer in the chair. Tickets, price 12s. 6d. (not including wine), may be obtained from the honorary secretaries, Mr. Gwynne Williams, I.R.C.S., or Dr. T. R. Lillott, F.R.S., University College Hospital Medical School.

THE annual dinner of past and present students of St. Mary's Hospital Medical School will take place at the Connaught Rooms, Great Queen Street, W.C., on Monday, October 5th, at 7.30 p.m., with Mr. Leslie Paton, F.R.C.S., in the chair. The honorary secretary is Dr. Hope Go. se.

THE inaugural address at the Westminster Hospital Medical School will be given on Thursday, October 1st, at 3 p.m., in the board room of the hospital, by Professor L. A. Gardner, Litt.D., Vice-Chancellor of the University of London, who will subsequently unveil in the hospital laboratories a tablet commemorating Mr. A. J. H. Carlill's endowment of pathological research work.

THE Fellowship of Medicine announces that an intensive course in general medicine, surgery, and the special departments will be given at the Westminster Hospital from September 21st for two weeks. The fee is 3 guineas, or 2 guineas for either week. The Brompton Hospital will start a fortnight's course in diseases of the chest on September 21st. On Wednesday, September 23rd, and for the following three Wednesdays, Dr. Heald will give special demonstrations at the Royal Free Hospital, at 5.30 p.m. on treatment by electrotherapy. Full particulars and syllabuses of the courses, together with the Fellowship programme, may be obtained from the secretary, 1, Wimpole Street, W.1.

A two weeks' course in cardiology will be held daily from 10 a.m. to 4 p.m. at the National Hospital for Diseases of the Heart, Westmoreland Street, W.1, from October 5th to 16th, the fee being 7 guineas. The course will include lectures and clinical work, with pathological demonstrations and instruction in the use of the electrocardiograph, polygraph, and sphygmomanometer. Admission will be by special tickets which may be obtained from the dean at the hospital. Early application is advisable.

THE American Association of Obstetricians, Gynecologists, and Abdominal Surgeons will hold its thirty-eighth annual meeting at Hot Springs, Virginia, during the latter part of next week. On Wednesday, September 16th, there will be discussions on appendicitis, placenta praevia, mechanics of labour, and on preparation and treatment in labour. On September 17th, discussions on preventive treatment in obstetrical practice, on fibroid tumours, and on malignancy, will be followed by the annual address of the President, Dr. Asa B. Davis. The last day, September 18th, will be devoted to the reading of independent papers.

DURING the Leicester Home Life Exhibition which is to be held from September 16th to 26th a series of health talks has been arranged by the Leicestershire and Leicester Insurance Committees. The subjects to be dealt with include the production of clean milk, smoke abatement, dental hygiene, housing, education and health, prevention of tuberculosis, and infant welfare.

DR. H. A. J. NICHOLLS, C.M.G., was presented on July 31st with an address, a piece of plate, and a purse of sovereigns, on the occasion of his retirement from the appointment of Principal Medical Officer of Dominica. For the last forty-eight years Dr. Nicholls has been officially connected with the Leeward Isles and Dominica, and for four years acted as Governor of the latter.

ARRANGEMENTS are now being completed for the sixth congress of the Far Eastern Association of Tropical Medicine which is to be held in Tokyo from October 11th to 31st, more than 500 delegates are expected. There will be an exhibition illustrating the medical history of Japan, and a demonstration of home-made medical and surgical instruments, medicinal plants, and parasitological exhibits.

THE First London (City of London) Sanitary Company was formed in 1908, and on the outbreak of the war consisted of two officers and fifty-nine other ranks, when it was dispersed. In May, 1918, it had eighty officers and over 1,500 other ranks serving overseas. The history of the company has now been compiled, and contains an unusually interesting account of the actual work during the war. Various illustrations, and the inclusion of many references to the lighter side of sanitary section work, commend the book to a wider circulation than among the actual members of the section. The price of the book is 2s. 6d. (post free), and it may be obtained from the editor, Mr. George W. Foster, "The Laurels," North Kelsey, Lincoln.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The Editor, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

ORIGINAL ARTICLES and ILLUSTRATIONS forwarded for publication are understood to be offered to the **British Medical Journal** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the **British Medical Journal** must communicate with the Financial Secretary and Business Manager, **British Medical Association House, Tavistock Square W C 1** on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager.

The TELEPHONE NUMBERS of the British Medical Association and the **British Medical Journal** are **MUSEUM 9561, 9562, 9563, and 9564** (internal exchange four lines).

The TELEGRAPHIC ADDRESSES are
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QUERIES AND ANSWERS.

CLUBS FOR DIABETIC PATIENTS

"E G" writes to inquire whether such a club exists in this country as the "Diabetic" in America. As the name implies it is a special club for diabetic patients, where they get meals suitable for their complaint prepared.

ACNE OF THE FACE

"A B" would be glad of suggestions for the treatment of acne of the face of seven years duration in a healthy girl aged 19. All the usual remedies have been tried including diet Turkish baths medicines vaccines and local treatment. After nine months there is very little improvement.

PHLEBIC DOUCHES

"G T B" asks—
(1) Can the P be injected? (2) How much in bicarbonate pint in the tube used? (3) Is my special rectal adds that his patient is elderly has sciatic and rheumatic pains, and is constipated and not relieved well by purgatives.

URETHRAL SPASM FOLLOWING THE PASSAGE OF METALLIC BOUGIE

"PREFLEXED" asks for advice in the treatment of the following case. A man aged 60 was operated on in 1916 for a stricture of the urethra by external urethrotomy. After the operation he passed a large metallic bougie once a month, but could never allow more than a month to go by otherwise the stream became too small and frequent micturition resulted. In 1922 he had a nervous breakdown. Since January 1924 passage of the usual monthly bougie is followed by a full stream but a few hours afterwards he has a desire to micturate can only pass a few drops with great pain and is relieved by passing a soft catheter and drawing off about 12 oz of urine. This suggests the occurrence of a reflex nervous spasm and had it occurred at the time of his nervous breakdown would have been so attributed, but it commenced two and a half years afterwards. The urine is normal with the exception of the presence of *B. coli* for which he has been treated by vaccines with little success. He has been advised to try a smaller bougie as the instrument may be too large but after using No 14 15 once a month the spasms continued. There is no great difficulty in passing the bougie showing that there is no real organic obstruction it is left in for an hour and withdrawn with some difficulty as it is very firmly grasped by the urethra and is followed by a little blood. Drugs have been tried—namely, morphine injections aspirin, phenacetin, potassium bromide tincture of hyoscamine with sodium bicarbonate and capsules of benzyl benzoate. The last alone gave any relief but not always. The following questions arise: Whether surgeons are passing too large bougies? Does the urethral canal vary in size in different individuals? How long should a bougie be kept in and how often should it be passed?

PREVENTION OF MIGRAINE

Dr G W CHEATER (Woodford Green) asks for information as to how attacks of migraine may be prevented. For many years the attacks have come in bouts of four or five in a month being followed by an interval of six to nine months of freedom before

the next series began. The remedies tried include phlebotomy, gelsium potassium bromide atropine luminal iron strichnine, and purgatives. Strict diet was without avail and both exercise and rest and also the abandonment of smoking had no results. Correction of the eyes was twice obtained in a twelve-month, but resulted in relief for about six months only. Dr Cheater is inclined to the theory that the migraine attacks are due to temporary swelling of the pituitary body resulting in pressure upon the optic chiasma. The attacks always start with homonymous hemianopia right or left headache occurs on the opposite side to the blindness. He does not believe that atmospheric or by way of the stomach or foreign protein poisoning is responsible. He asks whether examination of the optic disc during an attack in order to discover whether the veins are engorged so showing, the presence or absence of intracranial pressure, would be of use.

LETTERS, NOTES, ETC

TREATMENT OF EMPHYSEMA AT HARPOGATE

Dr R T MORRIS, C B I, M C P (Southfield, Harrogate) writes: Having had comments addressed to me on Dr Theodore Craig's letter in your issue of August 29 (p. 397) I beg to state I am not the Dr Morris referred to in that letter.

VACCINATION AND COMPLETE QUOTATION

Dr W G WILLOUGHBY (Medical Officer of Health, Lambourn) writes: In a small paper called the *Vaccination Inquirer*, the organ of the National Anti Vaccination League dated September 1st 1925 a statement has been made to the effect that at a meeting of the Natural History Society in Lambourn I stated: "I would rather sleep with a case of small pox than a case of influenza" and for having stated this I am alluded to as "a bonhomie sensible M O H". It will interest your readers to know that this statement is a part of a sentence which was complete to this effect: "because I have been vaccinated against small pox, and I keep myself re-vaccinated from time to time." The little paper is I understand, circulated to medical men and I must very well give the impression that I did not believe in vaccination. The facts are that I was giving an address on vaccination and similar matters at the meeting of the Natural History Society and was taking the opportunity of rubbing in the importance and advisability of vaccination and revaccination explaining carefully the reasons for my doing so. It is interesting to know that anti-vaccinators can take a part of such a statement as I made and twist it so that it would appear that my opinion is diametrically opposite to that which I stated in full at the meeting. The statement in the *Vaccination Inquirer* may not be a matter altogether of bad faith on the part of the writer in that paper for his information was got from a local paper in which a contributor who is a prominent anti-vaccinator, made the original misstatement.

SANITATION IN THE ALPS

Mr F F ROGET the author of *Alitude and Health* in the Chardwick Library series, writes to urge the importance of giving more attention to house hygiene when considering residence in the Alps for health or pleasure. Such an architecture of the house requires care in the drawing up of the lease or terms of the purchase of the laws of purchase and holding of real property and the incidence of rates and taxes, and the law relating to master and servant. Mr Roget points out that these matters were not discussed at the recent International Congress on Climatology at Davos of which an account appears on page 499 this week and that sanitary engineers, architects and innkeepers have special knowledge which will aid in obtaining the best results from sojourn in Alpine health resorts. The disposal of house sewage at high altitudes in the case of isolated dwellings is complicated by the alternate freezing and thawing of the snows, the fermentation of sewage exposed to the sun on a frost-bound soil and by the fact that the smaller streams may become almost solid ice. He adds that where sanitation is under the supervision of public or private responsible authorities the conditions are excellent but in isolated leasehold dwellings and even in some more numerous establishments, "many English clients do not know where they stand—literally." Therefore some caution is necessary some knowledge of the technique of sanitation and architecture and some scrutiny of the wording of a lease before chalets are acquired by hire or purchase. These chalets, being often the speculative work of local contractors or the venture of peasant owners of land are seldom built to serve the specific requirements of foreign purchasers. Mr Roget concludes: "There seems to be room here for a little piece of organization under medical patronage or for information given through the medical press so as to place in the hands of English people repairing to the Alps in search of health the means of protecting themselves against the risk of defective leases, imperfect sanitation, faulty architecture, and unsuitable sites."

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 36 37 38 39 42 and 43 of our advertisement columns and advertisements as to partnerships, assistantships, and locum tenencies at pages 40 and 41. A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 108.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BATH, 1925

SECTION OF THERAPEUTICS
(INCLUDING BALNEOLOGY AND RADIO-THERAPY).

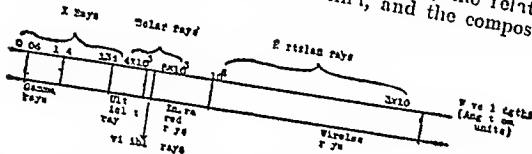
Professor R. B. WILD, M.D., F.R.C.P., President

DISCUSSION ON
THE THERAPEUTIC VALUE OF LIGHT

OPENING PAPERS

I—W. E. DIXON, M.D., F.R.S.,
Reader in Pharmacology and Assessor to the Regius Professor
of Physic, Cambridge

The physical basis of light is a series of waves in the ether which excite the retina to appreciation. The retina is sensitive to relatively few rays of definite wave length, this number forms a very small proportion of the total waves of a complete spectrum. The ultra-violet rays are of more rapid vibration and occupy a much greater portion of the spectrum than the visible rays, beyond them are rays emitted by vacuum tubes and gamma rays by radium, all these invisible rays can be detected by photography. The infra-red rays at the other end generate heat, and beyond them are the Hertzian rays used in radio telegraphy. The diagrammatic spectrum appended is an attempt to show the relative position and extent of these waves, the relatively small number which affect the retina, and the composition of the solar rays.



Local Action of Light

Any form of mild stimulation applied to the skin causes local effects on the skin and general effects on the body as a whole. The local action begins with an erythema, followed, if the stimulus is sufficiently severe, by oedema. These effects are produced by local dilatation of the blood vessels, and the cause of the dilatation is stimulation of the sensory nerve endings in the skin. The sensory nerves in the skin are connected by axon nerves with the vessels, and stimulation of sensory nerves causes reflex vaso-dilatation. Mustard applied to the skin produces no significant action on the part to which it is applied if the nerves have been previously severed and allowed to degenerate. The same is true if the mustard is applied to a portion of the skin in which the peripheral nerves have been previously paralysed by ethocaine or other efficient local anesthetic. Gooding and I have shown that the same mechanism of action accounts for the burns produced by dichloroethyl sulphide, the mustard gas of chemical warfare.

Prolonged exposure of the skin to the sun's rays also produces an erythema, this effect is not due to the heat waves, since staining the skin with penicillinate or coffee protects the exposed skin from the solar irradiation. The rays which produce this effect have not been clearly mapped, but those at the short end of the visible and the long end of the ultra-violet spectrum produce the maximum of inflammation, roughly speaking, the longer the wave-length the better the penetration and the more marked the action. This skin of 0.1 mm thickness allows only wave lengths greater than 3,600 Å to penetrate. By using ultra-violet rays from the mercury quartz lamp it is easy to give an exposure to the inner side of the arm which produces decided erythema. If the area of the skin is anesthetized by injections of ethocaine repeated from

time to time so that the area is kept anesthetized for two or three hours, then the application of the rays to the anesthetized area is found to have lost most of its stimulant properties and the skin is but little affected. The ethocaine itself has some stimulant properties and it is necessary to control the injections. Different people require considerable differences in length of exposure to produce comparable effects. The erythema produced by ultra-violet light on the skin appears then to be caused by the same mechanism by which mustard and other skin irritants act. How it happens that these rays stimulate sensory nerve endings and why people differ in susceptibility towards them we understand no better than we understand how mustard or mustard gas acts, except we have reason to think in the latter case that the effect is not due to any crude chemical change between the mustard and nerve endings, but that certain energy factors associated with the molecule and evidenced on apperception to the skin during its hydrolysis are at work, factors which are not exhibited in the chemist's structural formula.

One feature of skin, however, may throw some light on this mechanism of stimulation. Tappemeier and others have shown that light greatly increases the toxicity of certain toxic derivatives to micro-organisms, very many dyes and dyestuffs are similarly affected. All these bodies fluoresce in the presence of light. Traces of haematoporphyrin, which is also fluorescent, can be demonstrated in most normal urines. If haematoporphyrin is injected into animals such as white mice they remain quite normal so long as they are kept in the dark, but exposing them to strong light causes acute pyrexia, the skin becomes very red and inflamed, and death may ensue. Haematoporphyrin has the same action in man. Meyer-Betz injected himself with very small amounts of haematoporphyrin and examined the effects of different light on his skin. Sunlight caused burning on the exposed parts, associated with reddening, swelling, and later pigmentation. A considerable amount of clinical evidence is available showing that certain periodic eruptions, such as summer prurigo and hidradenoma, are directly caused by the action of light, and that the determining condition for this effect is the presence of some unusual substance in the body such as haematoporphyrin. Now one property of these substances which give rise to light sensitivity is that of fluorescence. The light is absorbed and part of the energy used to generate light of greater wave length. This fluorescence is exhibited best under the ultra-violet rays. So we have clear evidence that a non-bacterialidal fluorescent substance may be introduced bactericidal by the influence of light, and when present in the system may render the animal supersensitive to light. Bence-Jones long ago showed that normal tissues and urine contain yet another substance which fluoresces and which can be extracted from the skin by boiling with hydrochloric acid. To this substance he gave the name "quinoidine". It is well known that the normal skin fluoresces blue, but only when the epidermis is intact. In diseases the skin is particularly fluorescent suggesting that damaged epithelium in these conditions is especially absorbent for this substance.

I have pointed out that there is good evidence for believing that light, mustard leaves, and mustard gas ultimately produce their effects in the same way, therefore it might be argued that those who are tolerant or supersensitive to the one stimulant should be so also to the other. This is definitely not the case, and the reverse is not uncommon, though negroes are tolerant to all three this suggests that some other factor may be necessary to produce erythema apart from the light. This factor might well be of the Bence-Jones quinoidine, since it is known that skins of the supersensitive are particularly fluorescent, and that fluorescent substances under the influence of light exhibit remarkable properties, such as the artificial production of supersensitivity. This view is entirely different from that expressed by Dr. Peacock, speaking recently in the name of Professor Russ and himself, in which he regarded the fluorescence of the skin surface as a protective phenomenon, though on what evidence I do not know, except, of course, that outside the body fluorescent substances absorb ultra-violet rays.

General Action of Light

The general systemic action of light stimulation of the skin bears close similarity to that of other forms of skin stimulation. A mustard leaf causes a slight stimulation of the heart, slight splanchnic vasoconstriction with a corresponding rise in blood pressure, and some increase in respiration. These effects are all produced reflexly through the medulla. Metabolism is slightly increased, the absorption of oxygen, carbonic acid output, and nitrogenous excretion are all augmented, but the last only slightly. The general immunity is also increased. All these effects are said to be produced by the stimulant action of light, though the experiments of L. Hill on man are open to other interpretations. It must, however, be remembered that we are dealing here only with the action of light on the skin and are not concerned with the shortest ultra-violet wave-lengths which readily kill infusoria and bacteria, but which are unable to penetrate the undamaged skin and therefore do not cause erythema.

One other effect of both chemical skin irritants and light is the deposition of pigment in the skin. Little is known of the mechanism of its production, but its formation is in no way specific to light. Arsenic among other drugs causes pigmentation of the skin, the pigment in these cases is a degradation product of haemoglobin, but we are in ignorance as to why it is deposited in the skin, though certainly here it is not concerned with light. But arsenic is excreted by the skin, promotes growth of the skin, and, like light, acts as a mild irritant, continual irritation of the skin with mustard also leads to pigmentation indistinguishable from that of light. The function, however, of light pigmentation can hardly be doubted, it is an absorbent for ultra-violet rays. Half an hour's irradiation of cholesterol suspended in water renders it antirachitic, but if the water is coloured by carotin the activation fails. It is suggestive that one function of pigmentation is to absorb such solar waves (ultra-violet) as are not, under the conditions obtaining, required by the body. Cholesterol, which is plentiful in the skin, becomes yellow after the prolonged action of ultra violet rays and may play some part in the coloration.

Specific Action of Light

But besides this general action, light has another and more specific effect. Ultra-violet light influences the storage of calcium and phosphorus and their equilibrium, not only in growing, but in mature animals. Growing rats subject to daily irradiation by the mercury quartz lamp increase in weight and then total calcium content goes up considerably in excess of the controls.

An abundance of evidence is now available to show that ultra-violet radiations from the sun or, better, from the mercury vapour lamp protect children from rickets or cure the disease when its effects are already evident. Something is known of the method by which this is produced. If young rats are placed on a diet which readily produces "rickets" the disease can be prevented by subjecting the animals to ultra-violet rays for two minutes daily at a distance of three feet from the lamp. This action might conceivably be produced by an effect of the rays either on the animal or on its food. Reasons exist for believing it is on both. Many entirely different substances subjected to ultra-violet rays assume antirachitic properties which they did not previously possess. Wheat, biscuits, flour, meat, milk, eggs, as well as such fats as olive oil, lard, cottonseed oil, and linseed oil, can readily be activated so as to become antirachitic. One substance which is widely distributed throughout nature, present indeed in almost every animal cell, and therefore in all the foodstuffs named, is cholesterol, and this substance in the pure crystalline state becomes antirachitic after irradiation with the mercury vapour lamp like the foods named. Unlike foods, however, this irradiated cholesterol in a dry state rapidly loses this property unless it is dissolved in oil, when its curative properties are retained. Practically all oils contain cholesterol or its allies, and some of them, like the fish oils, possess natural antirachitic properties, but all of them have the faculty of becoming antirachitic after irradiation, and the curative virtues when once

established are not easily lost by keeping. It is generally believed that foods possess antirachitic properties by virtue of their cholesterol content. Hess has shown recently that ultra-violet rays change the chemical nature of cholesterol, its spectrum is altered and it becomes more transmissible for ultra-violet irradiations.

The skin is especially rich in cholesterol, and it has been shown that rats placed on the standard rickets-producing diet, low in phosphorus, do not contract rickets if they receive a small ration of irradiated skin of some animal. Hess thinks that such experiments show that the antirachitic effect of ultra-violet light in man is due to the activation of the cholesterol in the superficial layer of the skin. As this effect can be produced in the test tube, and is apparently independent of the bodily functions, it may be due to some definite chemical change. This property—that light can produce chemical substances in the skin which are preventive and curative for rickets—forms an important factor in its action. Such daily doses as 1/100 grain of an activated cholesterol protects experimental animals (rats) from the changes produced by rickets in a vitamin-deficient diet.

Two other points of practical interest require consideration. The first is that too long an exposure of cholesterol or food substances containing it to ultra-violet light renders them inert as a remedy for rickets, though this is unlikely to happen from continuous irradiation of the skin, since before this stage is reached pigmentation would occur and the pigment absorb the ultra-violet rays and render them inactive.

The second point is that such information as we possess suggests that there is no close relationship between the incidence of rickets and sunshine. In the Panama Canal zone, where rickets hardly exists, the yearly sunshine is not only less but is less evenly distributed than in New York. Some authorities state that effective solar radiation is so small in the winter that even if we were to substitute quartz panes for window glass it would be inadequate as a protection from rickets. In other words, light cannot be substituted for the older preventives like cod liver oil. It may be, as Dr. Leonard Hill has pointed out, that the smoke cloud which hovers over large cities absorbs much of the ultra-violet light in these places. It has been shown in America that during the winter months, when exposure to sunshine out of doors is difficult and the ultra violet light in the solar spectrum at a minimum, such sunshine as is available is insufficient to prevent rickets in rats.

These experiments show that, apart from therapeutic action in disease, ultra-violet rays can produce a chemical change in the tissues.

At present we have no satisfactory way of measuring the dosage of ultra-violet radiation, but there is some clinical evidence suggesting that overuse leads to diminished immunity. Sunshine is not a universal panacea in disease, and in health most of us try to avoid it. In Sweden, where clinical experience of light treatment is considerably greater than our own, it is clearly recognized that many people are unsuitable for such treatment, particularly is it the case with neurotics and the highly reflex.

II—C E M JONES, M B, B Ch,

Senior Assistant Medical Officer, Lord Mayor Treloar Cripples' Hospital, Alton, Hants

THE CLINICAL ASPECT

The two conditions in which light treatment has been found clinically to be of the greatest value are those of rickets and non-pulmonary tuberculosis. In regard to rickets, it is known that children and animals sufferings from this disease can be cured in a few weeks by exposure to light for a few minutes daily, also, in the case of animals experimentally fed on a rickets-producing diet, the disease may be considerably postponed, if not totally prevented, by similar exposure to light. In a case of rickets the deficiency of calcium and phosphorus, which is demonstrable in the case of the former substance by a skatogram, can be shown to be made good.

In discussing the value of light treatment in non-pulmonary tuberculosis, I would desire to emphasize the fact that, especially in bone and joint lesions, light is merely an adjunct method of treatment, which should be combined with general and local measures. There are some who appear to regard light as a specific cure for tuberculosis. Such a view is misleading, while it is an auxiliary method of treatment of the greatest value, the idea that bone and joint tuberculosis can be cured by light alone, without the employment of conservative methods of treatment involving general and orthopaedic measures, is fantastic.

Light acts in two ways: it has a local action and a general action, and in discussing the action of light I will, for purposes of convenience, deal separately with treatment by natural sunlight, or heliotherapy, and treatment by artificial light.

Heliotherapy

Local action.—Light has direct bactericidal action and has the power of destroying certain bacteria on the surface of the part exposed, it also acts by producing an inflammatory response in the exposed region. A sinus exposed to light at once commences to discharge more freely, the discharge is less purulent and more serous, and small sequestra are sometimes extruded.

General action.—The general or remote effects of light are of much greater importance. In suitable cases it produces a feeling of exhilaration and increased well-being, combined with increased metabolic activity. What is meant by the words "in suitable cases"? All patients do not benefit by heliotherapy, some do not benefit at all, and, in fact, are harmed by it. The benefit which a patient derives from sun treatment appears to be associated with his power of pigmentation, this statement is not accepted by some workers, but is one of the clinical truths of which I am firmly convinced. It is a matter of common knowledge that dark-haired people pigment better than those who are fair, and that the latter tend to blister and burn rather than to pigment when exposed to the sun. The most typically non-pigmenting person is, perhaps, the sandy-haired, freckled individual, this type, when exposed, instead of being stimulated and exhilarated, becomes depressed and collapsed. It is therefore necessary to decide in each individual case whether or not the patient is suitable for insolation. Further, in cases which are suitable for sun treatment, the exposures should be carefully graduated, in order to avoid overexposure and resulting depression and collapse. For example, on the first day the legs from the feet to the knees should be exposed for five minutes an hour for three consecutive hours, the area exposed and the time of exposure should be gradually increased, so that after about ten days the whole of the body may be exposed for about twenty minutes an hour for three consecutive hours. By this time the patient should have become fairly well pigmented, and when this is the case longer exposures can be tolerated with comfort. The head should always be protected from the sun, and the patient should never be allowed to feel either too hot or too cold, he should always feel invigorated and never be allowed to become tired or exhausted. The feeling of exhilaration produced by exposure to light is a condition with which, speaking generally, we are all familiar, and those who have had experience of institutions where heliotherapy is systematically and correctly practised cannot fail to be struck by the cheerful condition and optimistic outlook of the patients. This psychological phenomenon is combined with a condition of increased metabolic activity: this increase of metabolism is a measurable factor. Research work on this subject has been carried out at the Lord Mayor Telford Cripples' Hospital at Alton by Dr. Argyll Campbell and Dr. Leonard Hill, of the National Institute for Medical Research, working in conjunction with Sir Henry Gairdner. It has been found that in spite of the fact that children at Alton were recumbent and immobilized, their metabolic activity was about 40 per cent higher than that of an ordinary child. This was attributed to their exposure to the air and sunlight. In addition to this physical condition of increased metabolic activity there is also apparent an increase in mental activity which is produced on exposure to sunlight and air. In this connexion I would like to refer to the tests carried out by Mr.

C. R. Macdonald of Melbourne, in collaboration with Sir Henry Gairdner, which formed the subject of a paper read by Sir Henry Gairdner before the Royal Institute of Public Health in congress at Brighton. Stated briefly the results were as follows. Mental tests were applied to children in special schools for the physically defective in London, and to patients at Alton. It was found that the children at Alton were mentally nearly a year in advance of the London children. After excluding such possible factors as heredity, superior educational facilities, and differences in the severity of physical defects, none of which were found to be applicable, the conclusion arrived at was that the superiority of the Alton children was due to the treatment received in the hospital, while the increased metabolic activity already referred to would be likely to cause improved mental activity, it was considered that it would be unlikely that this was the full explanation of the mental superiority of the Alton children. The interesting suggestion was advanced by Sir Henry Gairdner that ultra violet light might improve the nutrition of the grey matter of the brain, even as it induced bone repair in the case of rickets.

There are two points of interest in connexion with heliotherapy in non-pulmonary tuberculosis to which I would like to refer. The first is connected with the question of pigmentation in the case of a patient suffering from bone and joint tuberculosis, if the lesion becomes quiescent following treatment, and if the patient is a non-pigmenter, then it is probable that there is latent tuberculosis in that patient, and he will either have a recurrence or develop a new lesion, if a new lesion should occur, and be treated, then the patient frequently develops the power of pigmentation and his subsequent progress is more satisfactory. Power of pigmentation may thus serve as an indication of prognosis. The second point which I would like to mention is the effect of sunlight and air on the musculature of the patient. Patients treated in this manner are relatively free from the muscular wasting commonly associated with bone and joint tuberculosis, and this is of obvious advantage to the patient when the stage of ambulatory treatment commences.

Artificial Light Treatment

Artificial light treatment is, of course, employed as a substitute for heliotherapy when natural sunlight is not available, either owing to climatic conditions or when suitable sites for the employment of heliotherapy are lacking, as in congested areas in large towns. Much valuable work is done in light clinics by giving artificial light baths to rickets, debilitated, and pre-tuberculous children, in crowded slum areas. In the treatment of non-pulmonary tuberculosis artificial light treatment differs from heliotherapy in one important particular. Whereas in heliotherapy we have seen that it is the general effect of light that is important as compared with the local action, in artificial light treatment of the cases the part played by local treatment is of far greater importance, though here also it should always be combined with general treatment.

In an artificial light department general light baths are usually given either by means of the carbon arc lamp or by some form of mercury vapour lamp. Certain advantages can be claimed for each of these two methods. The light from the carbon arc more closely resembles natural sunlight and possesses greater power of pigmentation than that of the mercury vapour lamp. On the other hand, longer exposures are required. A commencing dosage of twenty minutes to half an hour might be given with a carbon arc lamp whereas three minutes with a mercury vapour lamp would suffice. The arc also gives out a fairly considerable amount of heat which is apt to become exhausting to young or debilitated patients, and for this reason the mercury vapour lamp is sometimes to be preferred in cases of these types. Some workers prefer to use the carbon arc, while others favour the mercury vapour lamp. Personally I much prefer the arc for the purpose of general light baths. An interesting point in connexion with carbon arc is that it may be employed with caution in the treatment of cases of cases which cannot be exposed to natural light. Such cases will often acquire a certain amount of pigmentation.

the protective action of which will enable them to tolerate some exposure to natural sunlight, with its corresponding benefits.

I have mentioned previously that, in the treatment of non-pulmonary tuberculosis by artificial light, local treatment plays a relatively more important role than in the case of heliotherapy, and cases of lupus, scrofuloderma, skin tubercles, glands in the neck, sinuses, etc., are greatly benefited by local treatment by light relatively rich in ultra-violet rays. Thus, lupus in the ulcerative stage is advantageously treated by the mercury vapour lamp, when the ulceration has healed the treatment must be completed by the Finsen-Reyn lamp, which is usually essential for the final eradication of the disease. Scrofuloderma may be treated by the mercury vapour lamp or the tungsten arc, skin tubercles by the mercury vapour lamp, glands in the neck, more especially those of a multiple nature and accompanied by paradenitis, are greatly benefited by the tungsten arc. The Kromayer water-cooled mercury vapour lamp is useful in certain stages of the treatment of lupus. The quartz rod applicators are very helpful in the treatment of lupus in such situations as the interior of the nose, the gums, rectum, vagina, etc.

As an illustration of the advantage of combining general treatment with all forms of local light may be mentioned the results obtained at the Finsen Institute at Copenhagen. It was found that in the case of lupus patients given local treatment alone the percentage of cures was 60, whereas in the case of combined general and local treatment the percentage of cures was 80.

Contraindications to Light Treatment

It has already been mentioned that non-pigmenting persons are unsuitable subjects for heliotherapy. Others in which it is contraindicated are pyrexial cases, cases of marled amyloid disease, the acutely ill, the very young and the aged.

It has been stated above that in unsuitable cases light treatment produces depression instead of stimulation. This condition of depression is also produced by overexposure in cases otherwise favourable. It has been found that after exposure to light a rise in the haemo-bactericidal power of the blood is demonstrable, which persists for a few hours and then returns to normal. It has been shown by Dr R. G. Brunnerman, the research pathologist at Alton, that an overdose of light, such as an initial exposure of half an hour to the mercury vapour lamp, produces a rise in haemo-bactericidal power which not only returns to the normal, but which may fall below the original level and remain below it for some time before gradually rising to the normal. This was found to be accompanied by certain other phenomena, notably an increase in the rate of sedimentation of blood corpuscles, which is taken to indicate a phase of diminished resistance. This apparent lowering of resistance may account for the condition of depression which is produced by the exposure to light of unsuitable cases.

III—G. H. LANCASHIRE, M.D.,

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PHOTOTHERAPY IN DERMATOLOGY

THE treatment of skin disease by physical means is a field that has been greatly extended in recent years. Electricity, heat and cold rays, and light have all been exploited. With regard to ray therapy it has taken the accumulated experience of twenty years and more, since Schiff and Freund published their pioneer work on the subject, to enable one to say what are the indications and the limitations of the method in dermatology. It may well be the same with the later developments in phototherapy, and it must be borne in mind that these are but developments of the ideas given to the world by the genius of Finsen.

At our skin hospital in Manchester we were early in the field with Finsen's lamp, and only discontinued treatment with this and Reyn's modification after several years. Economic reasons, and the difficulty of getting efficient help

for its exacting service, were the chief motives for the change. Nevertheless the results in suitable cases of lupus vulgaris were good, and have perhaps never been bettered from a cosmetic standpoint. In September, 1924, we installed at the hospital in apparatus for artificial sunlight treatment, and in this matter we owe our grateful thanks to Dr. Sequerra and Dr. O'Donovan of the London Hospital for their willing help.

In our temporary room at the hospital we have two carbon lamps of the high ampere pattern, which are burning in parallel at 25 amperes each, in order to obtain an intense irradiation for treating six to eight patients simultaneously or two recumbent patients at one time. The ordinary plain electrodes are used, containing no metallic or other chemical elements. The upper carbon (positive) is coiled, and the lower carbon (negative) is solid, producing a long and brilliant arc flame. We have begun treatment with half-hour exposures, gradually extending the exposure to three hours daily. We have obtained the usual reactions, which have been already described by writers. We use also a powerful ozone apparatus, as is usual, in conjunction with the arc lamp. It will be noted that we have not used a single lamp of very high ampere, but two lamps of lower power side by side. This appears to have been a misadventure, but it has proved effective. The temporary room we have been compelled to use, pending new buildings, has been by no means ideal. The question of ventilation for such a room is of high importance, and the difficulty is that air currents may disturb the arc flame. Probably a lofty room with exhaust fans on the roof would be best.

The artificial sunlight treatment has been reserved for tuberculous skin cases, mostly lupus vulgaris, and the irradiation has covered the whole body surface, the "light bath" the lesions themselves in most cases being covered. I may say at once that the results we have obtained have exceeded my expectations, and that I believe this method is a real advance in our treatment of lupus, especially in the widespread and severe cases that we see in Manchester. It is possible that we shall do still better when we combine general with local irradiation, but the former alone has given us some fine results. It would take too long to describe individual cases, but in addition to the improvement in skin lesions there have been several showing wonderful improvement in lupus of the buccal and nasal cavities.

Reyn, who read a paper before this Association in 1923, said that light baths alone would not cure lupus without the local application of concentrated light. He might modify this view at the present day. At the same meeting Sequerra confirmed the opinion of Strandberg that intra-nasal lupus may be cured with the light bath alone. There seems to be no theoretical reason why lupus of the skin should not be included in the same category.

In common with others we find that the light bath improves the general health and well-being of the patient, who usually gains weight in the early stage. The cosmetic results are, as would be expected, extraordinarily good, this being a "natural" cure. A word, however, in conclusion on the question of lupus. The success of this light treatment does not imply that all older methods must go by the board. Economic reasons alone will necessitate the employment for some time to come of more rapid and less expensive methods. An active lupus threatening the eyesight, too, is justifiably tackled more vigorously.

Coming now to the direct application of ultra-violet rays to skin disease, my own experience, since the Finsen lamp epoch already mentioned, has been confined to the use of the tungsten arc apparatus. I am not qualified to speak of the mercury vapour or other forms of lamp, but on theoretical grounds the open tungsten arc should meet requirements, and I believe that in practice it does so. Unfortunately my experience has been only short. I have used the tungsten arc mainly in the treatment of the seborrhoeic type of alopecia and alopecia areata. In the latter condition I have already obtained some striking results, notably so in the case of an adult with complete baldness of two years' duration, the scalp being smooth, shining, and atrophic-looking. In this case there has been a growth of hair half an inch in length on the crown within two months. I am aware of the great danger in alopecia areata of ascribing results to treatment. *Vix medicatrix*

naturae would probably heal a large percentage of the cases which we have in hand, as indeed it sometimes does in cases which we have abandoned as hopeless. I have in mind two gentlemen, each over 70 years of age, whom I saw many years ago. One had rapidly spreading alopecia areata involving the whole scalp and leaving a few hairy islands only. The other had a big band of alopecia (ophiasis) on the occiput. In both patients the bald areas were atrophic and showed no follicular site. After a good trial treatment was abandoned. The gentlemen returned a year or so later, to confound me with a good growth of hair and no signs of abnormality. This would have been a triumph for phototherapy had it been known in those days. Despite the difficulty of separating the *post* from the *propter hoc*, however, the results seem too uniform to be ascribed to chance, and I believe that in some way, probably by stimulation of the capillary circulation, ultra-violet rays do promote the growth of hair. It is more than likely that visible rays also play an important part, since these rays penetrate more deeply. Another factor in the case of the tungsten arc may be heat, which is appreciable. At hospital we used for a long time a lamp of which the chief output was heat, and in some cases there appeared to be good results. In this connexion I may perhaps mention that you, Mr President, once observed that there might be some therapeutic value in the use of heat rays alone in dermatological practice. Although I have other cases of skin disease under the local application of ultra-violet light I prefer to make no comment on these pending further experience.

In recent publications many skin complaints are stated to be curable by phototherapy. I trust a good case is not being spoiled by too wide a claim. Although in the interests of research it may be allowable to investigate a wide field, the treatment should really be reserved for those things which it can do better than other methods. If, for example, it can be proved to relieve the troublesome cases of pruritus one often meets—cases unaccompanied by visible lesions—practitioners will be glad to adopt it in place of x-ray therapy, which, though effective, is always, or should be, attended by some anxiety.

One would be inclined on theoretical grounds to doubt the efficacy of local phototherapy on the deeper-seated psu-coeal skin affections, since we are told that the penetrative portion of ultra-violet rays is non-bactericidal. On the other hand, phagocytic action may in some way be stimulated. I would prefer to treat impetigo contagiosa on the old lines. I would like to know the reason for light treatment in ringworm of the scalp, and in rodent ulcer. For the latter disease we already have reliable weapons in x-rays and radium, augmented by diathermy for involvement of hard parts. Phototherapy is advised also for *acne vulgaris*. One may note that acne in town dwellers is often improved by a holiday in the sunshine, but the change, of course, may be due to the improvement in general health. *Cerebra*, *reute* and *chronic*, is also mentioned as suitable, we know that sunshine always aggravates the disease.

I have no wish to depreciate the value of the work of others who have had longer experience than I, but I think it would be well to publish further evidence before advising the method in so many and widely dissimilar skin affections, otherwise discredit may fall on what is a real advance in therapeutics. In some skin diseases phototherapy would be definitely contraindicated. This group would probably include lupus erythematosus (though in one case of this disease I have obtained improvement by the light bath, the lesion itself being covered), and would certainly include those diseases which have been actually initiated by light rays themselves.

Sir Lenthal Cheble wrote in the *JOURNAL* of March 28th last (p. 631) that there might be a tendency in ultra-violet radiation towards malignant changes in the skin, especially if the skin already suffered from an irritant such as tar. Subsequent writers negatived this idea, but it is one which should be noted, and which time alone can refute. The history of x-ray treatment prevents one from dismissing it too lightly.

In conclusion, I believe that though the value of phototherapy, local and general, has been abundantly proved for tuberculous skin diseases, more experience is required to establish its real worth in other departments of dermatology.

GENERAL DISCUSSION

Dr W MITCHELL (Bradford), as one who had been doing this work since 1906, thanked Professor Dixon for his most illuminating paper. The main conditions with which he himself had been concerned were lupus, tuberculous glands, alopecia areata, tinea, acne, and lupus erythematosus. In spinal tuberculosis in children he had had very good results from general treatment. Tuberculous glands did very well, but it was quite useless to treat them with light if an abscess was present. Lupus cases also did very well, a preliminary dose or two of filtered x-rays was a great help. In lupus erythematosus he had had good results with ultra-violet rays. He described a case of universal alopecia areata treated successfully, so far as the return of hair to the scalp was concerned, by weekly exposures to the Kromayer lamp. Acne did fairly well, but for this condition he preferred filtered x-rays.

Dr P HEFFERNAN (Buxton) asked a question regarding the effect of light on metabolism. In Derbyshire there was always a certain amount of endemic goitre, generally attributed to iodine starvation in infancy and childhood, but this endemic goitre was known to be intimately associated with the dark narrow mountain valleys with a limited horizon, where the inhabitants were deprived of a great deal of direct sunlight. Apparently the Swiss, by the administration of iodine in the schools, had very considerably reduced the incidence of endemic goitre in the children. Professor Dixon had said that it was not possible to increase the calcium or phosphorus content of the tissues by feeding by mouth, but there might be something in the action of direct sunlight on plants used for food. Dr Heffernan took it that in this matter of food there was an irreducible minimum below which definite starvation symptoms would appear. He desired to know from Professor Dixon whether there was any relation between the amount of direct sunlight on plant life and the power of the plants in fixing iodine.

Dr R GARROOD (Huntingdon) offered the suggestion that one of the factors accounting for the difference between the action of light on pigmenters and non-pigmenters might be racial type. He thought that in the mixed composition of the English people there was a good deal of Mediterranean blood, and he believed that the Mediterranean type survived the risk of tuberculosis much better than the purely Nordic type. It had even been suggested that under modern factory conditions they were returning to a cave-dwelling environment, and so a more primitive type survived.

Dr E P CUMBERBATCH (London) asked whether advantages were to be gained by using carbon impregnated with various metallic salts. He took it that the duration of exposure necessary for obtaining the erythema dose would be lessened if carbon impregnated with nickel or other metals were used. Was there any advantage in a twenty minutes' exposure to the carbon arc as opposed to exposure for two or three minutes to mercury vapour?

Dr NEWMAN NEILD (Bristol) thought that some warning was necessary against injudicious exposures of phthisical patients to sunlight. He had seen two cases recently in which the whole chest had been injudiciously exposed. It was necessary to keep a careful watch on patients when they started using this method. With regard to the supposed uselessness of calcium by the mouth, Professor Dixon spoke as a pharmacologist, the speaker had seen it do good. The fact that it was not absorbed did not imply that it was of no use.

Dr HELEN MACKAY (London) said that with regard to neurotic patients her impression was that the vast majority of children suffering from irritability and general discontent responded well to light treatment if it was carefully graduated. Almost invariably the mother of such a child would state after a fortnight or three weeks that the child was infinitely happier. But, in young children, if the dose was put up too quickly the child, who is happy enough, would not go to sleep at night. A day or two

after cutting down the dosage the child would be found to sleep quite well again. In the case of extremely young children she had over and over again got in extraordinarily good effect on the general condition, but it was necessary to go more slowly than in the case of older people. She believed also—although she had had no experience herself—that radiologists were unwilling to take on the cases of babies and very young children suffering from ringworm of the scalp.

Dr J M H MUNRO (Bath), after a reference to the light installation at the Corporation Baths, asked from the experts some more definite information as to the raising of the haemo-bactericidal power of the blood by irradiation.

Dr T B POOR (Westchiff-on-Sea) said that the point with regard to the absorption of calcium had impressed him very much. Some while ago an obstetrician saw a case of his of severe metrorrhagia, and advised the giving of calcium lactate prepared freshly from calcium carbonate and lactic acid. This had proved very efficacious and he had used it in a number of conditions, including chilblains.

Dr C F M JONES said, in reply to Dr Cumberbatch's question, that he did not think there was any superiority or advantage in the twenty minutes' or half-hour exposure to the carbon arc as opposed to the two or three minutes' exposure to the new rays upon Clinically he preferred the carbon arc because it more closely resembled the natural sunlight. With regard to Dr Munro's question about the haemo-bactericidal power of the blood, what he had said was that a fall took place as a result of an overdose. What he believed occurred as a result of a properly graded therapeutic dose was a rise, which was maintained, he thought, for three or four hours, but he could not help feeling that this haemo-bactericidal rise was one of more theoretical than practical interest. In rabbits the bactericidal power was, to start with, low—about 50 per cent—whereas in man the average was somewhere between 95 and 100 per cent. Clinically it was found that patients who presented a high bactericidal power did not do particularly well. The question of this bactericidal power was interesting, but practically he did not think it was going to be of very great importance. He added that it was possible gradually to acclimatize so-called non-pigmenting patients to natural sunlight by giving them small doses with the carbon arc.

Professor W I DIXON said that the Section ought to be congratulated upon the fact that so many people with divergent views had expressed their opinions in a very definite manner. Dr Jones had said that clinical results were not always to be explained by science, the speaker agreed. Science must be the servant of the physician. Dr Jones had also said that pigmentation varied with the resistance of the individual. Dr Greenwood had attempted to give him an explanation, and, curiously enough, they were both of them in agreement with Charles Darwin. Charles Darwin, speaking of the colour of the Africans, produced evidence to show that it was only those people who became black who were resistant to certain diseases and so were able to live. This, he took it, was roughly the view which Dr Jones held with regard to one object of pigmentation. No one knew yet entirely why pigment was formed. Dr Jones had referred also to the fact that light increased metabolism. That was a point which was perfectly well recognized, and if metabolism was increased the feeling of well-being was increased also, and one would expect mental activity to be quickened. When Dr Jones suggested as he did that this might be due to the action of light on the grey matter it sounded like a fairy tale. He did not see how light could get at the grey matter. If Dr Jones meant that a stimulation of the periphery caused the reflex stimulation of the brain he would agree, but any direct action was inconceivable to him. There had been some talk about the difference between artificial light and natural light, and he was sorry that the experts who were dealing with this matter did not make their points clear and state the amount of ultra-violet light which was present in sunlight. Some authorities said that sunlight contained 4 per cent of ultra-

violet and one went up to as much as 12 or 13 per cent. But it was known that the only light of this character which penetrated the skin, and therefore produced the beneficial effects, was the shorter rays of the visible light and the longest rays of the ultra-violet. In the case of the short ultra-violet rays the penetration was negligible but it was the short ultra-violet rays which produced the bactericidal action and which killed the protozoa. One other important point which had come out in the discussion was made by Dr Limeshure and Dr Mitchell, that when one wanted to treat a patient for a skin disease it was not necessary to treat the lesion itself. In the case of the eye, for instance, it was impossible to treat the lesion. In the modern treatment of lupus the patients were treated at one time in the back and at another time in the chest, and the condition was cured without touching the lesion at all. The benefit, therefore, must be the general effect, together with that specific action of light to which he had referred in his opening remark. Professor Dixon went on to say that he had been asked about the influence of light on iodine metabolism. It was stated that in Derbyshire and in Switzerland people were liable to get goitres as the result of iodine deficiency. Had the light a certain influence in fixing the iodine in plants or in altering the body tissues so that the body could make use of the available iodine? He did not know that there had been any observations on that. It was known only that simple goitre was due to iodine deficiency. It was a hypertrophy of the gland in order to fix and make up in quantity what the gland lacked in quality. He was sure that the disease on had wandered to calcium, for that had nothing to do with light. Dr Neild had warned them against the pharmacologist but the speaker did not think the warning was necessary. The pharmacologist was not there to dictate, only to give the facts from which the clinician could draw his conclusions and prescribe anything he chose. It was not possible to increase the calcium in the blood by taking calcium by the mouth—that was to say, in normal people by the administration of calcium by the mouth the clotting power of the blood could not be increased. The effect of overdosing was mentioned by Dr Midgley. They all knew that every stimulation was followed by a depression. If the stimulation was enormous to begin with the depression came on quickly. At the present time there were no means of exactly gauging the dose of ultra-violet rays to be administered. It was possible to do this with x-rays, and in the course of time he did not doubt it would be possible to gauge the amount of ultra-violet light administered.

THE USES OF POSTURE FOR BRONCHIAL DRAINAGE

BY

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In order to drain the bronchi by gravity, the patient must be placed in such a position that the bifurcation of the trachea is lower than both bronchi, and this result may be obtained in three practicable positions. In all three the thorax is placed at such an angle with the horizontal that both bronchi drain into the trachea as long as this is secured, the patient may lie on his back, face downwards, or on his side.

Lying on the face or back the angle which the line of dorsal vertebrae makes with the horizontal does not require to be so great as when the patient lies upon his side, and therefore the drainage position on face or back will not entail such a pressure of blood in the head as a lateral posture causes. That is certainly an advantage, but the disadvantages in most cases outweigh this advantage.

Lying on the back the fluid drained from the lungs collects in the pharynx or nose, and it is not easy for the patient to get rid of the fluid, should the patient be unconscious this objection to the dorsal posture is still greater. Moreover, it is very difficult to put the pelvis and thighs in a comfortable position.

Less open to objection is the face-downwards position. The chief disadvantage is that the expansion of both lungs is greatly interfered with and it is more difficult to get

the head and neck in a comfortable position. It is easier to obtain this position when the head of the bed can be removed, or on an Illey couch, or sofa with only one upright end. The advantages of this posture are that there is free drainage through the mouth without blocking the nasopharynx, and the base of the lungs is more easily drained without requiring such a steep slope as the lateral posture necessitates.

The lateral posture for bronchial drainage requires a greater angle between the line of dorsal vertebrae and the horizontal. When the patient is lying upon the front or back the bronchi are practically in the same plane as the trachea, from the point of view of drainage, but when the patient is lying upon one side the bronchus on that side, coming off at an angle with the trachea, is lower than the bifurcation, and in consequence the angle which the line of the dorsal vertebrae makes with the horizontal must be made more steep in order that the lower bronchus shall drain properly.

The angle required is greater when the patient lies upon his left side than when he lies upon his right, owing to the fact that the right bronchus deviates less from the continuation of the line of the trachea than the left bronchus deviates. If the patient is lying on his left side, then the angle between the dorsal spine and the horizontal may require to be at least 45 degrees. But the necessity for such a steep slope of the chest is avoided by turning the patient somewhat over towards the face down or upon the back position. The former inclination is more comfortable for the waist and hip-joints, and the latter inclination more comfortable for the head and shoulders.

To place the patient in this position, the pillows and bolster are removed from the bed, and the patient lies upon, say, his right side with the hip- and knee-joints somewhat flexed. The doctor sits on the edge of the bed in front of the patient's abdomen, and facing the head of the bed, then passing his right arm well under the patient's waist near the iliac crests, he lifts the patient's waist rather higher than is necessary to obtain the required angle, while helpers pack pillows and cushions under the patient in order to build a firm double-inclined plane under the shoulder, chest, waist, and thighs. The highest point of the double-inclined plane should be under the lowest ribs, and the apex of the construction must be well rounded off so as to ensure that the pelvis and thighs rest upon the inclined plane opposite to that upon which rest the thorax and shoulder. By this means the patient is without difficulty secured from slipping downwards towards the head end, and also the pressure of blood to the head is lessened.

The patient's head should lie upon the right ear and the mouth be just beyond the edge of the bed. The point of the shoulder should rest upon the lower end of the inclined plane and the corner of a pillow tucked under the neck from behind. The patient's comfort depends very largely upon the position of the shoulder and the support of the neck. Pillows are now adjusted behind the scapulae to maintain the forward or backward addition to the lateral posture and the forward addition should be tried first.

Should it be found that the bronchial drainage angle is insufficient, then the foot of the bed must be raised sufficiently to procure the proper angle, but this adjustment must be left to the last.

I have spent some time in describing what I believe to be the best posture, both for efficiency and comfort should the drainage be required over a long period or frequent periods, because the success of the manoeuvre depends upon the correctness of the posture. If the necessity for drainage is confined to one side of the chest only, then that side of the chest must be uppermost and care taken that the bronchus on the lower side is at a drainage angle, in order to avoid aspirating into the clear bronchus the discharges from the draining bronchus.

There is one condition where it is absolutely imperative that a free drainage posture should be secured in order that the patient may have his only chance of escaping death that is in the most profuse form of hæmoptysis. Even in a hospital for diseases of the chest it is very rarely that a physician is present on such an occasion, for the patient is usually dead within a very few minutes of the onset of such hæmoptysis.

I well remember such a case occurring in a general hospital where I was a resident in 1897. An elderly man came into the casualty room and stated that he had coughed up "half a bucketful of blood." When he expectorated, as requested, into the sputum, the sputum was not even tinged with blood, but he was so blanched that I admitted him. Three nights afterwards, as I entered his ward, I heard a choking cough followed by a splash and splutter. Then came gasping coughs, each followed by blood welling out through the whole width of his mouth. He had sat up in bed, and in a moment he was surrounded by screens and a hypodermic of morphine was injected. The cough ceased, the floor of his mouth fell downwards with rapidly lengthening intervals, but not a guiglo was heard. His eyes became fixed and staring, and within five minutes from the onset the man had been asphyxiated. At the necropsy the lungs and tubes were found to be filled with blood clot.

Unfortunately for cases of this, the severest, type of hæmoptysis, there is an authoritative aphorism that cases of hæmoptysis do not die from "drowning." But if such cases are treated in the way this case was treated they most certainly will be drowned. It may rightly be objected that the patient should have been laid horizontally upon the more diseased side. That would have been better, but, beds being what they are, even the trachea would not have been horizontal. The lower lung would have filled rapidly and the trachea become choked with blood, and it is far more likely that the patient would have fought himself into the sitting posture again.

Contrast that case with the following one. In a hospital for diseases of the chest a fellow resident of mine was sent for to treat a urgent case of hæmoptysis. When he reached the ward the woman was lying on her side, unconscious. The floor of the mouth was moving occasionally, but there was no sound heard to indicate that air was entering the lungs. Obviously this was beyond the routine textbook treatment for severe cases of hæmoptysis—lying on the side, morphine, quiet, and a reassuring smile. Greatly daring, he tried artificial respiration. Still there was no air entry. A week or two before this he had heard of cases of severe hæmoptysis being treated by inversion. He put his arm under the patient's waist and raised her so that the chest was inverted. This also was ineffectual. A nurse changed places with him and he then strongly compressed the chest. A large clot came away followed by some blood, and breathing soon restarted and the patient survived the attack.

In cases of hæmoptysis that are less severe, but still have a copious hæmorrhage, a bronchial drainage posture should be obtained as soon as possible after the onset, and initiated given by inhalation, and some such coagulant as hæmoplastin given hypodermically.

If it is certain which side the blood is coming from, then the old rule that the patient should lie upon the side where there is more disease must be neglected, and, in the bronchial drainage posture, the bleeding side, whether less diseased or not, should be uppermost. It is better that blood should be retained in the more damaged lung than in the sounder one, but it is better still that it should not be retained to any extent in either lung.

The bronchial drainage posture should be adopted in pharyngeal palsies such as that occurring in diphtheria. It may be objected that it is sufficient if the trachea is so tilted that food cannot enter the trachea by gravity. But so often the entry of food into the bronchi has already occurred, and, moreover, efficient coughing may be no longer possible, that the bronchial drainage posture is required for the treatment of pulmonary disease already present or to prevent disease the cause of which is already present.

Where there is paralysis of the diaphragm care must be taken that the abdomen be as far as possible beyond the highest point of the inclined planes, in order to prevent the abdominal contents impeding inspiration by pressing the paralysed diaphragm against the lungs.

Where there is no pharyngeal palsy but merely an inability to cough efficiently the bronchial drainage posture may prove useful, as the following case demonstrates.

A girl suffering from muscular dystrophy had a slight attack of bronchitis and found herself unable to expectorate efficiently. For some days there had been a gradually increasing dyspnoea,

and when I was called in to see her she had already found speaking such an effort that she wrote down everything that she had to say.

She was somewhat cyanosed, the temperature had begun to rise and the respiration was quickened and difficult. Examination of the chest showed a boxy note over the left upper lobe with no breath sounds. Elsewhere in the lungs a few rhonchi were audible and the left base was rather less resonant than the right and breath sounds were weaker. Obviously some tubes had become blocked. Her physician had already tried laying her upon her face, but she was now put upon her right side in the bronchial drainage posture which I have described, but the whole spine and not only the upper dorsal region was placed at the drainage angle. This was done in order to assist in forcing the unparalysed diaphragm into the chest when driving the air out during forced expiration. At first nothing happened. The anterior wall of the abdomen was firmly pressed upon, the muscles being much distended the diaphragm being thereby given a purchase. The patient then took a deep breath, and when she made a sudden expiratory effort I compressed the lower zone of the thorax at the same time. After half a dozen or more similar efforts a small quantity of thin clear phlegm was discharged and two yellow opaque plugs came away. She now became a good colour talked easily and said that she had not felt so comfortable for the last three days. My colleague then found that an entry into the left upper lobe had been restored. We feared that pneumonia might supervene but she was kept in this position for a large part of the time during the following three days, being allowed to sit up or walk about when necessary. At the end of that time the bronchitis had ceased.

This happened some months ago and she is going about as usual. One other point must be mentioned. Owing, I think, to the fact that the pelvis was on the same inclined plane as the thorax instead of upon the other inclined plane as it should be in most cases, the patient had distinct odema of the feet being some hours in the position in which she had been placed.

There is no doubt that the patient would have died had the tubes remained undrained, and seeing that the majority of cases of muscular dystrophy die from pulmonary complications due to the inability to clear the tubes, this method should be found of value in prolonging their lives if it is resorted to early enough.

In a case of acute bulbar palsy due to syphilitic endarteritis and thrombosis, life was prolonged for many hours and far more important in this case, the patient was saved from much discomfort, for he was fully conscious until the heart failed from involvement of the circulatory centre. In a case of bronchitis due to the pressure of an aortic aneurysm the patient was able to get rid of the sputum until an embolism caused a right-sided hemiplegia. He never lost consciousness, but he was then quite unable to cough and expectorate. The bronchial drainage posture was used, and he was able to drain off a considerable quantity of phlegm and was much relieved, although he objected so greatly to his increased helplessness in that position that he was returned to the sitting posture again.

Even had the case been one of cerebral haemorrhage, short spells of the bronchial drainage posture would be justified, because the retention of a continually increasing amount of sputum would certainly cause death, whereas an increase of cerebral haemorrhage and death therefrom, though not unlikely, would not be a certainty.

I have not had any personal experience of postural bronchial drainage in bronchiectasis, but it must be of use in some cases. Something will depend upon the cause of the bronchiectasis and the stage. I remember a case of bronchiectasis confined to the apices, probably due to syphilis, where the drainage must have been efficient during the daytime, but the patient died of indurative disease. Yet the success of surgical drainage in some cases has been great so long as the drainage persisted.

In many cases the patient does not need to remain in this posture for more than an hour or two at a time, if that and the patient may be allowed to rest horizontally for a time, or even to sit up or walk about according to the condition which is being treated.

There is no posture that is perfect in that all parts of the lungs are properly drained in one and the same posture. The posture which I have described drains by far the greater part of the lungs, but one apex may be damaged by maintaining the semi-inverted posture for too long. Whenever it can be done without risk the patient should have a change of posture every now and again into the sitting posture, or at least into a posture sufficiently sloped whereby both apices may be completely drained. I wonder how many cases of hypostatic pneumonia are due rather to weariness of the

power of expectoration than to weariness of the circulation. A patient dying of cerebral disease was placed for thirty-six hours in the right lateral drainage posture, and at the post-mortem examination only pneumonia was present in the right apex—a fact which at least gives a strong hint, although it is but a solitary case.

There must be many conditions similar to those which I have given, where drainage will greatly add to the patient's comfort and there must also be many where drainage is essential if the patient is to recover. There is also a condition where drainage, though of no use to the patient, is a means of sparing others from much distress.

I cannot understand why dying patients are allowed to disturb by the death rattle a whole ward of sick people. Some cases of pneumonia, of uraemia, or miliary tuberculosis, for instance, may continue this ghastly and insistent noise for some hours after it has become obvious to everyone that the case is absolutely hopeless. Were it not hopeless, then maintaining the patient in a posture whereby this noise is made possible is to ensure a fatal termination.

The full drainage posture is usually unnecessary when stopping this noise is the only end in view, and a slight but sufficient change in posture is easily and quickly made. It is a measure scientifically defensible in these cases but there is no doubt whatever that it is, from the point of view of those at the bedside, a humane measure.

SECTION OF OPHTHALMOLOGY.

W. MARION BRAUNTON, M.R.C.S., President

DISCUSSION ON OCULAR PAIN

OPENING PAPER

BY

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I am obliged to the office bearers and committee of this Section for the honour which they have done to me in asking me to open a discussion on the treatment of ocular pain, apart from operative procedure. On two previous occasions I have been asked to open discussions in this Section of the British Medical Association, one of the occasions being at Toronto and the other at Belfast.

May I say that the subject of the present discussion is a little foreign to my usual habits of thought, for I confess that all through my life I have looked at ophthalmology chiefly from the pathological, surgical, and physical sides, and have largely discounted therapeutics in the ordinary acceptance of that word? The reason of that attitude of mind has not been anything rational. Nobody admits more fully than I do the value of many drugs, but after all, the best form of ophthalmic treatment is in my belief, based on pathology, including bacteriology, and on physics. In former days, when I taught students, I always started out with the statement that ophthalmic practice consists in the application of three branches of science to the cure of disease—the three branches being pathology (including bacteriology), physiology (including medicine and neurology), and physics (including, as it does, the study of errors of refraction and of muscular anomalies). I maintain no doubt has rendered some service, but gradually the empirical methods of treatment are giving place, as accurate knowledge increases, to other methods of practice. To the above mentioned it is necessary to add surgery, including modern septic technique.

In great part modern eye treatment should be the application of biological principles to the cure of disease. If I may be permitted to say so, I think that has been the line of greatest progress all through the field of medicine, and from my point of view the great success that has followed the work of public health administration and many improvements in medical work depending upon the discovery of specific micro-organisms are the outcome of biological studies which have had the most far-reaching and beneficial practical results. The important changes which

have been introduced in almost every department of medical work we all acknowledge to have been the outcome of the genius of one man—Joseph Lister. He it was who grasped the significance of the biological researches made by Louis Pasteur and applied his results to the relief of disease. I venture to think that in the history of the human race no other man has done so much as Joseph Lister for the relief of pain and of physical distress arising from disease. There is no need to elaborate a proposition the truth of which is by universal consent cordially admitted. The problem is the same in all departments of the healing art. Major surgical operations do not now almost invariably spell death, people do not perish in the slums of our big towns by hundreds, if not by thousands, from typhus fever and other epidemic diseases, and even tuberculosis is being successfully attacked. All these changes we owe directly to Pasteur's discovery of the action of micro-organic life and to Lister's application of that discovery to surgical practice.

Now I have introduced these preliminaries and, as some may think, trite and unimportant remarks simply for the reason that many ophthalmic problems must be regarded from the point of view that pain is frequently the direct outcome of sepsis.

In discussing the treatment of ocular pain, apart from operative procedure, the first question that must obviously arise is as to the causes of pain. It is only when a thoroughgoing investigation is made of the cause or causes of pain in any particular case does not give a satisfactory and complete answer that the practitioner is justified in taking empirical measures to relieve suffering, although at the same time he may be well aware that he is not getting quit of the disease which is causing the suffering. Roughly speaking, pain in ophthalmic practice is found to depend on two main factors: in the first place, uncorrected errors of refraction, of accommodation, or of muscular balance, in the second place, septic infection. I am at the moment putting all such conditions as acute or chronic glaucoma out of count. In the case of patients suffering from glaucoma the relief of pain depends upon operative procedure. No doubt relief can often temporarily be obtained by the instillation of miotics. My own preference if a miotic is to be used, is for pilocarpine, because its solutions are more stable than those of eserine.

Constant neuralgic pain in or about the eye should invariably lead the practitioner to examine the tension of the eyeball, and if the tension is found to be increased, then the question of operative treatment immediately arises.

As everyone knows, a great deal of ophthalmic pain arises from uncorrected errors of refraction—such as hypermetropia, and astigmatism in its various forms, errors of accommodation are also frequently the cause of a considerable amount of pain which is often attributed to neuralgia. There is only one relief for such a condition of affairs, and that is very accurate correction of errors. Not infrequently patients are found who have been for months, and sometimes for years, undergoing treatment by lotions and ointments, and even drugs, when the only thing wrong was an error of refraction. The corrections in these cases must be very accurate. In some persons a small error of refraction, such as three quarters of a diopter of astigmatism or a diopter of hypermetropia will cause, even in young persons with a fair amount of accommodation, a considerable degree of suffering. Errors should be corrected as accurately as possible. No doubt in corrections a certain percentage of error is inevitable, even when the correction is carefully made, but in a case recently seen the correction prescribed was three quarters of a diopter convex, whereas the patient really had two dioptres spherical and two and a half cylindrical, both convex. An error of over 300 per cent is rather staggering. In all cases when there is pain on reading or when there is pain without any obvious cause the state of the refraction should be most accurately and carefully investigated. So also in middle life, say after 40 years of age, pain occurring on reading where no errors of refraction can be discovered, even on the most accurate investigation, indicates that the function of accommodation should be investigated.

Let us take an example and suppose that the reading distance of an ordinary man is 16 inches from his eyes,

that requires an accommodation equal to about two and a half dioptres. If we measure the range of such a person's accommodation and find that it is only three dioptres, and that his nearest possible point of binocular vision is 13 inches, then he has only a very small reserve of muscular power. A man to read comfortably at 16 inches must have a great deal more than half a dioptre to spare. He must at least have three or four dioptres in reserve. The muscle of accommodation is like every other muscle in the human frame—it cannot keep up a constant strain without very soon becoming fatigued. In many patients the relief of ophthalmic pain will come from ensuring by such a suitable correction that the muscle of accommodation for near-at-hand vision, is not taxed to anything like its full amount.

The other conditions which along with defective range of positive convergence are included under the designation of muscular imbalance are perhaps too numerous and too complicated to come within the range of the present elementary discussion. Fortunately in adequate discussion of them is to be found in many books which are well known to ophthalmic students. Among the early workers in this field of investigation it seems to me that special mention should be made of Alf Graefe, who made a simple test for detecting what he called muscular insufficiency. So far as I am able to form an opinion, the subject seems to have been brought before the notice of ophthalmic workers chiefly by Maddox in the United Kingdom, Landolt in France, and Weeks in the United States. There have been many excellent contributions made by other observers, but these are too numerous to mention.

There is only one form of muscular imbalance about which I should like to say a word. Binocular distant vision necessitates for the maintenance of the parallel direction of the axes of vision a certain exercise of the external recti. Now these muscles cannot be kept at highest tension when they are used for distant binocular vision without getting tired—it is essential that they have a certain reserve of strength—a reserve equivalent to a prism of two and a half or even three degrees minimum deviation. In other words, binocular vision must still be present when a prism of the above noted strength is placed in front of one eye with its edge outwards. A defect in this latent divergence is frequently the cause of a great deal of ocular and peri-ocular pain, and I have reason to believe that it is often overlooked, even by careful and accurate practitioners. I have frequently relieved ocular pain, and that effectively, by diagnosing and treating defective latent divergence either by prisms or by operation. Three in my lifetime I have been able to relieve distress, and that in a very marked degree, by advancing the inferior rectus in cases of impairment of the superior oblique.

The cause of a very large amount of ocular pain is briefly included in the word "sepsis," and hence the necessity for the most careful scrutiny of all the factors which may accompany ocular pain. There are, as we all know, other causes of ocular pain, for example, it often accompanies migraine and is not infrequent in certain forms of peripheral neuritis. With such special forms we have nothing to do at present. Iritis and cyclitis are always septic in origin. When a corneal ulcer or operation wound becomes painful it invariably means that sepsis has supervened.

The ideal treatment consists in the removal of the cause of the sepsis by finding the nidus of infection and dealing with it. That is the proper line of treatment which, if accurately carried out, will ultimately bring relief. Till that occurs, the patient's sufferings must be assuaged by the use of such remedies as may be relied upon to give the needed relief. It is of the first importance to find out the focus or foci from which the infection is derived, and often it is important to identify the germ that is causing the mischief.

It has often appeared to me that from a clinical standpoint inflammatory processes may be divided into two groups. The first of these contains such inflammations as are of mechanical origin. Perhaps one of the best examples of what is meant are the classical experiments of Leber. He put small particles of sterile cinnabar into the anterior chambers of some animals. In each case there were the usual signs of inflammation, but as soon as all the cinnabar

was removed by phagocytosis then the inflammatory symptoms such as edema, congestion at once subsided, leaving, in many cases, permanent changes in some of the structures involved. The characteristics of this form of inflammation are that it is not self-sustaining and does not tend to extend beyond its original locus. Similarly, a wounded surface often heals by a process which many would call essentially inflammatory in character. Of course, a wounded surface may, and as a matter of fact does, very often become the seat of septic infection.

Now in the cases which form the second group the process is entirely different. Here the inflammation is self-sustaining and tends to extension. We now know that the explanation of these characteristics is the presence of bacteria or other organisms which keep up the supply of the irritant, and which also in most instances have the power of extending the site of their operations.

An ordinary wound may cause a fair amount of pain after it is inflicted but that soon passes off and as a rule gives the patient no more uneasiness. In septic conditions the reverse is generally the case, and especially is this true in septic wounds. A patient who has had an operation for cataract suffers a fair amount of pain for some hours after the effect of the local anesthetic has passed off, but after this subsides there is no more severe pain unless something goes wrong. Now the thing that frequently goes wrong is septic infection. Proptosis of the iris, intraocular hemorrhage, and perhaps some other accidents, may cause pain but pain following an ophthalmic operation after the lapse of some hours is almost invariably septic in origin.

Now the infection may come from one of two sources. It may be due to imperfect sterilization of the eye or of the lotions or drops or dressings or instruments or hands of the surgeon or of his assistants. In other words, it may arise from defective technique. It was in 1891 that I began to test the conjunctiva of every patient who was to be submitted to any operation in which the eyeball was to be opened and from that day to this I have not seen retro suppuration follow any such operation. A thorough overhaul, before operation of the conjunctiva of the internal sac of the nasal cavities of the ethmoidal cells, should make a subsequent pyrophthalmitis or pathogenic suppuration absolutely impossible. To my way of thinking the eye is only one safe method of sterilizing the conjunctiva and retrobulbar fold, and that is by saline irrigation. Silver nitrate will only destroy the protecting epithelium and make matters worse. The newer drugs are practically inert. You cannot kill germs in tissues without destroying the tissues themselves. You may, however, be able to remove them by simple irrigation.

But there are other sources of septic infection of an eye which do not so directly depend on faulty technique. Take, for example, an iritis. This is often one of the most painful maladies from which the eye suffers. The pain at times is excruciating. No doubt relief can always be obtained by opiates and by the use of atropine and even by hot applications. But permanent relief is likely only to be secured by the accurate diagnosis of the source of the septic trouble. That source is often in the blood, as in iritis due to syphilis or specific urethral discharge. It often arises from pyorrhoea alveolaris, it is also said sometimes to arise from affections of the intestinal tract. I cannot say that I have been able frequently to associate ordinary acute iritis or cyclitis with tuberculosis, but at the same time it must be remembered that certain chronic forms of cyclitis and iritis are definitely known to be frequently associated with tuberculosis. Most idiopathic, chronic, or subacute inflammations of the uvea are due either to syphilis or to tuberculosis. I do not think there is any reasonable doubt on that matter. Atropine should, if tolerated, always be used in iritis, even when the tension is high. So far as I know it is not germicidal but it breaks up adhesions and seems to be to some extent anesthetic in its properties. It is always the same story if you wish to relieve pain feel out the cause. When you have found it you have, as a rule, discovered the best because the most permanent, method of relieving ocular pain.

Before closing this short introduction to the discussion I should like to mention a subject which has interested me

very much, and that is the application of the biological principles to the treatment of corneal ulceration. That is frequently a very painful affection, but both the ulcer and the pain which accompanies it as a rule readily yield to a definite plan of treatment. I am not at present discussing ulcer with hypopyon nor ulcer with staphylococci either formed or forming, I am dealing only with ordinary ulcers seen in their early stages. In the first place cocaine should never be used, it does not in the least relieve deep pain and has a most disastrous effect on the corneal tissue, atropine is almost equally injurious. When I see a corner with an ulcer and when I find the neighbourhood of the ulcer stony, I know that the ulcer is being treated either with cocaine or atropine or some other mydriatic and is going wrong. On no account should an eye with a corneal ulcer be bandaged. A compress and bandage foment the eye with its own septic secretions.

On the positive side you must promote drainage, and the efficient method of doing that is the moderate use of a miotic, say a few drops of a 1 per cent solution of pilocarpine put into the conjunctival sac once or at most twice daily. The eye should be douched at least thrice daily with sterilized normal saline and may be protected from excessive light by suitable glasses. If this line of treatment be carried out conscientiously when the ulcer is in its early stages, it will be found that no disfiguring leucoma is ever formed nor does hypopyon ever appear. Drainage is essential, and corneal drainage is best promoted by miotics.

When recommending this form of treatment I am sometimes asked as to whether I do not fear the onset of iritis, the answer to that question is in the negative. When corneal ulceration causes an iritis it is because some toxin have got into the anterior chamber, causing irritation of the iris, they can best be got rid of by increasing the drainage by means of a miotic. In other forms of iritis the injurious toxins are not in the anterior chamber, but are in the structure of the iris itself—a totally different state of affairs—and atropine should invariably be used in this latter case.

In conclusion, I have only to say that I hope you are not as much disappointed with my efforts as I am myself. I feel that I have only been tiptoeing over well known ground. It might have been better to have avoided a tolerably wide outlook over the whole field. Had I done so I would have selected the subject of corneal ulceration for review of a fairly extensive practice combined with critical observation of facts leave no doubt in my mind as to the truth of the views above enumerated. If health be given to me for some years longer and if I find the necessary leisure I should like to deal in much greater detail with the subject of corneal ulceration and if I do, perhaps a small corner will be provided for me at some future meeting of the Ophthalmological Section of the British Medical Association. Meantime believe me that my intentions in preparing the communication were of the very best. I find, however, as a general rule of human society that intentions are always better than actual performances, and to that general rule I, as I am only too well aware, form no exception.

GENERAL DISCUSSION

Dr WALLACE HENRY (Leicester) described some instances of reflex pain, and suggested the use of 1 in 4,000 of tetracaine instead of a saline solution for irrigating the eye before operations and when dressing the eye afterwards.

Mr BISHOP HURRY thought there was no one means for the immediate relief of pain in the eye, or, for that matter, anywhere in the body, the application of heat by hot-water bottles, wet hot sponges, and hot fomentations was the most effective method of alleviation.

Mr CARL WILKINSON (Bristol) also advocated the use of heat in the relief of ocular pain. He had found that steam put off from an open rubber bottle placed against the chest and prated with the bottle as is placed against the mouth of an opened eye.

Mr LINDSAY REA (London) reported a case of pain associated with the act of reading or playing an instrument. There was a history of sudden onset of pain while playing, extending over ten years. The patient's refraction was accurately corrected and the muscle balance was perfect. The eyes and conjunctiva were normal, but there was always pain while reading or playing an instrument. In this case the pain must be associated with the various connexions in the brain, "unrepressed pains."

Mr A S PERCIVAL (Newcastle) had found hot sponging almost always successful in relieving pain. He thought dionine was unreliable, sometimes, as for instance in glaucoma before operation, it was very successful in relieving pain, at other times it was of no use. He had been warned against operation on the inferior rectus, and had always been afraid of interfering with this muscle. There were many cases that seemed to be asking for advancement of the inferior rectus for the relief of hyperopia which hitherto he had been reluctant to touch.

Dr L WEBSTER FOX (Philadelphia, USA) said that for the relief of excessive pain he had been using, first, hot water with poppy heads, secondly, hot water with belladonna extract. When atropine irritated the eye dionine was substituted. Last, but not least, leeches were often very useful, also massive doses of salicylates, with injections of 3 to 5 c cm of milk every second day. By increasing the leucocytosis the pain was diminished and the value of medication was enhanced.

Lieut-Colonel A E J LISTER supported very strongly the application of leeches in inflammatory conditions of the eye. They were used very frequently in India, where a man who leapt them applied them for a penny a time. He had never seen them fail to relieve pain in inflammatory conditions of the eye.

Mr FREELAND FERGUS, replying, said that he had no objection to any suitable solution being used for irrigation, but he would be much surprised to find that acriflavine 1 in 4,000 was in any sense germicidal. His own idea in using normal saline was that it was isotonic with the exoplasm, the solution was not germicidal, but it answered the purpose admirably. Whatever might be said about leeches, it was to be remarked that the profession had so far lost faith in them that they had almost ceased to be on sale in Great Britain. As regards dionine, he had seen very severe conjunctivitis follow the application of a 1 per cent solution to the conjunctiva.

THE TREATMENT OF OCULAR SYPHILIS

BY

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In the time allotted to me I will endeavour to show the principles guiding the treatment of syphilitic cases which have come under my care. Laboratory methods can help us enormously both in the recognition and treatment of ocular syphilis, but the clinical recognition of the disease in its various and manifold forms is most important. Often when the Wassermann reaction, both of the blood serum and of the cerebro spinal fluid, is negative, one would still diagnose the case as syphilitic.

I lately have had help from Lange's colloidal gold reaction. Although the luetic curve is similar to that of disseminated sclerosis, yet it is of great value in establishing the diagnosis of syphilis, as in a case of retino-choroiditis when the Wassermann reaction both of the blood serum and of the cerebro spinal fluid, was negative, but the colloidal gold test showed this curve. Vision was diminishing, but treatment with mercury and iodides arrested the disease, and vision rose from 6/24 to 6/6 in one eye. Unfortunately the macula of the other eye was involved, and the vision of that eye remained poor.

Lately P H Jones published in the *BRITISH MEDICAL JOURNAL* (May 2nd, p 821) a paper entitled "The effect of antisyphilitic treatment as gauged by the Sigma reaction." This reaction was introduced by Dieyer and Waid, and was an attempt to establish a quantitative test which would show the effect of treatment by the fall of "units" in the blood test. In this paper, regarding tertiary syphilis, Jones says "In the majority of cases, however, the units can be reduced, but eventually take up a new level which is uninfluenced by treatment." Reading this we might be led to suppose that the treatment of tertiary cases is often ineffectual, although I do not think Jones meant to imply this, and clinical experience shows that if a tertiary manifestation is attacked at once by antisyphilitic treatment, which includes intravenous treatment by novarsenobillon, there is a splendid response. A gumma of the conjunctiva, which at first resembled an ordinary phlyctenula but resisted all treatment until its real nature was discovered, resolved completely in a short time under treatment by novarsenobillon. In another case a gummatous infiltration of the orbits included the left antium and ethmoidal region. The left eye was rapidly becoming markedly proptosed and fixed the lids would not meet over the corner, the right eye began to come forward also, while the left eye became completely blind. The Wassermann reaction of the blood serum was strongly positive. At once 0.45 gram of novarsenobillon was given every fifth day for eight weeks together withunctions of mercury into the abdominal wall and temples, with 15 grains of potassium iodide three daily. At the end of three months, mercury and iodides being used daily, the eyes had returned to their natural positions, movement had returned, and the vision of each eye became 6/6 as formerly.

Although Jones found that 0.9 gram was the most effective dose of novarsenobillon for lowering the unitage, yet it is my clinical experience that doses such as 0.45 gram rapidly repeated are more effective than 0.9 gram doses given over a longer interval.

One observation I have made, and in this Dr Ravner Batten agrees with me. I have never seen disease of the macula due to syphilis. True, the macula is often found affected by the disease, but evidences of the disease are also found elsewhere in the retina, in one such case the macular involvement was but a coincidence in the retinitis. Also I have seen evidence of arterial disease around and affecting the macula in a patient suffering from a generalized obliterative endarteritis, but again this was not a macula disease *per se*.

What is really the value of arsenical preparations such as novarsenobillon, and do they offer any advantage over mercury and iodides? Macintosh showed that cases of syphilis treated by mercury and iodides at the end of a year showed a negative Wassermann reaction in 92 per cent, at the end of the second year 54 per cent, and at the end of the third year 30 per cent. Arsenical preparations give us a much more rapid result, and save the eye from the damage which would ensue from prolonged exposure to the syphilitic virus. I have come to the conclusion that novarsenobillon gives the best result.

A question which presents itself rather frequently is that of the duration of opaqueness of the vitreous body when the retina or choroid body is attacked by syphilis. Although the vitreous body may remain opaque for over two years, I have seen it clear up, allowing the fundus to be clearly seen. In one of the cases mentioned by Sir William Lister at the Washington Congress last year the vitreous became clear, but a ring "hole in the hyaloid" was found fixed and situated in front of the optic disc. Apparently as a result of the disease, the vitreous became detached from the region of the optic disc, the lymph sheath becoming thickened and visible and showing as above mentioned. In these cases the vitreous may show local cloudiness, and it is this in the region of the optic disc a blurred effect is produced, but care should be taken not to diagnose the case as one of papilloedema. The extremely fine changes in the retina may be found by carefully searching as far forward as possible in the region of the equator.

The treatment of cases due to congenital syphilis is very efficiently carried out by novarsenobillon. It has been a source of confusion in the minds of many ophthalmic

surgeons that, no matter how many intravenous injections of any arsenical preparation are given, the Wassermann reaction will not become negative. In the majority of cases this is true, and yet whether treatment is given or not Nature will eventually produce a negative reaction. A patient, aged 29, presented himself to me with a marked scleritis in one eye. A Wassermann test was negative. This patient had interstitial keratitis when 10 years of age, but had never received antisyphilitic treatment. Another case, a woman of 49, who when 24 years of age suffered from interstitial keratitis in both eyes, now has just recovered from an attack of nits which yielded to a series of injections of novarsenobillon. The Wassermann reaction was strongly positive, although the patient had not run the slightest risk of infection. It is evident, therefore, that in acquired syphilis the Wassermann reaction can indicate the result of treatment, but in congenital cases it is the clinical manifestations which must be observed of the measure of thorough treatment.

In my little book on the treatment of interstitial keratitis I have published three tables. The first shows a number of cases which never had antisyphilitic treatment, and the common result is greatly lowered vision—some eyes were blind, while some had chorioiditis or staphylomata; these cases showed deafness in more or less degree. The second table records those cases which had not received treatment for some months after the onset of the disease. The results shown are similar to the previous table, but Table III shows the result of prompt antisyphilitic treatment in 63 cases which I was able to treat myself from the onset of the disease. In this series there is not one result comparable to any of those shown in Tables I and II, and, further, I did not find a single case showing the onset of deafness. I have come to the conclusion that if the majority of cases of ocular syphilis are treated vigorously with such preparations as novarsenobillon the results, although not dramatic in suddenness, are consistently good.

It must always be remembered that in inflammatory conditions of the eye produced by syphilis, atropine in the form of ointment must always be used. This will prevent adhesions forming in the pupillary margins, and keeps the iris at rest.

DISCUSSION

Mr BISHOP HARMAN (London) said that he was curious about one statement made by Mr REX—namely, that the test of efficient treatment of ocular disease in congenital syphilis was the prevention of the onset of deafness, which seemed to imply that deafness was general in blind syphilitic children. In his experience that was not so, amongst the children in schools for the blind, blind and deaf children were in a very small minority indeed. In his own view the one successful mode of treatment of ocular syphilis in children was by prevention through the efficient intra-uterine treatment of the parents before conception took place or as soon after that event as possible. Such methods would save endless labour from doctors, educationists, and social workers, and a lifetime of misery in the case of the sufferers.

Dr D J PRINROSE (Glasgow), in a large experience in Glasgow Eye Infirmary, had found very great and immediate benefit from the prompt use of the newer treatment by injections. Children as a whole stood treatment by mercury and by arsenic very well indeed, and many were able to have both, though not all. Where only one could be tolerated it was well to choose the more efficient and prompt in its action, the salvarsan substitutes. It was important not to neglect the other measures well known to ophthalmic surgeons where necessary atropine, blisters, rest in bed in acute cases, should be employed, also general hygienic measures, and—most important in large cities—change of air to the country.

Lieut.-Colonel A D J LISTER, I.M.S. (ret), congratulated Mr Lindsay Rex on his paper. There was much difference of opinion in ophthalmic literature as to the value of these arsenical compounds, but his own experience

had been that certain cases which had not been doing well on ordinary methods had responded to injections of these compounds administered by an expert. They had in some cases done very much better than his experience would have led him to expect from the older methods, of which he had had an extensive experience.

Mr CROFT B T TAY (Plymouth), while a firm believer in the treatment of interstitial keratitis by organic arsenical compounds, was frequently called upon by colleagues to justify his belief. He regretted that the paper just read had not left him with an absolute answer. He had made a habit of giving thyroid extract in suitable doses, and had noticed benefit.

Mr LINDSAY REX, replying to Mr Bishop Harman, said he had not meant to imply that every case of interstitial keratitis would become deaf, but Hutchinson and Jackson had said that deafness most generally supervened when the interstitial keratitis was passing off. They could not afford to take risks, and must therefore treat each patient thoroughly. Replying to Mr TAY, the average time taken for the cornea to become clear was from six to eight months. Even if there was a recurrence treatment must be continued, perhaps for as long as two years. Thyroid extract would not cure syphilis, though it might produce alterations in the tissues. If novarsenobillon could not be given, then 6 eg sulfarsenol could be injected into the buttock weekly.

THE CONSERVATIVE TREATMENT OF GLAUCOMA

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My justification for inflicting this paper upon you lies in the desire to bring to your notice the value of the combined use of morphine and nitroglycerin in cutting short an attack of congestive glaucoma. I wish also to make a suggestion whether, in view of the present state of the glaucoma problem, the time is not now ripe for us seriously to consider the development of a well thought-out stereotyped method of conservative treatment, applicable to the disease in all its forms, and if this were done, whether the treatment of the disease as a whole might not thereby be further advanced.

I think all will be agreed that the highly technical character of the operations we are now called upon to perform, in which the greatest accuracy is absolutely essential to success, demands at least as suitable a condition of the eyes and the patient beforehand as it is possible to secure, and herein lies the value of conservative treatment. This suggestion, I wish to make clear, offers no plea for the non-operative treatment of glaucoma, but rather the reverse, as I personally am convinced, speaking generally, that early operation in all forms offers the best results ultimately. My plea is that well thought-out conservative treatment should be supplemental to and not divorced from the operative.

While we recognize that no treatment is of much value which is not based on a correct etiology, the disconcerting fact is, as another has said, "while we are seeking to unravel the cause, the patient becomes blind." Operation, therefore, becomes essential for the relief of the symptom—namely, the tension, but this is no excuse that the etiology and pathogenesis of the disease should receive no consideration. It is in direct relation to this that conservative treatment is of such value.

The scope of such treatment is very wide. All we have to do to see this is to review the associations of glaucoma with which we are acquainted. There is not time in such a paper as this to consider the problem fully; still, I would like to refer to some of the associations which have especially struck me as important, and first I should place the nervous system. The influence of irritability and worry is well known. One of the most remarkable cases of glaucoma I ever saw was in a woman of 23, whose double glaucoma came on as the result of the depression and worry due to the breaking off of her engagement. It was kept in abeyance

CONSERVATIVE TREATMENT OF GLAUCOMA

for some time by miotics, but rise of tension and haloes came on whenever she got depressed and down, and especially when she heard prismatic music. These became so numerous and the visual acuity and fields so reduced that eventually, about a year after I first saw her, I had both eyes to triphine.

The question of arterio-sclerosis and blood pressure is one that opens up a wide field. Local arterio-sclerosis has been proved to exist in glaucoma. On the question of blood pressure, some opinions seem to differ, some authorities maintaining that there is no direct connexion between raised blood pressure and glaucoma, others that glaucoma without raised blood pressure, though certainly met with, is rare and gives rise to suspicions of its primary origin. My own observations lead me to think that an attack of congestive glaucoma is rarely precipitated without a temporary rise in the systolic pressure.

I have seen an attack of congestive glaucoma begin with a rise of 20 mm. of mercury above the average blood pressure for that individual, the record of which had been taken for weeks. Glaucoma has well marked associations with inborn errors of metabolism, and it is of capital importance to seek for and remedy metabolic disorders. Primarily glaucoma is associated with hepatic insufficiency, relative renal impermeability, diminution in the destruction of albumin within the body, intestinal troubles, chronic instability, and arthritis. If to any of these is added a local ocular predisposition all the factors are present for the development of the attack. A variation in the tension between the two eyes has been noticed with distal metabolic disorders. Gout, rheumatism, and the relative acidosis associated therewith, have been often noticed as concomitants of glaucoma.

Fisher went so far as to say that the swelling of the coloids of the eye (due to acidosis) might be the cause of glaucoma, the swelling leading to pressure and constriction of the blood vessels, venous stasis, and deoxygenation of the blood. Relative acidosis, as far as my experience goes, is an important factor in eye disease as a whole, glaucoma included, and every effort should be made to discover the factors responsible for it. Diet too, is of importance in helping them food and the molecular concentration of the blood. This change he thought, was independent of the blood pressure and could only be due to osmotic processes. The drop in intraocular tension in the coma of diabetes is probably of this nature. The influence of acute disease is well recognized. In secondary glaucoma syphilis should be borne in mind, thus helping the iridocyclitis and chorio-retinitis associated with it.

Thus briefly reviewed, are the avenues in which our energies in connexion with the conservative treatment of glaucoma may find their scope. I now proceed to deal with that which is my immediate subject—namely, the value of morphine and nitroglycerin.

As I have said before it is impossible for me to deal with all the forms of glaucoma, and that which is mainly acute is the congestive attack. These attacks usually come on for the first time in the course of a debilitating illness such as influenza, either during or after it, my last three cases in the spring of this year were of this nature. It may also be stimulated, in eyes which already have glaucoma, simply, by indiscretion of diet some excitement, or prolonged use of the eyes.

An interesting case I saw many years ago commenced in this way. An extremely sudden attack occurred in the case of a miniature painter after using the eyes it might be said for some hours and I had the good fortune to see it a quarter of an hour after it began. The eye then was quite white and free from congestion with a three quarter dilatation of the pupil but it was as hard as a stone, and the patient was nothing in a way in bed vomiting and comatose. It is the only case I have ever seen of acute glaucoma early enough to show no congestion. I used morphine and continuous dry heat—I was not aware then of the value of nitroglycerin. The eye was undisturbed for ten hours after the onset of the attack and did well, though the vision previously had been reduced to hand movements.

It is the class of case that the general practitioner invariably sees first, and with a good conservative treatment he can render great help. Even supposing the case comes directly into the hands of the ophthalmic surgeon, if controlled by treatment an operation can be performed with much greater precision with the eye quiet. Given such a case, how are we to proceed?

My method is to give a bath to commence with. With regard to the bath, it is important that it should not be too hot, as if so the peripheral vessels are contracted and not dilated. What is wanted is the dilatation of the peripheral vessels, and this is best secured by a bath at a temperature about 50 above that of the body. The object is to relieve the internal congestion by peripheral dilatation of the blood vessels, this is essential. After the bath, when the patient has been put to bed I give a hypodermic injection of 1/4 grain morphine and after this an alkaline mixture containing bicarbonate and citrate of potash and soda, with one minim of liquor tinitini for a dose every three hours. The skin should then be encouraged to act by a pack with uniform continuous warmth obtained either by a pack with uniform con-packing with hot bottles.

It is wise to have the urine tested beforehand the only contrary indication to the continuance of the nitroglycerin is the heart's action. I never like the pulse rate to exceed 90, should the medicine need to be prolonged, as in case of secondarily glaucoma with irido-cyclitis. The hypodermic of morphine should be repeated the last thing at night and kept up twice daily until the attack begins to decline. Neither drug acts so well alone, and I think the good effect is due largely to the relaxation of the peripheral circulation and consequent reduction in the blood pressure.

In a case I recently had under my care the patient objected to the morphine when she began to improve, and I omitted it for once, with the result that the tension crept up again. It is better not to interrupt the treatment at first and to keep it up certainly for two full days or more. The continuous application of dry heat to the eye, applied by means of Dr. Maddox's eye warmers, is, I think, essential, and is a very valuable measure in helping to reduce both the ocular tension and pain. The pads should be kept on continuously and the patient may even sleep with them, they should only be removed for a time, as a little relief, till the eye shows manifest signs of improving.

Ocular hypertension can in a large measure be controlled by heat, the heat, together with the morphine and the soothing influence of the nitroglycerin, relieves the pain and helps the patient to sleep, which is the natural cure for glaucoma. I always use cocaine for an acute attack, and preferably the salicylate in 1/2 per cent solution, which is instilled into the eye every three hours. I prefer an aqueous solution and not an oily one, as I think it is absorbed quicker. Directly the attack subsides the drop should be changed to pilocarpine 2 grains to the ounce, which should gradually be reduced to 1 grain or even half a grain. The rule for miotics is to use drops infrequently and as weak as possible, compatible with securing the necessary miosis. The irritation they give rise to can be readily met by washing with any bland solution such as simple boracic lotion between the instillations, and often with greatest comfort to the patient.

While on the question of drops, I would like to mention that I do not consider that either thionine or adrenaline should be used. In any case, the former is only used for its analgesic effect, which can be readily met by heat and the latter is dangerous. It may on account of its action in stimulating the dilator pupillae dilate the pupil and raise the tension. I have used an injection of adrenaline in two cases, according to the method of Hamburger, but I must say that I have not been impressed with it. In one case the patient an old man became so blanched generally and his pulse so slow that I thought he was going to collapse. Nothing in the nature of a tonic should have been given to the patient beforehand, especially now which is a dangerous drug to give in glaucoma.

As regards subconjunctival injections I have never given them. The Harbison test in that may be tried where mine has failed to reduce the tension and has its great effect in early glaucoma.

them in glaucoma, as such injections cannot be carried out without some pain, however much we try to prevent this, to aggravate this pain, with the patient suffering enough, and for a doubtful advantage, has never appealed to me. Sodium citrate in 4 to 5 per cent solution has been used, and is said to produce a fall in the tension as much as 10 mm of mercury after injection, which reduction is said to last from three to six days. It is thought to act by diminishing the swelling of the vitreous. The most recent work has shown that these injections do not reduce the tension at all some have even been known to raise it, where it fell, the fall was less than that given by eserine. Injection of the nasal duct with 25 per cent atropine and scrubbing the nasal fossa with 50 per cent cocaine over the region of Meckel's ganglion has been advocated for the relief of pain. The pressure massage of Domec is very useful and should be frequently done, I usually massage my private patients every two hours for a few minutes at a time, with antero-posterior pressings of the eye through the lid with the thumb on the globe and fingers of both hands on the temples to steady them. A firm vibratory motion is better than a severe punch. Knapp estimated that he could reduce the pressure 8 to 10 mm of mercury by a thousand pressings, the amount I have found is, on the average of a dozen cases, 6 mm of mercury for the unoperated eye, and 10 mm for a sclerectomized eye. Vibrations kept up for five minutes show more reductions in the sclerectomized than in unoperated eyes, as the curves show.

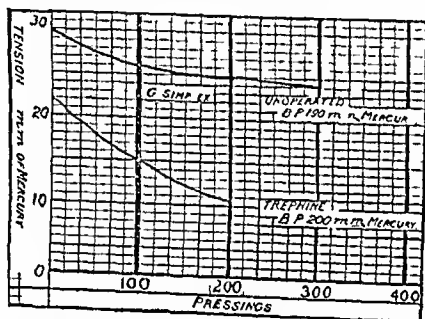


Chart showing reduction in tension by massage in unoperated and trephined eyes both subject to glaucoma

Venesection in glaucoma has been in my hands a useful measure in combating an acute attack, it can be employed according to the method of Dyes—that is, removing 3 gms of blood per kilogram of the body weight of the patient from, say, the median basilic vein, it always diminishes ocular tension in glaucoma simplex in six to eight hours and in inflammatory glaucoma in twenty-four to forty-eight. I have never pushed it so far as actually to reduce the blood pressure as indicated by the sphygmomanometer, though I think this is worth trying in a case which is not yielding readily.

In established glaucoma venesection should always be performed. I have been greatly struck by the effect of simple scarification of the temple and the abstraction of one-half to two ounces of blood by means of Bier's suction tubes or an artificial leech. In a definite case of secondary glaucoma I treated four months ago it had a marked effect, and I consider was the measure which determined the quietening of the eye. The patient had both morphine and nitroglycerin. Curiously enough I found the temple to be the best place and not the mastoid, I do not think it is the quantity of the blood withdrawn that is so important as the reflex effect it has upon the nervous system, but this point needs further investigation.

Coming now to the general care of the patient, perfect rest and quiet are essential and the room should be only partially lighted. It is important to have the air of the room moist, and I always use a bronchitis nettle, the influence of atmospheric humidity on eye inflammations was forcibly brought to my notice many years ago. I had been asked to look after a patient with post-operative eyeitis and no treatment I applied did any good whatever suddenly, without any further effort on my part, the eye

got much better, and on seeking a cause for this I noticed that the improvement coincided with a thaw which had set in after a long bout of black frost and a high barometer. I have since amply confirmed this observation on humidity and in no part of our work more so than in glaucoma. Cold dry air and high barometric pressure are bad for glaucoma cases.

Inhalation of oxygen has been recommended to me, but so far I have never tried it. It certainly would relieve the heart and improve the deoxygenation of the local blood supply consequent on the stasis.

As regards the general condition, the diet should be restricted and non-stimulating, and during the height of the attack large quantities of fluid should be prohibited. After the tension has come down the kidneys may be stimulated. A good saline purgative at the commencement of the treatment is helpful, though I prefer in private case to make little alteration in the medicines the patient has been habitually taking. Among the drugs I have found most useful are the alkalies, iodides, salicylates, sodium bromide, chloral hydrate, strophanthus, andgelsemium. The latter is especially valuable for alleviating the irritability and relieving both headache and pain in the eye. Lithiol tetrahydrate was recommended to me in place of nitroglycerin, but the only case in which I tried it did not do well at all, and I had to go back to the nitroglycerin. I have never tried any substitute for morphine.

In avoiding subsequent attacks it is advisable for the patient to lead a quiet life, free from anxiety and worry, chills should be avoided and woollen clothing should be worn next the skin. Special attention should be given to the lungs, heart, intestine, nasal sinuses, and the teeth. One or two things have especially struck me in connection with the care of the patients after such an attack, and the first is the climate he should reside in. The question of climate was first brought to my notice in treating a case in of the late Mr. Nettleship whom he put under my care. She had glaucoma simplex, and iridectomy was performed in both eyes. The only way we could keep her eyes comfortable was to give her nitroglycerin as medicine when she lived at home on Combe Down, one of the higher parts of Bath, failing this, she had to winter lower down, and later in the South of France. The climatic treatment of glaucoma is important. In my opinion high altitude and too bracing and dry a climate is bad, and although I know glaucoma patients see better in such places, my contention is that they are much safer from the risk of acute attacks at the lower altitude and in a more humid climate. Secondly, general medical care between the attacks is also of the greatest value in reducing their frequency. I have before me a case which I have followed since 1905, when the patient had iridectomy performed for glaucoma simplex. Since then till 1913 she has had four attacks of congestion—that is, about one every two years—and the average period of treatment was thirty-three days. Since 1913, when I began more detailed treatment and advised wintering abroad, she has only had two attacks—that is, one every five and a half years—and my average time of treatment for these was seven days.

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DISCUSSION

Dr. CHALMERS JAMFSON (Brooklyn, U.S.A.) expressed pleasure in hearing Mr. Burdon-Cooper's lucid and comprehensive paper. Often the surgeon's attention was concentrated upon the operation and the general and specific conditions to which Mr. Burdon-Cooper had alluded were neglected. He was glad Mr. Burdon-Cooper advocated the early operation in simple glaucoma. This corresponded with Dr. Jamfson's own feelings, and his histories showed that patients treated with miotics alone

nearly always played a losing game. In cases in which one eye was iridectomized the operated eye always held the fort for the longer time. Dr Jameson desired to advocate what might be considered a very unconservative procedure, to be used, however, in a conservative way, at least for the present. He had recently tried some posterior trephining in the region of the equator. These operations were performed on the premiss that if the venae vorticosae (by reason of their oblique passage through the sclera) were shut off and strangulated, and that if the suprachoroidal space by pressure was in part obliterated, a trephine in this region might restore the pituitous quality of the venae vorticosae, and re-establish the space. This, if successful, would mean the restoration of the return circulation, the larger part of which returned through the venae vorticosae, and also pressure relief to the incoming circulation and nervous supply, both of which passed through the suprachoroidal space, the lymph flow through this space communicating with the ciliary lymph channels was re-established. This procedure met with much success. All the eyes (five in number) were blind, of excessively high tension, painful, and subjects for enucleation. They had all been saved, to his knowledge, except in the case of one patient who precipitately left the hospital and the result was not known. The first, with the excessively high tension of 150 degrees, after a double trephine fell to 30 degrees, and this had been maintained for six months. In one case perforation had occurred, and this was the danger, although in the blind painful eye the chance could be taken. In eyes of lesser tension this danger would be greatly reduced. The subject of posterior trephining in this region undoubtedly opened a field for investigation, and could now be adopted as a conservative procedure in blind eyes where, by reason of pathological block or possible haemorrhage from friable tissue opening of the chamber was contraindicated. Dr Jameson hoped to operate by this method on eyes of lesser tension where the field of vision was considerably reduced.

SOME THINGS I DO NOT KNOW

BY

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Tobacco Amblyopia and Chronic Retrobulbar Neuritis

How can one distinguish a chronic double retrobulbar neuritis from what is now called toxic amblyopia? They both present very similar symptoms and no objective distinctive signs. In both there is a central colour scotoma, especially for green and red, and a general diminution of central vision. In both, after resting the eyes for one or two minutes by closing the eyelids, the sight is better, but presently floating clouds of fog obscure all details. In both sight is better in a dim light, and the light difference suffers more than the light minimum. Dr Schweinitz apparently makes no distinction between them, at any rate, he treats them both under chronic retrobulbar neuritis, with tobacco amblyopia in parentheses.

Those who have worked at the pathology of the condition found in tobacco amblyopia have given very different accounts of what they have seen. Samelsohn, Nettleship, and Vossius regard it as a grey degeneration of the axial part of the optic nerve, apparently starting from the region of the optic foramen. Of course we all know that the macular fibres at the site of the optic foramen occupy the axial part of the optic nerve. Noel regards it as essentially a disease of the macula itself. Langley has taught us all that tobacco paralyzes the ganglion cells, so it may quite probably be due to a primary change in the ganglion cells of the retina in connexion with the macular and perimacular nerve fibres. But it is exceedingly difficult to get specimens of pure definite tobacco amblyopia for examination. Nettleship's case was that of a diabetic who had smoked excessively, the case of Vossius was that of an alcoholic, here in Great Britain we almost all attribute the cause to tobacco in America and elsewhere abroad more stress is laid on alcohol, or alcohol associated with tobacco. Of course, it is easy to say that practically all who smoke

drink also, but I have seen one typical case in a teetotaler who said that he smoked 2½ oz of brown twist in a week, and who recovered completely on leaving off tobacco, taking a strychnine mixture, and eating as much watercress as he could.

I have been in the habit of ordering watercress in tobacco amblyopia since reading in *La Semaine Médicale* (March 22nd, 1905) what a perfect antidote Zalkowich found it to be to lethal doses (0.025 mg.) of nicotine in rabbits, and subsequently in dogs. I think there was some earlier work done on the same subject by some French experimenters on guinea-pigs, but I have been unable to find the reference. The expressed juice of watercress was given by injection into the veins. Incidentally I may say that in every case but one that I have seen the tobacco used was shag in the South, and brown twist in the North, and that the amount used was not excessive, very rarely exceeding 2½ oz a week. I imagine that those who are predisposed to tobacco amblyopia have already found that tobacco does not altogether agree with them, and therefore they are moderate in the use of it. I have been quite unable to discover any adulterant common to shag and brown twist which would explain the liability to induce amblyopia.

I personally object to the term "toxic", we know of toxic amblyopias due to sodium salicylate, to opium, to uranium, which may all completely recover, and to quinine, diabetics, lead, etc., in which the prognosis is not so favourable. I have never seen a case of wood-alcohol poisoning, which is so prevalent in America and gives rise to optic atrophy. But surely the pathology of these conditions is not the same. It is incumbent on us to recognize clearly what we do not know, and not to conceal our ignorance by using a general term like "toxic," which may include half a dozen different pathological conditions. I would urge you all to lose no opportunity of getting the eyes and nerves examined by a pathologist in every case of amblyopia or amaurosis when possible. I hope you will have better luck than I have had.

We all talk glibly enough of an ascending degeneration in retinitis pigmentosa, for instance, and of a descending degeneration in cases of prolonged pressure on the optic nerve or chiasma, but I do not think that any microscopist can say from the examination of the slide of an optic nerve (which has no nodes of Ranvier) to which class the case belongs. The observations of Samelsohn, Vossius, and Nettleship, even if they were all cases of tobacco amblyopia, might be due to an ascending degeneration.

Paralysis or Paralysis of Accommodation

Are all cases of paralysis of accommodation subsequent to a history of some throat diphtheritic in origin? For some unknown reason I have seen far fewer of these cases during the last ten years. They generally seemed to occur after a follicular tonsillitis, occasionally there was also a paralysis of the levator palati, when I was inclined to think that the case was diphtheritic. Generally there was no history pointing to diphtheria, no paralysis of the soft palate. Some of you will say that a scrub from the throat would clear up the matter at once, but would it?

Apart from the difficulty of distinguishing the Loeffler bacillus from the apparently innocent Hoffmann's bacillus, I gather from Professor Hatcher's translation of Besson's *Bacteriology* that "less than half the number of individuals in whom the bacillus obtains a lodgement are attacked by the disease." Again there is no valid reason to expect that during a late diphtheritic neuritis Loeffler bacilli should always be obtained in the throat. I am no bacteriologist, but I fancy some of us lay too much stress on bacteriological reports, I hasten to add that perhaps most of us, including myself, do not call in their help often enough.

Ciliary Injection with Glaucoma or Iritis (Tonometer)?

There may be an increased tonometric reading in either, but we have all encountered this stock question in one of our professional examinations, and we have found that most examiners are content if we give the very unsatisfactory answer that reliance, or at any rate great weight, should be placed on the size of the pupil. But in practice

we are rarely the first to treat the patient and the pupil is already under the influence of a motie or a mydriatic. Surely stress should rather be laid on minute examination of the iris with a loupe, notis can, I think be always detected by this means, but most important of all is the examination of the nasal field of vision and of that near the blind spot.

But you will say that in the last paragraph I have only been saying what I think I know, not what I do not know. But with me a moment. I spoke of an increased tonometric reading. I used this term because I do not know what it means.

In medicine generally an appalling ignorance of elementary physics is shown, we hear of blood pressure and uterine tension, of ocular pressure and ocular tension, as if they were synonymous expressions. Tension means a pull, and pressure means a push, as our master Priestley Smith sums up the matter. The tonometer gives the weight that will dimple or flatten the convex surface of the cornea. This depends upon the rigidity of the cornea, upon its curvature, and upon its size and the size of the globe, as well as upon the chamber pressure. Thus the internal pressure on the sclera and on the cornea is the same, but the tonometric reading is different. The internal pressure per square millimetre is the same in an aneurysmal sac and in the artery that feeds it, but the aneurysmal sac is the more stretched, is more tense, and consequently bursts, and would burst if stretched enough quite apart from any disease in its wall. The greater the curvature of the surface the more easily is it dimpled by the finger. Rayner Batten and later Priestley Smith have shown us this in a very simple and striking way, indeed, I have been quoting from this paper in the last ten lines. Further, the size and shape of the foot of the tonometer make a very great difference in the reading of the instrument. For all these reasons I personally distrust the value of any single reading with a tonometer. A series of readings made by the same observer with the same instrument on the same patient is invaluable in showing the progress of the case, but one observation which takes no account of the individual peculiarities of the eye may be most misleading.

The Chart of a Central Scotoma

I do not know if it has any value. I see apparently most accurate charts published of central scotomata in different conditions, but how on earth can a chart be taken when the eye examined cannot fix its gaze definitely upon one point? One patient I saw three times in one week, on each day I took two charts—no one of the charts resembled another. The poor man could not keep his eye fixed in the same direction. I have tried fixing the sound eye in one case of monocular central scotoma, but I obtained discordant results with even this. I never attempt to take a chart of a central scotoma now—it seems to me pure waste of time. If anyone here can tell me how a central scotoma can be accurately traced I shall be exceedingly grateful, but until I learn how it can be done I shall continue to have the most profound distrust of all such charts.

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¹ *British Journal of Ophthalmology* 1923 p 450

DISCUSSION

Mr W B INGLIS POLLOCK (Glasgow) said that the most recent work on perimetry pointed strongly to the retinal origin of tobacco blindness, and the older pathology of fifty years ago was not quite reliable on nerve poisons.

Dr PETER MACDONALD (Lith) agreed that tobacco amblyopia was usually due to such tobacco as shag and twist, but gave an account of an undoubted case of tobacco amblyopia due to cigarette smoking only.

Dr J W TUDOR THOMAS (Cardiff), referring to paralysis of accommodation, described a case in a young man. There was no affection of the throat, and the only point of interest in the history was that he had sustained an ulcer of the little toe through wearing new football boots,

to which no especial significance was attached. The appearance of further symptoms led to bacteriological examination of the ulcer, which proved to be diphtheritic. Appropriate treatment cured the paralysis of accommodation to disappear.

PSUEDO-GLIOMA

Mr A S PERCIVAL (Newcastle-upon-Tyne) showed a glutinous specimen of pseudo glioma in a child, aged 2, who was said to be recovering from meningitis. When he saw her she had left pseudo glioma and right retrobulbar neuritis from which she made a partial recovery, her sight improved considerably. The specimen showed detachment of the anterior layer of the choroid and the retina by an effusion. The dense black pigment in front was probably due to blood. The vitreous was represented by the greyish material behind the lens. The specimen had been previously exhibited at the Convention of English speaking Ophthalmologists. Mr Percival urged the importance of searching for symptoms of retrobulbar neuritis where choked disc was anticipated but not found. In one case of cerebral tumour he found symptoms of retrobulbar neuritis (verified *post mortem*) and no choked disc.

Mr Percival described experiments which appeared to indicate that pseudo glioma, retrobulbar neuritis, and choked disc might all arise from the same condition.

On injecting the sheath of the optic nerve in the *post-mortem* room he had made the following observations:

1 In children under 5 the fluid under the sheath travelled directly to the lymphatic spaces in the choroid detaching the anterior layer of the choroid and the retina from the posterior layer of the choroid and the sclerotic. This was the condition in pseudo glioma.

2 In one adult he had found that the fluid met with a block at the site of the optic foramen, the bulging sheath being constricted beyond this point. This was the condition presumably in retrobulbar neuritis.

3 In all other adults the fluid met with a block at the sclerical opening. This was the condition in choked disc.

Clearly the dura was continuous with the sclerotic, the uvea and par with the choroid, and the nerve fibres with the retina. It was he believed, recognized that optic neuritis did not occur in dogs. In the only two dogs on which he tried this experiment, condition 2 was observed, probably in dogs retrobulbar neuritis always implied choked disc in men.

COMPARISON OF THE NARCOTIC EFFECTS OF THE TWO HYOSCINES (SCOPOLAMINES)

BY

J CHASSAR MOIR, M B, CH B

(From the Pharmacological Laboratory University of Edinburgh, and Royal Simpson Maternity Hospital Edinburgh)

Hyoscyne exists in two forms, which are identical in their reaction to ordinary chemical reagents but differ in the direction in which they rotate the plane of polarized light, and are therefore known as optical isomers. The levo-rotatory alkaloid is that occurring in nature and used in therapeutics, the dextro-rotatory may be formed artificially from it. A mixture in equal parts of the two isomers, known as racemic hyoscyne, is not infrequently met with, especially in old solutions of the natural form. While these forms cannot be differentiated by ordinary reagents, they can be distinguished by substances which themselves rotate the plane of polarized light and are optically active. In a number of instances similar isomeric substances have been shown to differ in effects on living tissues, for example, the natural levo-rotatory hyoscyamine and adrenaline are some fifteen to twenty times as powerful as the dextro-rotatory hyoscyamine and adrenaline. It was therefore of importance to determine whether a similar difference existed in the two hyoscines. As regards their action on the peripheral nerve, the racemic form, containing equal amounts of dextro and levo-rotatory hyoscyne, was found to be only one half as powerful as

the laevo rotatory,¹ and later experiments gave the activity of the laevo-rotatory is from sixteen to eighteen times that of the dextro-rotatory one. In animal experiments on the narcotic action no satisfactory results were obtained, the effects seen in man not being elicited from correspondingly small doses in animals. The relative efficacy of the laevo-rotatory and racemic hyoscyne was compared in man by Richards and Light (see Cushing and Peebles) without any significant difference being observed.

Professor Cushing recently asked me to compare the effects on the higher mental processes of dextro- and laevo-rotatory hyoscyne, and I have done so on two lines of investigation: first, as regards their efficacy in producing "twilight" sleep; and secondly, their effects in controlling restlessness in cases of insanity.

The twilight sleep observations were carried out at the Edinburgh Royal Maternity Hospital, on cases under Dr R W Johnstone's charge. Nearly 40 cases were recorded, but in many the drug was started late in labour, or was given irregularly. After deducting these, 27 remain in which most satisfactory conditions were observed. As far as possible the two varieties were given in alternate cases, the dosage being based on the following standard:

First hour Morphine sulphate 1/6 gr and hyoscyne hydrobromide 1/100 gr
Second hour Hyoscyne 1/200 gr
Third and subsequent hours Hyoscyne 1/450 gr

The majority of cases were primiparae. The average number of injections was twelve, a few cases received twenty or even more. For each case a special chart was kept, in which hourly progress was recorded, special attention being paid to the degree of intelligence and the state of the memory.

The dextro hyoscyne cases numbered 12. In no case was any amnesia or impairment of the intelligence observed, and in none was there any alteration in the sensation of pain. Sleep was not induced. Increase of the standard dosage caused no change in results.

The laevo hyoscyne cases numbered 15. In 10 there was complete amnesia, the patients remembering nothing after the first or second injection. They were completely oblivious to the passage of time, and although they had been a day or more in hospital many would declare that they had only just arrived. In 3 further cases amnesia was almost complete, while in 2 cases it was only produced slightly or not at all. The intelligence was markedly disordered, and often most absurd answers were given to questions. Usually after the second injection the patient lapsed into the curious dazed state of twilight sleep. These observations were made in 11 cases in labour ward, and, probably because of this, drowsiness and sleep were not always observed. Instead, the patient usually became mildly delirious, plucked at the bedclothes, and made many purposeless movements. Speech was slow and, when intelligible, showed a state of complete disorientation with rapid flow of ideas of the nature of an occupational delirium.

The question of a depressant action on the child's respiratory centre was also considered. Among the laevo-hyoscyne cases it was not unusual for several minutes to elapse before respiration was satisfactorily established. Among the dextro hyoscyne group oligopnoea was only encountered in those cases where labour had been prolonged and delivery difficult, and was therefore probably not due to the drug.

As a further experiment, 1/200 gr dextro-hyoscyne injected thirty minutes before delivery has caused no oligopnoea. An example of the failure of dextro hyoscyne may be given.

Mrs D, aged 20, of medium build. Pains began at midnight and had been constant since when she was admitted. They were coming every three minutes, the pulse was 80, the pupils half dilated, the mouth rather dry.

At 12.30 p.m. an injection of 1/6 gr morphine and 1/100 gr dextro hyo cine was given, at 1.30 another of 1/200 gr dextro-hyo cine, at 2.30 1/450 gr dextro hyoscyne, at 3.30 1/200 gr, and at 4.30 1/450 gr. The patient became drowsy at 3.30, but the intelligence and memory remained good throughout. The pulse was 72 to 80 till 2.30, 68 at 3.30 and 64 at 4.30. The foetal heart was 124 to 128 until 3.30 and 116 at 4.30. Birth occurred at 6.45 p.m. and no oligopnoea was present. The mother's pupils were normal and no amnesia was present, and but slight dryness of the mouth.

After the administration of dextro-hyoscyne a few patients became rather less restless, but it was impossible to determine whether this was due to the injection or to natural fatigue. It was therefore decided to determine the effect on cases of insanity associated with motor excitement. By permission of Dr C J Shaw, this was done at Sunnyside Asylum, Montrose, the details of the observations being kindly worked out by Dr C J Swanson.

Cases of long-standing motor restlessness were selected. Dextro-hyoscyne 1/100 gr was given to each on one occasion, and laevo hyoscyne on another. All the laevo-hyoscyne cases showed the usual sedative effects of hyoscyne, although this varied considerably in degree in different subjects. In none of the dextro hyoscyne cases was there any change observed which could be attributed to the drug, even repetition of the dose being ineffective.

Clinical Observations

Case 1—J D, female, aged 54. Toile encephale. January 6th 1925. For two days has been restless, abusive, tries to get out of bed, has had no sedatives.
11.50 a.m. Dextro hyoscyne 1/100 gr hypodermically.
12.20 p.m. Still noisy. Intelligence unchanged, pupils unchanged. This condition remained unchanged at 1.20 p.m.
January 7th. Before injection not restless, abusive.
3.25 p.m. Laevo hyoscyne 1/100 gr hypodermically.
3.55 p.m. Drowsy, but not asleep. Pupils dilated, tongue dry.
4.25 p.m. Very drowsy. Pupils dilated.
4.55 p.m. Drowsy and quiet, but not asleep. Pupils dilated, tongue dry.

Case 2—V K, aged 48.
January 6th. For months has been agitated and restless. Has been getting up open mouthed and paraldehyde given almost every night to secure sleep. Before injection was restless and getting out of bed.
5.30 p.m. Dextro hyoscyne 1/100 gr.
6.0 p.m. Unchanged.
6.30 p.m. Unchanged. Pupils unchanged.
7.0 p.m. Rather quieter.
7.30 p.m. As before.

January 9th. Before injection was restless and getting out of bed. Is attempting to compress trachea with her hands.
2.45 p.m. Laevo hyo cine 1/100 gr.
3.15 p.m. Drowsy, but not asleep. Pupils slightly dilated.
3.45 p.m. Asleep.
4.15 p.m. Awake, but quiet.
4.45 p.m. Restless once more.

Case 3—R C, aged 49. General paralysis of insane.
December 22nd 1924. Has been restless all day. Has been on chloral (30 gr.) and bromide (40 gr.) for months. Last dose at 5.30 p.m. Before injection was very restless and bumping up and down in bed.
8.22 p.m. Dextro-hyo cine 1/100 gr.
8.52 p.m. No change.
9.20 p.m. Rather less restless. No change in pupils.
9.45 p.m. Asleep.

December 24th. Last chloral and bromide at 5.30 p.m.
8.45 p.m. Laevo hyo cine 1/100 gr.
9.15 p.m. Rather quieter. Pupils dilated, tongue drier.
10.0 p.m. Asleep. Very confused on being aroused.

Case 4—A H, aged 62 years. Senile dementia. For three months has been restless and will not stay in bed. Has been getting chloral gr xx and bromide gr xliid.
December 23rd. Before injection very restless, confused and incoherent, jumping out of bed.
5.0 p.m. Dextro hyoscyne 1/100 gr.
5.30 p.m. Very restless, will not stay in bed. Pupils unchanged.
6.0 p.m. No change. Dextro hyoscyne 1/100 gr repeated.
7.0 p.m. No change.

December 24th. Last dose of chloral and bromide at 6 p.m. two days ago. Before injection very restless and jumping out of bed.
5.0 p.m. Laevo hyo cine 1/100 gr.
5.30 p.m. Still restless. Pupils dilated.
6.0 p.m. Less restless. Tongue dry.
6.30 p.m. As before.
10.0 p.m. Asleep.

From these clinical observations it would appear that only laevo hyoscyne is active in producing amnesia, in depressing the intelligence, and in controlling restlessness. The dextro-rotatory form in doses of 1/100 gr or more is apparently inert in these directions, and can only be regarded as a useless ingredient of hyoscyne when present, to be eliminated where possible.

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ECTOPIC KIDNEY CONTAINING MASSIVE
CALCULI

BY

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DISEASES

An interesting point in the clinical features of the following case was the fact that the pain was not located at the site of the ectopic kidney, but always in the left costo-vertebral angle. Following the nephrectomy there was again a complaint of pain in this locality for a few days.

A man aged 45 complained of constant pain in the left side of the back. It was of old standing, and on this account he had been discharged from the navy as unfit for further service nine years before. He had been in a number of hospitals during the past ten years, and although radiographic investigation had been carried out in all the cause of the pain had escaped recognition.

When I first saw the patient although he was a little thin his general condition was fairly good. The urine contained a considerable amount of pus. The radiographic examination revealed no abnormality in either renal region but in the pelvis lying mostly below the bium, occupying the hollow of the sacrum in a medial situation, was to be seen a curious irregular opacity.

On cysto copy I found the bladder to be free from stone but the seat of a chronic inflammation which was most marked about the left urteric orifice. This structure was injected swollen, and immobile. The right urteric orifice was normal in appearance and effluxes of clear urine could be seen coming from it. A ureteric catheter failed to pass up the left ureter for more than 2 cm., while 30 cm. of catheter readily passed up the right, indicating a normal length of this structure. Following the intravenous injection of 5 c.cm. of 0.4 per cent indigo carmine the dye was excreted in good concentration from the right side in three minutes whereas it had not appeared at all from the left after ten minutes had elapsed.

Microscopical examination of the urine from the right kidney failed to reveal any pus but a few Gram negative bacilli were seen. These on culture proved to be of the *B. coli* group. The urine from the bladder contained a considerable amount of pus and numerous coliform bacilli.

It was concluded from these observations that the pelvic opacities were due to a mass of calculi in the left kidney which was occupying the hollow of the sacrum, that the infection of the bladder had its origin in the left kidney, and that the right kidney was present in its normal position and functioning well. Operation was therefore undertaken with the intention of removing the ectopic organ with its stones.

Operation

With the patient in the Trendelenburg position the abdomen was opened through a left paramedian incision from umbilicus to pubes. The right kidney was felt in its normal position with no palpable evidence of disease. It was however slightly larger than normal presumably from hypertrophy. There was no kidney in the left renal region. Projecting forward from the promontory and the hollow of the sacrum was a hard somewhat irregular mass having the dimensions of a slightly enlarged kidney. The lower part of the pelvic colon and the rectum lay respectively above and to the right of the projection. On dividing the overlying peritoneum the left kidney was identified with its pelvis and hilum directed forward and somewhat to the right. It is a usual feature of a kidney in such a position for the hilum to be directed anteriorly. The whole organ was surrounded by and adherent to a considerable fibro-fatty mass and could be felt to be full of stones.

The only difficulty which I experienced with the nephrectomy arose from the fact that I was quite unable to make out where the blood vessels entered or left the kidney, on account of the extensive adhesions. This prevented several of the vessels from being identified and secured before being divided.

The accompanying figure is a drawing of the specimen after removal and from which the right side of the parenchyma and strips of the same side of the pelvis have been taken to show the full extent of the calculous formation. It is also seen that the vessels are largely aberrant, inasmuch as their connexion with the kidney is through the cortex. Two veins were the only vessels connected with the kidney by way of the hilum. It was not possible to be certain without unnecessary dissection which were the parent run's of these vessels. It is not unusual in such cases for the vessels to come from several adjacent sources such as any of the iliac vessels or the aorta.

The retroperitoneal site of the kidney was drained for forty eight hours and the patient made an uneventful recovery.

The accompanying drawing shows the extensive nature of the calculous formation, all of the dilated calyces and the pelvis were completely filled with stone. The shape of the pelvis is worthy of special attention as this structure is divided into three limbs, all lying outside the actual kidney.

From study of a radiogram it is difficult owing to the more or less medial position of the stone shadows, to decide whether the right or the left was the misplaced kidney. Such a situation of the ectopic organ is occasionally noted, but more frequently it lies over the corresponding sacro iliac synchondrosis.

In certain rare instances of pelvic kidney this is the sole renal organ. Such a contingency impresses one with the necessity of establishing the presence or absence of the other organ before the full extent of the operation is decided.

I have noted two cases from the literature in which this precaution was neglected. In one case a solitary tender left kidney lying in the left iliac fossa of a female aged 19 years was removed. The kidney was subsequently found to be perfectly healthy. The patient lived for nine days. At the autopsy the right kidney and ureter were both absent. In the other instance the only kidney, a pelvic one, was removed because it was thought to be a sarcomatous metastasis from an ectopic testis.

In considering the relative incidence of renal abnormalities, Stewart and Lodge quote the following figures from 6,500 consecutive autopsies:

Congenital absence of kidney	16 cases
Horseshoe kidney	14 "
Pelvic kidney	3 "
Unilateral fused kidney	1 case

Many post mortem examples of healthy ectopic kidneys are recorded. The majority of diseased ectopic kidneys which have been reported have been the seat of hydro-nephrosis. Calculous formation is a

far less common complication.

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A SIMPLE METHOD OF DEFIBRINATED BLOOD
TRANSFUSION

BY

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The value of blood transfusion in certain conditions is now beyond dispute, and as a means of combating shock, either before or after operative intervention, has become almost a matter of routine.

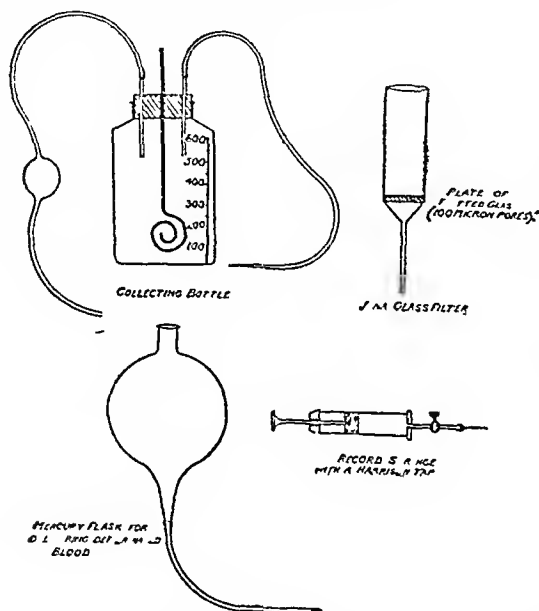
Of all available methods, doubtless the transfusion of whole blood is physiologically the best, but the difficulties, such as to preclude its use except by a trained team, for practical purposes the transfusion of non-coagulable blood is almost universally employed.

Blood may be rendered non coagulable by the addition of some anticoagulant such as sodium citrate or by defibrination. Both methods are simple and require no very special skill, and each has its appropriate indications. I described a very simple method of transfusion of citrated blood in the BRITISH MEDICAL JOURNAL of May 5th, 1923 the blood is withdrawn from the donor's arm into a graduated bottle

of 500 ccm capacity, into which also small quantities of sodium citrate are allowed to run from time to time, according to the quantity of blood required.

I propose to describe here an equally simple method of obtaining and transfusing defibrinated blood. I assume that all the usual precautions of grouping have been previously carried out.

The apparatus consists of a wide-necked bottle, graduated in divisions of 50 ccm, with a total capacity of 500 ccm, which is a satisfactory amount of blood to give as a maximum in any one operation. The bottle is fitted with a rubber cork, through which passes a short length of glass tubing and a long stout nickel silver wire, turned into a wide flat spiral coil at its lower end. A suitable length of rubber tubing connects the glass tube with a wide-bored short-bored needle. Through the coil also passes another short glass tube connected with a Higginson's syringe, for the production, within the bottle, of a slight negative pressure. The whole of the apparatus is sterilizable, and constitutes the receiving apparatus.



The donor lies down, the flexure of the elbow is sterilized, and a tourniquet applied to the upper arm. The apparatus having been put together, with a clip on the tube carrying the needle, two or three squeezes of the Higginson's bulb will produce a little negative pressure in the bottle.

The needle is then inserted into one of the veins at the bend of the elbow, the needle being pushed in against the blood flow, so that when the clip is removed from the tube blood will flow directly along the needle into the bottle. This manoeuvre is the only difficulty, and a very little practice will render anyone quite capable of venipuncture on almost every occasion.

As soon as the bottle begins to fill, the Higginson's syringe should be gently squeezed every few seconds with the left hand, whilst with the right hand the bottle is kept constantly revolving gently, thereby swinging the blood content against the nickel spiral, which may with advantage be slightly roughened by filing. As soon as sufficient blood is obtained the needle is withdrawn, the Higginson's syringe detached, and the bottle continuously rotated for about six minutes, at the end of which time the cork is removed, a large single clot of fibrin will be found adhering to the spiral.

The rest of the blood should be, and generally is, absolutely free from any fibrin, but to make it quite safe it must be filtered. This has proved one of the difficulties of the method, but I have recently used a special fritted glass filter instead of glass wool or silver gauze, this solves the problem of filtration. This filter is made by Schott and

Gen, Jenr, and is numbered 11aG3/2-3, it has a mesh of 100 to 110 microns, and allows the passage of blood quite easily, it can be washed free from fibrin afterwards, and can be sterilized without fear of damage.

A convenient receptacle for the filtered blood is a mercury container, to the end of which is attached a rubber tube provided with a clamp and needle attachment. The filter is inserted into the open end of the mercury container and the defibrinated blood poured through the filter. It is now ready for administration.

It is not always easy, in a collapsed patient, to bring the needle on the end of the tube has entered the vein comfortably, and I now invariably employ a 10 ccm Record syringe fitted with a small Harrison's tip, which also fits the ordinary Wassermann needle.

With the tap open and the syringe piston well down the needle is pushed directly into the recipient's vein (in the opposite direction to that when taking blood from a donor), and if the needle is comfortably in the vein a slight withdrawal of the piston will give proof. The tap is now turned, the syringe detached therefrom, and the tube from the receiver, with a suitable metal adapter, is pushed into the tap, which is again turned, and blood will begin to flow into the vein.

The recipient's vein is made prominent by the application of a tourniquet, as in the case of the donor, and this, of course, must be removed as soon as it is certain that the needle is in the vein.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PERIODIC SWELLING OF THE SALIVARY GLANDS

UNDER this heading a condition is described in Osler and McCrae's *System of Medicine*. The following brief notes of a case will be of interest because of the rarity of the disease and because a certain line of treatment was followed with apparent success.

A retired schoolmaster aged 62 was seen by me with Mr. H. G. B. Blackman. He gave a very intelligent account of his attacks. The first was in 1916 and since then there have been two or three recurrences each year and at any season. Without assignable cause and while feeling perfectly well the attacks commence with aching and stiffness at the angle of the jaw on both sides. This is followed within a few minutes by dryness of the mouth and by sneezing. Then the two parotid glands begin to swell simultaneously and symmetrically. They are tender and there is considerable disfigurement. After a few hours the mouth regains its moisture, the sneezing ceases and the parotid swellings begin to subside but their reduction is not complete until the third day.

This recurrent malady has been ascribed to plugging of Steno's duct by calculus or by inspissated mucus. But in my patient the simultaneous affection of both parotid glands excludes such an accidental cause. The same argument would apply to an infection of the ducts or of the glands. Sir H. D. Rolleston, writing to me on the subject, suggested "asthma of Steno's duct," and the constant association of sneezing in my patient's attacks seemed to support the idea. At the commencement of his last attack he was given hypodermically 3 minims of adrenalin solution. The whole attack was at once brought to an end and within an hour the swelling of the parotids had gone. This has not happened in any previous attack.

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CALCULUS IN THE TESTES

A man, aged about 30, consulted me in the Bhuj Civil Hospital for a chronic sinus in the right side of the scrotum, which had existed for more than eighteen months. There was some pus coming out of the sinus, it was hard, and I suspected a haematoma or a malignant tumour or tubercle in connexion with the testes. There was a history of tapping, by which I thought a haematoma might have been caused. The patient had some rise of temperature regularly in the evening. He was admitted to the hospital, and under chloroform an incision was made about 3 inches

long parallel to the sinus. On sitting open the sinus I found a calculus about the size of a hen's egg without its shell. As the long duration and septic condition had done much damage to the testis I removed it, excised the whole of the sinus tract, and closed the wound. It healed by first intention, and the patient was discharged in about ten days. The specimen has been preserved with a view to presenting it to the Robertson Medical School at Nagpur.

I do not find any mention of the formation of a calculus in the body of the testes in any of the books on surgery or urinary diseases that I know. In my practice of over twenty-five years in charge of large hospitals I have never come across a similar case.

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REMOVAL OF PAROTID TUMOUR WITHOUT APPLICATION OF ANY LIGATURE

A woman, aged 68, was admitted to the County Mental Hospital, Lancaster, with the parotid tumour shown in Fig 1. At about 40 years of age she was operated upon for tumour of the breast, which a daughter states was cancerous; she had also had operations for appendicitis and gall stones. After the withdrawal of some teeth eight years ago a small pea-shaped body appeared which gradually increased in size. The tumour was found to be fairly hard, deep seated, and attached at the lower pole; the skin was stretched and glossy over the most prominent part.

On February 11th, 1925, I removed it, and although

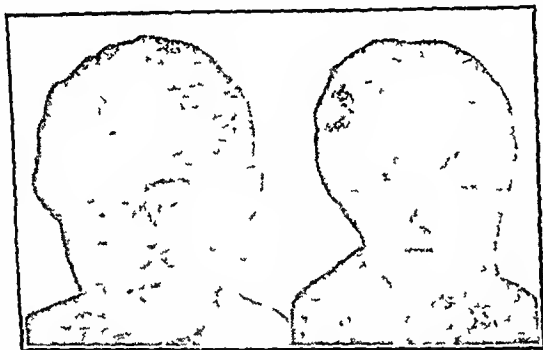


FIG 1.

FIG 2.

bound to the deep tissue by dense fibrous bands it came away intact, it was slightly larger than a hen's egg; no ligatures were employed except for approximating the skin surfaces. Then pressure was applied by a pad of wool, and healing by first intention took place. The patient was up in a week, and her appearance in three weeks is shown in Fig 2. A section made and stained by Dr S. R. Tittersall showed that the tumour was chiefly of a myxomatous character, with a small cystic portion at the upper pole; there were numerous fibroblasts posteriorly, due probably to the chronicity, but there was no sign of malignancy, which, I believe, is very frequent in a tumour of this type and patient of this age.

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RECTAL ETHERIZATION IN SUITABLE CASES

Rectal etherization has not gained much popularity in this country. As a routine method of inducing anaesthesia it is unsuitable in a busy general hospital, but in certain cases, when the more orthodox methods are strongly contraindicated, it is of undoubted value.

A man, aged 46, was admitted to the hospital suffering from acute cholecystitis. His general condition was bad as he was suffering from marked emphysema and aortic incompetence. On two previous occasions he had been operated on for gall stones and on both occasions he

As open ether was used as local anaesthesia resulting from the two chest conditions, as owing to the

heart conditions we considered spinal anaesthesia too dangerous, we decided to employ rectal etherization.

About four hours before operation the lower bowel was washed out by enema, and three hours later 1/4 grain morphine and 1/100 grain atropine were administered hypodermically. A warm mixture containing 6 oz. ether and 2 oz. olive oil was slowly run into the rectum (1 oz. in 5 minutes) by means of a funnel, rubber, and catheter. During the introduction of the oil and ether mixture the patient micturated and had an intense desire to defecate but on clamping the catheter this desire passed off.

About ten minutes later he had to use his own 'store' pins and needles in his legs, and twenty minutes later he showed all the signs and symptoms seen in the excitement stage of ether anaesthesia. He was then taken into the operating theatre and to complete the induction about 1 oz. of ether was administered by the open method. With this additional ether he remained in a state of surgical anaesthesia for one hour. The gall bladder was exposed in the usual manner and drained. During the operation there was complete muscular relaxation, the respirations were quiet and easy, and at no time did the patient present any untoward symptoms.

On his return to the ward the lower bowel was thoroughly washed out by soap and water enema and saline. There was no post-anaesthetic vomiting and the patient slept for about ten hours after the operation.

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A CASE OF ECTOPIC GESTATION

In the case of ectopic gestation here reported an ovarian gestation about twenty-six weeks old was found on the right side, and a tubal gestation about eight weeks old on the left. According to Dr Lee only seventy-two cases of ovarian pregnancy had been recorded down to 1921. Bilateral cases of the tubal type have been reported from time to time, but double cases of such a mixed type as in the present case must certainly be extremely rare. Ectopic gestations of the ordinary type are fairly frequent in Central America. Dr V. C. Reynolds, senior surgeon of the Vicente d'Antoni Memorial Hospital, to whom I was indebted for permission to publish this note, states that he has operated on about ninety such cases in fifteen years of practice.

A woman, aged 30, married for fourteen years, nulliparous and of spare build, was admitted to hospital, complaining of a tumour abdominal discomfort, loss of weight, occasional pyrexial chill, constipation and amenorrhoea for eleven months. Two months earlier she had had a bloody discharge from the vagina accompanied by much pain on the left side of the abdomen. She believed this to be a return of menstruation, but she had no period in the following month. She had noticed the tumour some six months previously. The swelling had progressively increased in size from that time but had ceased growing latterly. She was never inconvenienced in any way apart from the natural sensation of weight caused by the tumour itself.

In the abdomen a prominent swelling about the size of a six months gravid uterus was obliquely inclined towards the right side. It was elastic, tense and fluctuating. On the left side there was another tumour of smaller size, closely related to that on the right. No tenderness was present and on auscultation nothing could be heard. The cervix appeared to be slightly softened and tilted back. The wide and shallow anterior fornix was occupied by a firm mass, while the posterior was deep and narrow. The position of the uterus was not definitely ascertained; it seemed to be retroposed, as suggested by the angular position of the cervix, due undoubtedly to the large tumour in front. The cervix moved with the tumours above it; this sign suggested a uterine tumour but could be otherwise explained. From these clinical findings we made a diagnosis of cystic ovaries.

A median laparotomy was performed five days later, and on laying open the peritoneal cavity the tumour presented a looking very much like an ovarian cyst. Posterior adhesions to the omentum and abdominal wall were broken down; the tumour was displaced from its bed and clearly defined. The uterus was found to be slightly enlarged and the Fallopian tube on that side was stretched over the posterior inferior aspect of the cystic swelling with apparently normal ostium and fimbriae. The right ovary could not be found; it seemed that the tumour had replaced it. Foetal parts were felt in the swelling and the nature of the case became evident. Exploration on the left side of the pelvis established the presence of two swellings close to each other: (a) a blood cyst of the ovary, and (b) an elastic enlargement of the left Fallopian tube. The tumour on the right was next incised and a papaceous mass foetus about six months old was delivered. It appeared to be well developed, was fourteen inches long, and had a fair amount of hair on its head. On the left side a partial oophorectomy and a salpingectomy were performed and the abdomen was subsequently closed. The left tube was found to be dilated into a sac with a foetus about eight weeks old inside its amniotic membrane. The patient made an uninterrupted recovery.

The tumour on the right side was unquestionably an ovarian pregnancy, which had grown between the two layers

of the broad ligament. The relation of the tube to the sac wall seemed to prove this, besides the total absence of ovarian tissue on that side. The interesting points in the case are the long duration of the gestation, the lack of distinctive symptoms, and the impregnation of the opposite tube, which caused the patient to seek medical advice.

G BUSTILLO OLIV A, M R C S, L R C P

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ACUTE THYROIDISM FOLLOWING LIGATION

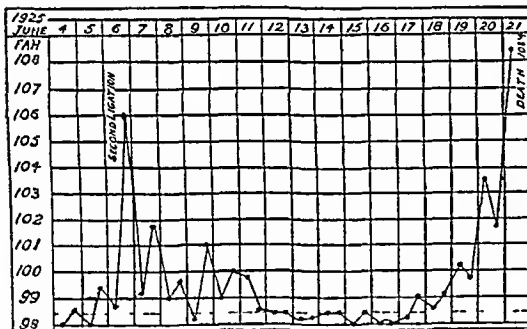
Acute thyroidism following ligation of the superior thyroid artery must be very rare. The following case affords an interesting example. My thanks are due to Dr R. A. Young for allowing me to publish it.

C. J., aged 23, was admitted to hospital with a large vascular goitre and extreme exophthalmos. The symptoms from which she had been suffering for six months were distressing. The temperature was normal, pulse 104 and regular, pulse pressure high. Flushings of the face and neck, tremor and general excitability were very marked. The superior thyroid arteries were enlarged and tortuous, a thrill being present on both sides. Small adenomata were present in both lobes of the enlarged gland. The patient was kept at complete rest and given a course of bromides for three weeks. It was then decided to ligature the superior thyroid arteries with a view to partial thyroidectomy at a later date.

Operations

A small injection of morphine and scopolamine was given and the right artery ligatured under local anaesthesia (novocain 1 per cent). The patient's condition was splendid after the operation and distinct improvement followed. After a week the nervousness and excitability had abated in rather a dramatic manner. Pulse 100.

A fortnight later the left artery was ligatured. A small injection of morphine and hyoscine was given and the operation performed under local anaesthesia. After the operation the patient appeared



was drowsy and very drowsy. The breathing became stertorous and coma set in. Three hours later the temperature rose to 103° F, pulse 150 and acute oedema of the lungs supervened. Oxygen by the nose, atropine and strychnine were given and the colour improved slightly. After a short lapse the temperature rose to 105° and the pulse became uncountable. Tepid sponging brought the temperature down to 104° and further injections of atropine were given. The condition of the patient improved and she became restless. Eight hours after the operation she regained consciousness.

Day by day slight improvement was noticed but she still suffered from mental confusion and extreme drowsiness. The temperature reached normal after five days, and remained steady for five days the pulse was 120.

Acute stomatitis and parotitis now retarded the progress and nourishment was taken with great difficulty. Rectal and intravenous salines were given. The patient went rapidly downhill and pulmonary oedema again set in. A rigor, an uncountable pulse and a final rise of temperature to 108° F were the main features before death.

A case of exophthalmic goitre which ended fatally from acute thyroidism was published in the records of the Middlesex Hospital of 1899.

A woman aged 32 was admitted with a vascular goitre marked exophthalmos and a regular pulse of 102. Three weeks later she became very dull and drowsy and at times restless. The temperature rose suddenly to 103° F and the pulse increased to 160. Stomatitis complicated the attack. Later the pulse became uncountable and death followed.

These two cases show a marked similarity in their symptoms, and are interesting as they demonstrate acute thyroidism (1) following ligation and (2) occurring without surgical intervention.

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Reviews.

A FRENCH VIEW OF FREUDISM

Any novel doctrine is faced with two dangers—the enthusiasm of over-zealous proselytes and the opposition of over-doubting sceptics. The proselyte may damage the doctrine by hasty application to unsuitable conditions, the sceptic may hinder progress by hasty condemnation on based on insufficient examination. In the *BRITISH MEDICAL JOURNAL* of December 6th, 1924, an account was given of Professor Paul Sollier's summary of the proceedings at six conferences on psychology held in the Institut des Hautes Etudes de Belgique, at which an attack was made on the doctrine of Freud. Sollier said that some of Freud's enthusiastic disciples declared that henceforth psychology would be divisible into two periods—namely, before and after Freud, while some opponents described the teaching as the scholasticism of pinnographic metaphysics. The views of Dr J. LAUMONIER, professor at the Ecole de Psychologie de Paris, are perhaps similar to, but milder than, those of Professor Sollier. His book, *Le Freudisme Exposé et Critiqué*, is readable and well arranged.

The first three chapters contain a statement of the doctrine of Freud, a description of psycho-analysis and its methods, and an account of the application of psycho-analysis to normal life, individual and collective. Dr Laumonier's criticisms are reserved for the fourth and last chapter. In this he begins by classing the doctrine of Freud with the conceptions of Rousseau and the theories of Marx, as a mystical form of religion which attracts fervent adepts who are captivated by the apparent logic of the system. The Freudians, without inquiring into details, accept the truth readily because it attempts to render comprehensible a multitude of facts which have been much neglected—for example, dreams, forgetfulness, and lapses in speech. Dr Laumonier thinks that in some cases a welcome is extended to the doctrine because it legitimizes, or at least excuses, tendencies to which many people are ready to yield. It makes a retrogression in that it reinstates the disorganizing power of sexual impulses which education had succeeded in moderating. He dwells on the difficulty of meeting the arguments of the Freudians, in that for their refusal to accept their dogmas only prove that the sceptic is a prey to the resistance of his repressed complexes, in fact, the critic either lacks sincerity or clarity of vision. It is contended that those who have not practised the rites cannot judge of their merits.

According to Dr Laumonier the fundamental error of Freud was his belief in a normal infantile sexualism. This *a priori* conception vitiated in advance Freud's direct observations of children, he used the eyes of adults initiated into sexuality when observing the actions of children, and attributed to them the idea of perversion because analogous actions are seen in adult perversities. If a little boy and girl play at being husband and wife, what reason have we for supposing asks Dr Laumonier, that their gestures correspond with the emotions felt by their father and mother in the same circumstances? In most cases, even where children have undergone visual or auditory initiation into sexual matters, there has been no observable trace left of emotional disturbance, simply because the child knew nothing of the significance of the action. The interest was no greater than that aroused by listening to the "tick, tick" of a watch. Experimental evidence has shown that sexuality is bound up with the maturation of the genital organs, and the pouring of their secretions into the general circulation. Normally the infant affords no evidence, histological or physiological, of internal genital secretions. Except in cases of exceptionally early development infantile sexualism in the proper sense of the word does not exist. Freud's belief in this sexualism came, says Dr Laumonier, mainly from his analysis of dreams and of neurotic symptoms, an analysis which led him to imagine in the adult unconscious erotic tendencies derived from the tenderest age. Notwithstanding the prodigious activity attributed to the infantile libido, the recollections of his

Le Freudisme Exposé et Critiqué. Par le Dr J. Laumonier. Paris. Felix Alcan. 1925. (Cr. 8vo pp. 172. Fr. 9.)

in infancy refer generally to events of small importance, never or hardly ever to sexual happenings. To explain this singular elective amnesia Freud imagined a mechanism of repression or resistance.

At this point in his criticism Professor Laumonnier complains that Freud has not defined his terms properly. The word "unconscious" should be limited to impressions which have never reached perception, such as the action of the sympathetic or the vagus, to impressions which have been perceived but have been forgotten the word "subconscious" may be applied. To these terms Freud, in his anthropomorphic description of the human mind, adds a third, the "preconscious," which he applies to tendencies (or sums of impressions) which his repressive guardian permits to cross the threshold of consciousness, though they do not even then become conscious unless they succeed in attracting the attention of consciousness. By confusing the terms "unconscious" and "subconscious" Freud has been able, according to the needs of his argument, to attribute to actual tendencies the quality of reminiscences of past tendencies. This explains why Freud so often takes the present aspirations of his patients for old aspirations forgotten or repressed, which originated in infancy. By confounding actual perceptions with reminiscences of the past Freud came to regard the unconscious as the real psyche, and his teleological organization of censors and resistances, his struggle between the *libido* and the *ego*, between pleasure and reality, between life and death, are simply a reproduction of the mystical idea of opposing principles, which is common to all religions.

The introduction of so many confusions and finalistic hypotheses into a doctrine intended to be scientific is explained, according to Dr Laumonnier, by the errors of Freud's methods, of which the principal were the interpretation of symbols and the analysis of the association of ideas. Freudian symbolism is not always in accord with popular symbolism. Why prefer the Freudian symbolism, asks Dr Laumonnier, when, on the one hand it justifies psycho-analytic interpretation by the traditional symbolism, and, on the other, applies psycho-analytic symbolism to the interpretation of historical and legendary symbols? If a drunkard dreams of bottles is it necessary to assume that he is the victim of an erotic complex which is seeking to reach the light of day? The psycho-analyst replies that if we explore the association of ideas we arrive invariably at an unconscious sexual tendency which is expressed by the symbol of a bottle. To this Dr Laumonnier retorts that there is no proof that symbols have always the same significance, or that they do not change with the epoch, the race, or the environment, and that while it is certain that dreams follow rules that we do not know as yet, there is nothing to show that they are compelled to follow the rules imposed by Freudism. To the method adopted in the exploration of the association of ideas, Dr Laumonnier objects that the associations are not entirely free or spontaneous, but that they are directed or provoked by the psycho-analyst. Almost always at the second or third sitting, the doctor makes an allusion which orientates the patient's ideas in a certain direction. In this way different doctors may arrive at different results in the same patient. Dr Laumonnier notes also that a patient only says what he has already felt or learnt, and that it is impossible to make him talk of matters, such as some of the rarer perversions, of which he has no notion.

The vicious circle of Freudism is, the author says, that it has first to admit an infantile sexualism so extraordinary that a censor, repression, and resistance must be invented to explain why the adult has no recollection in the matter, and, secondly, it has to admit the part played by this sexualism in the causation of neurosis, because it is in analysing symptoms that psycho-analysis discovers the *libido* of the infant and its conflict with the *ego*. Freud committed an initial error in method by attributing to the fundamental mentality of the subject ideas which he himself has artificially introduced. Psychoanalysts who have the faith always find a pathogenic sex complex, while psychiatrists, holding no preconceived ideas, more often find totally different motives—family differences, illnesses, fire, shipwreck, ruin or mourning.

Dr Laumonnier then discusses the cures attributed to psycho-analysis. Cases suitable to the treatment are limited to those of neurosis of transfer, and proof that the treatment is finished rests on the intuition that the important complex has been found and laid bare. As the patient nearly always protests energetically against the existence of the tendencies or desires, it is necessary to insist strongly for a long time, until he finishes by admitting their existence. But whether he does so because the tendency is a fact, or because he wishes to get rid of the importunities of the doctor, no man can tell. According to Dr Laumonnier many patients treated by psychoanalysts drift into other hands and are ultimately cured without the introduction of sex complexes. Others develop some other form of neurosis, sometimes of a sexual character, which may have taken its origin in the psychoanalytic treatment. In many cases the cure is not due to the exposure of a sex complex but to the confidence placed in the doctor, or to the fact that the kind of neurosis most suitable for the treatment has a tendency to disappear spontaneously.

At the end of his book Dr Laumonnier adds a conclusion. He does not accept the statement of M. A. Delmas that "in the Freudian psychology there is both good and new, but that which is new is not good, and that which is good is not new." Dr Laumonnier, while finding that neither the doctrine nor the method of Freud can be taken seriously from the scientific point of view, thinks that there are certain materials in Freud's artificial construction which can be used for building a more solid edifice. Freud exaggerates the influence of sexuality, but we may do well to recognize it more frequently in many phenomena such as in dreams in plays on words and in artistic manifestations. Sexuality is not alone responsible for the formation of character but it indicates some of the motives of fundamental perversity. Freud's ideas on the origin of societies and religions and on the extraordinary importance of the Oedipus complex, throw light in some cases on myths and legends and render them comprehensible. He has done an enormous amount of work but being a mystic he has given to phantoms the appearance of realities. His doctrine has spread throughout the world like a religion, and many have accepted the faith because it professes to explain everything under cover of a new science. The danger feared by Dr Laumonnier is that it may excite a perverse curiosity in the public owing to its pretension to establish psychology, morals, and the history of civilization on a new basis.

The conclusion to be drawn from the views of Dr Laumonnier would seem to be that while the doctrine of Freud is worthy of further, and really scientific investigation, it is unjustifiable, in the present state of knowledge, to apply it indiscriminately as a method of treatment. It is perhaps unfortunate that, as in the case of mesmerism and hypnotism, the only material for investigation is the human being. In the process of investigation much harm may accrue to individuals.

THE "EXTRA PHARMACOPOEIA"

THE *Extra Pharmacopoeia* of MARTINDALE and WESTCOTT is a very old friend to the medical profession, and we note with regret the death of Dr Martindale's collaborator, Dr Wynn Westcott, which occurred while the volume under review the second volume of the eighteenth edition, was in the printer's hands.

Most of our readers will be aware that the *Extra Pharmacopoeia* is divided into two volumes the first deals with matters relating to treatment while the second is devoted to analysis, experiments, and research. The field covered by the second volume is a very wide one, and the authors mention in their introductory leaflet that the labour involved in its preparation is enormous. This we can well believe, for a large proportion of its contents is derived directly from original papers or from actual experimental work. Anyone who has had occasion to collect the

The *Extra Pharmacopoeia*. Dr W. H. Martindale, Ed. D. and W. Wynn Westcott, M.B. Eighteenth edition, vol. II, London, H. K. Lewis and Co. 1925. (Keap 8vo pp. xlii + 728 20s net.)

original information upon a single one of the hundreds of subjects dealt with in this volume will be able to form an estimate of the labour involved in its preparation. The book contains over 700 pages of small print, covering, as we have remarked, a very wide range of subjects, and it is, of course, impossible to deal adequately in a short review with a reference book of this size and scope. Fortunately the *Extra Pharmacopoeia* is so well known that it is unnecessary to do more than mention a few of the most striking new features.

The organic arsenical preparations are dealt with at length, and a description is given of the methods of biological standardization evolved in the laboratories of the Medical Research Council. An account also is given of the methods of biological standardization used to determine the potency of extracts of endocrine organs. The chapter on foodstuffs is of particular interest. Here will be found a short account of the properties and distribution of vitamins. An exhaustive account is given of the various processes employed in the preparation of flour. Details are given of the bleaching of flour, of the chemistry of baking powders and of flour improvers, and the distinction between the various types of flour is explained shortly. In a later chapter in the book information is given on the subject of food preservatives. No fewer than 60 pages are devoted to radiology and radium. Useful tables showing the physical properties of the radio-active elements are provided, and full details are given of the technique and results of treatment with x rays and radium.

The volume contains a host of facts concerning the physiological and chemical properties of drugs, extensive tables for organic analysis, and a comprehensive account of the properties of the known pathogenic bacteria. The effort that has been made to keep the work absolutely up to date is indicated by the fact that a reference is given to the papers of Gye and Barnard on the filterable cancer virus. It is five years since the last edition of this volume appeared, and the present volume contains a remarkably large amount of new information. Medical science is advancing and expanding at an ever-increasing rate, and the authors of the *Extra Pharmacopoeia* have been extraordinarily successful in keeping abreast with this advance in knowledge.

INTERSTITIAL KERATITIS

WIDELY different views are held on the most satisfactory method of treating interstitial keratitis, and of the value of arsenical medication in this disease, on this subject even the standard ophthalmological textbooks are far from being unanimous. Mr LINDSAY REA has of late devoted much attention to the matter, and some months ago communicated his impressions to the Ophthalmological Section of the Royal Society of Medicine, lately, at the British Medical Association Meeting at Bath, in a paper published in this issue (p 509), he further elaborated his general thesis. The first of these is now published in a small volume entitled *A Preliminary Report on the Treatment of Interstitial Keratitis*.¹

Despite the title, three quarters of the essay is concerned with the etiology and clinical manifestations of the disease. As regards the former, he entertains no doubt whatever 100 per cent of his cases are syphilitic. Even when the Wassermann test is negative, more delicate tests, such as Lunge's colloidal gold reaction, invariably show a luetic type. He can find no suggestion that tubercle is a causal factor, and considers trauma of small importance in the etiology.

For comparison in treatment the cases are divided into three categories: untreated cases which had never had antisyphilitic treatment, cases which had not received treatment until some months after the onset of the disease, and cases treated promptly and intensively. The standard of results is taken to be, not the amount of evident pathological residua, but the degree of visual acuity finally obtained—a very common sense basis of judgement, inasmuch as the eye is an optical organ whose primary function is that of vision. Judged by this test—the end-results of

vision finally obtained—the author finds that the results in the first two series were practically alike: invariably greatly lowered vision, sometimes blindness, many patients had choroiditis or strabismus, and the majority showed deafness in more or less degree. In the third series, on the other hand, wherein treatment consisted of the local administration of atropine, with prompt, long-continued, and intensive constitutional treatment with organic arsenical preparations combined with iodides, not one result was comparable with the former. Although, however, undoubtedly beneficial, the effect of this thorough regime is by no means dramatic, the average time for cure in his cases is eight months, patience is necessary, and relapses are not unknown.

The impression conveyed by this record of ninety-one cases, carefully studied clinically and carefully followed up, seems to bear out fully Mr Rea's later conclusion expressed at Bath: "If the majority of cases of ocular syphilis are treated vigorously with such preparations as novarsenobillon the results, although not dramatic in suddenness, are consistently good", a conclusion interesting to compare with that expressed by Jonathan Hutchinson, who, while satisfied with the superior efficacy of antisyphilitic treatment (in his case mercury and iodides), wrote originally, in 1858 "I would carefully guard my readers against expecting too much from them."

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HAEMOGLOBINURIA DUE TO COLD

Dr SALÉN's book on haemoglobinuria due to chill,² a less comprehensive term than the name "paroxysmal haemoglobinuria," contains a full and prolix account of his observations and researches into the pathogenesis of that comparatively rare disease. The author distinguishes it from the forms of haemoglobinuria due to physical exercise, whether mild or violent, termed "marching haemoglobinuria" from their occurrence among soldiers. About the end of last century there were, he says, three chief theories as to its causation. The first supposed that exposure to cold brought about a local haemolysis in the chilled blood vessels, leading to a general haemoglobinaemia which produced the other symptoms. The second theory attributed the disease to an anomalous constitution of the red blood cells, mechanical injury, an increased CO₂ content, a primary vasomotor upset, and the production of haemoglobinaemia by a general peripheral haemolysis. The third theory supposed the haemolysis to be extravascular and intrarenal, and attributed it to an abnormal physico-chemical constitution of the blood. All these views were naturally much modified by the work of Bordet and of Ehrlich and Morgenroth on the haemolysis of blood serum, and in 1904 Donath and Landsteiner concluded that the blood of haemoglobinuric patients, examined *in vitro*, contained an amoceptor which became activated by exposure to lowered temperature and sensitized the red cells for the action of the complement in the serum. Dr Salén endeavours to submit this explanation to a more complete analysis, for it has been uncertain how far the processes *in vitro* are identical with those *in vivo*, and exactly how they proceed *in vivo*.

Some six hundred pages of his book are occupied with details of his own serological and clinical observations and their discussion in the light of the literature of the subject, but the whole is summarized in the last sixty pages. He finds that haemoglobinuria from cold exists in two forms—the latent and the manifest, both usually occur in patients with tertiary syphilitic or metasphylic lesions. Both classes, manifest and latent, are found to have the cold-haemolysin or cold amoceptor in their blood. Patients showing this abnormality in the blood may react in four different ways on exposure to cold, as follows (p 623):

(1) Haemoclastic crisis and clinical shock with sensitization of the red cells, haemoglobinaemia and haemoglobinuria, diminution in the number of the red cells, and increased excretion of urobilin substances in the urine. (2) Haemoclastic crisis and clinical shock, with sensitization and diminution of the red cells, haemoglobinaemia and haemoglobinuria not recognizable, transient albuminuria and increase of urinary urobilin, possibly a slight intravascular dissolution of the blood. (3) Haemoclastic crisis and clinical shock with sensitization and diminution of the red cells.

¹ A Preliminary Report on the Treatment of Interstitial Keratitis. By R. Lindsay Rea, M.D., F.R.C.S., London: H. K. Lewis and Co., Ltd., 1925. (Demy. 8vo. pp. 32. 4 plates. 2s. 6d. net.)

² Studien über die Kältehaemoglobinurie. Von Ern. B. Salén. Acta Medica Scandinavica Supplementum VI. Stockholm: Isaac Marcus, 1925. (Med. 8vo. pp. viii + 70. 7 figures.)

No haemoglobinemia haemoglobinuria, or albuminuria, but a transient increase in the urinary urobilin. (4) No haemolysis crisis, shock or sign of dissolution of the red cells. The effect of the cooling is shown only by a diminution in the number of the red cells and a transient increase in the urinary urobilin.

Patients with manifest haemoglobinuria fall into the first two classes, the latent into the last two. Salen quotes the case of a man who suffered from the manifest form of the disease for forty years, and then passed into the latent class, in which he has remained for the last four years. This improvement is set down to a thorough course of antisyphilitic treatment, and the use of a series of cold foot-baths to burden the patient by destroying (haemolysing) his older red cells. Salen argues that it is the older red cells that are first destroyed in an attack of haemoglobinuria from cold, the destruction must be extravascular in the latent cases, intravascular in the manifest. In all cases the blood serum when cooled and examined by the ultra-microscope shows a change in the physical condition of the dispersed colloids, presumably globulins, which are precipitated in relatively large particles, and in extreme cases may present a macroscopic agglutination similar to that seen in a positive Sachs-Georgi reaction. Salen assumes that this physical change on cooling sensitizes the red cells and has them open to the attack of the haemolysin that may or may not be present in the circulating blood. The proteins thus altered by cold may be supposed to act as heterogeneous colloids in the organism and to produce the signs of shock in cases of the first three classes of haemoglobinuria set down above.

There is a certain ambiguity in Salen's classification of haemoglobinuric patients, as on page 657 he gives a classification that is not the same as that on page 623. The connection between syphilis and haemoglobinuria he leaves uncertain, though he believes it to be close, remarking that further investigations are required before the question can be settled. He holds the name "haemoglobinuria due to cold" to be misleading, as haemoglobinuria is often absent in cases naturally belonging to the class, and he suggests "urobilinuria due to cold or chill" instead. His last word on the pathogenesis of the disease is that it may fairly be regarded as an impairment of the normal metabolism of the blood and the mechanism that normally brings about the disappearance of the red cells, due to a syphilitic infection. The normal mechanism for their elimination must be supposed either to fail or to act in an abnormal manner.

"PYE'S SURGICAL HANDICRAFT"

THE appearance of the ninth edition of *Pye's Surgical Handicraft* is welcome, for it is an old favourite among students. The new edition has been edited and largely rewritten by Mr. CLAYTON GREENE. This book is especially designed to help house surgeons and dressers. It presents to them surgery in the etymological sense of the word—a fine art demanding much manipulative skill—and impresses on them that their time in the wards is really a practical apprenticeship to their handicraft. The book contains a detailed account of all the minor work which is in most cases left for them to deal with, gives hints in diagnosis and treatment, sounds useful notes of warning, and tells them when to consult their chief. There are eleven sections. The first deals with the arrest of haemorrhage, and contains a useful account of blood transfusion. The second discusses bandaging, trusses, and splints. The third treats of dislocations, and sprains, and the fourth treats of wounds, ulcers, and burns. The next gives a general account of the venereal diseases. Cases requiring prolonged mechanical treatment, such as tuberculous disease of the hip and spine are grouped together in Section VI. The next section deals with a variety of subjects, such as the excision of joints and serious cystitis and the use of catheters and other instruments in the bladder, the manner of employing the stomach pump and of giving hypodermic injections, the use of bougies, the administration of enemata, the treatment of haemorrhoids, and the

performance of various minor operations. The eighth section is devoted to the special departments—eye, ear, nose and throat, and the teeth, and the ninth discusses certain emergencies, both surgical and general, such as poisoning, drowning and suffocation. The tenth section deals with anaesthesia, and the eleventh with miscellaneous subjects, such as the preparation of patients for operation and their after-treatment, urine testing, and the uses of x-rays in diagnosis and treatment.

The text is supplemented by some 344 illustrations and 14 plates. We can strongly recommend this book, not only to those to whom it is especially addressed, but also to general practitioners and those working in clinics.

NOTES ON BOOKS

THE Anatomical Society of Great Britain and Ireland, besides publishing a *Journal*, was formerly in the habit of issuing, three or four times a year, records of its proceedings as separate publications. In these were given the titles, and occasionally abstracts, of the papers read before the society. Later it became the custom to discontinue the *Proceedings* as separate publications, but to issue them as part and parcel of the *Journal*. Yet another practice is now initiated in the publication, in one separate volume, of the *Proceedings* for the four years 1921-25, a further change being that in addition to the notices of the papers read a record is included of the subsequent discussions. The volume is published under the auspices of the society, which has had for the purpose the advantages of Dr R. J. Gladstone's services as recorder and those of Professor J. Barclay Smith as editor. The publication reflects the greatest credit on all concerned, and we are confident that it will be found to meet a real want on the part of those members of the profession who, while not primarily anatomists, are still anxious to obtain a succinct account of the advances that are being made or have recently been made in anatomical science.

DR C. C. MILLER of Chicago, in his book on *Cosmetic Surgery*, gives to the profession the author's ripe experience on a subject which has been the happy hunting ground of the numerous quacks and the so-called beauty specialists. That there should be any great demand for this particular type of operation must be construed as evidence of a tendency to retrogression in those who demand it. One would imagine that its field of usefulness would be strictly limited, but the author says "With the tremendous change in the character of the people and the developing of a pleasure-loving race in place of the more serious types of the past, there has come more or less of a demand for cosmetic operations." In contrast to this we may recall the words of a great man at a sitting given to an artist: "Paint me as I am, for if you leave out one furrow or wrinkle not a halfpenny will you get for your trouble." The book is full of effective and painstaking advice to the surgeon willing to embark on such operations, and it is liberally illustrated. The author performs his operations under local anaesthesia, he deals mainly with the following subjects: folds, bags and wrinkles about the eyes, face lifting operations, operations for double chin, subcutaneous sectioning of face and neck structures for the eradication of lines and wrinkles, formation of dimples, various plastic devices for deformities of the nose, ear, and mouth. The greatest degree of success, the author says, demands an artistic eye, and study of the features by means of photography, combined with a knowledge of how to cut and how to sew. For the latter he uses interrupted sutures of fine silk on cambric needles.

In the little book, entitled *Chemistry to the Time of Dalton*, which forms the third volume of the Oxford Chapters in the History of Science, edited by Dr. Charles Singer, Mr. E. J. HOLMYARD has given an excellent sketch of the history of chemistry from the earliest times to the establishment of the atomic theory by John Dalton at the end of the eighteenth century. The book contains eight chapters devoted respectively to chemistry in Greece, Egypt, and Islam, chemistry in Europe until the fifteenth century, the progress of chemistry from Norton to Glanville, the phlogiston theory, Boyle and his contemporaries, Black, Cavendish, Scheele, and Priestley, Lavoisier, and Dalton. The text is accompanied by numerous well-chosen illustrations.

* Anatomical Society of Great Britain and Ireland. *Proceedings* May, 1921 to February, 1925. Cambridge: The University Press, 1925. (Cr. 410 pp. 120 12s. 6d. net.)

* *Cosmetic Surgery*. By C. C. Miller M.D. Philadelphia: F. A. Davis Co. 1924. (Med. 8vo pp. xv + 263. 178 figures. 4 dollars.)

* *Chemistry to the Time of Dalton*. By E. J. Holmyard. Chapters in the History of Science, III. London: H. Milford, Oxford University Press, 1925. (Cr. 8vo pp. 128 illustrated. 2s. 6d. net.)

* *Pye's Surgical Handicraft*. Edited and largely rewritten by W. H. Clayton Greene. CBE. B.A. M.D. B.C. Camb. F.R.C.S. Eng. Ninth edition fully revised. Bristol: J. Wright and Sons Ltd. London: Simpkin, Marshall, Hamilton, Kent and Co. Ltd. Toronto: The Macmillan Co. of Canada Ltd. 1924. (Demy. 8vo pp. xvi + 619. 344 figures. 14 plates. 21s. net.)

The commonest ailment in these temperate zones is the common cold. It would appear to be so also in the United States according to the statement of Dr. RUSSELL L. CECIL of Cornell University who has written an illuminating little book on the predisposing and exciting causes of these ailments. The book is intended for the layman. It is written in simple and pleasant language. At the same time it is strictly scientific—that is to say it gives an account that any professional man will recognize as true according to the known facts. It begins with an account of the anatomy of the respiratory passages, deals with varieties of colds and gives attention to hay fever and asthma, tonsillitis and influenza. Then there is a few some chapter on the complications of colds which is calculated to send every sufferer post haste to his physician. Yet the picture is not overdrawn. Finally, the author deals broadly with the questions of treatment and prevention, and discusses freely the use of vaccines.

THE second edition of Dr. GRACE H. GIFFEN DUNDAS'S *Text Book for Junior Nurses*¹⁰ differs from the first which appeared two years ago (see JOURNAL, June 2nd, 1923, p. 933), by the addition of three appendices dealing with subjects included in the State examination for nurses—namely, ductless glands, typhus, malarial fever, and venereal diseases. No mention is made of soft chancres, and the description of syphilis is inadequate but the other additions should add to the usefulness of the book.

A new and cheaper edition of *Golf from Two Sides*,¹¹ by ROGER and JOYCE WETHERED, contains two new chapters in one more unrestrained use of foot work is advocated, in the second the use of a longer swing with iron clubs under certain conditions is admitted as justifiable. Otherwise very few alterations have been made, and the general principles set forth in the first edition, which we reviewed on September 9th 1922 (p. 475), are maintained.

A directory of watering places and health resorts in Germany has been published under the title of *Reichs Bäder Adressbuch*.¹ It contains a detailed account of the various German health resorts in many cases illustrations are supplied, and a suitable amount of detail is provided with regard to hotels, prices, and train services. An index of various morbid conditions is given with a view to directing attention to the places where special treatment may be obtained.

⁹ *Colds Cause Treatment and Prevention*. By Russell L. Cecil, M.D. New York and London: D. Appleton and Co. 1925. (Cr. 8vo pp. viii + 111. 2 figures. 4s. 6d. net.)

¹⁰ *Text Book for Junior Nurses*. By Grace H. Giffen Dundas, F.R.C.S.I. D.I.H. Camb. Revised edition. Edinburgh: William Bruce. 1924. (Cr. 8vo. pp. viii + 228. 4s. 6d. net.)

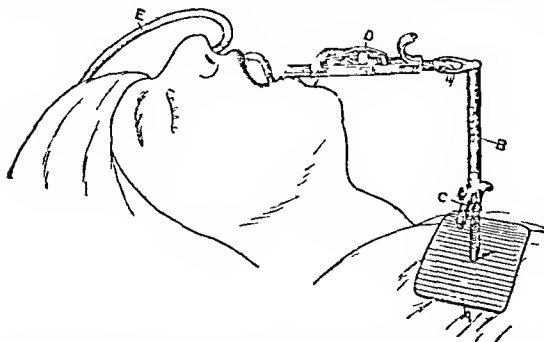
¹¹ *Golf from Two Sides*. By Roger and Joyce Wethered. New edition. London and New York: Longmans Green and Co. 1925. (Demy. 8vo. pp. viii + 214. 28 illustrations. 6s. net.)

¹ *Dein Reichs Bäder Adressbuch*. 1925. (Sup. roy. 8vo. pp. xxvi + 689. illustrated. R.M. 9.50.)

MEDICAL AND SURGICAL APPLIANCES

Jack for Use with Davis Gag

Mr. V. E. NEGLUS, M.S. F.R.C.S. (King's College Hospital) writes: When a Davis gag is used for tonsillectomy it is necessary that someone should support it in order to keep the lower jaw raised and the airway open. This is both tiring and wasteful of energy. Therefore the appliance illustrated has been designed to take the place of the hand of the anesthetist or a assistant. It is a footplate which rests on the patient's chest. It carries on it a rigid upright



rod provided with a rack on one side and a slot on the other. It is a tube sliding up and down on the upright rod and engaging at the top with the gag. It is supported by means of a ring which is a ratchet with a spring it engages with the teeth of the rack and can be freed by an upward pull of the finger. By adjusting the instrument the gag can be supported at any height above the chest between the extremes of four and eight inches. It is an intranasal intratracheal catheter. The instrument is made by Messrs. Mayer and Phelps.

THE HEALTH OF THE NAVY

REPORT FOR THE YEAR 1922

Our statistical report on the health of the Royal Navy for 1922 has just been published. Whatever may be the reason for the belated appearance of these far from voluminous reports, then issue two or three years after the year with which they are concerned detracts considerably from their public interest. But notwithstanding, the delay, they are of value in maintaining a continuity of statistics, by which one year may be compared with another or with the average of a group of years, and the measure of progress in this way gauged. From this point of view the health of the navy in the year 1922 is compared in the report with that of 1921 and with the five year period 1909-13, suitable details for the years 1914-20 not being available.

Incidence of Sickness

The total naval force during 1922 was 96,560. The ratio of admission to hospital for sickness was 559.02 per 1,000, a decrease of 24.35 per 1,000 as compared with 1921 and of 31.1 as compared with the five year period. The average number daily sick in hospital was 2,340.49, or 24.23 per 1,000 representing a slight decrease in both comparisons. This constantly sick rate varied considerably in the different naval stations from 17.49 per 1,000 in the Atlantic Fleet to 30.97 on the China Station and 34 per 1,000 amongst crews on warships to and from foreign stations and imperial personnel lent to the Australian Navy and the New Zealand Division all of whom constitute a group which is designated the Irregular List with a mean strength of 2,670. The constantly sick rates of other stations were 30.4 per 1,000 for Africa, 27.56 and 27.43 respectively for the Home and East India Stations, 22.86 for the Mediterranean, and 20.94 for North America and the West Indies.

The chief cause of inefficiency was venereal diseases which accounted for 10,023 admissions to hospital and 4 deaths. The highest admission ratio for these diseases (282.38 per 1,000) was among men on the China Station and the lowest (79.57) on the Home Station. Other groups of diseases giving high admission rates were injuries 8,931 cases, diseases of the digestive system 7,783 cases and of the respiratory system 6,924 cases. Other groups of diseases accounted for considerably less than 1,000 cases each but influenza as an individual disease, caused 4,514 admissions. The incidence of other individual diseases and specific fevers was comparatively small.

The ratio of invaliding (20.31 per 1,000) was a considerable increase on the average ratio for the five year period especially on the Home Station, where it rose from 24.17 to 34.19 per 1,000 in 1922. The principal causes of invaliding in order of importance, were diseases of the eye and ear, tuberculosis, gonococcal infections, deformities of the limbs, organic disease of the heart, and neurasthenia. The invaliding on account of other diseases or groups of diseases was insignificant in comparison.

Mortality

The deaths during 1922 numbered 333 of which 191 were due to disease and 142 to injuries. The total death rate (3.44) shows a slight increase on the five year period, but a decrease on 1921. The ratio of deaths from disease however, is only 1.97 per 1,000 and is the lowest on record. A table in the report gives the death rates year by year from 1856 onwards. From that year until 1861 the death rates from disease were high, varying from 11.1 in 1856 to 22.0 in 1853. After 1861 a steady decline set in, and from 1895 onwards the death rate from disease was always below 3 per 1,000 in each year except 1915, when it reached 3.48. The year 1922 is the first year in which it has fallen below 2 per 1,000. The death rate from injuries was high on the North America Station in consequence of the drowning of 13 men during the stranding of the *Halcyon* on the coast of Labrador on August 8th 1922. In the table the death rates for 1914 and 1915, the first two years of the war are given as 37.87 and 22.05 per 1,000 respectively, this high death rate being obviously due to battle casualties or other injuries and not to disease. The years 1916-20 are omitted from this table of death rates.

Prophylaxis of Venereal Disease

About two thirds of the report consists of detailed statistical tables of diseases and injuries in each of the stations, at marine headquarters, and in training and dockyard establishments. The text of the report includes short paragraphs amplifying the statistical tables, but gives little or no information.

¹ *Statistical Report on the Health of the Navy for the Year 1922*. H.M. Stationery Office. 1925. (8vo. pp. vi + 15. Price 6s.)

tion case the measures taken to prevent disease, except in the Station, when reference is made to the Sanitary Commission in Constantinople in controlling venereal disease, to the issue of prophylactic outfits, and the provision of ablution chambers on board and on shore. The report states that in practically every instance in which infection occurred prophylaxis was either entirely neglected or employed too late owing to the man being under the influence of alcohol at the time of exposure. As there were 1940 admissions for venereal disease on the Mediterranean Station, instances of neglect to take prophylactic precautions seem to have been fairly numerous in 1922.

Comparative Statistics

The health reports of the Army and Air Force for 1922 have already been noticed but it may be of interest to compare their health statistics with those of the Navy, the following table will serve to show this at a glance.

1922	Navy	Army	Air Force
Admission rate per 1000	559.02	51.80	514.0
Invaliding	20.31	19.31	15.1
Constantly sick	24.23	31.54	21.6
Death	3.44	3.22	4.3

HYGIENE IN SIERRA LLEONE

THE Annual Medical and Sanitary Report from Sierra Leone for the year 1923 contains, besides the usual details of public health and sanitation, a number of special reports. Of these three in particular merit attention. The first deals with beri-beri among prisoners, the second and third with inquiries into the prevalence and transmission in the protectorate of goitre and human schistosomiasis.

Beri-beri among Sedentary Prisoners

The investigation into the health of prisoners in the Freetown Jail, with special reference to the incidence and treatment of beri-beri, was conducted by Dr. W. H. Peacock, Acting Deputy Director of Sanitary Services, Dr. John Y. Wood, medical officer in charge of the prison, and Professor D. B. Blacklock, director of the Sir Alfred Lewis Jones Research Laboratory. It was supplemented by experiments upon fowls carried out by Professor Blacklock with a view to determining the influence on the production of beri-beri of the various constituents of the prison diet.

It was found that in the jail the occupation of tailor predisposes to fatal disease, and in particular to beri-beri. Over a period of ten years the tailors, numbering 15 per cent of the daily average prison population, contributed 33 per cent of the total mortality, while in 1922 they accounted for 57 per cent of the total admissions to hospital on account of beri-beri. The suggestion that these results must be attributed to the sedentary nature of the occupation was confirmed experimentally when fowls kept on a diet deficient in vitamins and deprived of exercise developed polyneuritis and died considerably earlier than controls kept on the same diet but allowed greater facilities for movement. Lack of sunlight did not affect the course of the disease.

Schistosomiasis

Professor Blacklock's inquiries into the prevalence of goitre and of human schistosomiasis covered the hilly Konno and Koranko country and some of the more level districts occupied by the Mende, Temne, and Lamel tribes. The report on schistosomiasis deals in detail with the incidence and effects of rectal and urinary infection in the region examined, and with the identification and biomies of the snails found to act as intermediate hosts. *S. mansoni* appears not to be endemic in these regions, since it was not detected in either faeces or urine, nor were its cercariae included among those harboured by the only planorbis found. On the other hand, a high infection rate with *S. haematobium* obtained in some districts, and its cercariae were found in one of the snails dissected—namely,

Physopsis sp. which is nearly identical to *globosa*. This snail was present in sewage-infected mud wherever the population was infected by schistosomiasis and not elsewhere.

Goitre and Local Contamination

The inquiry into the prevalence of goitre was particularly directed to determining whether it could be accounted for by any natural deficiency of iodine in the water supply. The facts observed support the conclusion that in artificial as opposed to a natural deficiency of iodine is the determining factor in the incidence of goitre, and that this deficiency depends upon infection by faecal organisms or their products, the organisms acting as neutralizers of iodine or inhibitors of iodine absorption. In this connexion it may be noted that the Konnos, who show the highest infection rate, invariably use the water for latrine purposes, while the Korankos, among whom this habit is neither universal nor acknowledged, and who also show a relatively high rate, commonly use the edges of the rivers for defecation. Among the Lambis, Mendes, and Temnes, where the land is used for latrine purposes and the risk of contamination is far less general, little or no infection was found. Among the natives themselves the disease is generally recognized as a Konno disease, and in one Mende village, where the existence of cases of goitre was admitted, it was stated that the sufferers had acquired it at the Konno village of Kuyima, and its prevalence there was accounted for as follows:

'In the old days certain intelligent men observed that the water of a certain stream at Kuyima produced 'big necks' in those who drank it. The intelligent men utilized this knowledge for the purpose of revenge, giving the water to their enemies to drink so that they developed big necks. After a time, however, other people got to know about this property of the water and as a result some of the intelligent men themselves developed big necks. When this stage was reached it was clearly time to take action, so the stream was put out of bounds very strictly. Even to day, however, women who are jealous are in the habit of giving their rivals the water from this stream in palm wine and their victims get big necks so short a period as a week's drinking of the water will produce goitre. Others say that while it is true that the stream was long ago condemned for drinking purposes this was done solely because the stream had become so greatly polluted from use as a latrine that its water was not considered safe.'

It is believed by the majority of natives that—

- (1) Goitre belongs to particular tribal districts or parts of districts.
- (2) Some goitres are hereditary and descend from either parent.
- (3) Goitre is curable by native methods of treatment when small (the method of treatment seen was incisions in the skin over the swelling).
- (4) Once developed fully it never goes away.
- (5) It is not a contagious disease from husband to wife.
- (6) It comes originally from drinking certain waters.

Professor Blacklock found among the chiefs and their advisers, with whom he discussed the object of his investigations as opportunity offered, a lively interest in the problems involved in the progress of sanitary education. The prevailing customs of these people were regarded by the paramount chiefs rather as the result of habit than as immutable rules of conduct. Some of the villages, as explained above, were already prepared to believe in the possibility of infection through faecal contamination of the drinking water, and a keen interest in schistosomiasis was aroused by the collection of snails and the demonstration of the life history of the worm.

In Object Lesson in Hygiene

Regarding education in hygiene as of more radical importance than curative treatment, Professor Blacklock recommends that a "badly sanitized area" of some importance should be selected, put into a state of fairly good sanitation, and so maintained, by way of demonstration. He suggests the village of Kuyima, with a goitre rate of 56 per cent and a schistosomiasis rate of 72 per cent, as specially suitable for the purpose. When the sanitary improvements are finished and the paramount chief has all necessary measures in operation, the chiefs, subchiefs and headmen of the chosen district might be made familiar with this scheme and invited to imitate it in their own villages as soon as possible. The result of such an experiment would obviously be of far more than merely local interest.

LIGHT AND HEALTH

WITHIN recent years the truism that life depends on light has come to possess a more explicit meaning from the broad biological point of view the truth of this statement has been self evident since the discovery of chlorophyll, upon whose energizing behaviour all modern science may have to say of the details of the legend of creation recorded in the first chapter of the book of Genesis, the chronological order of the early events would not be disputed. When the earth was waste and void we read that the business of the first day was the creation of light, and only when this was properly accomplished was it possible for the earth to put forth grass, herb yielding seed, and fruit tree bearing fruit after its kind.

Our own dependence on solar radiation has not, until recent years, been exactly defined, though admitted in principle since the days of Aesculapius. Sunshine has been out of fashion, and in writing of them historians have usually been more interested in the superstitions of sun worship than in the hygienic benefits claimed by their devotees. Thanks chiefly to that high priest of sunlight, Dr. Rolher of Leysin, the health giving properties of light have again attracted the attention of the modern disciples of Aesculapius, who ask why, in the construction of our hospitals and in the treatment of the sick, the influence of sunlight has so long been neglected. The answer to this question is the uniform reply which modern science recites to all empiric claims: it demands a rational explanation and experimental proof. Both of these requisites we now before us, as the unpersuaded would find by reading through the papers submitted to the Sections of Public Medicine and of Therapeutics at the Annual Meeting of the British Medical Association at Bath, published in this JOURNAL last week (pp 470 477) and to day (pp 499 504).

If we begin by reviewing the rational explanation of light therapy, we must admit at once that a completely satisfactory theory of the response of the body to radiation cannot yet be offered, and therefore words must be weighed. The visible rays which form but a small fragment of the solar radiation, have been analysed by physicists and their effect on the retina studied by physiologists and then radiation, have been both infra red and ultra violet, are a new province whose territory has not yet been fully explored. That the rays of longer wave length may be handled with marvellous advantage is proved by the discoveries of radio telegraphy, but the Heitzman waves have no known physiological influence until transformed by special apparatus into auditory waves and the dark infra red rays of benefit chiefly because they warm the surface of the body. It is among the rays of shorter wave length than visible light—the ultra violet rays—that modern research has distinguished the most important health giving agencies and it is therefore necessary to consider how these rays act upon animal tissues.

The ultra violet rays exert no sense organs of the body then existence can only be proved by the effect they produce on the fluorescent screen, photographic

plate, or some similar delicate indicator. They penetrate but little into the tissues of the body, being largely absorbed by the skin, where they cause a local stimulation leading to erythema and succeeded by oedema. The vascular dilatation which follows exposure to these rays is considered to be due to impulses carried from sensory nerves to blood vessels, for, as with other irritants the erythema does not appear if sensory nerves be cut or paralysed. The action is therefore not a direct action on the blood vessels, it is not even a direct action on the skin but after a latent period follows on the chemical molecular changes in the cells induced by alteration in the electrical charge of the ultramicroscopic particles of the colloidal protoplasm. This stimulation of the surface of the body produces reflexly, through the medulla, a slight increase in metabolism, the absorption of oxygen the output of carbon dioxide, and nitrogenous excretion are all improved and the general minimum is raised. Deposition of pigment recomposes these changes, none of which, however, are peculiar to light for they are met with as the result of other forms of stimulation. We must look more closely to understand the specific action of light on which radiotherapy is based, but here we shall have to be content with a tribulation of the subtler changes wrought by the ultra violet radiation which laboratory experiment has hitherto discovered without attempting to fit these together into anything more than a working hypothesis.

One of the first peculiarities of ultra violet radiation to be noticed was its lethal effect on living cells. Lowly forms of life, such as infusoria and bacteria, are very sensitive to this radiation—an observation which led to the view formerly held that success in the treatment of lupus by radiation depended partly on the destruction of tubercle bacilli within the skin. From the bacteriological point of view another important observation was that radiation of the skin results in an increase in the haemo bactericidal power of the blood as tested *in vitro*. But it is in the province of biochemistry that the most remarkable results of radiation have been observed. The discovery of the influence which ultra violet light exerts on the storage of calcium and phosphorus and then equilibrium both in growing and mature animals has played a very important part in unravelling the pathology of rickets, and has pointed the way to treatment. Finally, the observation that previously inactive foods may be given nutritive properties by preliminary radiation must be added to the list. Professor W. E. Dixon, in his paper printed this week, points out that it is generally believed that foods possess nutritive properties by virtue of their cholesterol content. The cholesterol becomes active after radiation but too long an exposure of cholesterol or of substances containing it, results in their becoming inert is a remedy for rickets.

Turning from the theoretical basis of light therapy to the experimental proof of its efficacy, we find substantial support from many different quarters. The two sectional meetings at Bath are of special value because they recount the experience of experimenters in different branches of medicine, and because of the practical considerations with which they deal. The experimental proof of the value of light therapy is based on many years experience, and no one can read through these six articles without being struck by the remarkable unanimity with which they testify to the value of ultra violet ray therapy in lupus rickets, and surgical tuberculosis. We meet with several observations also which invite speculation on

the possibilities which the future may unfold for instance Dr C E M Jones's account of the mental tests performed on physically defective children in London and patients at Alton which showed that the children at Alton were mentally nearly a year in advance of the London children. Sir Henry Gray's suggestion that ultra violet light might improve the nutrition of the grey matter of the brain, as it induces bone repair in the case of rickets, needs careful study, though many other reasons suggest themselves for the mental superiority of children living in the open air. Again, the remarkable discovery that inactive food of certain kinds can be made antinutritive by radiation may lead to the introduction of valuable new methods for feeding debile infants.

Now that the public as well as the medical profession are awake to the benefits of light therapy, there is a considerable danger that exaggerated claims will be made for sunshine treatment and ultra violet ray appliances, and that these new methods may be to some extent discredited because of their unskilful or inappropriate use. We have recently called attention to the dangers of ultra violet light baths (*British Medical Journal*, April 11th, 1925, p. 708), and several letters have appeared this year in our columns indicating the serious consequences that follow an unduly prolonged exposure in patients taking "light baths" without medical advice. It must be remembered that in unsuitable cases light treatment will produce depression and not stimulation, and the same may follow overdosage. A possible explanation for this may be found in the fact that an overdose of light will produce a rise in the haemo-brafericidal power of the blood which later may fall below normal and remain sub-normal for some time before gradually rising again. It is fitting therefore, to end this brief survey of the merits of light therapy with a word of caution.

LONDON'S WATER SUPPLY.

SIR ALEXANDER Houstoun's report on London's water for the year which ended March 31st 1925 (the nineteenth of the series), has now been issued. It runs to about 120 foolscap pages in addition to numerous diagrams and photographs. Much thought and care have been devoted to the scheme of the report, the author having evidently been anxious to make it useful and attractive not merely to those who are acquainted with his previous eighteen years' records, but to new readers without knowledge of what has gone before. Having this in view, he begins with an introduction in which he conveniently quotes from an American writer a good summary of the first fifteen years' work for the Metropolitan Water Board, followed by a brief account of the main sections of his eighteenth report. Next, for the reader's benefit he gives a synopsis of the matters dealt with in each one of the seventeen sections constituting the present volume, the synopsis being not merely a table of contents, but a reasonably complete condensation of what is to follow throughout the report.

Chlorination again receives much attention, in respect both of the Thames water and of the New River water. As regards the former the need for pumping into the Thames aqueduct of turbid subsoil water from a deep trench required for construction of a great concrete conduit alongside the aqueduct, gave rise to much anxiety, but chlorination was successful in preventing harmful results. In the New River heavy winter rains deteriorated the water, but here

also chlorination was efficient. Avoidance of objectionable taste in the water so treated is always attended to by means of careful dosage and the use of permanganate. In the New River the work has been carried on for six consecutive years without giving rise to taste troubles. Sir Alexander Houstoun directs attention to chemical investigations by Mr B A Adams regarding this question of the taste of chlorinated drinking water. He found that atmo-spheric pollution adversely affected chlorinated water through absorption of apparently phenoloid gases by the water in iodiform taste being the result, as in a case where air polluted by the emanations from a city gasworks had opportunity of affecting a water supply. Mr Adams observed that the reaction does not take place when the water contains a trace of ammonia and he advises that a chlorinated water should not be mixed with water which has been so exposed. As regards the value of permanganate it is stated that doses of from 0.5 to 1 per million not only prevent development of taste in chlorinated waters but aid in sterilization. The cost of permanganate, however, is more than three times that of chlorine.

The great new reservoir at Latchford, recently opened by the King, will when completed double the present storage capacity for Thames water. The value of storage not merely in providing a supply to tide over times of exceptional drought but as an important means of purification, is now universally recognized, largely in consequence of Sir Alexander Houstoun's own work during the twenty years he has been Director of Water Examinations to the Metropolitan Water Board. Filtration however is also essential and the present report gives in account of further experiments which have been made in rapid filtration, is a preliminary to slow sand filtration. The Director believes in the expediency of primarily rapid filters working at the rate of 100 to 200 gallons per square foot per hour, as a preliminary to slow sand filtration which under these conditions may be operated at two or three or more times its normal rate with the addition of chlorination as an integral part of the process.

It is good that an official should be in idealist which is quite different from being a fiddler and Sir Alexander Houstoun's ideal is to see the Thames become a salmon river again. He reverts to this question in the present report, and points out with regard to the amount of dissolved oxygen, that at Hampton the water is well aerated. The lowest figure in the year was 0.77 part per 100,000 on June 7th and 19th, that amount being well above what is necessary for fish life. In times of flooding and when tidal is mixed with river water, the greater volume of water would more than make up for any slight deficiency of oxygen. The difficulty is the pollution and deoxygenation of the tidal part of the Thames by great quantities of treated sewage effluent from the Barking outfall. Summing up his views on the matter he writes: "If it were possible, even temporarily, to purify the tidal portion of the Thames during the descent of the smolts and ascent of the salmon there is nothing in the state of the upper river to render salmon life impracticable and, further, assuming the possibility of this ideal ever being fulfilled, the habits and instincts of the salmon tribe are such that the introduction of their ova into the upper Thames would lead to the chain of events being visualized."

Having called attention to the Director's ideal, we do not follow him further in his valuable report, but conclude by expressing the hope that he may be able to embody in some future record the story of the realization of his dream of the Thames as a salmon river.

THE GOVERNMENT LABORATORY

THE report of the Government Chemist, Sir Robert Robertson, K B E, D Sc, F R S, upon the work of the Government Laboratory for the year ending March 31st, 1925, has just been issued. The chemical work of some eighteen Government departments is carried out for the most part in the laboratories at Clement's Inn Passage, in the Customs House laboratory, or in a number of chemical stations at the principal seaports, where certain classes of samples are tested by Customs and Excise officers trained for this purpose. Further, the department maintains a laboratory in the Geological Survey museum for the analysis of ores, and carries out all the inspection of food stores and supplies for the War Office at a laboratory in Deptford. The work of the head laboratories and of the chemical stations has increased very much in recent times. In all, the number of samples examined last year was more than 448,000, as compared with fewer than 390,500 in the preceding twelve months. The work undertaken for the Ministry of Agriculture and Fisheries includes analysis of dairy produce and margarine, and the investigation from time to time of samples of river water and effluents to ascertain the effects of certain types of water pollution on fish and fish food. Much of the great volume of work for the Board of Customs and Excise consists in the testing of samples, in connexion either with the assessment of duty and drawback or with the regulations and licences governing the manufacture and sale of dutiable articles. As many as 54,398 samples were examined for the purpose of assessing the duty on beer, and 1,257 samples of brewing materials were examined for arsenic, of which 90 were found to contain this in slight excess of the limit laid down by the Royal Commission on Arsenical Poisoning. Of 113 samples examined for the presence of morphine, diacetylmorphine, cocaine, and eugonine, 22 were found to contravene the provisions of the Dangerous Drugs Act, 1920. One of the duties of the department is to examine and report on applications to the Commissioners of Customs and Excise for rebates on alcohol used in making medicinal preparations or for scientific purposes, and for permission to receive duty-free alcohol for use in manufacture, terehling, or research. The fact is noted that pyridine has been adopted as an additional denaturant for mixing with methylated spirit in order to make it undrinkable, but we find no reference in this report to the valid objections raised by the medical and pharmaceutical professions against the use of pyridine in spirit employed for surgical and kindred purposes. More than 116,500 samples of wine were examined for the purpose of rating their alcoholic strength, these included 20 medicated wines, and of 58 grape juice samples 22 were found to be dutiable as wine. On behalf of the Ministry of Health a few pathological specimens were tested for poisons in connexion with investigations into suspected cases of poisoning, 30 samples of medical preparations (mainly smuggled morphine and heroin) were submitted by the Home Office, 120 samples of liquors, foods, and drugs were tested for the police authorities with a view to proceedings in the courts, and the Director of Public Prosecutions sent a number of samples (mainly of articles relating to charges of murder) for examination of blood stains. The examination was continued of such materials as lead glazes, crucibles, and prints, for the purpose of inquiries affecting the health of factory workers. For the India Office 32 samples of anesthetics were tested as to their conformity with specification, hospital supplies were examined for the Ministry of Pensions, and waters and disinfectants were submitted by the Government of Northern Ireland for report as to their suitability for domestic and other

purposes. On behalf of the Post Office the Government Laboratory watches over the purity of the materials used in mailing stamps, while for the Board of Trade it tests the lime juice and lemon juice for ewers on ships at sea and approves the disinfectants for emigrant vessels. The manifold activities of the department include recovery of iodium from accumulated stocks of disused luminous compass dials and gunsights, and investigation of the decay and disintegration of stone in town atmospheres. In a list of papers read by members of the Laboratory at periodical staff meetings we note communications on miasm by Mr W Smith, on sewage and effluent disposal by Mr H Stephenson, and on the bacteriology of water by Mr R M Mooney. The routine work of the staff is no doubt often tedious, but now and then there seem to be brighter moments. They may, for instance, be invited to settle the question whether a wine is still or sparkling, or a broken flask from a ceiling at Hampton Court, sent by the Office of Works, may inspire them to reconstruct the way in which the painter did his work in the seventeenth century, or, again, they may be asked to say whether the proportion of alkalis in a fragment of Roman plaster or mediæval mortar was the cause of its durability.

CLEAN MILK EXPERIMENTS IN WESTERN AUSTRALIA

At the beginning of this year a Royal Commission was appointed in the State of Western Australia to investigate and report on the metropolitan milk supply. The Commission has issued recently an addendum to its report, containing a survey of the quality of milk from different sources and handled in various ways. The samples of milk were taken before and after cooling, at the dairy farm, on arrival at Perth station, and on delivery to the consumer, at hand milking and at machine-milking dairies, from herds and from single cows, under ordinary and under specially clean conditions. The method of testing was by plate culture, counts being made of the total bacterial content and of the numbers of *Bacillus coli*. Counts of *B. coli* were made by cultivation from 0.5 c.c. of undiluted milk in a plate of MacConkey bile-sugar-lactose agar medium. It is satisfactory to note that the results of the experiments confirm generally the opinion expressed in the discussion in the Section of Medical Sociology at Bath,¹ that reasonably clean milk can be produced without the expenditure of much time, money, or trouble. Thus one of the conclusions arrived at by the Commission is that "the use of milking machines under existing conditions gives very unsatisfactory results." Milking machines under very good conditions give no better results than those obtained by hand milking under ordinary conditions. Under the best conditions the results of machine milking do not approximate to those of hand milking, owing to the difficulty of proper cleansing and maintenance of the machine. In the opinion of the Commission the most important factor in the production of clean milk is the sterilization of all utensils. This can be done by dipping in boiling water immediately before use. The chief expense is the provision of a rectangular boiler capable of taking a milk churn or drum laid on its side. The next precaution of importance appears to be the wiping of the cow's udders with a damp cloth. Special buckets and overalls for the milkers seem to be comparatively unnecessary. The Commission summarizes the precautions as "reasonable cleanliness on the part of the milker, washing of the udders, rejection of first jets, scalding of all utensils, and the use of ice tubes in milk which had to be stored overnight." Even under existing conditions country milk arriving at Perth station from hand milking dairies gave a relatively low bacterial count. By the time it reached the consumer the count

¹ Ol available from H M Stationery Office, Adelstra House, Kingsway, W C 2. 174d post free.

WELFARE OF THE BLIND

was high. With the simple precautions enumerated the Commission found that hand-milking dairies could produce milk of an extremely satisfactory degree of cleanliness, and deliver it to the consumer in the same condition.

THE WELFARE OF THE BLIND

The annual report for 1923-24 of the Advisory Committee of the Ministry of Health on the Welfare of the Blind states that 10,625 blind persons between the ages of 50 and 70 years are in receipt of old age pensions, as compared with 9,921 the previous year. The total is 85 per cent of those eligible. Some hardship occurs in a few cases owing to blind persons having private means just too much for them to receive a pension, and the committee recommends some easing of the regulation. It does not, however, recommend the total abolition of the income limit, nor support the suggestion that all adult blind persons should receive a pension of 10s a week, holding that this would reduce efforts for good education and industrial success. A great increase in schemes made by local authorities for the blind is evidenced by expenditure. This was £14,671 in 1921-22, and is £90,452 for 1924-25, with corresponding grants from the Ministry. The greatest part of this expenditure is on workshops and home workers—that is to say, it is industrial. Efforts have been made to increase the number of handicrafts suitable for the blind, but it is found that with the possible exception of stringing tennis rackets, no new industries can be introduced. The register of the blind shows 36,518 persons in June, 1923, as compared with 25,840 in 1919. The increase is mainly due to better ascertainment. At the present time 56 per cent are over 50 years of age, as compared with 52 per cent in 1921. The committee draws attention to the bad practice followed by some education authorities of placing myopic children in schools for the blind. We understand that the Board of Education is pressing for the provision of special accommodation for myopes. An appendix contains an analysis of occupations of employed blind. The greatest single group is that of the basket makers, thereafter come knitters, dealers (tea agents, etc.), mat makers, brush makers, and musicians.

JUVENILE EMPLOYMENT

On every side is heard the remark, ever increasing in insistency, that a huge waste of human material takes place because not enough effort is made to sort out workers, particularly while young, into the occupations for which they are most fitted. Those trends of thought are reflecting on our social work among adolescents, and to meet the demand more and more paid and voluntary workers are being drawn in through children's civic committees now established in connexion with every elementary school. Mr Bolton King, in his book entitled *The Employment and Welfare of Juveniles*,¹ gives an account of these committees, how they came into being, and how they seek to co-ordinate the known capacities of the children to work that is available, and of the successes which have attended these efforts. Committees were first formed in London in 1907, for schools definitely classed as "necessitous," with the object of carrying out the provisions of the 1906 Act for the feeding of school children. Two years later the system was extended in a modified form to all elementary schools within the area. They were to cease to be merely feeding committees, and to become "Care" Committees, taking an interest in the general welfare of children and co-operating with the parents and existing organizations

¹ The Fifth Annual Report of the Advisory Committee on the Welfare of the Blind to the Ministry of Health 1923-24. London: H.M. Stationery Office. 12s. Price 6d. net.
The Employment and Welfare of Juveniles. A Handbook for those interested in the Choice of Employment and After-care. By O. Bolton King. London: John Murray. 1925. (Cr. 8vo pp. xii + 254. 2 diagrams. 6s. net.)

As voluntary social workers have seen one sphere of usefulness after another absorbed into the State machine, new outlets have been discovered, and in the Care Committees they have come into their own, for, as Mr King shows, for much of this kind of work volunteer effort is welcomed by local and central authorities as essential to the efficiency of the public system. To the school doctor the Care Committee is indeed invaluable. Through the offices of its members he is able to see that necessary medical treatment is efficiently carried out, to obtain improved home conditions for the child, and to arrange for convalescent treatment and holiday trips, for the difficult case of physically defective children he can secure an efficient and kindly interest in the provision of suitable work when the child leaves school, without which he knows that all or nearly all the patient effort of years of school training is likely to be lost. What is true for a few of the school children is also true for the many, the Care Committees are greatly valued by parents of the normal children as a means of getting information they cannot obtain unaided. Mr King deals with the development of these committees, the scope of their work and how they do it, with choice of employment, continued education, and apprenticeship, the duties of the social worker, and the law relating to the industrial adolescent. In three appendices he gives particulars of unemployment insurance, and an alphabetical index of for certain occupations, and an alphabetical index of common trades and their requirements. Each order of industrial work or job is tersely described, and accounts are given of methods of entry, of prospects and pay, and qualifications, educational courses are indicated, and some warnings. For example, it is said: "Messenger work has a strong appeal to boys who leave school. It leads nowhere, and boys, when they reach the age of 17, are almost invariably dismissed without any training for another occupation. Parents are strongly advised to keep their sons clear of this occupation, either under a private company or local or central government, except under the Post Office." Mr King's book will be very useful to every school worker, and no school doctor can afford to be without the information he has collected.

THE HEALTH OF GIBRALTAR

The inhabitants of Gibraltar continue to enjoy remarkable good health, in spite of the high proportion of one room dwellings and generally overcrowded state of the city. According to the report for 1924,¹ by Lieut Colonel W. C. Smales, R.A.M.C., the medical officer of health, the death rate was 14.66 per 1,000 of fixed civil population, as compared with 17.6, the average for the preceding ten years. When corrected, however, for age and sex distribution for purposes of comparison with British towns, the standard death rate becomes 17.25 per 1,000. The infantile mortality fell to 91.6 per 1,000 births, or 17.0 per 1,000 below the rate for 1923. But this is not the lowest on record, for it was only 70 per 1,000 in 1909, and 75 in 1912 and 1913. The zymotic death rate was 1.05 per 1,000, and for pulmonary tuberculosis 1.5. The birth rate was 22.5. These rates have not varied much in recent years. Colonel Smales's report contains an interesting chart of small-pox epidemics in Gibraltar between 1871 and 1924. In several of these epidemics, especially those of 1871-73, 1878-80, and 1896-98, small-pox occurred in three successive exacerbations covering a period of two to three years before it eventually disappeared, a characteristic which was noted in the report for 1896, when a similar chart was published. The report for 1924 does not differ materially from its predecessors in general contents, but by the inclusion of small-pox and other charts it is somewhat more voluminous.

¹ Annual Report on the Health of Gibraltar for the Year 1924. Gibraltar: Garrison Library Printing Establishment. 1925. 12s. 6d. pp. x + 74. 4 charts and 1 plan.

and there is added an excellent plan of Gibraltar. It also contains an elaborate table giving details of school accommodation and a significant squared table showing the distribution of families of one to six and over six members in one to six and over six-room dwellings. As many as 1,316 out of a total of 3,480 families occupied one room only. Owing to building and other restrictions, the fixed civil population has remained stationary between 16,000 and 17,000 for a long succession of years. The sanitary administration until recently was in the hands of sanitary commissioners. There is now a city council with a public health department, but vaccination, civil hospitals, and inspection of schools and food are administered by a colonial department, and sanitary matters connected with the port by a board of health. Under these three departments sanitary activity and sanitary administration and personnel have greatly expanded, and, if one may judge by the facts recorded in the medical officer of health's annual reports, little is left undone in the application of preventive measures against disease.

THE FRENCH RIVIERA

In a recent number of *La Presse Thermale et Climatique* Dr. Gaston Sardou sets forth his views on the value of the health resorts of the French Riviera for the treatment of various pathological conditions. His attitude is that of an impartial observer, and not that of the enthusiastic bath physician, who is apt to vaunt the merits of his own particular spa and to deny that it can possibly do anything but good to any visitor. After briefly describing the physical geography, or what Huxley called the physiography, of the Côte-d'Azur, and the effects of the various winds on temperature and moisture, he states that the nature of the marine and alpine constituents of the climate varies according to the position of the particular place in question. The influence of the moist east winds diminishes, while that of the mistral, which is a north-westerly wind, increases, as we go from east to west. Moreover, purely local features affect the climate of particular places. Dr. D. W. Samways of Mentone has contended¹ that the characteristics of the Riviera climate are more those of a mountain than a marine one, since the prevalent winds are northerly, but with the exception of the mistral they are not cold in winter, because they have been warmed by passing over the sun-warmed surface of the land. Wet and cloudy weather is nearly always associated with south-easterly or south-westerly winds. In the paper referred to, which was read at a meeting of the Medical Society of the Mediterranean Littoral held at Nice, Dr. Samways entered into a very full exposition of the meteorology of the Riviera, which is well worth reading. Dr. Sardou would sum up the effect of the climate in general by attributing the greater part of it to stimulation, much of which may be a result of the blue or ultra-violet rays of the sun, to which so much lay as well as medical attention is just now directed. In this connexion it would be interesting to attempt to explain how it came about that ever since the decay of the Roman empire the inhabitants of northern lands, deprived to a large extent of the beneficent ultra-violet rays, have prevailed so often and so signally over the fortunate dwellers of the sunny south. Has the black man, for instance, defended himself by means of his pigment only too completely from the sun's rays, and thus lost all the benign influence which might have developed his intelligence and his pushfulness? Dr. Sardou does not go into this somewhat obscure speculation, but he expresses the opinion that the action of the sun's rays is curative in many conditions, especially when accompanied by heat. To sum up, the climate of the Riviera acts by heliotherapy,

reiotherapy, psychotherapy, myotherapy, thalassotherapy, physiotherapy, and barometric pressure. But although so beneficial in all depressed conditions of the organism, the climate is unfavourable for diseases characterized by hyperaesthesia and hyperfunction, such as chronic fever, phthisis, cachexia, and states of bodily or mental excitement. Lastly, the effects on the mind of the visitor from the north of the bright skies, clear air, and charming scenery are not the least among the curative agencies of the Provençal littoral, and the more the visitor sees of them and the less he has to do with the germ-laden atmosphere of casinos and other places of public entertainment the better it will be for his bodily health and his financial wealth.

SKIN TUBERCULOSIS IN CATTLE.

INVESTIGATIONS into the control of bovine tuberculosis have brought to light many new facts, and one of the most interesting among them is the existence of tuberculous lesions of the skin in cattle. Carpenter and Goldberger¹ report that an increasing number of specimens of this type have been encountered. In every case, however, the inoculation of guinea-pigs was negative. Calmette (1923) divides tuberculous lesions of the skin into four classes—lupus, ulcers, granoma, and lymphangitis. All these have been found in cattle, but those found by Carpenter and Goldberger were all of the lupus type. Calmette has already observed that bacilli in the lupus tissue are generally benign on inoculation, and to this he ascribed the fact that lupus cannot be inoculated from one human being to another. He regarded it as a rare condition in cattle, but the present series of cases indicates that it is by no means so rare as had been supposed. The condition generally develops from some traumatic lesion, usually of the extremities, and is commonest in young animals. The lesions are histologically the same as those in man, and the bacilli are considerably attenuated. In this the tubercle bacillus follows a general rule, which is exemplified also in the bacillus of anthrax and the virus of pleuropneumonia in cattle. Carpenter and Goldberger have been able to reproduce the disease experimentally in cattle, and to show that lupus will cause the animal to react to the tuberculin test in a manner similar to tuberculosis in other organs.

THE MEDICAL REGISTER UNTRACEABLE PRACTITIONERS

We publish in the SUPPLEMENT this week, at the request of the Registrar of the General Medical Council, a list of the names of those medical practitioners who have not replied to his inquiries as to the accuracy of their postal addresses. Any practitioner who finds his or her name included in this list should communicate at once with the Registrar of the General Medical Council, 44, Hallam Street, Portland Place, London, W 1.

¹ Cornell Veterinarian 19.5 xi pp 1-8 1923

The first social evening of the session at the Royal Society of Medicine will be held at 1, Wimpole Street, W., on Tuesday, October 27th.

The eleventh Norman Kerr Memorial Lecture before the Society for the Study of Inebriety will be delivered by Dr. R. Herod of Lyons on Tuesday, October 15th at 4 p.m., in the hall of the Medical Society of London, 11 Chandos Street, Cavendish Square, W 1. The subject of the lecture will be alcoholism as an international problem. A luncheon is to be held at the Welbeck Palace Hotel at 1.30 p.m., in order to provide an opportunity for meeting Dr. Herod. The president, Sir William Wilcox, will preside at the luncheon as well as at the lecture.

SOME ACHIEVEMENTS OF INDUSTRIAL LEGISLATION AND HYGIENE*

BY

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INDUSTRIAL hygiene is a comparatively recent branch of medicine. Although Ramazzini published his treatise on *Occupation Diseases* in 1700, it was the utilization of steam as a motive power which stimulated the growth of modern industry. The manufacture of pottery, also of bricks for building purposes, is one of the oldest trades. Coal mining, on the other hand, is one of the most important industries, as it is one of the most dangerous.

Coal Mining

The Romans during their occupation of Great Britain made use of the coal obtained from drifts in the city and neighbourhood of Newcastle upon Tyne. There was no deep mining for coal in those days. It was in the early part of the thirteenth century that permission was granted by Henry II to dig for coal in the North of England. During the early part of last century coal mining in Great Britain was a procedure attended by great hardships, physical and social, upon those who followed the vocation. A hundred years ago the hours of work were long—twelve to thirteen a day, boy labour was exploited and female labour underground was utilized, there was only one shaft leading into the mine, which served both for men and material, and as a consequence not only was there no through ventilation of coal mines, but in the event of the single shaft becoming blocked there was no escape for the men underground or means of their comrades above ground reaching them. It was the occurrence of such an accident at a pit a few miles from Newcastle, and known as the Hartley Colliery disaster, sixty years ago or thereabouts, which led to the compulsory provision of two shafts into a mine, and which led to the through ventilation in use to-day.

Two months ago I was called professionally to see a retired coal miner 72 years of age who told me that he began work in the mine at the age of 9 years, that he worked from 4 a.m. till 5 p.m. and for thus thirteen hours would a day he received 10d. He had to be wakened at 3 a.m. left the house at 3.50 a.m. and had to walk more than a mile to the mine where at the pit head he was obliged to be ready to descend at 4 o'clock in the morning. He often slept while he walked to and from his work and like the boys younger than himself employed in the mine he frequently fell asleep at his work and was ill treated for this by the foreman. In the winter months collier boys never saw daylight except on Sunday.

It is impossible to say what the number of fatal accidents was three quarters of a century ago, for statistics at that period were not kept, but the death roll was heavy. Before 1814 it was not the custom for inquests to be held on colliers who met their death by an accident in the mine. As showing the death rate from mine accidents during the latter half of last century, the following data supplied to me by Professor Louis of the Mining Department, Armstrong College, are of interest. Taking quinquennial periods, the death rates from mining accidents per 1,000 men employed underground in Great Britain were—

1851-55	5.149	1876-80	2.709
1856-60	4.628	1881-85	2.312
1861-65	3.791	1886-90	2.042
1866-70	3.995	1891-95	1.704
1871-75	2.736	1896-99	1.479

If we take two later decennial periods for comparison, we find that the average annual deaths from accidents in British mines due to all causes were, from 1873 to 1882, per 1,000 men employed, 2.5, and from 1911 to 1920 1.3. With the exception of the United States of America the statistics of other countries also show a decline in the accident fatality rates. In Germany the rate, which was 3.18 per 1,000 men employed in 1879, had fallen to 2.40 in 1914, in the United States the fatal accident rate had risen from 3.5 per 1,000 in 1890 to 3.62 in 1920, while during 1920 the rate for Belgium was 1.13, for France 0.77, for Great Britain 0.88, and for Germany 2.40. Coal mining in the United States is a comparatively modern industry, the men

have not been so long trained as those in the older countries. In addition many foreigners are employed, and, as a consequence of difficulties incidental to language, orders given by officials may not be readily understood. The men, too, in order to make high wages, work harder than in most countries. If the accident rate is measured by the number of men killed for every million tons of coal raised, the figure for the United States compares most favourably with those of other countries.

Spreading generally for all countries, but especially for Russia, the figures show that improvement has taken place in the reduction of fatal accidents in coal mining largely consequent upon freer ventilation, distillation of the mine for gas before the men descend, greater use of safety lamps, substitution of the higher explosives for ordinary black gunpowder, also the employment of skilled men to place in situ the cartridges and fire them.

Although one of the most dangerous of occupations, coal mining in Great Britain remained free from protective legislation until 1842, when, owing to the serious condition of affairs revealed by a Royal Commission, women and girls were excluded from working underground. It was not, however, until thirteen years afterwards that measures were introduced to protect the health, life, and limbs of the workers. For the saving of life in coal mines we are indebted to the attention given to the subject by men engaged in chemical and physical research. The employment of the 'safety lamp' recommended by Sir Humphry Davy has prevented many explosions, just as the daily inspection by trained men of the mines at the working face of the mine before commencing to haul coal has been the means of saving many a miner from becoming a cad. One other important circumstance has added considerably to the safety of the miner's vocation. Three quarters of a century ago the dangers of explosive gases in coal mines had been recognized but it was not until a few more decades had passed that Professor Gilloway and Mr. H. Hall showed that as widespread explosions frequently followed the firing of cartridges in mines some of these explosions were due to the dry coal dust which was raised into the atmosphere, catching fire, and travelling with explosive rapidity through the underground passages. Men were thus killed partly by gas, partly by burns, and in other instances, where death was not immediate, by pneumonia. Coal mining on a large scale in France, Belgium, and Germany is of recent date compared with that of Great Britain. It was not, for example, until 1766 that coal mining in Westphalia became a prominent industry. Other coal producing countries have profited by the experience, the mistakes, and the failures of British mining methods.

As an illustration of how hygiene measures introduced to protect the workers in one direction may inadvertently lead to disaster in another I cannot do better than reproduce the experience of the German mining authorities in the Ruhr a few years ago. Before this was several of the coal mines in Central and Western Europe had become infected by ankylostomiasis. I visited the Belgian, German and Hungarian coalfields and I descended into the Lothringen mine near Bochum. I was much impressed by the excellent organization of the sanitary measures which had been carefully prepared by Dr. Tscholtz and the adequate hospital provision made by the mine authorities for combating the disease in Westphalia. Although the parasite had gained entrance into the two mines of Coinwall, British coal mines fortunately remained free. Ankylostomiasis and have acquired heat and a considerable amount of moisture for their development. A few years previous to my visit to Westphalia there had occurred explosions in the German coal mines for which high temperatures and the dry coal dust were partly believed to be responsible. With the view of reducing such risks it was decided to introduce water spraying into the mines. This however only caused fresh trouble for the mine became infected by the ankylostoma parasite which it was believed had been brought thither by Polish and Italian workmen, also probably by some of their own miners who during the summer months had worked in the brickfields around Cologne and elsewhere. At any rate in 1900 water spraying of mines became general and the result was as follows. Cases of ankylostomiasis numbered 107 in 1896, 113 in 1897, 99 in 1898, 275 in 1899, 1,030 in 1901 and 1,355 in 1902. The rapid and great increase in the number of cases of ankylostomiasis after water spraying can hardly be regarded as a coincidence.

As a class, coal miners suffer less from pulmonary tuberculosis than most men employed in dusty occupations, but, as Professor Collis remarks, 'low as their phthisis mortality is, the experience for coal miners displays certain statistical characteristics which are distinctive of dust phthisis, and these are (1) an unusually late age of maximum incidence, and (2) an association with high mortalities from other respiratory diseases. Miners who are working at the coal face suffer from phthisis rather more than other miners below ground and

* Address (abridged) delivered before a plenary session of the Congress of Industrial Hygiene, Amsterdam, September 12th 1924.

workers above ground Phthisis in coal miners commences to express itself at and after 35 years of age

Periods	Age period—	35	45	55	65 and over
1890-92	1.45	2.07	2.23	2.03	
1900-02	1.03	1.52	2.04	1.47	
1910-12	1.02	1.31	1.43	1.02	

Thus shows the improvement which has taken place in the mortality rate of coal miners from phthisis

Manufacture of Lucifer Matches

There must be many in this audience who, like myself, twenty to thirty years ago, were witnesses of the ill health experienced by men and women who worked in match factories wherein white phosphorus was used. The men who dipped the matches in the phosphorus paste, and the women who filled the boxes, frequently suffered from necrosis of the jaw bones or died from septic meningitis or bronchopneumonia. In other instances where the poisoning was less severe the workers suffered from gastric trouble, anemia, and albuminuria, or from a tendency of the long bones to become fractured owing to peculiar fragility of the bones. So great were the sufferings of the persons affected that it became imperative that some united action should be taken by various countries to produce matches which would strike anywhere without, in their manufacture, the workers incurring risk to their health. As far back as 1879 Switzerland introduced a bill to prohibit the use of white phosphorus. In 1899 the British Government invited Sir Edward Thorpe, Dr Cunningham, and myself to visit match works at home and abroad with the view of ascertaining how the workers might be protected against the risks they were exposed to. Like many of our Continental confreres, we were of the opinion that the time had come when a harmless substitute should be found for the dangerous white phosphorus. It was Lorinser of Vienna who, in 1845, first drew attention to necrosis of the jaw bones as an occupational disease, but in every country in which lucifer matches had been made from white phosphorus there had occurred cases of phossy jaw. Chemists vied with each other to find a safe substitute for the dangerous metalloid. To French scientists fell the honour of showing how, by employing phosphorus sesquisulphide, lucifer matches could be made without risk to the health of the workers. After a congress of the various Governments, held in Berne in 1906, the match producing countries of Western Europe decided to manufacture lucifer matches by the safe method and so successful has been the result that the occupation is now free from the risks of three decades ago. Phosphorus necrosis has disappeared.

Manufacture of Mirrors

Chemical research has also proved helpful in other trades. It is not so long ago since quicksilver was used in the manufacture of mirrors. Many of the men then employed suffered from mercurial poisoning. Apart from the unhealthy conditions set up in the month, through vaporization of quicksilver, the workers became the victims of muscular tremor and occasionally of paralysis. Since making use of silver nitrate preparations the men have had good health, and the industry is now regarded as a healthy one.

Arsenical Pigments

Just over twenty years ago I was a member of the Dangerous Trades Committee of the Home Office to which was given the task of investigating several trades which were regarded as inimical to health. One of these was the manufacture and use of wallpapers which contained arsenic also the manufacture, mixing, and use of emerald green. It had been found that illness hitherto unrecognized was the result of sleeping in bedrooms the walls of which had been covered by paper containing arsenical pigment. Men employed in the grinding and mixing of such colours suffered from ulcers on their hands and fingers and upon the genitalia. In other instances a painful neuritis was established, which occasionally ended in paralysis. In the United States, in Holland, and other countries, the subject had also received attention. In Massachusetts, for example, a law had been passed in 1900 limiting the amount of arsenic in wallpaper to the extent of 0.1 gram per square yard, but at the time of the British inquiry alluded to we found manufacturers had been placing several grams in a square foot of wallpaper. The use of arsenical pigments in wallpaper

in Great Britain was subsequently prohibited then plies being taken by uniline and other safe colours. To the fortunate results which have followed in all the trades wherein arsenical compounds are used, stringent regulations, improved ventilation, and the employment of means for the removal of dust have contributed.

Carbon Bisulphide

Thirty years ago in the manufacture of india rubber goods in Great Britain there was much serious illness among the men and women employed in the factories. The illness was traced to the use of carbon bisulphide as a solvent for sulphur monochloride in the vulcanization of rubber. The vapour of bisulphide when inhaled causes intoxication not unlike that which follows the drinking to excess of alcoholic liquors. In the milder forms there are headache, vomiting and a staggering gait, in the more pronounced form the symptoms, while primarily of the nature of aggravated hysteria, occasionally become those met with in acute mania. In other instances, again, there are indications of peripheral neuritis followed by paralysis of the limbs. Since new methods of vulcanizing rubber by means of the incorporation of flowers of sulphur in a closed chamber under the influence of heat have been introduced, the trade has become healthier, and there are no longer the distressing and crippling forms of illness which attacked the workers less than half a century ago.

Lead and its Compounds

If there is one metal more than others which, since the rise of the modern industries, has exacted in all manufacturing countries a high toll of human life, it is lead and its compounds. One thing characteristic of industrial lead poisoning is the insidious manner in which it may develop, ill health may gradually steal over the workers, while, on the other hand, symptoms rapidly show themselves—as, for example, by the sudden onset of acute abdominal pain, or there occurs loss of power in one or both hands between night and morning. As lead and its compounds are used in over 130 industries, this circumstance renders lead one of the most important metals from an industrial point of view, just as regarded medically, it is one of the most interesting. In Great Britain and in Western Europe lead is present in ore as galena or sulphide, and as this is rather insoluble in weak acid solutions, miners who blast the ore and are exposed to dust do not suffer from plumbism but from a dust disease of the lung called silicosis. In the Broken Hill mines of Australia lead was present a generation ago in the form of cerussite or carbonate, this, when inhaled as fine dust, is readily soluble, and becomes, not only a source of plumbism, but of the severer type of the malady known as saturnine encephalopathy. It was a fortunate circumstance for the owners of the Broken Hill mines that after the cerussite layer had been worked out the subjacent ore was found to be galena, for the mining of this was followed by a marked declension in the number of cases of lead poisoning. A strange circumstance, however, has arisen at Broken Hill recently there has been a recrudescence of lead poisoning, this was found to be due to the lead ore in places having become changed into cerussite.

It is hardly likely, owing to fuller knowledge among the workers of the value of personal hygiene and cleanliness, improved ventilation where dusty processes are carried on, periodical medical examination of the workers, and enforced compliance with regulations, that the extremely serious and fatal types of lead poisoning with which some of us were familiar thirty to forty years ago, will ever again be met with to the same extent as formerly. In Newcastle upon Tyne, where it was once so frequent, lead poisoning has ceased to be the menace to the health of the workers it was a few years ago, and what is true of Newcastle is equally true of the country generally. In 1900 the number of cases of industrial plumbism reported to the Home Office was 1,058 in 1923 the number was 337. The records for 1924 show a slight increase and particularly is this the case for the manufacture of pottery, but as many of the men and women who have recently died had worked in the pottery trade for from thirty to forty seven years it is more than probable that the seeds of their illness were sown before the introduction of the new methods in vogue. The fact remains that here is no comparison, so far as number of cases and severity of the illness are concerned, between industrial lead poisoning to day and half a century ago.

Nova et Vetera.

MEDICINE IN SIR WILLIAM TEMPLE'S ESSAYS

AMONG his successes in the diplomatic service at Brussels and the Hague, Sir William Temple, weary of the tortuous cross-currents of politics and being also of the type of mind which does not cue to fish in troubled waters, retired to his country seat and solaced himself with his garden and the writing of essays. He was a close observer of affairs, and certain of his essays have interesting comments on medical practice and theory of the time, and notably his essay on the *Cure of the Gout* and that on *Health and Long Life*. In the former he states that no disease had within the compass of his memory so increased in prevalence as the gout, the incidence of which he attributed to an inherited trait, to the constant "use of great tables," to excess of several kinds, and to a sedentary and inactive life. That gout was a frequent malady at the time we know from other sources. Sydenham, a contemporary of Temple, was himself a sufferer; he prescribed as a preventive the libation of Canary wine, thereby showing himself less wise than Temple, who emphasized the necessity of temperance. "Immediately after dinner," says Sydenham, "I am accustomed every day to drink somewhat more than a quarter of a pint of Canary Wine to promote the concoction of food in the stomach and to keep away the gout."

Despite Temple's careful regimen he became subject to gout in middle life, apparently by inheritance, and he heroically adopted the treatment of burning the moxa. This form of treatment, which was introduced from the East Indies, consisted in the application to the affected joint of a pyramid of a special moss, which was ignited at the summit and then slowly burnt down to the skin, the burning was to be repeated a second, a third, and a fourth time until the patient could put his foot firmly to the ground—a form of treatment not to be undertaken lightly.

Temple was in advance of his age in recognizing the important bearing upon health of a life regulated by simplicity. He emphasized the necessity of temperance in food and drink, the importance of exercise, and the value of fruit—"The common ingredients of health and long life are great temperance, open air, easy labour, little care, simplicity of diet, rather fruit and plants than flesh." The period of the Merry Monarch was not one in which it was fashionable to put the reins upon indulgence, and one can hardly imagine Temple as an habitué of the court of Charles II, he was more in his element amongst his books and engaged in the culture of grapes and peonies. He insisted that the true use of wine is as a cordial, that at least it should be reserved for times and occasions of feasting and joy, and on such occasions he would not be unstrained. "The first glass," he says, "may pass for health, the second for good humour, the third for our friends but the fourth is for our enemies."

Criticism is not unknown to-day, and is perhaps not altogether unfounded, of alternating stress on particular diseased conditions and of some efficacy of fashion in remedies. Temple makes similar comment, and tells us that in the course of his experience he had known the changes rung upon richlets, consumption, the spleen, scurvy, ferment of the blood, vapours, and similarly there had been a continued change in the vinting of sovereign remedies. These apparent vagaries of medical fashion have not infrequently been a theme of wit, but Temple shows charity and restraint in his observation.

"Whatever can be said of the uncertainty of their art or disagreement of its professors, they may, I believe confidently undertake that when divines arrive at certainty in their schemes or divinity or lawyers in those of law or politicians in those of civil government the physicians will do it likewise in the methods and practice of physic."

Amidst these uncertainties of the science and art of medicine Temple turned to the practice of temperance and to simple remedies, most of which have passed from use, but some of which remain. Sage he vaunted for consumptive coughs, rue as a digestive and restorer of appetite, saffron

as a cordial (also he praised it but found too offensive for the company he conversed with). Quinine he mentions as of recently established virtue. One remedy he praises highly which seems to have passed entirely from ken, though apparently it was in former days in regular use. Temple adduces the theory that the increased prevalence of stone was to be traced to the introduction of hops, which, he says, took the place of alehoof or ground ivy in the preparation of ale. The use of hops, we are told, was for the better preservation of beer over long sea voyages, but it allowed "the staining of beer to be brought into custom." This substitution was much lamented by Temple, who found in alehoof a sovereign specific, and deemed it "the greatest charm of any plant known amongst us." Hops were introduced into this country in 1525, but their vogue did not become general until the seventeenth century. Previously a variety of plants was used for the seasoning of ale, of which one was the ground ivy or *Ulex glaberrimus*, one of the smaller Leguminæ, its congeners were freely used as herbs.

There is another point of contact between Sir William Temple's day and ours, in that the nation then, as now, had recently experienced the distracting phase of war and unsettlement of received opinion, and it is interesting to note that the essential function of the physician in restoring mental equilibrium as a prime necessity for physical cure was clearly recognized. The methods may not have been the same as those of to-day, but the principle is there, and is well expressed in the following sentence:

"I remember an ingenious physician who told me in the faintest times he found most of his patients so disturbed by troubles of conscience that he was forced to play the divine with them before he could begin the physician whose greatest skill perhaps also lies in the infusing of hopes and inducing some composure and tranquillity of mind before they enter upon the other operations of their art."

Perhaps physicians to-day do not so readily play the divine, but all of experience recognize how large a part the infusion of tranquillity and hope plays in their work.

Thus these essays open a small window through which we gain some glimpse of the world of medicine 250 years ago, and tell us of the impression made on a cultured and observant mind. It has been suggested, whether truly or not, that Halifax had Temple in mind when he penned his aphorism, "He that leaves nothing to chance will do few things ill, but will do very few well." The opinion may be unwarred that were Temple reincarnated as a physician his work in this respect at any rate, would merit the mayor's commendation. J. P.

INTERNAL MIGRATION AND HEALTH

THE Medical Research Council has just issued, as No. 95 of its Special Report Series, a monograph by Mr. A. B. Hill, entitled *Internal Migration and its Effects upon the Death Rates with Special Reference to the County of Essex*, which has both a personal and general claim upon our attention. Mr. A. B. Hill is of the third generation of a family which has achieved high distinction in literature and science, the historical side of the important problem he has selected would have appealed to the scholarly tastes of his grandfather, Dr. Birkbeck Hill, as its physiological aspects must interest the author's father, Dr. Leonard Hill. Anyone would be predisposed in favour of a writer with these hereditary claims on our interest. Mr. Hill is, however, quite able to interest the reader on his own account. It is indeed strange that the subject has had to wait so long for a monographist. Very able men—Dr. Edward Smith in the past, Sir William Hamer in the present generation—have written on some aspects of the hygienic interplay between town and country. Dozens of non-medical writers, usually economists, sometimes propagandists, have described particular facts, but no detailed inquiry under taken primarily from the hygienic point of view and utilizing the whole of the vital statistical data has appeared before.

Mr. Hill stated, as have others, with the datum that in early adult life the rates of mortality in country districts are sometimes absolutely and always relatively unfavourable

Thus in 1901-10, although the standardized mortality (all ages) of males in urban counties was 134 per cent of that of males in rural counties, in the age group 20 to 25 it was only 95.4 per cent of the corresponding rate in rural counties. Similarly the all ages rate upon women was 132.1 per cent of that in rural counties, at ages 20 to 25 only 91.2 per cent. When the comparison is made, not between urban counties and rural counties, but between all urban districts and all rural districts, the absolute inferiority of the rates upon women at young adult ages persists, while for men, although in each age group they die in rural districts at a lower rate than in urban districts (excepting the ages over 85 in one or two years), the rates approximate most closely in young adult life.

This feature is not peculiar to English experience, we find it again in comparing a country mainly non-urban, such as Sweden, with a country mainly urban, such as England and Wales. At all ages between 10 and 25 English rates of mortality are lower than Swedish rates, between 25 and 35 they are not very different, and at all later ages the rates of mortality in Sweden are much lower than in England and Wales.

When comparison is restricted to rates of mortality from pulmonary tuberculosis, the contrast is emphasized. In 1901-10 the standardized mortality (all ages) of males in urban counties was 127.1 per cent of that of males in rural counties, but in the age group 20 to 25 only 79.8 per cent. Females in rural counties had a higher death rate from pulmonary tuberculosis than females in urban counties in each age group from 10 to 35. There is a similar contrast between Swedish and English rates of mortality from pulmonary tuberculosis. An explanation at once suggests itself—the migration from country to town of the healthier and more ambitious adolescents, in search of better paid and more interesting employment, and it is to be remembered that Sweden is a country which in the past has lost many migrants—between 1861 and 1910 the outward balance was almost a million (in a population which increased in that period from nearly 4 million to 5½ million).

But there are difficulties in the way of this explanation. The factors of migration are numerous and complex, to quote Dr. Sjöstrand, of the Swedish Legation:

Emigration often took away the most vigorous and healthy people and thus tended to increase death rates amongst those remaining. But as the admirable research work conducted by the late Professor Sundbarg has proved, emigration was dependent upon a whole series of causes. More often than not people were induced to leave the country by their relatives and friends overseas. Others were driven abroad by a spirit of adventure, by social discontent etc. and in such cases physical health was perhaps a minor consideration. The most important emigration from Sweden took place in the eighties and hardly any unfavourable influence could be traced on the death rates at earlier ages. There was a constant improvement in those death rates with a slight exception for the ages 15 to 25 during the nineties and first quinquennial period of the present century when emigration was already receding.

Mutatis mutandis, these remarks apply to the etiology of internal migration, and some writers have boldly asserted that, so far as tuberculosis is concerned, movement from country to town or transformation of an agricultural into an industrial State is intrinsically favourable to the reduction of mortality, increased opportunities for infection and restriction of fresh air and exercise being more than counterbalanced by the higher nutritional level which, in the past, has usually characterized the increasing village prosperity of an industrial State. It is at least certain that the industrially backward States are those with the highest mortality from tuberculosis, although for technical reasons, displayed in a recent report to the Health Section of the League of Nations by Rosenfeld, comparisons should be made with great caution. It is seen, therefore, that the interpretation of the facts is not simple, so that it is very desirable to be quite sure what are facts before we set to work to explain them.

The first part of Mr. Hill's memoir is devoted to ascertaining what the facts are with respect to movement of population from the rural parts of the county of Essex, taken as a particular example, and the author has analysed the statistical data of a century. He first shows that prior to 1840 there was no systematic movement, but from 1840 to the beginning of the twentieth century there was a large

and steady flow from country to town which was checked between 1901 and 1911. The result was to produce a dearth of young men between the ages of 17 and 35 and of young women between 12 and 30, with corresponding excesses in the centres of immigration, such as London. The favourite age of migration has changed little since 1850, and there is evidence that the migration in the earlier age groups, 15 to 20 for boys and 10 to 15 for girls, is towards local rather than distant towns. In the Essex rural districts the death rates, in comparison with those of England and Wales, are abnormally high between 20 and 35 for males and between 15 and 25 for females. During these fifty years the rates have declined and

there is certainly a suggestion that at these age groups some influence apart from the general improved medical knowledge and application in the fifty years' period, is tending to depress the rural rates and to raise those of London. In other words there is some ground for belief that the lessened volume of migration has reduced the level of the mortality rates at these age groups in the rural areas and has increased similarly the rates for London.

The author then carried out a detailed study of particular districts, and concluded that the migration of adolescents has a definite bearing upon the abnormal height of death rates from all causes in the corresponding age groups, or, in other words, that a positive correlation between volume of migration and height of death rates does exist.

Thus far we have nothing novel in conception, but—an extremely valuable thing in itself—a quantitative measure of the actual effects which in a general way we had supposed would be found, reached by careful and perfectly intelligible statistical analysis.

In the second part of the memoir Mr. Hill breaks fresh ground. He has collected statistics of the after-life of members of families some of whom migrated to towns and others remained in the country. He obtained adequate particulars of 769 persons from 55 different villages. Of the males (402) 182 were migrants, 220 homekeepers, of the females (367) 204 were migrants, 163 homekeepers. They provided in all 14,271 years of life, and have been tested by the appropriate actuarial method. The result is this:

The figures are not very large (though the years of exposure it will be seen, are not inconsiderable) but the results for both males and females are very similar. Whereas the expected deaths of male homekeepers and migrants are 20 and 14 respectively, the observed deaths are 16 and 4, whereas the expected deaths of female homekeepers and migrants are 15 and 11 respectively, the observed deaths are 15 and 2. There is a distinct deficiency of deaths of migrants in each case, a deficiency that appears too great to have arisen solely by chance.

We have not space to recapitulate the author's discussion of the objections which can be urged against the data, but we think they are not sufficient to deprive the result of a certain value and that the direct test is some confirmation of the general statistics. Of course we cannot in this way determine whether the migrants were intrinsically better "lives" or whether their more favourable experience was due to a better environment—that is, not within the scope of such an investigation. But Mr. Hill has been able to throw light upon part of the problem by a study of some factors of country environment, for he has both collected a series of family food budgets and investigated the heights and weights of children in the elementary schools. His budget investigation covered 60 fully recorded diets and a further 38 where the home produce had to be estimated. The average "man" value in calories was 2,900, well below the conventional 3,300, and 45 of the 98 were below 2,750. The diet is, naturally, most deficient for families of three or four children below earning age. Mr. Hill suggests that this might account for the relatively unfavourable death rates of young women, since it would be upon the young married woman that the deficit would tell. This surmise is not, he notes, borne out by the statistics, which indicate that married women in the rural districts between the ages of 25 and 50, when compared with the same class in towns, are at a less disadvantage, in respect of mortality rates, than are unmarried country women in comparison with unmarried townsfolk. A scrutiny of the heights and weights of the school children disclosed no evidence of malnutrition.

A comparison of the heights and weights of the Essex children with similar measurements of a sample of 9,975 American children

gave an interesting result. The latter were classified upon medical examination as excellent or good, 'fair or poor' in nutrition as judged from clinical evidence. The mean measurements were calculated for each group thus classified according to nutritional status in yearly age groups. The heights and weights of the Essex children (differentiating boys and girls) lie between the means of the two American groups. They are somewhat below the good or excellent group, but they are superior to the 'fair or poor'."

On the whole, with a reservation regarding the absolute energy level of the diet, the villages do not come badly out of the test. The housing conditions are, however, extremely bad, and Mr. Hill rightly quotes the rather depressing report made by Dr. Thresh, formerly county medical officer of health, in 1919. In 1921 it was estimated that (in 32 out of the 47 sanitary districts) there were 694 houses definitely unfit and 5,876 houses not reasonably fit for human habitation. One cannot but suspect that in housing we have one of the unfavourable influences contributing to the rate of mortality.

We have already used so much space in indicating the nature of Mr. Hill's inquiry that we must refrain from all but a word of final comment. From a study, however detailed, of a single area we cannot draw any inferences applicable to the whole agricultural population save one that we have had displayed a matter of great importance which can only be fully elucidated by the co-operation of many investigators. It is a subject many aspects of which medical practitioners in our agricultural districts are well placed to investigate, and they will find Mr. Hill's report both stimulating and suggestive.

SECOND CONFERENCE ON STANDARDIZATION OF BIOLOGICAL PRODUCTS

[BY OUR CORRESPONDENT IN GENEVA]

The second international conference on the standardization of biological products was held at Geneva from August 31st to September 3rd under the presidency of Dr. H. H. Dale, F.R.S. of London and was attended by seventeen representatives from various countries. The members of the conference were welcomed by Dr. Ryghman on behalf of the Health Section of the League of Nations. The main business of the conference was to discuss the standardization of such products as pituitary extract, insulin, digitals, salivarin, thyroid gland, ergot, and others, and each of these was the subject of a good discussion, and resolutions were formulated which received the unanimous support of the conference. Indeed, the unanimity was such that when at the conclusion of their labours, the members of the conference were invited to see the Council of the League of Nations in session, Dr. Dale suggested that it might be better if the Council of the League attended a session of the conference to learn how to do things unanimately!

One resolution of a general character, relating to the international control of the traffic in secret and proprietary remedies put forward at the suggestion of Dr. Ryghman, was also unanimously carried. It ran as follows:

That the members of this Conference representing expert pharmacological opinion from many countries recognize and welcome the effort made in different countries to control the traffic in secret remedies and in a certain kind of proprietary remedies the existence of which they regard as detrimental and as a menace to public health. They express the hope that the Health Committee of the League of Nations will be able to find means to coordinate and centralize such efforts so as to render them international in their effect and provide a basis on which the different countries may be able to deal with this matter, in the interest of the health of their own people.

The first product which received detailed consideration by the conference was pituitary extract upon which a report was presented by Professor Voegtlin. After a somewhat lengthy discussion resolutions were arrived at, declaring that the dry (acetone) extracted substance of the fresh posterior lobe of the pituitary gland, which was recommended by Professor Voegtlin to the Edinburgh conference as suitable for adoption as a standard of activity for pituitary extracts and which has since been

adopted as a standard for this purpose in the United States Pharmacopoeia (tenth edition), should be now definitely accepted as the international standard, that the authority responsible in any country for biological standardization should prepare such quantities of the standard as were needed for distribution, and that the health organization of the League should be asked to furnish a small sample of the standard as originally prepared for examination by the Edinburgh conference to any authority which might require it for the confirmation of its own national standard. Various other recommendations were made with regard to the biological assay of this product, and it was also decided that it was desirable to express all pituitary extracts in units of activity, for this purpose the activity corresponding to 0.5 mg. of the standard powder is to be defined as one unit. Thus the official liquid extract of the United States Pharmacopoeia (tenth edition) would contain ten international units of activity per cubic centimetre, while that of another country might be made to contain a larger or smaller number of such units in accordance with the prevailing clinical practice in the country concerned.

Professor Macleod introduced the subject of insulin and recommended the adoption as the international standard of the dried preparation of insulin hydrochloride which, at the request of the Edinburgh conference of 1923, has been made at the National Institute for Medical Research, London, 1 mg. of this preparation to be regarded as containing 8 units of insulin. Professor Meyer mentioned a new method devised by Professor Loewy of the University of Graz, depending upon, what Professor Loewy held to be proved, in alteration by insulin of the distribution of dextrose between the plasma and corpuscles of shed blood. It was agreed that this method deserved further careful investigation but that no recommendation could yet be made as to its adoption. The recommendation made by Professor Macleod was agreed to, and it was arranged that the standard preparation should be kept by the Medical Research Council, which would undertake to test the permanence of its potency from time to time, and that samples of the preparation should be sent to some responsible organization in each country which would undertake its further distribution to testing laboratories.

With regard to digitals the conference agreed that an international standard dry powdered preparation of the leaves of *Digitalis purpurea* should be made of the same strength (10 per cent) as the experimental standard powder prepared in accordance with the decision of the first international conference at Edinburgh. The standard should be prepared by the mixture of ten different powders made from leaves properly dried at 55° to 60° C., should be adjusted by biological assay on cats, and distributed for international use, the permanence of its activity to be annually controlled.

The conference accepted the principle of the standardization of salivarin and its derivatives in relation to permanent standard preparations, and Professor Kolbe of Frankfurt was asked to accept the responsibility of preparing, maintaining, and distributing the standards for the various products of this class. It was agreed, further, that every batch of the remedies in question, before issue for therapeutic use, should be tested on normal animals for toxicity, and on animals infected with a suitable strain of pathogenic organisms for therapeutic potency.

Thyroid gland preparations were also discussed, and it was agreed, on the suggestion of Professor Reid Hunt, to adopt the standard of iodine content. The question of ergot was introduced by Professor Tiendelenburg, who said that, of a number of testing methods he had examined, a test based on the paralytic effect of these alkaloids on the inhibitory action of adrenaline on the movements of the isolated intestine of rabbits and guinea-pigs appeared to be most promising. The conference decided that the question of the biological standardization of ergot was not yet ripe for final decision.

After various other substances had been considered, Professor Pontsson presented a memorandum dealing with methods proposed for standardizing for vitamin content the substances used in medicine for supplying vitamins to patients. He recommended the method already adopted in the United States Pharmacopoeia (tenth edition) for standardizing cod-liver oil for the growth promoting factor

(vitamin A) He stated that tests were already available, though less certainly quantitative in their indications, for the antirachitic vitamin, the water-soluble growth-promoting vitamin, and the antiscorbutic vitamin A. Discussion ensued, in the course of which it was suggested by Dr Dale that the present conference was hardly suitable for the discussion of the whole question of the biological standard of vitamins. It appeared to him that such a discussion could more suitably be undertaken by a special conference analogous to the serological conference, attended by recognized experts in this special branch of inquiry. With regard to the proposed biological assay of cod-liver oil for vitamin A, he thought that the present conference might usefully promote investigation, in connexion with the reaction recently described by Drs Rosenheim and Drummond of London, which was believed by those workers to be specific for vitamin A and to be suitable for application as a quantitative colorimetric test. He suggested that Professor Poulsen might possibly be able to obtain a series of samples of cod-liver oil exhibiting widely different degrees of growth promoting activity, and undertook to endeavour to arrange for a comparative investigation of these by chemical and biological tests in London, and, with Dr Voeghtlin's co-operation, possibly in the United States as well. The conference passed a resolution affirming that the preparations used in therapeutics to supply vitamins to patients should be standardized as accurately as possible, such for its content of characteristic vitamin or vitamins, that the preparation for which such standardization appeared at present to be most important and most practicable was cod liver oil, vitamin A being the constituent of this oil which could be most accurately assayed, and that action be taken along the lines suggested by Dr Dale in his remarks just quoted.

The conference decided to take no action at present with regard to cannabis indica, squill, and certain other preparations.

THE PUBLIC HEALTH ACT, 1925

UNDER date September 4th the Ministry of Health has issued to public health authorities the following circular letter relating to the Public Health Act, 1925.

This Act covers a wide range and much enlarges the powers of local authorities. It is important that it should be familiar to councils and their officials and it is requested that it may be specially brought to the notice of the principal officers whose duties will be affected. It has been thought that it will be helpful to local authorities to deal fully in the summary with the provisions of the Act and it is hoped that it will provide information on a number of matters on which advice may be desired. The Act comes into operation on September 8th. Many of the powers will be in force only if the appropriate provisions are adopted after that date by the local council except those which may be exercised by county councils. In the case of urban districts with a population of less than 20,000 persons the consent of the Minister is necessary to the adoption of some special provisions. In the case of rural districts a number of provisions which are primarily suited for urban areas cannot be adopted by the council but can be put in force by an order of the Minister. The position in these matters is explained fully in the summary. The attention of urban authorities is called to the duty which is placed upon them by Section 84 of the Act to prepare, within six months after the 8th instant, a list of the districts within their area which are repayable by the inhabitants at large. The additional powers placed at the disposal of local authorities by the Act should be of material assistance to them in dealing with local problems and the amendments which have been effected in the law will be a useful preliminary step towards the consolidation of the Public Health Acts.

The summary referred to in the circular extends to forty pages, and will be of great value to the authorities and their officers charged with the administration of the Act. It is impossible within any reasonable limits of space to summarize what is itself only a summary, but a brief indication may be given of a number of the matters dealt with. The Act is in nine parts and contains eighty-seven sections. It relates only to England and Wales, and a good deal of it is adoptive under central sanction. The nine parts are (I) Preliminary, (II) Streets and Buildings, (III) Sanitary Provisions, (IV) Verminous Premises, etc., (V) Watercourses, Streams, etc., (VI) Recreation Grounds,

(VII) Infectious Disease and Hospitals, (VIII) Miscellaneous, (IX) Baths and Washhouses.

Part I deals with adoption, application, appeals, etc. Part II (Streets and Buildings) is adoptive except in so far as it confers powers on county councils. It covers many administrative details—drinking fountains, fire alarms, naming of streets, paving and draining, lopping of overhanging trees, wireless installations, construction of bridges, width and widening of streets, etc. Part III (Sanitary Provisions) is adoptive. It treats of drains and sewers, prevention of entry of petrol into sewers, ventilation of soil pipes, tents and vans, and questions as to the establishment of offensive trades. Part IV is adoptive, and is devoted to verminous conditions of articles, houses, and persons, power of entry, and cleansing stations. Cleansing may be compulsorily done under certification by the medical officer or sanitary inspector, and subject to reservations in the case of verminous persons. The cost is to be borne by the local authority. Part V (Watercourses, Streams, etc.) is adoptive and provides for the covering of watercourses and ditches, repair and cleansing of culverts, and local authority's defrayment of costs of execution of works. Part VI (Recreation Grounds) is not adoptive. It gives further powers as to parks and pleasure grounds, including restrictions as to concerts, entertainments, and cinematographs, provided by a local authority, and limitation of a local authority's expenditure on bands, concerts, etc., to a rate of 1d to 2d in the £. Parts of parks or pleasure grounds may be set apart for accommodation for cricket, football, etc. Part VII (Infectious Disease and Hospitals) is not adoptive. Certain of its provisions apply to county councils only, others to county and district councils. In connexion with infectious disease at common lodging houses, it provides for right of entry for medical examination, and also for closure. It defines dangerous infectious disease in relation to notification. It makes clear that the Minister of Health may invest a county council with the power of providing a hospital for the reception of patients, and may make regulations as to parish assessments for cost of maintenance of patients.

Concerning the important and difficult question of compulsory isolation of tuberculosis, it is enacted that county and other councils may apply to a court of summary jurisdiction for an order for removal to hospital or institution of an infectious case of pulmonary tuberculosis, and detention there for a period not exceeding three months. The powers of removal may be exercised contrary to the wishes of the patient, but certain safeguards are provided. (1) The section is restricted to patients whose lodging or accommodation prevents the adoption of proper precautions against spread of infection, or who are not taking such precautions, and in either case it must be shown that serious risk of infection is caused, (2) a suitable hospital must be available, (3) the cost is to be borne by the county council or local authority, and these bodies may be required to contribute towards the maintenance of dependants, (4) the first period of detention can only be extended if the court is satisfied that the risks to others would again exist and (5) application may be made by or on behalf of the patient for rescission of the order after six weeks from its date.

The extended use of ambulances, etc., is provided for. It is made clear that reasonable subscriptions or donations to voluntary hospitals or institutions may be made by local authorities, but the expenditure is not to exceed a rate of 1d in the £ of assessable property. Local authorities are empowered to provide conveniently situated houses for hospital officers and servants.

Part VIII, entitled Miscellaneous, is not adoptive. The Blind Persons Act (1920) deals with the welfare of the blind, but the new Act sanctions arrangements relating to prevention of blindness and the treatment of disease or injury of the eyes. Residence in a hospital or institution for the blind is not to affect the responsibility of the area in which the patient previously resided, for his maintenance. Other provisions of Part VIII include powers of local authorities to provide health lectures, pictures and other health information, subject to restrictions and conditions. Parking places for vehicles may be provided, also grounds for cricket, football etc. either by individual authorities or jointly. Where a local authority has provided a public slaughterhouse or market, it may also provide a cold storage or refrigerator, with consent of the Minister, and may fix reasonable charges for its use. Sanitary precautions are to be observed whenever food is prepared or kept for sale. The precautions specified resemble those relating to balhouses. Rag and bone dealers must not sell food or toys. Penalties may be imposed for neglect of traffic directions and for dangerous driving. Persons waiting to enter public vehicles may be arranged in queue and even in rural districts vehicular traffic at railway stations may be controlled. Part IX (Baths and Washhouses) is the only part of the Act which extends to the administrative County of London. Charges

for the use of these conveniences are dealt with, also the closing of swimming baths in winter, or their uses for other purposes.

It will be seen from the above notes, which are far from complete, that the new Act deals with many details which the working of existing Acts has shown to be necessary. It is a Public Health Act, not a Local Government Act, and is not intended to remove existing anomalies regarding the areas and population of so-called urban and rural districts as at present constituted.

Scotland.

SCOTTISH SANITARY CONGRESS

THE fifty-first annual congress of the Royal Sanitary Association of Scotland was held at Hivial on September 3rd and 4th. Mr John Halliday, sanitary inspector, Port Glasgow, read a paper entitled "The inspection of our daily bread and its allies." He said that though certain provisions relating to some articles of food had been added to the provisions of the Sale of Food and Drugs Act, 1875, the foundation of all these was contained in the original Act. In the fifty years that had passed there had been a tremendous development in the preparation, transport, storage, and distribution of foods, all creating fresh problems, and it did not appear that the basis of the Act was broad enough to deal adequately with existing conditions. There was no amendment of the Act designed to incorporate the great increase of scientific knowledge regarding the dangers of dirt and decomposition. The lecturer said that his experience as an inspector for a quarter of a century had taught him that nine-tenths of the pollution of food was preventable. Vermin should be kept out of stores, dirty places should not be permissible as food stores or food factories, and dirty persons should not be allowed to handle food in preparation. The road to health was beset with pitfalls dug by the lazy, the incompetent, the crafty, or the unscrupulous dealer, whose chief aim was self-interest. A short paper was also read by Dr Gerald Leighton of the Scottish Board of Health, in which he expressed the opinion that a Pure Food Act was the most urgently required of any health enactments. Legal standards with regard to what the important foods should contain were very much needed. He hoped that the general body of consumers would before long demand that we should follow other countries in regulating these matters by a comprehensive Pure Food Act. Dr A S M Macgregor, interim medical officer of health, Glasgow, contributed a paper on modern methods in the prevention and treatment of infectious disease. Referring to tuberculosis, he said that recently Professor Calmette and his colleagues had produced a strain of attenuated tubercle bacillus capable of producing antibodies in laboratory animals. It was expected that by inoculating calves with this soon after birth they could be made to resist subsequent infection with tuberculosis. This would have a very important effect in the production of tubercle-free herds of dairy cows. Preliminary results in the preventive treatment of young children by this means had just been reported to the Academy of Medicine in Paris.

MODERN TREATMENT OF INSANITY

The annual report of the Royal Asylum at Montrose for the year ended May 15th, 1925, contains some interesting observations by the physician superintendent, Dr C J Shaw, upon modern developments in the treatment of the insane. The number of certified patients remaining on the register on May 14th, 1925, was 726, including 349 men and 377 women. Including 28 voluntary patients, the total number in residence was 754. During the year 841 cases had been under treatment, with a daily average in residence of 752. The death rate on this number had been 8.07 per cent (27 males and 31 females). The average age at death had been 60.7 years, including 22 persons over 70 years of age, of whom 3 had exceeded the age of 90. The average age on admission had been 45.9 years, though 13 patients had been admitted when over the age of 70 years. Attention is drawn to the fact that the percentage of senile

cases is not quite so high as in previous years, and that if nursing facilities could be provided in parish homes or elsewhere certification would not be necessary for many of these aged persons. Recovery could not be expected and mental symptoms were due simply to the general systemic breakdown, so that many died soon after removal to the asylum. With regard to the causes of mental attack, the exciting and predisposing causes tabulated for the 131 admissions show that moral influences including domestic trouble, pecuniary worries, fright, and war stress had acted as an exciting cause in 35 cases (26 per cent), and physical causes, such as old age, epilepsy, and bodily diseases, in 81 cases (61 per cent). Heredity had been ascertained as a predisposing factor in 44 cases, or one third of all the admissions. Of the cases admitted during the year, 31, including 12 males and 19 females had at some previous time been already certified. Alcoholic indulgence was assigned as a cause only in 7 cases, but the critical periods of life had been found to bear a distinct relationship to the onset of mental trouble (puberty 3 cases, adolescence 10 cases, characteric 8 cases and old age 13 cases). Fourteen of the cases had already been mental defectives. With regard to discharges, 57 in number, 29 had recovered, 16 had improved sufficiently to return to the care of their friends or to be boarded out, while 12 were transferred as not improved. Attention is drawn to the fact that in cases with an acute onset the symptoms are usually so marked that admission has to be sought at an early stage, and the prognosis is therefore more hopeful. Unfortunately, however, in many cases the onset is insidious, and medical advice is not sought or not followed until too late. There would be less hesitation in attending at a general hospital where a mental specialist might be seen, treatment suggested, and touch maintained with the patient. The report points out that in many instances the effect of this would be to arrest the progress of the mental disease and that if certification should become necessary it could be carried out at a stage when the prospects of recovery were more hopeful. Twenty, or 34.4 per cent of the private cases had been admitted as voluntary patients, and there had been an increasing tendency to this method of admission in recent years. The chief obstacle to early treatment of mental disease were pauperization, certification, and the stigma which attached to asylum care. The first two of these would be largely removed if the voluntary system of admission were made available for pauper patients and the attitude of the public would be changed towards the last if asylums came to be regarded more in the light of mental hospitals than as houses of correction or detention. In regard to this particular asylum it is urged that a step in this direction has been taken by staffing three wards in the hospital block and three wards for chronic and convalescent male patients with female nurses.

PROVISION FOR MENTAL DEFECTIVES

The Edinburgh District Board of Control has recently purchased the estate of Kellistoun in the parish of Ratho for the purpose of providing accommodation for the housing of mental defectives. This board already possesses Gogar burn, a house and estate in the immediate neighbourhood, in which mental defectives have been segregated for some years past. It is expected that provision will be made in the course of a comparatively few years for the settlement, in the house and in cottages still to be built, of approximately a thousand mental defectives. Under the scheme of the Board of Control for Scotland, by which the larger towns are to provide accommodation for the mental defectives of the surrounding sections of the country, those mental defectives, for which Edinburgh is responsible, will be drawn from the whole of the south-east of Scotland. Kellistoun extends to over 360 acres, and seems to be admirably adapted for the purpose in view.

ROYAL INFIRMARY, EDINBURGH. RETIREMENT OF LADY SUPERINTENDENT

A committee of the visiting staff of the Royal Infirmary, Edinburgh, waited upon Miss A W Gill, lady superintendent of nurses on August 25th, for the purpose of presenting her with two pieces of plate on the occasion of

her retirement from her present post Miss Gill retires at the end of this month and is succeeded by Miss Bladen, who at present holds the post of assistant superintendent. The presentation took the form of a large inscribed silver tray and bowl, which are replicas of two of the larger pieces of the ancient Roman Treasurers' treasure. Dr Haig Ferguson, chairman of the visiting staff, referred to the great regret felt by his colleagues at Miss Gill's approaching departure.

England and Wales.

SANITARY CONFERENCE IN LIVERPOOL

THE thirty eighth annual conference of the Sanitary Inspectors' Association was held in Liverpool under the presidency of Sir William J. Collins, K.C.V.O., M.D., on September 9th, 10th, and 11th. Some 750 delegates and representatives of local authorities were present. Founded in 1885 by the father of British sanitary science, Sir Edwin Chadwick, the association has steadily grown, and its work may be justly regarded as ancillary to preventive medicine. The presidential address passed in rapid review the progress of knowledge during the last one hundred years. The speaker referred to the centenary of Huxley's birth and his life work, which he brought before his hearers in juxtaposition with the recent State trial of a school-teacher in Tennessee. Religion and science alike, he said, were in quest of truth, stood in no need of the protection of authority, but flourished best in an atmosphere of free and unfettered thought. Passing to the subject of evolution and disease, Sir William Collins urged that if it be true that in the life-history of the lowest organic things by the momentous influences which determined plagues and pestilences, it was reasonable to believe that in organisms whose cycle might be less than an hour and whose rate of propagation was incalculable, evolution might be powerfully at work, eventuating in the survival of those most fitted to their environment. Man's influence in this, as in other directions, might modify natural selection, and by acting in accordance with law learn to conquer Nature by submitting to her. The president then alluded to the cancer germ, and the various statements made recently by observers, showing that the whole subject still required most painstaking research before any definite conclusion could be reached. Neither the parasitic nor the chemical theory settled the question, and Sir William thought that by a return to cellular pathology, illuminated by evolutionary principles, they might seek for the intrinsic rather than the extrinsic causation of cancer. His concluding remarks dealt with the imperative need for reform in death certification and coroners' law.

Milk Slums and Rehousing

Clean milk and its distribution was fully discussed. Not palatial cowsheds so much as systematic methods of ideal cleanliness in utensils and the importance of the human factor were the points to be kept constantly in view. In short, the public and all concerned with milk production required to be educated in the importance of physiological cleanliness. Slum clearances and rehousing called forth an animated discussion, especially on the latter topic. The chairman of the Edinburgh Public Health Committee expressed his astonishment that Liverpool and London were going against all the teaching of the last fifty years by proposing to aggregate populations in high tenement dwellings. In Scotland they had been doing their best to get rid of the "vertical slums" which all medical officers and sanitary inspectors had declared to be adverse to the health of the individual. Some of the speakers thought that motives of economy were the deciding factors in erecting barrack tenements, and apparently no speaker spoke with enthusiasm in favour of such dwellings.

Smoke Abatement Marine Sanitation

The domestic chimney was blamed as much as the factory one for air pollution, and the Liverpool city analyst stated that in one year in Liverpool the rainfall in twelve months

brought down as much as 550 tons of dirt and carbonaceous products to the square mile. One delegate suggested that a new type of fuel, combining the advantages of coal and coke and eliminating their drawbacks, was urgently required. This would be less costly than converting millions of fireplaces into gas or electric heaters. A plea was put forward for better hygienic quarters for our seamen, and it was stated that, instead of lagging behind, we, as a maritime nation, should set up a higher standard than the Board of Trade at present required. The Ministry of Health and the port sanitary authority should undertake this duty.

TREATMENT OF SCHOOL CHILDREN

The Board of Education has now confirmed, with one or two minor modifications, the draft regulations for special services published in February, and these regulations including those for the medical inspection and treatment of children in elementary and secondary schools, can now be obtained in a single pamphlet. Each local authority must appoint a school medical officer approved by the Board, and, if required by the Board, submit annually a statement of its proposals for the special services of medical inspection and treatment, the provision of meals, the organization of physical training, and the cure of defectives. Emphasis is laid upon the need for securing a proper relation between these special services and other educational and public health services, with such adaptation to local needs as will ensure the provision of a comprehensive scheme for promoting the physical and mental development of all children in the area of the authority. Each child in a public elementary school must be medically examined on admission, and on reaching the ages of 8 and 12 years. Arrangements must be made for treating children with defects of the eyes and teeth, minor ailments, and enlarged tonsils and adenoids. Students under the age of 18 at secondary and continuation schools, pupil teacher centres, and junior technical schools must also be supervised medically, and treatment may be arranged. In the case of unsexed schools adequate arrangements must be made with regard to health, nourishment, and physical welfare. Records must be kept, and returns furnished as desired. If the local sanitary authority, or any two members of it acting on the advice of the medical officer of health, require either the closure of any premises used for the performance of a special service, or the exclusion from it of certain pupils with a view to preventing the spread of disease, such requirements must be complied with at once. Where meals are supplied to children attending public elementary schools the regulations laid down provide for the keeping of records of the effect of the meals on the physical and mental condition of the children, and the association of the school medical service with the planning and administration of the arrangements.

PUERPERAL FEVER BEDS IN LONDON

The Minister of Health, in a recent circular, states that he has had under consideration the hospital accommodation available in London for cases of puerperal fever, and he is satisfied, as a result of inquiries, that further special facilities, both for nursing and for medical treatment, are required, with a view to reducing the mortality from this disease. Arrangements have accordingly been made by the Metropolitan Asylums Board whereby in future the cases of puerperal fever referred to the Board will be concentrated, as far as practicable, in three of its institutions—namely, the Finsen Hospital, Homerton, the North-Western Hospital, Hampstead, and the South-Western Hospital, Stockwell—where special wards will be set aside for these cases and special medical and nursing staffs provided. The Metropolitan Asylums Board has also, with the Minister's approval, appointed an obstetric consultant at these three institutions. It is recognized that suitable accommodation for cases of puerperal fever is available at other institutions, but the Minister trusts that the metropolitan borough councils will take steps to secure, as far as practicable, that full use is made of the accommodation provided by the Metropolitan Asylums Board.

¹ Board of Education Statutory Rules and Order, 1925 No. 835. Price 4d. net.

Commission announces that the good round figure of 10,000 additional beds is needed in England and Wales. Apparently the 10,000 must spring up, like mushrooms, in a night. There is no time to wait, no time to make small additions in the more urgently pressed districts, no time to make up gradually the loss in the war. The 10,000 in a night are beyond the resources of the voluntary system. Let the taxpayer stand the racket. And it once eminent members of the Association leap in to hit the scheme.

There is no reason to deny the need for more hospital beds, even if the number required may not be quite so round as the Commission suggests. Nor is there reason to deny the services rendered by the State in many medical problems. But at a time when economy is said to be urgently necessary there are a few questions which may be raised about precipitate action towards the socialists' ideal. For example, how does this country stand in matters of health as compared with other countries? Are we falling so much behind other nations in healthiness that nothing but the immediate provision by the State of 10,000 beds will save us? Must the envious eyes of Mr. Souttar be at once gratified by more superb clinics than those of our friends abroad? And must reluctant Divisions be once more stirred up to elect representatives on Local Voluntary Hospital Committees for the purpose of booming Mr. Bishop Humber's hospital policy, or defending the rights of Dr. Flemming's cottage hospitals?

In answer to all these questions there appears in the Commission's report one small gleam of hope—namely, that in the last two years there has been improvement in the expansion of hospitals, an improvement which is noted as evidence of the vitality of the voluntary system. Might not the socialist zeal of our conservative reformers be curbed by fanning this gleam of voluntary effort into a ruddier glow? The gleam suggests that there may be methods by which the 10,000 beds might be got by degrees, without the intervention of State subsidies. The methods may require effort, and it is easier, no doubt, when tired of effort, to nationalize mines, railways, transport, and hospitals. It is doubtfully desirable to do so.

The Commission's report seems to have one merit which has not been noticed. It appears to have cold shouldered the other idealistic scheme—that of the Minister of Health's Consultative Council on Medical and Allied Services—I am, etc.,

FELICAD Sept 13th

CHAS BUTLER

THE SURGEON AND THE PUBLIC

SIR,—In spite of the advance in medicine and the more striking progress in surgery in recent years, I am sure that all physicians and surgeons who have the cruse of medicine at heart must feel much dissatisfaction with the present state of things. For one reason or another patients drift on with their illnesses to a stage at which it is impossible to effect a cure or some drastic operation has to be performed, when a relatively simple procedure at an earlier date would have sufficed.

A critical review of surgical literature and statistics shows that surgeons are operating in a distressingly large proportion of cases for the complications of surgical lesions, and not for the primary surgical complaints. For example, the Registrar-General's statistics show no diminution in the death rate from acute appendicitis, and if we put side by side the statistics from any large general hospital, which will show that in the majority of cases coming to operation the infection has already spread beyond the appendix, it is evident why the results are still so far from satisfactory. The same may be said of many other diseases.

How are we to improve things? By education. In some way it should be made easier for general practitioners to see what is going on at the teaching hospitals, so that they may keep in touch with old and new methods of investigation and treatment, especially as applied to their own cases after admission. It would be of immense value to include as a part of the curriculum at least a six months' appointment at a teaching hospital immediately after the final examination, even if this meant taking six months out of the pre-examination stage, for I believe more useful know-

ledge is acquired after the examinations are out of the way. At present too many men go into general practice without any post-graduate hospital experience. There would be difficulties at some of the larger schools, but if it were a compulsory regulation these difficulties would have to be, and could be, overcome. Increasing the number of appointments and a redistribution of the students would go far to put this right.

I have mentioned medical education first, but I do not wish to imply that the medical profession alone is to blame, much educational reform has been achieved already in this respect. In my experience the harm has been done in many cases before a medical man has been consulted. I will mention only two conditions—acute appendicitis and cancer. In the first, the patient, usually a child, complains of acute abdominal pain, and is promptly given an aperient by its parents, who act according to the popular tradition that "a good clear out" is all that is required, when the expected cure is not produced the doctor is sent for, maybe two or three days after the onset, perforation having in the meantime been precipitated by the aperient. In the second condition there is such a universal dread of cancer, such a feeling of certainty that it is the disease contracted, such a profound conviction that nothing useful can be done, and such a terror of the operation which is felt to be the inevitable outcome of consulting a doctor, that the period in which surgery can be depended upon to effect a complete eradication is already gone before a medical man is consulted. In other words, the patient does not give his doctor a fair chance. Come, it is time is inidious in onset but it gives rise to early signs and symptoms which are sufficient to warn those who do not wish to deceive themselves. The great field for education lies in this direction, and hitherto no attempt has been made to tackle it with energy and determination. We have everything at hand for such a campaign if we decide to act—namely, wireless and the press.

I believe that the broadcasting of indisputable, elementary facts would produce an immediate and extensive permeation which would have immense benefit. A person appointed by a responsible body, such as the Ministry of Health, would be listened to very carefully, for discussions on health are the most enthralling of all topics to a large section of the community. It would be easy to think of scores of simple facts to broadcast, but if only one—namely, that it is dangerous to give aperients for acute abdominal pain without the sanction of a doctor—was thoroughly thrust home, I believe we should see an immediate and vast improvement in the results of operation for acute appendicitis. At any rate it would be an easy way of testing the value of this educative method. Until there is a more intimate knowledge on the part of the public of such simple medical facts, I can see little hope of any rapid advance in the earlier recognition and treatment of disease. It is a tradition of medicine to condemn advertisement by its practitioners, but it seems to me a calamity that elementary knowledge of an official kind should be withheld from the public, while pernicious statements on behalf of quick remedies are allowed to be published wholesale.

In the distant future the need for surgery will no doubt steadily diminish as the efficiency of preventive medicine and education increases, but this is not the trend of affairs at present. The field of surgery is extending and also the number of operations in each area, but opportunities for early surgical intervention lag lamentably behind. However, taking things as they are, much can be done by giving oneself wholeheartedly to the attainment of the utmost possible for each patient as he comes, and here I think there is room for much improvement in surgery. It should be the aim of surgeons to do all in their power to remove from the public mind the widespread terror of operation. Fear of death is at the root of this terror, and much good would accrue here from the occasional surgeons relinquishing their efforts to perform serious operations, this is work for professed surgeons through whose hands such cases are constantly passing, and whose results are, therefore, better. Again, it is a reproach to surgery that a second operation should have to be performed for a condition which ought to have been cleared up on the first occasion. Recurrence of a hernia, overlooking a stone in the common duct when

doing a cholecystectomy, or injuring the duct, doing an operation for a condition diagnosed clinically but not found at operation, and not exploring the whole abdomen, thus missing the real lesion—these are some of the more common reasons for the necessity of secondary operations, which should very rarely arise when the primary operation is done by a competent surgeon. It is not difficult to appreciate the effect of this kind of thing on the attitude of the public towards surgery. Another matter to which the careful surgeon pays great attention is preparing his patient for operation. It is not enough to decide that an operation is necessary and to proceed with it forthwith. The utmost pains must be taken to ensure that the patient is in the best possible condition to undergo it. This may take much time, but the labour will be well repaid, and the public ought to be in a position to know that they are getting all that is necessary in this respect, as well as the requisite skill in the actual operation.

Many other things can be done to help towards creating a better popular feeling towards surgery, but I will only note one, and that is diminishing the dread of the anaesthetic. Since it has become the custom to give a preliminary injection of scopolamine, morphine, and atropine, the mental alertness of the patient prior to the anaesthetic has been much reduced. But to keep him in this muzzy state he must have the least possible stimuli to disturb him. Noise, light, talking, and jolting on an ambulance should be avoided. It is no use stupefying the patient with morphine and then making him walk to the theatre, though this is not infrequently done. When all these precautions have been taken, and the patient is anaesthetized with gas and oxygen in the first place, it is quite a common experience to hear him ask, as he comes round, when the operation is going to take place.

Attention to such matters as I have referred to should do much to encourage an attitude of mind towards surgery which will lead to the getting of cases at the earliest possible moment. But even with perfection in the practitioner, a perfect result cannot be attained without the utmost co-operation on the part of the patient, and this, I hold, can only be achieved by a well organized and sustained campaign of public education—I am, etc.,

Leeds Sept 14

E R FLINT

"GENERAL" OR "SEPTIC" PERITONITIS

SIR,—I have been greatly interested in Mr A J Blackland's article on the treatment of acute spreading peritonitis, as published in your issue of June 6th last (p 1037). He gives an admirable summary of Mr Sampson Handley's methods in the treatment of these desperate cases, mentioning that three out of the four cases reported by Mr Handley recovered.

Mr Blackland concludes an interesting account of his own case with the remark that he presumed it could be "wise to combine cecostomy with the anastomosis" (ileo- or jeuno-cecostomy), as recommended by Mr Sampson Handley. Undoubtedly it would. But it may be well to point out that a number of these desperate cases may be cured by the simple operation of cecostomy alone, as advocated and successfully carried out by the late Arthur Nixson in his work as gynaecologist to the Perth Hospital, Western Australia, and reported under the heading of "Intestinal drainage in septic peritonitis," at various times, in the *Medical Journal of Australia*, the *Lancet*, and the *BRITISH MEDICAL JOURNAL*. A later paper embodying his matured views on this subject appeared in the *British Journal of Surgery* of July, 1917, with the title "Cecostomy in septic peritonitis." The last six cases treated by him at the Perth Hospital all recovered with the simple operation of cecostomy alone and have been fully reported elsewhere—I am, etc.,

FRANK A. NIXSON, M D

Melbourne Australia July 15th

TESTS FOR DRUNKENNESS

SIR—In your issue for September 12th (p 495) Mr Howard Stratford advocates the formation of a committee to determine the tests for drunkenness. Might I venture to suggest that the time has arrived to drop the use of

these words "drunk," "drunkenness"? Are they not a complex of two often conflicting ideas which, in interpretation by the police and the doctor, lead to different conclusions, and possibly to the unedifying spectacle of doctors differing in public courts?

During the war an adjutant, keen to remove an undesirable officer from his regiment, caused me to be called to see this officer, and later involved me in a court martial. My senior medical officer (an old I M S colonel) advised me not to use the word "drunk", not to accept it when an endeavour would be made to put it into my mouth, and to content myself with a statement that "in my opinion the officer was, when I saw him, not capable of performing his duties, as he was at that time suffering from an excess, for him, of alcohol." The defending counsel, supplied with medical tomes, was waiting to tie me up in a knot, the presiding general and his colleagues—obsessed and bound by the King's Regulations—tried to force "drunk" upon me, and looked helpless and foolish when I stuck to my statement, asking them what they meant by "drunk." The officer got off!

Many an elderly lady patient takes a nightcap which is, in its desired action, undoubtedly an excess of alcohol for her, but did her doctor tell her that she was drunk she would be very much scandalized. Also, many a highly placed personage, after a banquet, is suffering from an excess, for him, of alcohol, and yet is capable of performing his immediate duty of walking home, although he could not have managed a motor car. In the former position the police would leave him alone, whereas the doctors who might see him would, by calling him "drunk" in both positions, have brought that highly placed personage into a police station and before a magistrate.

If the suggested committee of investigation would condemn as obsolete the use of these words and would elaborate definitions and symptoms by which each individual instance could be judged by all parties concerned, it would help undoubtedly to remove the fog which at present surrounds the question—I am, etc.,

Hove Sept 12th

E ROWLAND GUTHRIE

SIR,—Mr Howard Stratford's letter in the *JOURNAL* of September 12th (p 495) is of interest in more ways than one, as it shows the very vague ideas which the otherwise intelligent man has as to the methods applied in examining a case of "drunk in charge" (of a motor car). We are all agreed that the signs he enumerates "are not necessarily signs of drunkenness in themselves, or even if associated." No sane medical examiner would omit to take into consideration emotional stress or temperament, but even more so would he make careful inquiry into the whole circumstances and hear the story which the detained driver has to tell before forming any conclusion.

The experienced divisional police surgeon realizes more than most men the gravity of such a charge, and is unusually careful in his examination of a person detained on such a charge. He has the great advantage, however, of seeing the case much earlier, as a rule, than any other medical man—although, in our experience, even when a second medical man has been called on the prisoner's behalf it is very rarely found that the second opinion disagrees in any material sense with the first.

Mr Stratford does not realize that quite a large proportion of such cases are "tuned down" on the police surgeon's report and are not charged at all, the public only hear of those who are charged.

The onus of conviction does not rest upon the police surgeon's report, which is merely a medical opinion, given in the interests of the public, it is the magistrate who has to sift all the evidence, and who decides the case on the facts elicited from that evidence.

If Mr Stratford had made a few inquiries before writing his letter, he might have heard that a special committee is already in existence and is sitting, the object of which is to elucidate the very points to which attention is drawn in his letter, the committee is meeting with the full approval of the Commissioner of Police.

Lastly, both the police and the divisional surgeons dislike "motor drunk" cases more than any others and the

public can be quite happy in the knowledge that no case is taken into court unless the evidence of all kinds is of the strongest—We are, etc.,

PLUCY B. STUNCIN,
President Metropolitan Police
Surgeons Association

A. R. MOORE,
Senior Honorary Secretary
Metropolitan Police Surgeons
Association

London Sept 13th

PREVENTION OF RHEUMATISM

SIR—Much has been written of late years about the prevention of rheumatism. Prevention resolves itself into the management of the so-called rheumatic diathesis. This only is true prevention. The timely treatment of active rheumatism or of threatened rheumatic breakdown is preventive only in that the more serious sequelae are avoided. What, then, is the most effective management of the rheumatic diathesis? How are we to prevent?

English writers seem to confine their recommendations to the avoidance of exposure to cold and wet. In effect this amounts to very little, especially with the poorer classes, amongst whom rheumatism largely takes its toll. It is hardly more than one would advise for any child, rheumatic or otherwise. The advice lacks definiteness, or it may result in overclothing, which in itself may do as much harm as good. From the above standpoint, I think, we must admit that, apart from the early recognition and treatment of threatening or progressive rheumatic disease—which, it should be noted, belongs to the sphere of treatment rather than of prevention—little, if anything, can be actively undertaken as a true preventive measure.

A different view is taken by American writers—at least by Charles G. Keiley of New York. He urges that the prevention of rheumatism consists in the proper management of the so-called vice of constitution. He says these children "have a poor fat and sugar capacity, especially for cow sugar and cow's milk fat. The nearer the approach to a vegetable and cereal diet, the better for the patient." He forbids red meat, whole milk, eggs, yolk, and artificial sugar entirely, or almost so. He mentions "stomachic grum without other treatment when the sugar and cow's milk fat were removed from the diet." He differs, further, in advocating a cold splash or douche after the bath at bedtime, followed by a vigorous rubbing. As a preventive he gives sodium bicarbonate generally without sodium salicylate, and adds that "lithemic children cannot bear alcohol." "All the measures suggested, without the withdrawal of sugar and fat largely from the diet, are of little avail."

There is a profound difference here. Still, for instance, makes no mention of diet whereas Keiley makes it the mainstay of his preventive regimen. Has the dietetic management of the rheumatic diathesis been neglected in England, or is there a difference between English and American rheumatism? As a school medical officer I would welcome information on this point, for presumably the school medical service is one of the most important agencies through which this prevention may be effected, and according to the English view there appears very little that can be done—I am, etc.,

Gem Street School Clinic
Birmingham Aug 28th

E. H. WILKINS

THE SPAHLINGER TREATMENT IN BOVINE TUBERCULOSIS

SIR—With reference to the annotation on the above subject in your issue of September 12th (p. 488), may I say that (1) several Cheshire agriculturists were approached with a view to investigating the efficiency of the Spahlinger treatment, (2) this committee co-opted medical and veterinary assistants, (3) a representative technical committee was formed, (4) the committee has the benefit of the assistance of representatives of the public health department of the county council and some others working in connexion with that department, and, if the work

develops further, attempts will be made to secure the co-operation of some of the best known scientific workers.

While fully realizing that the preparation was to a certain extent a "secret remedy," this committee feels that it would be doing useful work if the efficiency of the treatment were proved or its inefficiency exposed, in order to dispel the great amount of uncertainty and doubt that exists in many people's minds with regard to these remedies. I would finally point out that this committee did not make the first move, it has no desire to work alone as far as other scientific workers are concerned, and it is I am sure, ready to work in co-operation with any scientific body—I am, etc.,

JAMES BAYLY,
Chairman Bovine Tuberculosis
Committee

Willaton Hall, Nantwich
Sept 1th

THE MORBIDITY AND COMPLICATIONS OF DIPHTHERIA

SIR—The answer to Dr. Cameron Kidd's question (August 29th, p. 398) is simply that in the area which he controlled antitoxin may not be given with sufficient frequency on the first or second day of disease—that is, before the case comes under his care. The tables of the McCombie report (which was issued, if my memory is not at fault, somewhere about 1897) show conclusively that the mortality of cases injected on the first day is nil, and that it rises very steeply as each day passes by without antitoxin. The reason of this I believe to be inaccurate interpretation of bacteriological reports by the clinician. Instead of giving antitoxin to every case of suspicious sore throat in a child—which has long been established as the correct procedure—it is quite a common practice to wait for the result of bacteriological examination, and not to give antitoxin if the report is negative.

An experience of twenty-nine years' work in the examination of throat swabs has led me to emphasize that the failure to find diphtheria bacilli in a single swab from an acute case is not only of no clinical value whatever, but is dangerous for the reason given above. For instance, I have repeatedly failed to grow diphtheria bacilli from membrane removed from the trachea in cases of undoubted diphtheria for which tracheotomy was required. On the negative reports from the laboratory of which I am director the following words are printed:

'N.B.—This is a report on the result of bacteriological examination only and does not constitute a clinical diagnosis of diphtheria in the patient nor is it a certificate of freedom from infection.'

I suggest that this procedure might be more widely adopted. As regards the examination of swabs, I think that false negative reports are not infrequently issued owing to undue reliance on specific stains. The morphology of the bacilli should always be studied, and is of major importance—I am, etc.,

London W.C. Aug 29th

A. KENNETT GORDON

COLLECTIVE INVESTIGATION OF RHEUMATOID ARTHRITIS AND ALLIED CONDITIONS

SIR—I also welcome Dr. Logan's suggestion (August 8th, p. 271) as to organization of research in chronic arthritis. Having devoted much time and attention to the subject for twenty-five years at least, I naturally have arrived at certain conclusions. One which stands out very clearly in my mind is that if one is to be successful in effecting something approaching a cure, one must be prepared to continue treatment for an indefinite number of years, using a remedy, amongst others, that is designed to promote the destruction of micro-organisms. In continuous counter-irritation I believe we have such a remedy, and I have proved to my own satisfaction that with due skill and care it may be employed with little or no intermission for ten or more years in an obstinate case.

So far I have never seen any harm that could be traced to the treatment. In my opinion short periods of treatment are of little value—I am, etc.,

Bournemouth, Aug 22nd

WILLIAM J. MIDELTON

Obituary

JAMES MURDOCH BROWN, M.D., F.R.C.P. Ed.,
Formerly Assistant Physician Edinburgh Royal Infirmary

A GENERATION ago the name of Dr. Murdoch Brown was a very familiar one to Edinburgh students, and will recall a short active figure and a quick keen intellect endowed with a genius for the teaching of clinical medicine.

Born in Dunfermline seventy-seven years ago, James Murdoch Brown, after a preliminary training in his father's business, went to Dundee and Flockhart's firm in Edinburgh to complete it. His energetic mind, however, led him to proceed to the study of medicine, and he entered heart and soul into this, having a most successful career as an undergraduate in the University of Edinburgh. Taking his M.B. and C.M. degrees with highest honours in 1874, he was awarded the Pittsler scholarship as the first man of his year. He was not long in building up a first-class practice, and while heavily engaged in private work found time to fill the post of clinical tutor to the university medical wards. He became a Fellow of the Royal College of Physicians of Edinburgh in 1880, and proceeded M.D. in 1897. In due time he was appointed assistant physician to the Royal Infirmary, where his powers of clinical diagnosis had full scope for development, and were utilized to the full by his chief, Sir James Affleck, in connection with the ward teaching.

Eighteen years ago he was laid aside by a serious illness involving a severe operation, from which his recovery was slow. This brought out all his indomitable determination, but he never could resume work. The end came peacefully on September 3rd, soon after his return to Edinburgh from a residence on the Clyde, which he loved so much and where he spent his summer vacations in the height of his practice, sailing his steam yacht and entertaining his friends. incisive in speech, trenchant, upright, and straightforward, he was a keen and fair controversialist, kindly and affectionate, he was a staunch friend, and to his patients he was ever a sheet-anchor.

Dr. Murdoch Brown is survived by his widow and son, his two daughters having predeceased him some years ago.
J O

W J LEIGHTON, M.D., B.Ch.,

Assistant Surgeon St John's Ear Hospital, Manchester.
Dr. WILLIAM JAMES LEIGHTON, who was killed in a motor-riding accident on September 8th, at the age of 42, received his medical education at Queen's College, Belfast, and Dublin, graduating M.B., B.Ch., B.A.O. Belfast, with honours, in 1906, and proceeding M.D. in 1909. He was an active supporter of the British Medical Association since 1912. He had been a member of the Executive Committee of the Preston Division, in 1921 he was elected deputy representative and from 1922 he had been the representative of the Division in the Representative Body.

Dr. F. H. M. MILLICAN (Glossop) writes: Though we were previously students together I first became intimately acquainted with Leighton at Purdyburn Fever Hospital, Belfast, where we were the first medical residents, going in just prior to the opening of the hospital for patients in November, 1906. Shortly after this Belfast was visited by a very severe epidemic of cerebro-spinal fever, and very many patients were sent to the hospital, the first cases were admitted just after Christmas and were diagnosed by Dr. Cudner Robb, the visiting medical superintendent as cerebro-spinal fever, being the first in the city to be so diagnosed. This outbreak brought Leighton and myself very closely together, and resulted in a friendship which remained to the end. He left Purdyburn Fever Hospital at the end of 1907, and took up resident medical appointments, first at the Bellinghrook Hospital, London, and later at Belford County Hospital, he eventually commenced practice in Chorley fifteen years ago. He was a man of many activities, and in intense life had a habit of throwing himself whole-heartedly into a matter he had in mind. He was an honorary member of the staff of St John's Ear Hospital, Manchester, and of Chorley Hospital. He took a keen interest in the welfare of the

latter, and particularly in its reorganization, he attended a meeting of the management called for this purpose the day before his death. Like his father, he was an enthusiastic Freemason, and he took an active interest in medical and national politics. A Conservative by conviction he was essentially open-minded and a man not to be blindly led. He had latterly interested himself in the formation locally of what one might call a "Young Conservative" movement, those who have read *Coningsby* will know what I mean. The heavy burden thrown on the working class by the economic conditions prevailing in the Lancashire cotton area was a matter for which he felt some relief ought to be provided. The necessity of many mothers of young children having to go out to work so as to render the family budget sufficient for living needs was, he thought, fundamentally wrong. He had sized up the evil effects of this upon the health of the community, and he sought a remedy. Like many medical men, he gave a great deal of his professional services without hope of reward, he was always ready to help his colleagues, and during health week he went to many districts to "lend a hand." He had the happy knack of making medical topics clear to the general public, and his services were much sought after. No trouble was too much for him. In character he was outspoken, perhaps brusque, but he was bubbling over with kindness—a real Ulsterman. He was a sincere and loyal friend, and at the Bath Annual Meeting he was delighted to have met again so many of his old friends and acquaintances from the Belfast Medical School. Just prior to his death he spent a holiday in Ireland, and had attended the golden wedding of his parents. To his wife and young daughter, and his father and mother, the sympathy of all his old college chums and medical friends will go out.

Dr. CHARLES EDWARD RYAN of Tipperary, who died on June 24th at the age of 75, was educated in Dublin, where he obtained the diploma of M.R.C.P.I. in 1894, the L and L.M. in 1872, the L.R.C.S.I. in the same year, and F.R.C.S.I. in 1894. He served with the American Ambulance throughout the Franco-Prussian war, and was present at the battles of Sedan and Orléans. He later published a book giving a graphic account of his experiences, including those in the siege of Paris. During the recent war he was associated with the Tipperary Command Depot and Military Hospital. Dr. Ryan was Chevalier of the Order of Louis II of Bavaria, and received the French war medal, 1870-71, and the bronze cross of the French Ambulance Society. He was a justice of the peace for the county of Tipperary, where he carried on an extensive private practice. For nearly fifty years he was a member of the British Medical Association.

Dr. WILLIAM BARCLAY LIVERMORE, who died at Plymouth on August 24th, aged 62, received his medical education at Aberdeen University and the Westminster Hospital. He graduated M.B., C.M. Aberdeen in 1883 and proceeded M.D. in 1918. After a period of private practice at Cleckheaton in Yorkshire he devoted himself to the study of tuberculosis and was appointed medical superintendent of the Didworthy Sanatorium for Devon and Cornwall, which post he held with considerable success for fifteen years. On his retirement he was appointed consulting physician to the institution, in recognition of his constant and zealous attention to the welfare of his patients.

The death occurred on August 2nd, at his home in Beaminster, Dorset, of Dr. THOMAS PALMER DANIEL in his 89th year. Following the profession pursued by his father and ancestors for two hundred years before him, he studied medicine at St Bartholomew's Hospital, obtaining the diploma of M.R.C.S. Eng. in 1858 and the L.S.A. in the year following. He was for two years assistant to Dr. Lovell Drage of Hatfield, and in 1861 he returned to his native town of Beaminster where he entered into partnership with his cousin, William Daniel, in the practice formerly held by their respective fathers. Dr. Thomas Daniel lived and died in the house in which he was born,

on property which has been in the family since the reign of Henry VIII. He was a late vice-president of the Dorset and West Hants Branch of the British Medical Association, and took keen interest in professional matters until illness compelled him to give up work twelve months before his death. He leaves one son, and two daughters, the elder being the wife of Dr W. M. Willoughby, medical officer of health, Port of London, and the younger the wife of Mr A. A. Pim, who carries on the practice in Bournemouth.

Universities and Colleges

SOCIETY OF APOTHECARIES OF LONDON

Dr T. VINCENT DICKINSON, physician to the Italian Hospital, has been elected Master of the Society for the ensuing year, in succession to Dr A. D. Birchley.

The Services

BLANE MEDAL

SURGEON LIEUTENANT COMMANDER LIONEL I. STRECKELL, M.B. R.N., has been awarded Sir Gilbert Blane's Gold Medal, he having obtained a first class certificate at the examinations held in 1925 for promotion to the rank of surgeon commander.

DEATHS IN THE SERVICES

Surgeon Commander Frederick James Burns, R.N. (ret.) died at Hampstead on August 3rd. He was the son of the late Mr James Burns, editor and proprietor of the *Acquy Reporter* and was educated at Belfast, graduating as M.D. in 1884 and M.Ch. in 1885 in the Royal University of Ireland. He entered the navy soon afterwards, and attained the rank of fleet surgeon in 1902. He served for some time on H.M.S. *Terion*. During the recent war he was senior medical officer of H.M.S. *Orion* until invalided for renal disease. His remains were interred at St. Patrick's Church, Newry on August 7th.

Colonel Charles Henry Swaine, D.S.O. Army Medical Service (ret.) died recently at West Palm Beach, Florida, aged 76. He was the second son of the late Dr A. C. Swaine, J.P., of Carrick on Shrumon and was born at that place. He was educated at the Ledwith School, Dublin, where he won prizes in medicine, surgery, and midwifery, and took the L.H. at Dublin and the L.R.C.P. and S. at Edinburgh in 1870. He entered the army as assistant surgeon on March 30th 1872, reached the rank of colonel in November 1902, with over thirty years' service, and retired in September 1905. He served in the yellow fever epidemic in Trinidad in 1881, in the Sudan campaign of 1884-85, with the Nile column, in charge of the Dongola field hospital, receiving the medal and the Khedive's bronze star in Burma from 1886 to 1889, medal with two clasps, and in the final campaign of 1897-98 on the north-west frontier of India, when he received the frontier medal with two clasps and the D.S.O. In 1896 he married Margaret Blakeney, daughter of the late Mr David Gillies of Londonderry, and had two daughters.

Medical News.

THE Westminster Hospital annual dinner will be held on Thursday, October 1st, at Oddino's Imperial Restaurant, Regent Street, W., at 7.30 p.m., under the chairmanship of Dr H. B. Brackenbury.

At the opening of the new session of the Middlesex Hospital Medical School the prizes will be distributed in the Queen's Hall, on Thursday, October 1st, at 3 p.m., by the Hon. Sir Arthur Lawless, and the inaugural address will be delivered by Dr C. I. Lakin on tradition in medicine. The annual dinner will be held that evening at the New Criterion Restaurant, Regent Street, with Sir Arnold Lawson in the chair.

THE opening ceremony of the winter session at King's College Hospital Medical School (University of London) will be held on Thursday, October 1st, at 2.30 p.m. The introductory address will be given by Sir Arthur Keith, M.D., F.R.S., Hunterian Professor of the Royal College of Surgeons of England. The annual dinner of past and present students will be held at 7.30 on the same day at the Connaught Rooms, Great Queen Street, W.C., with Sir Lenthal Cheble in the chair.

THE opening meeting of the new session of the West London Medico-Chirurgical Society will be held in the society's rooms at the West London Hospital on Friday, October 2nd. The chair will be taken at 8.30 p.m., when the president, Dr H. W. Armistead, will read his presidential address entitled "Thirty years of general practice."

At the opening of the winter session 1925-26 of the University of Durham College of Medicine, Newcastle upon Tyne, an introductory address will be given by Sir Humphry D. Rolleston, Bt, K.C.B., M.D., President of the Royal College of Physicians of London, Regius Professor of Physic, Cambridge, in the Examination Hall of the College on Tuesday, October 6th, at 4.30 p.m. The title of the address is "Physic and poetry."

THE opening lecture of the winter session at the Central London Throat, Nose, and Ear Hospital, Gray's Inn Road, will be given on Tuesday, October 6th, at 4 p.m. by Dr William Hill. The title of the lecture is "The practice at the Central in the late eighties: a period of marked advance and foreshadowing many modern improvements in technique."

THE annual dinner of the Society of Medical Officers of Health will be held at the Piccadilly Hotel on Friday, October 16th, at 7.30 p.m., with the new President (Dr G. I. Bachy) in the chair. Among those who have accepted invitations are Sir Kingsley Wood, M.P. (Parliamentary Secretary, Ministry of Health), Sir Arthur Robinson, Sir George Newman, the Right Hon. Sir Alfred Mond, M.P., the Hon. G. I. Stanley, M.P., Sir St. Clair Thomson, Sir Walter Hecker, Sir Dawson Williams, Sir Squire Sprague, Lieut. General Sir W. B. Leishman, Surgeon Vice Admiral J. Chambers, and Dr R. A. Bolam (Chairman of Council, British Medical Association). Ladies are invited and members are asked to give early notice to the Executive Secretary, 1 Upper Montague Street, Russell Square, W.C.1, of their intention to be present, with the names of their guests. A payment of 12s. 6d. for each ticket should be made with application sent before October 10th, after that date the cost will be 15s. each.

THE Fellowship of Medicine announces that a fortnight's intensive course in medicine, surgery, and the special departments begins on Monday, September 21st, at the Westminster Hospital, and on the same day a two weeks' course in diseases of the chest will commence at the Brompton Hospital. Dr C. B. Heald, at the Royal Free Hospital, will give the first of a series of four week lectures on electrotherapy on Wednesday, September 23rd, at 5.30 p.m. A series of lectures on tuberculosis will be given in the lecture room of the Medical Society of London, 11 Chandos Street, commencing on October 12th, at 5.30 p.m. and open to all members of the medical profession. Other courses during October include a special course in diseases of the throat, nose, and ear at the Central London Throat, Nose, and Ear Hospital with an operative surgery class, a course in tropical medicine on Tuesdays and Thursdays, a combined course in diseases of children, a course in urology at the St. Peter's Hospital, and a course in dermatology at the St. John's Hospital. Further information may be obtained from the Secretary, 1, Wimpole Street, W.1.

J.H.L. Sims Woodhead's series of constructive educational health lectures will be given under the auspices of the People's League of Health at the Regent Street Polytechnic on Friday, October 9th, at 6 p.m., and on the following five Fridays at the same hour. Information regarding the lectures may be obtained from Miss Olga Netherlands, 12, Stratford Place, London, W.1.

MR JOHN SCOTT RIDDELL, C.B.E., M.B.O. consulting surgeon to the Royal Infirmary, Aberdeen, has been appointed a Deputy Lieutenant for the County of the City of Aberdeen.

HIS MAJESTY THE KING has graciously accepted a copy of the *Iconography of Andriacus Iscarius*, by Mr M. H. Spielmann, F.S.A. This book, written to commemorate the quarter centenary of the great Belgian anatomist, at the invitation of the academic institutions of Belgium, is dedicated by permission to the King of the Belgians and is published from the Wellcome Historical Medical Museum as No. 3 of the Research Studies in Medical History.

THE British Dyestuffs Corporation, Ltd. (70, Spring Gardens, Manchester), has issued a revised price list of fine organic chemicals for research work, and of indicators, microscopical stains, and medicinal and photographic chemicals.

THE second All Russian Congress for Combating Sexual Diseases was held at Kharkoff this summer, when the following subjects were discussed: the present need of combating sexual diseases in Russia, sex education legislation in connection with sexual diseases, professional secrecy in sexual diseases, syphilis of the nervous system, syphilis of the internal organs, serology of syphilis, experimental syphilis, the question of dispensaries. The meeting was attended by 600 Russians, including medical practitioners, representatives of women's institutes, farm labourers, factory workers, miners, students, soldiers, and young men's associations. The only foreigners present were three German physicians—namely, Drs Jadassohn from Breslau and Paulus and Haenstein from Berlin.

Letters, Notes, and Answers.

All communication in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

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All communications with reference to ADVERTISEMENTS as well as orders for copies of the **JOURNAL** should be addressed to the Financial Secretary and Business Manager.

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Drumstrough Gardens Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central).

QUERIES AND ANSWERS.

POST HERPETIC NEURALGIA

"C A B" asks for advice as to local treatment of post herpetic neuralgia localized to an area the size of a five shilling piece in a very aged lady who is also the subject of a grave heart lesion.

TREATMENT OF VARICOSE VEINS

DR H. F. GIBSON asks for information on the following points:
(1) Treatment of varicose veins at Bagnoles de l'Orne and its success or otherwise.
(2) Can it be used in cases with ulceration?
(3) Can similar treatment be obtained at any English spa?
(4) Effect of ultra violet rays on varicose ulcer (and veins).

ACNE OF THE FACE

"C I. B." writes in reply to the query by "A B" (September 12th p 498). I have found excellent results from the local application of eucalyptus oil to the spots.

"A E" suggests to "A B" that he should try Biaceborough Spa water for his girl patient with acne. Let her drink a glass of the water twice daily and apply the water twice daily as a lotion to the affected parts. Cysts should be treated surgically.

DR L. J. HONSON (Harrigate) recommends "A B" to adopt the old fashioned method in dealing with acne, of piercing each follicle with a sharp pointed ("Swan") match stick dipped as to its point into liquid carbolic acid rotating the same while expressing the schaeus or purulent contents and in the case of the latter, repeating the action with a second insertion thereby making sure of a due action upon the follicular lining. In addition the following lotion may be used (with perhaps some steaming of affected skin):
sulphur præcip 5j caluminae præcip 5j
boric ad 5j. A light dietary with avoid stimulants is enjoined with daily use with or without sulphur water, and fresh points of acne should be attacked once or twice weekly. Under this treatment even the most obstinate cases of acne have in his experience, gradually subsided and no scars followed.

PLOMBIÈRES DOUCHES

DR K. R. COLLIS HALLIOWAY (Peebles) writes. The following answers to the queries of "G T B" in the **JOURNAL** of September 12th (p 498) may be useful. I have answered the questions in the order in which they were asked and added a few notes.

1 Plombières douches can be given at home. They should only be prescribed in suitable cases. A written prescription should be given for the douches and a thoroughly trained attendant employed.

2 One and a half to two pints of fluid is sufficient temperature of 100° F.

3 should be given in seven days a week are the maximum

4 course of three or four weeks treatment is sufficient

5 A rubber rectal tube should be used the end being lubricated

1 more than three inches is sufficient

6 It should be given very slowly the patient lying on the left twelve to eighteen inches higher than the anus. As a general

rule a Plombières douche should be preceded by an ordinary enema using normal saline solution. This is essential in those suffering from chronic constipation. I frequently prescribe with chronic constipation derive little benefit from Plombières treatment. Plombières douches are generally contraindicated in cases of cardiac disease and in those suffering from myocutaneous weakness. Dilatation of the colon is also a contraindication. In elderly and weakly patients hot external douches, sprays, or baths should not be given immediately after the douche.

DR F. P. DE CAUX (London, W.) also sends replies to "G T B's" six numbered questions.

1 Yes, Plombières douches can be given at home.

2 At least two pints—or as much more as can comfortably be retained.

3 Normal saline at the temperature of the body (99° F.) in container. Sodium bicarbonate may be added if much mucus is present.

4 About twice a week to begin with, then perhaps weekly.

Chronic alcoholics daily until normal stool is produced.

5 Some use a special tube others a stomach pump tube. A large bore tube with one terminal opening is best in my opinion.

6 As far as will easily go—six, nine or twelve inches.

Dr de Caux adds that the position of the patient during administration is all important if saline is to be retained without discomfort.

URETHRAL SPASM FOLLOWING THE PASSAGE OF METALLIC BOUGIE

DR M. W. BOWDIN (London, W.) writes. In reply to "Perplexed" (September 12th p 498), his patient has evidently an organic stricture (due no doubt to gonorrhoea) for which he was operated upon. Presumably he has also an enlarged prostate overlooked, and in consequence the neck of the bladder is easily irritated. A stricture is fibrous tissue, a methyotomy produces a scar (also fibrous tissue). The resiliency of this tissue varies in different cases. On passing an instrument, if large enough, it is gripped by the stricture, irritation is set up and spasm results, often followed by shock, rigor, fever, frequency of micturition, etc. No instrument should be left in for an hour unless inflamed. I would advise "Perplexed" to order his patient to take hexamine for two days before passing the instrument and for two days afterwards. A methyrosesal irrigation with a mild non-antiseptic antiseptic is first given and an instrument, well lubricated is then passed of a size that will enter by its own weight. A size larger is then passed, and left in for one minute. This is followed by another irrigation. The patient is told to have a hot bath and remain in bed for twenty-four hours. Gradual dilatation with a Hollmann dilator may later be tried. The answer to "Perplexed's" query (1) depends upon the amount of infiltration. (2) The calibre of pathological urethras depends upon the amount of infiltration. (3) A bougie should not be left in for more than one minute and the frequency of passage depends upon the rate of contraction and the amount of resilience.

INCOME TAX Car Transaction

"W S S" bought a car in 1922 for £370 and in 1924 sold it for £85 buying a lower grade car for £179. What allowances are due to him?

* First, as an expense of the year 1924 the net amount expended on replacement—namely £179—£85=£94, and secondly, a depreciation allowance deduction from the average profit assessable equal to 15 per cent of £179—say, £27.

Depreciation of Motor Car

"S C" who was advised in our issue of August 22nd that he was entitled to an allowance for depreciation on his present car as well as for the expense of replacing his old car states that the local inspector of taxes disagrees with this opinion.

* We feel convinced that the inspector is in error. The allowance for depreciation operates as a deduction from the average assessment, and is in respect of the machinery and plant (that is the car) in use during the year of assessment. (Conrad Steamship Company v. Coulson [1899] 1 Q B 865). The cost of replacing the old car was a professional expense chargeable as such for the purpose of ascertaining the practice profits of the year in which the renewal was effected. From the equitable point of view both allowances are clearly due—the depreciation allowance because it is a proper charge in respect of the present car and the expense deduction because the expense was actually incurred. To refuse an allowance for car B because the taxpayer had another allowance for car A seems to us plainly wrong.

Salaried Assistant's Expenses

"D G W" is employed as an assistant by his father at a fixed salary. The assessor refuses his claim to deduct therefrom the sums expended on medical books and publications.

* The claim is governed by the rule of Schedule E authorizing the deduction of sums expended wholly exclusively and necessarily in the performance of the duties of the office. However reasonable the expenditure in question may be, it is not allowable unless it is necessary in the performance, etc., and we are of opinion that unless our correspondent is legally bound under the terms of his contract of service to expend the sums in question his claim fails.

Sale of Horse and Trap

"F R C S I" inquires (1) what allowance he can claim for the sale of his horse, harness, etc., for £34 and the purchase of a motor car for £285, and (2) as to any useful hook on income tax.

* (1) At the most he can claim the excess of the original cost of the horse, harness, etc., over the £34 received for the same, but the correct view legally is probably that it represented a loss of capital and that no allowance is due. (2) Messrs Nelson and Co publish a useful little hook on income tax at about 2s 6d.

Interest on Bank Overdraft

"J A A R" writes: I borrow money to buy a practice, and in consequence have an overdraft at my bank. Am I entitled to deduct interest on this from my income tax return?

* Yes or alternatively to make at the end of the year a specific claim to relief in respect of the amount of interest paid to this bank during that year. The latter method might be preferable if "J A A R" has purchased a share in a practice, the profits of which would be assessable in one sum jointly with his partner's share.

Subscriptions

"W M," who is practising in partnership, inquires whether subscriptions to certain specified societies are allowable expenses for income tax purposes.

* If the particular society has arranged with the Board of Inland Revenue to account for tax on the excess of its receipts over its expenses, the whole subscription is allowable, otherwise only that proportion of the subscription can be claimed which was in fact expended by the society on professional purposes.

LETTERS, NOTES, ETC.

"LECHE"

DR PERCY C GARRETT (Cheltenham) writes: In his article on royal banquets in the JOURNAL of September 12th (p. 483) Mr. Murrehead Little speculates as to the meaning of *leche*. It is the French word *lèche*, a slice. Miss M. E. Christie, in her *Life of Henry VI*, says in a footnote to the description of his coronation banquet that "it seems to have been a kind of mould composed of eggs, raisins and dates, spices, and sometimes meat. It was cut into slices and coloured with saffron and other spices now unknown. According to others it was made of cream, isinglass, sugar and almonds." The dish figures in each of the three courses, the most elaborate being "a white *lecho* planted with a rede antelope with a crowne aboute his necke with a chayne of golde." An appendix to this book contains some curious recipes of mediæval cooking, from "Myllk rost" to "Peockkes."

DR RUSSELL V STEELE (Gloucester Gate, N.W.1) writes: The interesting paper by Mr. Murrehead Little on royal banquets in the sixteenth century contains one item in this bill of fare the meaning of which the writer notes is puzzling—this is the word *leche*. Is it not possible that this is the Spanish for milk? French and English words are used in the 'menus' and apparently a Spanish word has found its way among them.

CAUSE AND EFFECT?

DR E. W. S. HUGHES (Halifax) writes to report an unusual gynaecological case. A married woman aged 29, whose second pregnancy was due to terminate on September 7th, consulted him on August 3rd for a "lump" at this vulva. Beyond congestion round this urethra no abnormality was visible, but a vaginal examination showed the presence of a patulous os and a vertex presentation. There was no change in her condition on the next day but six days later Dr. Hughes found the patient dressed to go out for the day though she admitted that the "lump was down." On examination he found a large congested, and oedematous cervix presenting outside the vulva like a senile prolapse, it went back when the patient lay down. He saw a breast pump on the dressing table and found that she had been trying to draw out her nipples, which were completely sunk into this breast as had been the case at her first pregnancy when these efforts had set up a premature expulsive action affecting the cervix only—since the uterus could not descend—thereby elongating the cervix which was automatically sucked down by the vagina, till it presented as a complete pseudo-prolapse. Rest in bed reduced the "lump," and she was delivered quite normally on August 25th. She had used the pump assiduously, night and morning, for three months.

STAB WOUND OF THE BRAIN

MR J. COLLYER ADAM (Public Prosecutor Madras) sends a report of a case in which a man was stabbed with a knife in the forehead with such force that the entire blade, 4½ in. long, penetrated the head. The stab wound was 1 in. long and 1/8 in. broad, it was situated above the inner end of the right eye brow and the corresponding portion of this frontal bone was fractured. The blade had passed deeply into the brain, and survival seemed impossible though the man when admitted to hospital, was talking rationally. The knife was only removed with great difficulty at the end of half an hour. After being treated for forty days perfect recovery resulted.

GALL STONES

DR C. O. ANDERSON (Dunedin New Zealand) writes: In the JOURNAL for April 18th (p. 764), Dr. Dorothy A. Daly writes concerning a case of cholelithiasis in a girl aged 11. This prompts me to record a case in a male aged 9 suffering from intermittent hæmaturia. Radiographic examination showed that the right kidney was large, with a shadow which was interpreted as being a calcareous plaque in a tuberculous kidney. The patient was submitted to operation and during a transperitoneal nephrectomy a gall stone was palpated in the gall bladder. This was removed and subsequently radiographed. This shadow corresponded with the shadow seen on the original radiograph. The stone was over three quarters of an inch in length and about 1 cm. in width.

SHOE DYES

THE danger of using nitrobenzene and aniline in the preparation of shoe dyes is now well known, and Dr. C. W. Muehlberger has contributed to the JOURNAL of the American Medical Association of June 27th, 1925 (p. 1937), details of nine cases of poisoning resulting in this way. Six appear to have followed the use of a shoe dye which contained aniline instead of nitrobenzene as the solvent. The most important symptom observed was cyanosis without apparent cause occurring in a previously normal person. Loss constant symptoms were vertigo, headache, weakness, and nausea. Children seem to be particularly susceptible and possibly there is also an individual idiosyncrasy, as in the case of acetanilide. Chemical analyses of four black shoe dyes are given by Dr. Muehlberger, all these contained either nitrobenzene or aniline. The treatment recommended is to give up wearing the shoes and to keep the patient warm in bed until the cyanosis disappears, oxygen inhalations appear to have been of no value. It is recommended that the manufacture and sale of such toxic shoe dyes ought to be prohibited, and non-toxic solvents substituted for the dangerous nitrobenzene and aniline.

WINDFALL AFFAIRS IN LIGHTNING STORMS

DR M. HENRY (Ilelast) writes with reference to the letter on this subject in the JOURNAL of August 29th (p. 398). During a recent thunderstorm a chimney of my house was hit and a number of bricks and chimney pots knocked down. An aerial is attached to the pots on three chimneys about four yards apart, forming an angle of about 60 degrees. It then goes on some distance and returns, to go through a window. It was the central chimney that was struck. The aerial was not damaged nor was the pot to which it was attached displaced. It was not earthed at the time. No damage was done inside the house, except by soot.

ELECTRO-CARDIOGRAM OF CASE OF PLEURAL EFFUSION

DR G. ANDREW STEPHENS (61, Walcott Road, Swansea) writes: I shall be much obliged if any of your readers can supply me with a copy of an electrocardiogram taken from a case of pericardial effusion. I have made repeated efforts to obtain such a copy, but so far have been quite unsuccessful, although with such a steady constant resistance as is supplied by the presence of the effusion one ought, according to present-day theories to have no difficulty in obtaining one. The point is of great interest as well as of importance and I shall be grateful for any help in connexion with the problem.

THE PARIS-LES CÔTE D'ARGENT EXPRESS

FOR the benefit of medical men with patients who propose to winter in the South we are asked to state that the Paris-Orient and Midland Railway Companies of France, in conjunction with the International Sleeping Car Company, have arranged to run the above train de luxe permanently on and from October 5th next in conjunction with the 11 a.m. departure from London (Victoria Station) a through sleeping car, Calais to Irún, will be attached to this train until November 5th. The Pyrénées Côte d'Argent express will leave Paris at 8.40 p.m. and will consist of *coaches lits*, *Paris-Biarritz*, *Paris-Irún*, and *Paris-Tarbes*, and a restaurant car from Paris to Saint-Pierre-des-Corps. The Spanish railways have agreed to maintain a permanent connection from Irún to Madrid which, besides the usual restaurant car, will include a wagon salon of the Sleeping Car Company.

A HOUSE OF REST

THE "House of Rest" (Maison de Repos) at Montoux for professional men with restricted means who are temporarily in need of rest or change, will reopen this year on November 1st. It was founded some forty-five years ago by subscriptions collected from Britain and from residents and visitors at Montoux. We are asked to say that medical men in stated circumstances requiring a change for health reasons are welcomed. Visitors pay 30s a week, all included. Particulars can be obtained by writing to the station, Miss Goldie whose address at present is 122 Beaufort Street, London, S.W.3 and after November 1st, House of Rest, Quartier de la Madone, Montoux, A.M., France. The honorary physicians to the institution are Dr. Stanley Rendall and Dr. D. W. Samways.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 37, 38, 39, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 40 and 41.

A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 112.

THE BOROCAINES.

A NEW CLASS OF LOCAL ANAESTHETICS

BY

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THE object of this investigation was to determine the factors concerned in surface anaesthesia, with a view to finding a local anaesthetic equal in efficiency to cocaine hydrochloride but without its poisonous properties.

The least toxic of the available anaesthetics is ethocaine hydrochloride, this substance, applied directly to sensory nerve fibres, has an effect equal to that of cocaine hydrochloride, but it does not give very satisfactory anaesthesia when injected subcutaneously without adrenaline, and it has little value as a surface anaesthetic either for the eye, nose, or urethra; thus, for the eye it possesses approximately only one twentieth the efficiency of cocaine hydrochloride. So that the essential information required was why ethocaine lost its virtues when applied to a surface.

Experimental Observations

It has been shown¹³ that ethocaine hydrochloride ("novocain") has a strong affinity for sensory nerve fibres, but has very little action on sensory nerve fibrils in the eye. But corneal tissue, while containing a close plexus of the finest non-medullated nerve fibrils, has neither blood vessels nor lymphatics, and investigations were first made to determine whether this factor influenced the action.

When ethocaine hydrochloride is dissolved in rabbit or horse serum or in a solution of egg-white, its power of anaesthetizing the rabbit's cornea is increased twenty times, and becomes equal to that of cocaine hydrochloride. Physical adsorption cannot account for this, since neither gum acacia, pure crystalline egg albumen, cholesterol, glutathione, and the like augment the degree of anaesthesia. If the proteins are removed by boiling or by dialysis it can be shown by a process of exclusion that the enhanced effect is due to alkali present, and this "serum effect" can be simulated by adding to the solution of ethocaine hydrochloride an equivalent amount of sodium bicarbonate. Alkalis have long been known to increase the efficiency of cocaine hydrochloride as a surface anaesthetic. Gios⁶ found that alkali increased the potency of the hydrochlorides of cocaine, ethocaine, alipino, and stavano on frog's motor fibres, and his findings were confirmed by Sollmann,⁸ who extended the principle to include frog's sensory fibres and skin and rabbit's cornea. This increase of efficiency, according to Sollmann, was not observed in intracutaneous injection anaesthesia.

The fact of fundamental importance emerging from observations such as the above, which have been extended by Regnier,¹⁵ is that the surface anaesthetic effect of cocaine and its analogues is not constant, but can be varied

by using different salts of the alkaloid and by adding certain inactive salts to the aqueous solutions used, it is in this that the solution to the problem presented is to be sought. Attention is thus clearly directed to the nature of the components of aqueous solutions of the salts of cocaine and other bases.

When a salt of cocaine formed with a powerful acid (such as hydrochloric acid) is dissolved in dilute solution in water, a considerable proportion of the salt undergoes electrolytic dissociation—that is to say, it dissociates into the electro-positive ion of the base and the electro-negative ion of the acid, a portion of the salt doubtless remains in solution as the salt itself. When a salt of cocaine with a very feeble acid, such as acetic acid, is dissolved in water, a large proportion undergoes hydrolytic dissociation—that is to say, it dissociates into the base itself and the acid, provided the acid is sufficiently feeble, practically the whole of the salt may thus undergo hydrolytic dissociation. Under the various conditions thus indicated, the aqueous solution contains as potentially active components the basic cocaine ion, cocaine base itself, and cocaine hydrochloride itself, the proportions in which these three components are present in the solution can be varied by using different salts and by adding different physiologically inactive salts to the solution. Since no reason exists for supposing that the three forms of cocaine which may be present in the solution are of identical physiological activity, it would be anticipated that the varying surface anaesthetic action of different cocaine salts in aqueous solution should arise from non-identity in effect of those three forms. In order to test the accuracy of this surmise the series of observations recorded in Table I was made. We desire to thank Miss C. Lascelles (Laboratory of Biochemistry, Cambridge) for determining the pH values of the stock solutions.

It will be seen that cocaine hydrochloride solution to which sodium bicarbonate has been added is far more efficient as a local anaesthetic than solutions of other salts of equivalent concentration in base. The pH values of the original stock solutions are given, and it will be seen that the solutions with the higher pH values exert the greater surface anaesthetic action, this result is in accordance with the observations made by Regnier. Now, the solutions of higher pH value are those in which the hydrolytic dissociation predominates, to the more or less complete suppression of electrolytic dissociation and of undissociated salt. The free or hydrolytically dissociated cocaine is thus more powerfully anaesthetic than the electrolytically dissociated base—namely, the electro-positive cocaine ion. It is unnecessary now to discuss the significance of the pH values for the other salts given, and it is not suggested that they have quantitative value.

The indication thus obtained that the electrolytically dissociated basic ion and the hydrolytically dissociated base exert very different surface anaesthetic actions can be readily interpreted. The electrolytically dissociated salt would be expected to be absorbed into the circulation more rapidly than the hydrolytically dissociated base, the latter, being absorbed more slowly, should have more opportunity for exhibiting its surface anaesthetic properties.

TABLE I.—Anaesthetic Efficiency of Salts of Cocaine on Rabbit's Cornea

Drug	Alkaloid Content of Stock Solution in mg/c cm (Ref. Table IV)	Duration of action								pH of Stock Solution	Relative Efficiency (Cocaine Hydrochloride = 1)
		0.05	0.1	0.125	0.25	0.5	1	2	5		
Hydrochloride + sod bicarb 5 mg per c cm	17.85	14	18	21	30+	30+	—	—	—	7.1	10.0
Hydrochloride + sod bicarb equal weights per c cm	17.85	1	8	21	30+	30+	—	—	—	—	5.0
Borate " "	17.85	—	6	10	30+	30+	30+	—	—	5.71	4.5
Benzoate	17.85	—	—	2	10	22	—	—	—	4.9	2.0
Hydrochloride	17.85	—	—	0	2	13	18	30	40+	5.0	1.0
Lactate	17.86	—	—	—	—	5	8	—	—	5.2	0.5
Citrate	17.85	—	—	—	—	0	13	—	—	5.4	0.5
Palcaine											
Borate	17.85	—	7	17	23	—	—	—	—	6.6	4.0
Acid tartrate	17.40	—	—	—	—	—	0	0	4	3.8	0.05

have received practically no attention from chemists, scarcely any of these substances have hitherto been prepared in a state of purity. This is naturally due to the fact that they undergo hydrolytic dissociation in aqueous solution, and thus in general could not be obtained pure by crystallization from water. Lushorn and Uhlfelder,⁵ the discoverers of ethocaine, did indeed describe a crystalline borite of this base, and assigned to it the composition $(C_{17}H_{21}O_5N, 4B(OH)_3)$, but we have not been able to prepare a stable compound of this formula. A definite ethocaine borate may be obtained by crystallizing the ethocaine base with the corresponding amount of boric acid from acetone solution; this compound retains its composition unchanged on crystallization from organic solvents such as acetone, alcohol, and the like.

The composition of this and the other new borites which we have analysed is given in Table III. It will be noted that they are of the type of the imogenic pentaborates described by Atteberg.¹⁸

The borites are conveniently prepared by mixing solutions of the base and of boric acid in either hot or cold acetone, the proportions being those indicated by the composition of the salt, the pure borite crystallizes out on standing. Alternatively boric acid and excess of the base may be dissolved in acetone and the solution evaporated to dryness, after powdering the residue and extracting the excess of base with ether it yields the pure borite on recrystallization from a water-free organic solvent. The details of the preparation naturally differ slightly in the cases of the different bases, but, in general, the borites are obtained by crystallizing the base with boric acid from an organic solvent in absence of water.

Of the borites examined those of ethocaine, betacaine, and alpine alone give stable solutions in water, solutions of the others, in consequence of the hydrolytic dissociation, deposit the free base more or less rapidly on standing. This can be avoided by the addition of a further small proportion of boric acid; such addition, however, depresses the pH value and simultaneously leads to a diminution of the surface anesthetic effect. The three which are stable in aqueous solution seem to be indicated for general use.

Psicaine (the acid tartrate of $d\psi$ cocaine) has been shown¹⁹ to have an anesthetic action on the cornea which is considerably weaker than its low base content suggests, it is as toxic as cocaine hydrochloride. The borite is more than fifty times as powerful as psicaine of equal base strength on the cornea, but it is not more efficient than cocaine borite. This isomer of cocaine, then, has no advantage over cocaine, and it is unnecessary to pursue the subject.

It will be seen (Table II) that the cocaine substitutes are divided for convenience into three groups. In the novocain group, to which new members are constantly being added, it is found that the borites of "G S" and butyn are the most powerful, these substances may be

of some value in ocular anaesthesia, but are unlikely to be of value for other purposes owing to their toxicity, to uncertainty in action due to their precipitation by saline and by tissue fluids, and to the instability of the borates. "G S" is a hydrochloride, it is approximately as efficient as cocaine hydrochloride on the rabbit's cornea; the minimum lethal dose for rabbits by subcutaneous injection of 5 per cent solution is about 160 mg per kilogram, the minimum lethal dose of cocaine hydrochloride being about 75 mg per kilogram.¹²

Tutocain^{12, 13} is less efficient for anaesthesia of the cornea and less toxic than cocaine hydrochloride. The borite of the base has approximately the anaesthetic efficiency of cocaine borite on the cornea, but it is unstable.

Ethocaine in many respects is the ideal surface anesthetic, because its less dissociated salts are practically without toxicity and cause no irritation. The borite is approximately as efficient as cocaine hydrochloride on the rabbit's cornea. It causes slight vascular congestion, and has no effect on the pupil. It does not produce anaesthesia in such low concentrations as do the borites of "G S," butyn, and holocaine, but its advantages in low toxicity, lack of irritation, and stability make this of little moment, since it is at a great advantage when dose, toxicity, irritation, and anaesthetic efficiency are all taken into account. The solution keeps well, and does not precipitate in contact with the tissues.

The following experiments on two rabbits of approximately equal weight indicate its low toxicity.

Rabbit A 1.05 kg received a subcutaneous injection of 2.5 c.c. of a 5 per cent solution of ethocaine hydrochloride (dose = 120 mg per kg). Ten minutes after injection tonic spasms occurred with retraction of the head and rigidity of limbs lasting thirty-five minutes followed by severe clonic spasms lasting some minutes. This was followed by some paralysis lasting eighty minutes after injection after which the rabbit recovered.

Rabbit B 1.10 kg received injection of 2.6 c.c. of 5 per cent ethocaine borite (dose = 120 mg per kg). As a result fifteen minutes after injection the rabbit became quiet for two minutes, after which it was normal. No convulsion or paralysis or other sign of toxicity was observed.

The minimum lethal dose of ethocaine borite by subcutaneous injection in rabbits was not determined, since for a rabbit weighing 1.65 kg even the enormous dose of 20 c.c. of a 5 per cent solution of the borite (1 gram or 600 mg per kg) was not lethal. The animal was paralysed for one hour and the bronchial secretions were increased, but there were no symptoms suggesting stimulation of the cortex (for example, head retraction, twitchings of facial muscles, convulsions), and the corneal reflex was never lost. Complete recovery occurred two hours after injection. These experiments show that the toxicity of ethocaine borite is negligible. The borite, like the hydrochloride, is non-irritant, and 0.5 c.c. of a 20 per cent solution injected subcutaneously into a rabbit's shaved abdominal wall caused only faint bruising on the second day, and thereafter no signs of irritation.

TABLE III—Composition of Borites

Substance	Melt ing Point	Analysis						Stability of Aqueous Solution	Per centage Base in Solid Borate	Solvent Used in Preparation	Formula
		C		H		B O ₃					
		Found	Calcu lated	Found	Calcu lated	Found	Calcu lated				
Ethocaine borate	168°	35.1	4.9	5.4	5.4	38.9	39.0	Stable†	52.9	Cold acetone	2(C ₁₇ H ₂₁ N ₂ O ₅) 14H ₂ O 5B ₂ O ₃
Tutocain borate	210	35.8	35.8	6.0	5.8	37.3	37.2	—	53.4	Cold acetone	C ₁₄ H ₁₇ N ₂ O ₅ 5H ₂ O
Butyn borate	197°	41.1	41.1	6.8	6.7	33.5	33.1	—	58.3	Cold acetone	C ₁₆ H ₁₇ N ₂ O ₅ 5H ₂ O
G S borate	202°	39.4	39.5	5.8	5.9	35.7	35.8	—	56.8	Cold acetone	2(C ₁₆ H ₁₇ N ₂ O ₅) 14H ₂ O 5B ₂ O ₃
Cocaine borate	225°	38.9	39.1	5.0	5.0	33.7	33.3	—	58.0	Cold acetone	C ₁₇ H ₂₁ N ₂ O ₅ 5H ₂ O
Beta-eucaine borate	252°	38.6	38.6	6.0	5.6	37.4	37.4	Stable	53.0	Cold acetone	C ₁₇ H ₂₁ N ₂ O ₅ 5H ₂ O
Alpine borate	155°	36.7	36.9	5.6	5.7	38.7	38.3	—	51.8	Hot acetone	C ₁₆ H ₁₇ N ₂ O ₅ 5H ₂ O
Alpine borate	210°	38.5	38.6	6.4	6.3	35.2	35.0	Stable	53.9	Cold acetone	C ₁₆ H ₁₇ N ₂ O ₅ 5H ₂ O
Holocaine borate	110°	41.9	41.8	5.5	5.3	33.8	33.6	—	57.7	Ether	C ₁₇ H ₂₁ N ₂ O ₅ 5H ₂ O

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† The word "stable" indicates that the solution in water does not require the addition of boric acid.

A B Lyons (loc cit) gives 55 per cent

‡ These borates contain 1 molecule of acetone of crystallization

In the nose of the cat, using the perfusion method,¹² ethocaine borate causes congestion of the erectile tissue of the nose, as shown by obstruction to the flow. This is, however, less decided than after butyn, "G S," or cocaine borate, and stimulation of the sympathetics immediately corrected this—that is to say, the vasomotor nerves are not paralyzed. After the use of the other substitutes stimulation of the sympathetics is usually without effect. In other words, ethocaine borate can be given with adrenaline and so cause all the desired anaesthesia together with shrinkage of the tissues.

Cocaine hydrochloride acts equally well both for surface and hypodermic use. Ethocaine hydrochloride, on the other hand, only acts hypodermically, as a surface anaesthetic it is useless, did it act as a surface anaesthetic the necessity for cocaine would be gone. On the other hand, all the borates, like cocaine hydrochloride, act both as surface and hypodermic anaesthetics. It has been shown that this is not entirely due to the pH and the table shows that the different borocaines exert different degrees of surface anaesthesia which cannot altogether be explained by the stability of the different salts, so that a third factor—that of specific affinity for nerve tissues—requires consideration. This factor does not show the wide differences between the different cocaine substitutes that might, *a priori*, be expected, most of the bases are good anaesthetics. Moreover, such comparisons are open to many objections. We have, however, endeavored to obtain some approximate figures by dissolving the bases in castor oil and determining the effect on the eye. Such observations show that holocaine, tuteocaine, and cocaine bases have much the same degree of action. Ethocaine has about one-half the specific effect of cocaine, while other substances such as apothecine produce marked irritation before anaesthesia.

The other salts of ethocaine are shown in Table II for the purpose of comparing H-ion concentration of solution with anaesthetic efficiency. An example of this may be mentioned in further detail.

Experiment—10 ccm of 2 per cent ethocaine phosphate (pH 7.0) was rendered slightly alkaline by the addition of 0.15 ccm of N/5 NaOH the pH being raised to 8.4. The result of this was to double the anaesthetic efficiency so that it equalled that of cocaine hydrochloride.

10 ccm of the solution was rendered slightly acid by the addition of 0.04 ccm of 21 per cent phosphoric acid the pH being thereby lowered to 5.6. The result of this was to diminish the anaesthesia to less than one-tenth that of cocaine hydrochloride (pH 5.0) and to equal that of novocaine hydrochloride (pH 5.6).

The solution (pH 5.6) was now rendered slightly alkaline the pH being raised from 5.6 to 8.4 with the result that the efficiency was raised to that of cocaine hydrochloride (see Table II).

The borate of "523" base has twice the efficiency of cocaine hydrochloride on the cornea, but its toxicity has not been determined.

Holocaine hydrochloride is much employed in eye work, especially in the United States.¹⁰ The borate is extremely powerful, possessing an anaesthetic efficiency on the cornea which is greater than eight times that of cocaine hydrochloride though less than that of the borates of "G S" and butyn bases. Holocaine has the advantage over "G S" and butyn in not being precipitated by saline or tissue fluids, the borate may be useful for ocular anaesthesia.

The borate of beta-eucaine base is the most powerful borocaine, being more than ten times as efficient as cocaine hydrochloride. The toxicity is not yet determined.

Table IV deals with a derivative of quinine, which Dixon has shown paralyzes nerve endings and has little or no affinity for nerve fibrils. Isoamylhydrocupreine bi-hydrochloride is said to produce anaesthesia of the rabbit's cornea in strengths of 0.09 per cent—that is, it should be more than four times as powerful as cocaine hydrochloride. Our experiments do not confirm this, but they show that such quinine derivatives are highly irritant. The borate of this alkaloid was prepared and was found to have about sixty times the anaesthetic power of cocaine hydrochloride. Here, then, is an alkaloid exerting its action in a manner entirely different from that of cocaine and its substitutes, and yet the same principle obtains, the electrolytically less dissociated salts being much more active than the hydrochloride.

It may be well here to state the properties of one borate clearly, for this purpose we select that most generally useful

TABLE IV—Anaesthetic Efficiency of Salts of a Quinine Derivative on Rabbit's Cornea

Drugs	Alkaloid Content of Stock Solution in m.f.c. cm	Duration of Complete Anaesthesia in Minutes Concentration Stock Solution = 0.5				pH of Stock Solution	Relative Efficiency (Cocaine Hydrochloride = 1)
		0.03	0.01	0.05	0.1		
Isoamylhydrocupreine Borate	4.2	0	30+	30+	30+	6.4	60
Bi-hydrochloride	4.2	0	0	0*	0	4.0	?

* Signifies marked irritation

—ethocaine borate. This substance is stable and freely soluble in cold water and Ringer's solution. It does not precipitate proteins like the borates of butyn and "G S." The specific gravity of a 5 per cent solution is high (1.0139), which is useful for spinal anaesthesia. It is non-irritant. It causes anaesthesia of the hum in eye in 2 per cent solutions, the onset being very rapid, and it is equally effective in the mouth and probably other surfaces. Its toxicity is negligible. By subcutaneous injection it is as effective as ethocaine hydrochloride and adrenaline, but not more so. The objection to its use is that it dilates vessels, but this effect can be largely overcome by using adrenaline. In the nose it causes decided congestion whether this effect can be overcome by adrenaline is for clinical observers to decide.

The borates of the local anaesthetic bases possess, as has been shown in the present paper, entirely specific properties as surface anaesthetics, and it may be convenient to class them together under the name of "borocaines." The efficiency of the borocaines as surface anaesthetics depends upon the pH value for the salt in aqueous solution being kept high—namely, on the alkaline side of neutrality. It can be therefore be taken in preparing the salt to ensure that no factor is introduced which will depress the pH value. For this reason the manufacture of the borocaines has been entrusted to The British Drug Houses Ltd., and this firm is prepared to supply the compounds.

CONCLUSIONS

1 The action of a local anaesthetic depends upon the specific selective affinity of its base for nerve fibrils. But the different salts of such a base vary greatly according to the acid with which they are combined. If they are combined with strong acids (that is, those which dissociate electrolytically to a large extent), the salt is relatively rapidly absorbed into the general circulation and is less effective locally—that is, its toxicity is relatively high and its anaesthetic action relatively low. On the other hand, if it is combined with a weak acid which does not electrolytically dissociate to any considerable extent, it is relatively slowly absorbed into the general circulation and is more effective locally—that is, its toxicity is relatively low and its specific anaesthetic efficiency relatively high. Such salts have a high pH value.

2 A new group of local anaesthetics, the borocaines, is described, the members of which fulfil these conditions—that is, they are much less toxic than the original hydrochlorides, from which they can be prepared, but often exert more than ten times the anaesthetic action.

Clinical reports will follow.

We desire to express thanks to the Medical Research Council for the special grant it made for the expenses of this research.

We also desire to thank Professor Sir William Pope for his advice and assistance on the chemical side and Professor W. E. Dixon for help and advice throughout the investigation.

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SYPHILITIC NEPHRITIS

BY

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WHEN the patient whose case is about to be described first presented himself for treatment the renal condition was not fully investigated. The results of such investigations might have been of interest in the light of his subsequent history, but even without them the facts are sufficiently striking to make them worth recording.

A watchman, aged 56 came to the venereal disease department in 1922 suffering from tertiary ulceration of the soft palate and fauces and from chronic nephritis. He stated that he had been discharged from the police force some four years previously on account of chronic Bright's disease, which had started in 1917, when he was 51 years of age. He had remained in the police force for about a year after the onset, but having been laid up for three months during that period, and being chronically unfit the whole time he was ultimately discharged. After leaving the police force he was able to do light work, but was never really well. He suffered from intermittent oedema of the legs and ankles, and backache as well as giddiness. In 1922 he was laid up for three months with an exacerbation, and the tertiary ulceration of his palate developed at this time. On the day he first attended the department he presented fairly extensive ulceration of the soft palate and fauces. He looked grey and ill, the legs were moderately oedematous and the urine contained a heavy cloud of albumin. A note of his name and address was made on this occasion with a view to having him admitted to the hospital in order to have the renal efficiency investigated and to try and estimate whether he would be likely to tolerate a course of antisyphilitic treatment. Fortunately, in a sense, this turned out to be unnecessary. The Wassermann reaction was strongly positive.

It was decided to start gentle treatment for syphilis immediately and to observe the condition of the urine at each attendance. He returned a fortnight after the first dose (0.3 gram of silver salvarsan) to say that he felt much better in every way. The oedema had practically gone and the urine contained only a trace of albumin. After the second dose he returned to work feeling quite well. That was two years ago. He has never looked back, and has not had another day's illness.

He has had two full unit courses of antisyphilitic treatment—the first consisting of ten doses of 0.3 gram of silver salvarsan, the second of four doses of sulphoxyl salvarsan; the treatment was given in combination with iodide but not with mercury. When I examined him recently he looked a healthy man and had a ruddy complexion. The heart was not enlarged and there were no murmurs. The arteries were not unduly thickened for his age. The blood pressure was 130 (systolic); the lungs were emphysematous to a degree compatible with his age and build. The urine contained neither albumin nor casts. The blood urea was 0.25 per 1,000—a normal figure. The Wassermann reaction was still strongly positive.

But for the circumstance that this patient developed tertiary syphilitic ulceration of the fauces, the true nature of the renal affection would never have been diagnosed. Acute syphilitic nephritis occurring in the secondary stage presents well defined clinical features. It is a rare accident of syphilis. Fournier¹ in his treatise (1906 edition) mentions twenty-six cases. Since our clinic was established (1917) only one case has been recognized. It was published by Rawlins in 1919.

Several isolated cases of acute syphilitic nephritis have been published from time to time. All bear a striking resemblance to one another. The usual time for the appearance of the condition is the second month. More than a third of the cases, according to Fournier, occur during this month, and later observers state that it almost invariably accompanies the acute exanthematous stage of the disease, but may occur earlier or later. Talmann's case, quoted by Fournier, occurred a few days after the appearance of the chancre in a woman of 21. The albumin content of the urine was 32 parts per 1,000, it disappeared without treatment in a few weeks. Fournier quotes a case of his own in the microscopical stage, the albumin disappeared quickly under mercurial treatment. Cases may occur as late as the second half of the first year of infection. Fournier had two fatal cases in this period.

The symptoms do not differ from those of nephritis due to other causes, the patients have oedema and backache, but little or no headache as a rule. Occasionally early anuria is observed. The most striking feature however, is the very abundant albumin. Fournier quotes a case of his own with 110 grams of albumin per litre. Other observers

have found amounts varying from 10 to 100 parts per 1,000. Casts of all kinds may be present—epithelial, granular, and waxy, and some with fatty dioplets. Munk described doubly refractile lipid granules in the casts. Other observers^{2,3} have confirmed this, but Munk stated that he found similar droplets in cases of nephritis due to causes other than syphilis, though less constantly, and it is doubtful whether the observation is of much importance from a diagnostic point of view. Bernard and Widal found that renal permeability was not much impaired according to the methylene blue test. This has been confirmed by other observers, especially in America, with the phenol-sulphonaphthalein test almost normal figures were obtained, even when the damage to the kidneys, to judge by the symptoms and the condition of the urine, must have been severe.

Fournier states that besides the more serious cases of acute parenchymatous nephritis, benign cases, without general symptoms and of short duration, oedema, albuminuria may be the only symptom even when it amounts to 10, 20, or 30 grams per litre. In other cases albuminuria is accompanied by facial oedema, or a little oedema of the ankles. These cases yield easily to treatment, but there may be recurrences. Such cases are not to be confused with the slight transient albuminuria often found in the acute secondary stage of syphilis. Fatal cases, according to Fournier, are rare if the mild cases are counted with the grave ones. Many of them clear up, like the rash, without treatment, and many of them must pass unnoticed. But some of them pass on to the chronic stage or occur in later years.

The most striking feature of the later cases published is the remarkable effect of a single dose of salvarsan or of its substitutes. The effect is instantaneous. The case that attended this clinic in 1917 was a young woman under the care of Dr. Morna Rawlins.² She was pregnant and was in the florid stage of secondary syphilis. The urine contained 7 parts per 1,000 of albumin. After one injection of disodolnagol the albumin rapidly disappeared. She has been seen from time to time and her recovery has proved to be complete.

Elliot and Todd³ published a case in a man, aged 30, with 7 per cent of albumin in the urine, with comparatively few casts and almost efficient permeability according to the phenolsulphonaphthalein test. This case responded promptly to treatment with asphenamin. Day⁴ reports the following very typical case.

A man aged 20 presenting a secondary syphilitic eruption. His symptoms were anorexia and occasional vomiting followed a week later by extensive oedema. The urine was scanty and contained 15 parts of albumin per 1,000 and numerous casts. Improvement began within a few hours of a dose of 0.45 gram of novarsenobillon. It was accompanied by diuresis this continued for a fortnight during which time the patient lost 3 st in weight.

Cole⁵ records the case of a man, aged 26, in the second stage. The urine became solid on boiling; it contained many granular and hyaline casts, but, he states, few compared to the amount of albumin. The excretion of phenol-sulphonaphthalein was 40 per cent in the first hour, 20 per cent in the second. The albumin practically disappeared the day following a dose of asphenamin and totally disappeared on the second day.

Fournier¹ describes the post-mortem and histological appearances in his two fatal cases.

The kidneys were large being increased both in volume and weight. The capsule stripped easily, the surface was a little granular. The cortex was thickened pinkish grey and of firmer consistence than normal. The pyramids were enlarged and congested. The changes were more marked in one kidney than in the other. Both cases presented the appearance commonly known as large white kidney. The histological changes were purely epithelial with fatty degeneration of the lining cells of the tubules. He quotes from Dieulafoy a case with purely epithelial changes, swelling and loss of nuclear staining and degeneration of epithelial cells obstructing the lumen of the tube; the lesions predominated throughout in the convoluted tubules.

Le Plan and Szary⁶ demonstrated *Spirochaeta pallida* in acute secondary syphilitic nephritis.

The patient was a man aged 45 who in the first months of syphilitic infection presented anorexia, headache, digestive trouble, and a large amount of albumin in the urine (12 grams per litre). Mercurial medication brought about amelioration of the condition.

WHEN I read Dr Hollins's paper I planned to verify his contentions concerning the efficiency of raw fresh pancreas in the treatment of diabetes. As soon as possible I conducted a clinical trial on a boy aged 7, who had been receiving insulin for some weeks. On account of some minute incidents—which occurred, by the way, is illustrative of the numerous sources of error which, if not carefully looked for and eliminated, may vitiate any conclusions drawn from such experiments—it took a rather

long period to arrive at a net and unquestionable result. This was thoroughly negative so far as any influence of raw fresh pancreas, orally administered, on diabetic glycosuria is concerned.

Since, in the meanwhile, a number of experiments with negative results have been published by Drs Harrison, Graham and Lawrence, and, on the other hand, Dr Hollins, in a later communication, admits that raw pancreas is ineffective with patients having received insulin, I do not publish the rather long details of my above-mentioned trial, which was performed on a patient of this kind.

Dr Hollins's last contention is that his method of treatment, although ineffective with patients having received insulin, with those that never received this remedy before gives results at least as good as those that may be expected from insulin. I tried to verify this surprising proposition on the first severe patient who had not received insulin that I saw under conditions favourable for such an experiment.

The subject was a boy aged 2½ (Case 606 of my series). The first symptoms of the disease were noticed two weeks before I saw the patient for the first time. Before any treatment was begun, 8 per cent dextrose and a very intense reaction for acetone were found in the urine. The family physician prescribed a moderate food restriction and when the child was brought to me, a fast of twenty-four hours banished the sugar from the urine. I then put the patient on a diet of protein 40 grams, fat 80 grams and carbohydrate 50 grams (fish 60 grams, 2 eggs, milk 300 grams, olive oil 70 grams, 5 per cent vegetables 600 grams, oats 30 grams, nuts 10 grams), which remained constant all during the experimental period except for the day with pancreas, when 30 grams of fish were omitted to partially compensate the extra protein. Pancreas was given only on one day, first because in the circumstances I did not feel justified in further delaying the administration of insulin and also because according to Dr Hollins, glycosuria should disappear within twenty-four hours after the administration of the first dose of raw pancreas.

In this as in my former experiment I personally went to the slaughterhouse saw the animals slaughtered, had the pancreas taken from them within at most twenty minutes after their death and carried the pancreas to the hospital ("Sanatorium per a Diabeticus") in less than ten minutes. The first dose of 25 grams of pancreas was given with lettuce before any other food and not later than one hour after the death of the animal from which it came. The rest of the pancreas was kept on ice in the ice-box, and, in this experiment, a second dose of 25 grams was given at dinner time. Diet glycosuria and pancreas or insulin on the day with pancreas, two days before and five days after, were as follows:

	Date July 1925—							
	6th	7th	8th	9th	10th	11th	12th	13th
Diet								
Protein	40	40	45	40	40	40	40	40
Fat	80	80	85	80	80	80	80	80
Carbohydrate	50	50	50	50	50	50	50	50
Total glycemia (gram)	76.6	19.35	38.2	marked	light	light	light	nil
Insulin (unit)	—	—	50	—	—	—	—	—
Insulin (units) in the injection	—	—	—	15	15	15	20	20

The relations between food, raw pancreas or insulin and glycosuria are more fully shown by the following detailed records for the day with pancreas and the immediately before and after. Under "Glycemia" the colours obtained with the Benedict qualitative test performed with the urine eliminated at the time given are stated. The meals were identical on the three days, except that in the dinner of July 8th 30 grams of fish were omitted to make good for the protein in 25 grams of pancreas.

July 7th		Weather		Pancreas nor Insulin	
Time		Meal			Glycemia
9.0 a.m.		First breakfast			
10.30		Second breakfast			
11.30					Green
1.0 p.m.					Green & blue
1.30		Lunch			
2.0					Blue
4.45					Red
5.0		Tea			
5.30					Green
7.30					Yellow
8.30		Dinner			
9.30					Yellow
10.0					Yellow
11.0					Yellow
July 8th 7.30 a.m.					Red
July 8th Pancreas					
9.0 a.m.	Pancreas 25 grams	First breakfast			
10.30		Second breakfast			
12.30 p.m.					Red
1.0					Red
1.30		Lunch			
3.0					Yellow
4.0					Ped
5.0		Tea			
5.30					Yellow
6.30					Yellow
7.30					Yellow
8.30	Pancreas 25 grams	Dinner			
9.30					Red
10.15					Red
July 9th 7.30 a.m.					Red
July 9th Insulin					
9.0 a.m.	Insulin 5 units	First breakfast			
9.30					Green
10.0					Blue
11.0					
11.30		Second breakfast			
1.0 p.m.	Insulin 5 units				Green
1.30		Lunch			
3.0					Blue
4.0					Blue
5.0		Tea			
7.0					Blue
8.0	Insulin 5 units				
8.30		Dinner			
9.0					Green
July 10th 7.30 a.m.					Green

The data obtained very clearly show that, in a patient who had never before received insulin and was on a constant diet of raw fresh pancreas, administered in the form advised by Dr Hollins, and even with an additional dose at dinner time, thoroughly failed to diminish a glycosuria (it was rather increased), which was very quickly reduced to traces on the next day by a very moderate dose of insulin and completely disappeared on the fifth day of insulin treatment.

This experiment on a patient of the acute infantile type of diabetes completes those of Dr Lawrence on two patients of a very different type, all three never treated with insulin before. I fully agree with all Dr Lawrence's essential conclusions and comments.

I fully agree even Dr Hollins's starting assumption that due attention to freshness of the raw pancreas had not been paid in any of the negative pre-insulin experiments is not in agreement with the facts, since at least Allen, Stillman, and Fitz, in 1919,* published a number of experiments of raw pancreas feeding to diabetic patients with negative results, of which they textually wrote: "The pancreas was obtained fresh from the slaughterhouse each day, was kept on ice except during the messenger's trip, and was served raw with vegetables in the form of a salad."

The interpretation by Dr Hollins and his supporters of the facts they have no doubt observed is not correct. All duly controlled experiments, recent as well as ancient, show that the oral administration of raw fresh pancreas has no beneficial immediate effect on glycosuria in diabetic patients.

Thus far, there are no known facts supporting the very faint theoretical possibility that this form of pancreo-therapy might have any kind of delayed beneficial influence in the treatment of diabetes.

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British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BATH, 1925

SECTION OF PATHOLOGY AND BACTERIOLOGY

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DISCUSSION ON
THE PRESENT POSITION OF PATHOLOGY AND
BACTERIOLOGY IN THIS COUNTRY
WITH SPECIAL REFERENCE TO RESEARCH

OPENING PAPER

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TO DAY'S discussion is concerned with the welfare of pathology in this country, a topic which should interest, not only the professional pathologist and bacteriologist, but, I trust, all medical practitioners to whom advances in pathological knowledge that are calculated to help forward the cause of practical medicine make a genuine appeal, whether the opportunity of practical application comes soon, or late, or perhaps not in a lifetime.

The very title of our discussion has a suggestion of spring cleaning about it, as if in fact all was not as it might be in the pathological cosmos, and, indeed, we are here met to take, as it were, the pulso of pathology, and consider carefully and dispassionately what remedial measures, if any, may be indicated. Our committee believed that no more appropriate milieu could be found for ventilating views on this subject than the assembly of the British Medical Association, for it is precisely in connexion with those intimate relationships between the pathologist on the one hand and the medical practitioner and public health administrator on the other that circumstances militating against the due advance of pathology and bacteriology as live and progressive sciences have arisen and clamour a serious and somewhat overdue attention.

The Medical Research Council in their last annual report discussed at considerable length the parts played respectively by physiology, pathology, bacteriology, biochemistry, and experimental medicine in this country in contributing to the general advance of practical medicine during the past five years. They explain how physiology, which admittedly led a secluded life for many years and yet flourished greatly suddenly with the advent of war took the field, and has now become the most trusted and resourceful handmaid of the bedside. The war, we are told, brought the physiologists "to their proper place within the fields of curative and preventive medicine." Again, they say: "The work which has made a real difference to the daily tasks of preventive and curative medicine in the last five years has come from the laboratories of physiology and biochemistry rather than from those of bacteriology and pathology." These would be arresting propositions if they had some real warrant in fact, but, as I shall hope to show later, I believe the compilers of the report have entirely overstated the case for physiology, and have brought to their aid arguments which lend themselves to ready criticism.

The main achievement claimed for physiology in these five years is insulin, which, though it came from Canada, is regarded as the practical outcome of continuous research on diabetes, stretching back forty years. Those modern advances also in renal and cardiac disease, and in the physiology of industrial fatigue etc., redound to the credit of physiology. The honour for these advances it shares, to some extent, with biochemistry—itsself held to be a

child of physiology—and with its aid also there has been developed a new science of nutrition. What is called by the Council experimental medicine has also of late led to advances in practical medical knowledge, and is mainly pursued by the recently instituted units attached to various hospitals in London and elsewhere. When they come to discuss what pathology and bacteriology have done for practical medicine during the same period they can find nothing to place to their credit, even though they take the whole world under their paraview. So far as this country is concerned they attribute this apparent sterility to the fact that the purely utilitarian side of pathology and bacteriology which these sciences derive from their indispensable service to practical diagnosis and therapy has lessened the opportunities of their exponents for contributing to the advance of new knowledge, and has in many cases tended to withdraw from active research life workers who might otherwise have added to knowledge. Grave comments are passed on the practice of the universities in this matter, at least of those universities which maintain pathological and bacteriological departments whose staffs have to occupy themselves with the performance of routine diagnosis on behalf of outside bodies the fees for such services being devoted usually, though not invariably, to the expense of upkeep of the particular department concerned.

This feature of pathological life is probably the one which will be most freely and frankly ventilated to-day by those in a better position than I to speak from personal university or hospital experience. The practice is undoubtedly liable to give abuse, and I agree with the Medical Research Council that immediate reform is necessary in the best interests of pathology. None the less, though reform is clearly indicated, the place which routine diagnosis takes in the training of the professional bacteriologist in the best sense of that term cannot be ignored. This form of training, if intelligently pursued under the careful supervision of the expert, forms, in my opinion, the nucleus of what is perhaps the most valuable asset of the trained bacteriologist—namely, his faculty of judgment and his almost intuitive knowledge of what is sound or unsound in recorded statement. As an introduction to the later and more elaborate training in research method I would regard routine diagnosis as indispensable. When, however, that later stage is reached and actual research is under way, routine diagnosis must no longer be allowed to interfere with the new interests. To make my position clear on this point I would say that in the universities, particularly, any organization on behalf of hospital or public health service that is liable to interfere with the prosecution of research by workers capable and desirous of doing so, merits the serious consideration of the authorities. The main asset of a university is, after all, the research activity and research outlook of its staff.

I take the view that pathological services are more than ever indispensable in the interest both of public health and of general medical practice, and that these services demand trained men who, if of the right stamp, will not be likely to fail in seeking those conditions for their work which will ensure leisure for research. There can be no guarantee, however, of then securing those conditions until by and by medical appreciation of the pathologist's place in the scheme of things has very materially risen. Pathologists and bacteriologists have too long suffered from the clinician's conception of them as purely hewers of wood and drawers of water for their particular benefit. There can be no doubt that the best pathological service can be realized only when ward and laboratory or patient and laboratory are brought as near as possible, and mutual consultation on equal footing can be arranged. Wherever routine work has to be undertaken, very possibly as a whole-time occupation, I do not take the view that inspiration to research must of necessity be wanting in such atmosphere. The many additions to knowledge made during the war by men engaged in the routine investigation of epidemics disproves this, if disproof is wanted. My belief is that research output, even in the apparently unpromising atmosphere of routine diagnosis, might be very greatly increased if the training of men for professional routine pathology and bacteriology were more carefully organized.

Entirely to the practical activities of pathological and bacteriological science has too often been quite haphazard and casual. When the right spirit has been there the result has often been remarkably successful even though the initial training has been meagre, but in my view the time has gone by when we can afford to rely either for routine or for research on the casually trained assistant. Careful selection will always be necessary to secure the best workers for special research as their sole occupation, but I have long felt the lack of any organized movement in this country to train adequately the young graduates who may aspire to take up bacteriology as a profession in life, a profession which, I assume, always involves the obligation to advance knowledge.

At present, though we are far from having attained this desideratum, there are welcome signs of improvement, and I might point to the new courses for the diploma in bacteriology at Manchester and the inclusion of pathology in the Natural Sciences Tripos at Cambridge. A short post-graduate course in bacteriology for the diploma in public health has too often been regarded as an adequate qualification for entrance to professional bacteriology. Bacteriology is a science whose confines have long ceased to be bounded by its purely medical associations. Beginning as a curious department of microscopic botany, it suddenly, under the genius of Pasteur, Lister, and Koch, acquired a place in practical medicine, both curative and preventive, from which it is not likely to be dethroned by any other department of applied biology wherever studied. But bacteriology has now many vastly important ramifications in industrial life, and it is becoming wellnigh impossible for the medical bacteriologist to keep pace with developments in all branches of applied bacteriology. As Sedgwick points out in introducing the *American Journal of Bacteriology* to its readers, bacteriology must henceforth be recognized as a broad and fundamental branch of science co-ordinate with rather than subordinate to the other great divisions of biology. Its study, as Berger insists, involves two aspects: (1) the practical application of bacteriological knowledge to the solution of problems in a special field, and (2) its educational value in broadening one's concept of the various forces and agencies in nature. I hold, therefore, that it is the function of the universities to cater for the graduate aspiring to become a professional bacteriologist by providing advanced instruction in general bacteriology to those desiring it, whether for professional work in medicine or in any other sphere. Due recognition of this subject would be required in any honours course, where it should be at least on all fours with physiology or any other fundamental science. In no other way are we likely to secure a field from which may be recruited workers capable of filling a space, whether in the practical application of bacteriological knowledge or in special research. I trust this aspect of the subject will receive due attention in the course of the discussion, as I am convinced that a greater appreciation of the educational value of bacteriology is essential for securing systematically trained recruits for the bacteriological profession. Posts for trained bacteriologists have greatly increased of recent years, but I am not aware that there has been any corresponding increase in the field of suitable candidates. Believing, as I do, that a training in research methods is indispensable for the professional bacteriologist, I do not think that the available fellowships and scholarships which are offered for this purpose continue to attract young and promising male graduates as they used to do. This is a feature which I view with grave concern. Possibly it may be only a temporary phase consequent on the economic exigencies of the times and the necessity of entering as quickly as possible on a remunerative career.

The forces which have led young graduates in the past to qualify for the laboratory life in bacteriology have doubtless been diverse. The inspiration of the teacher, the organization and general life atmosphere of the university department, have been notorious among these forces, and it is reasonable that the great recruiting grounds of young trained pathologists and bacteriologists have been, and, I think continue to be the Scottish schools. The reason perhaps is not far to seek. Abraham Flexner, in his recently published book on medical education, remarks that

in Great Britain and France, despite their promising start in the eighteenth and in the early decades of the nineteenth century, pathology was, fifteen years ago, dead-house anatomy—a tool of the clinic. Except at Glasgow, nothing resembling an institute of pathology, where even morbid anatomy could be pursued for its own sake, could be found in either country. Autopsies, he says, were abundant, but they were made as a rule by junior members of the medical and surgical staff intent largely upon verifying or upsetting a diagnosis. There can be no question that the intimate connexion which has prevailed in German universities between the institute of pathology and the hospital, the director of the pathological institute being also the hospital pathologist, has fostered the unity and independence of the pathological institute and favoured the prosecution of morbid anatomy and histology for their own sake.

These German pathological institutes, as Flexner points out, and as I know from personal experience, were essentially institutes for the study of morbid anatomy and histology. Routine service to hospital probably restricted the experimental side of pathology, which was cultivated more generally in the departments of physiology, hygiene, and pharmacology. Bacteriology in the German university has usually been associated with the institutes of hygiene, the directors of which have been prominent bacteriologists. This development was primarily due to the influence of Koch, who, in founding with Flügge the *Zeitschrift für Hygiene*, envisaged the enormous importance of the new science of bacteriology to preventive medicine.

In this country, except in Scotland, the development of the pathological institute has been slow, and, in London especially, improvement has been impeded by the numerous vested interests connected with hospital management, but of recent years there have been welcome signs of widening up to new ideas, as evidenced in the separation of chairs of pathology and bacteriology, the development of pathological institutes at Oxford and in the great London hospitals, the founding of new journals, the ample provision of fellowships and scholarships for study at home and abroad, the distribution of grants in aid of research by the Medical Research Council and, may I add, the ever-increasing influence of the Pathological Society of Great Britain and Ireland.

To sum up this portion of my address, it may be said with some truth that in this country—and doubtless elsewhere—pathology and bacteriology have suffered from an undue concentration on the purely practical and didactic aspects of these subjects, both in the matter of undergraduate teaching and in their application to practice in medicine. Unlike physiology, which has remained largely aloof from practical medicine, pathology and bacteriology have given to practical medicine an unstinted and highly unrequited service which unfortunately has entailed a considerable sacrifice of time and brain that might otherwise have been devoted to research. To return under university supervision the best features of routine diagnostic service, whether from hospitals or municipal health departments, will demand a greater expenditure for extra staff, equipment and accommodation, but I firmly believe that the university association is worth preserving in some reconstructed form in the best interests of the coming race of pathologists and bacteriologists and also, may I say, of the particular health or hospital authority enjoying the university connexion.

The form which the reconstruction is to take so that the university connexion may be retained is not for me to discuss. It will I hope receive full consideration to day. The solution will doubtless vary with the local conditions in the university towns.

A corresponding obligation rests on the public health administrator and the general practitioner to maintain a active interest in the general progress of pathological knowledge so that facilities offered by the pathological service may be employed to the best advantage and not be, as they often are, dissipated in unprofitable investigation. A return to war conditions of medical practice would, I suppose, now be unthinkable, but from experience in the late war I feel strongly that the new knowledge with regard to epidemics, the efficacy of new remedies such as therapeutic sera, for example, or of prophylactic vaccines, would not have been ours to-day had it not been for the

compulsory co-operation for a set purpose of all medical units concerned. Some features of the military regime right with advantage be translated to civil life.

Let me refer briefly to the position of research institutes in the scheme of things. The research institute occupies a somewhat different but not essentially different position from that of the universities. Workers in such institutes are generally graduates in medicine or science who are given opportunities for carrying out an approved piece of research under the expert supervision of the staff. All the ancillary sciences that minister to medicine are usually represented in the institute staff, so that the institute forms a self-contained unit. Since also there is open hospital, for the foreigner, the institute fills an important international role. With regard to the work carried out in these institutes, which are not directly linked up with hospital or patient, it has been proved beyond question that experimental pathology and bacteriology, comparative pathology, research in serum therapy and specific disease prevention, supply under the conditions of the research institute a constant stream of problems the solution of which may or may not have their immediate echo in practical medicine. There come times and circumstances, however, when the direct appeal to the human patient becomes insistent, and when that appeal cannot be readily met, or, if met, cannot be adequately controlled by the expert responsible for the initiation of the inquiry and therefore especially interested in its outcome. Both the Pasteur and Rockefeller Institutes have provision for this in the establishment of the research hospital.

In August, 1895, just a month before Pasteur's death, a benefactress came to him with a proposal to construct and maintain at her expense a research hospital of 100 beds for the treatment of diphtheria cases with the new remedy antitoxin, and of persons bitten by rabid dogs with the newly developed immunization methods of Pasteur. Thus was founded the first research hospital, the perfectly natural tribute to the achievements of a single man of science working in the interests of suffering humanity.

In 1907 the board of directors of the Rockefeller Institute, which had been founded in 1901, were invited by Mr. Rockefeller to submit a plan "for an important extension of the field of medical research—namely, a means of studying disease in its clinical aspects under conditions as near as possible to laboratory standards of exactness and efficiency." Thus was founded with ample funds the Rockefeller Hospital, which has been an invaluable adjunct to the institute, though in many respects it is by its constitution a self-contained unit, possessing its own clinical, physiological, and pathological laboratories. I cannot here labour the advantages which such research hospitals can confer on the institutes to which they are attached. I shall just say that at the Lister Institute we have a side ready for a research hospital when the necessary funds come along.

It may be asked, however, how far the ideal of the research hospital is met by the new unit system. Certainly the unit system should approach to this ideal, but it must be remembered that fundamentally the unit system is a link in the pedagogic chain. Consequently the freedom that the research hospital gives to select cases for study, and to retain them for as long as may be necessary in the interest of the problem under investigation, cannot be realized under the unit system, not owing to the distractions of the pedagogic side, nor the full ideal of the research hospital is realized. With the research hospital I would associate the experimental farm and would take this opportunity of alluding to the possibilities afforded by institutions of his kind under the Medical Research Council, the Wellcome Research Laboratories, the Boards of Agriculture in England and Scotland, and the new department of comparative pathology at Cambridge. The special requirements of comparative pathology will, I trust, be duly considered in the following discussion.

I pass to consider some remaining points relative to the actual progress of pathology and bacteriology in this country in spite of the handicaps to which I have referred.

The Medical Research Council, in order to press certain perfectly reasonable measures of reform, have attempted an estimate of the achievements over a short period of

pathology and bacteriology as compared with those of physiology and biochemistry. In my opinion they have not done wisely in attempting such assessment, and some of the arguments adduced to support their points are, in my view, founded on irrelevant or inaccurate statement. At the close of the report they have given expression to the possible fallacy involved in estimating achievement over a short period, but they have nevertheless done so, and the repentance comes rather belated.

It is clear to me that the Council find themselves on the horns of the God and mammon dilemma. They have seen the practical achievements of insulin—after forty years of effort—they have noted the practical issues of the new science of nutrition and the application of experimental biology to questions like industrial fatigue. They see the physiologists are now becoming practical people. They then reflect that too much practical application, which may involve purely commercial considerations, tends to stultify research and point the finger at pathology and bacteriology. Bacteriology, in their view, has just been groping about for new weapons of attack, the old ones having served their day. So it has, and possibly in less than forty years it may succeed in solving the problem of cultivating the invisible viruses (if it has not done so already), but bacteriology has been by no means at a standstill either in this or in other countries. When the Council say that not one of the causal organisms of the common communicable diseases has been discovered in our university laboratories, it must be remembered that neither have any been discovered elsewhere. The reference to discoveries by British workers abroad in connection with malaria, kala-azar, sleeping sickness, etc., has little relevance to the present issue, while the statement that the work actually done in our university laboratories was not such as to attract notice and interest in other countries has a most ungenerous savour even if it were a true remark, which it is not. The Council forget that the individual research worker can rise above such things as university organization and ideals.

In recent years we have seen new and promising developments in the preventive medicine of diphtheria and scarlet fever, and gained a vast amount of new knowledge relating to typhus fever, trench fever, neurotropic viruses, anaerobes, and spirochetes, and now, let me add, of cancer. In addition, general bacteriology is being quietly and successfully pursued in many laboratories, and fundamental questions such as the factors which control the growth and variation phenomena of bacteria are being attacked. The solution of these problems may affect profoundly our conception of the nature of the relationship between host and parasite—that ever insistent field of inquiry of pathologist, bacteriologist, and epidemiologist alike.

If bacteriology fruits in five years to throw up an attractive flower, Heaven knows that in the past forty years it has thrown up many. Let it rest for a while in the apparent slumber of growth and rejuvenescence, working out anew its fundamental problems in activities which do not attract, perchance, the attention of the superficial observer. [This was written a few weeks ago. It may be that the attractive flower I speak of has already blown.]

Let me, lastly, say a word on the question of terminology. One constantly meets with that curiously artificial classification of research workers into physiologists, pathologists, bacteriologists, biochemists, and exponents of experimental medicine. Physiology, as the study of normal function, tries to express its phenomena in terms of physics and chemistry, while pathology, as the study of abnormal structure and function, attempts the same, with perhaps less faith, though its methods are no less precise than those of physiology. Much of what is called modern physiology is frankly experimental pathology, and, as to its achievements, surely the knowledge of normal function which the physiologists have gained has come mainly from the study of induced disease. Bacteriology, initially a purely biological study, became suddenly a department of experimental pathology, which, in the main, it still is, but many of its numerous offshoots in industry and agriculture are essentially biochemical in character.

Modern biochemistry dates its chief impulses from Pasteur's fermentation studies the work of Emil Fischer

and the developments which took place towards the end of the nineteenth century in the study of physical chemistry. Many of its problems, especially in industry, biochemistry shares with bacteriology. The new science of nutrition is equally the outcome of Hopkins's physiological researches on growth and of the earlier observations of pathologists like Holst, Eijkman, Braddon, Fraser, and Stinton. There is no historical warrant for fathering biochemistry on physiology. Research is discontinuous. One goes a little forward only to recede a little less and then again advance, and in the biological sphere no one can tell from what practical department a new weapon of attack may come.

The biological research worker is becoming increasingly difficult to label, and possibly it may in the future be found more convenient to drop these terminological intricacies and employ some more comprehensive label which will express that interdependence of all the biological sciences on which alone hangs the future progress of research.

GENERAL DISCUSSION

Professor M. J. STEWART (Leeds) said that he found himself in sympathy with the views which Dr. Ledingham had expressed. The training of the pathologist was strictly relevant to the subject of the present discussion. The academic duties of a university pathological department included not only the instruction of students, undergraduate and graduate, and the prosecution of research, but also the training, in all branches of their work, of future pathologists. Most of the latter must, by force of circumstance, become either hospital pathologists, bacteriologists to health authorities, or consulting pathologists in private practice, and for their proper instruction and training an abundant, steady supply of fresh pathological material was an absolute necessity. Especially was this so in the field of morbid anatomy, where proficiency in diagnosis could only be attained after years of training and experience. It might be argued that men of this class should receive their training, or at least their later training, in hospital and public health laboratories, they should certainly receive some years of training in university laboratories, where they would not only have the spirit of disinterested inquiry and research inculcated from the earliest stages, but would be able to maintain contact with and to receive intellectual support and encouragement from men working in other subjects and faculties. They would also have the resources of a well founded library always available for immediate reference. A primary difficulty in connexion with the training of pathologists was that in most cases the candidate started on his medical undergraduate career with only the haziest notion of his ultimate destination. Late in his course, or perhaps after graduation, he found himself attracted by the charms of pathology or bacteriology and later still learnt how inadequate had been his preliminary training for this work. Hence was little or no difficulty about his requiring in time satisfactory working knowledge of these sciences, which he lacked was that broad, fundamental training in mathematics, physics, and chemistry which would enable him to tackle with success the great problems of disease still awaiting solution. Physiology scored in that a student might study this subject intensively before starting on the task of the later medical curriculum, and might even take a course therein without necessarily continuing the medical course. A similar position was being attained by bacteriology. In Leeds, for example, there was now offered a four years' course leading to the degree of bachelor of science with honours in bacteriology. He doubted, however, whether pathology could be so studied with advantage—much as in end in itself, and divorced from the clinical side. That was not to say that the study of the subject might not be commenced in the pre-clinical years, and one enriched with sympathetic interest the important experiment now being made at Cambridge of placing pathology among the subjects for Part II of the Natural Sciences Tripos. It was the fashion some twelve or fifteen years ago to deem morbid anatomy as a worked-out subject indeed, its "passing" was duly announced, and one gathered that the whole future of pathology lay in the hands of the bacteriologist and the chemist. That was very far from

the truth. Instead of being at the end they were still only a little way past the beginning instead of dropping the subject because there was nothing more to be discovered, they were merely on the outer fringe of a very big and most difficult field of study. Of recent years, however, there had been a definite revival of interest in the subject less striking, perhaps, in this country than abroad, but even here sufficient to act as a valuable incentive to further effort. Might it be that one of the factors responsible for the decline of interest in morbid anatomy a few years ago was the position occupied by normal histology in many of their medical schools, probably as a direct result of the increasing interest in experimental physiology and in biochemistry? In most schools, he imagined, the subject was still taught under physiological auspices, in a few under anatomical, and neither physiologist nor anatomist, with a few notable exceptions, seemed at all anxious to hold the baby. Was not the time now ripe for the institution in all their universities of departments or chairs of normal histology, or at least for the appointment of senior members of anatomical or physiological staffs, whose first duty should be teaching and research in normal microscopic anatomy? The critical examination of the present position of pathological and bacteriological research in British universities in the last annual report of the Medical Research Council had already been referred to by the President. While there was undoubtedly much justice in these criticisms, he did not agree with the wholesale ban on routine work there pronounced. The value of such work in the training of young pathologists had already been mentioned, but in the case of morbid anatomy the "research value" of routine work must also be borne in mind. In illustration, if such were needed, one might refer to the admirable work of Nicholson of Guy's on the histogenetic relationships of tumours, the tissue heterotopias, and allied subjects, and of Masson of Strasbourg on the histology of tumours. From the point of view of the encouragement of research it was the conditions under which the routine work was done which mattered, and here it had to be admitted that things were not all they might be in many universities. It should only be permissible for a university department to undertake work of this kind provided that the amount per individual member of staff was not excessive, and that adequate accommodation was available. It should also be possible to free members of the staff entirely from routine work when occasion required, in order that they might concentrate for the time being on special lines of research. These conditions were on the way to attainment in most of the university centres where routine work was done. The Medical Research Council's report made no distinction between the routine work of the hospital and that of the public health service, yet it was, he thought, generally admitted that work coming within the latter category was of much less value than the other for purposes of teaching and research. Possibly it required to be dealt with on different lines. After reading the report's whole-hearted condemnation of the practice of applied pathology within the universities, it was pleasing to turn to the section which dealt with physiology, and to find that what was sauce for the goose was by no means sauce for the gander. "During the war," they read, "the pressing need for bringing the best physiological knowledge to the aid of sailors, soldiers, and workers in their exposure to every kind of violence, hardship, and physical stress, brought the physiologists increasingly to their proper place within the fields of preventive and curative medicine. This closer union brought many benefits to practical medicine, whether military, civilian, or industrial. Equally it brought benefit to the physiologists for the challenge made by practical problems, here and in so many other instances, so far from taking men away from the academic pursuit of knowledge for its own sake, was found to freshen their interest and to suggest new clues for further pursuit by theoretical inquiry." He concluded with a plea for a much enlarged side of the work—that part of it which surgeons especially, but even some pathologists, seemed fond of designating "dead-house pathology." The pathology of the living, as it was called, had become something of a fetish in these days, but while admitting as fully as possible the enormous value, for research purposes, of the pathological investigation of the living subject, he reminded his

audience that, after all, the *post mortem* room still provided an invaluable and almost inexhaustible field for original research.

Professor CARL H. BROWNE (Glasgow) said that Dr Ledingham had made a very comprehensive survey of the matter, and that his conclusions would meet with general acceptance by practically all who were in a position to judge. The quality of the pathological and bacteriological work which was being done in this country would bear comparison with that done elsewhere. British workers, however, as a rule, had been disinclined to utter generalizations which they believed might be premature, and this, coupled with a striking absence of the polemical spirit, had probably been mainly responsible for the small degree of publicity which their work had obtained in this or other countries. There were three points arising out of the subject for discussion on which he desired to lay special emphasis: (1) the training of the research worker, (2) the facilities for research, and (3) the endowment of research. To begin with, however, the question of bacteriology, considered separately from pathology, required brief attention. The investigation of bacteria for their own sake, and apart from any application, for example, to problems of agriculture, disease, etc., was eminently desirable, and there could be little doubt that many questions would be elucidated by such a study, but its pursuit was only beginning to be seriously undertaken, and the problems did not concern pathology more than botany and certain other sciences. He would therefore consider bacteriology solely in relation to disease or, as it might be termed, medical bacteriology. Here one was, of course, speaking of the training of talented individuals, and not of geniuses like Pasteur, since for these it was not possible to legislate. It was self-evident that pathologists and bacteriologists must have a medical training in order that they might be capable of appreciating the problems with which they had to deal. If, in addition, a degree in pure science had been taken, an excellent basis would have been provided, and the invaluable knowledge of how to conduct an experimental inquiry would have been gained. A working knowledge of French and German was essential. The course of study for an honours degree in science occupied with advantage four years, and included natural philosophy, physical and organic chemistry, anatomy and physiology, in addition to the principal subject of pathology with bacteriology. The principal subject, which was studied for three years of the course, occupied the whole of the time of the final year, the latter being devoted to research in some special branch of pathology or bacteriology. A similar course, in which some other principal subject was taken—for example, chemistry (organic or physical), physiology, or natural philosophy—would probably provide a training at least equally valuable. These schemes of courses were cited, by way of example, from the regulations of the University of Glasgow, but similar courses were followed at other universities. But besides a knowledge of the clinical aspects of disease, and as full and varied a scientific training as possible, a prolonged apprenticeship was required in a pathological department, preferably, to begin with, in one which combined both teaching work and routine examinations for a hospital. Assistantship in such a department, on the one hand, imparted familiarity with the natural history of disease and the correlation between pathological findings and clinical phenomena, on the other hand, teaching duties implied an intimacy with the subject in its broadest aspects. Such experience, acquired under the guidance of an able chief, was an excellent, and probably the best, foundation for sound research work, which would, of course, be carried on also at this time. It was to be noted that in this training no distinction should be drawn between the more purely bacteriological side and the pathological aspect of the work. It was a misfortune that medical bacteriology in hospitals was sometimes carried out by a separate staff housed in a department distinct from that of the pathologist. The young bacteriologist brought up under such conditions might run the danger of becoming a mere identifier of organisms. It was apparent, then, that the definition which he attached to medical bacterio-

logy was that it constituted that branch of pathology which dealt with infective diseases and their causation.

In the early period of post-graduate work it was of the greatest advantage to the worker to hold for several years a whole-time research fellowship. It was usually most preferable to hold this before entering on an assistantship, since the latter post was a more or less permanent one, and if relinquished could not perhaps be readily taken up again. But there was little doubt that the best results would be secured by the holder of such a fellowship having undergone several years' assistantship beforehand, so that in that way the special problem of the research would be surveyed with a better general perspective. In practice, however, the point was perhaps not very important, since the worker would be influenced by the criticism and encouragement of the other more senior members of the laboratory, and in this way he would gain his most valuable training in outlook and in experimental method. He regarded this period of work as an exceedingly valuable part of the investigator's training, and would prefer to omit the degree course in pure science rather than to cut out post-graduate study, which was undertaken apart from the influence of impending examinations.

Pathological problems were presented in their truest and most concentrated form to the pathological departments of hospitals. Where these laboratories were combined with the teaching departments of the universities, particularly good opportunities were afforded for the training of pathologists. It followed that the workers who had experience as to the nature of the problems should also have facilities for attempting their solution, and, therefore, that research work should be in active progress in these departments. It must be recognized, however, that a general miscellany of staffs would be required in order that this plan might come into effective operation. He would not regard it as excessive if, as had been recommended, every member of the staff of every pathological department had at least half of his working time free to devote to research work. Further, this free time should belong to each worker by right, and should not depend on the award of any form of terminable fellowship. In all such matters the arrangements should rest with the chief of the department, on his spirit and judgement depended the success of the department as a centre of research. The wide adoption of the custom of the sabbatic year was highly desirable also.

As regards infective diseases, it was, of course, at the fever hospitals that bacteriological and pathological research of the highest importance remained to be done. It was, however, with the greatest concern that one saw still so great a neglect of sustained investigation in these hospitals throughout the country. The problems of disease as presented there were among the most vitally important to the community. For in these hospitals one had to deal with acute infections which crippled or cut short young and active lives. The subjects attacked by such diseases were capable of vigorous reaction, and the problem of aiding their resistance appeared to be among the most hopeful of those which awaited solution. But there was as yet little or no provision of trained pathological and bacteriological investigators at the fever hospitals, and the important research work which ought to go on at these institutions was left virtually untouched. The establishment of active and continuous research work at all the large fever hospitals would mark a great advance, and was likely to yield results which would prove of the utmost value to practical medicine.

It was not intended to imply, in what had been said, that institutes for research pure and simple did not play an extremely valuable part. But they would exert their most beneficial influence by attracting the more experienced workers. It was worth mentioning in this connexion that the pace of research work probably could not be hurried on indefinitely, and that it was vain to hope that a colossal institute furnished with very large numbers of workers and with huge material resources would in a short time solve a proportionately large number of problems. Time was an essential factor in research, which would not yield all its best results to methods of mass

production. A closer association of research in animal and human pathology was most desirable. Few university departments had facilities for the adequate maintenance of considerable numbers of larger animals. Such animals were more and more necessary in the elucidation of human pathology, and the experimental work of the pathologist in the past had probably suffered greatly from being so much restricted to small rodents. Therefore the participation of the universities in veterinary training and research would without doubt confer high mutual benefit.

Even when adequate staffs were provided there still remained the need for the materials required in research. Although it was now admitted generally that research was one of the functions of a university, the provision for the material needs of research on a satisfactory scale did not appear to be very seriously considered by local bodies. The Medical Research Council had given almost inestimable assistance by paying for both personnel and material. But the Council, apart from the National Institute, were concerned with individuals and with particular schemes of research work rather than with the financing of departments. Also no other body, so far as he knew, made grants for research except on a personal basis and for particular schemes of work, and the period of the support was strictly limited. The financing of laboratory expenditure on a generous scale was essential, however, if continuity of research work was to be secured. And it was to be remembered that the kind of work which was worth doing was largely of a nature which might proceed for years without affording striking results, and even without furnishing materials for honours theses to candidates for doctorates. Such work could best be aided by local endowments, and research endowments of this kind were an essential complement to the endowment of professional chairs. Without the former the latter were not likely to produce the anticipated fruits of first-class research. It was particularly important, however, that such endowments should be secured without the fettering condition of their being applied solely to the investigation of some particular specified problem or disease. No benefactor was likely to be wise enough to know what investigation could be most profitably pursued even a year hence. Here as throughout, one must trust the competent investigator.

Dr J. A. BRAXTON HICKS (London) said that the ground had already been so well covered by the previous contributors that, as the last contributor to the opening papers, he would confine his remarks to but two aspects which greatly affected pathological research as seen in teaching hospitals of university standard and even in large university departments of pathology. The first factor militating against efficient and sustained research was the excessive burden of teaching and other routine duties too often imposed on responsible directors and senior members of pathological departments. This factor was a variable one in different institutions, but there was no doubt that it existed to a certain extent in all. They had all been informed by the sponsors of the large clinical unit system that here there was a solution of the problem as touching effective research into clinical and even the profounder problems seen in disease. It was in practice a fact that such was not the case and that the directors and workers themselves found their efforts still hampered by the necessity of undergraduate and post-graduate teaching. He did not think the solution of this problem was the divorce of teaching and research, because it was to his mind essential for university discipline that some instruction should come from the senior members of a university department. The solution was, as Professor Browning had suggested, the provision of much larger staffs, and therefore this implied as a consequence the better endowment of pathological departments. For too long had those responsible for university and hospital administration regarded pathology as the Cinderella of the three sisters, medicine, surgery, and pathology, and had often thought it right to expect that "research" should commence when the ordinary day's work was done. Indeed, this was reflected in the popular idea of a research worker as one who wrung secrets from reluctant nature by copious consumption of the midnight

oil. The second factor, and one which would continue to hamper research to an even greater degree in the future, was the absence of a good supply of suitable young workers in the departments of pathology. Largely this was economic, for the remuneration offered to young men anxious to take up bacteriology and pathology could not be considered adequate and indeed hardly constituted in many instances a living wage. Previous contributors to this discussion had expressed views as to the value of routine work, even work of an admittedly routine "commercial" type, such as public health diagnostic work. Personally he held that routine work of any sort was of the utmost value in the proper training of a bench worker. A man in training to become a valuable worker should know the essentials of everything that pertained to his job. Thus a bacteriologist should know the essential facts about media making when he commenced his career, and so on for other branches of pathology, otherwise how could he put his finger on possible factors governing his experiments if he did not know the fundamental factors? Again, a young man set to do routine work over a certain period of time needing skilled technique required "bench sense" and could be known by his work to be a reliable worker. Once they had a reliable worker to whom they could detail certain lines of investigation that might arise in any department, that worker would quickly evolve ideas of his own arising out of that line of investigation, and once they had a man who could evolve, as it were, "side lines" such as those, they had, he thought, a research worker in being. He personally, therefore, regarded routine work as the best "kindergarten" for the research worker, where this work was carried on under university conditions that workers had every opportunity of viewing pathology in its broadest sense, and did not necessarily find himself labelled as a morbid anatomist, bacteriologist, biochemist, etc., though he might show a certain aptitude for some particular subject which it was the duty of the director to encourage and foster. To summarize his remarks, it was essential, first, that the trained laboratory worker should have adequate time at his disposal for research, and that could only be done by increasing the staff of the departments of pathology, and, secondly, that young men should be encouraged to take up the various branches of pathology by being adequately remunerated. These two conditions necessitated a proper endowment of pathology. Further, they must not divorce teaching from research, nor routine work from the departments of pathology, for teaching was good for discipline, both in the teacher and in the disciple, while routine work trained the future research worker. And last, but not least, university experience should broaden the outlook of the laboratory worker in all branches of pathology.

Dr J. A. ARKWNIGHT (London) said that at first sight it appeared futile to discuss whether physiology or pathology was the more fertile field to cultivate, since the distinction between them was arbitrary and difficult. Such comparisons had, however, been made recently, as recalled by the President. Pathology was concerned with morbid structure and function, and physiology was also concerned with function, but the distinction was usually made that the latter was concerned with function in a state of health only. As had been pointed out, however, physiology had very frequently to draw its conclusions from morbid states which might even have been intentionally induced for the purposes of experiment. The question how far pathology and bacteriology should be studied in isolation apart from practical human affairs seemed to be determined in the main by what might be called opposing centrifugal and centripetal forces. There were a number of practical objects besides medicine which led to the study of bacteriology, and each, approaching this science from a different angle, contributed to the sum of knowledge. Clinical medicine and hygiene (human and veterinary) must always remain at the centre of medical science. The subsidiary branches had so tumbled off from this centre on account of the uncollected difficulties of applied medicine, due to its extreme complexity and the many variable factors involved. In order to resolve the problems into simple terms recourse had been had to the dead house, and attempts had been

made to analyse disease organ by organ and tissue by tissue, dead or alive. To make this involved research easier and more hopeful of clean-cut answers, the student had sought to obtain more uniform conditions as a foundation, and had tried to reach less variable standards in the more stable states of health by studying what appeared to be the basic science of physiology. The difficulties, however, were still great, and, continuing the process, physiology had resolved itself so far as it could into mechanics, biochemistry, colloidal chemistry, and physics, which now very largely constituted what was known as physiology.

The other great force which controlled the course of development of the medical sciences might be called the centripetal force, which drew the auxiliaries to the main body and caused the workers to turn to the needs of clinical medicine and hygiene for their inspiration and justification. In a sense, no doubt, it might be said that a science like bacteriology could stand alone and be its own justification. Nevertheless, he thought that human beings usually needed a more definite aim or goal, near or remote, to justify the course they were pursuing, and to silence the sometimes insistent demands of "Cui bono?" He believed this was especially the case in early life, when energy was greatest and careers were being determined.

Medical problems, though not alone in this respect, had a very wide and powerful influence in this sense. The more intimately pathology and bacteriology could be linked to practical medicine, without a serious sacrifice of the necessary specialization and unhurried research, the better for both departments. That university departments of pathology and bacteriology had found it desirable to sever their connexion with hospitals or public health work must depend on temporary conditions, such as the lack of appreciation by public health authorities of the help which science could and should render to hygiene. The severance was hardly likely to be permanent, though the funds and other conditions for the union might for the time not be satisfactorily provided by the public health authority or by the university. The only justification for this divorce from the public health point of view would be the provision by the authority of laboratories so well equipped for wide and thorough research in pathology, bacteriology, and the allied sciences, that they constituted in themselves scientific institutes of university standard. As the scientific theory of preventive medicine in relation to pathology and bacteriology became more fully thought out and expanded, it seemed probable that a correct alliance of the hygiene departments of universities with these sciences and the public health service would appear.

SECTION OF PUBLIC MEDICINE

T. EUSTACE HILL, OBE, MB, President

DISCUSSION ON FOOD MANIPULATION IN RELATION TO HEALTH

OPENING PAPERS

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We are all aware that the applications of scientific knowledge and the difficulties of feeding a rapidly increasing population have resulted in a great increase in the extent to which our food supply is presented for consumption, not comparatively unchanged as in nature, but materially modified and altered. It is of great practical importance to consider very carefully the extent to which such changes in our food habits are of importance in relation to the health of the nation, to decide the amount of oversight which should be exercised over the methods employed, and in particular whether any check should be enforced in regard to the extent to which food is allowed to be manipulated. All three considerations are of great importance, and will, I hope, be thoroughly discussed.

It is a mistake to imagine that food manipulation is a modern phenomenon, it is attached as man's civilization,

but the extent and form of it is largely modern. Indeed, the art of cooking food is itself a form of food manipulation, and as such cannot be neglected in regard to its influence upon the foods so treated. It is unnecessary to describe in detail the different forms of food manipulation, but as a basis for discussion it is convenient to outline the different types in relation to the objects in view, or unintentionally achieved.

1 Manipulation to Preserve Perishable Foods.—This is a very valuable objective since it not only enables seasons of plenty to be used to balance seasons of deficiency of food production, but it allows foods plentiful in one area to be made available for those in another in which they are absent or deficient. The methods employed are preservation by the action of cold, putrid or complete sterilization by the action of heat with subsequent exclusion of air (canning and bottling), drying to eliminate water, the addition of chemical substances (preservatives) to inhibit bacterial growth.

2 Manipulation to make the Finished Article More Digestible or More Palatable.—Simple cooking must be included in this category. Many potential foods are not utilizable in their native condition. Many of these methods do not affect health, but some are of great importance. Those which demand most consideration are processes which remove part of the food and only preserve the white and finer parts. The preparation of white flour instead of wholemeal flour is by far the most important of such manipulative changes, while the polishing of rice and other cereals also comes under consideration.

3 Manipulation to Provide a New Type of Food.—Numerous foods of this class come under this heading—such as cheese, butter, beer, vinegar.

4 Food Sophistication with the Substitution of one Article either in Part or Wholly for Another.—Sometimes this is done to make a food more palatable or appear more attractive, but usually it is a fraudulent manipulation to save money by the substitution of a cheaper for a more expensive food. Well known examples are the use of potato starch for other starches, margarine for butter, adulteration of milk with water or skim milk, and undue amount of bread in sausages.

5 Accidental Contaminations.—These are liable to occur in all food manipulation, and may be chemical, bacterial, or parasitic.

Discussing the relationship of these practices to health conditions we can conveniently group them into three classes—namely, defects as regards nutritive properties, bacterial (and parasitic) infections and their consequence, and chemical contamination.

The Effect of Manipulative Changes upon the Nutritional Properties of Foods

There is probably no subject of greater interest and importance in relation to public health under discussion at the present time. The crude manipulations, such as the removal of proteins, the substitution of proteins of less nutritive value for higher, or the removal of fat, have long been recognized as detrimental and made the subject of penal enactments. It is rather in regard to finer and less quantitative alterations that chief interest arises to-day. The most important are diminution in the vitamin content and alteration of the mineral balance as regards such inorganic bodies as calcium, phosphorus, and iodine. Our knowledge of the importance of these substances is of recent origin, and in spite of much intensive research is comparatively limited.

Speaking generally, it may be accepted that food manipulation is liable to damage the vitamin content of foods so treated and may upset the physiological balance and availability of contained salts. A good many writers, however, go much further, and suggest that all food manipulation is harmful, and that a community is healthy, as regards its food supply, directly in proportion to the extent to which it is fed on foods which are in no way altered from the form in which they are delivered from Nature's laboratory. While not stated so precisely, this is very definitely the form of much modern propaganda work. Indeed, the extremists go much further, and propound the view that the physique of the people is deplorable (C 3), and that this defective and widespread condition is directly due to the fact that the nation suffers from vitamin starvation, much of which is due to the fact that our food is largely unnatural and sophisticated. Cooking is a form of manipulation comes in for sweeping condemnation, and this "babe to the raw" school would have us believe, further, that this vitamin

deficiency, which they allege to exist, is a direct incentive to overfeeding, with the added accompaniments, to make our flesh creep, of chronic intestinal stasis, decomposition in the large and small bowel, absorption of toxins and chronic poisoning, followed by rheumatism, cancer, and most of the rest of our fleshly ills. Apart, however, from such extreme conceptions, for which I fail to find a reliable basis of fact, certain considerations of the greatest practical importance do arise, some of which I propose to discuss.

In the first place, have we reliable information in regard to the extent to which food manipulation does damage the vitamin content and salt balance? It would appear that the general tendency at first has been to assume material damage, or even elimination, as the result of many processes, and that later investigation has shown that the damage has often, or even usually, been less than was anticipated. I have more particularly studied this point in connexion with canned foods. The primary assumption was that canned foods were devoid of vitamins. Later knowledge in regard to heat action, and particularly of the fact that it is oxidation rather than actual temperature which is of importance, has shown that the vitamin content may not be extensively impaired, especially as regards vitamin A. With increased knowledge it is being ascertained that it is possible to prepare canned foods with considerable, possibly unimpaired, vitamin content.

I would suggest that our knowledge is far too recent to enable positive statements to be made as to the effect of heat upon vitamin content, and that while as regards some food manipulations, such as the production of white flour, there would appear to be clear evidence of vitamin loss, for others we cannot yet speak definitely. For practical purposes we can only say generally that food manipulation is likely to be detrimental to vitamin content, and as such is potentially unsatisfactory.

In the second place, is there evidence that considerable sections of the community so feed themselves that they receive insufficient vitamins to maintain full bodily health? We are all convinced of the fact that the total deprivation of vitamins will cause specific deficiency diseases. The Vitamin involuntary experiment demonstrated that widespread lack of vitamins will cause disease. It is a plausible hypothesis to correlate deficiencies in health of our population with inadequate vitamin intake, but I have not come across any evidence which entitles us to affirm that the methods of food consumption of sections of the community are such that they ensure a deficiency of vitamins and that this deficiency is definitely related to conditions of ill health. At present it is purely an assumption.

A third consideration is whether there is any evidence associating some particular disease, or form of malnutrition of a particular section of the community, with a deficiency of vitamins or other food essentials in their diet. Here there is positive evidence, and the association of such diseases as goitre with iodine insufficiency, or rickets with vitamin deficiency (together with other factors), stands upon a strong basis of experimental and clinical evidence. On the other hand, the assumption that much malnutrition and general impairment of health in the community is due to vitamin deficiencies in the diet does not as yet seem to be supported with evidence of any cogency, whatever the future may be able to advance. Assuming that food manipulation materially damages vitamin content we have no evidence that the dietary habits in England are such that the proportion of such foods consumed is large enough to reduce to any material extent the vitamin requirements below a safety margin. It has to be remembered that the amount of vitamins required is extremely small, and it may well be true that even with a diet containing a large proportion of manipulated food the rest of the food intake may give all the vitamins required for full health.

Recently the conceptions of vitamin deficiency have been given a pathological basis. Crummer, Funder, McCarrison, and others have brought forward striking experimental evidence that deficiency of vitamins is associated with degenerative changes in the mucous membrane of the intestines and other organs, and that this is associated with a diminished resistance to bacterial infection from the small intestine. Such pathological conceptions are of great interest and importance, but are up to the present

associated with marked deficiency of vitamins in experimental work upon animals.

If these theories are true we should expect definite chemical confirmatory evidence. For example, countless children have been fed upon boiled milk without the addition of any added vitamins, and yet reliable observers have failed to find any evidence of disease from vitamin deficiency, although definite disease will result if vitamins are completely absent. Crummer remarks "The children of the poorer classes in whose dietaries bread and margarine play a large part are cut off from their main supplies of vitamins A and B." This being the case we should expect chemical and epidemiological evidence of poor physique and malnutrition and excessive infection amongst the children. School medical officers are in a particularly suitable position to provide such evidence, yet the essential facts seem to be that any evidence of malnutrition is associated rather with a diminution of adequate food, and that insufficient calories is the primary factor.

As regards ordinary food constituents, natural habits required with unrestricted food supplies have always been held as a valuable guide to what are really necessary components of a diet. Evidence seems yet to be lacking as to whether there is such a thing as a physiological craving for vitamins. If, for example, we are dealing with foods which are deficient in vitamins, do we, to satisfy this physiological craving, tend to eat excess of the deficient articles in order to obtain the necessary amounts of vitamin? It is a possible causation and explanation of overeating, and some evidence for or against such a hypothesis is very desirable.

I do not presume to say that the conceptions mentioned above as to the relationship of ill health in the community with a deficiency of vitamins in the diet are untrue—indeed they are extremely attractive, merely that they have yet to be proved as sufficiently accurate for them to be adopted and used as a basis for a public health campaign to interfere with modern dietetic habits. If we realize the need for proofs there is much more likelihood of attention being paid to their acquisition. By all means let us advocate the importance of vitamins in the diet, but not on grounds we cannot substantiate. There is a danger that the weight of public health activities may be diverted into directions in regard to which we are not yet in a position to speak with unimpeachable authority.

Bacterial Contamination

Foods in their raw state, including animal foods if from healthy animals, are for practical purposes free from bacteria. The more the food is handled the greater the opportunity for bacterial contamination and the greater the liability for it to be infected with pathogenic bacteria. While all manipulated foods are liable to bacterial infection, many of them are subjected subsequently to methods of treatment, mainly in the direction of the application of heat, which either sterilizes the product or reduces materially the number of living bacteria. Foods are so numerous and types of manipulation are so varied that it is impracticable to describe them in detail, and the danger can best be considered by discussing the general principles which are involved.

1 While bacterial additions from dust or other air-borne sources may be considerable, pathogenic bacteria are far more likely to be added from direct human handling. In manipulated foods it is usually impracticable to eliminate direct handling, but in many processes it can be greatly reduced, and in some—such as many canned food methods—there is very little direct handling. For example, in the canning of sardines in Maine (U.S.A.), as seen by me, the only stage in the complicated series of manipulations during which the small herrings are directly touched by hand is when they are picked into the tins.

2 Great importance is to be attached to the use of food which is sound initially. It is a mistake to suppose that this is a minor matter if sterilization is practised subsequently. This point is of considerable importance in connexion with canned foods. Sterilization by heat is governed by many factors, one of which is the number of bacteria which have to be destroyed. If the food is initially unsound it is liable to be heavily contaminated

with bacteria which have found conditions suitable for multiplication, and the likelihood of the survival of some of them is materially increased. For instance, *B. botulinus* is an obligate anaerobe which finds a suitable medium for multiplication on or within damaged fruit and may produce considerable toxin. Given the same degree of heat treatment, the danger of the survival of spores, or even of toxin, is increased by the use of damaged fruit or other food.

The relationship of initial numbers to survival and decomposition changes is well illustrated in some experiments of mine* upon yeasts in sweetened condensed milk. For example, in one experiment in which the yeast cells added to different tubes of condensed milk were respectively 20, 200, 2,000, 20,000, 200,000, 2,000,000 no gas production took place in the first two tubes with 20 and 200 yeast cells even after thirty-four days; gas production was greatly delayed in the tubes with 2,000 and 20,000 yeast cells but resulted within a few days in the remaining two tubes. This experiment and numerous others conclusively demonstrated that the survival of a few yeasts even of fermenting type, was inadequate to cause blowing of the tins and that this only resulted if they were sufficiently numerous to produce enough enzyme to break down the saccharose and produce gas. They were then comparatively independent of any oxygen supply and could continue to develop gas under the anaerobic conditions present in the tin.

3 It is possible to enunciate factors which will differentiate the degree of danger from bacterial infection. From this point of view we can divide manipulated foods into a number of groups, passing in order from the least to the most potentially dangerous.

(a) Bacterial contamination of a food which is a non-multiplying medium for bacteria and which is eaten only when cooked (least dangerous). Ordinary cereals such as rice or oatmeal are examples. These may be contaminated from mice excreta or other sources, but such added bacteria do not multiply if the food is kept dry and quickly die out, while subsequent cooking is a further powerful safeguard.

(b) A food which is a non-multiplying medium but which is not subsequently cooked. Bread is perhaps the best example. Much has been said about the dangers of infection from unwrapped bread, but in view of the absence of a multiplication factor I am not prepared to rate the dangers of infection as having an importance as great as those concerned with made-up meats and other similar foods.

(c) A food which is a multiplying medium for bacteria but which is not subject to slow cooling and which is subsequently cooked. The degree of the cooking and the nature of the food are important factors. Ordinary meat sausages are a good example. Bacteria will multiply greatly in such a food, but not at the same rate as in foods cooling slowly. Sausages will often contain very numerous living bacilli, and as they are frequently only lightly cooked a good many may survive. Even non-sporing pathogenic bacilli, such as those of the food-poisoning group, will survive in lightly cooled sausages. With some of the German types of sausages—such as blood or blood pudding sausages—in which the primary material is more liable to contain pathogenic organisms, the need for thorough cooking is still more obvious.

(d) A food which is a suitable multiplying medium for bacteria which is heated in preparation, but which is subsequently cooled slowly and eaten without further cooking. Ordinary brown is a typical example. Bacteria readily multiply in it. In preparation the cooking should destroy any bacteria present, although this is not always the case in practice, but it is then put to cool and cools very slowly. If a food-poisoning bacillus gains access the temperature conditions favour rapid multiplication, and since the food is not further heated they are consumed alive. Many outbreaks of food poisoning have originated from foods of this class, including brown, potted meats, and meat pies.

(e) Most dangerous of all are foods exactly similar to (d) but for which the materials used are in their native state liable to contain bacteria, and possibly pathogenic bacteria. Made-up foods containing viscera are foods in question, and since pathogenic bacilli are more likely to be present in liver lungs, intestines, etc., their preparation requires special care. Fortunately these types of food are not in great favour in this country.

I believe it is of real importance and value to compile some such scale so as to be able to assess the relative danger to health of any type of manipulated food and to prescribe the precautions necessary to remove or minimize such risks. It is absurd to group all foods together as if the dangers were the same. Unfortunately these considerations have not been followed by our Legislators, and we have, for example, plenty of legal enactments dealing with bake houses, but none giving control over premises which prepare made-up foods, such as meat pies, brown, potted meats, and the like. For many years I have been pointing out the need for such special supervision and control. In a report on food poisoning³ issued last May we point out—

"Such special supervision could best be exercised by requiring that every person carrying on such a business should be licensed to do so by the local authority. Before granting a licence the local authority should be satisfied that the premises were suitable, that the procedures were likely to be conducted in a clean manner, that they were not carried out in proximity to undesirable trades, and that the measures for protecting the foods when made, and especially during the cooling stages, were such as reasonably to prevent bacterial contamination."

The subject is of special importance in relation to food poisoning outbreaks, and the following figures as to the vehicle of infection in 203 such outbreaks will be of interest. These all refer to outbreaks in the British Isles, and many of them were personally investigated and bacteriologically studied by Mr. Bruce White and myself.

	Number	Percentage
Canned meat	31	
Canned marine products	27	30.5
Canned fruit	4	
Milk	14	6.9
Milk products	16	7.9
Made up meat	54	26.6
Manipulated meat	10	4.9
Fresh meat	33	16.3
Fruit and vegetables (not canned)	8	3.9
Other foods	6	2.9

This table shows what a large part foods which have been made up and manipulated play in food poisoning. They constituted 72 per cent of the whole, apart from some of the fresh meat cases in which some manipulation took place.

4 No finality has been reached under practical conditions of preparation in obtaining a satisfactory formula, which is always applicable, between the degree and amount of heat required on the one hand and freedom from pathogenic bacteria on the other. Two types of food may be mentioned in illustration.

In the manufacture of canned foods in order to obtain sterilization it is not the simple matter of the application of a known degree of heat for a definite time but all kinds of factors operate which profoundly affect practical conditions. Some of these factors such as the physical properties of the food and the degree of acidity vary with each type of food canned and sometimes with the same food. For instance the percentage of starch affects the formation of convection currents and thus delays heat penetration. To quote from Bigelow's excellent monograph in a series of experiments with 2 per cent of starch the centre of the can reached retort temperature of 250° F. in about fifteen minutes but with 3 per cent of starch it took about eighty minutes in creasing to 120 minutes with 5 and 6 per cent of starch. With the low percentage of starch the heat transference is due to convection currents, with the higher almost entirely to conductivity and so lags greatly. The ascertaining of suitable lethal temperatures for the bacteria in canned foods is therefore a matter involving numerous scientific considerations. In practice many perfectly sound canned foods are not sterile and my results for a long series of sound sheep samples gave 38 per cent not sterile, excluding sweetened condensed milk, which is never sterile.

The pasteurization of milk may be mentioned as another example since it may be regarded as a manipulated food. There is still considerable lack of uniformity of opinion as to the exact temperature and period of operation to secure destruction of pathogenic bacteria in heated milk without damaging it.

5 The risk of contamination from human sources in the later stages of preparation and in distribution is an important one, and there is evidence of disaster being so

spread. The importance of eliminating this kind of contamination is obvious and will be discussed in more detail by Dr Goddard.

Chemical Contaminations

These are of two kinds: substances introduced unintentionally, and those added deliberately. Unintentional chemical additions may be of many kinds, but are mainly either introduced from processes of manufacture—such as arsenic in beer or sweets, lead in cider and other foods—or added from the action of the food upon the container, tin in canned fruits being the best known example. Deliberate additions include the addition of chemical substances to preserve foods from decomposition, additions to enhance the appearance of foods, such as copper salts to vegetables and peas, or the addition of colouring matters and the use of such chemical mixtures as flour improvers, which in part are fraudulent in intent.

The subject of chemical preservatives in food is a form of food manipulation of great practical importance. My own views are clearly set out in the following quotation from one of my books¹ (1919).

'The new Ministry of Health with its advisory bodies of experts should find it perfectly feasible to enact suitable regulations setting out the preservatives which may be used with the maximum amounts for the different foods requiring that if these permitted substances are added the fact must be adequately set out on the label and prohibiting the sale of preservatives under fancy names. The addition of all preservatives outside this permitted schedule should be completely prohibited. It is quite useless to say that certain specified preservatives should be prohibited and leave the matter there since the trade chemist can always be relied upon to find fresh ones. The attitude to be adopted is that of prohibiting all preservatives except those scheduled as permitted under defined conditions.'

This is exactly the basis of the recommendations of the Committee on Preservatives and as embodied in the draft regulations of the Ministry of Health.

I do not propose to discuss these chemical contaminations and their prevention, as this aspect of the subject will be dealt with by a subsequent speaker.

In opening this discussion it seemed to me that it would be most helpful if I attempted to cover the ground on broad lines, only filling in certain sections, either because I had data from my own experience to offer which served to elucidate the subject, or because certain aspects appeared to me to be of special importance. I have no doubt that other speakers will wish to emphasize other sections and will complete the review of this very important subject.

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II—CHARLES E. GODDARD, OBE, M.D.,

Medical Officer of Health, Harrow, Wembley and the British Empire Exhibition.

ACCIDENTAL CONTAMINATION OF FOOD

What is so admirable about the address we have just heard is that every statement made therein is founded on a scientific basis. Dr Savage is one of those who could not offer any suggestion unless he had proved it from his great experience. I cannot claim that kind of experience nor his opportunities of research, but I feel, and feel strongly, and I am sure you do, that there is a good deal to be said, and a great deal more to be done still on the practical side of the question of the accidental contamination of food, and generally on food pollution. I shall therefore, in the few moments that are mine, place before you a few points worthy, I hope, of your consideration and support.

It may be taken for granted that in its preparation, in its storage, exhibition, and distribution, food is seriously polluted, mainly from lack of ordinary precautions, and we all know that every kind of bacterium has been found on and in the food put before the public. Now, I do not wish to infer that these bacteria are always placed on culture media that are ideal for their growth, or even for their existence, nor that they are responsible for a large amount of infection and disease, but I do insist that so long as there are so many lacunae in our knowledge of the origin of so many diseases, so long as so many of the sources of food poisonings are so obscure, it is incumbent upon us to eliminate as many as possible of the more obvious and grosser pollutions, at the same time pointing out better methods and suggesting remedies as they occur.

As a typical instance of gross contamination, let me remind you of the account given recently in a well known daily paper of the inspections made by a member of Parliament at Smyrna of the methods used there in the storage and packing of figs and sultanas. In that account he gave most disgusting details. Still more recently another paper, by way of explanation, if not of defence of Smyrna, published an article excusing the use of bare feet, and finished with the following note: "No doubt in some of the smaller houses evasions of the sanitary regulations may take place, but not in those competing for the American market." It went on to say, "If the British public are anxious as to the purity of their sultanas, the remedy would seem to be to adopt the American methods of consular supervision." I think you want no clearer admission of default than this paragraph. So it comes to this, that for long years past we have all been obliged to consume large quantities of filth, with results we can hardly gauge, as we are still ignorant how far this contamination of dried fruit is sterile or potent for evil on arriving in this country. In any case, we ought not to be asked to eat Oriental filth. With regard to this matter I think the obvious reply should be that our own colonies should lose no time in placing on the British market in every town these and other dried fruits in cartons, not necessarily to compete with the smaller tradesmen, but to create a demand and to educate the public to purchase only food for which a guarantee can be obtained that it has been prepared, stored, packed, and distributed in a cleanly manner. I feel that something should be done, and soon, to clean the atmosphere and satisfy us with better methods. Coming nearer home, I think the same argument applies to bread, you can all note four, five, or six separate contaminations from the oven to the home. Heaven knows how many occur in the house, often more than four before the bread is eaten. Here the remedy is at hand, has been tried, and has been found efficient—namely, to wrap bread, cakes, and similar food in waxed paper, and this paper should not be removed till the bread is consumed on the table. A bacteriologist tells me he has isolated streptococci and all forms of bacteria on the surface of bread. When we remember that more than 80 per cent of tuberculosis is in middle life derived from human and not bovine sources, and that a large proportion of those notified to us as health officers are never traced, when we think, for instance, of a dozen different people handling the bread on the sideboard to help themselves, we cannot be surprised at the wide dissemination of bacteria when the propagation is so easy. Every medical practitioner attends cases of sporadic infectious disease, and sees acute cases of gastrointestinal irritation in his practice for which neither he nor his patient can account. Fortunately, the majority of us are immune, and can deal physiologically with almost every form of bacterium except the members of the Gartner group, but one never knows the moment when that immunity ceases, and at any rate, we have a very clear and definite duty to protect others.

The unnecessary handling of food is almost universally practised, and is really most reprehensible. Go to the fruiterer's and watch women, even of good class pinching the greengroceries or the buns at a confectioner's. This kind of wilful pollution will continue till sanitary officers have more power to deal with this danger by suitable regulations from the Ministry of Health. Why should greengrocers be

permitted to expose their edible foods, as now obtains? We really want similar powers with limiters that we have with meat and milk. Go to the back streets of any town, and see the small grocers' shop fronts piled up with sugar, dried fruit, biscuits, chocolates, etc., and covered with flies and bluebottles by day and with cockroaches by night. Such exposure is not so much accidental contamination as premeditated pollution, and should certainly be prevented. Why should poorer people have polluted food? We have, as health officers, a good deal of power in a borough, but practically none at all in the shop, even now one often sees the assistant dribble the sweets from the hand into the scale pan until the exact weight is obtained. It is up to the public to condemn these faulty methods at once, and in strong terms. It is up to the press to instruct in better methods. You may say what you like about newspaper medical references, but with all our teaching, our societies, and lectures we have nothing like the power of the press—only the press should take care to be well informed first.

We have at last I am glad to say, the new Meat Regulations, giving better control of meat of slaughtering, and the slaughterhouse, but what is essential now—and we all heartily support Dr. Savage in his contention—is that all premises where made up meat foods are prepared for public use should be licensed so that frequent and thorough inspections can be made of those premises, of the ingredients used, and of the methods employed. Of course we can now inspect wherever food for the public is prepared—if we know—but we require the licence for systematic inspection. The same applies to ice cream vendors, though I am aware that many large authorities and counties have their own by-laws and regulations with regard to this.

The new Meat Regulations though welcome as a first instalment and no doubt good in parts, are wholly inadequate for present needs. With regard to milk, the public is duly obtaining a purer supply, and there is less adulteration and contamination. Every effort is being made by the county medical officers and the large distributors to induce farmers and draymen to deliver milk of high standard, and, we may say, on the whole successfully, but alas! it takes one almost weep to think how this valuable food is treated in the home. How very few people think it worth while to sterilize their jugs and utensils or protect the milk from flies and vermin! We all know that with the greatest care and vigilance in these rushing times it would be impossible to eliminate all sources of contamination of food, but nothing can excuse the appalling ignorance and want of care so often displayed in the treatment of food in the kitchen. There must be something very defective in the training of the home and in the schools that produces such a mass of incompetent, wasteful people who are responsible for the preparation of the food of the family, where so much pollution occurs, and so much damage to the vitamin content.

In paying tribute to the opener of this discussion for his learned and comprehensive address, I should like to thank him for allowing me to place before you these few points on the subject of the accidental contamination of food.

GENERAL DISCUSSION

Dr. J. BROWN (late M.O.H. Bury) said he had found one of the most frequently contaminated articles of diet to be cooled porridge, which was often retrieved as such from small shops in industrial districts.

Dr. CUNNINGHAM (London) thought there should be more supervision over cold storage, which he believed was responsible for some deterioration of food values.

Dr. H. SCURFIELD (late M.O.H. Sheffield) agreed with Dr. Savage that there was a tendency in certain quarters to make extreme and exaggerated statements on this matter. Even those engaged in the vitamin research work were liable to make loose generalizations. For example he had read pronouncements to the effect that the deterioration of milk destroyed the vitamins, whereas the truth appeared to be that only one vitamin, and that

the only reduced vitamin C, was affected by this process. He would like to see more exact work done with regard to the vitamin content of such common foodstuffs as jam and marmalade. He believed, however, that there was evidence sufficient to connect the universal prevalence of dental decay, constipation, and the poor physique revealed by recruiting statistics with vitamin deficiency, and thought we were on safe ground in advocating the increased consumption of milk and dairy products, more fruit and more green vegetables. Above all people ought to learn to adopt a diet which secured freedom from constipation.

Dr. S. NOX SCOTT (Plymouth) thought there was some ground for forming a general attitude of bacteriophobia, and although a little of that disease might be good for us, anything like an epidemic of it would be deplorable. With regard to milk they had neglected, though fear of vitamin deficiency, to advise the public to take two most simple precautions—namely, to cook all milk and add to the diet more fresh food and vegetables. It was always found that the mere mention of further regulations with regard to imported foods was immediately made the ground of political "stunts" and agitation by vested interest, a recent example of this was the outcry that had been made about the importation of foreign eggs. One of the most curious aspects of the food question centred round the impunity with which putrid food, especially game and cheese, was consumed by some people, and particularly that section of the community which was so ready to take advice to the rest of the nation.

Professor F. I. WATTS (M.O.H. Sheffield) regretted that so many medical men seemed to be unaware that it was their duty to report cases of suspected food poisoning. In several instances cases had only come to his knowledge on seeing a report, frequently exaggerated, in the lay press. By that time, of course, it was too late to obtain samples of the suspected food or clinical material from the patients, and thus valuable opportunities for investigation were lost. An extreme instance of manipulation of food was found in certain popular and much advertised proprietary articles. Some of these might contain some nutritional value, but even so it was obtained at an exorbitant cost which was deplorable in these days of general poverty. He considered it most unfortunate that many of these articles were "pushed" by the staffs of nearly all child welfare clinics. The mothers should be taught to get value for their money from natural fresh foods and cod liver oil.

The Chairman, Dr. LUSTIG HILL (County Medical Officer, Durham), agreed that it was important to avoid the suspicion of "stunts," which were always marring their appearance in connexion with medical matter, especially public health. Nevertheless, he was in agreement with the principles of the draft regulations as to preservatives, as was the Public Health Committee of the Association. Although he thought the risk of any dangerous contamination of bread was very small, he thought the wrapping of loaves was nevertheless a valuable procedure, merely as a hygienic example. That was an aspect of the question that should not be lost sight of, for such examples were the best means of educating the public to a higher standard of really hygienic cleanliness, and thus indirectly bringing about an improvement in the health of the community.

Dr. SAVAGE, in replying to the points raised in discussion, said that there was no reason to suppose that putrid meat was unwholesome. It was seldom eaten because it was generally unpalatable, but the old idea that food poisoning was caused by chemical substances produced in the process of saprophytic putrefaction was based on a complete misapprehension of facts. The term "ptomaine poisoning" had long since been dropped out of scientific vocabulary, and he had hoped that the theory on which it was based had been forgotten.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

DEATH FOLLOWING THE PASSING OF THE STOMACH TUBE

THE passing of the stomach tube is such a common and simple proceeding, and accidents are so rare, that it seems advisable to put this case on record because of the untoward result which followed this method of investigation.

J O, a foreigner, aged 50, was sent to see me in April last complaining of pains in the epigastrium and behind the shoulder coming on soon after the taking of food and accompanied by flatulence, in addition to much shortness of breath on exertion. He complained also of weakness and loss of weight. The pain was first experienced after dinner on December 8th, 1924, but since then had become very constant, and was aggravated either by food or on exertion. It was not sufficiently severe to make him stop if he were walking. He was a stoutly built man, and said that he had always been healthy till the onset of the present symptoms.

I found that the heart dullness was not definitely increased, the apex beat was not palpable, the sounds were pure, and extra systoles were present every seventh or eighth beat. The blood pressure was 140/90 mm Hg. There was no evidence of neuritis. There was no tenderness in the abdomen, the stomach was not dilated, the liver was not enlarged, the urine contained no albumin, the fundi were normal. The patient had previously been x-rayed, and nothing abnormal was found in either stomach or bowel. His tongue was coated with white fur, and a powder containing belladonna, ipecacuanha, bismuth subchloride, and sodium bicarbonate was prescribed.

In a month's time the condition was if anything, worse. The patient had a burning feeling behind the sternum, and pain in the epigastrium and behind the shoulders, and the shortness of breath was more troublesome while the loss of flesh had become more marked. Meritine the Wassermann reaction had been found negative. He was admitted to the Western Infirmary in the middle of July. His blood pressure then had fallen to 107/90. A soft systolic murmur had developed at the apex. He was given an Ewald's test meal and 40 ccm of filtrate was removed, with a total acidity of 18 but no free hydrochloric acid. There was no occult blood in the stools. A further x-ray examination was made of the stomach, and no abnormality was detected except that in one of the films there was some spasmodic narrowing at the pylorus. While in bed he complained of no symptoms. Three weeks later a further test meal was given to determine whether there was any alteration in the gastric acidity. When the tube was passed to remove the contents the patient had an attack of coughing and a drachm or two of fluid was ejected from the tube. He suddenly became very pallid and the tube was immediately withdrawn, but he died almost instantaneously. There was no external bleeding. The only explanation that could be offered was that the patient had had an attack of syncope or angina set up reflexly by the passing of the tube. *Post mortem* examination was not permitted. On the previous occasion on which the test meal had been given the patient had also had some coughing, but otherwise was not specially disturbed.

Glasgow

Geo A Allan, M.D.

FULL-TIME PREGNANCY IN A BICORNUATE UTERUS

UNTIL I saw the case reported in the BRITISH MEDICAL JOURNAL of August 8th (p 256) by Dr Moyes I was not aware that this condition is regarded as rare. I have in my records the following case, where not one but a series of full-time confinements took place in a patient with a double uterus, the presence of the condition being discovered in rather a curious way. The first normal confinement was in August, 1918, the woman then being a primigravida about 25 years of age. I have no note of anything unusual at that time. Between then and her next confinement in January, 1920, she had an attack of pyelitis. In the second confinement the presentation was a breech, but otherwise not abnormal, and also full-time. She had further kidney trouble in that year and unfortunately again became pregnant in July, 1920. Her general condition was very poor, and in consultation with another practitioner, I decided that she ought not to go on with this pregnancy, and procured abortion at the third month,

after having emptied the uterus I was inserting the nozzle of the uterine douche, when I found that apparently it would only enter some two inches, whereas, of course, the blunt curette had entered perhaps four. Examination revealed a septum in the upper part of the cervix, dividing the entry of the right side of the uterus, which had been pregnant, from that of the left, which had not.

This patient was confined again in 1924, and although I took particular care to see if there was anything to indicate the abnormality either in pregnancy or at confinement I was not able to feel the non-pregnant horn of the uterus or to discover any sign of it by vaginal examination during labour. I did not think it justifiable to make an intrauterine examination after the birth for this purpose.

I think there is no doubt that in this case, unlike that of Dr Moyes, the non-pregnant horn of the uterus did not enlarge along with the pregnant one.

One curious feature remains to be mentioned. The patient suffered from a certain amount of menorrhagia at times, and it was noteworthy that this occurred principally at alternate periods. My suggestion is that this depended upon which Fallopian tube the ovum had entered, one side of the uterus being apparently more fully developed than the other, and not partaking of the menstrual disturbance when the other side was affected.

York

J C LATH, M.B., B.S. Lond

OPTIC NEURITIS DUE TO DISEASE OF THE ANTERIOR ETHMOIDAL CELLS

DR J A GIBB, in the JOURNAL of July 4th (p 12), states that as far as he is aware there are no recorded cases of optic neuritis and retrobulbar neuritis due to disease of the anterior ethmoidal cells. The following case, therefore, seems worthy of mention.

On June 18th 1923 a lady of 50 complained of pain in the right eye of nine days duration that the eye was slightly tender to touch and that the sight in that eye was becoming clouded. Her vision was right eye 6/36 and left eye 6/6. The ophthalmoscopic appearances were those of neuritis of the acute retrobulbar type. Dr McNabb confirmed the diagnosis suspected nasal sinus trouble as the cause and referred her to Mr Lindley Sewell.

A week later Mr Sewell removed the anterior end of the middle turbinate and found this cystic with one large cell filled with mucus. There was another cell external to this structure filled with mucus. The next cell opened was clear. She had limited disease of the anterior ethmoidal group of cells the second cell opened being within the ethmoidal labyrinth proper. Within a week the vision began to improve, no further nasal treatment was necessary, and on September 19th the vision was 6/9 (two letters).

Colwyn Bay

HAROLD NUTTALL, M.D.

RECURRENT HAIR-BALL OF STOMACH

THE following case is, I think, of sufficient interest to merit publication.

In 1911 an unmarried woman aged 35 was operated upon at St Mary's Hospital London for the removal of a hair ball from her stomach. In April 1922 she was operated upon by Mr Washbourn of Gloucester for a similar condition and again in June 1922. When I saw her in October, 1923 she complained of pain and a swelling in her abdomen and loss of appetite of three months duration. On examination a large solid tumour was visible and palpable in the upper part of the abdomen and in view of her past medical history another hair ball was suspected. Upon opening the stomach which was much enlarged it was found to be entirely occupied by a mass of hair. This extended through the pylorus into the duodenum and when removed was found to weigh 2½ lb. it was 20 inches long and its girth at the largest circumference in the stomach portion was 15 inches. Recovery was uneventful and the patient after giving a solemn undertaking to refrain from the habit of hair eating, was discharged as cured. In November 1924 she once more complained of a return of her former troubles and I again removed a large hair ball. Up to the present I think she remains quite well.

Apart from her hair eating habits, this woman is quite normal mentally, being well educated and a very fine musician. She seems to have suffered no permanent ill effects from her repeated operations, since her abdominal wall is firm, and when her stomach is not full of hair her digestion is unimpaired.

RUFUS HARRIS,

Late Assistant Surgeon Gloucester
shire Royal Infirmary, and Eve
Institution Gloucester

Countess West Devon

SPLenic ANAEMIA SPLENECTOMY RECOVERY

MEMORANDA

[THE BRITISH
MEDICAL JOURNAL]

THE severity of the haemorrhages, the large amount of ascitic fluid, and the rapid recovery after splenectomy seem to make the following case worthy of record

A girl aged 5½ had weighed 10½ lb at birth, but gradually lost ground and a doctor who was consulted when she was 1 year old noticed an abnormal swelling in the left side of the abdomen. She improved a little until the age of 3 when she had a sudden profuse haematemesis. During the next two and a half years the child was constantly under medical attention and as yet no attacks of melena and six of haematemesis nearly all being severe enough to blanch the child and keep her almost constantly in bed. I saw her first in October 1924 after a haemorrhage she was desperately ill and thin. The splenic swelling was visible and palpable, filling almost the whole of the left hypochondrium. The blood was examined at the Southland Hospital Laboratory. The findings were: red cells 3 150 000 per cubic millimetre, white cells 3 200 per cubic millimetre, polymorphonuclears 49 per cent, lymphocytes 40 per cent, large mononuclears 9 per cent. The findings were: and was subsequently tapped eleven times at weekly intervals, four to seven pints of clear straw coloured fluid being removed on each occasion. Her weight before operation was 2 st. Her father's blood was tested and found to be suitable for transfusion but this was not attempted before the operation as the child was very nervous.

Operation.—On January 28th 1925 ether being administered by Dr C. Huntly Gordon I made a left supraumbilical parietal incision and ascitic fluid escaped freely. Except for a few omental adhesions the spleen was found to be free. It was swung forwards fully but during the manoeuvre the child almost collapsed. A long heavy mesenteric clump was shipped over the pedicle which we divided and the abdomen rapidly closed in layers which weighed 1 lb. Transfusion was rendered impossible by the accidental breaking during sterilization of all the available syringes. The child drank freely after returning to the ward did not vomit and made steady progress. Clear fluid escaped from the wound for some days. The clump was loosened gradually from the wound for seventy-two hours after the operation and was easily removed. There was no bleeding after the operation and the child was still weak and thin. She was tipped twice subsequently with great relief.

Progress.—Five months after the operation the mother reports that the child is well, she is much stronger, has gained 14 lb in weight does not need to be wheeled about and is much improved in general health. There has been no further ascites or haematemesis. The blood report is: red cells 4 400 000 per cubic millimetre, white cells 13 800 per cubic millimetre, polymorphonuclears 63 per cent, lymphocytes 36 per cent, haemoglobin 65 per cent.

G. R. KINGSTON, M.B., Ch.B.,
Late Superintendent Wallace County,
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TRANSIENT GLYCOSURIA FOLLOWING SCORPION STING

This note published in the BRITISH MEDICAL JOURNAL (August 15th, p. 294) by Dr H. E. King Fretz on transient glycosuria following scorpion sting is of considerable interest. My experience is limited to the following case. I only learnt the patient's history on his return to England.

A healthy man aged 29 travelling in the Far East was quite well until he was in Java. There about February 15th 1925 he was bitten on the leg by what he called a large spider. Swelling about two inches in diameter developed and persisted for about seven days. He began to feel limp and a definite oedema together with red blotches appeared on the legs. Down to this time the bites of mosquitoes had not troubled him but afterwards they caused a definite swelling.

While in Hong Kong he was examined and glycosuria was discovered. The blood sugar was said to be positive and the diagnosis of diabetes mellitus was made. It does not appear that he had any thirst or polyuria at any time. A fairly strict diet was ordered but the glycosuria apparently persisted since the diet was confirmed in Shanghai and a very bad prognosis given. On his journey home the strict diet was continued, and his weight began to improve as soon as the weather became cooler. When I saw him on June 22nd he still felt weak and could not walk far. He weighed about 9 lb less than his usual weight. The urine did not contain any sugar. A sugar tolerance test with 50 grams of sugar gave a quite normal result since the initial value was 0.115 per cent and the highest point reached was 0.14 per cent after thirty minutes after two hours the blood sugar had fallen to 0.075 per cent. No sugar was excreted in the urine in either hour.

I had not heard of a transient glycosuria following the bite of a 'spider' but seeing that the illness had followed the bite so promptly and that the patient's reaction to the mosquito bites had altered, I suspected that this accident had been responsible for the glycosuria. Since I saw him he

has eaten an ordinary diet. Dr H. A. Rippmer tells me that the patient is feeling much better and that the urine is sugar-free. It would be of great interest if workers in tropical countries would extend Dr King Fretz's observations and estimate the sugar tolerance of these patients. It is important to know whether the glycosuria is due to a definite hyperglycaemia or to a lowering of the threshold of the kidney so that the sugar escapes into the urine although the blood sugar is normal.

DLATH FROM HAI MORRHAGE IN SCARLET FEVER

Arthritic haemorrhage resulting from erosion of some of the large vessels in the neck, as is possible cause of death in scarlet fever and its complications, is mentioned in some textbooks, such cases are sufficiently rare to warrant publication of this one.

I was called recently to see a girl aged 7 suffering from sore throat, headache, fever and general malaise. I made a provisional diagnosis of scarlet fever and the next day the appearance of the rash, red tongue etc., confirmed the diagnosis. All went well for about ten days after which there was swelling of the left superficial cervical glands at the angle of the jaw. I decided to open the mass but this was refused by the mother who preferred that it should 'break'. On the twentieth day of the disease the mass broke and large quantities of pus (about half a pint according to the mother) discharged. A great deal of sloughing followed so that after a few days the external jugular vein and the external carotid could be seen over the sloughed area. All went well for about a week when the glands on the opposite side became swollen and aphthae developed. Under treatment the recently swollen glands began to recede to their normal size while the edges of the left side (sloughed) began to show signs of healing.

I was just beginning to think that after all the case would terminate favourably when on the thirty-fourth day of the disease with no warning or any intimation—for example changing dress, picking by the child or undue exertion—the external jugular ruptured and the child died of haemorrhage before I could be reached or any medical aid could be obtained.

Sydney, Nova Scotia

A. CALDER, M.D., C.M.

ACUTE APPENDICITIS ASSOCIATED WITH SARCOMA OF THE APPENDIX AND VOLVULUS OF THE CAECUM

The following case is of interest owing to the variety of conditions present.

A boy aged 15 was admitted to Addenbrooke's Hospital with a diagnosis of acute appendicitis. The bowels had not acted for four days and the pulse and temperature were both slightly raised. There was a well marked lump in the right iliac fossa and the abdomen was tender and moderately rigid.

Operation. (Brittle's incision) revealed tonsils, a large omental mass the size of the palm of the hand enclosing the appendix and an abscess cavity which had burst into the caecum. The omental mass was attached to the transverse colon and the caecum was rotated on its mesentery. The terminal coil of the ileum entering its right side. The appendix was removed from the transverse colon and after some difficulty the omental mass was freed and the abdomen closed with a drainage tube. After removal of the appendix was dissected from its omental sheath when it was found to be continuous with an abscess cavity just distal to which was a hard lump the size of a pigeon's egg of apparently fibrous tissue the real cause of attachment to the transverse colon. On microscopic investigation, however, this lump was found to be a spindle-celled sarcoma presumably of the tip of the appendix.

Before and after operation the urine contained sugar but it disappeared after ten days. The patient was discharged after seventeen days in hospital.

The interesting points in this case are the large number of different conditions present—appendicitis, peritonitis, volvulus, sarcoma, and glycosuria—and the fact that the acute appendicitis drew attention to an early sarcoma which I am indebted to Mr W. H. Bowen, honorary assistant surgeon to Addenbrooke's Hospital, for permission to operate on and publish this case.

Cambridge

THOMAS PENNELL, M.B., F.R.C.S.,
Honorary Surgical Registrar Addenbrooke's Hospital

Reviews.

TUMOURS OF THE SPINAL CORD

THE newly published monograph on *Tumors of the Spinal Cord and the Symptoms of Irritation and Compression of the Spinal Cord and Nerve Roots* by Professor CHARLES A. ELSBERG of New York is an important contribution to neurological and surgical literature. It embodies the results of his remarkable experience during twelve years of one hundred verified tumours of the cord and its membranes, all of which he observed and operated upon himself. In 81 of these the tumours were submitted to histological examination, thus giving a completeness to the records which in this subject is unrivalled.

More than half the book is occupied by the detailed histories of these 81 cases, but the author has done wisely to print these individual records. Far from its being a weariness to read the case reports, they will be found deeply interesting and instructive. The predominant clinical features of each case are recorded fully but concisely, and each is accompanied by charts of the sensory changes. In nearly all excellent illustrations are provided of the condition found at operation, and of the naked eye and microscopical appearances of the individual tumours. The report of each case is followed by comments on the lessons to be learned from it, which illustrate the gradual growth of the author's experience.

The second half of the book contains a systematic study of the subject. Classifying the tumours first in reference to their relation to the cord, it appears that three-fourths were extramedullary, and that of these 78 per cent were intradural and 22 per cent extradural. The tumours are classified also according to their relation to the anterior and posterior nerve roots and the dentate ligaments. The occurrence in a small number of cases of a "reversed Brown-Sequard syndrome" is noted. This Professor Elsberg believes was due to the pressure of the bony spine on the side of the cord opposite to the lesion. His experience is opposed to the common belief that pain is always an early symptom. In 27 of the 81 cases there was no pain at the onset, in only 8 cases, however, was pain absent throughout the illness. He lays stress further on the occurrence of paresthesia or abnormal sensations short of actual pain, and divides the clinical features into a first stage, in which the symptoms are usually irritative, and a second stage, in which symptoms of interference with cord functions become manifest.

The diagnosis of tumours at different levels of the cord is considered in detail in successive chapters, and the differentiation of tumours from tuberculous or malignant disease of the spine, and from intraspinal diseases such as multiple sclerosis and syringomyelia. An erroneous diagnosis of Pott's disease is in his experience more frequent than the diagnosis of cord tumour in a patient with tuberculous bone disease. There is a chapter on the examination of the cerebrospinal fluid in cases of tumour. In 39 per cent of 77 cases xanthochromia was present, it was most frequent in tumours of the lower thoracic and lumbosacral cord, and was almost constant in large tumours of the conus and cauda equina. Excess of protein with a normal number of cells was common but not constant. He has not made use of the method of Sicard of injections of lipiodol into the cisterna magna.

The operative mortality was 10 per cent, but for the extradural tumours it was only 5 per cent. He concludes that the majority of patients with cord symptoms due to an extramedullary tumour of less than two years' duration will recover after removal of the growth and be able to resume their former occupation. This is a very impressive fact and is in general accordance with the experience of other workers. It should convince the practitioner of the heavy responsibility which rests on him to bear in mind the possibility of an operable tumour being present in any case suggestive of a local lesion of the spinal cord. There can be no doubt that a good many of these patients are allowed

to go on to a hopeless condition of paralysis under the diagnosis of "myelitis," who might have been cured or greatly relieved by early operation.

The price of the book is high, but the illustrations are numerous and the general production excellent. There are odd printing mistakes and some errors in the bibliography—for example, reference 136 should be "Walshe" and not "Holmes and Walshe," and the Society of Neurology of Paris should not be called the French Association of Neurology.

TEXTBOOKS OF PATHOLOGY

THE third edition of BEATTIE and DICKSON's *Pathology* is now published in one volume. Apart from this and an increase in illustrations little change appears to have been made on the previous edition issued four years ago. This textbook has always been a favourite with students, several generations of whom have appreciated its concise descriptions, generous illustrations, and helpful system of emphasis with different type. The one-volume edition is likely to be preferred, not only because it means a saving of eight shillings, but also because it avoids the necessity of studying two volumes simultaneously. No one can read special pathology without having to refer occasionally to general pathology. If the province of pathology continues to increase, compelling yet bulkier textbooks, we suggest that a temporary postponement of the revision to the two-volume plan might be secured by printing on thinner paper. The present volume is only just not too thick to be grasped by the hand, but it is inconveniently heavy.

Professor WILLIAM BOYD's textbook *Surgical Pathology*³ is as its title suggests, a presentation of those aspects of pathology of most interest to the surgeon. Osler's aphorism "As is our pathology so is our practice" applies with equal truth to surgery as to pure medicine. But just as there are certain anatomical regions of much greater importance to the surgeon than others, so there are regions in pathology which have a special claim on the surgeon's attention. Books on surgical anatomy and surgical pathology are valuable because they separate out and give particular emphasis to the facts and doctrines of greatest urgency from the surgeon's point of view. Whether or not Dr Boyd's volume will achieve its object is difficult to foretell. It is accurate, clear, and well illustrated, but it seems to follow the conventional plan rather closely, being divided into two parts, the first on general and the second on special pathology. An unusual but commendable feature for a book on pathology is the summary of symptoms which accompanies many descriptions, thus providing a link between the laboratory and clinical sides. A list of useful references follows each chapter. The book is well described by Dr W. J. Mayo in the foreword as "a sincere attempt to place pathology before the student and practitioner from the practical standpoint."

OEDEMA

DR J. LE CALVE's large volume on oedema⁴ is divided into two books, and each of these into four parts. The first book gives a general and tolerably superficial account of the experimental side of the questions to which the study of oedema gives rise. The author reviews the many theories as to the causation of oedema that have been put forward from time to time—the five chief being the mechanical, the nervous, the physical and physico-chemical, the toxic, and the vascular—and finds some truth in all of them. It is the vascular or vasomotor theory of oedema that he develops most fully. He sums up oedema as a defensive reaction of the organism against an excess of water and dissolved substances which the excretories have not succeeded in

¹ *Textbook of Pathology General and Special* By J. Martin Beattie M.A. (N.Z.) M.D. Edin. and W. E. Carnegie Dickon M.D. B.Sc. F.R.C.P. Edin. Third edition. London: W. Heinemann (Medical Books) Ltd. 1925. (Roy. 8vo pp. xvii + 1130. 499 figures. 17 coloured plates. 42s. net the complete volume. Parts I and II 25s. net each.)

² *Surgical Pathology* By William Boyd M.D. M.P.C.I. Edin. F.R.C.S. Philadelphia and London: W. B. Saunders Company. 1925. (Roy. 8vo pp. 837. 349 figures. 13 plates. 45s. net.)

³ *Oedema* By J. Le Calve. Paris: Masson et Cie. 1925. (Med. 8vo pp. vii + 648. Fr. 30.)

⁴ *Tumors of the Spinal Cord and the Symptoms of Irritation and Compression of the Spinal Cord and Nerve Roots* By Charles A. Elsberg M.D. London: H. K. Lewis and Co., Ltd. 1925. (Sup. roy. 8vo pp. viii + 421. 354 figures. £2.10. net.)

eliminating, in addition to this physiological function, oedema has also an antitoxic function. The second book, occupying two thirds of the volume, gives a clinical account of the various pathological conditions in which oedema is observed, with a discussion of its pathogenesis of the oedema in each instance, and suggestions for its treatment in many of them. No mention seems to be made of oedema due to asplenia in the rare cases of idiosyncrasy to that drug, and in the last chapter of the volume, dealing with infantile oedemas, no reference is made to the oedema that is common in children who are rickety but otherwise apparently in good health.

Regarded as a whole, Dr Le Calvé's book may be described as the work of a clinician rather than of an experimental pathologist or physiologist; it is not well documented and contributes little more than a popular summary to our knowledge of the subject with which it deals.

CHIMPANZES AND A FACULTY OF REASONING

DURING 1914 and 1916 Dr KOHLER, professor of philosophy in the University of Berlin, studied the behaviour of chimpanzees in confinement at the Anthropoid Station in Jena, belonging to the Prussian Academy of Science. His results were published first in German in 1917. A version in English¹ has recently been issued, and in it the author has made some changes in the critical and explanatory sections, and has added some general considerations on the psychology of the chimpanzees.

The observations relate to tasks set to chimpanzees to test their possession of a faculty of reasoning. These tasks were varied in different ways, the results were influenced by the disposition of the animal, its state of health, and by the surroundings. Professor Kohler's general conclusion is that chimpanzees in confinement are suitable subjects for examination if brought young, but then only for a short period. They can suggest nothing as to the possibility of progress in evolution. Those he studied, owing either to un congenial surroundings, or, as he thinks possible, to the attainment of sexual maturity, soon tended to lie about all day in a sort of slumber and only roused themselves at meal times or when a special stimulus was applied.

The following is a brief description of some of the principal tests to which the animals were submitted under the least complicated conditions.

Sultan, a young male chimpanzee, was tested by suspending a basket containing bananas 2 metres from the ground by a cord passing over a pulley fixed to the roof. A loop at the free end of the cord was hitched over the branch of a tree—Sultan knew the basket and what was in it. When left alone he at first exhibited excitement and after gazing at the basket climbed the tree then without attempting to detach the cord he jerked on it until a banana fell. Having eaten it he returned to the tree the cord had meanwhile been fixed and he tugged on it until it broke. Next a basket containing stones as well as fruit was made to swing so that at the end of one excursion it came near a scaffold. Three chimpanzees were let in to view the swinging basket. Grande, one of the older chimpanzees, first leapt at the basket from the ground and missed. Chica, an active young female, watched and then suddenly climbed the scaffold stretched out her arms and caught the basket all within a minute. On a repetition of the test Grande at once imitated Chica and caught the basket. The third chimpanzee followed after getting over shyness as did other chimpanzees after periods of indifference or complaining.

An alley was constructed blocked at the end by bars through which some food could be seen but in order to get at it was necessary either to turn back to the entrance of the alley and pass round a corner or to climb over the obstruction. The chimpanzees achieved the task when once they had learnt the route but they did not succeed so quickly or so well as a dog nor as well as a girl aged 15 months just able to walk but they did better than hens.

Sultan was brought from the outside through a doorway along a passage then through a second doorway into a room. He there watched a banana thrown out of a window and the window closed by a shutter. He at once turned round passed out of the room through the passage and the outside doorway, and thence by "noth" turn reached the banana lying under the window.

Tested by placing in sight but out of reach food with a string attached to it the free end being within reach chimpanzees understood the use of the string but a dog did not. The chimpanzees can become adepts in the use of sticks to draw food into reach, and also learn to use a cloth to flap the food towards them.

The chimpanzees were ready to play with empty boxes. Six were

put together into a cage the walls of which were too smooth to climb. Food was suspended from the roof about 2½ metres from the floor. All six first tried to reach it by leaping. Sultan soon ceased, paced restlessly up and down, and then five minutes after entering the cage dragged a box under the food, sprang upon it, and tore down the banana, all in a few seconds. With further practice Sultan when one box was not enough, came to place a second on top of the first and to climb upon it. The other chimpanzees learnt by watching Sultan. Sultan eventually placed a third box upon the second. Another chimpanzee (Grande) learnt to pile four boxes one upon another in order to reach the objective. Instead of such a construction Sultan tried to induce the keeper to stand underneath so that he might mount on his shoulders.

The chimpanzees made use of a stick as a spud to dig up roots to rid in raising stone in the search for insects and to poke into holes in trees to get at grubs. The following were devised as tests of memory of position. Sultan, while sitting alone in a barred cage watched a pear being buried in the sand 140 metres from the bars to the depth of some centimetres, and the sandy surface smoothed over until the spot was unrecognizable. After an interval of five minutes Sultan noticed a stick lying at some distance outside the cage whereupon he seized the observer's hand and motioned him in the direction of the stick. Sultan repeated this gesture at intervals for half an hour when the stick was brought within his reach, he at once poked it through the bars and scraped away the sand exactly over the position of the pear. The next day the pear was buried 130 metres from the bars and 2 metres to one side of the previous spot. Sultan watched the process then turned away and occupied himself otherwise. One hour later a keeper threw a stick into the bare of the cage. Sultan at once picked it up and began to scrape off the sand at first about 30 cm to one side then over the precise spot and brought out the pear. Three days later a heap of fruit was buried while the apes were looking on afterwards they went to their sleeping quarters, in their absence the surface was smoothed over the fruit and some more holes were dug a few metres away but left empty. The next morning sixteen and a half hours after the apes had seen the fruit buried they were let out and Sultan proceeded in a straight line to a spot 60 cm from the right one. He scraped away the sand until he came to the buried ground the others acted similarly but after a pause they discovered the right spot. Sultan also learnt when given two bamboo rods, one thinner than the other to push the thinner into the larger and use the extended rod for pulling a banana to him. They knew how to use a pole both for heaving down fruit and as an aid in leaping and also how to clamber up a bamboo pole using both hands and feet. At first they fell with the pole but learnt either to seize the fruit or to swing off the pole on to a beam or branch of a tree.

The foregoing experiments resemble one another in this that to get at the desired objective, after failure of direct attempts, the animal had to adopt an alternative, which had been placed more or less distinctly within its range of vision while gazing at the object. A perusal of the book will impress the reader with the difficulties of instituting in this way a comparison between the mentality of chimpanzees and that of human beings, whether children or adults.

This remark applies all the more strongly to *Chimpanzee Intelligence and its Vocal Expressions*.² In the first part of the book Miss YERKES describes the traits of young chimpanzees, including the sounds they make, concerning which she observes "Vocal reactions are frequent and varied in the young chimpanzee, but speech in the human sense is absent." In the second half Miss LEARNED makes use of a musical notation to express what the utterances of the chimpanzees sounded like, and in a final chapter correlates these sounds with what she concludes the animals meant by them. A list is given of the sounds turned into words as if elements of speech.

THE PHYSIOLOGY OF MIND

A second edition of Dr FRANCIS X DERCUM's volume on *The Physiology of Mind*³ has recently been published. The book was originally written in the form of a continuous essay, but the present edition has been improved by the division of its contents into chapters, the work has been completely revised also and contains much additional matter. A chapter has been added dealing with the nervous system in the light of Einstein's interpretation of energy, and in an appendix the author subjects Freudism to criticism, and reveals himself as an uncompromising opponent of psycho-analysis.

¹ *Chimpanzee Intelligence and its Vocal Expressions*. By Robert M Yerkes and Blanche W Learned. Baltimore. The Williams and Wilkins Company. London. Baillière Tindall and Cox. 1925. (Cr 8vo pp 157 2 plates 17s 6d net)

² *The Physiology of Mind. An Interpretation based on Biological Psychological Physical and Chemical Considerations*. By Francis X Dercum. AM MD PhD. Second edition. 1st Philadelphia and London. W B Saunders Company. 1925. (Post 8vo pp 287 16 net)

³ *The Mentality of Apes*. By Wolfgang Kohler. Translated from the first edition by E.H. Wier. 1925. International Library of Theoretical Psychology and Scientific Method. London. Hegan Paul Trenc. Frutcher and Co. Ltd. 1925. (12s 6d)

Dr Dereum aims at developing the view that a study of mind from the standpoint of the physiology of the nervous system leads to the conclusion that the "physiology of mind" embraces what is ordinarily meant by "psychology." An excellent outline is given of the evolution and physiology of the nervous system, and there is no doubt that a knowledge of the neuro-physiological basis of action should be an essential part of the equipment of the student of human behaviour. At the same time it may be questioned whether psychology can be regarded merely as a department of brain physiology. Psychology, owing to the nature of its subject-matter, has methods of investigation and a terminology peculiar to itself, and it is obvious that we cannot understand, predict, or control the behaviour of a human being by making the changes occurring in his nervous system and the paths taken by stimuli the primary subjects for consideration.

The essay as a whole is stimulating, suggestive, and informing. The earlier chapters, dealing with the development and morphology of the nervous system, would be most helpful to those readers with only a slight knowledge of the anatomy of the nervous system if the text had been illustrated by diagrams.

THE ETIOLOGY OF DENTAL DISEASE

MR ORAN STARR writes in his book *Lamarck-Darwinism and Dental Disease*, "The great thought intended to be threaded through this book from first to last is that every physiological action, every anatomical structure, and every characteristic of living substance is, or will be, explicable by Lamarck-Darwinism with advantages to hygiene and health."

In pursuance of this thought he devotes the first two hundred pages of his book to a somewhat rhetorical apology of the inheritance of acquired characters and of the effects of use and disuse. The development of life from its first beginning as a protoplasm (which is described as an "energy") to man with all his dental ills, is sketched as in obedience to six great laws, two of which are Lamarck's laws of use and disuse and inheritance of acquired characters. No other idea on evolution can be entertained—it is, he says, "mere foolishness to try to account for the peculiarities of heredity by overcrowning the poor little germ and sperm cells with determinants, unit-characters, dominants, memoirs, and every conceivable kind of imaginary entity, and try to prove a theory by mathematical formulae."

When we come to teeth as a concrete example of the effect of disuse we read, "the hard work thus thrown upon young teeth would soon change their shape"—an obvious impossibility except in so far as they are ground down and destroyed by overuse. Disuse does not seem to fit in well as an explanation of dental errors.

In his discussion of protrusion the author makes more effective application of his thesis. Cooked food, he thinks, vitiates the function of mastication, and the tissues supporting the teeth may therefore be expected to suffer from disuse. But even so his case is not yet proved. Cooked food may not need mastication, but the act is performed just the same and with equal vigour as when uncooked food is eaten.

When considering the immediate causes of dental errors and protrusion the author finds himself in agreement with what we believe to be the opinion generally accepted to-day, that both are due to a common state—that is dent of the teeth. Resistance to protrusion could be raised by eating more uncooked food and so ingesting more vitamins (or, as the author prefers to call these elusive substances, "anti-toxins"), and both diseases could be avoided by disuse of sticky foods. "Gum must not be ground except by dental machinery. Food must not be digested except by living tissue." Whether we agree with the author that all the dental troubles of modern civilized communities are the result of disobedience of the Lamarck-Darwin laws of evolution or whether we regard

ourselves as governed by an evolutionary law which of itself necessitates disobedience of the Lamarck-Darwin precepts, we must be in hearty agreement with him in calling for the use of less sticky food—and, we may add, in his admiration for Lamarck!

GUY'S HOSPITAL REPORTS

THE third quarterly instalment of the seventy-fifth volume of the *Guy's Hospital Reports* contains twelve articles covering such a wide area that it is difficult to imagine any medical man failing to find at least one that would specially interest him. "Kerfs as a medical student" is the subject of an attractive article by Sir William Hale-White, who not only reproduces the life and chief actors in the Guy's medical school when Kerfs was there, but breaks new ground by analysing the poet's notes of lectures by Mr C—, who is fairly proved to have been Astley Cooper, rather than Henry Cline, jun., for both then taught on closely allied subjects at the same time. The next two articles are on physiological subjects. Dr J M H Campbell deals in detail with the weight, vital capacity, pulse rate before and after exercise, and physical fitness in health of the eighty Guy's students who were examined by means of fractional test meals and x rays and reported on in previous papers.

The U-tube manometer test introduced by the Rev Stephen Hales in the eighteenth century, utilized in the great war by Wing Commander Martin Fleck for estimating the fitness of airmen, and now in more general use for testing industrial efficiency, is the subject of a paper by Mr E C Warner and Mr W B Hambly of the physiological department, who provide explanations of the variations in the blood pressure and pulse rate while the column of mercury is held up by expiration. Mr A A Osborn contributes a clinical study of fifty six cases of renal nephritis in children and young adults, which were followed up for periods of one and a half to twenty-two years, and finds that at least 55 per cent were due to infections of the upper respiratory tract, generally the tonsils, and that 36 per cent did not recover completely. A case of exceptionally high eosinophilia in hydatid disease (68 per cent) is recorded by Mr C A Hampson, and a fatal case of tetanus with an incubation period of seven days in which the bacillus was obtained from the healed wound is put on record by Mr I March and Mr R B Fawkes. Mr R P Rowlands follows up his article on appendicitis in the last number by an account of the operative treatment of this disease.

The editor, Dr A I Hirst, whose guiding hand is manifest in other articles, contributes three under his own name in a continuation of his account of massage and remedial exercises in medicine he deals with the treatment of the abdominal and pelvic muscles in visceroptosis, rectal and uterine prolapse, and constipation, the rationale and nature of the remedial measures are clearly set out—for example, in severe visceroptosis walking on all fours, as first described by Leon Meunier, is recommended as specially useful. Abdominal massage should not cause pain, if it does it is an indication either that the condition is unsuitable or that the method is unskillfully employed. The consideration of this is supplemented by an account of genital prolapse in women by Mr H B Butler. The editor also describes, with diagrams and figures, two cases of a diverticulum from the lower end of the oesophagus—a much rarer condition than pharyngo-oesophageal pouches, these two cases bring the total up to twenty-nine, four of which were engrafted on to dilatation due to achalasia. Together with Mr P J Briggs, radiologist to the New Lodge Clinic, he reports a case of an anterior pharyngo-oesophageal pouch causing dysphagia. From careful observations on von Piquet's cutaneous tuberculin test, Dr A J Komisar shows that there is a difference in the positive results obtained in obviously tuberculous patients and in the 81 per cent of persons who appear clinically healthy.

NOTES ON BOOKS

WE are glad to note that Professor J C PHILIP's book on *Physical Chemistry* has reached a third edition.¹⁰ It has been looked on as a useful book from which to gain a clear idea of what is meant by osmotic pressure, permeability, electrolytic dissociation, and adsorption, to mention only a few of the technicalities of physical chemistry which have a direct bearing on medical science. For his chapters on colloidal solutions Dr Philip must have earned the gratitude of many a student, especially because of his knack of actually removing stumbling blocks and not merely directing the way to a well trodden path round them. The third edition takes much the same form as its predecessor, though some new matter has been added. The book does not seem to be much larger and is arranged in the same way as before.

After a lapse of twelve years E TOROK and G H GROUT have re-edited their *Surgery of the Eye*.¹¹ Several new operations have now been included, and many which received only brief notice in the previous edition, but have since come into general use, are described in detail. The illustrations were a strong feature of the first edition, and their number has been increased. For the photographs, some of which were indistinct, have been substituted drawings of a semi-schematic character, which admirably serve their primary purpose of conveying a clear picture of the procedures described. The book is intended for the student and the beginner, and the authors have succeeded in their aim of presenting the essentials of the subject in a simple, clear, and concise manner. They describe in detail each step of the more common procedures, survey the indications and contraindications for them, provide notes on the preparation of the patient and on the appropriate instruments, and give advice as to the after-treatment, finally, they consider the possible complications, immediate and remote. In their choice of considerations for examination on the licentiate is described without reference to any of the methods of establishing drainage into the nose. There is a very complete index.

The fourth of the statistical handbooks¹² issued by the Health Organization of the League of Nations deals with Spain. So far as census taking is concerned the Spaniards were in the field long before we were, their first census was in 1594. The record, indeed, shows considerable improvements, and in one respect—the compulsory notification of stillbirths—Spain is in advance of us, but the certification of causes of death still leaves much to be desired. The handbook remarks that, having regard to the legal requirements and the fact that in a population of 22 million there are some 26,000 registered medical practitioners, it is probable that few deaths escape registration. But the proportion of deaths assigned to ambiguous headings is very large, and "in any case of doubt affecting the death of a person aged 59 years or over, the cause of death is usually ascribed to 'senility'." This practice renders it doubtful whether addition to bull fights can really explain the relative immunity from cancer enjoyed by the Spaniards.

Mr R T CUNTER's little book on *Historic Instruments for the Advancement of Science*¹³ is a handbook to the Oxford collections prepared for the opening of the Lewis Evans collections on May 5th, 1925. It opens with an account of the old Ashmolean Museum, which the author claims to be the first public museum of natural history in Britain. The instruments described include astrolabes, dials, nocturnals, globes, calculating apparatus, water-wisdoms, as early taximeters were called quadrants, theodolites, magnets, compasses, telescopes and microscopes. Of special interest to the medical reader is the account of Marshall's microscope for viewing the circulation of the blood which was made in 1693.

In an address on the problems and aims of epidemiological research of the founding of the Dr FRIEDRICH WOLTER or Hamburg, who pays a tribute to the memory of the late Dr Richard J Reece emphasizes the importance of giving

consideration to factors other than those connected with bacteriology, and declares that the doctrine of the epidemic constitution put forward by Sydenham and supported by Pottenger in the case of typhoid fever and cholera is "the Ariadne thread which will serve as a guide in the labyrinth of theories and hypotheses connected with epidemiology."

Dr GRIFFITH's manual on *The Care of the Baby* seems likely to rival Dr Charvase's *Advice to a Mother* in the frequency of its editions, the seventh¹⁴ is a volume of nearly five hundred pages. The ground covered is immense, beginning with the mother's health before the baby arrives, including almost all the diseases from which children may suffer, and concluding with appendices which contain nineteen formulae for making modified milk, and a long list of drugs with the doses suitable for a child 1 year of age. From the evident popularity of the book we may presume that American mothers are able to read all about the dreadful diseases that may affect them or their children without developing an excess of anxiety. We think that too much has been attempted, and that the descriptions and details are overdone. Perhaps the book has its uses in the hands of intelligent mothers living in places where doctors are not easily summoned.

A new edition of the *Pharmacopoeia of the London Hospital*¹⁵ has been issued, and contains a large amount of information very clearly set out. A table of the approximate equivalents of imperial and metric dosage will be found valuable and convenient. Separate series of formulae are provided for children, dental cases, ear and throat cases, and ophthalmic cases, and a comprehensive list of antidotes to poisons is another useful feature of the book. A new edition of the *Pharmacopoeia of the London Temperance Hospital*¹⁶ has also been prepared. The free interweaving of the book is a useful feature. In addition to the list of general formulae a helpful series of instructions to patients is included, presumably with a view to assisting the house staff in giving advice.

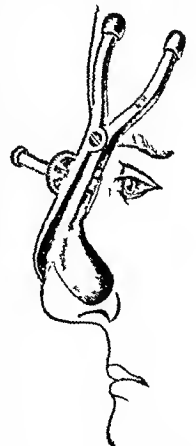
¹⁰ *The Care of the Baby: A Manual for Mothers and Nurses. Containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease.* By J I Crozer Griffith M.D. Seventh edition thoroughly revised. Philadelphia and London: W B Saunders Company Ltd. 1924. (Post 8vo pp 488 104 figures 12 6d net.)
¹¹ *The Pharmacopoeia of the London Hospital.* Compiled by F A Hoeking M.B.E. B.Sc. Lond. under the direction of a committee appointed by the London Hospital Medical Council. New edition. London: School Press. 1925. (3 x 5 1/2 pp 254 4s. 6d. net.)
¹² *The Pharmacopoeia of the London Temperance Hospital.* Published by the authority of the medical staff. New edition. London: W J Clark and Co. 1925. (3 x 5 1/2 pp 11 + 111.)

MEDICAL AND SURGICAL APPLIANCES

Arrest of Haemorrhage in Epistaxis. Dr CHARLES R PORTER (Great Beckenhamsted) writes: The frequency with which the busy practitioner is called to cases of epistaxis and the time spent in the usual routine treatment of such cases suggested the use of the epistaxis clip illustrated below.

It is designed only for haemorrhage from the anterior portion of the septum, which in an experience of twenty years of general practice seems to be the most common site. The large majority of haemorrhages occur in patients over 50 years of age, and are associated with arterio-sclerosis and increased blood pressure. The simple expedient of compressing the naves just below the nasal bones with the thumb and forefinger is equally efficient but hardly preferable for more than ten to fifteen minutes. The idea of the clip came from using a small Mason's gag now old fashioned, using the handles as the compressors and adjusting the ratchet and piston to modify the pressure required.

Dr Porter states that the advantages of the use of the clip are: (1) The adjustment is simple and can be learnt by the patient or by any untrained person in the household in a few minutes. (2) The weight of the clip reminds the patient to keep quiet in the position of recumbency with the head raised to a comfortable position on pillows thus enables a book or paper to be read. (3) The complete arrest of haemorrhage restoration of the patient's confidence and relief of the friends' anxiety. (4) The obviating of the uncomfortable procedure of plugging the nostril, or of cauterization both of which require time and apparatus and increase the apprehension on the part of patient and friend. (5) The medical man can leave the patient for an hour or more after a visit of five to ten minutes. This idea has been neatly and effectively carried out by Messrs Allen and Hanbury, 48 Wigmore Street W1. The accompanying sketch shows the clip in position.



¹³ *Physical Chemistry.* By James C Philip D.Sc. F.R.S. Third edition. London: E Arnold and Co. 1925. (8vo pp 31 + 367 3s. 6d. net.)

¹⁴ *Surgery of the Eye.* By E. Torok M.D. and Gerald H. Grout M.D. Second edition thoroughly revised. London: Baillière Tindall and Co. 1925. (Post 8vo pp 311 + 81 510 figures 20s. net.)

¹⁵ *General Practice.* London: C. and L. 2 6d. net.

¹⁶ *Historic Instruments for the Advancement of Science.* By R. T. Cunter. London: Humphrey Milford (Oxford University Press) 1925. (Fcap 8vo pp 90 illustrated 2 6d. net.)

¹⁷ *Aufgaben und Ziele der epidemiologischen Forschung.* Von Dr med. Friedrich Wolter. Hamburg: Conrad Behre. 1925. (Dem. 4to pp 31.)

Nota et Vetera.

EARLY CHARTERS WITNESSED BY MEDICAL MEN

SIR NORMAN MOORE in his FitzPatrick Lectures published in 1908, gave some examples of medical witnesses to early charters, and cited in the appendix eight Royal charters which were witnessed by a physician, by name Grimbald, as well as an early charter to St Bartholomew's Hospital, which was witnessed by John of London the physician. I am indebted to Dr George C Percley for calling my attention to these facts. In this paper I give some further examples of medical witnesses.

In the *Monasticon* (vol 4, p 150, edition of 1823) under Walden Abbey, Essex, in the charter of Geoffrey de Say, the eleventh out of fourteen witnesses who are named is Magistro Thoma Medico. Walden Abbey was founded by Geoffrey de Mandeville, first Earl of Essex, in 1136. The founder's sister, Beatrice, was the wife of William de Say, and the grantor of this charter was her second son. In volume 7 of the same work (p 659), under the Hospital of St John Baptist, Coventry, in a *Confirmatio dicti Domini Edmondi super Fundationem, Possessiones et Dona Prædicta*, the third witness out of six mentioned by name is Magistro Ricardo Medico. This grant was passed early in the reign of Henry II in the priory of Laurence of Coventry Monastery (1144-1179). There may be some other examples in the *Monasticon*, but I have not come across them.

Two very interesting early charters are given in volume 10 of the publications of the Pipe Roll Society. This volume consists of a series of ancient charters, royal and private, prior to 1200 (Part I), it is edited and annotated by Dr J Horace Round.

The first of these early deeds, is a confirmation by Henry I of grants made to Lewes Priory by William de Warenne, 1st of Surrey, the fifth witness is Grimbald. This charter is not included in Norman Moore's list.

Notum sit presentibus et futuris quod ego Henricus [] locum concedo dedit et sanctis apostolicis Petri et Paulo ad locum sancti Pancratii pro anima patris mei et matris et pro [] hute aumre mere et uxoris mee Matildis re filii mei Willelmi donationem quam Willelmus de Warenna comes subregne sancto Pancratii dedit. Sciatis ecclesiam de Bistelmestuna et ecclesiam de Hingelstuna et ecclesiam de Cletuna et Capell[] de Kiemela et ecclesiam de becca et ecclesiam de eidingelegr et quadrigenta solidatas terrae de illa soca de gelungelham pro decima decuriorum de placitis suis et decimam faciu sui e molendinum unum apud meeng[] cum quatuor a[] et dimidiam hidam terrae in bistelmestuna et rusticum alium nomine brimerum cum terra illa quam tenebat de Radulfo filio Warrini et tertiam partem Willelmus de grinnosa villa tenebat de predicto comite in erchelham et decem solidatas terre e octo denaritas quas Hugo de grinnosa villa dedit aucto Pancratii in testem pro decimis terrae suae. Testibus Radulfo cancellario Ricardo de capellano Euciarlo filio Roggeri comitis Johanni debaroco et Grimbaldio medico Henrico de ubino et Rodberto de [] Rodberto de Gomeri Willelmo de petroponto [] Ricardo lupello.

The learned editor in his notes to this charter says that this must be earlier than the date of Queen Maud's death in 1118. "It cannot, however, be earlier than 1107, which is recognized as the earliest year in which Radulph appears as Chancellor."

Richard de Capella became Bishop of Hereford in 1121, Fecard son of Earl Roger of Shrewsbury by his second wife was also of the King's chapel and was consecrated Bishop of Norwich in 1121. John de Bayeux was the natural son of Bishop Odo the Conqueror's half brother and was another of the King's clerks. Henry de Albini was the founder of the house of Albini de Caynho and William de Pierpont was probably son of Godfrey de Pierpont a Domesday subtenant of Warenne.

In the grant itself, Round identifies the churches of Brighton, Hangleton, Clayton Keymer, Barcombe, and Avingly, the tithe of lry, and the half hide at Brighton, and Bithmei the Villen with his land, and the mill at Meeching (now Newhaven) with its four acres. The charter of Ful William was granted "for the souls" of his father (William), his mother (Gundrada), and his brother

(Reginald), the last was therefore dead at the time. He appears to have been living at least as late as 1106.

The second charter is a grant by Ralph, Archbishop of Canterbury, to Lewes Priory of an annual render of thirty-six loads of beans, known as "circescet," from his Archepiscopal Manor of Pagham (Sussex).

Radulfus cantuariensis Archepiscopus Radulfi circestrensi episcopo atque omnibus fidelibus suis salutem. Scitis me dedisse fratribus nostris monachis videlicet sancti pancratii de launs semper in posterum deinceps habendum illum redditum fabarum quem retinui et habeo in domo nostro apud villam nostiam pagham et vocatu circescet et habebunt inde singulis annis xxxvi sumas de fabis. Testibus Theodrico priore cantuariensis Hugone monacho Felice monacho Anfrido dapifero Rodberto de cerecio Rogero de sancto albano Hufrido clerico Rollando medico Roberto filio Riculfi.

Round notes that this charter must be previous to the death of Archbishop Ralph in 1122. Conrad was appointed prior by Anselm in 1109, and was still prior in 1119. The name of Theodoric of Canterbury does not figure on the existing list of priors, but this fact much proves the incompleteness of such lists. Of "circescet" Round says as follows:

"This notoriously obscure due is described by Dr Stubbs as a sort of commutation for first fruits paid by every householder. The best account of it however, will be found in the special appendix on the question in Kemble's *Anglo Saxons in England*. It occurs with various spellings, some dozen times in Domesday, but not in the case of Pagham though the account of that manor is a full one. The inference is that the silence of Domesday nowhere proves its non-existence. At Pagham it was probably, at the time of the survey included in the total render (*redditus*) but subsequently returned in hand (*i.e.*, excluded from the *firma*) by Archbishop Ralph. In Domesday we find the due generally commuted for money. In Worcestershire however it was paid in kind and as here at Pagham, in loads (*sumae annonae*) one being due from each hide. Here the rate was nearly the same Pagham having been assessed at fifty and then at thirty four hides.

At Pagham an extra couple of loads of beans were thrown in. "The grant also illustrates the power of a life-tenant of ecclesiastical property over immovables held in *dominio*."

It only remains for me to add that if any mistakes are found in the extension of the few quotations in the Latin of these deeds they must be ascribed to my ignorance of the language and not to Dr Round.

R R JAMES, F.R.C.S.

LUNACY AND MENTAL DEFICIENCY

REPORT OF THE BOARD OF CONTROL FOR 1924

ON January 1st, 1925, the number of notified insane persons under care in England and Wales was 131,551 in increase of 1,217 over the number on January 1st, 1924. It is pointed out in the eleventh annual report of the Board of Control that this increase has no necessary connexion with the incidence of mental disorder in the general population, but is merely the net balance as between the admissions and the combined deaths and discharges. The relative percentage distribution of the sexes—males 43.9, females 56.1—was the same as in the previous year. The recovery rate, calculated upon the direct admissions, was 34.86 per cent. The death rate was again very low, being 7.62 of the daily average number resident.

Classification of Mental Patients

The Board regards the question of classification as one of particular importance. Strict classification of the patients according to their form of mental disorder is for many reasons undesirable. What is of special importance is the segregation of recent and probably recoverable patients. They would be shielded from the possibly adverse effects of association with cases of confirmed mental disorder. They would be in an atmosphere of hope and recovery. The provision of a nursing staff on a liberal scale would afford an opportunity of providing individual attention and treatment, and, locked doors being dispensed

¹ Eleventh Annual Report of the Board of Control for the year 1924. London: H.M. Stationery Office, Adastral House, W.C.2, or through any bookseller. 1925. 12s. 6d.

with, a feeling of restraint and detention would not arise. To this end the Board renews its policy of separate admission hospitals, and, while avoiding the stereotyping of any particular design as a model intends to set out the structural requirements which should be borne in mind in the planning of such hospitals. Those patients in the admission hospital who have improved enough to permit of considerable relaxation of supervision should be withdrawn without delay from the presence of others with active mental symptoms, and those in whose case the chances of discharge are favourable should be kept apart from patients whose stay is likely to be protracted. It is accordingly the Board's desire to see at every mental hospital, ancillary to but sufficiently distant from the admission hospital, a detached convalescent home allowing free ingress and egress, and made as homelike as possible. Recovering patients would pass to the convalescent home without having experienced any sense of restraint or detention.

Open-door Wards and Parole

Quite apart from the convalescent and recoverable patients there are large numbers whose happiness is greatly affected by the existence or absence of the privileges of open-door wards and of parole. In nearly every mental hospital there is a community of able-bodied, trustworthy, and industrious patients who require long continued care and supervision because of persistent or recurrent mental symptoms. Their supervision, however, need not be rigorous, and they can be trusted with liberty during non-working hours to walk about the grounds. This is best arranged by a classification, which includes villas or wards administered on the open-door principle, to which none but parole patients are sent. This is not only desirable for the sake of the parole patients themselves, but also acts as a direct incentive to others to exercise self-control and to fit themselves for promotion to the open-door unit. The Board has now for many years given every encouragement for the provision of such facilities, and expresses gratification at finding their adoption in over 80 per cent of mental hospitals.

Visiting Specialists

The Board attaches great significance to the movement towards the employment of skilled specialists in various branches of medical work, not merely occasionally, but as part of the routine arrangements. The Board sees in this the means both of preventing mental hospitals working in a groove and of maintaining an active and mutually advantageous link between psychological and general medicine, besides the obvious advantages to the patients. Doctors who take up permanent resident posts in mental hospitals ought not to be expected to undertake surgical operations or to possess a corresponding competency in branches other than those of general and psychological medicine. Visiting committees are urged to appoint specialists who will regularly visit at prescribed intervals, and who will also be available for emergency calls. At some hospitals it happens that one or more of the resident medical staff has special competency in certain specialist services but however great his competency, the Board regards the placing of reliance on his services as a mistaken policy, and one which causes the sacrifice of time which can ill be spared from his recognized duties.

Open air Treatment and Hydrotherapy

The value of rest in bed for the treatment of active and acute mental symptoms is generally recognized, but of more recent growth is the opinion that the beneficial effect of this rest in bed is greatly enhanced if it can be laid in the open air. Open-air treatment in bed is a powerful tranquilizer and a valuable corrective in cases of insomnia.

Surprise is felt that in mental hospitals in this country hydrotherapeutic methods, speaking generally, are but little employed, and this all the more so inasmuch as in almost every treatise, modern as well as old, upon the treatment of mental disorder mention is made of various forms of bath as being admittedly powerful therapeutic

agents for their sedative effect in controlling excitement, their soporific influence in insomnia, their action in eliminating effete products, and their tonic effect in conditions of vasomotor stasis.

In the late fifties some mental hospitals were quick to see the utility of the recently introduced Turkish baths, and caused them to be installed. They appear now, however, to be but little used, owing perhaps to administrative difficulties. Treatment by the use of the wet pack is also seldom employed. This may be partially explained by the fact that the Commissioners felt it necessary to include it among forms of mechanical restraint. Under the new regulations of January 7th, 1925, it is no longer so regarded. The form of hydrotherapy now most usually employed is that of the "continuous bath," and is one of undoubted service.

Facilities for Examination

The relationship between mental and physical conditions is too intimate to warrant the absence from a properly equipped mental hospital of any recognized means of investigation. A growing recognition of the important part played by certain bodily conditions whose absence is often not determinable by bedside examination make it imperative that every mental hospital should possess at least a small clinical laboratory. The employment of a trained laboratory assistant to work under the direction of the medical staff is essential. The Board is satisfied that there is an increasing tendency to develop laboratory facilities in mental hospitals. Any institutions also run but be considered a necessary part of their outfit. Apart from the wisdom of a routine use of serum examination on admission and after any accident and trouble, there are many important spheres for its use in the investigation of septic foci, in the localization of intracranial growths and for therapeutic purposes. Considerable stress is also laid in this report on the necessity for the provision of clinical rooms in the wards where patient and doctor can be uninterrupted and not overheard, such conditions being essential for the adequate examination of mental states and for treatment by psychotherapeutic measures.

Coroner's Inquests

In a communication to the Board last November from the Coroner for the Southern District of the County of London it was pointed out that, especially in a district where there are a number of institutions for mentally disordered patients, allegations are liable to be made in the investigation of which the presence of someone with practical knowledge of the management of such institutions, but not connected therewith, would be an advantage. The Board has acquiesced in the suggestion that it should nominate someone with the necessary experience to act as assessor with the coroner on the bench.

Mental Deficiency

A considerable section of the report is devoted to a consideration of the present grave lack of accommodation for all types of mental defectives. Urgent cases have been, and are being, discovered for whom no vacancies in existing institutions are available. The country in this respect has come for the time being to the end of its resources, and unless the local authorities give immediate consideration to this matter the beneficent intention of the Mental Deficiency Act will be hampered and will almost cease to operate. Cases illustrative of the urgent need of such accommodation are set out in detail.

This report should be read by everyone interested in the mentally disordered or mentally deficient person. It illustrates how particular is the care exercised by the Board of Control in all matters appertaining to the welfare of these patients, and how zealous it is in advocating whatsoever measures may temper their unfortunate state and promote their eventual recovery. The reasonableness and practicability of the Board's suggestions are unquestionable, and should, wherever and as soon as possible, be made effective.

British Medical Journal.

SATURDAY SEPTEMBER 26TH, 1925

THE PRESENT POSITION OF PATHOLOGY AND BACTERIOLOGY

The subject of the discussion at Bath which we report in full at page 554, on the present position of pathology and bacteriology in this country was chosen for consideration by the Pathological Section of the British Medical Association's Annual Meeting because many pathologists thought that the observations on this branch of medical science made in the report of the Medical Research Council for 1924 called for some reply. It will be remembered that in the quarterly review of the progress of medicine included in that report, generous praise was meted out to the sciences of physiology and biochemistry but a less approving eye scanned the achievements of the pathologist. The abundant harvest yielded by physiological research was contrasted with the apparently meagre fruit of the pathological tree of knowledge and the conclusion was reached that the position and progress of these sciences [pathology and bacteriology] on which so much of the current work of medicine depends, cannot be regarded as satisfactory. In a leading article on February 14th last (p. 319) we made some comments on certain specific causes to which the Medical Research Council's report attributed the seeming decline in pathological research more particularly with reference to the organization of the bacteriological laboratories of universities, hospitals, and public health authorities. But this is only one part of a very big question as is clearly shown by the frank opinions expressed during the debate at Bath.

It is interesting to notice in the first place that many prominent pathologists find the comparisons of the Medical Research Council's report unfair and its criticism unjustified. Dr. Adwright and others remarked that it seems idle to discuss whether physiology or pathology is the more fertile field to cultivate, since the distinction between them is arbitrary and cannot be clearly defined. The biological research worker is becoming in Dr. Tiedemann's words, increasingly difficult to label and much of what is called modern physiology is in truth experimental pathology. But even accepting conventional distinctions and putting aside the question whether it is possible accurately to estimate the achievements of any science over such a short space of time several speakers at Bath challenged the judgement of the Medical Research Council's report on the ground that it is inconsistent. Therein it will be remembered the science of pathology is declared to have suffered because of a too close concentration on its practical service to medicine and the practice of applied pathology within the universities is wholeheartedly condemned. On the other hand the report traces the success of physiologists to the fact that they have at last become practical people. The war pulled them out of their shell, so to speak, for the pressing claims of sailors, soldiers, and munition workers brought the physiologists increasingly to their proper place within the fields of preventive and curative medicine. This closer union is said to have brought many benefits

to practical medicine and physiology alike for the stimulus of urgent problems, instead of filling men with from the idle pursuit of knowledge for its own sake, was found to freshen their interest and to suggest new clues for further pursuit by theoretical inquiry. Upon this Professor M. J. Stewart observed that it did not appear that what was sauce for the goose was equally sauce for the gander.

Whatever differences of view there may be as to the achievement of pathological research the speakers at Bath, almost without exception admitted that the organization of pathological services in this country calls for many changes and owing to this defect in organization research work has been greatly hindered. Conditions of work vary in different parts of the country and in different laboratories such as those of universities, institutes, and hospitals and it would be hard to formulate any detailed plan of general application to remove the disabilities of which pathologists complain. But judging by the opinions expressed at Bath and elsewhere when this question has been discussed pathologists in all parts of the country are dissatisfied with their status and with their facilities for doing research work.

On the question of the status of the pathologist Dr. Tiedemann's words may well be quoted. Speaking of opportunities and leisure for research he says:

There can be no guarantee, however, of then [pathologists] securing those conditions until law and medical appreciation of the pathologist's place in the scheme of things has very materially risen. Pathologists and bacteriologists have too long suffered from the clinician's conception of them as purely hewers of wood and drawers of water for their patients' benefit. There can be no doubt that the best pathological service can be realized only when ward and laboratory or patient and laboratory are brought as near as possible and mutual consultation on equal footing can be arranged. This question of status is intimately bound up with that of the training of pathologists. To become skilled in all branches of pathological and bacteriological laboratory work calls for a long training in technical methods and very wide reading. The need for this apprenticeship is often overlooked by committees in charge of pathological appointments, and it might improve the status of the trained pathologist if he could point to some recognition of his specialization comparable to the F.R.C.S. diploma of the surgeon or M.R.C.P. of the consulting physician. The D.P.H. though certainly a useful training for some branches of laboratory work should not be looked upon as evidence of competence in pathology whose province is much larger than that covered by the pathological requirements for the diploma in public health.

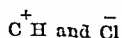
But unquestionably the keenest grievance of the pathologist arises from interference with his facilities for research work. If he holds a whole time post he is expected to spend all the day teaching and carrying out routine diagnostic tests, and to do his research in the evening. Not only is it impossible to prosecute research under such conditions but if long continued, the drudgery of routine work and teaching stifles the impulse to investigate and the pathologist is deprived of the chief attraction which drew him to laboratory life. The obligation to attempt to further scientific knowledge should be recognized by everyone who holds a pathological appointment and enjoys the facilities of a well equipped laboratory. So, too the obligation to encourage and secure leisure for these researches should be recognized by all medical and law committees of management.

COCAINE SUBSTITUTES

For the last twenty years the medical profession has been in search of some efficient substitute for cocaine. Cocaine is used almost entirely as a local anæsthetic, and in one sense is nearly ideal, since it acts both by injection and when painted on mucous surfaces, also it constricts blood vessels, and is not sufficiently irritant to make this factor of moment. But after absorption cocaine exerts on the cerebral cortex a stimulating action, which is especially pronounced in fatigue and in the condition of neurasthenia, it whips the flagging nerve cells into activity, and induces a condition of exhilaration or excitement in which the individual may lose his sense of responsibility. The sudden relief from mental fatigue, from worry and forebodings, is so decided that the sufferer readily falls back on his pinacra on every trifling occasion, and before he knows of his fetters he is an addict. But besides this possible danger there is the immediate danger of sudden collapse and even death following an injection for local anæsthesia. A sudden and excessive absorption of cocaine may, after a very brief stimulation, produce depression of the cortex and medulla, resulting in a fall of blood pressure, feeble respiration, and all the symptoms of shock and collapse, recovery from this condition is often very slow. To some extent the *British Pharmacopœia* has been responsible for some of the cases, since the official injection contains 5 per cent of the alkaloid—an amount probably five times greater than is necessary. For this reason cocaine is now rightly placed among the dangerous drugs, and the medical profession is still seeking a substitute which, while possessing all the anæsthetic properties of cocaine, lacks its effect on the central nervous system and its toxicity.

Picaine and butyn both exert a central action like cocaine, but eucaine is too irritant, novocain and its substitutes do not act in reasonable amounts as local anæsthetics—that is, they will not anæsthetize the eye, urethra, and nose. It is therefore with pleasure that we welcome a new principle in connexion with surface anæsthesia propounded by Dr A J Copeland and Mr H E F Notton in the opening paper in this issue of the *BRITISH MEDICAL JOURNAL*. Many basic substances—cocaine, ethocaine, eucaine, and the like—act as local anæsthetics when injected subcutaneous in the form of some ordinary salt such as the hydrochloride, but cocaine is the only base of which the salts are known to act as powerful, and hence useful, anæsthetics of the mucous membrane of the eye, nose, urethra, and other sensitive areas. It has been noted, however, that the intensity of the action of cocaine salts can be modified by the addition of certain apparently inactive substances to the solution, and in this fact the germ of what appears to be a most useful discovery has been discerned.

The possibility of varying the intensity of action of a surface anæsthetic led to a consideration of what modifications in the state of the base accompany this change. Cocaine is usually applied in solution as its hydrochloride—namely as a salt with a strong acid, in such solutions the salt undergoes extensive electrolytic dissociation, and the base itself is largely present as an electro positive ion, giving the symbol C to cocaine the hydrochloride becomes C,HCl and the electro positive and negative ions existing in the dilute aqueous solution become



In a salt of cocaine with a very feeble acid such as boric acid, electrolytic dissociation is very largely

replaced by so called hydrolytic dissociation in which borate, C,HB is actually present as free base, C, and boric acid, HB. The variation in intensity of surface anæsthetic action of cocaine salts has been traced to the different action of the electro positive cocaine ion and of the hydrolytically dissociated cocaine base.

This is of interest in connexion with cocaine salts, but it becomes of paramount importance when applied to the use of ethocaine and other synthetic local anæsthetics which so far have not been known to exert useful surface anæsthetic action. Thus ethocaine hydrochloride (novocain) has practically no surface anæsthetic action—that is to say, the electro positive basic ion, E⁺H, does not effect local anæsthesia. On the other hand, an aqueous solution of the borate in which the base is present as such—hydrolytically dissociated—is a more powerful surface anæsthetic than cocaine hydrochloride in corresponding concentration. The surface anæsthetic action of ethocaine base under these conditions had not been observed previously, but it appears that ethocaine borate may almost entirely replace cocaine salts for surface anæsthetic purposes. This conclusion has a profound bearing upon the difficulties raised by the Dangerous Drugs Act in relation to the prescribing of cocaine for use as a surface anæsthetic, the borate under consideration is almost without toxicity, and its stimulant action on the central nervous system is said to be negligible.

The condition that maximum hydrolytic dissociation and minimum electrolytic dissociation should be established in solutions used as surface anæsthetics—and it appears that this is the condition to be fulfilled—is defined by the chemist as holding when the so called pH value lies at neutrality or on the alkaline side of neutrality—namely, at 6 or more. To ensure this great care is necessary in the manufacture of the borates, as the new salts are called, and for this reason strict chemical control has to be maintained.

The ultimate criterion of usefulness of the new principle enunciated by Dr Copeland and Mr Notton must, of course, depend on chemical results, and the medical profession will look forward to the publication of these with interest.

THE HANDLING OF FOOD

The manipulations to which so much of our food must of necessity be subjected excite alarm among two opposite schools of food reformers. One of these traces all manner of diseases, together with much vague ill health, to the changes which prepared food undergoes as the result of canning, bottling, cold storage, or chemical preservation. The chief of these changes is nowadays thought to be loss of vitamin content, and from this food reformer quite a comes the watchword that health depends on eating raw uncooked food. The other school of food reformers is disturbed by the thought of the prodigious population of microbes in mill, cheese, and so forth, and looks a glance at the naked exposure of the loaf of bread or fruit on the buffet, inviting the invasion of the omnipresent invisible foes of man. That some reforms are necessary in the methods of preparation and manner of distribution of food would be disputed by no one with a watchful eye, but in their devising protection may perhaps be needed almost as much from friends as from enemies. One danger with which friends threaten is that of overstatement, thereby engendering distrust in a public opinion notoriously slow to move. It is well, therefore—as was done in the discussion on this subject in the Section of Public Medicine at Bath, reported in full this week at page 560—to point

out to the one school that much of the manipulation of prepared food, such as processing, canning, and drying, need not necessarily destroy vitamins, and to the other school that the majority of the microbes likely to get into food from the air are harmless, and that the chief ones to fear are those which cause specific food poisoning. Since the specific germs of food poisoning nearly always come from diseased meat or from the handling of food by human sufferers or carriers of these bacteria, it is clear that the first points on which to concentrate are a wholesome source of food and a diminution of human handling. The ultimate ideal is of course, fresh food free from all preservatives, but such a diet is likely, for a long time to come, to be beyond the reach of all but the very wealthy. In the meanwhile, it is reassuring to know that food may be brought across the ocean still enriched with vitamins, and that meat in this may be just as nutritious as the carcasses hung in the butcher's shop. With the remarks of Dr. Goddard on the reckless exposure of all manner of foods in the shop and street every thinking person must be in full sympathy, and it is to be hoped that when the Ministry of Health has abated the evil of chemical preservatives in food this question of unnecessary exposure may receive more official attention.

X RAY THERAPY IN WHOOPING COUGH

Whooping-cough is a disease which may be said to be characterized by its ubiquity, its resistance to treatment, the distressing nature of its symptoms, and its liability to such serious complications or sequels as pneumonia, bronchitis, emphysema, tuberculosis, and otitis media. The prolonged course of the infective period makes preventive measures more than usually difficult, and therefore any method of treatment that seems likely to shorten the duration of the disease is worthy of notice. We have referred more than once before to the possibilities of x-ray therapy, and, in particular, to the work of Dr. H. I. Bowditch and his colleagues at the Boston Floating Hospital (*Epitome*, November 29th, 1924, page 424). More recently, Dr. J. W. J. Willcox described in our columns (May 16th, 1925, p. 921) successful results in nine cases treated by him along the Boston lines, but using a rather simpler technique. Dr. L. W. Smith, in collaboration with Dr. Bowditch and other American workers, has now published an analysis of 850 cases of whooping cough treated by x-rays, supplementing the original series of 300 cases. Comparison of the two series reveals a much smaller incidence of pneumonia in the second series, due, it appears, to the fact that earlier treatment has now been made possible by the spread of knowledge in America about the curative possibilities of x-rays in pertussis. In the present series the age incidence of whooping-cough is 88.2 per cent for children under 7 years, 30.5 for children under 2 years, and 8.4 for infants under 6 months of age. A positive bacteriological diagnosis was made in 180 of the 300 patients whose sputa were examined. The most infectious period appeared to be the catarrhal stage, and infectivity seemed to diminish very rapidly after the onset of the paroxysmal stage. No positive cultures were obtained after the second week of the whooping, which represented approximately the fourth week of the disease. From this the inference is drawn that the usual prolonged quarantine period of six to twelve weeks is unnecessary. Skingrams indicated the presence of characteristic pathological changes—namely, peribronchial thickening (most marked in the lower parts of the bronchial tree), enlargement of the mediastinal tracheobronchial lymph nodes (with a distribution unlike that of ordinary bronchitis), and the frequent appearance of mottling suggestive of com-

mencing bronchopneumonia. In the present series of 850 cases 700 patients received x-rays only, while 150 were in addition treated by vaccines. In 80 per cent of the cases treated by x-rays alone a pronounced diminution was observed in the number and severity of the paroxysms in a time interval which ranged from a few hours to a week or ten days. The clinical improvement was most noteworthy in a small group of infants suffering from convulsions. Where combined treatment was employed the resulting benefit seemed to be even greater, and the average duration of the paroxysmal stage was reduced, autogenous vaccines were more efficacious than stock vaccines. The mortality as compared with untreated cases was small: five children died, but in only two cases could death be attributed to whooping cough. No adverse symptoms of any kind followed the treatment, and there was a rapid shrinkage of the swollen lymph nodes, accompanied by a definite fall in the total number of the lymphocytes and in their relative percentage. This was most noticeable in the older children. It has long been suspected that the swelling of the lymph nodes is directly responsible for the paroxysmal cough, and the present authors agree that this is probably correct. The diagnostic value of the lymphocytosis is stressed, it was found in 88 per cent of the cases during the infectious catarrhal stage. The authors believe that early diagnosis is now possible in most cases by a combination of bacteriological, radiological, and haematological examinations, associated with a careful study of the history. They suggest that quarantine can be shortened to four weeks, during which period isolation would be practicable. Prophylactic vaccination is also recommended, it is thought that the immunity so obtained endures for about one year, and the treatment should therefore be repeated annually for three or four years to cover the period of greatest liability to infection. By joint action between private practitioners, hospitals, laboratories, and local boards of health a specific preventive and curative therapy could, they hold, be established, whereby the incidence, morbidity, and mortality of whooping cough might be as much lessened as has already come to pass in diphtheria and scarlet fever.

INSURANCE AGAINST DOCTORS' BILLS

A company called "Family Medical Services, Limited," with offices in Manchester, has arranged at Lloyd's a doctors' bills policy, with the object of providing first-class medical services for the middle and professional classes. The prospectus of this "Anchor" policy, of which we have been favoured with a copy, is not compiled in very lucid language. It would seem, however, that in applying for a policy all members of a family who reside at home and are eligible must be offered for insurance. The family is therefore the unit. Eligibility appears to consist in not being "on the panel" (that is, we presume, not an insured person under the National Insurance Acts), in being between the age of 12 and the age of 45 in men and 40 in women, and in being able to submit a satisfactory proposal, though no preliminary medical examination is required. But children between the ages of 2 and 12 years, and adults up to the age of 50, are accepted with a loading. If the proposal is accepted insurance may be effected under Table "A" or Table "B." In the first table insurance applies only to general practitioners' fees, under three classes according to the fee of the doctor, whether 7s 6d, 10s 6d, or £1 1s a visit. Under this policy the insured pays as premium 15s, £1, or £2 per person (eligible person, presumably). Of his total doctor's bills for each year of insurance the insured himself will pay, according to the visiting fee of his doctor, the first £2 10s, £4, or £8, plus 15s, 20s, or 40s for every

person over the number of two. Under Table "B" a premium per person additional to the premiums under Table "A" insures a proportion of the costs of operations and consultations. The additional benefits fall under four schemes, and in each scheme there is a limit to the amount payable per annum per person. There is much that is interesting in my attempt to help the middle classes to insure against the anxieties of heavy expense in illness, anxieties which were emphasized by Lord Dawson of Penn in an address on health insurance delivered not long ago before the Insurance Institute of London. But from the brief outline we have given of the Anchor Policy of the Family Medical Services, Limited, it will be seen that the matter is beset with many difficulties. The complications of the policy are increased by the express exclusion of venereal disease, alcoholism and its results, neurasthenia, childbirth, "change of life," any disease not common to both sexes, and accidents resulting from certain occupations and amusements or from civil commotion and war. It must be remembered also that the policy is an annual and not a permanent contract, so that medical fees for a chronic illness of more than a year's duration are not likely to be covered. While, therefore, we shall watch with interest this early and ingenious experiment in middle-class medical insurance, we are by no means certain that it is possible to be sanguine as to the results. The honorary advisory council of the Family Medical Services includes three leading members of the medical profession in Manchester—Sir William Milligan, Professor George R Murray, and Dr T A Goodfellow.

ASPHYXIATION AT GENEVA

The Health Organization of the League of Nations (writes our correspondent from Geneva, whose further report appears at page 578), extends its operations from China to Peru—it all events from the epidemiological service at Singapore to the collection of medical statistics in Latin America. But the course of the present Assembly at Geneva shows that it might very well direct its energies to its own household. Parliaments notoriously are stuffy places, which is the reason, perhaps, why political life is so often uninspired but something better might have been expected from the "Parliament of Man." The atmosphere at meetings of the League of Nations, both of the Assembly and of its six statutory Commissions, is almost insufferable. The Assembly meets in a public hall in Geneva, not so large as the Great Hall in the new House of the British Medical Association, and, of course, not to be compared with it in regard to modern and hygienic methods of construction. A glass roof adds to the general discomfort of the close days of September. Here the delegations of fifty-four countries have to be seated, each with its separate desk, and behind each its retinue of secretaries and technical experts. The galleries are allotted to the journalists and to as many of the public as can be crowded in. The accommodation is entirely insufficient, and for some time the League has been considering the building of a hall of its own—so far without any tangible result. The rosters of the present hall are faulty, its ventilation is bad, and the general crowding and jostling is a scandal worthy of the attention of that committee of the League which is charged with social and humanitarian affairs. But, ill housed as the Assembly is, the Commissions are worse off. The Commissions hold their meetings at the Palais des Nations, the home of the secretariat, where four large salons are available. Each of these salons has a vast window space overlooking the lake. The beauty of the outside view contrasts strangely with the discomfort within. The windows are apparently not made to open or, if they are, there is an unwritten law that they shall not be opened.

If a current of air stultifies the assembled delegates one may be sure that some enterprising Anglo-Saxon has discovered a window which gives upon the outer world, and equally sure that some less stealthy Latin will soon close it. In each of these salons also accommodation has to be found for the delegates of fifty-four nations, for their secretaries, for a small army of officials, for journalists, and for an eager public, very largely Americans, who show a zest for the League very unlike the attitude of their Government towards Geneva. Add to this that almost every delegate smokes incessantly, and the atmosphere at the end of a session, which may last for four hours, must be breathed to be understood. It is such a call to mind a tragic event in the history of Calcutta under the Viceroy of Bengal. Had some of the sessions been prolonged for another hour the wisdom of fifty-four nations might have perished from asphyxia.

AUXILIARY HOSPITALS

By an auxiliary hospital is meant a recovery home, something between a general hospital and a convalescent home, for patients who need not be kept in a hospital and are yet not sufficiently well to go to their own homes or to a convalescent home. A minor instance, entitled *The Auxiliary Hospital*, has been prepared by Dr J N Kay Menzie, director of hospital and medical services to the Joint Council of the Order of St John of Jerusalem and the British Red Cross Society, and Miss R H P Oide, B A, in which the purpose and cost of such hospitals are discussed. It is recommended that they should be situated in the country or at the seaside, and it is stated that they cost less in buildings, staff, equipment, and in maintenance than the parent hospital, although they are more costly in all these respects than what are commonly called convalescent homes. One of the largest of the Voluntary Hospital Committees in the country has examined this matter, and its conclusion is that "There may be a saving in capital expenditure and in some items of maintenance, but on the other hand there will be some extra cost of separate administration and of transport. The advantage of a recovery branch, as compared with extension of the hospital site, lies, therefore, solely in the benefit to the individual patient, not in any increase in the number treated for the same sum of money." Dr Menzie examines this statement in detail, and gives figures to show that where such an arrangement has been established "the combined cost per occupied bed at this hospital and its home of recovery is nearly £3 a year lower than at the parent hospital itself." In other hospitals it was evident that the long stay patients were returned because there was no accommodation available to which they could be sent, and for no other reason. It is hardly possible to imagine a more uneconomical use of parent hospital beds. The report concludes that "it can never be an economic proposition to add beds to the parent hospital and utilize them for the retention of patients a moment longer than is absolutely necessary. And we are of opinion that this is the true test of whether, in any given locality, extension should be by way of recovery branches or by way of beds at the parent hospital." The address of the Joint Council is 19, Berkeley Street, W 1.

EFFECT OF HEPATIC EXTRACT ON HIGH BLOOD PRESSURE

DURING recent years attention has been directed to the action of the various guanidine derivatives in raising the blood pressure, and more lately to certain tissue extracts which lower the pressure. In the biochemical laboratory and the physiology department of the University of

Western Ontario researchers have been in progress to determine the specific nature of the depressor principle in hepatic extracts, and Drs A A James, N B Lughton, and A Bruce Macallum now report in *Nature* (August 8th, p 208) that this principle is non-protein in nature and is found in the albumin fraction in association with a pressor principle. They add that the depressor principle is soluble in water and water-alcohol mixtures up to 80 per cent, is precipitated from aqueous solutions by phospho-tungstic acid together with the drummo acid fraction, and that the material recovered in aqueous solution can be further purified by extraction with ether. The physiological effect of hepatic extracts has been studied by these authors, and also by Dr R H Major of Kansas, who contributes to the *Journal of the American Medical Association* (July 25th, p 251) an account of its use in dogs and forty-two hospital patients. He reports that in subjects with normal blood pressures, tested as controls, the injection of a therapeutic dose was without effect, but that when the blood pressure was previously raised by the administration of guanidine derivatives, or in cases of arterial hypertension, a prompt though gradual fall of blood pressure resulted. The younger patients who gave no evidence of renal drainage or of arterio-sclerosis responded best, but some patients with obvious renal deficiency and definite general arterio-sclerosis were much benefited. Out-patients who were pursuing their usual occupations while under treatment were found to react equally with those who were inmates in hospital. Dr Major found that the fall in blood pressure was as a rule unaccompanied by symptoms, there was rarely some slight dizziness. In some cases the lowering of pressure persisted for only a few hours, in others it lasted for one or more days. Six patients proved quite refractory to the treatment, one of these died, and the necropsy revealed a most intense arterio-sclerosis of the splachnics. Dr Major concludes with the caution that the therapeutic value of these preparations cannot yet be assumed, but that further research should reveal whether their efficiency is limited to the benign group of cases which respond to drug treatment, or is capable of extension to the more malignant degrees of hypertension.

THE SOOTHING CIGARETTE

SCIENCE, unlike proverbial law, has never been unmindful of the smaller things of life, and it has now turned to study that placid contentment or even cheerfulness which graces the countenance of the tobacco user, often to the exasperation of those who neither smoke nor chew. Disregarding such niceties as the effect of nicotine on cats, so delicately dismissed by Cuvier, and passing over, with some reluctance perhaps, those earlier investigators who believe they have detected a lower standard of mental efficiency in tobacco devotees as compared with others, W L Mendenhall has contributed to the *American Journal of Physiology* (May, 1925) a report of experimental work designed to establish finally whether tobacco is to be classed as a boon or a bane. Only cigarette smokers are considered in this report, but the author indicates that the study of cigar and pipe smoking is being taken up as a separate problem, whether this distinction is due to obvious mental differences between the three classes of smokers or to profound variations in the composition of the grades of tobacco concerned, is not disclosed. The procedure adopted was, briefly, that the threshold of sensation to electrical stimuli was first estimated and checked accurately, the subject of inquiry then smoked two cigarettes in a well ventilated room (whether he or she inhaled the smoke is not stated), and the sensory threshold was redetermined. About 750 observations were

made but, strange to say, difficulty was experienced in obtaining a large number of subjects, the lure of two cigarettes (of a popular brand) or the appeal of science proving apparently inadequate to college students of both sexes, smokers and non smokers. It was found—whether as a surprise or not is undisclosed—that smoking has an effect similar to that of resting, and more particularly in restoring the human organism to the normal state. Thus, when the sensory mechanism was depressed smoking stimulated, but when the mechanism was hyperexcitable the effects were soothing or depressing. The depressing effect was more marked with tobaccos containing nicotine, when cubeb cigarettes were used stimulation resulted generally, whatever the state of the sensory threshold. No differences were observed in these respects between habitual smokers and non-smokers, but the one instance of maximum stimulation, and the single occasion of maximum depression, occurred in a non-smoker. This makes it hard to draw a moral. Commenting on his results Mendenhall finds himself able to explain the calming influence of smoking on a nervous, high-strung, irritable person and its power to relieve the mental ennui of brain workers. It would appear that tobacco smoking furours the maintenance of, or return to, a normal frame of mind. But into the vast speculative field thus opened up the author, perhaps wisely, does not venture to step. He does, however, go so far as to imply that this finding casts light on “a matter of common observation and experience, that smokers in whom the habit is undoubtedly established, and who are deprived of their smoke, show unquestionable signs of hyper-irritability of the central nervous system, and that these signs disappear both objectively and subjectively when smoking is indulged in.” This might have been put more tersely, perhaps.

IMPERIAL SOCIAL HYGIENE CONGRESS

THE Imperial Social Hygiene Congress organized by the British Social Hygiene Council (formerly the National Council for Combating Venereal Diseases) will be held at the British Empire Exhibition at Wembley from October 5th to 7th, under the presidency of Sir Auckland Geddes, GCMG, MD. The main points to be discussed are the imperial aspect of social hygiene, which will be introduced by Mr L S Amery, Secretary of State for the Colonies, reports on the administrative and naval position with regard to venereal diseases within the empire, methods of health propaganda in Europe and the Far East, the consideration of the problem of venereal disease with relation to race and climate, the diagnosis and the treatment of gonorrhoea in the male, a review of the position with regard to venereal disease in Great Britain and the self-governing Dominions, social hygiene in relation to the mercantile marine, the need of welfare work for merchant seamen, arrangements in the Australian Commonwealth for the mercantile marine, venereal disease and immigration, the diagnosis and treatment of syphilis, the problem of venereal diseases in India, syphilis and endemic disease in India, survey of the position in the various provinces, congenital syphilis in India, community social service in combating venereal diseases, the problem of venereal diseases in protectorates and mandated areas, and the selection of propaganda films. Further information may be obtained from the Secretary of the British Social Hygiene Council, Cartet Street, Westminster, S W 1.

THE KING has been graciously pleased to grant a Royal Charter to the Medico-Psychological Association of Great Britain and Ireland, which will henceforth be known as the ‘Royal Medico-Psychological Association of Great Britain and Ireland.’

INTERNATIONAL HEALTH.

WORK OF THE ASSEMBLY AT GENEVA

[FROM OUR CORRESPONDENT]

THE Health Organization of the League of Nations will be entrusted with many new tasks if the various proposals now before the Assembly at Geneva take practical shape. The Cuban delegation proposes interchange visits of the technical staffs of the institutes of public health in the countries of Latin America, the Italian delegation wants an inquiry concerning trachoma to be set on foot, and the Pan American suggests the dispatch of a medical statistical expert to certain countries with a view to comparing health statistics. The Czechoslovakian delegation has a more ambitious programme—it asks the League to undertake a comparative investigation of the health administrations of the various countries, "with a view to the economic, rational, and effective organization of such services, including those of national health insurance", also the drawing up of an international scheme for collecting information with regard to diseases treated in hospitals in order to establish statistics of morbidity and, finally, it asks for an investigation of the possibilities of achieving a unification of pharmacopoeias.

This is not all. The French delegation desires the establishment on the West Coast of Africa of a sanitary and epidemiological bureau. The representative of the Serbs, Croats, and Slovenes moves for an investigation of methods to be recommended for adoption by Governments for regulating, in the interests of public health, the manufacture of and trade in, foodstuffs. Then there is Venezuela which asks for the establishment of national health offices to serve also as liaison offices between the administrations of the various Governments and the Health Organization of the League.

All these proposals have been referred for technical consideration to the Health Committee with the proviso—rather a devastating one—that no additional expenditure must be undertaken over and above the present budget. At the meeting of the second committee of the Assembly, which is concerned with technical organizations, several delegates protested against this restriction, arguing that the efficiency of the Health Organization should not be allowed to suffer on the ground of economy, and that if no new expenditure is to be incurred on health activities the same denying ordinance should be applied to the other work of the League.

Epidemiological Intelligence Services

A report on the general work of the Health Organization was made to the Second Committee on September 16th by M. Oscar Velghe, secretary to the Belgian Ministry of the Interior and of Health. He spoke first on the epidemiological intelligence service. The Governments of several countries on the Mediterranean and Black Sea have decided to notify Geneva by wireless of the appearance of plague or cholera. The proposed epidemiological intelligence bureau has been set up at Singapore, thanks to the generosity of the Rockefeller Foundation, and has been at work since April last. It is now in communication with the principal ports of that part of the world, including those of Australia and East Africa. It co-ordinates the information received and transmits it weekly by telegraph to the interested health services in the Far East.

M. Velghe went on to say that the Health Committee of the League has appointed a section of experts to agree upon a standard definition of stillbirth in order that it may be possible better to judge of the efficacy of the measures taken to reduce infant mortality. This section has arrived at certain conclusions, which have been forwarded to the various Governments. Another body of experts has been appointed to study the tabulation of the causes of death. Since the last Assembly six Governments have sent in their replies regarding the sero-diagnosis of syphilis. It appears

from these replies that the system of notation which is advocated for use in indicating the results of the sero-reaction has been officially adopted in several of the countries. The investigations concerning serums in respect of which standardization is possible are well advanced, and some specific resolutions may be arrived at within a few months, and will be submitted for ratification to the various Governments.

Investigations on Cancer and on Malaria

From inquiries undertaken by the Cancer Commission of the League (M. Velghe continued) the supposition that there is a considerable difference between England, Italy, and the Netherlands as regards mortality from cancer of the breast and uterus has been confirmed. Investigation of the factors which may explain the difference are now in progress, and are likely to lead to interesting conclusions. With regard to the Malaria Commission, the results obtained during the recent tour of investigation have led the majority of the members to conclude that, valuable as is the quinine treatment, the most effective weapon against this disease consists in improved methods for the destruction of larvae and mosquitos. At the invitation of the Spanish Government the Commission has lately visited certain malarial regions in Spain. The French Government has asked the Commission to conduct an investigation in Corsica, and the British Government has also requested an investigation in its territory. As existing supplies of quinine are not wholly adequate the Commission has decided to arrange for clinical tests using cinchonine, a secondary alkaloid of cinchona, and the entire extract of that substance, so that their action may be compared with that of quinine. The Commission hopes to reach a decision on this point next year. The Union of Socialist Soviet Republics has recently solicited the co-operation of the Health Organization in investigating the causes of the persistence of endemic plague in certain parts of Eastern Siberia, bordering upon Manchuria.

Exchange Visits

The exchange visits of public health officials have proceeded. Certain exchanges of specialist officers—one such class being factory inspectors—have also been arranged. As it is difficult for doctors in the British Dominion to take part in these collective journeys, medical expert from Australia and New Zealand and from Canada have been charged with individual missions of investigation in Europe. The Canadian delegate made a thorough investigation of the methods in use in different European countries for combating tuberculosis. On this subject of tuberculosis investigations are now proceeding on the decline of mortality from this disease in the various countries, and the effect of industrial labour, of housing, and food supply especially milk, upon the frequency with which tuberculosis occurs. M. Velghe deplored that lack of funds had prevented the Health Organization from making a study of the problem of physical education and the means of its general extension on rational principles, as requested by the last Assembly.

Appreciation of the League's Work

Following upon M. Velghe's statement to the Second Committee, the delegates from a dozen countries spoke in warm approval of the work of the Health Organization. These included Mr. A. M. Samuel, M.P. (Great Britain), the Hon. George Swinburne (Australia), and Sir A. A. Chatterjee (India). The only word of criticism was with regard to the request from Soviet Russia, the Polish delegate, M. de Vasconcellos, remarking that the Soviet Republic had taken an antagonistic attitude to the League, and he very much doubted whether a mission of health would soften its heart.

A recommendation was passed, inviting the Assembly (which has still to receive the report) to record its satisfaction that Governments were more and more disposed to collaborate with the Health Organization in matters concerning the prevention of communicable diseases and the improvement of health conditions.

A CHINESE MALARIA EPIDEMIC

A SERIOUS epidemic of malaria in South China in 1923, the outcome of the civil war, is reported by Dr R Boeckh¹ of the Basle Mission, senior physician to the Mission Hospital at Hoyun, near Canton. He says that in travelling up the East River from the Canton delta, just before reaching Hoyun a great new graveyard is passed, in which, in three weeks of October, 1923, 700 were buried, dead of malignant tertian malaria, which suddenly burst upon a community accustomed indeed to benign tertian, but with no immunity against the locally unusual malignant form. Europe, he adds, learned much of epidemics in the great war, the old civilization of China, too, enduring from unwise doctrines and robber brigades many trials since the revolution of 1911. It has experienced war-famine, plague, cholera, and malignant malaria, besides which the country folk were formerly free from syphilis, which now causes three-quarters of the diseases they complain of. The mercenaries, levied from all over China to fight in these wars or looting expeditions, picked up diseases everywhere and carried them round, and when they go back infected to their homes China in the after-years finds fun to become the most disease-infested of all lands. For example, plague has become endemic in the East River valley, where it was unknown before 1917.

In 1923 Sun Yat-Sen made a move against Chen from Canton up the East River, starting from the area of endemic malignant malaria, against which the natives of the delta had a certain immunity, though his troops had none, many of them being North Chinese with no experience of malaria nor even of tropical heat. The summer of 1923 was very wet, with quite unusual inundations in the delta and in the valley where the troops lay. In consequence the September swarms of anopheles came out in myriads. The South Chinese knew their risks and sheltered in the houses of the country folk, while the inexperienced northerners became heavily infected. They had no quinine or mosquito protection. As soon as the floods had gone down Sun marched up the right bank of the East River, reaching in a few days his objective, Hoyun. Poor food and overexertion in the heat had on the way exhausted his men, the river crossing was opposed, and their malarial infection began to manifest itself. The people of Hoyun who lived outside the walled city fled in thousands to the walled Mission Station, and Sun's troops flooded the Mission Hospital (sixty beds), where three or four hundred were accommodated daily, and 1,400 malarial cases, nearly all malignant, in three weeks. In October Sun's force was defeated and in flight, its route bordered by hundreds of dead and dying, overcome by hunger and malaria. The people of the Hoyun suburbs now returned to their houses, and in ten days Dr Boeckh was called to deal with their new malarial epidemic, contracted from Sun's army. It attacked almost exclusively the people in the open suburbs, not those in the walled city. It showed itself first along the right bank, the left was subsequently infected by human carriers, at crossings, especially where there were markets.

At this season the usual malaria was benign tertian, everyone was prepared for that. But this was different, much more severe, and they called it "the Spanish disease," as it reminded them so much of the so-called Spanish influenza of 1918-19. It ceased in the cold weather, but how heavy had been the cost! Of 10,000 dwellers in the environs of Hoyun, 700 (besides children) had been reported dead, whole families had been wiped out, others had lost nearly all their men. As resistance was low, the malarial infection had been all the more virulent, and the immunity acquired in wars against the benign tertian failed altogether against the malignant form. Sun's soldiers were very heavily infected (eight to ten crescents in a single microscopical field, and they appeared a very few hours after onset), blood destruction was very rapid, and early anaemiasis marked. The fever curve was quite irregular, sometimes resembling that of typhoid, and of no prognostic value, men died at 102° F, and lived at 106°. The cases were as various as in influenza epidemics: intestinal, gastric, cerebral, and pulmonary forms were seen, but always with malignant parasites. Quinine (15 to 45 grains daily) cured the most unlikely cases—even three of eight resembling

amoebic dysentery, though no amoebae were present. Many bronchitis cases were seen. Spleens were large, tender, and hard, even in early cases (splenitis was excluded), and decreased quickly in convalescence. Nervous symptoms were more frequent than usual, those patients with coma were mostly syphilitics. Quinine with salvarsan was the best treatment for them.

As Dr Boeckh points out, this is an unusual history of an epidemic of malignant tertian spreading in special circumstances into a region hitherto unattacked. It is fortunate a careful observer was there to report it so exactly.

If the epidemiologically most important considerations are put together shortly it may be said that in the endemic area of malignant tertian, in the Canton delta, anopheles, thanks to the inundations, came out in unusual numbers that September, and in the epidemic area got themselves infected, and after a fortnight began to infect the troops heavily and widely. These soldiers were inexperienced in malaria, quite unprotected, and unable to look after themselves. With their malaria still undeveloped, they tickled up the East River, in heat and discomfort from bad roads and heavy loads, and when, with the onset of the fever, a fortnight later, their blood became infective, they were at Hoyun, in a region which so far only knew the benign tertian. Into this district, with a climate, it may be supposed, ordinarily only suited to the development of *Plasmodium vivax*, they in the warm season brought a mass infection for the mosquitos of *P. falciparum*, which in that hot time in 1923 was able to develop. After a fortnight the local mosquitos were infecting the local people, the original carriers, Sun's troops, were then driven out ten days later the new infections began to develop, and the epidemic of locally arising malignant malaria, novel to the district, appeared. Quite an interesting story—all the more, as Dr Boeckh says, because so little is known of the history of the development of malaria in China.

The course of events may be briefly reconstructed thus. In the first week of September a young female anopheles at Canton bit a Cantonese who had had malignant malaria, and had not been cured. In a fortnight it, now infectious, infected one of Sun's North Chinese, who, marching up the East River, became very exhausted, so the parasites grew as they liked in his blood. At the end of September he fell sick at Hoyun, where a local anopheles bit him and became heavily infected. In a fortnight more it spread the disease to a native Hoyunese, who in another fortnight, at the end of October, went down with a malignant tertian fever his friends could not understand, having never seen a malarial fever without a remission every other day.

England and Wales.

METROPOLITAN ASYLUMS BOARD

THE widespread activities and the excellent services of the Metropolitan Asylums Board are known to all. The annual report issued by the Board never fails to provide a comprehensive survey of the manifold problems of public health which are being assiduously studied and determinedly attacked.

Diphtheria

In its report for 1924-25 the Board, in reviewing the incidence of the various infectious diseases, directs special attention to the increase of diphtheria during the past fifteen years. As the incidence of diphtheria on children under 10 years of age is about two-thirds of the total, the likelihood of a child under that age becoming infected with the disease is now approximately twice as great as it was in the period immediately prior to 1911. The Board considers these figures a powerful argument for the adoption of some form of immunization in an attempt to stamp out the disease.

The recent figures for New York City show a marked decline in the incidence of diphtheria, and it seems reasonable to conclude that this has been due, in part at least, to the immunization measures adopted there during the past few years, over 500,000 school children in that city having been tested, and about 125,000 of these found susceptible, having been immunized against diphtheria.

¹ Arch. f. Schiff- und Tropen Hygiene vol. 29, Jah. 1925 p. 305

The application of the Schick test is but a trivial matter involving neither pain nor subsequent discomfort, and having regard to the fact that it is possible to ascertain, with almost complete certainty, whether or not a person is susceptible to diphtheria, the Board now requires every new member of the nursing staff to be tested on joining for duty in any of its fever hospitals, and if found to be susceptible to diphtheria to be given the option of being immunized against the disease.

One of the Board's officers, Dr Frederick H Thomson, medical superintendent of the North Eastern Hospital, has urged the revision of the methods of bacteriological culture before discharging diphtheria convalescents. Dr Thomson found that, by a more intensive system of cultures, in which six consecutive negative cultures from throat and nose spread over a period of three weeks were required, a certain number of carriers who continued to show virulent diphtheria bacilli had been found. In this investigation Dr Thomson had the assistance of Dr W Muir, Assistant Director of Pathological Services, and of Mr Humphrey Munier, F R C S, for the performance of minor operations on the throat and nasal passages, as the only remedy in certain cases is such an operation.

Encephalitis Lethargica

It was indicated in the last report that the year 1924 was likely to be marked by heavy incidence of encephalitis lethargica, and this surmise has unfortunately been fully borne out. The total number of cases notified during 1924 was 611, a figure which approached a level three times as high as the highest previously recorded (233 in 1921). Apart from its intrinsic seriousness and the difficulties in the way of effective treatment, the distressing psychological changes which sometimes follow in its train render it one of grave sociological implication. The need for providing institutional treatment for juvenile cases is acutely realized, and the Board, regarding itself as the most suitable authority to move in the matter, has informed the Ministry of Health of its willingness to undertake such duties in the matter as might be thought necessary.

Scarlatinal Otitis

With a view of diminishing the number of cases of otorrhoea in its fever hospitals the Board, some years ago, appointed Mr T B Layton F R C S, as otologist, to enable a thorough investigation of this problem to be made. As a result of his extensive study of this question, Mr Layton formulated a number of conclusions, which are embodied in an exhaustive report made by him to the Board. Mr Layton gives the following list of instructions for the treatment of ear disease in scarlet fever:

(a) By incision of the drum head in every case in which it can be found to be bulged before it ruptures.

(b) By the cleaning of the meatus and the instillation of antiseptic hygroscopic drops when otorrhoea has occurred (Mr Layton informs us that the drops he uses contain glycerine of earbolite acid one part rectified spirit one part and glycerine two parts. He published a detailed account of the treatment in the *British Journal of Children's Diseases*, vol xx p 65).

(c) By considering the question of performing an operation upon adenoids when there has been ear discharge for twenty one days in simple scarlet fever or longer in septic scarlet or mixed infection.

(d) By the performance of a Wilde's incision as soon as a retroauricular swelling or a drena appears when this is not due to cervical adenitis.

(e) By opening the mastoid in such acute conditions of the bone as do not seem amenable to treatment by Wilde's incision.

(f) By performing an operation on the mastoid in those cases where a Wilde's incision has been done and in which the general symptoms do not subside or recur or the wound does not heal or the ear discharge continues.

(g) By performing an operation on the mastoid in cases where the ear discharge threatens to become chronically established and in which evidence of changes in the bone of the mastoid can be proved by radiography or otherwise.

(h) By the treatment by heliotherapy of such cases as are tending to develop chronic otorrhoea, whether these have had any operative treatment or not and whether they have suffered from simple scarlet from septic scarlet fever or from a mixed infection.

Mr Layton's recommendations were carefully considered by the Board, who were advised by Dr Doord Caiger, the chief medical officer of the Board's infectious hospitals service, after consultation with three of the medical superintendents. With one exception the recommendations by Mr Layton met with unanimous approval. In regard, however, to the advisability of incising the drum head in every case where it is found bulged, the Board's advisers felt considerable doubt. They contend that the opportunity of performing anticipatory puncture is often precluded because the occurrence of a discharge is the first indication that the ear is affected, and that the procedure is practicable on only a small percentage of cases.

Research

In October, 1922, the Board appointed a Scientific Advisory Committee to advise on the organization of pathological and research work and on kindred subjects. Acting on the recommendation of this committee, the Board recently established the post of Director of Research and Pathological Services, and appointed as its first director Dr J B McCutney. His duties will comprise those of general administration of the Board's laboratories and the carrying out of research work into the causation of various diseases. It is not considered that the administrative duties will interfere in any way with those of research. Dr McCutney contributes to this report an article on attempts to demonstrate a filterable virus as the etiological agent of a scarlet fever. The virus isolated was shown ultimately to have no otological relationship with scarlet fever, and is probably an unknown rabbit virus, but the experiments are of interest, they demonstrate the great difficulties attendant on the search for the etiological agents of disease, and emphasize the absolute need for controlling fully all experimental work.

The provision by the Board for research into the causes and prevention of mental deficiency has been considerably enlarged by the establishment of a laboratory at the Fountain Mental Hospital. The supervision of this work will be undertaken by Dr L B Sherlock, chief medical officer of the Mental Hospitals Service. This service also to have the advantage of the services of a consultant neurologist and a consulting surgeon, the first occupants of these posts being Dr Kinner Wilson and Mr Price Thomas, F R C S.

Post-Graduate Instruction in Manchester

The post-graduate teaching at the Manchester Royal Infirmary during the coming year will follow the lines previously established. On Tuesday afternoons lectures will be given in turn by the acting honorary staff and on Friday lectures on recent clinical and scientific work will be delivered, partly by the honorary advisory staff, which includes university professors who are not on the clinical staff at the hospital but who teach scientific subjects bordering on medicine. Professor W L Biagg will speak on the nature of rays, and Professor Stifford will continue the role lectures of the past years on the motor and sensory systems by giving two on the sympathetic nervous system. The appointment of such an honorary advisory staff has been of great assistance to the hospital, it was one of the numerous wise steps taken by the infirmary board during recent years, and is a sign of the growing intimacy between the university and the infirmary, as well as of the smooth working of the Manchester medical school. The lectures are open to all medical practitioners and to students interested in the subjects. A syllabus of lecture has been issued and an advertisement is inserted in our present issue. Dr E Bosdin Leech is the honorary secretary for these courses.

Sale of Food and Drugs

The results of administration of the Sale of Food and Drugs Act for the past year are summarized in a publication of the Ministry of Health containing extracts from the annual report of the Ministry relating to the subject,

together with an abstract of the reports of public analysts. We note that the total number of samples of all kinds examined was 118,000, being 3,154 more than in the previous year. The proportion reported as adulterated or not up to the standard was 5.9 per cent, it was 6.1 per cent in 1923 and 6.2 per cent in 1922. Milk continues to furnish the chief subject of interest. Out of 62,133 samples analysed 47,773, or 77 per cent, were not reported genuine. Of these 45 contained preservative, but only one was preserved with formaldehyde, the vendor in that case suffering the exemplary penalty of a fine of £30. Although the number of glaring offences is quite small the need of stringent control is exemplified by the discovery of a case of systematic addition of water to milk in adjusted quantities so as carefully to avoid trespass on the standard which would have been detectable by analysis, and also by the increased proportion of adulterated samples found in sundry deliveries, in one county it was almost double the plain average for the year. The powers conferred by the Milk and Dairies (Amendment) Act, 1922, have been used to remove the names of two vendors, convicted for adulteration, from the register of purveyors, thus preventing them from trading in milk. There is a growing tendency for the names of articles of a certain class to lose their meaning. One analyst remarks that the term "ice cream" may be used to describe any frozen preparation from sweetened water to sweetened cream. Another analyst states that lemon cheese should be made from butter, sugar, eggs, and lemons, whereas in fact little or none of these ingredients is used in its production. "Custard powder" is applied to a coloured and flavoured maize flour. The trivial offences of this kind add difficulties to the correction of the more serious abuses of description. An editorial article appeared lately in one of the London daily papers dealing lightly in satirical vein with the comments by an analyst on lemon cheese, but the application of the term "paregoric" to a liquid devoid of opium shows the length to which such abuse may go. Since paregoric contains a scheduled poison and thus may only be sold by registered pharmacists, certain unregistered drug store proprietors have sought to meet the request of their customers by supplying an imitative preparation containing no opium. Of 5,901 samples of drugs examined, 315 were reported not genuine. The principal defects were found among borax, sweet spirit of nitric, and medicines dispensed from prescriptions. Cream of tartar as an ingredient of baking powder has been generally replaced by acid calcium phosphate, and thus another confusion of names has grown out of the substitution. But while the substitution in baking powder may be legitimate, cream of tartar has distinct uses as a drug, and the confusion of nomenclature would be unfortunate if not checked. We note, however, that one sample only, out of 478 examined, was reported to contain phosphate, and that only four samples were certified to contain lead or arsenic in excess of the limit allowed.

TREATMENT OF TUBERCULOSIS

The Ministry of Health has issued a memorandum (37/T) concerning the annual reports to be furnished by the chief administrative tuberculosis officers of local authorities and the records to be kept by tuberculosis officers and medical officers of residential institutions approved by the Minister of Health for the treatment of tuberculosis. A covering letter (Circular 613) has been addressed to county councils, county borough councils, and tuberculosis joint committees in England and Wales, and another letter (Circular 613b) to the authorities of sanatoriums and other residential institutions approved for the treatment of tuberculosis. The memorandum has resulted from collaboration between the Tuberculosis Society, the Tuberculosis Section of the Society of Medical Officers of Health, and the Society of Medical Superintendents of Tuberculosis Institutions, the County Councils Association, the Association of Municipal Corporations, and the London County Council have also been consulted. An obligation is placed upon the chief administrative tuberculosis officer of each area and the medical officer of each approved residential institution to furnish to the Minister of Health certain statistical reports,

model forms of records are suggested, but these are not obligatory. More complete and systematic information will now be obtained than hitherto. The Minister also desires to receive annually general information about the working of local tuberculosis schemes, including accounts of any noteworthy developments or changes. Certain terms are defined with a view to stating the results of public medical treatment. Cases are to be described as "quiescent" in which no symptoms or signs of tuberculosis are present, except those compatible with a completely healed lesion. The term "arrested" is to be applied only to cases which have been quiescent for at least two years, but in non-pulmonary cases the term may be used as soon as there is reason to believe that the disease is unlikely to recur. It is added, however, that non-pulmonary cases should not be discharged as "cured" until three years have elapsed without there being any signs or symptoms of active disease. Cases in which the general health is fair and the symptoms of tuberculosis have materially diminished are to be termed "improved", and in all other patients who are alive the term suggested is "no material improvement". In order to obtain the statistical information each tuberculosis officer and the medical officer of every approved residential institution should keep a register containing information about all persons dealt with, whether coming for treatment, observation, or advice. It is added that all patients on a dispensary register should as far as possible be examined at least once a year by the tuberculosis officer, and their homes be visited periodically by the health visitor or dispensary nurse. Treatment at the dispensary—as distinct from diagnosis, consultation, and general supervision only—should, as a rule, be limited to patients whose continued treatment requires special knowledge or technical skill, or who cannot obtain other adequate medical attendance. It is further stated that patients whose treatment does not call for experience or skill beyond that ordinarily possessed by the general practitioner, and who are either insured persons or who can afford to pay for medical attendance, should not be encouraged to attend the dispensary for a routine treatment. On the other hand, a patient who only needs general supervision and no regular systematic treatment should not be referred to the general practitioner for treatment, and a form is provided for reporting such cases annually to the Ministry.

PREVALENCE OF SMALL-POX

In the first seventeen weeks of 1925 (as nearly as possible a third of the year) the total number of cases of small-pox notified in England and Wales was 2,393. The highest figure included in this total was 176 in the seventeenth week. Since that time there has been a steady drop in the notifications, the total for the second seventeen weeks having been 1,433, a diminution of 960. The figures for the last six weeks of the seventeen have been 65, 45, 63, 34, 50, and 37 respectively, whilst the next following week has had only 32. This fall in prevalence is very gratifying, and is apt to induce speculation as to whether the flood tide may not at last have been reached of the small-pox recrudescence which, starting from the extreme ebb of 1917, has steadily gathered force in the succeeding years. But it is much too soon to venture on prediction. In 1924 the total notifications were 3,784, and already, with one-third of the year to go, that figure has been passed in 1925. In the third quarter of 1924 the year's prevalence was at its minimum, there being only 643 notifications, as against 1,195 in the previous and 1,413 in the subsequent quarter. Indeed, the incidence of small-pox is usually lowest about this time of year, and it cannot be assumed that 1925 is any exception to the rule of seasonal prevalence. The northern parts of England continue, as hitherto, to be most affected by small-pox, Derbyshire, the North Riding of Yorkshire, the counties of Durham and Northumberland being all involved. Further south the county of Notts still reports cases, but the rest of England, including London, has had hardly any, and Scotland and Wales are in a similar happy position. Also, the disease continues to be of the same mild type as since the beginning of the present long-continued prevalence.

Scotland.

THE HEALTH OF GLASGOW IN 1924

The annual report of the medical officer of health for Glasgow has now been issued, and is packed full of information bearing on the physical welfare of the inhabitants. The author is Dr A S Macgregor, the period of office of Dr A K Chalmers having terminated at May 31st. The population at the middle of 1924 is estimated at 1,095,969, the estimate being based on a return of occupied houses. The institutional population was 30,104. The average density was 57 persons to the acre, and the number of inhabited houses 239,179, an increase of 1,447. Unoccupied houses numbered 449, that small figure being 124 more than in the previous year. The birth rate was 23.11, the death rate 15.39, and the infant death rate 119 per 1,000 births. The birth rate has declined steadily from 36.6 in 1871-80, and the death rate from 24.22 in 1881-90, to the rates given above for 1924. Owing to a lower estimate of population, the Registrar-General's rates are slightly higher than those of the medical officer, and, as in the past years, the report shows the Glasgow rates compared with those of the other three largest cities in Scotland, and the four largest in England. Next to Liverpool, Glasgow has the highest birth rate, and next to Dundee it has the highest death rate. The rate from infectious diseases in Glasgow was 1.71 in 1924 as against 1.46 in 1923, the excess being almost wholly due to whooping cough prevalence in the early spring, when pneumonia and influenza were also prevalent. Tuberculosis shows improvement.

Cancer has declined for the first time in a considerable number of years, the rate in 1924 being 1.16, against 1.19 in each of the two previous years. This improvement, it is remarked, may be a hopeful augury and reflect the results of early treatment. The cancer death rate in four residential wards of the city was from two to three times as high as in three typically antisocial wards. Deaths from rheumatism are considerably lower than in the two preceding years, and it is recorded that the deaths from alcoholism remain remarkably few, the rate per million having been 21 in 1921, and only 6 in 1923 and 7 in 1924. The death rate from nervous diseases as a group has, since the beginning of the present century, been remarkably uniform at from 1,600 to 1,700 per million. As in all the other cities with which comparison is made, the infant death rate has been higher in Glasgow in 1924 than in 1923. Of the four Scottish cities, Edinburgh has a much lower rate than the rest, while Glasgow comes out rather better than Dundee and Aberdeen. The infant mortality in the first month of life represents nearly one third of the total. Following the sections dealing with vital statistics, the report, which extends to 320 pages, proceeds to treat of all the other departments of health work undertaken by a great municipality—maternity and child welfare, infectious, respiratory, and venereal diseases, hospitals, offensive trades, port local authority work, housing the bacteriological laboratory (now much extended in accommodation and equipment), and general sanitation. Part II of the volume contains the annual reports of the hospitals and sanatoriums belonging to the corporation. Illustrations are given of the new buildings of Knightswood Hospital, the plan of a child welfare centre, and the extended laboratory of bacteriology.

NEW REGULATIONS REGARDING THE SALE OF MILK

The Scottish Board of Health has now issued to local authorities copies of the Milk and Dairies (Scotland) Order, 1925 and the Model Dairy By-laws. The Order prohibits the transfer of milk from one vessel to another in public place like railway stations, streets, etc., where it might become contaminated by dust. Milk in milk vessels must not be kept in a byre, kitchen, dwelling-room, or other place likely to cause contamination, nor in any place exposed to foul effluvia or impure air. After January 1st, 1927, the conveyance of milk in wooden vessels is prohibited, and all vessels used in transit must bear the owner's name and address. Carriers must take precautions to prevent milk vessels from being exposed to heat or to contamination, and after January 1st 1926 all vessels (except bottles) consigned for transit must be either sealed or locked. A part

of the Act deals with structural conditions in regard to cowsheds. These provisions are especially directed against conditions likely to favour the harbouring of infection, especially that of tuberculosis.

NEW PROFESSOR OF ANATOMY AT DUNDEE

The post rendered vacant by the retirement of Principal J Yule Mackay, M.D., from the Chair of Anatomy in University College, Dundee, was filled by the University Court of St Andrews University on September 15th by the election of Dr D R Dow. The new professor is a graduate of St Andrews University. Since 1913 he has been Lecturer on Regional Anatomy at University College and assistant successively to Professor Musgrave and Professor Waterston, the Bute Professors of Anatomy. He has carried on general practice at Crail, first in association with his father, the late Dr Dow of Crail, and, after the death of the latter, independently. Professor Dow is 37 years of age, and has contributed various articles on anatomical subjects to medical journals.

INCESSANT PRESCRIBING

In the report of the Executive Committee for the annual meeting of Insurance Committees to be held at Rothes at the end of this week it is stated that in the year 1924 there was an extraordinarily heavy claim upon the Drug Fund. The total expenditure for the year amounted to approximately £176,000, leaving a balance of £80,000 to be carried forward to 1925. The Executive Committee urges the necessity for vigilant scrutiny of Drug Fund expenditure, because, so far as information can be obtained, there appears to be no lessening in the present year. The Committee considers that extravagant prescribing, possibly unchecked for years, is to a large extent the cause of this high expenditure.

Correspondence.

THE DIVORCE OF SURGERY FROM MEDICINE

SIR,—It is wonderful how this story of the Council of Louis keeps cropping up. I should much like to find out who started the tale, and especially the phrase *Fœclesia abhorret a sanguine* as applied to it. Like Dr Cullen (*Journal*, September 12th, p. 494), I have carefully searched the Acts of the Council, and entirely agree with him.

A great authority, the late Edmund Bishop, in a private letter endorsed my view of the curious historical error in Sir Clifford Allbutt's book. In a paper on the Biber Surgeons (International Congress, 1913), and in my little treatise on *The Early History of Surgery in Great Britain* (1920), I pointed out that there is not a word in that Council about surgery, priests, or the shedding of blood, but merely an order against monks and regulars going out of their houses to study and make money in pharmacy, law, and medicine. This order has an interesting history, as Dr P Cyprien shows in his recent book on Salerno. He tells us that the early Benedictines, in the absence of secular teachers, started so many schools of medicine, and practised it so widely outside their convents that towards the year 1200 their medicine became a serious hindrance to their monastic work. Fortunately the new universities appeared at that time, and began to train lay physicians to take up the work. A whole series of Councils then forbade the monks to neglect their own duties for the practice of law, pharmacy, and medicine—for example, Rheims (1125), London (1138), the Lateran (1139), Montpellier (1162 and 1195), Paris (1212). Our Council of Louis thus took part with others in a needed reform. That, however, had nothing to do with the exclusion of the clergy from surgery. Indeed, they were not excluded by any rule till long after fashion and popular opinion had confined surgery to men of a low social rank. The separation of medicine from surgery arose, as Chauliac says, in the time of Albucares (? about 1050). This seems to have been partly due to Moslem feeling and partly to the aristocratic tendencies of the age, which despised manual labour and arts.

The first rule of the Church forbidding priests and deacons to practise surgery was a canon of the Lateran Council of 1216, confirmed as a decretal of Gregory IX (lib III, cap 9, tit 50) in the year 1234, or nearly two centuries later. This was followed by others, but they do not seem to have amounted to much, for exemptions were freely granted, as in the case of Chauliac himself, and in 1310 we find the Council of Bezeiers apparently ignoring the decrees, and ordering that priests and monks who practise surgery must have the bishop's licence. Surgery itself cannot feel slighted by the canon of 1216-34, for Honorius III, in 1216, ordered the secular clergy to abstain from physicians' work, because, he said, they should attend to their own studies.

As a matter of fact the wretched separation appeared chiefly where the evil influence of the University of Paris was great. There was very little of it in the South and in the early Italian universities. Even in England, as soon as university records appear, we find surgeons among the graduates—I am, etc.,

Clifton Bristol Sept 20th

GEORGE PARKER

COLLECTIVE INVESTIGATION OF RHEUMATOID ARTHRITIS AND ALLIED CONDITIONS

SIR,—I am surprised that Dr Logan's letter on the above subject (BRITISH MEDICAL JOURNAL, August 8th, p 271) has not provoked more correspondence. Few medical men of experience will quarrel with his opinion that "rheumatoid arthritis and allied conditions cause more human suffering and incapacity than that produced even by malignant growths."

Cancer with its almost inevitable "sentence of death," evokes a dramatic appeal to public sympathy. Rheumatoid arthritis presents no such immediate appeal, in one way, perhaps, the saddest part is that it does not kill. Its victims are hidden away in quiet places to suffer years of tortured crippledness. Its very chronicity tends to sink it to the position of an accepted fact, and there is no press agitation to beat up funds for its investigation.

In his opening paper on the subject at the recent Annual Meeting of the British Medical Association, Sir Humphry Rolleston gave a masterly summing up of the present state of our knowledge. There was a distinct note of encouragement, and I believe with Dr Logan that an investigation might well be undertaken "with rather more hope of beneficial results than in the case of cancer."

Where are the funds to come from to organize and maintain such a research? Possibly the friendly societies might do something to ease their present burden of £2,000,000 a year sick pay for rheumatic diseases. The equivalent of just one month's expenditure would put the thrug on a good basis, and would probably be a very sound investment. Again, the trade unions might devote a small fraction of their funds to this object, which would be likely to bring in more benefit than many of their present ways of dissipating their accumulations. Such a step would be a fitting complement to their present policy of establishing convalescent homes for their members—I am, etc.,

Cheltenham Spa Sept 21st

J S KILLETT SMITH

LATENT PERIPHERAL NEURITIS AND THE ANKLE-JERKS

SIR,—In the report in your issue of September 12th of the recent discussion on multiple neuritis held at Bath, I am glad to see that Dr Hurst insisted on the importance of latent—that is, symptomatic—neuritis.

As regards diagnosis, it is wise always to test and record the condition of the ankle-jerks—in particular amongst the tendon reflexes—before administering the drug, either in organic or inorganic form, and at weekly intervals during treatment. I have been struck by the fact that abolition of the ankle-jerks in arsenical and other forms of peripheral neuritis may be very temporary. In two cases seen recently the condition would have been missed but for routine periodic examination, for the neuritis was symptom-

less. Moreover, a careful examination disclosed no other evidence whatever of the condition.

A girl of 13, under treatment for chorea by my house physician was taking 30 minims of liquor arsenicallis each day. The dose had been increased gradually from 6 minims a day. On the third day (June 3rd) of the larger dose the ankle jerks previously healthy, were found to be abolished. The calf jerks were normal. The knee jerks were unaffected and there was neither motor nor sensory abnormality subjective or objective. The drug was omitted and five days later (June 8th) the ankle jerks were once again elicited. The observations were made by me. On June 1st and 2nd there was vomiting and on these two days only there was fever associated with tonsillitis. The vomiting, therefore may or may not have been due to the drug.

A boy, aged 6 under treatment recently for severe diabetes mellitus showed no evidence of peripheral neuritis. On the sixth day of treatment the knee and ankle jerks were all abolished and some of the muscles involved showed impaired faradic responses and polar changes. Ten days later the reflexes were again elicited.

In the treatment of syphilitic disease I have pushed organic arsenic until the ankle-jerks, previously healthy, have been abolished. The reflexes in all have at a later date been elicited normally. I am sure that the earliest and often the only sign of poisoning by arsenic may be bilateral abolition of the ankle jerks. It follows that in the case of a treated patient with nervous syphilis whose ankle jerks are absent we may be uncertain whether their absence is due to disease or treatment.

As regards symptomless neuritis from alcohol, I have found the ankle-jerks abolished, in the absence of any other detectable abnormality of the nervous system, in people who take spirits. I believe that alcohol may show its early action on the nervous system in this way only.

A woman of 26 under treatment at present for asthma and dyspepsia has been accustomed to take spirits in moderation in India for two years. She presents symptomless abolition of the ankle jerks. The knee jerks are healthy and the calves are not tender. Serum and cerebro spinal fluid are healthy and the nervous system otherwise appears to be quite normal. During three weeks, although the temperature has been persistently subnormal, her average pulse rate has been 95.

In several young persons of subnormal intellect I have failed to elicit the ankle-jerks, whereas all the remaining reflexes have been present—a solitary abnormality in what have appeared to be otherwise healthy physical states—I am, etc.,

HILDRED CARLILL,

Physician to Westminster Hospital and West End Hospital for Nervous Diseases
London W 1 Sept 17th

ACUTE THYROIDISM

SIR,—The report by Dr Clifford Nash (BRITISH MEDICAL JOURNAL, September 19th, p 519) of rigor and a rapid rise of body temperature accompanying the death of two patients with exophthalmic goitre is of considerable interest to me as I have observed the same phenomenon in rabbits fed with thyroid extract over a prolonged period. I have described in a paper, which will appear in the next number of the *Journal of Physiology*, that rabbits after prolonged thyroid feeding are in a condition in which sugar given intravenously or by mouth produces hyperglycaemia followed by severe hypoglycaemia, convulsions and death, rigor being immediate. The appearance of the hypoglycaemia, I now find, in experiments which are being carried out together with Dr J Hoet, is accompanied by a striking sudden rise of body temperature which may reach 108° F. The suggestion is forced on me at once that the rise of body temperature at the death of a patient suffering from exophthalmic goitre may similarly be accompanied by a fatal hypoglycaemia—I am, etc.,

H P MARKS

National Institute for Medical Research,
Hampstead N W Sept 21st

POSTURE FOR BRONCHIAL AND TRACHEAL DRAINAGE

SIR—I am glad to see that Dr Neild calls attention to the value of bilateral drainage by posture in the BRITISH MEDICAL JOURNAL of September 19th (p 504). He produces the necessary downhill slope of the trachea and bronchi by a pile of firm pillows under the middle regions of the patient who lies in the lateral position. The mouth projects just beyond the edge of the bed. If necessary the foot of the bed is also lifted.

The question I wish to raise is whether it is not just as effective to drain the trachea by merely lifting the foot of the bed. If so, it is simpler, easier, and more comfortable, I would think except possibly when the diaphragm is paralysed.

The "death rattle"—so distressing to those who have to hear it for hours—may be taken as illustrative of cases requiring tracheal drainage. Here the liquid mucus merely surges noisily to and fro in the trachea, accumulating till perhaps it kills. The patient may be too comatose to cough, and his larynx will—for example in meningitis—be yawning open. This laryngeal sentinel—once so sensitive and alert—is no longer capable of co-operating in a cough or of preventing the aspiration of fluids from the mouth.

All one has to do is to prop the foot-end of the bed upon a chair, with a pile of large books about a foot high upon it. Turn the patient's mouth into a dependent position and place cotton-wool under it. In a few minutes the death rattle will cease and many diachms of horrible mucus will drain on to the cotton-wool, simply because the trachea now slopes gently downhill. The mucus still surges to and fro—slightly and silently—but its current now is pre-dominantly outwards instead of inwards. The amount of mucus in the first few minutes seems more than could come from the trachea alone—some must come from the lungs.

Now if it is adequate thus to drain the trachea, why complicate matters with piles of pillows to drain the bronchi? I fancy that expiration will empty them if the trachea is kept drained. The bronchioles are even more important, and Dr Neild cannot empty their ramifications by gravity alone.

I do not think that bronchiectasis needs constant postural drainage. Daily inversion will often cure an empyrable cavity. One lad I remember years ago produced pints of stinking pus for many weeks. By daily inversion he was quickly cured after drugs and surgery had failed and became a healthy insurance agent in later life. Raising the bed-root will relieve many troublesome coughs also.

Now that Dr Neild has so ably opened this subject, I hope others will write their experience of this simple, valuable, and too little used device—I am, etc.

Hull Sept 19th

FRANK C. FAY, M.D., F.R.C.P.

BACTERIAL VACCINES

SIR,—Having been abroad until recently, I have not had the opportunity of replying to certain comments made by Dr Mier Coplans on my observations regarding the antigenic value of different types of vaccines (*BRITISH MEDICAL JOURNAL*, December 13th, 1924, p 1103, and *Edinburgh Medical Journal*, 1925, 32, 67). It is particularly his letter in your issue of May 23rd, 1925 (p 987) to which I should now like to reply.

He states that a conclusion to be drawn from my experiments is that active specific immunity can only be acquired as the result of "physical suffering." What I attempted to show was that active immunity can only be acquired as the result of a reaction on the part of the tissues to the antigen injected. This reaction varies considerably depending on the antigen and the animal employed, and does not necessarily involve physical suffering. When the organism used is the pneumococcus and the animal treated is the rabbit the reaction is invariably severe, no immunity can be produced without considerable wasting. This has been well recognized by other workers. Here would seem to be the ideal conditions for establishing the practical application of the detoxicated vaccine. However it is of considerable significance that animals injected with detoxicated and defatted vaccines showed no signs of wasting or ill health, but at the same time their serums contained no specific protective properties while the animals injected with an ordinary vaccine showed a very marked reaction with loss of weight and in spite of their ill health, produced an active immune serum which was capable of protecting mice from 100,000 lethal doses of virulent pneumococci.

Dr Coplans seems to think that the weights of the animal employed have been disregarded. This is not the case. All the animals selected for comparative tests were of approximately the same age and weight.

With regard to the comparison of the quantities of the several vaccines employed, the ordinary and defatted vaccine were prepared by emulsifying definite dried weights of the organisms in saline (the method I consider most accurate for standardizing vaccines). The detoxicated vaccines were prepared by the originator of the process (Dr David Thomson), whose own standard was necessarily employed—that is the number of organisms per cubic centimetre. In order to render the various preparations approximately comparable, Brown's standards (which give the numerical equivalent of 1 mg of dried bacteria in 1 c.c. of suspension) were applied in the case of the ordinary and defatted vaccines, while enumeration by plating was used for the broth culture vaccine. The dosage of the different preparations was then arranged so that the therapeutic principle which has been applied in using detoxicated vaccines (that is, large doses considerably in excess of those generally given in the case of ordinary vaccine) could be adopted in the animal experiments.

In reference to Dr Coplans's remarks regarding the dosage of the detoxicated vaccine injected into rabbit he states that, by a simple arithmetical calculation, in one injection I must have given 1,000 c.c. of the detoxicated vaccine to a rabbit! It is surprising that anyone who considers himself capable of criticizing bacteriological research work should take up valuable space in your journal by suggesting that such a dose was ever given. However this arithmetical problem (which has arisen owing to an uncorrected error in the heading of the table of doses) will be elucidated by reading "thousand millions—38,500" as "38,500 millions."

The conclusions I have arrived at regarding the immunizing properties of these types of vaccines have been based now on a large number of animal experiments, the results of which have been exceedingly uniform and decisive on the question at issue, and I fail to see how Dr Coplans's comments in any way affect my interpretation of the results—I am, etc.

J. S. P. DAVIDSON, M.D., F.R.C.P. (Edin)

Hunth, Scotland Sept 17th

FLUORESCENCE

SIR,—Professor W. L. Dixon, in his paper on "The therapeutic value of light" as reported in your issue of September 19th (p 499), points out the important part played by fluorescent substances in the blood stream. In discussing his own view of their action, he says: "This view is entirely different from that expressed by Dr Peacock in which he regarded the fluorescence of the skin surface as a protective phenomenon, though on what evidence I do not know" (Italics mine). I should like to refer Professor Dixon to the details of my experiments (published since he read his paper) in the *Lancet* August 22nd (p 369).

It would appear quite possible for fluorescent substances to play a defensive role in the skin and an opposite one in the blood stream, as suggested by the experiments referred to by Professor Dixon. As a matter of fact in case of haematomorphinism, under the care of Dr H. MacCombe, was markedly protected by covering the exposed skin with a thin layer of vaseline, a brilliantly fluorescent substance—I am, etc.

London W 1 Sept 21st

P. REDINGTON PEACOCK

ACUTE APPENDICITIS IN THE AGED

SIR.—In the *BRITISH MEDICAL JOURNAL* of September 12th (p 479) Dr F. C. Foister reported a case of acute appendicitis in a lady aged 75. On reading his notes I am tempted to send you an account of a case that occurred in a man 80 years of age.

On June 1st 1921 Dr Smale of Pensilva asked me to admit to hospital an old man with general peritonitis due probably to appendicitis. He had been ill for four days with abdominal pain and vomiting. On admission the old man looked extremely ill, abdomen distended rigid and painful with tenderness and rigidity most marked in the right iliac fossa. Temperature 97° F., pulse 135. The family decided to take the small chance of life that operation

offered, the patient being too ill to decide for himself. A subcutaneous saline was given, also atropine gr 1/100, open ether was administered by my partner, Dr Toogood. I opened the abdomen through the right rectus sheath, removed a perforated gangrenous appendix, did not stop to bury the stump, and placed a large tube into Douglass's pouch as there was a considerable quantity of free pus present also a good deal of lymph adherent to the coils of the intestines. The abdomen was closed with through and through sutures. Recovery was normal except for some slight bronchitis, the wound became soundly healed and he is today alive and well. There was no history of any previous attack. The old man attributed his recovery largely to the fact that he was allowed to take goat's milk and cream which his sons brought him daily from the moors and to which he had been accustomed all his life.

It would be interesting to know the greatest age at which any patient has been operated upon for appendicitis. I believe that Sir Samuel Wilkes was over 80 at the time of his operation.—I am, etc.,

Li leard Cornwall Sept 16th

BRIAN B METCALFE

ADDITIONAL VOLUNTARY HOSPITAL ACCOMMODATION

Sir,—Dr Buttr (September 19th, p 540) is an advocate of trying to get the 10,000 beds required by an additional effort on the old lines. Is he not somewhat ashamed of the old methods? A "sportsman competition" simply encourages the habit of gambling. It puts temptation in the way of the poor hard-up work. It encourages dishonesty. And, after paying organizers and others, how small a proportion is left for the voluntary hospitals!

I think I saw the other day that half the income of St Thomas's Hospital now comes from paying patients. What representation on the governing bodies of the hospitals have the paying patients and the weekly subscribers? If the extra money is provided by the Government for a national necessity, why should it follow that there must be undue and harmful interference by its representatives? I have always suspected that all the silly talk about socialism and the voluntary hospitals comes largely from honorary medical officers, who think they have some sort of a monopoly in the voluntary hospitals, which they fear to lose. I have always contended that the Divisions of the British Medical Association, as representing the general practitioners, should have some say in all hospital appointments. The same honorary medical officers would howl out against any such innovation.

The committees who were elected to look after the distribution of the Government grant seemed ideal for arranging for the supply of hospital needs. I contend that the present methods are uneconomical, and unjust to good and generous citizens. The Hospitals Association has no sense of citizenship, its policy is selfish and medieval. The refusal of State aid for hospitals means a great deal of human suffering, but that, I suppose, seems a lesser evil to Conservative politicians.—I am, etc.,

Southend on Sea Sept 22nd

FERDINAND REES, M D

FOULING OF FOOTWAYS BY DOGS

Sir,—I have recently received so many inquiries from a clerical officers of health and other medical men concerning the by-law which operates in this borough in regard to the fouling of footways by dogs that I think it may be well to write to you on the matter.

In this borough there is a very large number of flats and maisonnettes to which no gardens are attached with the result that dogs are exercised on the footways. Owing to the fouling of the footways as a result of this practice, the council came to the conclusion in 1921 that it was desirable to secure legislation to enable it to deal with the nuisance. The by-law, which was finally sanctioned by the Home Secretary, reads as follows:

No person being in charge of a dog in any street or public place and having the dog or a lead shall allow or permit the dog to deposit its excrement upon the public footway.

Any person offending against this by-law shall be liable to a penalty not exceeding 40s.

The by-law was made in pursuance of Sect on 23 of the Municipal Corporations Act, 1882, Section 16 of the Local

Government Act, 1888, and Section 5 of the Local Government Act, 1899, for the good rule and government of the Royal borough.

Two officers in my department report breaches of the by-law detected by them to the Public Health Committee. These two officers are engaged on other outdoor duties, and make their observations while passing from place to place in the borough. A leaflet calling attention to the requirements of the by-law has been delivered to a large number of dog owners, a poster in similar terms has been exhibited in various parts of the borough, and a printed slip has been attached to the rate demand notices.

During 1922 two offences were reported to the Public Health Committee and a warning was issued in each case. In 1923 two warnings were issued, and in the case of a third offence a summons was taken out, the defendant being fined five shillings. In 1924 a conviction was obtained in each of the four summonses issued, in one case the fine was five shillings, and in each of the other three ten shillings.

I have no hesitation in stating that the condition of the footways in the borough has improved very considerably since the by-law came into operation. Several other boroughs have now adopted a similar measure.—I am, etc.,

JAMES FENTON,

Public Health Department
Kensington, W. Sept 22nd

Medical Officer of Health.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

Sir,—The Council of the Royal College of Surgeons decided on July 30th last to petition the Privy Council for a supplemental charter, among other purposes, "to admit women Fellows and Members of the College on the same terms and conditions as men, and with the same rights and privileges."

It is therefore expedient that prospective women Members of the College should realize beforehand that their so-called "rights and privileges" do not include any representation of Members as such upon the Council or in the management of the College.

Thus, too, in spite of the fact that there are over 16,000 Members most of whom are general practitioners, and that the Council of the College is composed exclusively of consultants and specialists.—I am, etc.,

London S W 6 Sept 21st

HUGH WEDD, M R C S

Obituary

SIR FRANCIS DARWIN, D Sc, M B, F R S,

Formerly Reader in Botany in the University of Cambridge

SIR FRANCIS DARWIN, the distinguished botanist and writer, died on September 19th at Cambridge after a long illness. Although he never practised medicine, he was a member of our profession and a friend of many medical men, and his teaching of elementary botany brought him into affectionate contact with generations of Cambridge medical students.

Francis Darwin was born at Down, Kent, on August 16th, 1848. He was the third son of Charles Darwin, the great naturalist, grandson of Robert Waring Darwin, M D, F R S, who practised medicine at Shrewsbury, and great-grandson of Erasmus Darwin, physician and early exponent of the doctrine of evolution. While an undergraduate at Trinity College, Cambridge, he was one of the earliest of a long line of students of science who smoked their pipes in the hospitable rooms of Professor Alfred Newton on Sunday evenings in Magdalene College. At the suggestion of E C Stirling Frank Darwin became a medical student, and began to work for the Natural Sciences Tripos, in which he gained a first class in 1870. He then entered St George's Hospital with the intent on becoming a practising physician and in 1875 graduated M A and M B. However, under the impulse of I I Klein's teaching at the Brown Institute—he gave him, as he said in after years, the chance to see "science in the making"—he abandoned the idea of medicine as a career. Accordingly, on leaving St George's he went home to Down.

as Charles Darwin's assistant, and so continued, with intervals of study at Würzburg and Strasbourg, until his father's death in 1882. In that year he was elected F.R.S. in recognition of his researches in physiological botany, and settled at Cambridge with a Fellowship at Christ's College. From 1884 to 1888 he was university lecturer in botany at Cambridge, and for the next sixteen years university reader. During this period teaching and research in plant physiology, and the organization of a sound system of practical instruction in the rudiments of botany, occupied much of his time. Under his guidance the botanical part of the Cambridge course in elementary biology for the first M.B. examination took shape, and in 1895 he embodied the gist of his class teaching in an excellent manual, the *Elements of Botany*, produced as one of a series under the general editorship of Sir Arthur Shipley. This small book was very plainly and intelligibly written, and gave a good selection of examples to illustrate the various facts and phenomena, with special regard to the medical student's need for groundwork in the basic sciences. A more advanced work, just as valuable in its way, was the *Practical Physiology of Plants*, written by him in collaboration with E. H. Acton, and published in the previous year.

The importance of Francis Darwin's experimental studies of the movements of plants will be appraised elsewhere, but mention must be made here of the admirable full-length portrait of his father's work and character, presented by him to the world in 1887 under the title *Life and Letters of Charles Darwin*. In this, as in many short biographical sketches and essays on divers subjects, he revealed both literary grace and that command of lucid statement which seems to belong by birthright to every member of the Darwin family. He once said that the best exercise in English he ever had was the correction of his father's proof sheets.

Many honours and distinctions fell to his lot. He was a doctor, *honoris causa*, of eight universities, including his own, Darwin medallist, and formerly Vice President and Foreign Secretary of the Royal Society, and President of the British Association in 1908-09. He was knighted in 1913. As for his influence with the students of medicine and pure science whom he taught at Cambridge, perhaps the most fitting thing that can be said is what he himself wrote in generous appreciation of others: "The personal effect of teacher on pupil cannot be bought at a price, nor can it be paid for in any coin but gratitude. It is the possibility of earning this payment that makes the best part of a teacher's life."

Dr. JOHN WALTON HAMP, who died on August 28th in his 74th year, received his medical education at Queen's College, Birmingham, where he obtained the diploma L.S.A. in 1876, and the L.R.C.P.S. and L.M. in 1878. After holding house appointments at Queen's Hospital, Birmingham, he commenced practice in Wolverhampton, and was elected a member of the town council in 1884. In 1900 he became mayor, and in the following year was made a justice of the peace. He was elected a member of the British Medical Association in 1877, and he was also a fellow of the Obstetrical and Medico-Chirurgical Societies of Edinburgh.

Universities and Colleges.

UNIVERSITY OF LONDON UNIVERSITY COLLEGE

On October 5th and 6th from 10 a.m. to 1 p.m. first year students of the Faculty of Medical Sciences will be received by the senior tutor, the dean of the faculty, and the sub-dean. On Monday, October 5th from 2.15 to 4 p.m. students of the Faculty of Medical Sciences other than first year will be received on the same day, at 3.15 p.m. candidates for the D.P.H. will be received by Mr. Delafield, acting head of the department. The new buildings for anatomy, anthropology, embryology, histology, and physiology, provided by the gift of the Rockefeller Foundation of New York, are now in full use. The list of public lectures includes six on "The study of man" by Professor G. Elliot Smith and Dr. C. F. Sonntag, and one on "The photochemistry of vision" by Professor Luitz Weigert of the University of Leipzig. Full particulars of the course and other public lectures may be obtained on application enclosing a stamped addressed envelope to the Secretary of the College, Gower Street, W.C.1.

Medico-Legal.

THE "ERA" CULT IN NEW ZEALAND

PRACTITIONER'S APPEAL DISMISSED

THE appeal of Dr. Henry Dundas Mackenzie, medical practitioner, of Auckland, New Zealand, against the Order of the Supreme Court of New Zealand, made on March 30th, 1925—a report of the judgement of Mr. Justice Healdman appeared in the *BRITISH MEDICAL JOURNAL* of May 30th (p. 1023)—removing his name from the *Medical Register of New Zealand*, was dismissed by the New Zealand Court of Appeal on August 1st.

The motion for removal was made at the instance of the New Zealand Medical Board, it being alleged that Dr. Mackenzie had been guilty of infamous conduct in a professional respect in practising the Abrams method in the diagnosis and treatment of cancer in such a manner as to show that he could not have honestly believed it was a reliable or useful method in the cases in which he employed it.

Judgement of Appeal Court

Mr. Justice Sim, in his written judgement in the Court of Appeal, said the Medical Practitioners Amendment Act 1924 provided in Section 6: "That no medical practitioner shall be deemed guilty of grave impropriety or infamous conduct in a professional respect by reason only of his having adopted and practised any theory of medicine or surgery if in so doing he has acted honestly and in good faith." The court was of opinion that the judgement of Mr. Justice Healdman was right. Appellant's counsel had complained that his client had been condemned because he relied almost entirely upon the Abrams system and very rarely resorted to ordinary clinical methods. Complete reliance on the system might be foolish and reckless, but it was quite consistent with honesty and good faith. Another complaint was that Mr. Justice Healdman had based his decision to some extent on the report of the Horder Committee on the Abrams system and that it was not fair to judge Dr. Mackenzie's conduct during the years from 1921 to 1924 in the light of a report which was not published until 1925. This contention seemed to be well founded. The question of the value of the Abrams system was not directly in issue in the case, the only question being whether Dr. Mackenzie had acted honestly and in good faith in his use of that system. Appellant's counsel had, therefore, succeeded in some respects in establishing that the reasoning by which Mr. Justice Healdman had arrived at his conclusion was not entirely sound. Notwithstanding this, however, that conclusion appeared to be justified by the evidence, from which it was clear that although Mackenzie might have believed to some extent in the Abrams system, he used it not for the purpose of benefiting the unfortunate sufferers who came to him for relief, but for the purpose of exploiting them to his own pecuniary advantage. Mr. Justice Sim added that the order fixed two years as the time after which Mackenzie might apply for re-registration. It was unfortunate he thought that any period was fixed, for it seemed undesirable that such a practitioner as Mackenzie by obtaining registration again should be enabled to prey on a gullible public.

Mr. Justice Alpers, in concurring said if he had tried the case he would have fixed the period for re-registration at ten years instead of two.

The Services

SURGEON LIEUTENANTS R.N. FOR SHORT SERVICE

THE Admiralty announces (A.O. 2677) that surgeon lieutenants R.N. entered for short service on completing two and a half years service, are required in future to forward a statement through the usual service channels as to whether they desire to serve for twelve months after the termination of their three years engagement for short service. Surgeon lieutenants for short service who have completed over two and a half years service at the date of the receipt of this order should send in their statements immediately.

EAST AFRICAN MEDICAL SERVICE

The Secretary of State for the Colonies has approved of the following changes of title in the staff of the Medical Departments of—

Uganda. Principal Medical Officer to be Director of Medical and Sanitary Services. Deputy Principal Medical Officer (Native Services) to be Deputy Director of Medical (Native) Service. Deputy Principal Medical Officer to be Deputy Director of Medical Service. Chief Sanitation Officer to be Deputy Director of Sanitary Service. Sanitation Officer to be Senior Sanitation Officer. Surgeon in charge European Hospital Kampala to be Surgical Specialist. Bacteriologist to be Director of Laboratory. Medical Officer of Health to be Sanitation Officer.

Tanganyika. Principal Medical Officer to be Director of Medical and Sanitary Services. Deputy Principal Medical Officer to be Deputy Director of Medical Service. Senior Sanitation Officer to be Deputy Director of Sanitary Service. Senior Medical Officers of Health to be Senior Sanitation Officers. Medical Officers of Health to be Sanitation Officers.

Zanzibar. Principal Medical Officer to be Director of Medical and Sanitary Services. Senior Medical Officer of Health to be Senior Sanitation Officer. Assistant Medical Officer of Health to be Sanitation Officer.

Medical News.

THE annual dinner of St George's Hospital Medical School will be held at the Hyde Park Hotel on Thursday, October 1st, at 7.45 p.m., with Dr F. Ashton Warner in the chair.

THE Fellowship of Medicine announces that the second weeks of the intensive course in medicine, surgery, and the special departments at the Westminster Hospital, and of the course in diseases of the chest at the Brompton Hospital, begin on September 28th. On September 30th Dr C. B. Heald will give the second of his series of four lectures on electrotherapy. The Fellowship of Medicine has arranged a series of lectures on tuberculosis in the lecture room of the Medical Society of London, 11, Chandos Street, the opening lecture will be delivered on October 12th, at 5.30 p.m., by Dr L. S. Burrell, on tuberculosis from the physician's viewpoint. There is no fee for this series, and all members of the medical profession will be welcomed. The following other courses will be held in October: diseases of the throat, nose, and ear, at the Central London Throat, Nose and Ear Hospital, with an operative surgery class, a course in tropical medicine, consisting of eight clinical demonstrations, on Tuesdays and Thursdays, a combined course in diseases of children at the Paddington Green Hospital, Victoria Hospital, and Children's Clinic, a course in urology at St. Peter's Hospital, and a course in dermatology at St. John's Hospital. Copies of the syllabus of any course may be obtained from the Secretary, 1, Wimpole Street, W.1.

THE Infants' Hospital and the National Association for the Prevention of Infant Mortality and for the Welfare of Infancy have arranged a course of postgraduate lectures on infant care for health visitors, nurses, midwives, and superintendents of infant welfare centres. The lectures will be given in the lecture hall of the Infants' Hospital, Vincent Square, Westminster, S.W. on Mondays, at 6.30 p.m., from October 5th to December 21st. A syllabus and tickets may be obtained from the Secretary, National Association for the Prevention of Infant Mortality, 117 Piccadilly, London, W.1.

A SERIES of three lectures is being delivered at the Royal Free Hospital on the application of Christianity to the doctor's life. The standpoint of a general practitioner was dealt with by Miss A. Lloyd Williams on September 17th, and that of a consultant on September 24th by Dr H. Crichton Miller. The non-medical point of view will be expressed by Canon Simpson, of St. Paul's Cathedral, on September 29th.

THE Deptford Borough Council is organizing a health exhibition which will be held from September 28th to October 2nd. Besides various exhibits, addresses, and film displays, lectures will be given by the medical officer of health (Dr C. S. Thomson), Dr Leckard Hill, Dr E. Sloan Chessel, Mr E. B. Turner, and others.

THE annual meeting of the Medical Sickness, Annuity, and Life Assurance Society will be held at the offices of the company, 300, High Holborn, W.C.1, on Monday, October 12th, at 4 p.m.

THE opening of the eighty-fourth session of the School of Pharmacy of the Pharmaceutical Society of Great Britain will take place at 17, Bloomsbury Square, W.C.1, on Wednesday, October 7th, at 3 p.m. The Pereira Medal will be presented, and the inaugural sessional address will be delivered by Dr Winifred Cullis, Professor of Physiology in the University of London.

ON September 15th the Mayor of Lewes unveiled a tablet in the Council Chamber of the Lewes Town Hall to the memory of Dr J. R. Stenhouse, late medical officer of health, and founder of the Lewes Sanatorium.

DURING the first four months of this year 1,128 cases of typhus, with 118 deaths, occurred in Rumania.

The thirty-fourth French Congress of Surgery will be held at Paris under the presidency of M. Berard, professor of clinical surgery at the Lyons Faculty of Medicine, from October 5th to 10th. The following subjects will be discussed: (1) remote results of the different methods of treatment of cancer of the rectum, introduced by MM. Guadier of Lille and Anselmo Schwartz of Paris; (2) treatment of tuberculosis of the knee after adolescence (15 years), introduced by MM. Fredet of Paris and Vignard of Lyons; (3) the present apparatus used for fractures of the humerus and femur, introduced by MM. Guyot of Bordeaux and Rouvillot of the Army.

IN view of the general importance of town planning the part of the annual report of the Ministry of Health for 1924-25 which deals with this subject has been published separately. Copies may be purchased, price 6d., from the Stationery Office, Adastral House, Kingsway, W.C.2 or through any book seller.

THE issue of the *Nederlandsch Tydschrift voor Geneeskunde* of September 12th has a special supplement containing the papers delivered in English, French, German, and Italian at the plenary sessions of the fourth International Congress of Industrial Hygiene recently held in Amsterdam. Sir Thomas Oliver's address was printed in our issue of September 19th (p. 530).

ON the advice of Professor Pirquet active immunization of school children against diphtheria with toxin antitoxin has been forbidden in Austria.

THE proposed provincial meeting at Leeds of the Society of Superintendents of Tuberculosis Institutions has had to be abandoned. The ordinary meeting of the society will be held in London in October on a day to be announced later.

THE well known histologist Professor Camillo Golgi of Pavia celebrated his 82nd birthday on July 9th.

ON the occasion of his 60th birthday Professor Max Askanazy, director of the Institute of Pathological Anatomy at Geneva, was the recipient of a special number of the *Revue médicale de la Suisse romande* containing fourteen original articles dealing with pathology.

THE Sunderland Division of the British Medical Association has arranged a scientific meeting to be held at the Royal Infirmary, Sunderland, on Wednesday, October 7th, at 7.30 p.m. All medical practitioners in the area of the Division, whether members or not of the Association are invited to be present.

Letters, Notes, and Answers.

All communication in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

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THE TELEGRAPHIC ADDRESSES

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QUERIES AND ANSWERS

RECURRENT THROMBOSIS

"SCOTUS" asks for advice in a case of recurring thrombosis in the legs. The patient a man of 50 has slight varicose veins in the calf in both legs. The thrombosis occurs chiefly in the femoral veins. Milk has been given up and lemon juice is taken freely.

CLIMATE FOR SURGICAL TUBERCULOSIS

"G. H. S." inquires whether there is a locality on the mainland near Southampton suitable for a case of surgical tuberculosis. He already has information regarding the Isle of Wight.

PREVENTION OF MIGRAINE

DR H. M. TRAQUAIR (Edinburgh) writes. In reference to the inquiry by Dr Cheater (September 12th, p. 493) it may be remarked that pressure on the chiasma does not produce homonymous hemianopsia. The hemianopsia associated with migraine is entirely different in type from that caused by sub-geniculate pressure interference. Nor does pituitary swelling—unless very gross—cause increased intracranial pressure.

DR HENRY BAZZETT (Torquay), in reply to Dr Cheater's request for information as to how attacks of migraine may be prevented writes. My routine treatment if followed regularly, seldom failed. It was based on the observation that, in practically every case of migraine a history of ancestral gout could be obtained and on the experience of the benefit derived from "flushing the system" with well diluted lemon juice. In both that disease and rheumatism I invariably ordered the

taking for the remainder of life, the juice of half a lemon in a tumbler of water unsweetened, on an empty stomach, night and morning. My two worst cases so treated were (1) A business man of over 30 with very violent fortnightly attacks. (2) A lady of over 60 in poor circumstances and working as a housemaid, with a very bad gouty history, who had had bad attacks at about the same interval as (1) since early girlhood. No 1 remained for years entirely free from attacks on this treatment, but he temporarily abandoned it when an exceptionally severe attack quickly followed. No 2 told me about a twelve-month after she commenced the practice that she had only had one attack in that twelve months, and that a very slight one. Both occurred in my practice at Hendon, which I left not long after, so that I can only speak of their immunity from attacks during the year or two I had them under observation. Their surprise and gratitude were extreme.

ANSWERS TO THE FACT

"R. H. B." writes to remind "A. B." whose query on this subject was printed on September 12th (p. 498) of a practical note on the treatment of acne vulgaris by Dr. James Ait Scott consulting dermatologist to the Ministry of Pensions, West Midland Legion, which appeared in our columns on January 26th, 1924 (p. 159).

TREATMENT OF VARICOSE VEINS

Dr. J. NISSEI, D.M.C. (London) writes with reference to Dr. H. T. Gibson's inquiry (September 19th, p. 545).—A multipara aged 29 with generalized varicosity of legs and vulva of seven years' standing sent me to hospital at the end of August. I was written from the Hotel des Thermes to say: "I have just finished ten baths and am going strong. I haven't felt my legs since I came although they were very bad at Dinard. The arthritis in my hands has completely gone and my joints are quite supple now. The cures are simply a wonder in people with phlebitis etc. come in to the baths on stretchers and after about a week can walk quite well. It is getting too cold here now for we are about 800 feet up and the sea is freezing. I shall come next year in June." She adds that the baths begin with three at 20 minutes, two at 25 minutes and the rest at 30 minutes; and that these last are preceded by 25 minutes of cold painful spraying of the legs. The patient rests for two hours after the bath. Before breakfast 10 minutes of adrenaline solution are taken by mouth (1/2 inch) because the gastric vaso constriction induced prevents absorption) and before lunch and dinner a tablet of phlobose (1/2 composition). A glass of Vittel water is drunk before and after each bath and again at bedtime. The hotel is opposite the baths and the terms are 65 francs a day inclusive.

INCOME TAX

Cash Receipts or Bookings

If I. C. has been in his present practice for five years during which time the profits have been assessed on the basis of the actual money received. The inspector of taxes is now asking for a statement of book debts.

The profits assessable should strictly be assessed on the basis of the value of the fees booked but it is understood that the Revenue authorities are willing to accept the cash receipts basis unless there is ground for supposing that that basis would for some reason give an appreciably different result. Presumably the Inspector is enquiring for the statement of outstanding debts at different dates to see whether the amounts are substantially the same. If they are, then the two bases will in the long run yield the same result and no doubt the inspector will continue to accept the cash basis figures. Unfortunately the statements asked for are often difficult to prepare for a medical practice especially as receipts should be made for specific debts believed to be paid wholly or in part, and if I. C. might find it advisable to see the Inspector first and discuss the matter with him if—this would seem to be the case—there is no particular reason for thinking that the amount of uncollected fees is increasing.

Private Use of Car

If S. V. is entitled to certain allowances in respect of his motor expenses but the inspector refuses to allow more than 1/3 of the full amount on the ground that the remaining one third is covered by private use of the car.

We gather that H. B. V. does not contend that since 1923 the car may have been used for private purposes in the ratio suggested. If that was not the case in 1923 and earlier years we are of opinion that a different proportion should be taken for the "renewal" allowance, but the "depreciation" allowance refers to the year of assessment itself. We cannot, of course, offer an opinion on the merits of the ratio taken, it is certainly at an unusually high figure but its correctness or otherwise depends entirely on the facts of the case.

Depreciation of Car

"J. P." inquires what depreciation allowance he is entitled to in respect of his car.

The rate normally taken for the purpose is 15 per cent on the written-down value of the car for 1925-26. "J. P." will

be entitled to 15 per cent of £240 (the cost price of his car) = £36, and for the following year 15 per cent of (£240 - £36) = 15 per cent of £204—that is, £31, and so on.

LETTERS, NOTES, ETC.

"I GOT A D B S"

SIR JOHN O'CONNOR, M.D. (Buenos Aires), writes: In a leading article on international radiology in the *British Medical Journal* of July 11th, 1925 (p. 75) I read with deep interest that "the day of the foot and toe surgeon has passed." It happens that I was the parent of the paraphrase "foot and toe" (vide "Ligation of simple fractures" *Annals of Surgery* January, 1915). I accept the sentence in the past tense, passed, the leader writes, and I am delighted to think that diagnostic accuracy has reached such a high standard in England as to render ordinary employment of the exception which I believe is still the dominant mode in radiology—an unnecessary, if not antiquated, factor in surgical diagnosis.

SUBJECT OF THE TREATMENT

Dr. G. D. FRY (Medical Superintendent, Dumfries and Galloway) writes:—With reference to P. A. D. S. 29th (p. 402) I would suggest that the abnormal temperature be based on a more definite knowledge of the normal before treatment is undertaken. Referring to the so-called normal temperature, I can cite an example (On the Metal Thermometer and Thermography) of *Healthy Man during Post-Caric Institute of Washington*, 1910 (p. 177) says: "It is some time to place the exact limits of the rectal temperature of this man (33.4) and it may be local upon the more or less of a thermometer which has been so shipped by long continued use." In their work the describe the normal temperature as under 36.5, a regular rhythm during the day, lowest in the early morning rising to a maximum in the afternoon and falling thereafter. They further state that a high temperature several condition is not to be forgotten that this point—fluctuations amounting to as much as 2°—may well be within the range of physiological limits and in no way indicative of pathological condition. Reference to these and other observations—for example, Woodhead and Varrier Jones *Lancet* 1916 p. 452, 1 reads (1) and (2) in (1) of *Asyria*. The following working rules laid down by Prof. J. of *Asyria*. The rectal temperature in the healthy (adult) individual on waking in the morning is near but below 37° C. During the day it rises to 37.5° C. but remains below 39° C. (the subject being in bed). In the evening it falls between these two readings. In the female subject the rules apply during the post-menstrual cycle, but there is a physiological rise of about a degree during the pre-menstrual ten to fourteen days. The oral temperature is about 0.9° C. lower than the rectal and is much less reliable for small variations. Persuaded and back strikingly demonstrate that for oral thermometry the mouth must be kept shut for ten minutes before and the thermometer retained therein for at least another five minutes. The axillary temperature is lower still and least reliable. In conclusion I would strongly advise that the diagnosis of subnormal temperature be established by rectal or fasting that careful oral thermometry before, thyroid or other treatment is contemplated. If P. A. D. S. is unconvinced and without time to look up references I would earnestly suggest that he observe his own temperature on an "off" Sunday. Apart from the subject under discussion general acceptance of such data on the above and other observer would revolutionize the domestic treatment of pulmonary tuberculosis. The importance of this is a matter of distress to those of us who are almost entirely guided by them in the sanatorium part of treatment.

HEALTH AND SERVICE

One of the activities of the Health Service Bureau of the Wesleyan and Central Assurance Society, Birmingham, is the preparation and distribution of literature bearing upon personal and civic hygiene. We have received copies of leaflets dealing with the following subjects: Cancer, tonsils and adenoids, diphtheria and scarlet fever. These describe the ways in which these diseases begin how they spread point out warning signs and give simple advice about nursing. Similar leaflets have already been prepared on first aid, influenza, measles and infantile diarrhoea. These are not the only activities of the Health Service Bureau of this assurance society. For a more detailed and comprehensive setting up machinery for the study of mortality and morbidity statistics and for making periodical health surveys. It professes that whatever will promote better health and longer life is within the range of the service.

VACANCIES

NOTIFICATION of officers vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 33, 34, 35, 36, and 37 of our advertisement columns and advertisements in partnerships, assistantships and locum tenencies at pages 36 and 37.

A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 116.

British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BATH, 1925

SECTION OF MEDICINE

The Right Hon Lord DAWSON OF PENN, G C V O, K C M G, C B, M D, F R C P, President

PRESIDENT'S OPENING

LORD DAWSON, in opening the proceedings in the first day's session of the Section said

Although the days of lengthy inaugural addresses—and perhaps to our profit—are passing, I hope you will agree it would be fitting for me to spend briefly by way of introduction to the proceedings of this Section

First, let me say how highly I value the honour of being President of the Section of Medicine, for service in medicine is always an honour and a joy to those who love their profession. This Annual Meeting may be said to be notable—notable in that it records substantial advance in the knowledge of malignant disease, the fear of which rarely escapes our home at some time or another, and we enjoy the proud thought that such has come as just reward to British investigators, notable because this Association is giving expression to the realization of the widening range of its usefulness in the domains of learning, education, and public good, notable for gathering in this ancient city, rich in traditions which inspire its citizens, and not least its doctors, with wisdom and courage in meeting the problems of the day.

This is not the occasion to discuss the brilliant researches into cancer which are occupying our interest, but the fact of general import emerges that before the virus can invade an animal there has to be created in that animal a factor or nidus which will enable the virus to get foothold, and, what is remarkable, this factor or nidus is more specific, more individual, than the virus itself. The virus has a measure of interchangeability as between animal and animal, but the internal factor belongs exclusively to one domain. This brings forth in graphic manner what is always being borne in upon clinicians—namely, the individuality of disease, or rather how individual, how varied is man in his reactions to morbid processes—a fact which is worthy of remembrance even by those who are concerned with systems of government. And the way in which this internal chemical factor conditions the growth of cancer emphasizes the fact that with the advance of the acute infectious medicine will be concerned more and more with the condition of the individual man—his resistance, his qualities, which make for good and for evil.

So medicine will occupy itself increasingly with the fascinating but difficult study of trends and tendencies, with the border country between the physiological and the pathological, and this will in its turn bring medicine more in contact with how man thinks, and acts and feels, and plans—in short, how he has his being—and will make those who seek man's well-being feel the need of its co-operation. It follows that though the outlook of medicine will alter, its horizon will widen. Its disciples will be inspired as always by the unceasing quest for knowledge, and, on the other hand, by the bringing of the wisdom of that knowledge to man's service, as the prophets but not the vassals of sixteen hundred years ago.

Before concluding I would like to pass from thought to the man, and yet the change is not abrupt when one recalls that the man who is in our minds gave brilliant expression to the thought. I refer to Clifford Allbutt. He was not only physician and thinker, but a great leader for this Association during the troublesome years of the war. There were gathered within him many attributes forming an harmonious whole of rare beauty—wide knowledge, ripe scholarship, broad outlook, the living faith that to-morrow will be better than to-day. Moreover, he possessed in a manner exceptional if not unique, the physical beauty which can belong to advanced age. The greatest tribute

to age is the allegiance and affection of the young, and these were his in supreme measure. His was the glory of the setting sun—now living, refulgent, and then passing in a few moments behind the horizon—leaving us in abiding influence and grateful memory.

DISCUSSION ON
RHEUMATOID ARTHRITIS, ITS CAUSATION
AND TREATMENT

OPENING PAPERS

I—SIR HUMPHRY ROLLESTON, BART, K C B, M D, Regius Professor of Physic in the University of Cambridge, President of the Royal College of Physicians of London

The subject of what is commonly called rheumatoid arthritis is especially appropriate at Bath, with its long historical association with the treatment of joint disease, its special hospitals, and its wealth of clinical material.

For this discussion the designation "rheumatoid arthritis" may be taken to cover the group of chronic joint affections of uncertain nature, but it has been considered convenient to leave aside the condition of advanced osteoarthritis, especially of the hip in old people, though it must be admitted that such a condition may be the outcome of the rheumatoid arthritis. Fibrositis, which Stiedemann says always precedes, and in any case is much the same as rheumatoid arthritis except that, like paronychia, it concerns the connective tissues other than those in or about the joints, may, in order to reduce the already extensive scope of the subject, also be omitted. Regarded in this somewhat arbitrary fashion rheumatoid arthritis is, like splenic anaemia, a repository for syndromes not proved to be specific. The subject is so enormous that it is obviously impossible to touch on all its numerous aspects.

ETIOLOGY

The present conception of the disease is that it is infective, but it may be well to consider if infection is the sole and exclusive factor.

The Question of Disordered Metabolism

In 1907, while admitting that treatment of focal infections is sometimes followed by amelioration or even cure of the affected joints, Sir Archibald Garrod—son of Sir Alfred, who in 1858 introduced the name "rheumatoid arthritis"—doubted if these cases are really examples of the specific disease rheumatoid arthritis, adding the cautious proviso, "assuming that such a specific disease exists and not examples of other forms of infective arthritis which mimic it more or less closely", and in 1923 he was of much the same opinion in opening a discussion at the Royal Society of Medicine, at which Cassidy expressed his firm conviction that the importance of infection had been greatly exaggerated and, while granting the existence of a large group of chronic infective arthritis believed that there was also a genuine rheumatoid arthritis—a somewhat uncommon disease probably due to disordered metabolism. The question, then, is, Are all forms of chronic arthritis with the exclusion of the nervous arthropathies in its types and symptomatology, gout, leucophilic and possibly psoriatic arthropathy (Garrod and Evans) to be regarded as due to infections with various micro-organisms of a low virulence, or ought an open mind to be still maintained as to the existence of cases independent of microbial infection from the start and due primarily to some disorder of metabolism analogous to gout as commonly accepted?

What evidence is there that disordered metabolism is the sole cause of rheumatoid arthritis or of a certain group of cases in this category? Hereditary disposition to arthritis is not a very strong argument and what is much the same though in even broader conception, the "arthritic diathesis" is not a very satisfactory conception, for they both might be regarded as, in other words, an inherent want of resistance to infection. Joint changes have been described in a few rare cases of that "inborn error of metabolism" alcaptonuria and ochronosis. According to Pemberton (1921), the basal metabolism is

lowered in 20 per cent of the cases, and the sugar tolerance is lowered in rheumatoid arthritis but it might justly be argued that this really depends on infection as it returns to normal abruptly on removal of the focal infection. The blood fats and cholesterol, the blood calcium, and the blood urea and non-protein nitrogen were found to be normal. From his point of view, then, the metabolic defect appears to be limited to the carbohydrates, and even then might be regarded as, in common with the arthritis, due to infection. It is impossible to deny that an inherent disorder of metabolism might favour in infective or toxic arthritis by diminishing the resistance, and that gouty deposits are found in chronic rheumatoid joints, though they may be secondary rather than primary. On the other hand, it is known that an infection may, by inducing pancreatic disorder, lead to a more or less permanent lowering of sugar tolerance. Pemberton (1925) considers that such a permanent lowering of sugar tolerance accounts for the disappointing results of removal of definite foci, it might therefore be logically argued that a lowered sugar tolerance alone should also cause rheumatoid arthritis. But rheumatoid arthritis is not a feature of diabetes mellitus, even though infections are prone to occur, so that as regards disorder of carbohydrate metabolism as a primary factor in the causation of rheumatoid arthritis the positive evidence is very weak. Although infection may so affect the endocrine glands as to modify metabolism and thus favour joint changes, this is very different from postulating a primary error of metabolism independent of infection. G. Diaper (1920) argues that chronic arthritis represents a very profound constitutional disturbance in forces analogous to those concerned in acromegaly and thyroid insufficiency, and chronic arthritis due to thyroid insufficiency (Leopold-Levi and Rothschild-Sergeant) and to pluriglandular inadequacy, especially ovarium (Umber), has been described, but it might be objected that chronic infection is really the underlying factor of both the endocrine and the arthritic disorder. The endocrine element in arthritis has recently been discussed by H. K. Thompson who divides the cases of arthritis into (a) isotrophic or chronic infective arthritis due to and curable by removal of, the infective focus, and differing structurally from the two following forms—(b) atrophic or rheumatoid arthritis occurring in individuals of the slender "carnivorous" type of Goldthwaite and Bryant, and associated with, but he does not say definitely due to, some evidence of endocrine dysfunction, often hyperthyroidism; (c) the hypertrophic or osteo-arthritic of our attacking the "herbivorous" type of Goldthwaite with low metabolic rate, benefited by iodine medication and showing evidence of hypothyroidism. It will at once be obvious that as osteo-arthritis and hypothyroidism are both common in advanced life, their coincidence does not prove that the joint lesion is secondary to the thyroid disorder. Thompson does not prove or, indeed, dogmatically claim more than that "certain types of arthritis are not necessarily disease entities but may be symptoms of, or coincident with, an endocrine dysfunction." Correspondence between the geographical distribution of endemic goitre and rheumatoid arthritis (McCarrison) and the disposing influence of hypothyroidism which has been regarded as identical with the arthritic diathesis (L. J. Llewellyn 1925) might be explained by the view that they are both results of an underlying endocrine infection.

Infective Origin

The effects of oral sepsis, largely due to W. Hunter's advocacy and more recently to Billings's book and Wilcox's papers, are now well known, and its association with arthritis is fully recognized, but this advance has occurred well within the lifetime of many of us, and the importance attached to it has progressively increased. The relative responsibility of the teeth and the tonsils has been variously estimated: the teeth and gums have been incriminated for 50 per cent of the cases (Beddard Wilcox 1923), Lillie and Lyons from a series of 200 consecutive cases of tonsillectomy for arthritis possibly a one-sided experience, considered the tonsils responsible for 79 per cent of the

arthritic cases. Pemberton (1921), on the basis of 400 cases, gives percentages of 52 for the tonsils and 33.5 for the teeth. Possibly they are about equally responsible, and they certainly may both be diseased in the same patient, but, as the tonsillar and peritonsillar infection may be secondary to the dental, the latter should perhaps be given the first place. Adenoids should of course be considered in the same category as the tonsils. With regard to the teeth, a distinction has rightly been drawn between (1) pyorrhoea, in which the infective agents are discharged into the alimentary tract and are therefore prone to set up secondary foci in the tonsils, and, if there is achlorhydria, in the gall bladder, intestines, appendix, but are not so likely to pass into the general circulation and reach the joints as in (2) apical infection of the teeth, which may occur in teeth superficially healthy and so require skiagraphic assistance for their detection, here, being in a closed space, absorption by the blood is more likely to take place. A secondary focus in the maxillary antrum may be due to local extension of dental infection, and it is important to eliminate both foci. It would be interesting to have statistics showing what proportion of cases of rheumatoid arthritis are associated, on the one hand with pyorrhoea alone and on the other hand with the apical infection of the teeth only, I am informed that it should not be difficult to obtain cases with pyorrhoea but without any trace of apical infection. It is perhaps still necessary to emphasize the importance of remembering that the accessory nasal sinuses may be the sites of infection responsible for arthritis, sinusitic infection may be secondary to oral, dental, or pharyngeal lesions, or, conversely, it may be primary and give rise to them. It seems probable that unless the exit of discharge, purulent or otherwise, is obstructed sinusitis is, like pyorrhoea alveolaris, more likely to cause gastroenteritis and secondary foci in the gall bladder and vermiform appendix than systemic and arthritic infection. Cases of sinusitis responsible for arthritis may be latent and escape attention, and Dr P. Watson-Williams believes that it is the slighter, rather than the profuse purulent, forms of sinusitis that cause arthritis, because they are not accompanied by a polymorphonuclear leucocytosis which protects against the effects of absorption. For the detection of infection of the accessory sinuses transillumination and skiagraphy may be misleading and are not so satisfactory as puncture.

The activity of intestinal bacteria largely depends on the presence or absence of hydrochloric acid in the gastric contents. Achylia gastrica has been described in rheumatoid arthritis by Knud Faber, Woodward and MacLennan, Wallis, and Hurst. Coates and Gordon, adopting Hurst's explanation of the relation of subacute combined degeneration of the spinal cord to Addisonian (pernicious) anaemia, suggest that in rheumatoid arthritis achylia gastrica allows the bacterial production of a toxin with a special predilection for the synovial membranes.

Intestinal auto-infection has been urged, especially by Sir Arbuthnot Lane, as a cause of chronic arthritis. Pemberton (1914), from numerous laboratory investigations, found that protein putrefaction is not a factor. But Mutch has developed Lane's conception on bacteriological lines. In 1915 he found intestinal infection with staphylococci in Still's disease, later he insisted on a long-chained streptococcus as a pathogenic intestinal organism, and the observation, made in 1921 by N. and J. Mutch, of its characteristic glycolytic character or avidity for sugar, is of great interest in connexion with Pemberton's successful results in restricting the carbohydrate intake of chronic rheumatoid patients. Mutch, like Lane, insists on the frequency of masked stasis and hidden infection in the intestinal tract of patients with rheumatoid arthritis. Beddard, however, considers that in the absence of signs, such as attacks of diarrhoea, pointing to infection of the intestinal mucosa, this is improbable. Primary infections of the colon, such as dysentery, have been considered to be rarely responsible for rheumatoid arthritis in this country, the great majority of colonic infections being secondary to oral infections. On general principles intestinal infection should be restrained by the antitoxic function of the liver from producing secondary changes in the joints, though it is possible that

in certain cases bacteria might pass via the thoracic duct into the general circulation and so escape the hepatic filter. It would be interesting to know the results of tests for phenoltetrachlorophthalein test, in cases of severe chronic infective arthritis.

Infections of the genito-urinary tract, excluding those of gonococcal origin, do not play a prominent part in the production of arthritis, but it may occur in *Bacillus coli* infections of the urinary tract, and streptococci from chronic and vesicular seminales, and attention was called by F. McCrae to prostatic infections as a cause of arthritis, especially of the spine, and among 100 cases of chronic arthritis in the prostate infection of the vesicular seminales may extend from the prostate, and, though often gonococcal or tuberculous, may be due to other micro organisms.

Infections of the respiratory system have attracted comparatively little attention as a cause of chronic arthritis. Pierre Marie's chronic pulmonary osteoarthropathy is, of course, a well marked example. Mention should be made of Poncet and Leclerc's view, apparently widely accepted in France, that the commonest form of chronic infective arthritis is that due to the toxins of a distant tuberculous focus acting on the joints, 50 per cent at least of the cases ordinarily met with are thus explained (Mouriquand and Michel), the joint affection being, in fact, analogous to a tubercule of the skin. This conception of the widespread influence of tuberculosis has received little recognition and is still uncertain—namely, whether it is entirely toxic, the joints never being infected—and also because it is so different from ordinary tuberculous arthritis. H. Platt could not find any conclusive evidence that it is a pathological or clinical entity. Probably many would agree with his dictum that Poncet's disease is merely chronic arthritis in a person with tuberculosis, but even then it should be borne in mind that the joint lesion might be modified by the presence of a tuberculous focus elsewhere, further, the long debated and now established syphilitic nature of tuberculous should warn us to keep an open mind in the relation of tuberculosis to chronic arthritis of doubtful origin.

Skin infections such as boils may be responsible for rheumatoid arthritis, and Stockman has seen it in general dermatitis and lupus erythematosus, but whether or not chronic arthritis may follow impetigo or nephritis has done (Guiraud J. Phillips) is an interesting point. The etiology of psoriatic arthritis has given rise to some discussion. Guiraud and Evans remark that the rapid recovery of the joints when the psoriasis clears up is unlike anything seen in cases ordinarily classed under the name rheumatoid arthritis and is only approached in severe cases of dysentery. This is perhaps evidence of the success of removal of a primary focus rather than of their contention that neither lesion is a mere complication of the other. But possibly psoriatic arthritis is a toxic or anaphylactic rather than an infective arthritis, and the association of intermittent hydrarthrosis with two out of Guiraud and Evans three cases is at least compatible with this view.

Consideration of Criticisms of the Infective Theory of Rheumatoid Arthritis

It has naturally been urged against the focal infection theory of rheumatoid arthritis that extensive infection, especially oral, may exist for a long time without the sequence of rheumatoid arthritis or other systemic lesions, and indeed it has been stated, probably with considerable truth that few persons of mature years are entirely free from chronic septic foci. Further it has been insisted that in many cases of rheumatoid arthritis careful search fails to reveal a septic focus. In considering why very definite focal infection often fails to cause joint lesions, the contribution of the individual, his powers of resistance must be taken into account, the moral now well recognized in the case of tuberculosis, that the seed (the local conditions of the joints) as well as the soil (the infective agent) is an important factor in determining whether or not disease

results, should be more extensively applied in rheumatoid arthritis. Cases certainly occur in which a focal infection exists for years before the onset of arthritic phenomena, which may then run a rapidly progressive course, crippling the patient in a few years. Something, perhaps an attack of influenza, has broken down the individual's immunity and powers of resistance, among which the bactericidal power of the gastric hydrochloric acid must be taken into account, or in a more marked degree has rendered him sensitive to micro organisms or to foreign bacterial proteins to which he was previously immune. Another example of this required susceptibility is provided by cases following acute trauma, or the long continued stresses and strains described by Sir Arbuthnot Lane.

But the disposing factor may be inherent and congenital, such as the anatomical conformation of the body and "the human constitution," which G. Dupier (1924) has recently defined as "the aggregate of hereditary characters, influenced more or less by environment, which determines the individual's reaction, successfully or unsuccessfully, to the stress of environment." Goldthwaite and Bryant described two types of departure from the normal which they called the enervous, from their slender figure, and the herborious—broad backed, heavy, and prone to degenerative diseases, such as uterine sclerosis, diabetes, and osteo arthritis. The narrow backed slender type are prone to tuberculous and other infections, many intestinal disorders, and, significant on these counts, rheumatoid arthritis. Crookshank in an able paper argues that in persons prone to become chronic arthritis there is often some morphological defect which renders a joint a place of diminished resistance. He gives examples of congenital rheumatoid joints showing definite evidence of congenital defect, such as malformed little fingers, small thumbs, and pleonostose famillae as an extreme instance of deformity favouring subsequent disease, and Collet's observation of a congenital condition of the hip joint approaching dislocation, as a disposing factor to senile arthritis of the hip. The nervous origin of rheumatoid arthritis (Latham, 1886) describing the changes to disturbed trophic action though now mainly of historic interest, may apply in a few instances—for example, in Chiriac's arthropathy—by rendering the joints a *locus resistencie minoris*.

It must be admitted that it is often difficult to detect the infective focus. This may depend on imperfection in our means of localizing them—for example, the necessary nasal sinuses, prostate, vesicular seminales, or the internal female genital organs, may escape investigation, cryptic infection of submucosa or apparently normal tonsils may easily be overlooked, or there may be a closed focal infection of the gall bladder or appendix which may remain latent, not discharging then bacteria into the alimentary canal, so that bacteriological examination of the faeces may not give any clue. Another difficulty about focal infections is that the primary one, such as dental suppuration may produce secondary foci, some of which are less easily removed—for example in the tonsils cervical glands, maxillary antrum, the gall bladder, appendix, intestine, mesenteric gland, a reservoir of infection. Mutch (1925) divides the infections of the alimentary canal into two zones—the upper, of the mouth and throat the lower of the bowel and its appendages the second may be local or affect the whole from the duodenum to the rectum. Thus extrication of the teeth may fail to relieve the joint symptoms because a secondary focus of foci have become active in distant and unsuspected parts. Thus in a series of 80 cases of arthritis recorded by Bloch, 42 patients had had some focal infection removed but all of them still had other foci remaining, 25 had lost their tonsils, and 22 of these still had infected teeth. One reason for the practical—namely, as regards rheumatoid arthritis is perhaps imperfect removal of the whole of the focal infection. Dentists are rightly conservative in extracting teeth they believe to be sound but if even one tooth with latent apical infection is left this may be sufficient to keep up the joint trouble, either by carrying as a continued source of bacteria conveyed by the blood, or possibly merely by providing poisons which, acting on a

joint rendered hypersensitive by previous infection, responds actively (vide infra). Even when teeth are removed infected roots may be left behind to keep on the evil influence, thus, among 290 edentulous jaws, M F Lusterman found 129 root or other evidences of infection, and he believes that 37 per cent of the areas to which dentures are adapted harbor infection. The position is made more difficult by evidence that x-ray examination of the jaws may fail to reveal infection of the apices of the teeth (Meisser and Hiden).

An objection sometimes raised to the infective origin is that the average run of rheumatoid cases show little or no evidence of corresponding systemic and visceral damage. In reply it may be said that this is also true of many cases of undoubted focal infection. But, on the other hand, rheumatoid arthritis is often associated with fibrositis and neuritis, and in the juvenile form of rheumatoid arthritis, or Still's disease, the lymphatic glands are commonly and the spleen often enlarged, and occasionally visceral lesions are found in the kidneys and in rare instances in the liver.

If for the purpose of this discussion rheumatoid arthritis be regarded as a subacute or chronic inflammation of the joints due to infection, but not proved to be due to any definite bacterial agent, so that gonococci, pneumococci, and other known bacterial forms of arthritis are excluded, then it appears that, logically, an arthritis of chronic course associated with streptococci or staphylococci invasion of the tonsils or apices of the teeth and cured after removal of the focus and corresponding vaccine treatment, should be excluded from the group of joint affections of obscure origin for convenience described as rheumatoid arthritis. In general, however, this apparently logical sequence is not observed, and such a case, presumably streptococci, is not removed from the category of rheumatoid arthritis. There is some reason for this want of strict consistency: the streptococci form a large and even yet, from their instability, imperfectly classified group, and among the various forms some only are responsible for chronic joint lesions. The difficulty in the specificity of the streptococci makes it reasonable to wait before transferring these cases from rheumatoid arthritis to streptococci arthritis.

A point of interest for discussion in the clinical phenomena of rheumatoid arthritis is how far toxic influences, as apart from continuous or repeated infection of the joints, play a part. A joint is infected, and as the result of local and other treatment the condition subsides, whether the causal organisms die out or remain late it being unknown. Is it not conceivable that the joint becomes hypersensitive and, in the event of any toxin reaching it from an infective focus, such as a single tooth with apical infection, reacts in an anaphylactic manner? There are other examples of a probable anaphylactic arthritic reaction, such as intermittent hydrarthrosis and possibly gout.

BACTERIOLOGY

The infection is obviously of low virulence and of a very chronic nature. Various organisms have been found in cases of rheumatoid arthritis, which would thus appear to resemble bronchitis and colitis in being not specific but due to a number of different infections, and therefore including a number of different diseases, though clinically in many ways alike. Various streptococci are most frequently incriminated.

In 1914 Hastings found that out of a series of cases 17 gave a positive and 18 a negative complement fixation test of *Streptococcus viridans* and therefore considered, what would now be regarded as a very modest estimate, that 40 per cent of the cases of rheumatoid arthritis are infective. Among Mutch's 200 cases of intestinal infection in chronic arthritis the vast majority were streptococci only 6 per cent of which were hemolytic. From 21 cases examined in the course of laparotomies it appeared that the small intestine was the site of streptococci invasion; a transition to *B. coli* infection taking place about the ileo-caecal valve. It might thus be assumed that streptococci responsible for arthritis might not be recovered from faeces passed per anum. Beddard spoke of the long-chained organism *Streptococcus longus* as present in 75 per cent of the cases.

Staphylococci appear to be much less often responsible than streptococci.

In 1903 Dor obtained *Staphylococcus pyogenes albus* from the joint of a rheumatoid patient. Crowe described as a causal agent *Staphylococcus epidermidis albus* (variety *deformans*) or *Micrococcus deformans* and has obtained agglutination of their

own scurf cocci by their blood in patients with severe rheumatoid arthritis. Among Mutch's 200 cases 4 per cent only were associated with staphylococci.

Other microorganisms, such as coliform organisms, have been described.

A natural objection to the infective nature of chronic arthritis is the difficulty of obtaining microorganisms from the joints, even when they are obtained from chronic cases, as Poynton and Paine (1902) did, it might well be argued that the infection has supervened in a joint rendered a place of diminished resistance by the arthritic change, and that the experimental production of joint changes in animals by the injection of such an organism does not prove that the original arthritic changes in the patient were due to the organism. That the fluid removed from rheumatoid joints is almost always sterile is not surprising from analogy with the same event in tuberculous pleurisy, but the unity with which cultivation of pieces of synovial membrane removed from such joints gives a positive result in spite of the numerous media employed is a problem deserving further investigation and consideration, if the view that rheumatoid arthritis is due to a chronic infection rather than to a toxic or metabolic factor is to be maintained.

TREATMENT

Treatment is primarily preventive—namely, the hygiene of the mouth and other sites of focal infection. Dental disease and oral sepsis have probably become more frequent with the more widespread consumption of soft foods, and it may be that rheumatoid arthritis has correspondingly increased, on the other hand, the school clinics for dental treatment and the removal of tonsils and adenoids are a step in the direction of preventive medicine and should exert a neutralizing effect. Removal of teeth with apical infection is obviously essential, and, as already mentioned, all affected teeth should be removed, otherwise the arthritis may continue and the result be disappointing. The patient should be warned that the extraction may be followed by a temporary aggravation of the arthritis, general infection may result, and in a recent case the possibility that the preliminary injection of a local anesthetic had favoured this complication by more widespread damage to the tissues was raised. Whether or not the affected teeth should all be removed at one sitting or extracted in relays should be decided in each case by consideration of the patient's condition and to some extent by the number of the teeth affected. Leucopenia has been regarded as a sign of diminished resistance (K Gordby, J A Tonen) and an indication that not more than one tooth should be removed at a time. Removal of dead teeth requires careful consideration: dead pulps favour persistence of infection and so arthritis, Lord Bennett emphasizes the responsibility in this respect of dental surgeons who kill sensitive pulps for the relief of pain. Cauterizing of an infected uterus is dangerous, as it may spread the infection.

Before vaccine treatment is commenced infective foci that can be dealt with, such as the teeth and tonsils should be removed. Autogenous, not stock, vaccines should be employed, and sensitized vaccines have their advocates. When more than one organism is suspected to be responsible for the arthritis, it has been suggested that monovalent vaccines from them should be given so as to recognize the causal one by reaction in the joints, but mixed vaccines may be necessary. Vaccine therapy is often combined with, and said to be helped by, diathermy and ultra-violet radiation (Billington). Crowe's results with his *Micrococcus deformans* vaccine showed that 70 per cent of 62 patients were cured for the time, and that 15 of these, or 25 per cent of the total number, were known to remain so.

Intestinal auto-intoxication has been attacked by many disinfecting drugs, especially guaiacol. In cases with aetiology gastrica hydrochloric acid by the mouth is a logical procedure in inhibiting bacterial activity in the alimentary canal, and stasis has naturally been met by purgatives—paraffin and so forth. Sulphur is an old intestinal antiseptic, intramuscular injections of sulphur in oil have been given by Reinmann and Pucher, who are somewhat erudite in their estimate of the effects, and of organic sulphur compounds, contramine and thergamine have been recommended from a different standpoint by McDonagh, who says

that their effect is as striking as that of insulin in diabetes, but that their oral administration is ineffectual.

Thyroid extract and arsenic, as in so many obscure conditions, have been given, and may do good by speeding up metabolism, which Pemberton believes to be lowered as regards carbohydrates. H. W. Nott obtained a cure in 8, relief in 14, and no benefit in 11 out of 33 cases treated by rectal injections of potassium permanganate and the oral administration of thyroid extract—the permanganate being thought, by its detoxicating action, to enable the thyroid extract to exert its effect. On the other hand, parathyroid, the action of which is antagonistic, not complementary, to that of thyroid extract, has been found to be beneficial (Grove and Vines), and is said to act by correcting the disturbance of the endocrine balance between the thyroid and the parathyroid, in which the parathyroid becomes subordinate, with calcium deficiency which is due to chronic infection (Vines). The administration of parathyroid one-tenth of a gram, which is not regarded as a specific remedy, appears to be more effective than the intramuscular injection of calcium salts. The number of drugs that have been given is long, it includes iodine as a tincture or in colloidal form by the mouth, or intravenously, and colloidal preparations of sulphur and manganese. It has been suggested that iodine does good merely by improving the condition of the thyroid and relieving subthyroidism, which favours arthritis (Llewellyn, 1925).

Pemberton, finding that there is a lowered sugar tolerance more or less in proportion to the severity of the arthritis, has employed a dietetic treatment based on restriction of carbohydrates and a reduction of the total caloric value of the food intake, with due attention to the state of general nutrition. Within four days of a diastolic reduction of the diet subjective improvement may occur, even though a septic focus is present, and this dietetic regime appears to enable other methods of treatment, such as hydrotherapy, to exert a beneficial effect which they fail to effect alone. Red meat, tomatoes, apples, and bulky foods of small nutritive value, so as to make an appearance of a fairly generous diet, are allowed. This method is specially applicable to cases in which a focal infection is not found. As convalescence advances cautious improvement of the diet may be tried. As regards diet Llewellyn Jones in 1909 insisted on the mistake, due to confusion with gout, of restricting meat, but in the absence of dyspepsia did not restrict the carbohydrate diet.

An important point in treatment, which the orthopaedic surgeons have impressed upon us, and on which Sir Robert Jones will no doubt lay stress, is the prevention of permanent deformities from the adoption of bad positions of the limbs and trunk during the acute stages and exacerbations. As has been well said by Russell the price paid by the patient for comfort during the acute phase is that of becoming a cripple for life. Unless carefully supervised, complete immobilization of the painful joint by plaster or splints, may lead to troublesome fixation of the articulation and the patient should therefore be urged to move the joint as early as possible, or passive movements and massage should be employed. Forcible extension of the joints in order to break down adhesions is a process attended with risks. But in the stage of convalescence suggestion and encouragement in moving the affected joints are important.

The good effects of heliotherapy and ultra-violet radiation natural or artificial, are explained in various ways—namely, by increasing the bactericidal power of the blood and so raising the resistance to infection (Rollier, Colebrook, Eidinow and Leonard Hill) or also by speeding up metabolism. There appears to be some difference of opinion about the influence exerted on basal metabolism. Pemberton (1925) says that it is increased by external heat, Aigyll Campbell that it is unaffected by a light bath. Hall has obtained surprisingly gratifying results in various forms of arthritis from ultra-violet radiation provided by the tungsten arc lamp, combined with other forms of electrotherapy such as general diathermy and ionization. Other forms of external treatment—by massage, heat, and hydrotherapy, such as whirlpool baths—do good by increasing the supply of blood to the joint thus improving the local resistance and so possibly killing off the local infection

and it has been suggested that this is due to the increased oxidation processes thus favoured (Pemberton).

Protein Shock Therapy.—The intravenous injection of foreign protein in various forms, such as Witte's peptone (Auld), milk, and especially T A B vaccine, so as to produce a relatively severe reaction (protein shock), has been employed with some success—at any rate for a time—in rheumatoid arthritis. Some of the benefit ascribed to the specific effect of vaccine treatment may, as L. Baker remarks, be due to protein shock. Cruickshank has obtained encouraging results from the intramuscular injection of 0.3 to 0.6 gram of peptone in solution on four or five occasions at weekly intervals so as to give rise to a temperature of 101° F. Draper (1920) suggests that the good effects of the domestic remedy bees' stings in rheumatoid arthritis are due to protein shock therapy. Improvement after protein shock therapy depends on the occurrence of a febrile reaction for twenty-four to forty-eight hours, and is often accompanied by exacerbations of the arthritis, like that sometimes seen after removal of septic teeth, though rigors are commonly present, the reaction is very rarely dangerous. It has been suggested that the improvement is due, not to one, but to various factors, such as alteration in the ferment and anti-ferment balance in the blood serum, leucocytosis, fever, sweating, and increased lymph flow (Jobling and Petersen), and a resulting increase in the defensive powers of the body, it has been compared with the effect of an acute intercurrent disease on a chronic infection (D. Campbell), or an example of one disease curing another, such as malarial infection on general paralysis of the insane. In early cases the infection may be cut short, or it may be inhibited only, so that the disappointment of relapses after improvement can be explained by recrudescence of the infection. Campbell has treated 100 cases, 70 of which, up to November, 1923, he has analysed, of these 70 there was no improvement in 12, in 58 benefit was obtained so that 40 of them were in work without relapse after periods of one to three and a half years, while 16, and possibly 2 that had been lost sight of, had relapsed. As the infection may be inhibited only and not abolished by protein shock therapy, he suggests that it may be wise to give one or two more injections after the active phase has disappeared.

QUESTIONS FOR DISCUSSION

The following points may be suggested for discussion

1. Is rheumatoid arthritis always infective in origin?
2. What is the relation of tuberculosis elsewhere to chronic arthritis?
3. What share do constitution and disorders of metabolism take in its causation?
4. Are the arthritic and endocrine disorders both due to infection, or does metabolic disorder sometimes precede and dispose to infective arthritis?
5. Treatment by endocrine therapy, dietetic modifications, and protein shock.

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II—W R ACKLAND, M R C S, M D S,

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SIR HUMPHRY ROLLESTON has described oral sepsis as the product either of pyorrhoëa which drains into the mouth, or of apical infection which does not. In other words, pyorrhoëa produces an open or free sepsis, and apical abscess a closed sepsis.

But though this is true in the main, as a matter of experience we find the deeper layers of pyorrhoëa do not drain, and on the other hand, an apical abscess may burst into the mouth in the familiar "gumboil." Hence both open and closed sepsis are occasionally produced by either pyorrhoëa or apical infection or by both. It is important to recognize that pyorrhoëa does not ever entirely drain. Deep pockets and shut-off foci exist whose products may enter the circulation.

A young woman came to me with apparently a perfect set of teeth, every one of which was attacked by pyorrhoëa, there were no dead teeth. At first she had no constitutional symptoms, so I attempted to keep them except for one or two of the worst. But the patient gradually lost weight, got joint symptoms with an evening temperature round about 100°. In the end I had to extract them all.

It has been estimated that pyorrhoëa affecting the thirty-two teeth to the depth of 1/8 inch produces an absorbing raw surface of 2½ square inches in area. If the four lower incisors are alone involved to their full extent 3 square inches of absorbing area result. If all thirty-two teeth are fully involved in the disease it has been shown that the enormous area of 20 square inches is offered to absorption.

Open sepsis, which is so horribly obvious in many patients seems to be tolerated for years without much apparent harm. But on close examination we find all

effects somewhere in the alimentary tract—tonsillitis, laryngitis, pharyngitis, gastric, hepatic, and pancreatic inefficiency. I believe intestinal stasis may be caused by the weakening of the muscle of the intestinal wall.

We are accustomed to say that the healthy gastric juice will destroy the streptococci, but there is no proof that the endotoxin is destroyed. Indeed, there is the greatest probability that the endotoxin is liberated by the destruction of the streptococcus. It is further probable that a healthy gastric juice is gradually broken down by this open sepsis, and achlorhydria may result. As a matter of fact, what probably happens is that through the night, when the stomach walls are resting and the gastric juice is not being produced, the sepsis is still being poured along the alimentary tract, and it produces its effects on gastric walls and the rest of the tract unhindered. These patients tell us that they get up good for nothing in the morning, with no appetite. They frequently suffer from insomnia and temperature.

Open sepsis, then, may be a most insidious and potent predisposing cause of arthritis, partly by providing extra foci of infection, partly, too, by its impairment of the hepatic function through duodenitis and cholecystitis, and in general by weakening resistance. But the closed sepsis, especially that of apical infection, provides the purest culture of streptococci, and an "overload" on the one hand and weakened resistance on the other, allows the poison to enter the circulation.

You realize that it is a tooth whose nerve is dead which alone becomes the seat of apical abscess.

Research has shown that the *Streptococcus viridans* has an elective affinity for dead teeth. He devitalized dogs' teeth and injected a vaccine from apical infection of a human tooth at various parts, and always found the streptococcus in close apposition to the devitalized teeth.

Finally, then, I offer the following points for consideration.

- 1 That pyorrhoëa never entirely drains
- 2 That even a healthy gastric juice may not destroy the toxin

3 That a healthy stomach exposed to open sepsis will break down in time

4 That inasmuch as the liver is one of the most important producers of antibodies, impairment of the hepatic function by oral sepsis is likely to be a predisposing cause of arthritis

5 We get a "flare-up" of the arthritis after the extraction of teeth. Equally we get a "flare-up" with too large a dose of vaccine prepared from dead teeth

6 These cases are disappointing because even when the dental or other foci have been removed, one cannot remove at once the effect of the long years during which immunity has been breaking down. In other words, if a man has suffered from septic teeth for ten years, you may remove the bad teeth, but you cannot suddenly put him back ten years. The most you can hope for is that for the present he shall not get worse.

As regards treatment, we naturally begin by taking skiagrams of the teeth, with especial reference to bridges and crowns. One has, however, to realize that x-rays are not an infallible guide, and apical infection may exist without much appearing in the skiagram.

In cases then, of arthritis, we condemn all crowns, bridges and dead teeth, whether the skiagram shows mischief or not.

In one case I have had the patient under observation for two or three years and only extracted one or two of the worst every three or four months, as they successively became loose and tender with pyorrhoëa, at which time the joints seemed to "light up" and become tender.

It has answered very well in this particular case, though as a rule one gets rid of the teeth more quickly. I am bound to say, however, that these cases are often the most disappointing as the patient frequently gets such a reaction, and is often so depressed by the inability to eat or speak properly, not to mention the disfigurement.

Vaccines as a remedy for pyorrhoëa are useless, in my experience, but as a part of the treatment after extraction a vaccine is most useful.

III.—RUPERT WATERHOUSE, M.D. M.R.C.P., Consulting Pathologist Royal United Hospital Bath Physician, Royal Mineral Water Hospital and Royal United Hospital Bath

I HAVE been invited to continue this discussion with special reference to the experience that those of us who practise in Bath require of the treatment of this disorder by balneological methods.

The hypothesis that rheumatoid arthritis is dependent on the presence of some septic focus was in full swing in Bath a quarter of a century ago, and it might be imagined that preventive and curative measures in the direction of the eradication of septic foci resulting from the increased care of the teeth, removal of diseased tonsils, etc., would in that course of time have led to an appreciable diminution in the incidence of the disease. For all I know this may be the case, but there is certainly no evidence of it in Bath, indeed, it seems to me that sufferers from this crippling type of arthritis form each year a larger proportion of those who seek relief here. This is a personal impression only, for our hospital statistics are of very little value for this purpose, owing to the constantly changing nomenclature of these chronic joint affections. Especially have I been struck with the large number of cases met with in men since the war, and though here again I am unable to bring forward figures in support, I am inclined to think that the disproportion between the sexes is less than it was, say, twenty years ago.

In my remarks I shall employ the term as it was first, I believe, used by Sir Archibald Garrod and exclude those cases in which bony outgrowth is a feature from the outset, such as Heberden's nodes, the lipping of the knees so often met with in middle life, and disease of the spine and hip characterized by the presence of osteophytes, cases of which he made a separate group under the heading of osteo arthritis. This distinction is, I am sure, one of real value, for whilst in both the presence of septic foci militates against recovery, the symptoms, course, and prognosis of the two affections are quite different.

Unfortunately the position is complicated by the occurrence of intermediate cases of all grades, the correct classification of which is a matter of the greatest difficulty, some, indeed, may be a true admixture of the two, but this need not prevent our recognizing the fact that at the two extremities of the scale there are two affections utterly dissimilar, and one cannot help thinking that those who claim such uniformly successful results from any particular form of treatment include many cases which here in Bath we should classify, not as rheumatoid, but as osteo arthritis, cases in which the natural tendency to quiescence is much greater.

Of the importance of the elimination of septic foci in the generalized, fusiform, peritonsillar, atrophic type of arthritis with which we are dealing there can be no question. I have seen cases recover, apparently completely, after removal of diseased teeth and tonsils, after cure of a prostaticitis, after the healing of a rectal ulcer, and after appendicectomy. But the percentage of cases that completely recover as the result of such measures is, in my experience, very small. For one who can thus be described as "cured" I should say there were nine who could only be said to be "improved." As Sir Humphry Rolleston has pointed out, the focus may be of such a kind or so situated that it cannot be eradicated. But the fact I wish to stress is this: that these patients even after removal of their teeth and tonsils, after treatment with vaccines, serums, proteins, and what not, still find their way to spas in numbers as large as if not larger than, even so that it is doubtful whether much more is to be expected from treatment on these lines until our methods of detecting and dealing with the responsible focus have considerably advanced.

The results of spa treatment of rheumatoid arthritis, using the term in the restricted sense and excluding cases of osteo arthritis, are somewhat comparable to those obtained by dealing with septic foci—that is to say, a very few cases are cured by one course of treatment, whilst the great majority can be said only to be relieved or temporarily improved. But it is only very exceptionally that some benefit is not received, and although in severe cases

there may appear to the casual observer little change in the patient's condition, it means much to the bedridden sufferer himself to be able to walk a few steps without assistance, to be able to feed himself where formerly he had to be fed by others, or, in the case of a woman, to be able to do her own hair, though this latter accomplishment is not, of course, so important as it was a few years ago. I would submit that these are, from the patient's point of view, no small gains to be achieved as the result of a few weeks' treatment. For unfortunately the period over which a course of treatment of this kind can advantageously be extended is limited, and treatment too prolonged is apt to produce debility and undo any good that had previously resulted. Six to eight weeks is generally considered as much as any patient should receive at one time, and sometimes not more than three or four is advisable.

But if the essentially chronic nature of the malady is appreciated, and these patients can be induced to come for further courses with intervals of a few months' rest in between, the results are eminently satisfactory, further improvement occurs with each course, and I have known many instances where patients apparently doomed to hopeless crippledness have eventually been able to resume their occupation.

There are, however, obstacles in the way of following this, which I regard as the ideal, course in those cases where, after thorough investigation, careful treatment of septic foci has failed to cure the complaint. In the case of hospital patients lack of accommodation is the bar. For many years there was a rule at the Royal Mineral Water Hospital that no patient should be readmitted until two years had elapsed, and since even at that time the waiting list was so long that a patient had often to wait seven or eight weeks for admission, it may seem to have been justified. Of late this rule has been relaxed with, in individual cases, the happiest results, but it must not be forgotten that every such readmission prolongs the waiting period for others, some suffering from complaints more rapidly and completely relieved than the intractable one we are considering. In fact, for example, of 706 women who applied for admission room could be found for only 404—little more than half.

In patients above the hospital class the matter of expense becomes the important one, for this form of arthritis is far more common among those of limited means than among the well-to-do. Those who can then their own living—governesses, nurses, school teachers, and the like—are more often victims than their wealthier sisters, and can seldom afford the expense of repeated courses of spa treatment, indeed, then financial resources are often strained to the utmost to achieve one so-called "cure" of three or four weeks. In severe cases it must not be thought that even by repeated courses recovery is to be expected, but I do think that by these means, used judiciously, the complaint can as a rule be kept within reasonable limits so that the subjects of it can lead useful lives and avoid complete helplessness.

One must indeed be very cautious in ever speaking of complete recovery in a well-mixed instance of this disease. Even so far back as the days of Troussier and Sir Alfred Garrod cases were met with where, after apparent cure for several years the disease again flared up under some depressing influence, and the same is true to-day, so that it is as important for one who has had rheumatoid arthritis as for one who has had tuberculosis to regulate the whole of his or her future with a view to preventing recurrence.

Treatment of rheumatoid arthritis by hydrological or rather balneological measures resolves itself into an attempt (1) to combat any existing infection and promote elimination of toxins (2) to restore tone to the nervous system, (3) to improve the nutrition of the joints and muscles.

The first indication may be met by the douching and spraying of parts the seat of infection—for instance the nose, pharynx, vagina, colon, etc.—and cases are not infrequently met with where a pharyngitis or a vaginal discharge quickly clears up by these means after resisting skilled treatment by experts for many months. This may probably be attributed rather to the greater mechanical efficiency with which such treatment can be applied at a well-equipped spa than to any specific qualities in the medium employed, though it is possible that radio activity, or some agent of

which we are at present ignorant, may play a part. The drinking of large quantities of natural mineral water on an empty stomach may conceivably increase the output of toxins by the skin, kidneys, and bowel, apart from any specific effect that these natural radium-containing waters may possess.

No one who has had much experience of this complaint will deny the importance of a nervous factor in its causation. From the earliest times observers have been struck with the frequency with which it attacks, for instance, women who have nursed a child relative through a long and trying illness. The disease once started, the constant pain, the helplessness, and want of sleep, all tend still further to increase the nervous debility, which is further enhanced by the too kind attentions of anxious friends, who do everything in their power to spare the sufferer effort so that soon she drifts into a condition of almost complete immobility. Much can be done by well directed treatment at a spa to rouse the patient from this condition of inertia, which reacts adversely on the joints by depriving them of the nutritional stimulus of active movement. When a joint is acutely inflamed it should be rested, but when its surface is not hot, but cold to the touch, it is our experience here that, however swollen it is, benefit results from active movement, probably in consequence of the increased vascularity thus occasioned. If one of these joints is kept immobile too long as the cartilage becomes in part or wholly destroyed the ends of the bones become welded together, but if movement is persisted in a fresh articulation is formed by churning of the ends of the bones. *Post-mortem* examinations in this disease are few here, but I have more than once seen, as the result of the displacement of the proximal phalanx, a new joint surface formed in this way on the palmar surface of the head of the first metacarpal bone.

Time does not permit of my entering into a detailed description of the various methods at our disposal for relieving pain, facilitating movement, and improving the vascular supply of joints and muscles, and you will have during the week abundant opportunities of seeing them demonstrated at the Bathing Establishment, so I will content myself with stating that in my experience during the more acute stages great benefit may accrue from the electric reclining bath, but that the treatment *par excellence* for this class of case is the combination of douching and massage introduced here from A. J. Le-Bras.

IV—ROBERT B. OSGOOD, M.D., Professor of Medicine Harvard University

I APPRECIATE the courtesy you have shown in allowing me to take part in the discussion on this subject. I have little to bring to it other than the impressions of a group of physicians, who are frequently consulted when other methods of treatment have failed to restore function. Such study of "end-results," however, may not be without suggestion. Certain it is that we see many cases in which an apparently systematic and thorough removal of all possibly infective surgical foci has been accomplished, and yet the disease has not been cured or its progress checked.

In Pemberton's war cases possessing one or more such foci, actually a greater percentage of those who did not have their foci removed recovered on a general and dietary regime than of those that did have them removed. This does not necessarily imply that a chronic, distant, low-grade infection may not play an important part, but at least that there is probably some link in the chain of causative factors which in many cases is still lacking. This link has been suggested by Dr. Hans Zinsser, professor of bacteriology at the Harvard Medical School. I should not like to commit him to the statements which I am about to make but as far as I am able to recall they represent the drift of a very informal conversation I had with him just before I left America.

Sir Humphry Rolleston has hinted at the possible link by suggesting that a hypersensitive joint may react in an anaphylactic manner to a toxin reaching it from an infective focus.

We may dismiss the direct infection of joints as having no direct relation to the problems of chronic joints, nor do

acute febrile conditions apply. Bacteria may possibly play a part in chronic rheumatism in one of three ways.

1. Through thrombosis and because of endarteritic changes in joints in the course of an infectious disease.

2. By means of the toxic changes. We know many poisons are species specific—for example, 1/10 ccm of 1 in 500 to 1 in 2,000 dilution of streptococci (Dick test) may be very toxic for man but not at all for rats and mice. There may be toxins from human tonsils or teeth, for example, and these toxins may not only have a species specificity, but also a tissue specificity.

3. Allergy may be concerned. Faber was able to sensitize joints by injecting non-bacterial extracts into joints several times at intervals of one or two weeks with little or no local joint reaction. But when bacteria themselves were injected into these animals intravenously these sensitized joints became affected.

In order for animals to become allergic (not at all the same thing as the protein reactions) to bacterial material it is not sufficient that they be injected with soluble extract substance of bacteria. This allergic reaction only occurs when there is a tissue response to infection—that is, you cannot make a guinea-pig react to tuberculin by injecting it with filtered extract of tubercle bacilli, but it may become delicately susceptible to tuberculin in two weeks if you give it living tubercle bacilli, that is, there is no tuberculin reaction without the presence of the tubercle bacilli. It is easy to render a guinea-pig allergic to streptococcus filtrates by giving it several peritoneal injections of living whole streptococci in a course of two or three weeks to a month. Now, whenever the body harbours a definite focal infection, this focus, if it continues for two weeks or longer, or is frequently repeated, may make the body allergic or hypersusceptible to bacterial substances which are given off by the growing bacteria which are absorbed. These substances, however, may have slight or no activity for normal animals.

Allergic reactions under these conditions have been produced with many different forms of bacteria. Given this possibility, you have a mechanism on the basis of which it is at least logical to assume the possibility of injury to tissue remote from the focus of infection purely by the mechanism of a chronic infection followed by the mechanism of allergy. This, however, does not complete the chain of occurrences. It does not appear as if the joint cavities and the inner joint structures were, under normal conditions, in direct connexion with the circulating blood as far as the non-diffusible colloidal materials are concerned. There would seem to be some other factor in operation before this could be possible. Now, in most rheumatoid conditions there has been a clinical connexion with endocrine disturbance, exposure to cold, etc., which may well act as a capillary instabilizer and disturber. We know from allergic work that one of the basic physiological changes that underlie these reactions is a permeability of the capillaries. The toxic factor and the direct action may be possible when there is a coincidence with some other disturbance—endocrine, loss of balance, cold, etc.—which makes possible the escape of the substance from the capillaries into the circulation and into the joints or tissue spaces or lymphatics, and an allergic reaction might do the same thing if some focus—for example, intestinal infection—were present which rendered the body susceptible to this particular poison. Perhaps the "rhumatisme tuberculeux" of Poncet might be thus explained.

As regards treatment, we know of no specific drug. We are finding the basal metabolism is lower than normal in repeated tests in a larger proportion of the rheumatoid cases than we had expected, and that they seem to tolerate well and improve on carefully graded doses of thyroid extract. We have not had the success with non-specific protein therapy which Professor Stockman and Dr. Campbell have recently reported.

While we undoubtedly should attempt to eradicate every focus of infection which may judiciously be held responsible for, lowered vitality, we are inclined, as Haldane suggests, to treat the disease rather than only to search for the etiological organism, hoping by heliotherapy and attention to "body mechanics" to bring the patient to a point

where his natural defensive forces may overcome the infection agent, and he may regain his lost "capillary control" (Pemberton).

May it not be quite possible that many of the so-called foci of infection are the result and not the cause of the lowered general resistance, and that if this resistance can be raised, as we believe it often may be, we may reasonably expect that many of these foci will disappear without direct medical or surgical attack?

One thing more. May we ask for "fair play" in the prevention of deformity? We see much of this, and can offer only imperfect correction for that which might have been completely prevented. Is it not fair to ask you to learn the simple methods of prevention yourselves, or to seek help before the deformities become fixed deformities? By these measures you will save the patients from later falling into our somewhat impotent hands.

V.—**SIR ROBERT JONES K B E, C B, F R C S,**
Lecturer in Orthopaedic Surgery, Liverpool University.

The remarks I make will be confined to the prevention and correction of deformities. Sir Humphry Rolleston has dealt very completely with the disease in its etiological and histological aspects, and has especially emphasized its infective origin so that most surgeons will be in sympathy with his conclusions. The disease, or group of diseases, has a very distinct surgical aspect and should from the very earliest manifestations receive the conjoint attention of both physician and surgeon. It is rarely the surgeon has an opportunity of seeing these cases before deformities have occurred. Indeed, a walk round the wards will generally reveal the rheumatoid case, especially of the more acute type with flexed hips, flexed knees and the feet in equinovarus. In addition, there is often marked adduction of the thighs. Such cases are very difficult to deal with later, and often result in unkylosed joints. It is rarely we find the hands in any better position than that of palmar flexion with ulnar deviation, both at the wrists and at the metacarpophalangeal joints, it is not uncommon to find the forearm even pronated, which adds considerably to the helplessness of the patient. It must be our object to prevent these deformities by every means at our command. When crippling deformities have occurred a great deal can be done, even in extreme cases, to improve the conditions from a functional standpoint. Treatment, therefore, should be preventive and reconstructive.

As in every type of arthritis, muscular spasm is the starting-point of deformity, and in the extremities the flexor group of muscles are dominant—in the ankle the calf muscles plantar flex. They are assisted by the fact that slight flexion of joints is also the position of rest and of ease. If the muscles continued merely to hold the limbs in very slight flexion, and at the same time secured for them sufficient fixation to control pain, we would be satisfied to leave matters at that. As a matter of fact, this is not so for the muscular spasm is intermittent and during sleep is partially relaxed, and the deformity is always progressive because of the overaction of the stronger groups. During the later stages this is of necessity accentuated when walking is attempted because of the influence of superincumbent body weight. During the early acute stages of the disease the oncoming of deformity is overlooked, whereas no should realize from the beginning that unless prevented extreme deformity must be expected. I would suggest that the treatment of the so-called rheumatoid group should be similar to that of all other types of infected joints.

I will first say a few words on the subject of prevention. As there is no time to enter into detail regarding the separate treatment of each joint it is proper to emphasize the necessity of applying the principle of rest in relation to them all. It is to prevent movement that the muscles become protective during the acute and painful stages, and this must be looked upon as Nature's somewhat crude endeavour. We should take this indication, realizing that friction of tender joint surfaces means irritation and further effusion which is again protective. We know from experience the deformities which arise and from the first we should oppose them. This means that no

posture should be allowed which gives a bias to their development. The wrists should be kept dorsiflexed, the hips slightly abducted and extended, the knees in complete—or almost complete—extension, the ankles at right angles. From the first the wrist should be kept dorsiflexed, the metacarpophalangeal joints and phalanges just short of full extension, and the thumb slightly flexed and adducted. The hand should be kept, in short, in very much the same position as it is when it holds a large tumbler. When the acute symptoms have passed the dorsiflexion splint should be shortened in order to give play to the fingers and to the metacarpophalangeal range. There are two reasons for this position, the first and most important is that flexion of the fingers is much more powerful when the wrist is dorsiflexed, and secondly, the wrist in plantar flexion should be avoided for aesthetic reasons. Bandages should be very lightly applied in order to prevent circular compression, which hinders the circulation. The elbow should be kept slightly extended beyond a right angle, and the forearm short of complete supination. To prevent flexion at the hips the patient should not be allowed to sit up in bed, but pillows should be placed under his head (unless the spine is affected) and the head of the bed raised. This can be effected with the limbs in slight abduction by means of careful nursing, helped, perhaps, by a few sandbags without the application of splints—although splints may sometimes be needed. The feet should be kept dorsiflexed by means of skeleton rectingulum splints, and light splints may be required for the knees. The methods by which this is effected, however, are not so important as the principle governing them—namely, that rest in the position opposed to deformity should be recognized as essential. Whatever splints or methods are employed to keep the joints at rest in good position, they should be so constructed as to give easy access for any additional treatment, such as gentle massage or outward medication. Compare this with what is the general practice, even when a patient is under the charge of excellent nurses. Little effort is made, other than the very natural one of giving ease to the patient. Pillows are placed under the knees, sitting up in bed is frequent, the bedclothes often rest upon the feet, and the thighs are very much abducted. Let it be remembered that deformities are very easily prevented if we start at once during the acute or subacute stage, but they soon become very intractable.

When the acute stage is passed gentle movement may be of advantage, and here I would emphasize that pain should be avoided. Furthermore, the joint must only be moved to a limited extent once or twice a day, and the movement should be a single one. There is no object, but much harm, in repeating the movement several times on the one occasion. The movement is intended to prevent the formation of adhesions, and, if they have occurred, gently to stretch them.

If, unfortunately, joints have become deformed and the acute or very painful stage has passed, it is the surgeon's object to place them in a good position with a view to function. This he usually does by means of a splint, and he should endeavour to be very gentle in his methods. In the case of the knee if the flexion is not too acute nor the tibia dislocated brief words, a splint of the type of a Thomas knee splint will suffice, which is more easily controlled than a weight and pulley and is less apt to produce an intermittent strain. When the knee attains the desired position it can be kept without extension and gently moved. If the joints still tend to flex the control should be maintained for weeks or months as required.

There are two types of the disease which surgeons encounter—one of which is characterized by effusion, and the other where effusion is only rarely present. Richardson and Nicholls classified the one as proliferative arthritis, and the other as degenerative. The degenerative is most common in the young and effusion is neither an essential nor a frequent symptom. The x-ray picture shows a bone with diminished lime shadow, mottled and stippled, and where osteophytic overgrowth is not present to any extent. It is generally polyarticular.

The degenerative type, which occurs usually in older people, is not so commonly polyarticular, and may be confined to one or more joints. If it commences in the fingers it is

more apt to become polyarticular than if it begins in one of the larger joints. The x-ray plate shows marginal hooks and projections due to osteophytes. From the surgical aspect these two types have considerable importance. The proliferative or dry type merits a less favourable prognosis, its course being more acute and rapid and the end-result more prone to firm ankylosis—often bony in character. It runs a more rapid career of destruction than does the degenerative group. From the surgical aspect it is more difficult to treat because the ankylosis occurs in the sub-acute and painful stage. In this group passive movement is worse than useless, and the surgeon should direct his energies to guard against ankylosis in a faulty position. If mobility is secured for the joint it is due to arrest of absorption by the removal of foci or an antidotal vaccine, and not to any surgical procedure. In the degenerative type, by removing trauma and friction, the disease is often arrested and improved. This is especially evident in the knee-joint, whose movements can always be kept under control. One frequently sees a rheumatoid knee in a middle-aged woman with slight limitation of movement and pain when the knee is extended. There is flexion deformity to a limited degree. The joint is blocked to extension by thickened synovial and other intra-articular structures, which are compressed and irritated by pressure from walking. The application of a cage allowing free movement in the painless range, but locked against the trauma of extension, often gives instant relief and checks the progress of disease.

There is no time to more than mention the treatment of the fixed deformities which are seen far too commonly. If hips and knees are flexed up to fifty or sixty degrees they can generally be extended by mechanical means. If the tibia is subluxated in addition, combined traction anteriorly and in the line of deformity should be employed. If the angle of flexion is greater the question of a wedge osteotomy through the knees should be considered. If adduction is added to flexion of the hips, a wedge osteotomy through the trochanter and a division of the adductors may be indicated. In complete ankylosis of both hips a pseudarthrosis of the one and an osteotomy of the other will suffice. No operation should be performed in the painful progressive stage of the proliferative type unless it is one devised to obliterate the joint. Operations upon the knee are frequently required. If the joint is thickened around the post-patellar pads and effusions recur, removal of all masses, including the synovial membrane in front of the joint, will often result in an increased range of painless movement. Complete synovectomies are sometimes needed where painful effusions and villous synovial membrane are diagnosed. No case is without the hope of improvement. Where there are several degrees of early movement in a joint the movement can be preserved by an osteotomy designed to transfer the limb to a useful position. If the flexion is marked I have removed a wedge from the tibia and divided the femur just above the joint, and by this means have secured a straight limb retaining the movement that already existed in the joint. Seventeen years ago I operated upon a young man of 25, who had acute flexion of both knees and hips, one hip being abducted and the other adducted, of several years' duration. The operation consisted of pseudarthrosis of one hip, trans-trochanteric osteotomy of the other, and excision of both knees. He was alive ten years later, and could walk a considerable distance with the aid of one stick. Surgeons, therefore, can do a great deal with the apparently derelict but surgery would not be needed if early preventive treatment were employed. I would utter one word of warning against endeavouring to straighten, by mechanical means, extreme flexion of the hip in elderly people. It is dangerous to life. I make no attempt to discuss the various physiotherapeutic methods—many of them useful, I desire most of all to urge early preventive methods.

of cases sent in as rheumatoid are always under treatment, an attempt is often made to segregate the cases with obvious infective clinical indications from the remainder, which persist under the non-committal term "rheumatoid." But the term "infective" is used in a special sense, the best known infective arthritides (tuberculous, gonococcal, syphilitic, suppurative, and acute rheumatic) being tacitly excluded. Having published in 1923 100 blood counts of chronic multiarticular arthritis of symmetrical type without distinction between rheumatoid and infective, it recently occurred to me to compare the blood pictures of a sufficient number of cases segregated in the hospital diagnoses as "infective" with those remaining as "rheumatoid." Reviewing in this way 171 cases, 32 of which are termed "infective" and 139 passed as "rheumatoid," the following comparison of chief points in the blood pictures is arrived at.

	Percentage of Rheumatoids	Percentage of Infectives	Percentage of Total Number
Normal leucocyte count (7 500 to 9 000)	15	9	14
Leucocytosis (9 000 and over)	54	72	57
Leucopenia (under 7 500)	31	19	23
Lymphocytes over 30 per cent	55	55	56
Lymphocytes under 20 per cent	3	6	3½
Reds over 5 000 000	34	47	36

Excepting one case (a child of 2 with leucocyte count of 96 000) the degree of leucocytosis ranged in both classes from 9,000 to 20,000, and of leucopenia 7,500 to 2,560.

Lymphocytes under normal figures are almost absent from both classes, but a considerable relative increase in lymphocytes is common to both. Thus the great majority of "rheumatoid" and "infective" counts differ from normal, the deviations are of the same kind and not markedly different in degree, all the cases show secondary anaemia, and about a third a moderate increase in reds. At first it was thought the leucocytoses might indicate coccal and the leucopenias bacillary infections, but some demonstrated coccal infections showed leucopenia, and Gordby, as Sir H. Rolleston notes, considers it a mark of streptococcal arthritis arising from oral sepsis. But we must not lose sight of the fact that 57 per cent of all the counts show leucocytosis.

Osteoarthritis, spondylitis, and fibrositis are excluded from the above review, but notwithstanding that a bacterial focus or origin is even less apparent in these cases than in rheumatoids their blood counts show a larger proportion of leucocytoses. Dr. Thomson, our house-physician, in his recent M.D. thesis shows that in 24 out of 25 cases of osteoarthritis and spondylitis investigated by him, marked leucocytosis and erythrocytosis are features, and incidentally that four cases only were definitely positive to complement fixation tests with gonococcal antigen.

As the blood picture by itself indicates general infection in 85 per cent of cases passed as rheumatoid, systematic serological tests appear to be the most likely means of identifying the causative organism, whether obtained from the rarely successful blood cultures and joint fluid examinations, or selected from the pathogenic flora of tonsils, teeth, urine, faeces, os uteri, etc., even the cases where these searches have drawn blank may furnish a positive serological result, pointing to one of the common classes of infective organisms, if suitable antigens are employed in the trials. Complement fixation and agglutination tests have been employed to this end, and precipitation tests will probably have their turn soon.

The streptococci commonly found in infections of tooth sockets, tonsils, and throat have been cultivated and used as antigens by several observers, amongst whom Richards has obtained results suggesting that *Streptococcus viridans* is almost a specific organism in arthritis from oral sepsis. He found no organism but this in 14 successful blood cultures from 104 cases in which he found streptococcal foci, the same organism only in 4 successful out of 54 joint fluid cultures, and with a mixed antigen from strains thus

VI—J. M. H. MUNRO, D.Sc., M.R.C.S., L.R.C.P.,
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THAT rheumatoid arthritis is sometimes of infective origin was a moot point about a generation ago now we ask, with the opening paper, "Is it always infective?" In the Royal Mineral Water Hospital here, where numbers

grown he obtained positive complement fixation with the blood serum of 68 of the 104 cases.

I do not think results obtained on this side will bear out so exclusive an infection. The carbohydrate reactions of *S. viridans* are not given but Dr Melvin Gordon and other authorities believe it to be identical with *S. salinarum*, and 90 per cent of Richards's cultures were obtained from teeth or tonsils. To Dr M. Gordon and Dr Stone I am indebted for a satisfactory complement fixation technique with streptococcal antigens, with which I have carried out tests on 102 serums—71 arthritic and 31 non-arthritic—all designated by numbers, the results being compared with the diagnoses only after completion of the tests. When 3 minimal haemolytic doses of complement are used very few serums show fixation, but with 2 minimal haemolytic doses and $1\frac{1}{2}$ minimal haemolytic doses the majority of the rheumatoid, osteoarthritic, and fibrositic cases showed fixation, rigid controls, of course, being put up against each test. The antigen used was Dreyer's double streptococcal vaccine as supplied me by the Standards Laboratory at Oxford. This was prepared by extracting with formalin and acetone three cultures of streptococci, *S. salinarum* not being included, and one, if not two, being haemolytic. Some serums of undoubted rheumatoid and osteoarthritic patients were negative, and so were the majority of the non-arthritic control serums. One or two pyorrhoeic patients not suffering from arthritis gave fixation, on the other hand, twelve serums from healthy persons with gums and teeth in good order were all negative. Evidence like this lends support to the streptococcal infection theory, but there are many difficulties in making such tests conclusively diagnostic. Moreover, Gordon, whose classification I follow for convenience, has himself shown the specificity as regards complement fixation and agglutination of many strains in the *salinarum* and *faecalis* groups, and Dr Stone has found a certain amount of cross-fixation with strains from different groups. In a case I described to the Clinical Society of Bath last January staphylococci and *Streptococcus pyogenes* were found infecting the sockets of every one of the sixteen teeth not previously extracted, and on extracting these teeth in batches of two or three every root tip gave smears abounding with streptococci only, notwithstanding that they had been twice skilgraphed and pronounced sound by two skilgraphers and two dentists. This patient's blood gave positive fixation with an antigen of the streptococcus, not with one of the staphylococcus. There was no abscess or microscopic pus in any of these sixteen tooth sockets (though there had been in some of those previously removed), and having only a film of streptococci and leucocytes to deal with in cases like these one wonders whether the demonstrated haemo-bactericidal power of ultra-violet radiation could be employed both locally and generally with any success in saving such teeth, avoiding flucy after extraction, and raising the power of the tissues to react to vaccines.

Having found *Staphylococcus epidermidis* in blood cultures and smears from joint effusions in more than one case of "rheumatoid," I feel inclined, instead of expecting a specific organism for this disease, to suspect the Gram-positive cocci generally for the majority of cases—staphylococci, streptococci, and pneumococci. All these we know outside of arthritis to be responsible for chronic as well as acute infections.

Brilliant rheumitoids are almost uninvestigated and are probably rare. Finding they might explain the greater incidence of rheumatoids in females I sought to confirm blood infection by agglutination tests in some scores of cases in which *B. coli* was suspected, but there was no mixed coloration.

Coincident tuberculous activity in our rheumatoid cases is common if skin reactions to a small dose of old tuberculin be accepted as evidence. 50 per cent of positives are found. Wassermann tests (3 minimal haemolytic doses complement) are positive in a much smaller proportion. Possibly some of the leucopemias are thus caused.

Although I have known more than one arthritis case diagnosed as "rheumatoid" subsequently proved to be tuberculous, I regard the great majority of the above

cases as having tuberculosis antecedently or as an added infection to the arthritic one. But I do not think there is any evidence of surgical or pulmonary tuberculosis increasing susceptibility to rheumatoid arthritis.

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VII—A. G. TIMBRILL FISHLR, M.C., F.R.C.S.,

Late Hunterian Professor, Royal College of Surgeons
 Consulting Surgeon, Ministry of Pensions, etc.

It is to be hoped that further research will ere long justify us in replacing the terms "rheumatoid arthritis" and "osteoarthritis" by a more satisfactory and scientific nomenclature. They are not infrequently used as a cloak of ignorance, and the term "rheumatoid arthritis" is a pseudo-clinical term in which the disease is compared to another, the etiology of which is still undecided. Most of the present classifications are unsatisfactory and confusing in that clinical, pathological, and anatomical classifications are jumbled together. It is suggested that the term "chronic arthritis" is simple and accurate, and embraces all the pathological types. It allows also for expression. For instance, as the clinicians, bacteriologists, and possibly the chemical pathologists gradually differentiate the various etiological types, the causation factor can be added thereto and the type of chronic arthritis thus indicated. This is an ideal which can only be accomplished by research and co-operation and a combined attack upon the problem.

Pathological Types of Chronic Arthritis

Classification—I venture to suggest the following classification of the pathological types of chronic arthritis is being simple and based upon the principal anatomical site of the joint changes. There are three principal groups.

Group 1—This group, which I have called "chronic arthritis of the chondro-osseous type," corresponds to the condition sometimes known as osteoarthritis, or the degenerative type of Nichols and Richardson. The first change consists in a degeneration of the central area of the articular cartilage. The changes that follow are in a sense all consequent upon this primary degeneration—although they themselves are more inflammatory than degenerative. For instance, the lateral part of the cartilage proliferates, and osteophytes are formed to extend the articular area. The subchondral layer of bone becomes sclerosed, hardened and enbated in an endeavour to form a new joint surface and thus compensate for the loss of the central portions of the cartilage. The changes in the synovial membrane are at first insignificant. There is villous hypertrophy and increased vascularity of the synovial fringe near the articular margins. Later, however, the membrane and capsule become thickened and fibrous, and arterio-sclerotic changes may then be seen therein. It is clear, however, that these occur concurrently, and are not of etiological importance.

The histological changes in the membrane and capsule are of the nature of an inflammatory hyperplasia, and an important point is that collections of small cell infiltration which are frequent in the next two groups, are usually absent. These changes are frequently seen *post mortem* in the joints of persons past the meridian of life and are encountered as the result of trivial or long-continued intra-articular irritation. It is the type to which the term "degenerative" may be logically applied, as this is at any rate the primary change, and the subsequent changes appear to be consequential. Long continued toxic states may bring about such degeneration, but the pathological changes are not such as we usually associate with a localized infection.

Group 2—In the second great pathological group which may be called "chronic arthritis of the mixed type," the synovial membrane and the articular surface are both involved simultaneously, and the changes proceed concurrently although the process starts in the membrane. The central part of the articular cartilage is destroyed by toxins in the synovial fluid, and its surface invaded by

an advancing tide of pannus from the membrane, while it is simultaneously invaded from beneath by outgrowths of vascular connective tissue from the underlying bone.

There is evidence of chronic inflammatory changes in the membrane—the villi of which enlarge and multiply, and in some cases cartilage or bone may develop therein. Veritable little tumours may be formed, and I have produced these experimentally in animals. Histologically there is well marked evidence of chronic or subacute inflammation in the form of rounded foci of small-celled infiltration, and the appearances are such as we associate with an infective process.

According to the cause and stage of the inflammatory process the condition is apt to lead to partial or complete ankylosis, especially if prolonged rest is ordered. In the more chronic types where movement is permitted, lipping of the articular margins is a prominent feature, and may be compensatory, as in the first group. Elimination may also occur in the later stages, and a condition results which at first sight somewhat resembles our first group.

Group 3.—In the third group, which we may call "chronic arthritis of the synovial type," the inflammatory process remains for a considerable period, principally localized in the synovial membrane and capsule. Slight degenerative changes after a while occur in the central part of the articular cartilage, and a little pannus may stray for a short distance over the articular surface and slight lipping may occur. The outstanding feature of the pathological picture is, however, the inflammatory changes in the synovial membrane. Here again fat, cartilage, or bone may form therein.

Groups 2 and 3 constitute the condition usually known as "rheumatoid arthritis" or the "proliferative type" of Nichols and Richardson.

Physiology of Joints

At first sight the pathology appears complicated, but this has been largely due to our ignorance of the physiology of joints.

A few years ago I endeavoured to establish the principle that the remarkable difference in the behaviour of the central and lateral portions of the articular surface—the degeneration of the former and the proliferation of the latter—is due to a difference in their mode of nutrition, and that the lateral portion of the cartilage derives an additional source of nutrition from the circulus articularis vasculosus.

These physiological facts are not of mere academic interest as explaining the nature and significance of the pathological changes, but are of great practical importance. A study of the physiology of joints convinces one of the great adaptability of the joint structures, and how in the more chronic types Nature is striving hard to repair the damage and to prepare the joint for renewed function. How frequently, instead of assisting, the medical man actually impedes this process by an imperfect knowledge of physiological principles and a too rigid application of the doctrines of rest and splintage.

Practical Applications

What lessons do these pathological and physiological facts teach with regard to treatment?

In the more acute forms deformity is to be religiously avoided by the measures that Sir Robert Jones has indicated, and we must aim at the ideal of a movable joint wherever feasible by the institution of early movements.

In the more chronic forms regular movements through complete ranges are instituted from the first, whereby we help Nature's efforts to repair the damage inflicted upon the joints and the following benefits result:

- 1 Contracture by scar tissue, both intra- and extra-articular, with resulting limitation of movement, is prevented.
- 2 Mechanical obstruction by osteophytes cannot occur.
- 3 The process of ossification is materially assisted.
- 4 Muscle tone is preserved.

When, however, such a joint is fixed it is physiologically placed at the greatest disadvantage to combat infection or toxic onslaught, for the circulation, not only of lymph but

of blood, and the secretion and absorption of synovial fluid, depend upon regular movements. The immense importance of these local measures is often entirely overlooked.

When the principles have been neglected deformity must be treated by appropriate surgical measures. There is an unfortunate lack of co-operation in some of these cases and experience teaches that cases in which the disease is no longer active are often treated by various medical measures, which cases in reality urgently require surgical treatment. It is sometimes forgotten that one cannot disperse a joint full of loose bodies by administering vaccines, neither will all the drugs in the *Pharmacopoeia* have any appreciable effect upon a firm ankylosis in faulty position.

I do not propose to discuss etiology beyond stating that in my experience attempts to isolate or grow organisms from tissues removed at operation from the joints have been usually negative even in the last two groups. The pathological changes, however, seem to point to an infective agent, and I believe that in addition to the cases associated with some obvious toxic focus there is a large group in which such foci are absent, probably due to a filter passing virus. The pathological anatomy of chronic arthritis can yield but few further secrets. The stage is now set for the bacteriologist and chemical pathologist armed with the most modern technical methods, to find it last the final solution of this most complicated problem.

VIII.—SIR WILLIAM WILLCOX, K C I E, C B, C M G; M D F R C P

Physician to St Mary's Hospital London

Many factors play a part in the etiology of rheumatoid arthritis, but a careful consideration of these leads inevitably to the conclusion that "infection" must be regarded as the primary cause in the great majority of cases.

It must be clearly understood that by "rheumatoid arthritis" is meant a pathological condition of the affected joints showing definite changes of the chronic inflammatory nature peculiar to the condition.

Thus "intermittent hydrarthrosis," the remarkable transitory effusion into joints occurring with a definite periodicity, is an example of a condition of sensitization to some toxin in the body, the reaction to which is manifested by synovial joint effusion. It is akin to allergic anaphylaxis, asthma, etc., in its pathology, and is not to be regarded as rheumatoid arthritis, for the characteristic morbid anatomical joint changes are absent.

For similar reasons true gout should be excluded, for there is a consensus of opinion that this also is an example of an idiosyncratic sensibility to some toxin in the body.

Neuropathic joint lesions such as those occurring in the dorsals (Charcot's atrophy) are readily distinguishable from true rheumatoid arthritis by their clinical symptoms as well as by the morbid joint changes and must be excluded from consideration.

With these reservations the claim for the infective origin of rheumatoid arthritis is exceedingly strong and must be admitted. The following reasons appear to me to be of great importance:

1 Many well known pathological organisms give rise to arthritis which is indistinguishable from rheumatoid arthritis. Gonococcal infection forms one of the best known examples, but others may be cited, such as those of bacillary dysentery, pneumococcal infection, and typhoid and paratyphoid fever. Then, again streptococcal septicaemia, in which the organism has been obtained from the blood stream, is not infrequently accompanied by a multiple arthritis. On two occasions in my wards at St Mary's Hospital a typical multiple arthritis indistinguishable from rheumatoid arthritis has developed in hospital after an acute streptococcal tonsillitis. In these cases the joint condition was clearly not one of acute or subacute rheumatism but a true arthritis which responded in no way to treatment by salicylates.

2 The well known frequency of occurrence of a progressive "rheumatoid arthritis" following parturition is strongly suggestive of an infective origin.

3 The great majority of cases of "rheumatoid arthritis" show evidence of an infective cause. Often when a case is seen for the first time in an advanced stage of the disease it is difficult to state precisely the original focus of infection, for this may have been removed previously. Cases seen within the first few months of their origin, in my experience, show almost always some definite infective origin.

4 Removal of infective foci is commonly followed by improvement of the disease. Careful search must be made for dental sepsis, both by expert clinical examination and by radiography. The importance of apical dental infection in cases where the gums appear healthy on macroscopic examination is now well recognized. Dead teeth act in some cases as foci of infection, if the disease persists and no other obvious focus is present dead teeth should be removed. In a discussion at the Royal Society of Medicine on dental sepsis as an etiological factor in disease of the organs, in 1923, I quoted the infective origin of 100 consecutive cases of arthritis and fibrositis under my care. The figures were

Dental sepsis	72
Intestinal	13
Tonsillar	10
Urethral (gonococcal)	5

1 Of the cases of dental sepsis, 15 out of the 72 showed definite apical infection. These figures must be taken as giving only an approximate idea of the infective origin.

To obtain an accurate idea of the true infective origin of rheumatoid arthritis it would be necessary to collate a very large number of cases the etiological investigation of which had been carried out in the early stages of the disease. In consideration of whether the teeth are the cause of infection, very careful consideration must be given to each individual case—for example, in some cases a slight amount of change shown by radiography may be responsible for the acute symptoms of severe arthritis.

The tonsils are not infrequently a focus of infection, and I should like to lay stress on the fact that the tonsillar origin of rheumatoid arthritis is often shown by the tendency for the joint symptoms to show marked improvement and often disappearance, and then to be followed by recurrences of the arthritis. The tonsillar cases are more often seen in young people, they are more likely to be associated with pyrexial periods, and there is usually a greater tendency for effusion into the joints.

The septic stumps of tonsils which have previously been partially removed are not infrequently the cause of rheumatoid arthritis. The existence of enlarged tonsillar glands is an important clinical indication, and the necessity for an examination by an expert rhinologist is called for in such cases.

The nasal accessory sinuses have been found by me in a number of obscure cases to be the primary focus of infection. Most commonly the maxillary antra are the site of infection. In some cases these had been infected from a molar tooth, in others the infection appeared to have been from the nasal cavity. Attention should be called to the difficulty of diagnosis of nasal infection. Radiography and transillumination are not infrequently misleading, and the only certain test in doubtful cases is that of antral puncture and bacteriological examination of the antral washings. In several cases under my care where an antral infection has been found, and drainage of the infected antrum effected the active inflammation of the joints has subsided and marked improvement followed.

Intestinal Infection

The colon is most commonly implicated, the tubular glands being no doubt the site of infection. In cases where the primary focus of infection is in the mouth or nasopharynx it cannot be long before the intestinal glands become infected, and these frequently carry on the infective process even when the primary focus has been eradicated. Sir Arthur Keith has called attention to the important influence which the tubular glands have on the general metabolic processes.

In elderly patients the intestinal infection is often the primary focus. For the last five years, in all cases under

my care at St Mary's Hospital, a careful bacteriological examination has been made of the colon washings, and in over 90 per cent of these cases a definite pathogenic infection, usually of the *Streptococcus viridans* type, has been found. The signs of active colitis in cases of rheumatoid arthritis showing colon infection are usually absent, but the colon washings generally reveal evidence of mucus.

Dysenteritis has been found in a few of my cases to be the focus of infection in arthritis of the rheumatoid type. Its presence is revealed by x-ray examination.

Urethral examination is advisable if there is a history or actual evidence of any urethral infection. Bacteriological examination of the urine, especially after prostatic massage in males, may show evidence of the infective origin.

Examination of the pelvic organs in women is important, and a swab of the cervical discharge should be bacteriologically examined. A latent chronic salpingitis has been found in a few cases to be the cause of rheumatoid arthritis. In my experience, excluding gonococcal cases, urogenital causes of arthritis are rare.

The eradication of the primary focus of infection in early cases of rheumatoid arthritis has, in my experience, usually been followed by a cessation of the active inflammatory changes in the infected joints. Where bony changes have occurred, or other disorganization of the joint structures, it cannot be expected that removal of focal infection will rectify these. When the active inflammation of a damaged joint has ceased, treatment for the restoration of movement will be followed by real improvement.

5 "Gout" has been excluded as being always infective in origin. It must be mentioned, however, that many cases of rheumatoid arthritis show some association with gout, and these were included in the old term "rheumatic gout." I believe that in these borderline cases some infection always exists and this is commonly intestinal. Similarly some cases with a definite history of acute rheumatism in early life develop later rheumatoid arthritis. The two conditions are distinct, but the same diathesis obtains in each.

6 The presence of an infective cause in rheumatoid arthritis is shown by many other manifestations of the causal toxæmia, such as secondary anaemia, debility, malnutrition, gastric or duodenal ulcer, colitis, chronic appendicitis, cholecystitis, skin affections, etc.

I would go so far as to say that rheumatoid arthritis is not a disease *per se*, but it is the joint manifestation of a chronic toxæmia. The toxæmia is usually due to an infection with a streptococcus of mild virulence, such as one of the *viridans* group, and very commonly the toxæmia originates in a primary focus of infection in which the causal organisms are aggregated.

Attention should be directed to the difference between acute rheumatoid arthritis and the purely chronic type. In the former, though the joint manifestations are very acute yet the joint changes frequently completely clear up.

Tuberculosis elsewhere is not in my experience, an important etiological factor. Tuberculous arthritis is readily distinguishable clinically and by radiographic examination from rheumatoid arthritis, and there should be no confusion between the conditions. Dr Wingfield has called attention to the great importance of focal infections as a predisposing cause of pulmonary tuberculosis. It is obvious that in cases of pulmonary tuberculosis with an existing focal infection of streptococcal origin, there is a likelihood of arthritis developing, and the coexistence of these two conditions is an adequate explanation of the association of tuberculosis with chronic arthritis.

"Constitution" or "diathesis" is, I believe, an important etiological factor. Thus an inherited tendency exists in some families for joint trouble in others for the development of gastric or duodenal ulcer, then again a tendency to the development of pernicious anaemia, or diabetes may be inherited.

If a chronic infection of streptococcal origin occurs in an individual the inherited diathesis or constitution may determine the part of the body which will bear the brunt of the damage.

Disorders of metabolism may determine to some extent the type of arthritis which develops—for example, the so called "rheumatic gout"—but the investigations made on cases have failed to show the constant presence of any special metabolic disorder.

Arthritis and endocrine disorders are both commonly due to the same cause—namely, infection. There is strong evidence that diabetes is, in its early stages, caused in a large percentage of cases by a chronic toxæmia, such as obtains in rheumatoid arthritis (*Practitioner*, December, 1923 "The treatment of diabetes"), and I have seen several early cases of exophthalmic goitre in which focal infection was an obvious causal factor.

For these reasons it seems clear that arthritis and endocrine disorders, when coexistent, are both due to a common cause—namely, infection.

TREATMENT OF ARTHRITIS

Rheumatoid arthritis is the gauge of the immunity of the patient to some chronic infection, by constant dosage with toxins the joint disease is lit up and the inflammatory condition progresses. The treatment should aim at the removal as far as possible of the infective cause, and in stimulating by any means available the body immunity.

Careful search for, and eradication, as far as possible, of, any focus of infection, is the first step. Since colon infection is present in most cases, colon lavage is of value, especially in cases of long standing. Plombières colon irrigations, using a warm solution of 1 drachm of salt and 1 drachm of sodium bicarbonate to the pint, can be satisfactorily given by any trained nurse. The patient should lie on the left side and about 1½ to 2 pints of the solution be slowly introduced by means of a funnel with rectal tube attached, at a pressure of about 1 foot. The tube need only be passed two or three inches beyond the anal orifice. After the liquid has been retained a few minutes it is evacuated, and a second lavage similarly repeated. These treatments may be given with advantage on alternate days for the first week, and afterwards twice weekly for three or four weeks. Intestinal antiseptics such as guaiacol carbonate and salol are of value. Tincture of iodine (French *Pharmacopœia* without potassium iodide), commencing with three or four minims in a wineglassful of milk or water three times a day, appears to do good. This probably acts by stimulating the thyroid function.

Local treatment of the joints by iodine poultices, hot applications, radiant heat, ionization, or diathermy, is helpful.

Massage and active and passive movements of the joints are only indicated when the active inflammation has completely subsided.

Stimulation of the general immunity of the body by means of artificial sunlight, or carefully regulated sun baths, is of value.

The diet should be of high nutritive value and rich in vitamin containing foods, alcohol is best avoided. In some cases endocrine therapy, such as small doses of thyroid gland or parathyroid, may be helpful.

Protein shock therapy, such as injections of peptone solution or of typhoid vaccine, has, in my experience, been disappointing. In some cases a definite temporary improvement has occurred, but this has usually been followed by a relapse to the former condition.

Vaccine Therapy

This should never be used until the focus of infection has been removed as far as possible. Vaccine therapy may then supplement the other methods of treatment. Autogenous vaccines made from the organism believed to be causing the toxæmia are isolated from the infected teeth or other primary focus and from the colon washings.

It is very important that overdosage be avoided. It is best to commence with a weak vaccine of strength 5 million per cubic centimetre and to give an initial dose of 2 minims increasing by 1 or 2 minims every five days for six doses, and afterwards giving weekly doses of gradually increasing strength. A vaccine of strength 50 million per cubic centimetre may be used later if benefit results.

IX—A CAWADIAS, M D, M R C P,

Professor of Medicine, University of Athens

An important contribution to the discussion on rheumatoid arthritis is given by the researches on sulphur metabolism. As time represents the most important way of elimination of sulphur, urinary determinations give us the key to sulphur metabolic troubles. I have made a certain number of such determinations, of which a part has been published in a note read before the French Academy of Medicine.

The first thing these determinations show us is that there is an excess of total sulphur eliminated in these patients. Instead of the normal 250 to 300 grams (expressed in SO_2) per diem, we find 4 and 5 grams of total sulphur in the urine of rheumatic patients. This sulphur is not due to a special diet. We know that in general diet has no influence on the quantity of urinary sulphur, notwithstanding that we have made comparative determinations in non rheumatic patients following the same diet as our rheumatic patients, and we found no excess of urinary sulphur in them. This sulphur, on the other hand, is not simply a sign of increased protein destruction. If that were the case there would be a parallel rotatory, and the ratio of nitrogen to sulphur would be normal as 5:1. But in our cases the loss in nitrogen was not parallel to that in sulphur.

We are induced, therefore, to admit that this sulphur demineralization is a special metabolic trouble in rheumatoid arthritis—in other words, that the tissues of the rheumatic patient have lost the power of retaining sulphur, in the same manner as the tissues of the tuberculous have lost the ability to retain calcium, and even the tissues of the diabetic to retain carbohydrate.

The second point in our sulphur determinations consists in the relative increase of the neutral or imperfectly oxidized sulphur. Whereas normally this neutral sulphur represents 14 to 20 per cent of the total urinary sulphur, we find in our cases 25 and 33 per cent.

This relative predominance of neutral sulphur can be explained by a general deficiency in the oxidation processes of the organism. It is interesting to remember the researches of O. Loewi in animals intoxicated by hydrocyanic acid, in whose urine this author found up to 54 per cent of neutral sulphur. Now hydrocyanic acid determines an internal asphyxia—that is, it makes the protoplasm lose its affinity for oxygen.

Lastly, it is important to remark that in rheumatoid arthritis the ethereal sulphates are not increased. In the absence of intestinal fermentation an increase of these sulphates in the urine of rheumatic patients would indicate a destruction of cartilage, because chondroitin sulphuric acid is an ethereal sulphuric acid of chondroitin, and is eliminated as an ethereal sulphate. The fact that these ethereal sulphates are not increased shows that the excess of sulphur elimination does not point to a destruction of cartilage, but to a general cellular metabolic trouble.

We find, therefore, in studying the sulphur metabolism in rheumatoid arthritis two syndromes: (a) syndrome of sulphur demineralization, (b) syndrome of sulphur hypo-oxidation. This last is probably part of a general syndrome of inefficiency of organic oxidations—Bouchard's "ralentissement de la nutrition", the sulphur demineralization is more specific for rheumatoid arthritis.

These facts help us to understand the therapeutic action of sulphur. After injections of colloidal sulphur this sulphur demineralization is often checked, as we have seen in cases published in an article in the *Journal des Praticiens*. On the other hand, they give us an insight into the nature of rheumatoid arthritis. Of course, these metabolic troubles must be first considered as a result of the infection—or intoxication—which causes the disease. But it is not illogical to think that a certain predisposition towards hypo-oxidation and towards sulphur demineralization exists beforehand, hereditarily and constitutionally, and that it helps the development of the disease.

Many eminent clinicians represent the disease G as the result of the action of an external cause W on a reacting organism R . $G=W/R$. In rheumatoid arthritis W represents the infective agent, R the predisposing organism. The two elements are absolutely necessary for the determination

of the disease. But we think that R plays a greater part, and that without a certain metabolic type—a certain 'humoral' type, to use a Hippocratic expression—the micro-organism W, inoffensive probably in other individuals, cannot determine the disease.

GENERAL DISCUSSION

Sir JAMES BARR (Liverpool) said that in 1913 he gave an address at Sunderland on rheumatoid arthritis which excited a good deal of controversy in the *BRITISH MEDICAL JOURNAL*. The views which he then expressed he had consistently held and persisted over since—namely, that true rheumatoid arthritis was due to a prolonged mild acidosis which decalcified the synovial membrane and fibrous tissue of the joints, and finally attacked the cartilages and bony structures. The popular idea was that the disease was microbial or toxic in origin, and all known organisms had been called into requisition to explain different cases, but no specific organism had been discovered. Whatever the cause of the acidosis, the immediate cause of the mischief was the decalcification. In all these cases there was defective vagotonia, the stomach was dilated, whether distended or not, with acid fermentation of its contents. There was no hyperchlorhydria, though the amount of free hydrochloric acid was not necessarily below normal. The amount of free hydrochloric acid was not sufficient to arrest the acid fermentation and formation of organic acids, although the blood never became acid, these acids were sufficient to lessen the buffer salts in the blood and attack the fixed calcium in the tissues. There were many acid-forming organisms in the stomach where the stasis was. Any stasis in the bowel might give rise to intestinal putrefaction, but the *Bacillus coli* flourished in an alkaline medium and was not a causative agent of rheumatoid arthritis. In these cases there was increased basal metabolism, and very few of them could hold their breath for thirty seconds. The pulse was frequent, the blood pressure low, and perspiration occurred readily. Overaction of the ovaries and thyroid would mischief by increasing calcium metabolism. Any of his audience could bring on pains in their joints by living on a carbohydrate diet and taking large quantities of citric, tartaric, acetic, or lactic acid, he would not advise them to carry the experiment too far for fear they might work mischief without the aid of a micro-organism. In his opinion there was no other chronic disease so amenable to treatment if taken early, say within the first six months, so long as the cartilages and bones were not involved the case was very hopeful. In this respect he sympathized with the spa physicians, because they chiefly had to treat

the derelicts of the medical profession. The cases which required the attention of a surgeon had been very badly handled. It might be thought that the decalcification would be very easily corrected by giving large amounts of soluble calcium salts, but no matter how much was given by the mouth only a small amount was absorbed, and the amount of calcium which the blood would hold was not sufficient to act as a buffer salt, it was therefore necessary to give also a liberal supply of sodium and potassium salts. The calcium passed into the lacteals is a soap, consequently it was necessary to form a soluble soap with unsaturated fatty acids such as olive oil. Stearin and palmitin formed very insoluble soaps which only irritated the bowel. Unnecessarily large doses of calcium were apt to lessen the motor function of the stomach, hence milk was not the best method of administering calcium, as it might cause undue retention and lead to acid fermentation, which would do mischief. The sour-milk cure in this disease had fizzled out long ago. The only endocrine glands of value were the parathyroid, pituitary, and suprarenal, which led to calcium retention. In a myxoedematous patient the development of rheumatoid arthritis must be a rare event, but osteoarthritis might readily occur. The best diet was red meat, and, as Dr Woods Hutchinson had said, plenty of it, he had entered very fully into that question in 1913, and there was no need to repeat what he had then said. A good plan was to take a glass or two of hot water three hours after meals and then elicit the stomach reflex, which relaxed the pylorus and allowed the stomach to empty itself. This should always be done at bedtime and be followed by two tablespoonfuls of olive oil.

The PRESIDENT (Lord Dawson), in closing the discussion, said that it seemed clear that infection played a part in the etiology—the question was, what part? It was often difficult to decide the balance of advantage and disadvantage in removing septic foci. In some cases the infection might be in some part so difficult of access as to make even its detection impossible, and in others it might well be that lack of resistance allowed an ordinarily harmless organism to become pathogenic. In investigating the factor of low resistance the clinician looked for co-operation with the biochemist, and Professor Cawdron's observations were very suggestive on this point. With regard to the extraction of teeth, he looked upon ago as a contraindication to any extensive removal, and the results of extraction were often very disappointing, but even so some comfort might be derived from the fact that the care now given to the teeth had undoubtedly produced a great improvement in the general health of the people.

THE SURGICAL TREATMENT OF MITRAL STENOSIS

BY

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THERE can be no more fascinating problem in surgery than the relief of pathological conditions of the valves of the heart. Despite the consecutive changes to which these lesions may have given rise in the cardiac muscle, the relief of the lesions themselves would undoubtedly be of immense service to the patient and must be followed by marked improvement in his general condition. Expressed in these terms the problem is to a large extent mechanical, and as such should already be within the scope of surgery, were it not for the extraordinary nature of the conditions under which the problem must be attacked. We are however, of opinion that these conditions again are purely mechanical, and that apart from them the heart is as amenable to surgical treatment as any other organ. Incisions can be made into its chambers, portions of its structure can be excised, and internal manipulations can be carried out, without the slightest interference with its action, and there is ample evidence that wounds of the heart heal as readily as those in any other region.

The conditions which appear as fundamental are, first,

that the operations have to be carried out on a structure in rapid movement, and secondly, that no interference whatever with the circulation must take place. The first is not quite so difficult as it sounds, for it is possible to fix the actual portion of the heart which is under operation, but it must obviously limit the possibilities of repair. In animals the second condition may sometimes be ignored, and the circulation has been clamped for as much as two minutes. This, however, would never be justifiable in a human being, in view of the extreme danger to the brain from even the shortest check to its blood supply. Any manipulations which are carried out must therefore be executed in the full flow of the blood stream, and they must not perceptibly interfere with the contractions of the heart.

The simplest valvular lesion for surgical interference is stenosis of one of the valves, and of these the mitral valve is perhaps the most accessible. I have been interested for some time in the development of a suitable technique for reaching this valve, and I owe to Dr Otto Lewton the opportunity presented by the following case for putting my ideas to the test. A description of the case itself will give the clearest indication of the method of approach I adopted and of the technique which I devised.

Decription of Case

L. H. aged 15 was admitted to the London Hospital in January 1921 suffering from chorea and mitral stenosis. Her subsequent history was one of many relapses, with steadily

increasing failure of compensation. In September, 1924, she was admitted with haemoptysis, vomiting, and severe dyspnoea. She was cyanosed, her feet were swollen, and her liver was enlarged and tender. After three weeks in hospital she had greatly improved and was sent to a convalescent home, whence three weeks later she was discharged.

Early in March, 1925, she appeared at the London Hospital with cough, dyspnoea, and pain in the limbs. She was sent home to bed and given digitalis and aspirin, but she did not improve. After a severe attack of epistaxis and precordial pain she was again admitted as an inpatient.

She was a thin girl with a bright malar flush. Her pulse rate was 128, and respirations 32. Cardiac pulsation was visible over a large area of the left chest, and the rib cartilages in this area were very soft and had a forward bulge. The apex beat was in the fifth space, outside the mid clavicular line, and the area of cardiac dullness extended to the second space above. In the mitral area there was a long rumbling diastolic murmur, followed by a soft blowing systolic murmur, the latter being conducted out into the axilla. A presystolic murmur was present, but was not very marked. The liver was not obviously enlarged, but was slightly tender on palpation.

After a week's rest in bed her pulse fell to 80 and her respirations to 24, while her general condition greatly improved. Her pulse was now small but perfectly regular, with a systolic pressure of 95 mm. There was no presystolic murmur or thrill but a long diastolic murmur of low pitch was followed by a soft blowing systolic murmur.

In view of her many relapses it appeared that her heart was unable to establish compensation for the combined stenosis and regurgitation from which she suffered, and it was therefore decided to attempt to relieve the stenosis by surgical means.

Operation

On May 6th, 1925 under intratracheal anaesthesia, a curved incision was made along the fourth left intercostal space, up along the middle of the sternum, and outwards along the first left intercostal space. The skin and subcutaneous tissues, with the left breast, were turned outwards, exposing an area of the chest wall about five inches square. On the outer side of this area a short horizontal incision was made along each of the three ribs exposed (Fig 1), and through these incisions the ribs

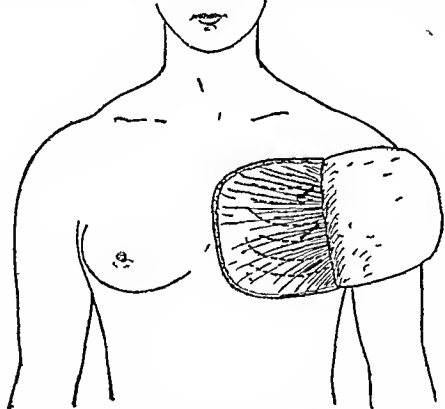


FIG 1—Skin and subcutaneous tissue reflected with ribs exposed prior to division.

were in turn divided. The chest wall was now divided a little within the line of the original incision by cutting through the muscles and costal cartilages and the flap so formed was turned outwards, the pleura being included in the flap (Fig 2).

A very full exposure of the left side of the pericardium was thus obtained, while with an intratracheal pressure of 15 mm Hg there was only moderate collapse of the left lung. The action of the heart now became extremely hurried, the pulse rising to 150, and it was evident that until it settled down nothing further could be attempted. After five minutes delay the beats became slower and steadier and it was decided that we could safely proceed. The pericardium was opened by a vertical incision three inches long in the centre of which the left auricular appendage came prominently forward (Fig 3). Two sutures were passed through the upper and lower margins of the appendage so that it could be readily drawn forward.

As the heart was still beating very rapidly the wound was covered with hot saline pads and a subcutaneous injection of 1/100 grain of strophantidin was given. After a delay of ten minutes the heart had steadied down to a rate of 120 and the blood pressure, which had fallen to 60 mm, had returned to 80 mm.

The auricular appendage was now drawn forward, a soft curved clamp (Fig 4) was applied to its base, and it was

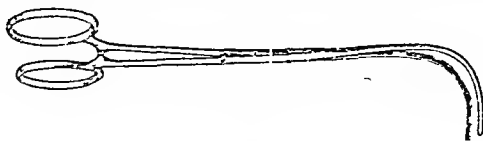


FIG 4

incised in an anteroposterior direction with scissors (Fig 5). Into this opening the left forefinger was inserted (Fig 6), the

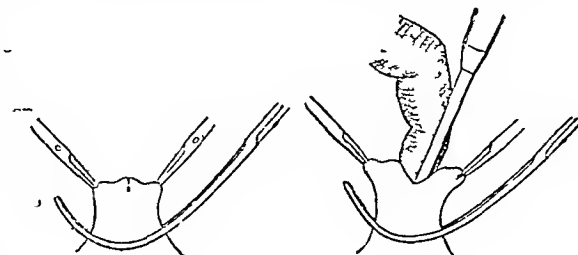


FIG 5

FIG 6

clamp was withdrawn, and the appendage was drawn over the finger like a glove by means of the sutures. The whole of the inside of the left auricle could now be explored with facility. It was immediately evident from the rush of blood against the finger that gross regurgitation was taking place, but there was not so much thickening of the valves as had been expected. The finger was pressed into the ventricle through the orifice of the mitral valve without encountering resistance, and the cusps of the valve could be easily felt and their condition estimated.

The finger was kept in the auricle for perhaps two minutes, and during that time, so long as it remained in the auricle, it appeared to produce no effect upon the heart beat or the pulse. The moment, however, that it passed into the orifice of the mitral valve the blood pressure fell to zero, although even then no change in the cardiac rhythm could be detected. The blood stream was simply cut off by the finger, which presumably just fitted the stenosed orifice. As, however, the stenosis was of such moderate degree, and was accompanied by so little thickening of the valves, it was decided not to carry out the valve section which had been arranged, but to limit intervention to such dilatation as could be carried out by the finger. It was felt that an actual section of the valve might only make matters worse by increasing the degree of regurgitation, while the breaking down of adhesions by the finger might improve the condition as regards both regurgitation and stenosis.

It was now decided to withdraw the finger and close the appendage. Unfortunately, at the critical moment of withdrawal the lower retaining suture cut through, the appendage slipped back into the pericardium and there was a sudden gush of blood, which, however, was instantly checked by pressing the appendage against the heart. With a little manipulation the tip of the appendage was now grasped between the finger and thumb, which held it securely closed while an assistant passed a silk ligature round it and tied it off. The pericardium was closed, and a certain amount of blood, which in this *contretemps* had escaped into the pleural cavity, was removed with moist gauze pads. The intratracheal pressure was raised so as to cause the left lung to expand, and the wound was closed in layers, the ribs being accurately sutured in position. Before the flap was actually closed a small quantity of 60 per cent alcohol was injected into the intercostal nerves just outside the point at which the ribs had been divided.

Immediately the chest was closed the heart's action returned to normal, and on the conclusion of the operation the general condition of the patient was indistinguishable from that at the beginning. She had a bright colour and an excellent pulse. Except at the moment when the suture cut out her condition had never caused the slightest anxiety, and even then there was only a momentary drop in the blood pressure. The whole operation took precisely sixty minutes.

She made an uninterrupted recovery, the freedom from pain or any disturbance which might have been expected to result from the operation being remarkable. Her general condition appeared to be greatly improved, but the physical signs showed little or no change. She went to the convalescent and left in bed for six weeks, but as at the end of that time her pulse rate had remained constant at about 90 she was gradually

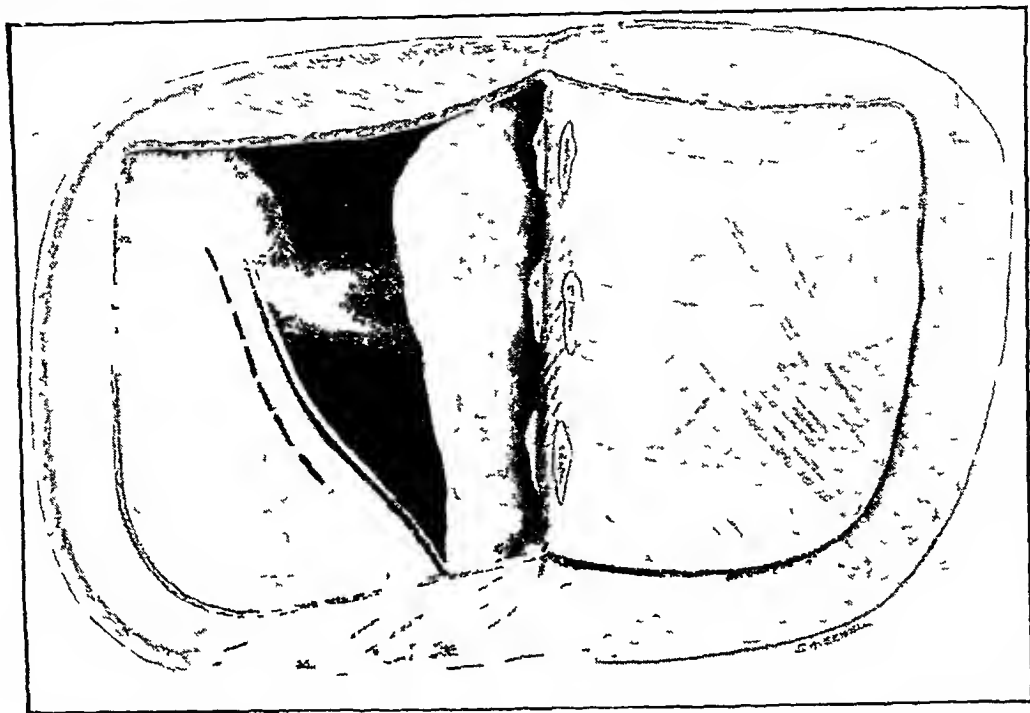


FIG 2—Ribs divided and flap formed by cutting through muscles and costal cartilages turned back left side of pericardium exposed

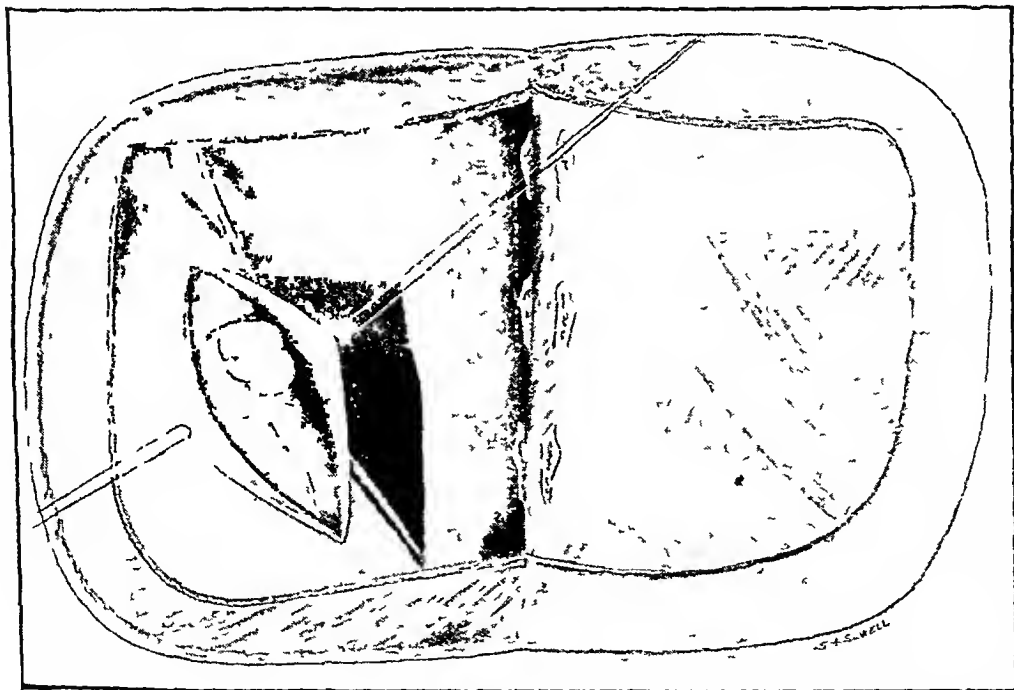


FIG 3—Vertical incision in pericardium exposing left auricular appendage

allowed to get up. At the end of three months he declared that she felt perfectly well, although she still became somewhat breathless on exertion.

REMARKS

I believe that this is the first occasion upon which an attempt has been made to reach the mitral valve by this route in the human being or to subject the interior of the heart to digital examination. The value of the method

cannot possibly be judged on a single case, but I think that I may claim to have shown that the method is practicable and that it is reasonably safe. Indeed, the features which most struck all who were present at the operation were the facility and the absolute safety of the whole procedure, while even on a first attempt the amount and precision of the information to be gained by digital exploration were very remarkable. I had intended to divide the aortic cusp

TABLE IV—Age Incidence of Aneurysm, Tabes Dorsalis, and General Paralysis

	Below 40	Below 50	Aged 50 years
Aneurysm	42.5 per cent	75.5 per cent	43.87 years
Tabes dorsalis	61.0	83.0	42.41
General paralysis of the insane	62.0	83.0	42.44

The average age at death in all three diseases is the same within a year or two—a fact which supports the view that they have a common origin.

Rupture as a Cause of Death in Aneurysm

The cause of death and the frequency of rupture as a cause is an interesting point about aortic aneurysm, and I published the *post mortem* experiences of the Manchester Royal Infirmary (over forty years on this subject) in a lengthy paper in the *Medical Chronicle* (May and June, 1902), with short notes on 182 cases of aneurysm of the thoracic and abdominal aorta in all its marked forms and in those which the various pathologists did not consider severe enough to warrant being called aneurysmal. Mr. Somerford looked up the records from 1909 to the present date, but for sacular aneurysm only, and has added the 43 cases he found notes of to 168 of this form previously recorded by me.

Without going into details of all the causes of death, it will suffice to say how often it occurred from exhaustion or sudden heart failure and how often from rupture. This the subjoined table shows, and it will be seen that rupture occurred in less than half of the cases.

TABLE V—Heart Failure and Rupture as a Cause of Death

	Number of Cases	Exhaustion and Heart Failure Percentage	Rupture Percentage
Sacular aneurysm			
First part of the arch	64	54.7	42.2
Second and third parts of the arch	63	39.0	33.3
Descending thoracic aorta	23	35.7	53.5
Abdominal aneurysm	15	13.3	80.0
Dissecting aneurysm	6	50.0	50.0
Dilatation	35	57.1	28.5
Total	211	47.2	41.7

I have much pleasure in thanking Mr. Somerford for his valuable help in the preparation of these notes.

TWO FORMS OF DERMATITIS DUE TO THE USE OF METHYLATED SPIRIT EXTERNALLY

BY

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THE increasing restrictions imposed by the excise authorities on the use of alcohol have led to the occurrence of various irritations of the skin in persons who are compelled to use medicinal alcohol. Amongst those hitherto unaffected are surgeons who use spirit for the purpose of disinfection and also harddressers employing spirit lotions and spirit soaps. Prosser White notes that pyridine and methyl alcohol used in polishing trades may give rise to chronic dermatitis of the hands.

During the last twelve months an outbreak of severe dermatitis occurred amongst the surgeons at the Manchester Royal Infirmary, and more recently a closely comparable eczema has been produced amongst the employees of a certain firm of barbers in the same town.

The dermatitis occurring in the hospital was produced on the hands and arms of five members of the surgical staff and several theatre nurses. The condition was proved to be due to the alcohol by a process of exclusion of all other factors—the soaps, the disinfectants, and the process of laundering being changed without effect. When the use of spirit ceased, the dermatitis ceased also. The lesions were of a dry eczematous type and affected particularly the webs of the fingers, the wrists and the forearms. The lesions were intensely irritable and commenced within twelve hours of exposure, in certain cases fissuring of the skin and superficial bleeding occurred when the trouble became severe. Only one of the persons affected was predisposed to eczema. The exact chemical irritant concerned in these cases was not isolated, but a change of source of supply checked the appearance of lesions.

The outbreak among the barbers was more extensive and more severe in its results, although two of the cases occurred in men who had had general eczema (from unrecognized causes) elsewhere on the body. Ten definite cases were found within a few months, and in all these the men had been in the same occupation for many years—periods varying from three to twenty years. Several of the other employees complained of itching, burning and tingling of the hands after using certain of the preparations. The ten cases examined showed the following characteristics.

Case 1—Aged 46. Complained of irritation of the hands and wrists for two weeks. Suddenly developed a very severe dermatitis with oedema, fissuring, pain and general desquamation of palms, anterior surface of wrists and between the fingers. The condition settled rapidly on cessation from work and application of sedative lotions. In the employ of the firm four years.

Case 2—Aged 28. Complained of burning of the hands during the last six weeks. Developed blisters on contiguous surfaces of fingers and on palms after using friction lotions. Condition almost disappeared during the forty hours rest provided by the week end. Stated that he has produced a dermatitis of the face by the application of friction lotion to his chin. A dotted vesicular condition of the palms with pruritic erythema was produced by the giving of three seip applications during one day. In the employ of the firm five years.

Case 3—Aged 33. A very severe case with intense oedema and serous exudation of both hands and wrists. This was the first case affected and was the most severe. He now appears to be sensitized to any form of methylated spirit and can only work with rubber gloves when compelled to use spirit shampoos or frictions. Was employed for five years.

Case 4—Aged 35. Irritation commenced in July 1925. He persisted in his work for ten days in spite of mild desquamation. Suddenly the hands became inflamed, oedematous and dehydrated freely. The fingers were so inflamed as to prevent flexion. Pressing and bleeding followed. The wrists also were affected. The condition disappeared entirely within two weeks rest. He resumed work but after giving two applications of lotions the entire dermatitis recurred in an even more severe form. Has been in the employ of the firm for fifteen years.

Case 5—Aged 35. Has had recurrent mild dermatitis of his hands on several occasions. It always disappeared after a week's rest from work. After using the applications he feels a biting sensation all over the hands—if this is repeated the skin peels off and the hand swells up, reddens and becomes very irritable. He states that attacks can be prevented by oiling the hand before employing lotions or frictions, though several applications will penetrate through this and give rise to trouble. At present he has a mild squamous dermatitis which is almost entirely interdigital. This is a patient who has had dermatitis elsewhere on the body previously. Has been in the employ of the firm three years.

Case 6—Aged 35. Has a moderately severe dermatitis on the right wrist and on the webs of the fingers. States that he has a marked burning sensation after the use of any of the spirit lotions.

Case 7—Aged 20. Has some dermatitis of the backs of the hands and wrist with dry scaling and fissuring. This disappears when he is away from work for a few days. Complains of irritation after the use of friction. Has been in the employ of the firm twelve months.

Case 8—A milder case showing dry slightly erythematous fissuring and scaling on the skin on the webs of the fingers of the left hand. There is some slight dermatitis also on the right hand which is very irritable at night. Has been in the employ of the firm for three years.

Case 9—Exactly similar to Case 8. Duration in both cases one month. Has been in the employ of the firm six years.

Case 10—Shows a chronic and scaled patch of dermatitis about three inches in diameter over the first interphalangeal space of the right hand. Has been in the employ of the firm for six years.

The firm concerned gave the writer every assistance in investigating the cause of the outbreak, and a full analysis

of all possible irritants was made, with the following findings

The "dry shampoo" contained approximately 50 per cent water and 48 per cent alcohol. There was a heavy deposit of a gritty nature present which proved to be almost entirely potassium carbonate. Small quantities of colouring matter and scent were present also. It is to be noted that no pyridine was present. The bottles are of necessity shaken before use and it may be concluded that the deposit is evenly shaken throughout the mixture and would therefore be inoculated into the hands were any fissuring present. It is worthy of note that the relative concentration of alcohol and water is such as to precipitate crystals of potassium carbonate. These are palpable in the lotion for a few seconds when rubbed on the hand until the evaporation of alcohol allows them to redissolve in the water. Under the microscope they are seen to be sharp and needle shaped. Experimental inoculation of these crystals into the hand of a non-sensitized person did not give rise to any irritation except such as is to be expected after the application of alcohol to injured skin.

An analysis of the various "frictions" used showed that one of them contained the following irritants: Pyridine, 0.49 per cent of the total mixture, and 25 per cent of the residue after evaporation on the water-bath. Also traces of arsenic and maline colouring matter.

It appears that the use of pyridine is very common in Continental spirit, and it is likely that the cause of the trouble lay in the use of spirit containing this denaturant by the manufacturers. Evaporation of the particular "friction" referred to above left a residue which was largely composed of pyridine and gave rise to irritation of the skin when rubbed in. It is realized also that when the friction is applied to the scalp the evaporation of the alcohol will result in a further concentration of the irritant material.

I am indebted to Dr. Sivatar and Dr. Gibson of the Manchester and Salford Skin Hospital for permission to report on three of the cases which came under their notice and to Mr. H. C. Taylor for the analysis of the materials employed.

REFERENCE

¹ Prosser White. *Occupational Infections of the Skin* (Lewy, London).

COMMON MISTAKES IN THE TEACHING OF PHYSICAL TRAINING

BY

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Now that forms of exercise and physical training are applied and used in colleges, schools, etc., the following remarks on the breathing exercises might be of interest, especially as medical officers are entering more and more into matters of education and school life.

Breathing Exercises

A clear distinction should be made between a pure breathing exercise and an exercise designed to exercise the muscles of the chest. A pure breathing exercise should, of course, be performed without any movements of the arms or other parts of the body.

In deep breathing the arms should hang loosely by the side, and the muscles of the body be relaxed, in order that the diaphragm may descend to the utmost, and that the capacity of the thorax may be increased to its fullest extent unimpeded by any other muscular movement. The abdominal muscles especially should be relaxed. The severe restriction to breathing which takes place when the arms are moved and the head pulled back can be watched by anyone.

Exercises designed to develop and train the muscles of the chest should be called "chest exercises."

The Straight Spine

It has been taught that the ideal spine is the "straight" spine. This word "straight" has led to considerable confusion in the teaching of gymnastics.

The medically straight spine is the one which gives an erect carriage to the body, has all its natural curves in

correct proportion to one another, and is quite free from any lateral curve. In the other form of straight spine the word has been taken in its literal sense. This faulty spine is illustrated in diagrams and described in words as being as straight as a chimney stack, and free from all its natural curves, the vertebrae are piled up on top of one another like a child's single column of twenty-four bricks, the cervical and coccygeal curves only being shown. This, of course, is not meant by the word "straight."

It is wrong to tamper with or over-correct the normal curves of the spine, the danger being that abnormal curves are produced elsewhere. MacKenzie, writing of the bantam or pointer pigeon type of chest, in which the chest becomes pushed forward and upward, and the lower spine over-extended, forming a marked exaggeration of the natural lumbar curve, says: "This posture is always the result of faulty teaching, and is an exaggeration of the correct standing posture caused by the mistaken efforts of the teacher to over-correct faults" (namely, the "round back" or "goillon" type).

If an abnormal curve is present then the patient should be transferred from physical training or gymnastic instructors to the care of the doctors.

Leg Exercises

Confusion has also arisen as regards leg exercises.

It has been taught that after heavy exercises leg exercises "deflect the blood" from the heart, and so cause the heart and diminish the pulse rate, that leg exercises stretch blood vessels, and so the legs contain more blood and that they have a "calming effect" on the pulse and respiration after heavy exercise. All of this is incorrect.

Writing on leg exercises Pembrey says:

My chief criticism is that there appears to be prevalent a wrong idea of the physiology of respiration and circulation. Thus some exercises are commended because they are thought to stretch the large blood vessels and increase their capacity. It is apparently forgotten that most of the large blood vessels are placed so near the bones that little or no stretching can take place even if stretching were desirable.

A man after cross-country running has had a smiffet of leg exercise and his legs have as much blood in them as they can hold. Another leg exercise imposed on him now can only have one result—the state of rapidity of his pulse and breathing are prolonged, which is a point to be guarded against.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

DIRECT FRACTURE OF CLAVICLE WITH SYMPTOMS SIMULATING CERVICAL RIB

We recently saw a boy who had been knocked down by a motor car. He had halted on a dark evening by the side of the road on the edge of the sidewalk, and was stooping well down, engaged in trying to light his bicycle lamp, when he was hit by a motor and tossed on the sidewalk. When lifted up he was unconscious, and his bicycle only fit for the scrap heap. He was taken to the surgery of a near-by medical practitioner, who set his broken collar-bone and directed his friends to take him to his home.

He was seen by one of us on the following day, he was still unconscious and the temperature was raised. As the collar-bone seemed to be doing well the adhesive plaster was not removed till the fifth day, it was then impossible to ascertain whether he was hit on the point of the shoulder by the radiator or mudguard or not. An ordinary oblique fracture of the clavicle just external to its middle presented itself. Behind and above the clavicle, in the posterior triangle of the neck, was a blunted swelling. It was slightly movable, painless on pressure, and pointed obliquely upwards and outwards.

On the opposite side of the neck a small blunted swelling was to be felt. We came to the conclusion that it was a case of a cervical rib, springing from the anterior limb of the transverse process of the seventh cervical vertebra on the right side, and that there was a corresponding small attempt at one on the left side.

The general appearance of the boy almost forced one to consider that there was some abnormality. He was

aged 14 years 2 months, and had a peculiar shaped head. The parietal bones met at an angle, like the two sides of the roof of a house. He was mentally deficient, could not be taught to read, but had been able to do general handyman's jobbing work. We were told that the shape of the head and his mental deficiency were the result of severe delivery with instruments owing to little pelvic room.

During the course of attendance we ascertained that there was frequently pain in the neck and a feeling of pins and needles down the arm. As soon, therefore, as it was convenient we had a skingram taken both for diagnosis and with a view to treatment by excision of rib with its periosteum. The x-ray picture showed a frac-



tured clavicle and fractured first rib, but no trace of a cervical rib.

It is obvious that the first rib and clavicle were broken by direct violence from above downwards on the outer end of the clavicle by the impact of the motor car, and the unopposed action of the scapular medius muscle, tilting up the proximal end of the broken rib together with the callus, gave the impression to the examining finger of a cervical rib.

The boy ultimately made a good recovery.

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CONGENITAL DUODENAL ATRESIA

HAVING read with great interest Dr H C Cameron's most instructive lecture on duodenal atresia in the BRITISH MEDICAL JOURNAL of April 25th (p 765), and noted thereby the extreme rarity of the condition and the scarcity of reported cases in the literature, it occurred to me that the following case would be worthy of publication.

A female infant 3 days old was admitted under my care with a diagnosis of hypertrophic pylorus. This was the last of a family of ten children and was delivered after a perfectly normal labour. It appeared quite healthy at birth and slightly above the average weight it was not premature. The history sent with the infant simply stated that it had been vomiting continuously since birth and that it would not take the breast or any other food, any attempt to feed it was immediately followed by vomiting. When examined the infant appeared rather listless and weak but there was no marked evidence of dehydration or wasting. No abnormalities of development were observed during the very thorough routine examination carried out by the house-surgeon and the ward sister. The vomiting was not of an expulsive type but was generally a copious and frequent regurgitation though the ward sister noticed that the vomit was somewhat forceful and was once projected several inches. The vomit was greenish brown obviously containing a large quantity of bile. It had also a disagreeable almost faecal odour but there was no microscopic blood in it. This vomiting started from the day of birth.

The Stools.—Several meconium stools had been passed without any apparent effort or pain. There had been no opportunity for the stools to change to the yellow milk type as no food had been digested. No rectal examination was made but there was no history of passage of any mucus or blood. There was no excoriation of the skin of the buttocks. The child did not appear to be in any pain and there were no signs of painful colics such as screaming or drawing up the legs.

Jaundice.—The child was markedly jaundiced much more deeply than the slight jaundice of haemolytic origin so often seen in the newborn.

The Abdomen.—There was no obvious distension either general or local. The abdomen was resonant all over but not hyper-resonant. It was soft to palpation no coils of bowel in spastic contraction could be felt and there was no evidence of any free fluid or peritonitis. The stomach outline could not be observed, a most careful inspection failed to show any peristaltic waves either gastric or intestinal nor could any be induced to appear by applying friction or scratching. Frequent attempts to palpate any mass in the pyloric region were equally unsuccessful although at one time I had a vague sense of a movable thickening in the pyloric region (the operation proved that this must have been inaccurate). Unfortunately no x-ray examination was made.

Immediate operation was decided upon as it appeared that the child must surely become weaker the longer it was left since no food was being retained. Immediately prior to the operation an attempt was made to outline the stomach and gain some idea of its size by passing a catheter down the oesophagus and running sterile water into the stomach through the tube. The catheter passed quite freely into the stomach and about 4 ounces of fluid was run in without difficulty whereupon it started to regurgitate gently through the mouth and nose. This quantity did not seem to render the stomach outline any more definite.

Operation.—The stomach appeared normal in size and shape and showed no obvious hypertrophy. It seemed to be capable of holding about 6 ounces. The pylorus was not thickened nor did it feel harder than normal. Commencing about half an inch distal to the pylorus the duodenum suddenly narrowed down to what looked and felt like a solid cord of only about 5 or 6 mm diameter. This extended throughout the second part of the duodenum which was observed to become normal again in its third portion. As it was thought that no canal existed I decided to perform jejunostomy in order to be able to feed the infant by this route for a few weeks with a view to doing a gastro-enterostomy when it should have become stronger. However the child only survived operation by a few hours.

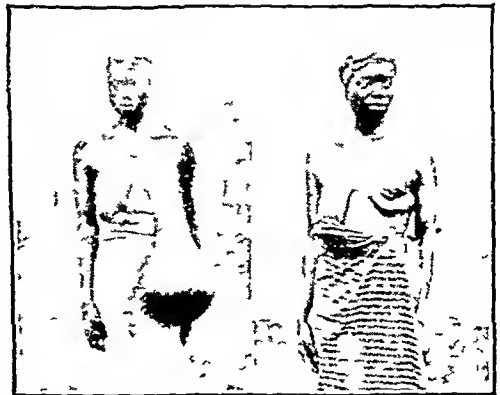
Post mortem. The stomach was found to be perfectly normal the pylorus was normal and not obstructed by any valvular or muscular thickening. About one and a half inches of the duodenum were constricted to the size of a small pocket book pencil. This constricted area occupied the second and part of the third portions of the duodenum. There was however a small lumen traversing the whole length of the constricted area. It was wide enough to admit a packing needle with some difficulty. The walls in this area appeared of normal thickness but the mucosa (if such actually existed) was deeply injected and of reddish brown tint in contrast to the very pale mucosa of the normal part of the duodenum. No microscopic examination was made.

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ELEPHANTIASIS OF THE BREAST

THE two photographs reproduced herewith illustrate a case of elephantiasis of the breast before and after removal. Elephantiasis mammaria is, I believe, a not very common tropical disease.



The woman belonged to the Mendi tribe in Sierra Leone. The duration of the growth was about five years, and its weight after removal was 40 lb. Its elephantine structure was demonstrated by a histological examination.

I am indebted to Professor Blacklock and Dr Gordon of the Sir Alfred Lewis Jones Research Laboratory, Freetown, for the photographs and pathological report.

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Leighton Luzzard

Reviews.

THE WAR HISTORY OF THE NEW ZEALAND MEDICAL SERVICES

IN the preface to the second volume of the official *General History of the Medical Services* during the great war reference is made to the probability that greater detail regarding the work of individual medical units would be forthcoming on the publication of the histories of Territorial and Dominion medical services. This has now to a great extent come true by the publication within the last few months of two volumes on the war history of the Canadian Medical Services, a review of which appeared in the *BRITISH MEDICAL JOURNAL* recently, and of an exhaustive volume on the *New Zealand Medical Services in the Great War*, by Lieut.-Colonel A. D. CANNERY, of the New Zealand Medical Corps. Just as Colonel Snell's Canadian volume provides a study of the work of medical services within a corps area of operations, Colonel Cannery's provides us with an excellent record of the work of medical services within a divisional area on the Western Front, as well as of the wide experiences of the New Zealand field medical units and regimental medical services with a brigade in Egypt and Gallipoli and with a cavalry division in Sinai and Palestine. It thus contains a mass of instructive reading.

In the opening chapters the defective administration and organization of the New Zealand Medical Corps on the outbreak of war and the manner in which the medical services were hampered by the dual and in some respects triple control of different Government departments during it are described. When war was declared the Director of Medical Services had no assistants, the four principal medical officers of districts had no sanitary officers, and the medical units were below establishments. The New Zealand branch of the Q.A.I.M.S. had a ration-master, but no names were on its roll. In a final chapter the subsequent efficiency and expansion of the service are traced in interesting and accurate detail.

The New Zealand Medical Corps had the earliest experience of the war in the bloodless occupation of Sinai on August 29th, 1914, but, although there was no fighting, the medical officers found themselves left in the lurch by the German medical staff, who refused to remain in charge of the civilian patients in the civil hospital in Apra and carry on the important ophthalmic work of the island. The whole staff had consequently to be deported. When a brigade was sent to Egypt in 1914 its field ambulance was hampered on disembarkation by its horses and ordnance equipment having been sent on a different transport from that conveying the personnel and wagons. How often this lesson has been ignored in the history of the embarkation of medical units with an expeditionary force! An account of the preliminary difficulties in Egypt is followed by four chapters of vivid description of the experiences and work of the New Zealand medical units on the Gallipoli peninsula. They reveal in more detail than does the British official medical history the horrors and deplorable sanitary conditions of the ill-fated but gallant force that landed there in 1915. By January 1st, 1916, New Zealand had sent 27,902 officers and men overseas. Of these, 2,638 were dead, missing, or prisoners of war, 4,857 were wounded or sick in hospital, and 3,111 had been repatriated.

A New Zealand Division was mobilized in Egypt of the 17,200 who remained there after the evacuation of the peninsula. It joined the Second Australian Corps, and went to France in April, 1916. Twelve chapters, forming the chief section of the volume, record the history of its medical services during the battles in which it was engaged on the Western Front. The working of regimental and posts and regimental medical services is especially well told and supplies a mass of information such as is lacking in the British official medical history. The narrative of the capture of Flers on September 14th, 1916, is typical

of this. It is taken from the diary of Major Noel Johns, whose brief descriptions of the Somme and other battles are frequently quoted, and who fell himself on the field of battle in August, 1918, near the spot where he describes the events in which two other gallant officers of the New Zealand Medical Corps, Captain Gilbert Bogle and Major A. Martin, lost their lives in September, 1916. The attractive personality of these three fine young officers can be seen at a glance from the photographs of them which appear in the volume.

The chapters on the Western Front are followed by a chapter on the experiences of the New Zealand Mounted Brigade Field Ambulance with the Australian Mounted Division in Sinai and Palestine and during the raids on Amman over the Morb plateau in 1918, when sick and wounded had to be brought back to a distant base over difficult country by hand carriage and pack transport, but arrived at the base hospital in wonderfully good condition. In similar operations in future ambulance aircraft and ambulance aeroplane squadrons will no doubt surmount the medical difficulties of operations such as these, just as they are now doing in Syria, Morocco, and Iraq.

The concluding chapters deal with demobilization and reconstruction, and also record the outbreaks of influenza and pululent bronchitis from which the New Zealand troops suffered severely at the close of the war. There are several useful statistical appendices, 124,211, or over 50 per cent of the male population in New Zealand between 19 and 45 years of age, were mobilized, and 100,444, or over 40 per cent, embarked for overseas, 753 officers and 15,549 other ranks lost their lives, and 1,720 officers and 39,542 other ranks were wounded. In an analysis of the causes of death from disease among 92,860 of the troops influenza is shown as accounting for 152 deaths, typhoid fever for 126, meningitis for 115, and pneumonia, including bronchopneumonia and septic bronchitis, for as many as 578. Out of 358 officers and 3,248 other ranks of the New Zealand Medical Corps who went overseas, 12 officers and 123 other ranks were killed or died of wounds, 7 officers and 49 other ranks died of disease, and 35 officers and 426 other ranks were wounded. Of 550 nursing sisters, 13 died, 10 from drowning by enemy action. Other appendices contain a note on medical arrangements for the landing at Anzac and for the dysentery which occurred, the scale of rations there, an account of the New Zealand divisional medical school of instruction in France, and nominal rolls of officers and men of the New Zealand Medical Corps who died or were wounded, and of those who received honours and awards. There is a good index, but only three maps, in a pocket of the cover, on none of which are the positions of medical units indicated. The reader will consequently find it impossible to follow the narrative without referring to the numerous sketch maps in the volumes of the New Zealand official history, which have been published under the title of *The War Effort of New Zealand*. Another defect is the number of misspellings and date errors that are somewhat too prominent. They are obviously due to insufficient proof-reading. Otherwise this volume of the war history of the New Zealand medical services is beyond all praise, and, as stated by Sir William Macpherson in a short and appreciative introduction, will be welcomed alongside the volumes of the British official medical history as an essential portion of the medical history of the war as a whole.

THE STOMACH AND UPPER ALIMENTARY CANAL

Dr. T. IZON BENNETT is well known for his work on Reflux's fractional test meals and on other aspects of gastric physiology and pathology at Guy's and the Middlesex Hospitals, and his recent monograph on *The Stomach and Upper Alimentary Canal in Health and Disease*, which is refreshing for its originality, is thoroughly worthy of his past record. It begins with the physiology and pathology of the month and ends with a consideration of the duodenum,

¹ The New Zealand Medical Services in the Great War. 2 vols. 1918. Ba. 4d. 1. Official documents. By Lieut. Colonel A. D. Cannery, M.B., B.S., N.Z.M.C. Auckland etc. Whitcombe and Tombs. 1. 100 pp. 14 photographs. 3 maps. 14 photographs.

² The Stomach and Upper Alimentary Canal in Health and Disease. By T. Izon Bennett, M.D. Lond. M.R.C.P. London: William Heinemann (Medical Books) Ltd., 1925. (Demy. 8vo. pp. xv + 344. 15 plates, 26 figures. 21 charts. 21 net.)

The Transpiration Stream
 University of London Press
 2s 6d (net)

Dr Henry H. Dixon
 1924
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Dr. Dixon's lectures on the rhythmic movement of plants, and his theories of cohesion and tension, are of great importance to the study of plant physiology. The view which Dr. Dixon holds, in opposition to vitalistic theories, is that the structural characteristics of the wood of trees are such that water naturally or completely filling it inevitably passes into a state of tension, when it is reduced in volume by abstraction from one or both ends. He believes that in normal circumstances, abstraction of water is effected by the cells of the leaves in contact with the upper ends of the ramifications of the wood and so the water coming from the lower parts of the plant is drawn up in a state of tension living from these upper terminations. In the first of his three lectures Dr. Dixon reviews the experimental work carried out since 1914 by himself and other botanists, and finds that the position of the cohesion theory has been materially strengthened thereby. The second lecture, on the function of the living elements in lifting the water current deals chiefly with the views of Bose on the rhythmic activity of plant cells and reports a number of experiments by Dr. Dixon and others which contradict Bose's hypothesis. In the third lecture Dr. Dixon discusses the part played by the transpiration current in the transport of substances throughout the plant, and brings forward evidence to prove that the cohesion theory, in addition to solving the old problem of the ascent of sap, offers a

The Transpiration Stream
 Dr. Henry H. Dixon D.Sc. F.R.S.
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due to the mechanism of the transport and distribution of organic substances in plants. Though these lectures are intended primarily for botanists they deal with a subject in which every type of biologist has an interest, and we think that some of our readers will be glad to know where to find a recent account of this debated question.

A GERMAN CYCLOPAEDIA OF OTO-RHINO-LARYNGOLOGY

A vast system of otology and laryngology in nine volumes, under the general editorship of DR. KRAUSE and KÄHNEN, has been planned to replace handbooks of otology and laryngology by SCHWARTZ and HERMANN respectively. The first of these immense volumes contains 1,068 pages and 709 illustrations, and it appears to be conceived on a similar scale. It is responsible for otology and laryngology and the other subjects now included under that term. There are one hundred and twenty-two contributors to this colossal undertaking.

The first volume contains a complete account of the anatomy and physiology of the nose, pharynx, and larynx, in which no detail of embryology and histology is lacking. In this part there is also a description of the nervous connections of these regions, which include the trachea and bronchial tubes. The rest of this volume is devoted to the general pathology and methods of examination of the nose and nasopharynx down to the bronchial tubes. Vast as it is, this volume forms only an introduction to the study of rhinology and laryngology. Its size alone must excite a feeling of awe, but this is enhanced by the wealth of material, the precision and clarity of the hundreds of illustrations, many showing histological details in exquisite colour, the exhaustive bibliography, and finally the reputation of those whose names form the list of contributors.

To attempt a detailed criticism of such a work would be futile, beyond recording the general fact that work and methods of examination elaborated in America and Great Britain during recent years are to a great extent ignored. The German mentality seems unable to discard this chauvinism but in a literary undertaking so comprehensive in character it constitutes a serious deficiency. There is presented, however, an encyclopaedia of German laryngology, the product of many ardent workers directed by two masters, and as such it must compel respect in spite of the defect we have pointed out.

REFRACTION OF THE EYE

Among the conditions that affect the eyes and cause discomfort none is more common than some error of refraction or accommodation or muscle balance. Errors of refraction cannot be treated as things apart; they are more or less troublesome according to the general habit and work of the patient. It is therefore necessary that every book upon the anomalies and diseases of the eye should treat of errors of refraction. But for all that there is a very real place for separate books upon the anomalies of refraction and amongst these Mr. INVER CLARKE'S *The Errors of Accommodation and Refraction of the Eye and their Treatment* has won a high place in the regard of students and practitioners. It has now reached a fifth edition. The first edition issued twenty years ago, was founded on lectures delivered to graduates. Now it has become a well established and balanced handbook. The author carries the student through a course of instruction each part of which is related to practical work. Beginning with elementary optics he proceeds to the optical properties of the human eye and so to the divergences from the common standard. His insistence upon the influence of the general health upon the working of the eyes is right. He says:

There is a wide difference in the accommodative power of different individuals when the accommodative power is lower than

normal it will be found that the individual is older, and looks older, than his age and vice versa. Premature presbyopia which is really premature senility, is provoked by various conditions, but intestinal crisis is perhaps the commonest cause. A small error of refraction uncorrected not only tends to lower the power of the ciliary muscle by the constant drain on its energy, but tends to hasten the sclerosing processes in the lens.

The author still adheres to the original practice of describing retinoscopy as the "shadow test," and in the terms of shadow. There is long precedent behind this, but there is advantage to the student in describing it as the "light test," and referring the observations to the movements of the light reflex. Experience shows that by the latter method the student gains a more rapid and certain appreciation of what is before him, and that in the end greater accuracy of observation is obtained. But apart from such a criticism as this on a matter of opinion, we have nothing but commendation for the book as a valuable and safe guide to the student and practitioner.

HOMOEOPATHY BY A HOMOEOPATHIST

In his booklet, *Homoeopathy Reasoned Out*, homoeopathy, says Dr. NORTBY, is based upon a great law, and the great law is that "if you wish to cure a disease you must select the remedy which, when given to a healthy man, will produce a similar disease." The great watchword and slogan of homoeopathy, invented by Hahnemann himself, is *Similia similibus curentur*, which means, and can only mean, "Let likes be treated by likes."

Dr. Northby then proceeds to protect himself against the possibility of the law behaving as a boomerang by writing "When I talk of similarity I do not mean absolute similarity—but a general similarity." Furthermore, homoeopathy is not the administration of very minute or infinitesimal doses. "We may deduce a small dose from the law, or we may find by practical experiment that small and perhaps progressively diminishing doses are giving better results than crude or material doses." This has nothing to do with the "main difference between the systems of allopathy and homoeopathy." What sect is meant by the term "allopathy" is not explained but it appears to consist of "old school practitioners," followers, disciples, of Aesclepius, Hippocrates, Huxley, or Sidenham. We are told that mercury is a homoeopathic cure for dysentery, because if given to a man in health it will cause symptoms resembling dysentery. Note how the difficulty with the amoeba and the bacillus is got over by the explanation of "general similarity." So, too, camphor cures cholera because camphor can produce symptoms similar to cholera. Arsenic cures syphilis because one of the most marked features of arsenical poisoning is a chronic skin eruption while "the most perfect simile for the majority of cases of erysipelas and scarlatina is belladonna." One of the few specifics of the "old school" is quinine. Why is it specific for malaria? Nobody ever knew that until Hahnemann himself took 4-drachm doses of cinchona bark, and was astonished to find that he reproduced in himself an accurate picture of the symptoms of malaria. Dr. Northby gives surgery a little pat on the back. Apparently surgeons are not allopaths and even Hahnemann declared that foreign bodies must be removed by surgery. Consequently tonsils should be removed if they do not diminish in size under treatment. We are left in doubt as to what the remedies are that "homoeopathically chosen may at times have a remarkable effect on cancer." Dr. Northby makes much use of vaccine therapy as evidence for homoeopathy, and states that Sir Almroth Wright, the high priest of St. Mary's laboratory, has admitted that vaccines are homoeopathic. Other witnesses Dr. Northby mentions to the truth of the gospel are Sir Frederick Brunton and Oliver Wendell Holmes, though the latter luckily described homoeopathy as a "myth." Finally, there is the discovery that more than a hundred years ago Hahnemann was reducing inert insoluble substances to the colloidal state, thereby anticipating the activities of some modern drug firms. Well may Dr. Northby close his volume with the slogan, "Dip it up, dip it up—it is all around you, the flowing tide of homoeopathy."

² Handbuch der Hals-Nasen-Ohren-Heilkunde. Von Dr. K. KRAUSE und O. KÄHNEN. Erster Band. Die Fehler der Vision. Erster Teil: Anatomie. 1. Aufl. 1904. Berlin: Julius Springer. München: (Suppl. 1913). Pp. xv + 1058. 709 illustrations. M. 2.40.

³ The Errors of Accommodation and Refraction of the Eye and their Treatment. A Handbook for Students. By F. INVER CLARKE, M.D., F.R.C.S. Fifth edition. London: Baillière Tindall and Cox, 1924. (Cr. 8vo. Pp. vi + 251. 1 plate. 48 figures. 8. 61 net.)

Homoeopathy Reasoned Out. A survey of the very latest medical and surgical methods of treatment, proving the value of homoeopathy. For medical men and laymen. By Dr. N. NORTBY, M.A., M.D., F.R.C.S. (Lond.). London: N. C. Cantab. M. A. Ltd. London. 1925. (Demy 8vo. pp. 31. 1s. 6d. net.)

NOTES ON BOOKS

A PAMPHLET dealing with the height and weight of school children⁸ has been issued by the Director of the Children's Clinic in the Berlin University, in conjunction with the German Ministry of Health, it contains data intended to form a basis for the systematic inspection of school children in reference to their development and nutritional condition. The publication relates solely to the question of weight and height, and an endeavour has been made, by deductions from extensive statistics carefully prepared, to obtain figures representing the normal condition of children in these particulars at different ages. It is pointed out that if the scheme is to have any practical success it is necessary that school medical officers should undertake regular anthropometric investigations, and, more particularly, that the methods employed should be uniform and the scientific uses of statistics thoroughly understood, in order that results may be comparable. The methods of measurement that have proved to be the most satisfactory are described, and the results, collected from twenty-one towns and two country districts, involving measurements of nearly a quarter of a million individuals, are embodied in tabular and graphic form. The figures are grouped in age classes, and these are subdivided in reference to the normal, subnormal, and supra-normal heights and weights. The normal half-yearly increase in weight and height is also given. The course of development varies between males and females in Germany, as in this country. At the age of 6, boys are taller and heavier than girls and the difference is somewhat accentuated up to the age of 10, at this stage girls increase in height and weight more quickly than boys and overstep them in these respects at the age of 11. The difference increases up to the age of 14, when a marked development occurs in boys, while that of girls slows down. An extensive bibliography is appended.

Dr ELIZABETH SLOAN GRESSER has edited a volume entitled *Health and Psychology of the Child*⁹ which is intended to help those who are responsible for the care and upbringing of the young. The editor believes that environment during the early days of life makes an indelible impression on the whole development of the individual, and she believes that a better understanding of psychology and the needs of a child will do much to prevent disorders grouped under the term 'psychoneurosis'. That factors other than those dependent upon early training are responsible for the production of abnormal personalities the author realizes when she asserts that the medical profession must devise a humane method of preventing the propagation of the mentally unfit. She thinks, perhaps a little optimistically, that such a measure, combined with improved environment for the children of all classes, would uplift the physical, mental, and moral stamina of the race in two generations. The volume contains thirteen chapters by different contributors, and has a foreword by Sir Maurice Craig. Both the physical and mental aspects of child life are considered, and all the writers express their views simply and clearly. We have no doubt that the book will be found helpful by parents and teachers, and it may be recommended to all those interested in the welfare of children.

SIR RABINDRANATH TAGORE has a wide reputation and his works have a considerable vogue in certain circles. His latest book is a drama in one act, entitled *Red Oleanders*¹⁰. The theme is symptomatic of the attitude of many Indian writers, particularly of such of them as lead sheltered lives. It is a fierce protest against organized life and a pathetic yearning after a life of nature love. The scene is laid in a mining town. Diggers forgather, talk, and grumble, governors manoeuvre and order, the preacher soothes with words, the king is veiled in mystery, and a woman, a spirit of Nature, in Rudra Pan, stirs up the hunger of the populace for its lost simplicity. The story ends in riot and death which is reckoned to be the recovery of liberty. We should judge that as a play it would not be acceptable by the most eclectic of repertoire theatres: the dialogue is fragmentary, but there are a few felicities of the sort that has made Tagore's reputation—for instance, 'Underground there are blocks of stone, iron, gold,—there you have the image of strength. On the surface grows the grass, the flower blossoms,—there you have the play of magic. There must be beauty even in hell, but nobody there can understand it that's then cruellest punishment'.

⁸ *Größe und Gewicht der Schulkinder und anderer (Erstatungen für die Finanzinspektion)* Berlin: Politik und Wirtschaft 1924 (Imp. 8vo 11, 83).

⁹ *Health and Psychology of the Child* Edited by Elizabeth Sloan (Ch. F. M.D. London: William Heinemann (Medical Book) Ltd. 1925 (Cr. 8vo pp. 202, 7s. 6d. net).

¹⁰ *Red Oleanders: A Drama in one Act* By Rabindranath Tagore. London: Macmillan and Co. Ltd. 1925 (Cr. 8vo pp. 181, 5s. net).

In *Uncle Archie His Nights with a Nephew*¹¹ Dr WILLIAM CULLEN is reminiscent in an interesting and humorous vein about men and their doings, especially Glasgow and its Medical School in the past. There are many good stories, particularly some about the late Sir William MacEwen, and the history and origin of Sydney Smith's historical note about the need of a surgical operation to get humour into a Scot. Written in an easy, happy mood, the text is varied with many appropriate verses.

¹¹ *Uncle Archie His Nights with a Nephew* By William Cullen M.D. London and Glasgow: Gowans and Gray Ltd. 1925 (Cr. 8vo pp. 195, 3s. 6d. net).

MEDICAL AND SURGICAL APPLIANCES

An Ultra violet Ray Outfit

Dr F. C. EVE, F.R.C.P. (senior physician, Royal Infirmary and Children's Hospital, Hull), writes. At present the available sources of ultra violet rays are (1) the mercury vapour lamp, which has a short life, produces no heat rays, and can easily be overexposed, (2) the tungsten arc, rich in short rays but poor in heat rays, and costly in carbons, (3) big arc lamps, such as the Eidenow, with a very long arc, which jumps in a draught, they are wasteful of current, I am told.

The novelty in the system, which has been working satisfactorily at the Hull Royal Infirmary during the last five months, consists in forcing the electric pressure designed for four street arc lamps through three lamps to eliminate the consequent overheating then coils have to be rewound by an arc lamp specialist (for instance, Mr. Pardoe of Hull). Then



one gets three big arcs which do not jump, and which only waste 10 per cent of the current in resistances instead of the usual 50 per cent. The three lamps are suspended in a row 15 inches apart (adjustable), at a height alterable by a winch (seen on right).

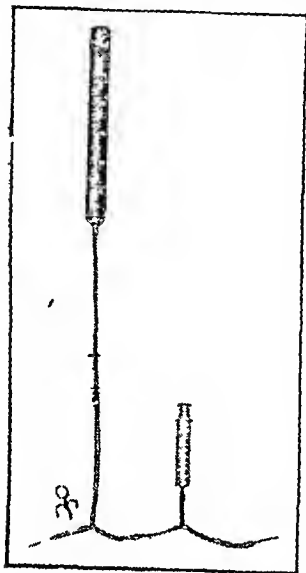
The other advantages are

- 1 The four patients are recumbent and hence very comfortably resting equidistant from the arcs.
- 2 The whole skin from head to foot is evenly radiated—ten minutes front and then ten minutes back initially.
- 3 As the energy is emitted from three sources instead of one the skin can be exposed at 2 feet instead of the usual 3 feet. This increases the radiation effect as three squared is to two squared—more than double.
- 4 Street arc lamps are now largely superseded and hence can be bought very cheaply.
- 5 Ordinary carbons are used the total cost of running is estimated at 1s. an hour.
- 6 The total radiation imitates hot sunshine so that the sensation of basking is very enjoyable. Tested by a standard methylene blue tube on the patient's skin, one unit of fading is produced in twenty minutes at our usual working pressure. This is equal to several hours sunshine: erythema and pigmentation are produced.
- 7 The two (novel) double decker couches enable four patients to be treated at once, they are fitted with yacht's wire mattresses.

The outfit is in a small room (14 ft. by 12 ft.) next the medical wards, and is used as an ancillary to general medical treatment. Certainly the patients like it and say they feel much benefit. My general impression of the clinical effects is favourable. I am in no way an retino-therapeutic expert, but if it is true that our patients are suffering from a deficiency of sunshine it is clearly the business of a general physician to attempt to supply that deficiency by artificial means.

A Blood Transfusion Apparatus

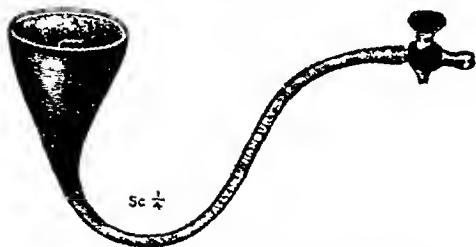
Dr DANIEL McLELLAN (Vancouver, B.C.) sends an account of an apparatus for the direct transfusion of blood, with the introduction of citrated saline solution into the blood stream as it passes through the apparatus. An all glass 20 ccm syringe is attached by means of an adapter and rubber tubing to the stem of a Y shaped glass tube. The intake arm of the Y tube is connected with the needle for the donor, while the exit arm is connected with the needle for the recipient. A cone shaped glass valve is placed on each side of the Y tube the one on the donor side has its apex pointing towards the donor the base of the one on the recipient side facing the recipient. Between the donor needle and glass valve next the donor a second Y shaped glass tube is placed to the stem of which a rubber tube 20 inches long is attached, connecting with a 300 ccm burette for citrate and saline solution. On this tube is a Murphy screw clamp and a cut off clamp. Needles are 15, 14, or 12 gauge. The tubes should be placed in the form of an L or L reversed or a T, the recipient's table forming the foot of the L or the cross of a T, the donor's arm slightly outward the recipient's arm at right angles to his own body. The donor's needle is inserted towards the finger tips the recipient's needle towards the heart. A standard with an adjustable goose neck attachment stands in the angle formed by the two tables from this goose neck the burette is hung. A mixture of 2 ounces of a 3 per cent solution sodium citrate with 18 ounces normal saline is used as diluent. Where small quantities of blood such as 6 to 10 ounces are being transfused the citrate may be cut off entirely after the first stroke of the syringe has been made. To expel air from the apparatus the long tube is clamped off the burette is filled with warm citrated saline solution, and the Murphy clamp is screwed down to allow a moderate flow. The needles are immersed in a bowl of citrate saline solution the cut off is released, and a few strokes of the syringe will expel the air the last bubble may be removed by inverting the syringe. The automatic action of the valves now becomes evident as the intake valve opens the exit valve closes and vice versa. To regulate the flow of the citrate-saline solution place a suitable clamp on the rubber tube between the (burette) Y tube and the release the cut off clamp unscrew the Murphy clamp tight, the solution comes from the donor needle drop by drop about 100 to the minute. The pinch cock is taken off and placed on the tube between the (burette) Y tube and the donor needle. The recipient needle should be inserted first immediately loosening the turncock and releasing the cut off clamp. The liquid begins to flow slowly through the apparatus into the recipient giving no chance for the formation of clot and thus bidding over the interval of time between the insertion of the recipient and donor needles. The donor needle is then inserted the pinch-cock removed and by steady easy strokes the blood is pumped from the donor to the recipient the strokes being counted. By deducting the quantity of citrate saline solution from the total the actual amount of blood transfused is estimated. The apparatus may be obtained from Messrs Down Bros Ltd 21 St Thomas's Street S E 1



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A Modified de Ribes's Bag

Dr J E HEPPER (Frimley, Surrey) writes to bring to notice a modification of de Ribes's bag which he has devised. The



object of the bag he says is to play the part of the membranes in those cases where the membranes rupture early in labour. The bag when folded can be introduced into the uterus when the cervix is the size of a shilling by means of long ovum forceps. It is pear-shaped 2 1/2 inches in diameter at the broad end and 4 in long and is made of rubber of medium thickness. The thin end of the bag is attached to a rubber tube the other end of

which is fitted with a tap. It is important that all air should be expelled before introduction, and that a partial vacuum should be ensured by turning off the stopcock. When the bag has been introduced in the manner described a Higginson's syringe should be fitted to the tap and the bag partially filled with water. One injection is sufficient. It is better to dilute with water than with air. The bag remains in position until the cervix is fully dilated the number of hours in labour being thus considerably reduced. By a special device the broad end of the bag when filled, is concave so that it does not displace the foetal head. The pressure also is evenly distributed outwards against the inner side of the cervix thus producing more speedy dilatation. The bag can be obtained from Messrs Allen and Hanbury's Ltd 48, Wigmore Street W.

MOTOR CARS FOR MEDICAL MEN.

NEXT WEEK'S OLYMPIA SHOW

A FORECAST

By H. MASSAC BUIST

THE nineteenth annual International Motor Car Show, organized at Olympia, Kensington, by the Society of Motor Manufacturers and Traders, under the patronage of the King, will be opened to the public on Friday next, October 9th, and will close on the evening of Saturday, October 17th.

This year's Motor Show will not be so remarkable for the number of entirely new chassis types that will be introduced as it will be for the quite exceptional all-round progress made in twelve months in the matter of developing in detail vehicles already on the market. In the latter connection enterprise takes two forms: the pioneers of designs that are commercial have been always notable for the simple means by which they achieve results. An inspection of engine and chassis improvements made by the rank and file of manufacturers will reveal that at last the majority of them have become educated to the value of clean lines and to the necessity of "tidying up" their engines and chassis to reduce cost, to minimize possible loss of adjustment, and to ensure accessibility whenever that process should become inevitable.

THE QUEST OF ACCELERATION

Of course, these characteristics are apparent also in the majority of the new car types that will be forthcoming. The inspiration of the design of most of these is a clear recognition of the fact that it has been possible for many years to travel as fast on a car, once it has got going, as is desirable but that we are still far from the stage of vehicle evolution which will enable a driver to attain promptly, either from a standing start or after slowing down for traffic or at cross-roads, the speed at which he wishes to travel. That quality we call acceleration. As far as new four-cylinder engined cars are concerned, progress is being attained by the use of lighter reciprocating parts, including aluminium pistons, by developing, or altering the valve system, by increasing thermal efficiency, using higher compression, higher crankshaft speeds, by economizing heat losses, and so forth.

To give an instance, a very successful car in the service of medical men, the Hillman, will appear in entirely fresh guise with a 2-litre side-valve four cylinder engine of such improved performance that this is now a mile a minute machine with proportionately good hill climbing performance, quiet gears that can be changed instantly, as in racing practice, so that neither car momentum nor engine revolutions are reduced in the act, Hotchkiss type front wheel brakes on a much wider and longer chassis, and coachwork developed accordingly. Inspection resulted in my being able to count twenty-two fresh points in the whole scheme, not the least valuable of which is the mounting of the power unit on new-style oil proof fabric insulators.

PURPOSE OF THE SIX-CYLINDER ENGINE

But 1926 will not be known for the development of the four-cylinder engined type, nor for the increasing use of the overhead valve system, recruits to which include Atwood-Johnston and Galloway among those who exploit four cylinder practice. That will introduce the long expected nominal 7-h.p. four-wheel braked small car with light-hand controls, even as Humber will bring forward a 9/20 h.p.

new style light car with a four cylinder engine having overhead inlet and side-by-side exhaust valves. Lagonda introduces a chain-driven, double overhead camshaft-driven, overhead valve, four cylinder 2-litre engined, front wheel braked car, thereby entering a new market, and Straker-Squire re-enters the arena with a new push-rod operated, overhead valve, 1460 ccm four cylinder 11/28-hp engined chassis with Alford and Alder type four wheel brakes, having, however, the Whitehead system of hydraulic operation. About the only other notable firms which will present new moderate sized four-cylinder engined cars exploit the side-valve setting—namely, Swift, with a 1,954 ccm 12/35-hp type with front wheel brakes, Triumph, with a 15/50-hp side-valve four cylinder engined machine, also with front wheel brakes, Clno, with a 1,496 ccm side-valve four cylinder 13 hp engined chassis, with a specially designed spiral bevel rear axle having proportionately very large diameter bearings, and a four wheel brake system absorbing the greater proportion of the speed by chocking the front wheels, and De Dion Bouton, with a £10 tax side-by-side valve four-cylinder 10/20-hp engined, four speed, four wheel braked Rudge-Whitworth wire wheeled chassis at £255 only, with coachwork prices in proportion.

To discover the unmistakable trend of the motoring times, however, we must look to the new six-cylinder engined machines. These are remarkable for their number, for the variety of the systems of their design, and for their quality. The plain fact is that what the four-cylinder engine was to the two cylinder engine type before the war, the six-cylinder engine is to the four cylinder engine to day. By means of secondary force vibration dampers, by using lighter reciprocating parts, and so on, it is possible to give a four-cylinder engine of the highest quality and of expensive production many of the characteristics of a first-class six-cylinder type, but, cylinder volume for cylinder volume, one cannot give it equal acceleration.

More Flexible Performances in all Categories

That is the reason for the introduction at the forthcoming Motor Show of such an extraordinary variety of six-cylinder engined new car types, ranging from the 6-litre overhead valve "Big" Bentley (wherein an overhead camshaft is driven in a wholly novel and unprecedented smooth fashion by triple connecting-rods) the 3,929 ccm double cast-iron sleeve valve six-cylinder engined Willys-Knight, the 3,880 ccm Burt McCullum type single oscillating cast-iron sleeve valve engined 25/70 hp Vauxhall with pear shaped combustion head, the 3,180 ccm push-rod and rocker operated overhead valve 20/60-hp Star, the 2½ litre 18/50 hp overhead valve six-cylinder engined Crossley, the 2,540 ccm overhead valve six cylinder 17/75 hp Daimler, the six cylinder Calthorpe, the inclined side valve 2,565 ccm six-cylinder Calcott, and the 1,776 ccm overhead valve six-cylinder engined Singer down to the 1,500 ccm overhead valve six-cylinder engined Alfa-Romeo from Italy and 1,500 ccm overhead valve six-cylinder engined Steyr from Austria. Other machines could be named, but the foregoing will suffice to indicate the beginning of a tendency to offer six cylinder engined cars of all sizes and prices with power units employing quite strikingly contrasted valve gear practice.

Again among those who have spearheaded in the production of six cylinder engined cars, notable advances have been made this year. There will be on view the first display at any exhibition of the complete range of Daimler cars—including one of only £16 tax rating which is nevertheless capable of travelling at a mile a minute—with the new style light, durable, steel double-sleeve silent valves and a buffer plate system which eliminates the smoke nuisance. Also there will be introduced the "New Phantom" 40/50 hp Rolls Royce with its six cylinder overhead valve engine in succession to the side valve engined "Silver Ghost" type. Armstrong-Siddeley brings forward an overhead valve six-cylinder monobloc 18 hp engined chassis. Only one objection is common to this wealth of enterprise—that smoother functioning which spells greater acceleration and hill-climbing power in conjunction with enhanced flexibility and therefore greater range of performance on the direct line. That, and the provision of greater body accommodation is why Sunbeam will introduce a 30/90 hp

eight-cylinder-in-line overhead valve engined chassis with a notably large diameter stiff crankshaft.

CHASSIS DEVELOPMENT

The most obvious chassis development this year is the increasingly wide standardization of brakes to all four wheels. All Armstrong-Siddeley cars, all Swift, both Rolls-Royce, both Morris, both Rover, both Clno, the new Hillman, and the latest Humber are among the recruits to the practice.

One has already seen several new-style cars, too, wherein the engine and gearbox are insulated from the chassis frame (or subframe, as the case may be) by setting the arms on flexible vibration and noise-absorbing mountings that are oil-proof. Quite a number of Coventry builders are exploiting this system, to the merits of which attention was drawn in these columns last year, though it that time the motor industry was unaware that such a facility was about to become available to it. Another very important forecast made then takes material form now in the new Vauxhall chassis, wherein neither shackles nor pins are used in connexion with the suspension scheme by half-elliptic springs, which need no lubrication, yet do not wear and do not squeak. Nor are the expensive constructions as far as these details are concerned. Further developments along these desirable lines are therefore assured in the evolution of the motor vehicle, for the majority of firms are always afraid to embark on any common-sense fresh practice until they find an automobile engineering house of world-wide reputation holding to lead the way.

PRICES AND IMPROVEMENTS

The rise in the price of rubber, leading to an increase in the price of tyres that was not expected by car builders in the course of the past season, has had an unfortunate effect in retarding the progress of the world wide movement to provide better yet cheaper cars. Manufacturers did not increase prices many of them are compelled to lower them, all are trying to do so. Therefore the only course the majority can take is to provide fewer improvements, or accessories than they intended had the cost of tyres not been raised. Surviving the matter all round, they have done admirably well, for many manufacturers of the highest repute are marketing their cars, not much at appreciably lower prices but in every case in better form as regards one or more details. Clno and Morris are examples of sensational decreases in price, accompanied in each case by quite a number of improvements in detail, all of a practical sort, such as the standardizing of front wheel brakes, and so forth.

Nevertheless, concerning the motor car industry in the broadest sense undoubtedly but for the increase of tyre prices we should have found all cars standardized with mechanically operated wind-screen wipers for the driver and in some cases for the occupant of the seat beside him too. In like fashion, had it not been for the bad effects of the rise in rubber prices—a matter of prime consideration for the medical man—the provision of means for preventing head-lamp dazzle without minimizing the amount of light available to him would have been the general as distinct from exceptional, practice illustrated at next week's exhibition.

PREVENTING HEAD-LAMP DIZZLE

The use of dimmers is a compromise, not a solution of the problem of dazzle, therefore the American industry compromises, and the British industry also. But on the Morris Oxford models there is no compromise, instead, Barker rotating dipping head-lamps of the type used by the King and the Royal family on their Daimler Rolls-Royce and other cars are standardized. There is therefore no longer any manner of doubt that twelve months hence car builders in general will standardize means to prevent head lamp dazzle without in any way limiting the volume or light. There is more than one means of attaining this end and where the builder of the greatest number of cars in the country leads others must follow in due course.

CHIEFLY CONCERNING COACHWORK

The fact that completely successful results have not so far attended the very numerous and prolonged experiments

of car builders in this country is the reason why we shall have to wait yet another year for the advent of the standardized oil, grease, tar, rim, damp, and heat proof frequent body finishes, such as Studebaker has been so exceptionally successful in pioneering in America in big car practice. But Mr Edge has been bestirring himself, and considers that he is justified in introducing a scratch-proof body finish scheme on the A C car.

As regards design, in the middle size categories one British manufacturer after another who has standardized central change speed and gear lever positions is providing offside controls. The salesman's argument that this cannot be done without it being exceedingly inconvenient for the driver to have access to his seat from his own side of the car is absolutely without foundation. Numerous designers have shown for at least a decade how this can be done quite effectively, and if individual designers are so unintelligent as not to avail themselves of common knowledge, at least they cannot pretend that a driver has to enter and leave his seat as often as he has to change speed or use the handbrake. Those seats are inconvenient, to say the least, in cars of restricted accommodation occupied by motorists in winter attire. That is one reason why, even in the small car category, several machines will be presented at the forthcoming show with right-hand instead of central controls. In the case of the most luxurious cars we find Rolls-Royce abandoning a three speed centrally controlled gearbox on the 20-h p chassis, and providing a more compact four-speed still quieter gearbox with offside control.

Other novelties to be shown at the exhibition will be reviewed in these columns next week.

PUBLIC HEALTH SERVICES IN HUNGARY

THE Health Section of the Secretariat of the League of Nations has published a memorandum on the public health services in Hungary, by Dr Alexander De Dobovits, Councillor of Section in the Royal Hungarian Central Statistical Office. Though the population of Hungary is now only seven to eight millions the account of its health administration is longer and more elaborate than that relating to Germany, noticed in our issue of July 4th, 1925 (p 20). The subjects dealt with are grouped under seven heads—public health organization, duties of health personnel, public health institutions for the sick, the campaign against epidemics, temperance campaign, child welfare, and measures for the protection and improvement of public health.

The administrative organization of Hungary consists of a Ministry and three sets of local authorities. The supreme direction is in the hands, not of a Minister of Health so called, but of a Minister of Labour and Social Welfare, who has charge of no fewer than fourteen departments, including sickness, workers' and disability insurance, war victims' relief, poor relief, housing, and child welfare. Each of the departments has a chief and a clerical staff, whilst the Minister has two under secretaries, altogether the staff numbers 336 persons, including the Minister and secretaries, twenty-two medical officers, and four pharmacists. There is a National Public Health Council, which is an advisory committee with medical members. The advisory and administrative bodies of county or urban municipalities are (a) a municipal committee, and (b) an administrative committee. The former has a membership ranging from 48 to 600 according to population; this larger figure must seem extraordinary to readers acquainted with local government in this country. The chief municipal medical officer is a permanent official whose duties include expert medical investigation in police matters and attendance at medico-legal *post-mortem* examinations. He signs and registers the diplomas of medical practitioners and midwives in his area. A district medical officer has more or less similar duties and is a regular permanent county official appointed by the prefect. The capital city, Budapest, has a special organization. The smallest units of administration in Hungary are called communes and possess, within limits, important autonomous rights. Each local authority for an area with 5,000 inhabitants and upwards must appoint a

medical officer of health, smaller communes may be grouped into cantons for that purpose. The officers may practise privately outside their own areas. Medical officers are *ex officio* members of the magistracy and council, they are appointed for life, and among their numerous official duties are medico-legal inquiries.

In general medical practice there has been no reciprocity between Austria and Hungary since 1898. In Hungary a diploma to practise is not conferred until after a year's probation in a hospital. Some foreign diplomas cannot be validated in Hungary. The Minister of Labour and Social Welfare may hold special examinations and grant certificates essential for holding municipal, police, and forensic appointments. Post-graduate tuition at the universities is organized by a central board.

Midwifery practice by women has, since 1921, been confined to those with a legal diploma, previously a certificate by the chief municipal medical officer sufficed as a substitute for a diploma, the course of training covers ten months. Midwifery certificates issued abroad must be validated in Hungary before being effective. Places with 2,000 to 5,000 inhabitants must have two qualified midwives, those with from 5,000 to 10,000 must have three, and above 10,000 an additional midwife is required for every 5,000 of population.

Death certification is compulsory, burial is not permissible without it. Certificates may be given by (a) medical practitioners, (b) persons who have passed a test of competence, or have been trained by a medical practitioner, and (c) in the absence of a certifying official, by a member of the local authority appointed for the purpose. There is a prescribed terminology for specifying causes of death. Burial should take place between forty-eight and sixty hours after death. Where an autopsy is necessary "the police shall conduct" it, but there is no statement as to whether the return examination may be done by a layman.

Pharmacies rank as public health institutions, not commercial establishments, and are under Government licensing and supervision; there is a university diploma of doctor or master of pharmacy, the requirements seem stringent. The price of drugs is fixed by the Minister in an annual tariff, and a pharmacist failing to adhere to it may be punished.

Official medical salaries are graded, they are given in the memorandum in gold crowns. There are various provisions as to allowances in addition to salaries—for food, sugar, laid, wood, and coal, one pair of boots a year, clothing material at reduced prices, and a lodging allowance. The Government tried to regulate the private fees of practitioners by a standard scale, but abandoned the attempt.

Hungary has four classes of hospitals. In 1921 there were 184 institutions, with 26,451 beds, 243,575 patients, and 7,342,854 days' treatment. Some belong to the State, some are "public" though not State supported, and others are private. The State is responsible for treating the indigent poor, whether in hospitals or not, and for the cost. There is a sickness insurance scheme for industrial workers and another for civil servants, but we cannot attempt to enter into details.

Notification of epidemic diseases is compulsory, but not for tuberculosis, the law prescribes compulsory treatment for venereal disease, "it is, however, very frequently impossible to enforce it."

A temperance campaign is conducted mainly by philanthropic societies which are federated into a national league. "Speaking generally, however, these organizations have not yet succeeded in obtaining any very important results." A child welfare scheme is supported by a statutory National Sickness Relief Fund. A State home is provided for neglected children. Many are sent to children's colonies. "Nine tenths of the children entrusted to the State homes are placed in families who offer every guarantee of good character." They are medically supervised. The number in the homes is stated to be close on 42,000.

Environmental sanitation as regards purity of air and soil, water supply, house sanitation, industrial hygiene, school hygiene, food inspection, and other such matters is conducted on lines more or less like those of this country.

British Medical Journal.

SATURDAY, OCTOBER 3RD, 1925

THE ORIGIN OF SPECIES

It is just two thirds of a century since Charles Darwin published *The Origin of Species*, but the stimulus it gave to biological research is very far from exhausted. The main idea of the book was not new, the systematists in zoology and botany had been feeling their way towards a doctrine of evolution, and the philosophers and poets had made inspired guesses, probably the immense effect it produced was due to the fact that it presented a theory of the way in which the evolution others had suspected in the resemblances and differences of species had come about—namely, by "natural selection, or the preservation of favoured races in the struggle for life." It transcended the hints of the systematists while making the fullest use of the facts they had collected. Sir Andrew Macphail recently declared that it is a dull book, and that few persons now living have read it. He is very probably right about the number of its readers in the present day, but the ideas it contained and their popularization mainly through the opposition they excited among persons who knew little of philosophy and its history, and nothing of biology, justifies his further assertion that the controversy about evolution was the principal event of the nineteenth century, comparable in magnitude only with the controversy over Christianity in the second.

The crises, he continues, 'were somewhat similar. It was a contest between the spirit and the word. The evolutionists were not spiritual above all men but their opponents were under the strictest bondage of the letter like the Pharisees of their own book, taking their stand upon the written as opposed to the living word.' But after its complete victory with biologists, and after permeating a science even so remote as astronomy, the Darwinian theory began to suffer attacks from within the biological camp chiefly from the followers of Weismann and the mutationists. Nevertheless Mr Tate Regan, Keeper of Zoology in the Natural History Section of the British Museum, in his presidential address to the Section of Zoology at the recent meeting of the British Association, affirmed that *The Origin of Species* still remains the one book essential for the student of evolution.

The systematist—that is to say the biologist who distinguishes species—is concerned with the study of the results of evolution, and ought to have a distinct idea of what is meant by the word species, but it is not easy to find. In his attempt to find a definition Mr Regan proposes to reserve association for a collection of dissimilar and unrelated organisms that occur together, such as the animals found on a muddy bottom in the North Sea, or the plants of a range of chalk hills, and to apply 'community' to a number of similar individuals that live together and breed together. Species is then defined as a community or number of related communities whose distinctive morphological characters are in the opinion of a competent systematist, sufficiently definite to entitle it or them, to a specific name. The defini-

tions of subspecies and genus are on the same principle. This definition of species is not very satisfying, as it amounts to little more than saying that a species is a species, but it retains the idea of fertility between individuals as an essential part of the conception of a species, though the occurrence of hybrids is proof that it cannot conveniently be made the only criterion, for the morphological differences may be too great. In spite of the logical objection to his attempt, Mr Regan is able to show that his definition is useful in discussing the origin of species by providing the idea of the division of a species into communities, each of which may, in the process of evolution, become a species, or, at first, perhaps a subspecies.

Mr Regan, who is a leading authority on the classification and geographical distribution of fishes, draws several illustrations of his thesis from that division of the animal kingdom. His thesis is that the first step in the origin of a new species is not a change of structure but the formation of a community, which for some reason—the reason may not be obvious—acquires new habits or finds itself in a new environment, which may mean a restricted environment. The novel point is the influence of habit, or, as the point is not quite novel, it would be better to say the influence attributed to habit. It is not easy to determine the relative importance of habit and of environment, for change in the former must usually entail change in the latter also. All that can be said is that change of habit seems in some instances to have been the first thing to happen of this Mr Regan finds an example in the trout and salmon. The salmon is more highly specialized, grows larger, swims more strongly, makes longer journeys than the trout and may have evolved from it. But the young fish are very much alike. For the first two years both are called parr and live in fresh water, then habits are nearly the same but though both are eating the same kind of food—for example, both take flies at the surface—yet on the whole their food and feeding habits appear to be different. Salmon parr seek their food—such as insect larvae, small molluscs and crustaceans—at the bottom, whereas young trout subsist more on food brought down by the stream, and tend to keep more in midwater, thus the salmon parr may be hunting in a stretch of shallow rapid water while the trout parr wait for food in the quieter water just below. In their second year when both are about six inches long, they both turn silvery (smolts) and start down the river. The trout travels in a leisurely manner hanging about the estuary, and even the older fish frequent the coastal waters. The salmon smolts make down the river straight to the open sea where they grow rapidly, putting on several pounds in a year. The point here to be observed is that though the young are almost if not quite indistinguishable the adults differ conspicuously and that this difference is related to habit not environment.

The char is a fish very like a trout to look at but belonging to a different genus (*Salvelinus*) lives in the Arctic Ocean but in the autumn runs up rivers to breed in fresh water. Many lakes of Scandinavia, Scotland, Ireland, England (the Lake district), and Switzerland contain char, and apparently the char of no two are exactly alike in habits or structure, so that they have been recognized as separate species, to the undue multiplication of specific names. Mr Regan would regard them all as belonging to the same species as the Arctic char. His theory is that at the end of the glacial epoch the bulk of the char retreated northwards, but some were trapped in lakes, where they

¹ Macphail Sir A. *The Idea of Evolution: An Address to the Biological Society*. McGill University. January 2nd 1925. (Printed for private circulation.)

have continued to live and breed ever since, and to undergo evolutionary changes which are said to be clearly related to the conditions of life in their lake. If only the char in a dozen selected lakes were known there would be a dozen well marked forms which it would be convenient to recognize as species, but with hundreds of lakes and as many forms of char the convenience disappears. This case has been given at some length because, as Mr. Regan observes,

"a somewhat similar problem arises in the classification of man, it is convenient to place all the living races in one species. But if there were only Englishmen and Hottentots we should probably regard them as specifically distinct." As to why there is evolution, why in the flux of things a progress from the less to the more complicated is discernible, we have no evidence and hardly any theories. To quote Sir Andrew Macphail again,

biologists now agree to assume that the whole universe is composed of the same matter having an essential unity in spite of a diversity of elements and in similar conditions acting in the same way, thus we are to conclude that "from the beginning there was unity, uniformity, and development by a process which is not a fresh creation, but emergent from previously created forms. By this theory mind is traced back to the earliest physiological reaction."

COMPENSATION FOR INDUSTRIAL ACCIDENTS

THE almost simultaneous publication of a book by Dr. Lucien Mavet of the University of Lyons, on the compensation to be paid for partial and permanent incapacity following industrial accidents, and of the final report¹ of the committee on compensation for eye injuries appointed by the Section of Ophthalmology of the American Medical Association provokes an attempt to compare the practice of the two countries in so far as eye injuries are concerned.

It should first be said that Dr. Mavet's book is not limited to the eye, but is a ready reckoner (*barème*) to guide practitioners in estimating the compensation which ought to be paid for injuries to any part of the body.² All injuries from the skull and scalp to the feet recorded to have been sustained through accidents during industrial work are systematically arranged, and for each an estimate of the percentage of disability is given. Where there has been diversity in the estimates by various medical practitioners of the disability arising from some class of injury these differences are set out. Damages to joints are calculated out in a most detailed fashion; for example the degree of loss of flexion following injury to the elbow joint is illustrated upon a full page chart, in which useful and relatively poor positions are given in degrees and the resulting disability is related to these degrees. The same is done for every other joint. Nothing more complete could be devised upon such a plan. Among the other matters discussed are the disabilities arising from post-traumatic psychoneuroses, diseases contracted during the course of employment including tuberculosis, syphilis, diabetes, and tumours, as well as such industrial diseases as plumbism. The mode of calculating the incapacity arising from simultaneous multiple injuries and also

from successive multiple injuries, is explained, and Dr. Bubié's scheme for calculating the incapacity arising from industrial accidents following mutilations sustained in war is set out. The *Barème* is drawn up on a most methodical plan, and the degree of disability produced by any injury or combination of injuries can be estimated by reference to the appropriate page. There is the same precision that is expected in a trade catalogue of prices current.

Such a compilation, when based upon a consensus of medical opinion checked by decisions of the courts, as Dr. Mavet's appears to be, is of value to the profession in all countries. The mere classification of possible injuries is useful, since it is an indication of what is to be expected. There are, however, dangers in such a rigid table of values. Damages sustained tend to be regarded as absolute—so much for a finger tip. But this is rarely a true judgement. The damage is relative—it is so much for the finger tip of the person X, that is to say, the loss sustained must be related to the peculiarities of that person and of his work. Dr. Mavet recognizes this, and indicates that age, sex, and general state of the injured person, "and a thousand other circumstances which it is impossible to foresee" must be taken into account.

The first conclusion of the American report is that compensation should be based upon the visual efficiency of the individual. The loss of one eye where the other is good is not loss of half vision. The industrial visual efficiency of the individual is calculated on a formula to be 75 per cent. In the French scale the loss of one eye, the other remaining normal is given as 25 per cent, subject to an addition, according to the nature of the individual's occupation, up to 10 per cent. The American and French agree on basis, though the latter gives elasticity for special condition. The American report recommends methods whereby visual acuity may be ascertained in which both far and near vision are combined in the finding. It proposes standardized methods of measuring the acuity, the field, the muscle movements, and gives maxima and minima for each. It states that certain effects cannot be standardized—for example disturbances of accommodation, colour vision, adaptation to light and dark, and certain injuries to the lids and their muscles. For many of these losses the French scale gives definite percentages of disability. The American report concludes that the amount of compensation should not be computed until all known operative and medical treatment has been tried, and that three months should be allowed to elapse after the last trace of visible inflammation has disappeared. This rule should be subject to certain exceptions in sympathetic ophthalmia and cataract in interval of twelve to sixteen months is necessary. When there is evidence that vision was subnormal before the accident, compensation should be based upon the additional loss only. When there is no such evidence it should be assumed that the visual efficiency prior to injury was 100 per cent.

The dangers of a rigid scale of compensations are well shown by cases that have recently come before the Supreme Court of Minnesota.³ A man lost the use of an eye and received compensation. Later there was some recovery of sight so that he could read print in certain positions and note approaching objects. This partially blind eye was again injured and removed the second employer was thereon mulcted in full damages for the loss of the eye so that there was double compensation. Again an eye totally blind

¹ *Journ Amer Med Assoc* 1925 vol 11 p 131.

² *Barème à l'usage des médecins praticiens pour l'évaluation sommaire de l'incapacité partielle et permanente en matière d'accidents du Travail*. Par Dr. Lucien Mavet. Paris. A. Petit & Co. 1925. 206 pp. xvii+327 21 figures. Fr. 6.

³ *Journ Amer Med Assoc* 1925 vol 11 pp 113-115.

since childhood was injured and removed, the workman secured the full statutory compensation for the loss of this sightless eye. On the other hand, a workman who possessed only one good eye lost it, and became totally blind, under the statute the unfortunate man received no more compensation than did the man who lost a blind eye! That was the effect of an melastic law.

THE SUPPLY OF ARTIFICIAL LEGS

As announced by a paragraph in the *Times* of September 5th, the Ministry of Pensions has decided to give the contract for the supply of artificial limbs in future to two firms only, on the advice of a committee whose report has since been published.¹ Although it is not specifically so stated, we understand that this decision refers to prostheses, for the lower limbs only, the supply of artificial arms probably remaining in the hands of those firms which have had contracts with the Ministry for some time past. Economy is the reason alleged for this change of policy, and it is argued that the interests of the amputee will not suffer, because the two firms in question will be able to supply each of the two types of metal limb which now answer to the requirements of most patients. We understand that the new contracts were originally submitted for tender to fourteen firms, all of whom declined them, but two of the firms, as the result of separate negotiations, subsequently entered into the contract referred to in the paragraph in the *Times*. The twelve firms who thus find themselves deprived of a great part of their business not unnaturally feel themselves aggrieved, and nine of them accordingly have issued a statement which shows it any into a *prima facie* case for inquiry. Representatives of the firms now excluded had an interview with the Minister of Pensions on September 29th, but Major Tison adhered to the course he had decided to take on the recommendation of the Committee of Inquiry and expressed his regret that any of the firms should be placed in a position of difficulty, he, however, held out no hope that the decision would be reconsidered. He added that the difficulty was created in the first place by the concerted action of the firms themselves in refusing to renew their contracts unless the maintenance and costing clauses were deleted. We are only concerned with the economic questions involved in so far as, like all taxpayers, the members of the medical profession are interested in the reduction of public expenditure, but we must sympathize with those firms who, having done good service in the past, find themselves deprived of what had become a mainstay of their business. But there is another serious aspect of this matter. The adoption of the recommendations of the committee appears to us likely to produce a state of things in which further possible improvements in details and in types will be discouraged.¹ The two firms who are, it seems, to hold a virtual monopoly will have no inducement to adopt new devices, and will naturally be inclined to continue on the same unchanging lines, seeing from the competition of others each of whom in the past has been eager to push forward any improvement which might secure an increased share of the work. The arrangements now made by the Ministry seem to us likely to put a stop to such improvements. Even if they do not have that effect, and supposing that a very striking improvement in limb-making or fitting is brought out by a firm no longer a contractor to the Ministry, how is such an advance to be made available for the disabled pensioner when the Ministry has definitely struck off the name of the proprietor of the device from its

list of contractors? Such an eventuality is by no means remote, and as the Ministry's experimental workshop has been closed, it is to private initiative and enterprise alone that we must look for future development. The committee whose report is now in question was composed of ten members, of whom six were laymen, of its four medical members one is an amputee who has no special knowledge of limb-fitting, though another has been limb fitting surgeon to a military hospital in the provinces. On the committee and among the witnesses who appeared before it the names of orthopaedic surgeons of repute and experience in prosthetics are conspicuous by their absence, although some such are understood to have been for several years the official advisers of the Ministry.

HEALTH ADMINISTRATION IN IRAQ

The report for the years 1923 and 1924 of the Inspector-General of Health Services in the Iraq Department of Public Health¹ is a document of more than ordinary interest at the present time. It records the difficulties with which the department has had to contend and the manner in which it has emerged successfully out of its troubles. Early in 1923 the efficiency of the public health services was jeopardized by a lack of sympathy on the part of the Government. A policy had been adopted by which the Government undertook the maintenance only of the first-class hospitals in Baghdad, Basra, and Mosul, specialist institutions, and a quarantine service, but left the provision of all other medical facilities throughout the country to local authorities—a policy which the health authorities, supported by the Ministry of the Interior, regarded as bound to result in almost complete disappearance of medical facilities and loss of control over the spread of epidemics. A compromise was eventually made by which the Government undertook the maintenance of the medical institutions in all parts of Iraq by means of contributions from the local municipalities. The municipalities, however, were impoverished, and when Baghdad and Mosul also failed to contribute, the revenue for health services throughout the country fell so low that the scheme had to be abandoned and the upkeep of all medical institutions was accepted as debatable against the Government. The decision to accept this financial responsibility was also greatly influenced by the outbreak of a serious epidemic of cholera, which began at Basra and threatened to spread throughout the country. The measures taken to combat it demonstrated the necessity of complete control of all medical institutions by a central health authority, and the vital importance of widely distributed dispensaries and hospitals. At the end of 1923 the number of hospitals in Iraq, excluding railway and military hospitals, was eighteen, two of the larger being in Baghdad, two in Basra, and one, the second largest in Mosul. In 1924 ten more were sanctioned. Fifteen of the principal health service posts were staffed by British officers, but in addition there are a number of posts occupied by local doctors under an Iraqi director of public health, Dr. Hanna Khayat, an able administrator who had eighteen years' previous service under Turkish rule. The present policy is to form a permanent health service of Iraqi medical officers, but there is much difficulty in finding a sufficient number of suitable candidates, although the quality of those actually in the service is good. Out of a total of 102 doctors practising in Iraq only 42 are of Iraqi nationality, the remainder being Syrians, Turks, Armenians, Greeks and Persians. But, if one may judge by the Inspector-General's report, a very efficient public health

¹ Ministry of Pensions. Report of the Committee of Inquiry on Metal Artificial Limb, with special reference to limitation of type. 1923. H.M. Stationery Office. Price 6d net.

¹ Report of the Inspector-General of Health Services for the Years 1923 and 1924. Government of Iraq. Department of Health Services. Baghdad. Government Press. 1925. (Folio, pp. 67.)

service is now functioning in the country. It is also interesting to note that King Faisal and his Government have promulgated a pharmacy law with a dangerous drug clause and corresponding schedules, full details are printed in the report. Some vital statistics of the three chief towns—Baghdad, Basra, and Mosul—are given, but owing to defective notification and uncertain census of population it would be unwise to rely on them. In other respects there is much useful information on the measures taken to prevent such diseases as cholera, plague, anthrax, schistosomiasis, malaria, and leprosy, all of which are either endemic or liable to become epidemic in Iraq.

INFORMATION BUREAUX CONFERENCE

THE idea of providing an opportunity for intercourse between those engaged in assembling and distributing information in the fields of science, industry, and public affairs has met with great success under the auspices of the Association of Special Libraries and Information Bureaux, to which reference was made in our issue of August 29th (p. 390). Sir Arthur Steel-Maitland, Bt, Minister of Labour, opened a conference at Balliol College, Oxford, which lasted from September 25th to 28th, and was attended by over 200 delegates of organizations ranging from the scientific societies and large libraries to research institutes and smaller associations of experts, in the aggregate probably representing more than half a million intellectual workers. The attendance included M. Otlet, of the Institut International de Bibliographie, Brussels, and other visitors from Germany, Holland, and the United States, and the international aspect of the subject was further emphasized by a valuable address from Professor Gilbert Murray on the work of the Committee of Intellectual Co-operation of the League of Nations. Dr. Chambers Mitchell, F.R.S., spoke on the *World List of Scientific Periodicals*, which has just been published with the help of the British Museum authorities, and which discloses the existence of some 25,000 separate journals, and for the first time gives a picture of the situation. Organization, co-operation, and the initiation of methods of exchange are obviously desirable to keep the community in touch with world sources of information of such gigantic dimensions. The problems of translation and collective abstracting were dealt with in papers by several authorities in the engineering and chemical sciences. An attempt was made to give the conference some insight into the library methods of the daily and technical press, and a series of papers were read by leading representatives of the library service departments of the three main political parties. The information sections of such Government departments as the Board of Education, Ministry of Health and Imperial Institute were described. Sir Horace Pimmett gave an account of the Co-operative Reference Library, which it is hoped to transfer from Dublin to London. Methods of filing and classifying library matter and correspondence were dealt with by several leading librarians. Miss A. L. Lawrence, Intelligence Officer of the British Medical Association, reviewed the medical interests in this field in a paper entitled "The co-ordination of medical information," which described bibliographical work in the United States of America, France and this country. Her statement was followed by some particulars by Dr. O. Kentish Wright about the organization of the intelligence service of the Ministry of Health. In the discussion the conference was asked to use any international co-ordinating influence it might have for securing a better basic comparative value in sociological data which is so necessary for the improvement of medical statistics. In this connexion special comment was made on the absence of provision for registration of stillbirths in this country.

LEFT HANDEDNESS

THE phenomenon of right- and left-handedness is of such general interest that any new light on its cause or significance is very welcome. The latest adventurer in the solution of this riddle is an American, Mr. Beaufort Sims Parson, who has written a book about it.¹ Plato believed that handedness was the result of nursing and early education, and many others have followed him. Sir Thomas Browne declared that handedness is "the result of institution and not of nature." Sir George Murray Humphry of Cambridge expressed the opinion that "there is no anatomical reason for it with which we are acquainted," and many others have accepted this position. Others agreed with Sir John Struthers that the subject "has ceased to attract the notice of physiologists only because it has baffled satisfactory explanation." Cunningham, in his Huxley Memorial Lecture, accepted the hereditary theory, and gave some examples to show that left-handedness is transmitted from parents to children. Professor Jordan of the University of Virginia, after collecting many pedigrees, concluded that the appearance of left-handedness is sporadic, and resembles abnormalities of bodily structure in its running in families, and in general conforming to the Mendelian law of inheritance. The asymmetry of the thoracic viscera gave rise to a theory that unequal weight gave a balance of advantage to the right shoulder and arm. Warlike theories have been propounded, and the necessity for protecting the heart with the left arm. More recent explanations have been sought in unequal blood supplies of the two cerebral hemispheres, or in the manner of origin of the carotid arteries or of the subclavian arteries. The discredit into which these latter theories fell led to the view that the asymmetry of manual function results directly from asymmetry of convolutional development in the two hemispheres, and Le Conte, without attempting to give a detailed explanation, simply expressed the opinion that "People are right-handed because they are left-brained." Humphry hinted at the beginnings of a new theory in referring to the correspondence between hand and eye. Others worked out the idea into a theory of ocular dominance, and to this Mr. Parson appears to lean. He suggests that earliest man, like the highest apes, sighted laterally, with either eye as needed, and, like the simians, was ambidextrous, that the fixed unilateral sighting faculty, accompanied by handedness, developed with the manufacture and intelligent use of weapons, and that in the beginning it was without any marked general bias for either the right or left side. The biological ascendancy of right-eyedness and right-handedness, he thinks, came about subsequently through natural selection as a result of one or more now obscure causes, the more likely being the advantage that would accrue to the warrior who, as he faced his opponent, carried his spear or club in his right hand, and later a shield in his left. He thinks, too, that sun worship probably had much to do with fixing manual dexterity. The theory of unilateral sighting as the cause of handedness is, he says, susceptible of proof by a simple test. The eye that fixes a given object (under conditions that enable the observer to determine which eye is fixing) will give the "eyedness and handedness" of the person under examination. He has devised an instrument for this purpose. But the test can be made without apparatus as follows. Double up one fist with the index finger pointing freely. Lift the fist above the head and imagine it to be a pistol. With both eyes open, fling the pistol forward at arm's length as though to fire instantaneously at some distant object. Now rapidly shut first one eye and then the other, and note which eye is in a line with both forefinger and object simultaneously. If

¹ *Left Handedness: A New Interpretation*. By Beaufort Sims Parson. Foreword by Harvey E. Jordan. A.M. Ph.D. New York: The Macmillan Company, 1924. (Cr. 8vo pp. vii + 185. 8s. 6d. net.)

it be the right eye the subject is right-eyed and right-handed if it be the left the subject is left-eyed and left-handed. But, alas for the theory, there are many persons who are left-eyed—that is, in the majority of the tests the left eye is the fixing eye—yet they are without doubt pure right-handed without a trace of left-handedness in their childhood or in their family records. There can be scarcely an ophthalmic surgeon who has not seen patients who complain that they are bad shots, and in whom there is found left-eyedness. They are right-handed, and can only shoot from the right shoulder, whereas, for no discoverable reason, when both eyes are open in taking aim the left eye makes the choice. These cases are sheer puzzles for which no explanation can be found, certainly none of the conditions suggested by Mr. Pearson meet this flaw in his argument.

RESEARCH DEFENCE SOCIETY

THE Research Defence Society is to be congratulated on the readability of its annual report, which, besides giving the usual information about the finances of the society and the changes in the committee, is enlivened by a few pages of attacks and counter-attacks directed towards the antivaccinists, and is adorned with a number of impressive and well chosen quotations from celebrated scientists, testifying to the advantages to be gained from experiments on animals. The society was formed in 1908, its chief object being to make generally known the value and necessity of experiments on animals and the great saving of human and animal lives already obtained by means of such experiments. It is not therefore, as sometimes is imagined, merely a scientific society: it is a national society of men and women united to promote national health and efficiency, to bring about a better understanding of medical and surgical studies, and to expose the false statements made against them. During the past year the Research Defence Society has been able to provide many lectures and debates, with lantern slides and information about scientific work. The society congratulates itself on its activity which led to the disfigurement of Lord Bimbury and Lord Lymington in the House of Lords on the occasion of the debate on the Dogs Protection Bill on March 31st. The report gives an account of the annual general meeting of the society, at which Dr. R. A. Lister delivered a lecture on "Our defences against small-pox" (reported in our issue of June 13th, p. 1100), which received so much attention in the newspaper press during June and July. The short articles on insulin and diphtheria antitoxin provide formidable arguments with which to meet the antivaccinator.

THE MEDICAL DEFENCE UNION

At the annual general meeting of the Medical Defence Union held at 49, Bedford Square, London, on September 25th, the president, Mr. Walter G. Spencer, F.R.C.S., in moving the adoption of the council's annual report for 1924-25, said that this was one of the most satisfactory and successful reports ever issued. The new members elected showed a striking increase, there had been very few resignations, and the total membership had reached over 12,900. The increase during the past two or three years was quite unprecedented: no doubt this was largely because the teachers in the medical schools now made a point of telling the newly qualified to join one or other of the defence societies. Everyone engaging in active medical practice should at once join a defence society, and should take care to pay the subscription each year as it fell due, if this important point was overlooked the member might find he was out of benefit when he most needed help. The work of the union had greatly increased. A number of complaints in connection with the certification of lunatics

had been successfully dealt with by the solicitors. Practitioners belonging to a defence society need have no hesitation in carrying out their duties with regard to certification. Fewer care must, of course, be exercised in such matters, but there was reason to fear that persons were being under- rather than over-certified at the present time, and this was a serious danger to society. The finances of the Medical Defence Union were very satisfactory, and the investments now stood at over £20,000. Since 1924 members had been provided with unlimited indemnity against damages and costs of the other side. New arrangements had been made by which the union was taking upon itself an increased liability in connection with the indemnity insurance, and it was hoped in this way to effect a large saving with regard to premiums. In conclusion, the president emphasized the urgent desirability of making an x-ray examination in every case of injury to a bone or joint, in this way evidence of the actual condition could be obtained in a form which a non-medical juror could understand. The annual report of the council and the financial statement for the year 1924 were adopted unanimously.

RESIGNATION OF SIR HENRY GRAY

TELEGRAMS dispatched from Montreal on September 29th announce that Sir Henry Gray has found it necessary to resign his position as surgeon in chief of the Royal Victoria Hospital, Montreal, and also as lecturer on clinical surgery in McGill University, to which he was appointed about two years ago. From the brief abstract telegraphed to the *Daily Mail* of the correspondence which has taken place between him and General Sir Arthur Currie, Principal of McGill University, it appears that Sir Henry Gray considers that from an early stage he has not had full play from his hospital colleagues. When in 1923 he accepted the appointments in Montreal he was surgeon to the Aberdeen Royal Infirmary, where he had resumed duty after acting for several years as consulting surgeon with the British army in France, in which capacity he earned a reputation as a surgeon of great independence of judgement and brilliant executive ability. His surgical colleagues in this country will learn with deep regret of his resignation from the offices he held in Montreal.

THE Harveian Oration will be delivered before the Royal College of Physicians of London at 4 p.m. on Monday, October 19th, by Sir Frederick Mott, M.D., F.R.S., on "The progressive developments of Harvey's doctrine of *Omne vivum ex ovo*."

THE David Lloyd Roberts Lecture will be given by Sir Arthur Keith, F.R.S., in the Robert Baines Hall, 1, Wimpole Street, W.1, on Monday, November 16th at 5.30 p.m., the subject selected being "Man's structural defects." It will be remembered that, only a few weeks before his death on February 22nd, Sir Clifford Allbutt had accepted the invitation of the Royal Society of Medicine to deliver the lecture this autumn.

A COURSE of demonstrations of specimens in the museum will be given by Sir Arthur Keith and Mr. C. L. Shattock in the theatre of the Royal College of Surgeons of England, Lincoln's Inn Fields, W.C. On Friday, October 16th, Sir Arthur Keith will demonstrate specimens illustrating the pathological anatomy of acromegaly, and on Monday, October 19th, Mr. Shattock will deal with lips and tongue. The demonstrations, which will be held at 5 p.m., are open to advanced students and medical practitioners. They will be continued on subsequent Mondays and Fridays, and end on Friday, November 6th, when Sir Arthur Keith will show microscopical preparations made from recent cases of intestinal stasis.

Opening of the Winter Session.

THE STUDENT-HABIT

BY

SIR ARTHUR KEITH, M.D., LL.D., D.Sc., F.R.S.,
F.R.C.S.

CONSERVATOR OF THE MUSEUM AND HUNTERIAN PROFESSOR,
ROYAL COLLEGE OF SURGEONS OF ENGLAND

Of all the men it has been my fortune to meet in the flesh Clifford Allbutt, Regius Professor of Physic in the University of Cambridge, came nearest to my ideal of the real student and the perfect gentleman. He died in February of the present year, having reached his 89th year. For seventy of those years he was a professed student, and yet at the end of his term he carried his load of learning with ease and comfort, as if it were a garment which had become part of him. He never suffered so far as one can learn from that fell disease which so often wrecks the lives of budding students, mental dyspepsia. For his brain managed its affairs as a good woman runs her household: every article admitted to his mind had first to be sampled when admitted the right place was found for it; every article admitted had to add to the efficiency and comfort of his mental household; every room had to be furnished and used. And yet at the end of a lifetime of toil—a toil which had been his constant pleasure—he still continued to make additions and alterations to his mental furniture. His mental household hit that of a thoughtful, happy, generous housewife prospered in that which it gave away. The giving away kept the rooms of his mind sweet and living.

The True Student

I have cited the example of Clifford Allbutt in order that I may make clear what I mean by the student habit. He could sit down by the hour and apply himself with a sense of pleasure to the gleaming of knowledge from the written or printed page, drinking in and assimilating facts observed or explanations given by men who had toiled in years long gone by. He applied himself with equal ease to the writings of his contemporaries, men who were still toiling in their laboratories or in their wards. Men and women who can acquire themselves thus have acquired the student habit. Of all the struggles men undertake that which ends in making the brain the willing slave of study is the most arduous. Of all mental habits it is the one most difficult to come by, and the one which is most easily lost.

Many men who are masters of research, who force secrets from Nature by experiment, who prefer to glean their knowledge at first hand (and are, I admit the rarest and highest form of scholars) often despise the habit I wish to extol—the student habit. There have been, and there are, successful medical men who turn aside from books, who leave their medical papers unopened in their wraps, who prefer to be guided in thought and action by what their fingers have felt and their eyes seen. If by neglecting the student habit they gain something they also lose much, and it would go ill with their harvest of knowledge if their successors treated them in the same selfish way as they have treated their predecessors.

I do not claim for my ideal student, Clifford Allbutt that he was a pioneer who opened up great new fields of knowledge but he attains to my ideal because he checked what he saw and what he suspected against the observations and the theories of the great minds which have paved the highways of medicine. Nature had endowed him richly, but he could never have done what he did nor been what he was unless he had acquired the student habit. I speak as an old student of ordinary ability to young students born into the same happy estate and I say that the acquisition of the student habit is one of the most valuable assets that a man or woman can carry into any line of life.

At what age Clifford Allbutt acquired the student habit I do not know but if it came to him by the age of 20 it had come in due time for with the best of students, the twentieth year is in sight before the real purposes of life dawn on their minds. Nor do I know of the struggles he went through before

the habit of study became his second nature—such biographical details are usually overlooked—but I am certain that, even in his case, there had been a struggle for for all human habits that of the student is the most unnatural and the most forced. It is a hot house plant, which can thrive only when enclosed in the glass houses of the highest civilizations.

The peoples of Western Europe produce the highest form of students the world now has, and yet the student habit is for them a recent importation. It was otherwise in the East. 6,000 years ago perhaps 8,000 years ago, young men in Babylon and Egypt were acquiring the habit, it began as soon as the human mind conceived that knowledge could be inscribed on stone or brick. If there is aught of truth in the inheritance of acquired faculties it is from the peoples of the East we should get our finest scholars, they come of long lines of descent in which study has been endemic for countless generations. It is true that amongst the peoples of the East, from Egypt to China, we do often find those who have a marvellous facility to memorize the written or printed page and yet amongst them the Clifford Allbutt type of scholar is rare, almost unknown—the scholar who assimilates what he read and makes his learning a part of his manhood.

Rural Claim

Learning thrives in Western Europe just because it has fallen on a strong and virgin soil one which has not been wasted by the exhausting crops of a long continued literate civilization. We have still in us the vitality and the energy inherent in men and women bred for life in the open air. It is because you and I have the aptitudes and instincts of our primitive forefathers so strong within us that we find it needs an effort—an internal struggle—to settle ourselves to our books of an evening. Our difficulties are even greater when the sun shines, and a longing for the open country stirs our blood. It is then that we have to struggle with the original Adam which is present to a greater or lesser degree in the hearts of all of us. English teachers beyond those of any other country, have recognized the needs of those primitive faculties which well up in the breasts of scholars, young and old, we encourage play and sports of all kinds in our schools and universities in order that the inheritance which has come down to us from savage ancestors may find vent in exercise. Golf is one means of allaying the beast within. It is so difficult for the modern student to weld the needs of our present day life to his inborn predilections. To dance, to sing or play to feast to gossip, are the outlets of the natural man ever since our distant ancestors emerged from the jungle these instinctive outlets for enjoyment have been clung to and cultivated they have come down to us in an undiminished vigour. Before the student habit can be acquired they have to be—not vanquished or eliminated—but disciplined. That is why it is so difficult to become a real student.

You will not be a student for many years before the most natural of all human appetites begins to give you concern. Among the prerogatives of life we count the enjoyment of food, we expect to eat with relish and to enjoy the results of repletion. We are not quite certain what our brain cells live on but we do know that they need very little to do the heaviest work we throw on them: the energy in an ounce of sugar would be enough. I suspect, to produce any of Shakespeare's plays if it found its way to a brain gifted as his was. Every one of us has been given the appetite not of the brain worker, but of the muscle user. The professional student in his earlier years expects to satisfy his appetite just as fully as if he were using his muscles all day in the open air and sooner or later his stomach has to pay the price of his acquired habit of study. Carlyle Darwin Huxley and Hebert Spencer suffered from this student's disease: it is true all were moderate eaters, and yet their stomachs were in a state of continual up-*start* and rebellion, nevertheless they all lived to a ripe age. Modern physiology has given the stomach a secondary place in the hierarchy of bodily organs. And yet somehow as students know to their cost sooner or later brain and stomach react furiously upon each other. It is true that we do come across eminent students who have the physique, complexion and appetite of women. They are exceptions and should count themselves fortunate.

Most of us who take to habitual study have to pay the price, and the more we give our stomachs to do the higher is the price we have to pay. To become a real student you have to be prepared to make sacrifices. For your encouragement I would say this, that I know of no student who would exchange a regulated brain for the healthy appetite of the mental sluggard.

The Potential Student

Many of us, perhaps most of us, have grown up under the belief that it is a natural thing for young men and women to give themselves to study. It is only when we approach the problem of the acquisition of the student habit from the long-range historical point of view that we see how foreign the habit is to our nature and how recently the need for it has arisen. Some can claim that their family has produced scholars, learned men and women, for many generations such are the exception rather than the rule. The majority of eminent scholars have no scholarly lineage. They come from Highland glens, Welsh hill-sides, English county villages the first of their kind, so far as they can tell, who ever devoted their lives to the cure of learning. There must be, throughout the length and breadth of our land, immense and virgin fields of untapped scholarly talent. I am not speaking now of those rarely gifted minds which can imagine things new and true, which know the way to make Nature yield up her deepest secrets or discover how to harness new forms of energy for man's benefit, but of the rank and file which make up the learned army of a country. To join that army every recruit must learn the student step—the habit of study. It may at first sight seem surprising that there should be such an abundance of potential students in a population of manual labourers. But when one looks into the quality needed above all others to make a man a master student it is no longer surprising, for we see that the essential qualification is a power of steady application in any line of endeavour whatsoever. The potential student must have method and foresight as well. Now all of these qualities—steadfastness, orderliness, and prudence—are just the qualities which our best women apply to the management of their homes. The son who would wag his head in a professorial chair wins his way there by applying to learning the same qualities that his mother brought to bear on her domestic affairs.

The Brain's Margin of Safety

When the modern student compares his outfit of brain with that which was given to his ancestor in remote times he meets with another surprise. The men who lived in Europe 20,000 years ago were just as well equipped as he is as far as concerns size and form of brain. What did those ancient hunters do with so big a brain? They had no professional examinations to pass, no briefs to master, no leaders to write, no mathematical problems to solve no ancient classic to translate, no sermons to prepare and preach. If brains were given to us merely for such purposes then those ancient hunters had somehow come by a superfluity. Brains, however, serve the needs of much more than the intellectual side of our lives, beneath the intellectual centres lie a myriad of others which subserve more menial duties—which by their exercise fill the cup of life's enjoyment. But even this explanation is but partial, the full explanation lies much deeper, and has to be sought in a strange law which regulates the construction of all living structures. All such structures have been framed on the rule which provides a large margin or factor of safety. All our organs have been built to meet not the daily routine of life, but emergencies which occur only at critical junctures. The heart, on an occasion, can rise to ten times its usual output, the lungs, if pressed, can nearly do as well. As for the stomach, the less said the better, modern civilization tends to throw an unfair burden on it. But as for the brain, the factor of safety law holds good. We have, and our ancestors had, about ten times more than ordinary occasions require, our superfluity was given us for emergency. It is just this emergency ration that the modern scholar has to depend on, and there are few if any of us who use this extra allowance to its full capacity. You may study to the utmost limit of your endurance, and by the mere act of study you may rest assured that you will do your brain no injury. Infinitely greater harm is done by misuse and disuse of the brain than by overuse.

The brains I am speaking of are not those of children—to push education upon an immature brain is cruelty. I am

speaking of the mature brain, the state reached by most of us about the nineteenth year. It is then that the brain cells have come to their complete outfit and connexions. By habitual study you may overtax your physical endurance, you may damage your bodies if you neglect to exercise them, but you will never succeed in using your brain up to its full capacity.

Warming Up and Rusting

I have said nothing about how the student habit is to be attained. There is nothing to be said, no one can teach it, there is no royal and no easy road. Each one has to come by it for himself or herself by self effort and by self application. Nor have I said anything about a matter which every student soon discovers. Our brains have moods and tempers, like horses or the engines of motor cars, they have to 'warm up' before they will run smoothly and easily. The start is always the most difficult phase to manage. And often we are uncertain, when our brains start sluggishly, whether pressure will warm them up to study pitch or whether it is wiser to lay science or stiff reading aside and take to fiction. The healing power of a debauch of fiction is often marvellous in its results. The best brains are not like cut horses which will do a turn at any hour, like racehorses, they have their times off and their times on. Therefore each student is a law unto himself.

If I have been speaking to you who have still examinations to face, I have also in mind those who have left such ordeals behind them. Sooner or later they will discover that the student habit, which is gained only by great and continuous effort, is soon and easily lost if not exercised. And they will also discover, as I found to my cost, that it is terribly difficult to get it back again. The medical man or woman who has lost the student habit has become a camp follower in the great professional army to which we should all belong if medicine is to prosper.

THE CURES OF AESCULAPIUS

ADDRESS BY PROFESSOR GARDNER AT WESTMINSTER HOSPITAL

THE introductory address at the Westminster Hospital Medical School was delivered on October 1st by Professor Ernest A. Gardner, Litt D, Vice-Chancellor of the University of London.

Professor Gardner said that the cures effected by Aesculapius, or Asclepius, as he was called by the Greeks, offered common ground for study to students of medicine and archaeology. The precincts of Asclepius on various Greek sites were admirably situated, and were suitable as sanatoriums. And it had been much discussed how far medicine and surgery were practised by his priests, at Cos, Hippocrates himself was among them. But especial interest attached to the precincts of the god at Athens and at Epidaurus, because information existed as to how they were used. Both alike had, in addition to temples and altars, porticoes especially intended for the reception of invalids, in these it was customary for them to sleep, and they were usually recorded to have gone away whole in the morning. For Athens, they had in the *Plutus* of Aristophanes a bucolic description of such a visit. The patient, who in this case was blind, slept in the portico. The god was described as going the round of the patients, when he came to the blind *Plutus*, he wiped his eyes with a napkin, and his attendant put a purple cloth over the patient's head. The god then summoned two snakes which crept under the cloth and licked the patient's eyes. Then the god and snakes disappeared into the temple, and *Plutus* recovered his sight.

The list of cures at Epidaurus, which were recorded on two great slabs of marble, were evidently a compilation, made chiefly from inscriptions on the dedications made by grateful patients, but edited and improved by the priests. There was some confusion in them between what actually took place and the dreams that came to the patients when they slept in the portico. Usually the god himself, or a sacred snake or dog, applied a healing touch as medicine, or sometimes there seemed to be surgical operations. In almost every case the invalid was said to have gone forth whole in the morning but naturally no

record was kept of the many who were not cured. Suggestion or hypnotism might well have been used in some cases, and much may be due to faith-healing.

Other gods or heroes, such as Asclepius and Iphigenia, were consulted in dream-oracles, when no doubt the dreams were interpreted by priests. Similar rites of incubation survive to the present day in Greece, notably at Ikenos, where a large number of people suffering from all sorts of diseases, blind, or lame, sleep on the eve of the festival of the Annunciation in the great church and the crypt beneath it, and usually two or three cures are announced. Thus the reputation of the shrine for healing was maintained, and the same thing probably happened at Epidaurus and at other shrines of healing gods.

THE HUMAN TOUCH IN PRACTICE

ADDRESS BY "IAN HAY" AT GUY'S HOSPITAL MEDICAL SCHOOL

THE opening address of the winter session at Guy's Hospital Medical School was delivered on September 29th by Major Ian Hay Beith, CBE, MC (better known as "Ian Hay," novelist and playwright), whose subject was "The human touch in professional life."

Major Beith began by remarking that his only qualification for addressing a medical audience was that long ago at Cambridge, he took a course in chemistry and physics. But in those undergraduate days his circle of acquaintances was largely among those who kept a skull on the mantelpiece. Just as the saxophone was distinguished above all the instruments in the jazz band, so medical shop overtopped the talk. If one of the medical friends performed the feat of passing his bones the occasion was celebrated by everybody, theological students and all. He would never forget the enthusiasm on one first evening of term when a second year man burst into the room where he was entertaining a few friends, shook Cameron by the hand—H. C. Cameron, now of Guy's—and said: "Congratulations, old man! You have got a head and neck."

By the human touch the lecturer said he meant character and personality as compared with technical knowledge and ability. Of course, the one must not be regarded as a substitute for the other. In the medical profession above all others force of character could never compensate for ignorance of one's job. There was a tendency to day to exploit the personality stunt to the neglect and detriment of real training and thorough knowledge. The art of advertisement, which had been elevated to a high and solemn mystery, emphasized personal magnetism and points of manner and bearing rather than intrinsic merit or technical quality. Yet it must be said that in the cultivation of the healing art the human touch was of incalculable importance. As much healing was wrought by suggestion as by drugs. Many a patient got well just because he believed his doctor, though one need not go so far as the man in Samuel Butler's story who chewed the prescription under the impression that it was the medicine, and was immediately healed of his malady.

Patients were divisible into three categories. First of all there were the patients who were really ill, one need not dilate upon these because they gave little or no trouble. Then there were the patients who had something the matter with them but did not believe in doctors and said so with the bluff honesty which had made the name of Englishman respected throughout the world. These people must be humoured. My dear fellow, I agree with you. You are quite right. Physics is nine parts faith and one part colouring matter. You know, of course as well as I do that you are suffering from —, here I could follow the name of an illness, preferably two longish words perhaps with a false concord then a vague scientific description and to finish a chemical formula, which need not be correct. After that this patient would get out of his doctor's hand. A man would enjoy tennis elbow if he was able, in his club to speak of my synovitis. The third class of patients consisted of those who had nothing the matter with them but thought they were going to die. These patients needed cheering up and all the technical knowledge in the world would not avail so much as a cheerful presence and a confident manner. Humanity felt for one thing above all others—the unknown. What frightened a patient most of all

was to have nothing definitely wrong with him. Once a cause had been assigned, once he was labelled in plain figures on a card, once he had something physical to hold on to, all was well. The future practitioners in that audience would be well advised to be explicit on these points, and to tell the patient something which would keep his imagination from soaring into the region of unhealthy speculation. It was a good thing to employ some mechanical analogy, to say that the accumulators wanted recharging, or the dynamo tuning up, or to say that the patient had a Rolls Royce body—it must be no cheaper make than a Rolls Royce—but there was water in the carburettor. That would cheer him up much more than the information that his malady was functional and not organic.

The medical profession was, with the possible exception of the teaching profession, the most responsible in the world. For that reason especially one might be proud and thankful to have sprung from the British race, for the men of that race possessed initiative, the habit of acting efficiently and conscientiously without supervision from higher up. The British nations were largely run by men of other ranks, as they said in the army—men who did their jobs faithfully, each in his place, and to a large extent unsupervised. The members of the medical profession were foremost among such, and bore as heavy a burden as any in the Empire. The career which the students before him had chosen might lead them to Harley Street or to the head of a great hospital, it might set them in a laboratory, tracking down a single germ, or dispatch them off to the tropics, or it might plant them down as general practitioners in a manufacturing town, where they would work eighteen hours out of the twenty-four with a large, troublesome, and for the most part unremunerative family of patients running to them for every hurt.

The medical profession is one of the few essential trades on earth. It goes right down to the roots of human existence. It is the standing army and navy of humanity. The life of the doctor is one long campaign against ignorance, cruelty, dirt, and disease. You bring us into the world. You attend us through our voyage. At any moment we may call upon you to dry dock us, or, more difficult still, to execute repairs while under steam. And when the time comes for us to pass beyond the horizon we call upon you again to assuage our suffering. To your hands we commit the innocence of our children and the honour of our womanhood, and it is the special glory of your profession that these commitments are made as a matter of course, because we know that they will never be abused. It is indeed a great tradition and heritage to which you are about to succeed.

The speaker concluded by reminding his audience of the great reputation of Guy's men, in particular for term work and *e pur de corps*.

THE annual past and present students' dinner of St Mary's Hospital Medical School will be held at the Connaught Rooms, Great Queen Street, W.C., on Monday next, October 5th, at 7.30 p.m., with Mr. Leslie Paton, F.R.C.S., in the chair.

THE prize distribution at Charing Cross Hospital Medical School will take place in the Outpatients Hall on Monday, October 5th, at 3.30 p.m., by Sir Herbert Waterhouse. The annual dinner of the past and present students will be held the same evening at 7.30, at Gatti's Restaurant, King William Street, Strand, W.C.2.

THE St. Thomas's Hospital old students' dinner will be held at the Hotel Victoria, King Edward VII Rooms, Northumberland Avenue, W.C., on Friday, October 30th, at 7.30 p.m. The chair will be taken by Mr. Samuel Osborn, F.R.C.S. The Right Hon. the Lord Mayor and Sheriffs will be among the guests. The price of the dinner inclusive of stewards' fee, is 15s., to be paid at the Hotel Victoria. Evening dress and decorations will be worn.

THE winter session of the James Mackenzie Institute for Clinical Research, St. Andrews, will be opened by the Honorary Director on Tuesday, October 6th, at 4 p.m. It is hoped that the following speakers will open the discussions on the dates indicated: Professor Lorrain Smith (October 13th), Professor Adam Patrick (October 20th), Mr. Harvey Cushing of U.S.A. (October 23rd) and Sir Leslie Mackenzie (October 27th). All practitioners are cordially invited.

GENERAL MEDICAL PRACTICE IN ENGLAND AND GERMANY

SOME PERSONAL IMPRESSIONS

[FROM A CORRESPONDENT]

ALTHOUGH, before the war, the Black Forest was as familiar to English tourists as any pleasure ground of Europe, the country east of the Schwarzwald and west of the show places of Bavaria had been less visited. Ickburg, in the Blackgau, calls up pleasant experiences to thousands, of whom not ten had penetrated some hundred kilometres to the east, to the little town of Sigmaringen, a name which, for a few days, fifty-five years ago, was in every newspaper. Situated on the upper Danube, near its most beautiful reaches, Sigmaringen had claims on the attention of the holiday maker which Germans themselves sufficiently honoured. Foreigners, however, were few—even if they included very excited visitors, for the princes of Hohenzollern-Sigmaringen, although no longer reigning princes, kept up a regal state in the Schloss.

The town, therefore, had none of the air of a tourist resort, neither was the conventional adjective "unspoiled" appropriate. It is true that the Schloss, some 700 ft above the river, and the Marktplatz, with its cluster of steep-gabled seventeenth century houses, recall a dozen "unspoiled" towns in the kindly land of Swabia. But what really characterized Sigmaringen was not architecture of the seventeenth century, but the long main street of great buildings all less than a hundred years old, and nearly all government offices. For Sigmaringen was the administrative headquarters of the province of Hohenzollern, which is rather larger than our county of Huntingdonshire, and, being in Germany, needed many more civil servants and local officials than Huntingdonshire employs even now.

Perhaps the government buildings in Sigmaringen were not really so large as the public offices in Whitehall, but in this quiet town, they seemed more imposing, with their handsome portals and trident-looking eagles (Hohenzollern is administratively part of Prussia). "Königlich Preuss Oberamt I," in large capitals, is more inspiring to the foreigner, than, say, "Home Office" in small letters.

It was a town of civil servants, wherein the conditions of social life were perhaps more similar to those of an official centre in British India than to what we find in a small English provincial town. Official rank (in the civil service, there were no soldiers) counted for much more, and wealth for much less, than in an English country town.

Such were my recollections of the town in 1912, when I was last there, returning last month, I wondered what changes the war had made in this quiet place.

Outwardly, there was little change. The public parks were not quite so tidy, the buildings were not quite so sprick and span, the impression of order was not quite so impressive. "Preuss Oberamt I," with a faint discoloration to the left (where the "Königlich" had been obliterated) seemed lop-sided. But it was still an official town. Indeed, there were more officials than ever, for a huge military training college, which had just been finished in 1912, contained no soldiers, but had been converted into a training office, with a new and large staff of civil servants. England is not the only country that has increased its civil establishment since the deluge.

Quidquid delirant reges plectuntur Achivi.

For reges read ex-Kaiser Wilhelm and his like in other lands for Achivi read the professional middle classes in every land and one has a universal after-war truth. I was interested to learn how our subdivision of the Achivi the medical profession, had fared. The friendship of two practitioners in the town enabled me to form impressions (of course, mere impressions, I have had neither leisure nor much inclination to modify them by study of documents) which may interest other medical men. Before describing these however, one must notice some general characteristics which affect the middle classes as a whole in the two countries.

In the first place, the levels of retail prices. From the merely arithmetical point of view, it is much easier to compare the price levels of the two countries now because, since the stabilization of the exchange, the rentenmark is practically equivalent to the English shilling. At present the retail purchasing value of the rentenmark is almost the same as that of the shilling. The German retail price index number is indeed slightly less than our own index number (which on July 1st was 73 per cent above the pre-war norm), but as the index numbers are not constructed in precisely the same way, accurate comparison is impossible. Food and tobacco are cheaper, good clothes much dearer, rent rather dearer than in England. We shall not be very far wrong in saying that in both England and Germany £100 now buys little if any more than £60 would buy in 1914.

So far, it is a case of "all square." But the depreciation of savings has affected the professional classes very differently. Take first our own position. The savings of a moderately prosperous, reasonably cautious, English doctor would, I think—of course, I am judging from the narrow experience of my own English circle—take the form of (1) a life assurance policy, (2) investments in solid securities either gilt-edged or just below gilt-edged, which before the war did not yield above 4 per cent on the investment. I think such a man acted on the assumption that an effective yield of more than 4 per cent and safety were incompatible. In 1925 the rate of interest of securities of this class is about 5 per cent. For instance, in the *Times* the 5 per cent War Loan is quoted at 101½ and the highest and lowest prices in 1924 were 101½ and 98½. Great Western 4 per cent debentures are 81½, 5 per cent debentures 98. It follows that anyone who invested £100 in a fixed interest bearing stock returning him 4 per cent on his capital in 1912 will be able to sell it for only 80 per cent of what he paid. With this amount he will only be able to buy commodities which could have been had for £48 in 1912. The same argument, of course, applies to the capital value of an assurance.

English savings in the professional class—the safe investments—have therefore depreciated to the extent of one-half. If, as happened to many doctors the investor was obliged to realize three or four years ago in order to purchase the house in which he lived and practised, the loss was a good deal more. It is certainly not putting the loss too high to call it 50 per cent. This fact was new to my German colleagues, who still entertained the traditional belief that all Englishmen are very rich. But they have this excuse, that the savings of the German professional classes have depreciated much more than 50 per cent. It is not technically correct to say that all investments in first-class German securities (Government loans etc.) are worthless. The State may resume the payment of interest and may refund as much as a third of the capital many years hence. But I did not gather that anybody expected to receive a rentenpfennig after any number of years, and nobody can receive anything now. The position of policy holders is illustrated by this example. A civil servant in the town held for many years a life policy for 20,000 pre-war marks. He died after the introduction of the rentenmark, and his widow received from the company 20 rentenmarks. An English doctor who insured his life for £1,000 in 1912 will, if he dies to-morrow, leave his widow about as well off as if he had insured for £450 to £500 and there had been no war. His German colleague's widow will get £1.

To measure the importance of this in comparing profession with profession in a statistical way naturally requires a knowledge of the average ratios of savings to gross income in the two countries. But, putting the case at its lowest, supposing that in neither country has it been within the capacity of the medical profession to save much the moral effect of the position is very great. In the middle class, doctors included, the bitterness of feeling engendered can only be realized if one mixes on friendly terms with our social and professional "opposite numbers."

Passing to the conditions of general practice one notes that in Germany, as in England, the system of National Health Insurance is the dominating factor. The regulations in force in the two countries are far better known to many English doctors than to me, whose knowledge,

indeed, of English conditions is not based on recent personal experience. I confine myself to the impressions gained in one town, which is, as I have pointed out, of a special type.

While in England the method of payment by capitation grant is the usual plan and payment for work done the exception, the position in Germany is reversed, and the profession much prefers the method of payment for work done. In an area not far from Sigmaringen the capitation system—the rate being 5s per head per annum—is in force, but I did not obtain any details of its administration. In Sigmaringen itself the method of payment is 1s for each consultation in the practitioner's house, 2s for each visit within a minimum distance, and a kilometre allowance for distances in excess of the minimum.

The system works in this way. Any qualified practitioner entering a district can apply to have his name entered on the panel of insurance doctors (*Kassenärzte*) and, although powers exist to close the list if the supply of practitioners be deemed adequate, the application is normally granted after a residence of six months. Insured persons have complete freedom of choice. Thus, suppose in a district there are four *Kassenärzte*—Drs A, B, C, and D. Hans Schmidt is an insured person, and decides to consult Dr A, who sees him three times in his consulting room and twice in his home. Dr A will be paid 7s—1s for each consultation and 2s for each visit. If Hans does not like Dr A's manner or the medicine he prescribes he can, when he is ill again, consult Dr B, Dr C, or Dr D without any formality. He can, indeed, go from Dr A to Dr B in the same illness, but, in that case, some person must be assigned. How this proviso actually works can be illustrated by an extract from a little volume of sketches of medical life by Dr Max Nassauer.¹

Dr Fellner has been treating me for three weeks. began a shabbily dressed middle-aged woman in Dr Fuchs's surgery house. Her voice had that touch of arrogance which distinguishes the voices of people who think they are important. He doesn't understand my case, she went on, he comes and sees me every day but I am not getting any better. Now you have been recommended to me. I am the housekeeper at the Palais Ohrenberg so of course I am in the insurance. "Yes, Mrs. —."

"So I have come to you," she interrupted. "We have paid insurance money for years. So you will be paid!" Quite so, madam. Dr Fellner who has visited you every day for weeks. He too madam receives a few marks from the Insurance Committee perhaps to pay the train fares to your house. How ever if you have no confidence in him I will treat you. But you must first tell him that you have come to me before I treat you.

The housekeeper sends for Dr Fuchs late in the evening. She is half an hour from his surgery and Dr Fuchs would like to have supper but he must postpone this for a doctor's dinner matter. His wife and child have supper by themselves. There is nothing really wrong with the housekeeper. But after all the Insurance Committee pays the doctor and it is much pleasanter to have supper comfortably with one's husband and then send for the doctor.

The husband begins. We have telephoned to Dr Fellner that he needn't come any more. Let us hope he shrugged his shoulders.

The pecuniary side of the work, how it compares with English experience, can be judged better by my readers than myself, I can only add the following items which are relevant.

Competition is at least as keen as in England. In Sigmaringen, without counting the *Geheimer Medizinalrat*, an official not seriously engaged in private practice, or the director of the hospital, there are seven medical men. The average for the first ten English country towns of approximately the same size in the current *Medical Directory* is six.

Strange as it may seem at first sight, the proportion, always high of men who pass through the universities has greatly increased since the war. The universities are overcrowded although the severity of the academic tests has been increased in all faculties and the proportion of "ploughs" is high. Many explanations have been given. One is that with the abolition of the military caste the social prestige enjoyed by a *Gebildeter*—always much greater in Germany than in England—has no longer a military rival. A more probable reason, as I think, is the unconscious faith of Germans that in education, and education alone can the nation find salvation. However this may be,

there is little doubt that the supply of doctors of all faculties is at the least equal to the demand.

Average incomes are misleading, like most averages, unless one knows how they are compiled, so I do not quote them. But it is instructive to know what sort of an income is regarded as enormous. One of my friends remarked that he had heard of cases where one or two men—"insurance lions" he called them (*Kassenlöwen*)—had actually reached a gross income of £750 to £1,000.

Lastly, my friends had no doubt that, whatever its drawbacks, the insurance practice was the principal means of subsistence. When one remembers the general situation of the middle classes it is indeed fairly obvious that medical practice in the social class above the insurable limit cannot be remunerative.² As I have said, the significance of all this will be more correctly estimated by experienced practitioners than by me. This at least was obvious enough, that the doctors in Germany whom I knew had an appreciably smaller share of the physical comforts of life than those of my English friends whom I judged to occupy an equivalent position socially and professionally.

There were some other differences between German and English professional conditions which interested me. I have heard it said that one of the results of our English system has been to strengthen vested interests and to make it more difficult than it was a generation ago for a young medical man without capital to start in independent practice—in other words, that here the advantage is more with the older men and established firms than it used to be. I do not, of course, know whether this is true, but if it is the position is quite different in Germany. The older men complain that they cannot live owing to the competition of the young. Two reasons seem of importance: (1) the absolute freedom of choice of doctor, so that the patient can pass from one to another doctor without any formality whatever; (2) the fact that medical partnerships are unknown. The position of a doctor getting on in years with no son in the profession, and his savings rendered worthless, is a gloomy one indeed.

In Nassauer's book, from which I have quoted already, there are bitter complaints of the demoralizing effect of the insurance system from the professional point of view. I will quote one more passage, from a sketch entitled "The Serf."

It was striking 11 as Dr Metzler came back. Just as I told you he said brushing the snow from his beard. And when I told them the man was merely drunk they simply eased me and wouldn't believe a word. The wife shouted after me that she would bring the insurance book round in the morning for me to certify her husband for sickness benefit for he was quite unfit to work. Sickness benefit indeed! How these insurance laws have demoralized the people! Tomorrow he will come along and whine that he has pains all over and can't work and beg me to give him a certificate. If I find nothing and refuse to sign him up he will swear at me probably there will be an article in the paper about my hardness of heart and inhumanity and the man will go round until he does find a doctor who will do what he wants. And many of his friends and fellow workmen will not come to me again because I am too straight. If I do sign him up because perhaps after all there is a grain of truth in his complaints and the insurance committee has him examined and find nothing wrong then I shall have my nose bitten off.

These complaints and complaints of lay treatment, of end less boot keeping—"if our legislators only knew how they have degraded the scientific level of medical work, forcing us to this mass production, perhaps there would be a change"—have been heard in England. It seemed to me that my medical friends emphasized more the tyranny of the local committees and less the interference of officials of the central Government than English critics do. But at least all the grievances felt in England are well known in Germany.

One other point struck me—the intense bitterness with which my friends inveighed against the evils of quackery, the tremendous competition of the charlatan and patent medicine vendor. Nassauer's book is full of this, and it is a little surprising to the Englishman who thinks of Germany as the land of *verboten* to realize that illegitimate practice there is as formidable an enemy as in England.

Such are the scattered impressions of medical life in Germany which I gathered. They can only be gratifying to

¹ *Die Diktorskule* (München 1925 Gmeln). This humorous and pathetic book which my German friends assure me is true to life deserves to be translated.

² This would no doubt be especially felt in a population of civil servants with a number of pensioned officials.

more robust hters than I am. I suppose most Englishmen who can speak French and German fairly well would agree that, in spite of all that has happened since 1914 one is much less reutely conscious of being a *foreigner* in a German middle-class environment than in a French one. Indeed, this sense of homeliness is rather stronger than before 1914, because officers in uniform can no longer be seen in Germany. My impressions may perhaps give food for thought to those who denounce the condition of our own country.

Correspondence.

TUBERCLE-FREE MILK

SIR,—A case recently under my charge presents some points of interest from a public health point of view, and suggests some questions.

On September 3rd I was asked to see an only child, a boy, aged 2 years and 2 months sent by Dr G F Campbell Bangor. His mother gave the following history. He had been breast fed for six months and all the milk he had since received prior to June 1st had been tubercle free from cows tested by tuberculin. On June 1st he went on a holiday with his parents to a place where ordinary milk only was available for his use. On July 20th he was taken suddenly ill. He complained of pain in the right side of his neck, which was very considerably swollen. The swelling was tender but not red and the temperature was then 103° F. and for ten days ranged from 100° and 103°. He had no sore throat though there was a very slight enlargement of the right tonsil as compared with the left. When I saw him on September 3rd his general condition was normal with the exception of considerable enlargement of the upper deep cervical group of lymph glands.

On September 13th I removed the affected glands which had in the meantime become softer though the skin was not red and there was no fluctuation. The operation was much more difficult than usual owing to the amount of periaadenitis the knife and not blunt dissection being necessary throughout. The glands were subsequently sent for examination to the Pathological Laboratory, Queen's University and Dr Ori has reported to me that he has found with considerable ease tubercle bacilli present in the glands.

The points in this case are (1) The child had been fed until June 1st on tubercle-free milk. (2) Seven weeks later there was a considerable enlargement of the lymphatic glands of one side of the neck. (3) These were found on re-examination to contain tubercle bacilli.

Such are the facts, and the questions suggested by them are (1) Can one assume that infection occurred from milk during the seven weeks in which the child was taking ordinary milk? (2) Has this infection anything to do with the fact that he had previously been reared on tubercle-free milk?

Definite answers to these questions cannot I think, be given, but it would be interesting to know from your readers whether similar cases are occurring, the supply of tubercle-free milk being now advocated by the medical profession. It would be important to know whether in present circumstances this affords a real safety or whether it continues as well a lurking danger for the child who has hitherto acquired no immunity to tuberculosis. The acute symptoms, the periaadenitis and the finding of tubercle bacilli with ease in the glands would seem to indicate that such a danger requires recognition.—I am, etc.,

Belfast Sept 2nd

S T IRWIN

SYPHILITIC NEPHRITIS

SIR—In his interesting paper on syphilitic nephritis in your issue of September 26th (p 551), Dr G B Dowling states that he has only been able to find two cases described in the literature which responded to treatment in the same way as that recorded by him. I recall two similar cases at Guy's Hospital the first being under the care of Dr Newton Pitt, when I was his house-physician in 1905, and the second under my care in 1912.

The former was a woman who had been in the hospital for about twelve weeks in a waterlogged condition with a very large quantity of albumin in her urine. Her condition was getting slowly worse, and it seemed unlikely that she could survive much longer when she developed a rash on her face, which Sir Cooper Perry diagnosed as syphilitic. This was before the days of the Wassermann reaction, but she was at once given potassium iodide. Within a week the

oedema and ascites had disappeared and the urine was free from albumin. Shortly afterwards she was discharged from hospital apparently cured.

The second case was clinically almost identical. After being ill with severe oedema and abundant albuminuria for about three months, she complained of vulval soreness, which Mr Bellingham Smith found was due to the presence of condylomata. The Wassermann reaction was positive, and she was given a mercury and iodide mixture, with the result that in four days the oedema was gone and the urine was normal.

Cases of this kind must be very rare, because, having observed the extraordinary recovery of these two cases, I have the Wassermann reaction tested in every case of nephritis I see, and only on one other occasion has it proved to be positive. This was in a man of 51, who had contracted syphilis when 20 years old, but had never received any treatment for it. Fifteen years later he developed severe nephritis with abundant albuminuria and severe oedema. He was given a very bad prognosis, but survived for twenty years, living a useful and very active life in spite of having oedema of his legs, scrotum, and face in varying intensity the whole time. When I first saw him in 1921, four years before his death, he had 30 parts of albumin per 1,000 in his urine, with a few hyaline and granular casts, the blood urea was 0.16 per cent—well below the normal maximum—but the urea concentration test showed some renal insufficiency. The systolic blood pressure was only 130 mm, and there was no cardiac hypertrophy. The condition was complicated by the presence of pneumonia, due, apparently, to infection of his bladder with Welch's bacillus. Some improvement followed vigorous antisyphilitic treatment, and he remained active till a very short time before his death, though in 1923 albuminuria reinitis developed, and this finally made him almost blind. His history shows that even in the absence of treatment syphilitic nephritis has an exceptionally good prognosis, as it must be very rare for a case of chronic nephritis with severe oedema and abundant albuminuria to live an active life for twenty years without any rise of blood pressure or cardiac hypertrophy, and without developing reinitis until two years before the end.—I am, etc.,

ARTHUR F HURST

New Lodge Clinic, Windsor Forest
Sept 28th

A FRENCH VIEW OF FREUDISM

SIR,—If your reviewer is to be trusted, as one cannot doubt, Dr Laumonier's "exposure" of Freudism (*Le Freudisme Exposé*) shows that, like so many other critics, he has completely failed to comprehend the theories he attacks. This would not in the least matter were it not that your lengthy notice of the work (September 19th, p 519) may lead the many into thinking that by Freud receives a "knock-out" blow. It is really ludicrous to attribute to Freud the idea that children experience sexual emotion on an adult plane, and yet the main attack of this French critic is based upon this fantastic notion. It is unnecessary to repeat here what Freud's views really are on the subject of infantile sexuality. The English translations of his works are available and in both his *Introductory Lectures* and *Collected Papers* the subject is treated with a clarity which should place it beyond misrepresentation. One cannot think either that Freud's definitions of his terms "unconscious" and "pre-conscious" are in any way lacking in precision.

However, my main object in writing is not to contest the article point by point, but to emphasize the harm done by the assumption that the whole question of a dynamic unconscious stands or falls by the validity of Freud's views on the evolution of the sex instinct. Such an attitude towards psychology provides a stumbling block at the very outset, with the result that the majority of the profession refuse to consider modern psychological teaching at all. In a recent letter to the *Lancet*, I deplored the lack of facilities for the medical student to acquaint himself with the fundamental principles of psychotherapy, and I should like to labour the point again in this the sister journal. There is sufficient common ground between McDougall,

Rivers, Adler, Jung, and Freud (to mention only a few of the outstanding names) to provide a solid basis for the understanding and treatment of neurotic conditions, and the dust of conflict can be ignored.

No one can pretend that the neurotic patient at present receives anything like adequate treatment. The public facilities are all but non-existent, and few private practitioners have either the knowledge or inclination to deal with them. The resulting economic loss to the community must be enormous, and if further generations of students are allowed to enter practice knowing nothing of the origins and treatment of the functional disorders with which they will be brought in contact every day, the outlook is hopeless indeed—I am, etc.,

Birmingham Sept 21st

R MacD LADILL

APERIENTS FOR ABDOMINAL PAIN

SIR,—Pace Mr Flint (September 19th, p 540) the vast majority of acute abdominal pains in children are not due to appendicitis, organic obstruction, or other serious conditions, and, though "a good clean out" may not be all that is required, it is undoubtedly the most essential precursor of relief, as a rule there is no relief until it occurs. The surgeon does not see these cases, and even the general practitioner sees probably only a minority of them, and "out of sight is out of mind." Mr Flint's dictum, that "it is dangerous to give aperients for acute abdominal pain without the sanction of a doctor," takes no account of the vast majority, and if his advice were generally adopted innumerable children would have their sufferings unnecessarily prolonged, though possibly one here and there might be saved a little suffering and perhaps some danger to life.

On balance I think much more harm than good would accrue from the adoption of the advice, for, failing "the good clean out," a certain number of benign conditions are apt to take bad ways and become serious. In organic obstruction aperients increase the suffering and, if repeated, may turn the scale against recovery, and the same holds good for a few other comparatively rare conditions, but in incipient appendicitis it is quite rational to suppose that an aperient, by unloading the caecum, may have a favourable effect, even if it fails to abort the trouble. To hold an aperient, given during the first few hours of an attack, responsible for subsequent gangrene, suppuration, or perforation, seems to me quite irrational, a loaded caecum, left loaded, seems much more likely to produce such results, and I should say (submissively) that such results seem quite as frequently when aperients have been withheld as when they have been given early. Some cases are doomed to gangrene or perforation from the outset and are hardly influenced for good or evil by anything short of surgery.

In industrial practice the doctor seldom sees these cases until the second day (and often later) and by then the time has passed for the administration of an aperient if the case is appendicitis, though theoretically in a few cases an aperient might still act favourably. Practically few of us are capable of diagnosing the exact condition of the appendix and surrounding parts, and so we are wise to take no risk. It is by no means unusual for cases seen on the second or third day to present a history and a few indefinite physical signs highly suggestive of an attack of appendicitis which has been cut short and if an aperient has been given at the outset (and has acted well) the doctor, as well as the mother, may be forgiven for suspecting that the aperient was beneficial, obviously it did no harm. If the industrial population could and would send for a doctor (and get him) at the very outset of abdominal pain, the onus of giving, or withholding an aperient would be on his shoulders, and a few disasters might possibly be avoided, but a good deal of broadcasting would be required to produce such an ideal, and in the meantime many mothers, acting on Mr Flint's dictum, would withhold the necessary aperient for a much longer time than is desirable in all but a very small minority of cases.

Hard cases make bad law, and it seems unwise to make a well founded faith in the efficacy of aperients for abdominal pains generally because in a very small minority of cases they may do harm—I am, etc.,

Swinton S pt 26th

J PRICE WILLIAMS

MEDICINE AND THE PUBLIC

SIR,—Mr L. R. Flint's letter in your issue of September 19th is both timely and interesting, especially as a sign of the times, and in the light of the Royal Commission on National Health Insurance, which (among voluminous other recommendations with regard to the National Health Insurance Act) is considering the scheme for national medical service published in the *BRITISH MEDICAL JOURNAL* of April 20th and May 4th, 1912, and subsequently in my pamphlet *A National Medical Service*, after consideration and agreement thereto of the Manchester (South) Division of the British Medical Association on May 3rd, 1912.

Returning to general practice here after an interval of ten years (away at the war and in the Colonies) I am struck by the fact that, as Mr Flint writes, "the patient does not give his doctor a fair chance" nowadays. As Mr Flint truly remarks, "it seems a calamity that elementary knowledge of an official kind should be withheld from the public, while pernicious statements on behalf of quack remedies are allowed to be published wholesale." Surely the Royal Commission should recommend either the total abolition of quack remedies, or that a statement of the actual ingredients and their quantities must appear on the labels.

In 1912 the late Dr Rentoul of Liverpool published a pamphlet pointing out that as far back as 1889 he "proposed the formation of a public medical service. The doctors refused it, because they thought it would affect their money interests. But had they accepted it, we would not now [1912] be like mendicants with hunched knee waiting for charity rates of pay to be offered us by politicians."

My proposals for a national medical service were put forward when the National Insurance Act was being considered, and now the borough of Teddington is putting practically the same scheme into operation experimentally as a voluntary service scheme, which should be watched with the greatest interest by the whole medical profession in general and the British Medical Association in particular, as well as by the Royal Commission itself. In a further pamphlet, just published, I have set out in tabular form a comparison between the Teddington voluntary scheme and the national medical service I proposed to Mr Lloyd George at the time of the consideration of the Insurance Act. Mr Flint's opportune letter points to the inevitable formation of such a national medical service. The time for individual spirit from collective private practice has long gone by, and the danger of a C3 population was never so threatening as now.

Every argument used by Dr Rentoul and many others in 1889, by myself and others in 1912, and by Mr Flint now, could be used to day with sevenfold power and force by anyone who knows the conditions now and can compare them with those before the war both in private and hospital practice. It is time we organized to form the best national medical service in the interests of the highest traditions of our profession, as well as in those of the people we exist to serve. To all who are interested I would be pleased to send a copy of my 1925 pamphlet and to correspond with them to help forward what is now seen by all, I believe, to be the orderly evolutionary and not revolutionary development of the medical profession in the interests of the national health—I am, etc.,

MILSON RUSSEN RHODFS

Leicester Sept 21st

SEA-WATER FOR SEA SICKNESS

SIR,—A note in your issue of June 20th about the oral administration of a 2 per cent solution of sodium chloride as "a remarkably satisfactory treatment for vomiting in shock" recalled experiences in treatment with sea water.

In January 1901 while on the ss *Cornwall* with the Sixth New Zealand Contingent en route from Auckland to South Africa, Sir Owen Cox the manager of the Federal Shipping Company, who accompanied us as far as Sydney, told me that a good dose of sea water was the sailors' remedy for sea sickness. Consequently when after a further six days at sea as many as sixty-six men paraded sea sick hoping for medicine and no duty. I had a Winchester bottle filled with sea water labelled *Mistura Oceani Pacifici* and prescribed half a tumbler to be taken statim. It was interesting to note the effect on some it acted as an emetic,

on others is an aperient. As to its efficacy, suffice to say that on the following day only four paraded sick. It is only fair to mention, however, that we were to go ashore that day at Albany, Western Australia.

In 1910, while voyaging from Hobart to Hell's Gates, Strahan up the wild west coast of Tasmania in passing Port Davey, where the wind was contrary, two cabin companions both in the throes of sea sickness made a piteous appeal for something to relieve them. Half a tumbler of sea water followed later by a brandy and soda brought them to dinner.

My last experience of the use of sea water for sea sickness was on H.M. transport *Minneapolis* on the day of the Anzac landing. As I was about to take the morning sick parade a South Australian lieutenant of artillery, obviously with a dark brown 'taste' in his mouth on the morning after the night before said: 'Doe send me a dose of Enos's fruit salt.' Taking neither the abbreviated title nor the idea of auto-prescribing, I sent a tumblerful of sea water with the doctor's compliments. The gallant lieutenant appeared at breakfast but was solicitous to know if it were actually Enos's which he had taken. On being answered in the affirmative he remarked that it must have been old stock as it did not fizz and had a musty taste. He admitted, however, that it had fixed him up all right. Later in the day he approached me again, saying 'Fair dinkum! Tell me was that really Enos's fruit salt?' Ultimately when he was again feeling agreeable I told him that he certainly had been cured with Enos's salt as at the time we had been passing through the Gulf of Enos he had drunk thereof.

While at Alexandria, in 1915, I tried washing out chronic cases of urethritis with sea-water, with apparently some improvement, but my transfer to Cairo, as specialist sanitary officer, cut short further opportunity for experimental therapy. Dr. Wiley of Sydney, however, tells me that at the Australian V.D. Hospital at Bulford, Salisbury Plain, in 1917, sea-water was also tried as an injection, but did not seem to have any advocates. There is, however, a sphere for the use of sea water which, as the result of experience, one can commend. Observation in times of influenza epidemics that habitues of snuffing did not suffer, and knowing that a solution of sodium chloride is a favourite application to mucous membranes, I have advocated the snuffing of a little sea water up the nostrils each morning as a prophylactic against catarrh. Those who have once used this hypertonic saturated salt solution discard thereafter nasal douches of antiseptics and other so-called prophylactics, whose name is legion, for nasal catarrh.—I am, etc.,

J. S. PERRY, D.S.O., M.D., C.M.,
Metropolitan Medical Officer of Health

Sydney Aug 4th

MULTIPLE NEURITIS AND FATIGUE

Sir,—In view of the very interesting contribution of Dr. W. Johnson (Liverpool) to the discussion on multiple neuritis, at the Annual Meeting of the British Medical Association at Bath (BRITISH MEDICAL JOURNAL, September 12th, p. 466), perhaps an extract, which I take the liberty of quoting, from my thesis on "Lead paralysis," written twenty years ago, may be of interest.

In the production of this condition the element of fatigue seems to me to take an important part. From a comparison of the following cases it will be seen that that arm which had the hardest work to do was primarily and most seriously affected.

(Case 1)—By occupation a tile scraper. In this she was constantly scraping the tiles with a knife in her right hand, whilst thus working she kept her right hand cramped for an hour or so at a time her wrist incessantly undergoing flexion and extension. Her left hand though being used was allowed some rest between the picking up of each consecutive tile. In her case the right arm was the first to be affected and remained permanently the worst of the two.

(Case 2)—A myroloka kiln placer. His work was to fetch the tiles from the dipper and place them in the myroloka kilns. The right hand was almost entirely the one used the right wrist dropped first and recovered last.

(Case 3)—A ground layer. The ware was supported by the left hand whilst the pencil was being constantly applied with the right which was primarily and more seriously affected. [Several other cases were recorded to illustrate the point.]

In muscles having undergone much exertion there is an absorption into the blood of waste products that temporarily poison the system. These act upon the nerve endings in muscle and temporarily paralyse them due to the nutrition of the nerve fibres being lowered and therefore they are unable to resist the absorption of poisonous products.

Since in lead poisoning metabolism is so much affected and the action of the liver, kidneys, skin and bowels is imperfectly performed it is not possible that the toxic products of lead circulating in the blood act in this way on the nerve-endings of fatigued muscles and paralyse them?

'It seems likely that at the end of a hard day's work in some lead occupation absorption of lead is more probable than at the commencement of the day when the tissues are invigorated and that therefore the element of fatigue may be a factor in the production of such poisoning by acting as a predisposing cause to the toxic effect of lead.

The fact that women are more susceptible to the poison and so to the paralysis may be due partly to their inferior muscular development and consequently fatigue is more readily produced, the muscles at the same time losing their tone due to want of trophic influence which cannot be supplied from the chronically inflamed nerves.

—I am, etc.,

Bath Sept 14th

H. CLULOW NIXON

VENEREAL DISEASE IN THE NAVY

Sir,—In your issue of September 19th (p. 524), commenting on the statistical report on the health of the Royal Navy for 1922, you make a laudable comment on the obvious failure of the naval medical authorities to enforce observance of prophylactic precautions against venereal diseases. A hospital admission rate of 282 per 1,000 among men on the China Station is difficult to account for otherwise than by indiscipline on the part of the men and laxity on the part of the medical officers.

More serious, however, is a menace to public health at home in the statement that large numbers of men are being discharged from the navy on account of gonococcal infections. These uncured cases should surely be retained in the service, where, as the men are compelled to undergo treatment, ultimate cure can be more readily achieved. As a civilian clinical officer, one can sympathize with the naval surgeons in their disinclination to go on treating difficult cases of chronic gonorrhoea, but one cannot condone the Admiralty's total disregard of the consequences to the health of the civil community.—I am, etc.,

Glasgow Sept 24th

ROBERT FORGAN

POSTURE IN BRONCHIAL AND TRACHEAL DRAINAGE

Sir,—The instructive letters of Drs. Eve and Neild on posture for bronchial and tracheal drainage have drawn attention to an old but somewhat neglected method of treatment. Sir William White, in his *Dictionary of Treatment*, states:

A point of primary importance in the treatment of all cases is to educate the patient systematically to assume such a position as will upon coughing enable him to empty the cavity by the force of gravity. This he may do lying in bed and almost inverting his body supported by his hands placed on the floor whilst his head is lowered almost to the level of his hands.

Over thirty years ago, as an old pupil, I attended a clinic of Sir William's—then Dr. Whittle—on the treatment of bronchiectasis and allied conditions, in which the postural treatment was discussed and the various methods, such as bed rests, pillows, and so on, were exemplified.—I am, etc.,

Pendleton Manchester Sept 16th

S. McNair

Obituary

THE death is announced of Dr. WILLIAM MORRISTON DAVIES, formerly of Gordon Square, London. He was educated at Edinburgh University, where he graduated M.B., C.M. in 1873 and M.D. in 1878. He took the diploma of L.R.C.P. Ed. in 1872. He had served as surgeon to the Huntingdon County Hospital and physician to the Medical Mission Hospital, Edinburgh, and was the author of a work on *Hæmorrhoids: their Pathology and Treatment*. Dr. Herbert Spencer writes: 'The death of Dr. Morrison Davies came as a great shock to his friends, of whom I have been one for the last forty years. Dr. Davies had reached the age of 83, but he always seemed twenty years younger than his age, and, long after he was 70, I have seen him climb trees with the agility of a monkey. For many years he had a large practice in Gordon Square, and his care and devotion endeared him to his patients. After his retirement from practice he bought the Manor House, Stoke Poges, a sixteenth century building and the home of Penn, which Dr. Davies restored with the finest taste and fitted with the exquisite furniture for which he was renowned. Some years ago I took an American friend

by motor to see Dr Davies at the Manor House, and this year I met the friend again in New York, and he told me that the visit to that delightful house was one of the most vivid memories of his visit to England. Dr Davies was an Alpine climber for many years, usually making his headquarters at Pontresina, which he visited thus year. He was a great lover of the Alps, of cathedrals, and of all forms of grandeur and beauty. He had a special flair for old silver, Italian carvings, mezzotints, and old English furniture, in all of which he showed the most perfect taste. He had a fine appreciation of good food, wine, and cigars, and was a delightful host and companion. All who knew him will miss him greatly, and will condole with his widow and children, one of whom is a distinguished member of our profession.

Dr GEORGE MARTIN FOX, a practitioner very well known in South Staffordshire, died at Walsall on Sunday, September 27th. He was taken ill while in London, representing his Division at the opening of the new House of the British Medical Association in July, and died a couple of months after his return to Walsall. Born in Bilston, the son of the late Mr Charles James Fox, he took the L.S.A. in 1886 and the M.R.C.S. and L.R.C.P. diplomas in 1887, and, after a short period of practice in Willenhall, settled in Walsall some thirty-two years ago. Subsequently, he obtained the D.P.H.E.D. in 1897 and the M.B. D.U.I. in 1905. For many years he had been medical officer to the Walsall Workhouse and medical officer of health to the Walsall Rural District Council, as well as honorary physician to the Walsall General Hospital. He was a keen member of the British Medical Association, and for several years was Representative of the Walsall and Lichfield Division. There were few things he enjoyed more than a large and argumentative gathering of Representatives, particularly when followed by such an Annual Meeting as that at Glasgow or Portsmouth. He was especially interested in midwifery, and for several years he was the recognized teacher of midwives in Walsall. The constant night calls which this entailed seemed to worry him not at all, indeed, right up to his fatal illness his capacity for work was phenomenal. Dr Fox leaves a widow and one son, an officer in the South Staffordshire Regiment, now in India. His eldest son was killed in the war.

The death of Dr ROBERT REID RAYBOLD of Liverpool has removed one who, in former years, was a prominent figure in medical politics. He was educated at Edinburgh, Dublin, Belfast, and London, and took the diplomas of L.R.C.P. and S.D.M. in 1877 and that of M.R.C.S. Eng. in 1879, he graduated M.D.R.U.I. in 1880. He settled in general practice in Liverpool, from an early date he took an interest in the British Medical Association, and was at one time a member of the Parliamentary Bills Committee. He belonged to a group of active members whose chief opportunity of airing any grievance in the days before the formation of Divisions and the establishment of the Representative Body was either to give notice of motion at the Annual Meeting or move a resolution upon the Council's report then presented. For years no Annual Meeting agenda paper was complete without his voluminous notices of motions. He regularly attended the Annual Meetings and also the special meetings in Fether Hall held from time to time to consider the many contentious medico-political subjects under the old constitution. A fluent speaker and trenchant critic, scarcely anything the Association undertook escaped his caustic comment. He was elected one of the direct representatives for England on the General Medical Council but only served for eight months—from January 1st till September 1st, 1897—when he resigned.

We regret to record the death of Dr ANDREW JOHN GIBSON, at the age of 53, at Creetown, Dumfriesshire, to which he was paying a short visit. Dr Gibson was a native of the Hebrides and received his medical education at Edinburgh where he graduated M.B. C.M. in 1894. He served with distinction in the Boer war, and

was senior medical officer to the refugee camp at Uitenhage, Cape Colony. During the late war he served with the Canadian Medical Forces. In recent years Dr Gibson gave great assistance to the British Medical Association, of which he was a member, in connexion with the question of the prospects of British medical settlers in Canada. He was for some time a member of the Immigration Service of Canada, and for many years had been engaged in medical practice at Victoria, British Columbia. He recently removed to Duluth, Minnesota. A military funeral was given him at Creetown, all the local ex-service men attending.

Dr THOMAS ANDERSON ALEXANDER, who died on August 12th at his residence in Lpsom, in his 67th year, received his medical education at Edinburgh and in Berlin and Vienna. He graduated M.B., C.M. Edin in 1880, and M.D. in 1884. He had practised in the Lpsom district for forty-one years, and was medical officer to the Lpsom Urban Fever Hospital and honorary surgeon to the Lpsom and Ewell Cottage Hospital. After his retirement from active practice some six years ago he became honorary secretary of the Cottage Hospital, in which he took a keen interest. During the war he was largely instrumental in starting the Lpsom Ground and Stand Hospital for Wounded Soldiers. He was one of the original members of the Lpsom Golf Club, and in his early days was a member of the Lpsom Cricket Club. He devoted many of his holidays to fishing in Scotland, and was a member of the Epsom Angling Society. Dr Alexander was a member of the British Medical Association for thirty-six years.

The Services

HONORARY APPOINTMENTS TO THE KING

It is announced that Air Vice-Marshal David Munro, C.B., C.I.E., Director of Medical Services R.A.F. and Group Captain Hardy Vesey Wells, C.B.E., have been appointed honorary surgeon and honorary physician respectively to His Majesty the King.

DEATHS IN THE SERVICES

Colonel Robert Robertson Madras Medical Service (ret.) died on June 5th aged 60. He was born on December 10th 1864 the son of James Robertson of Dundee and was educated at Glasgow, where he graduated as M.B. and C.M. in 1886. Entering the Indian Medical Service as Surgeon on March 31st 1887, he attained the rank of colonel on June 30th 1913 and retired on June 30th 1918. He served in the Burmese campaigns in 1888-89 receiving the frontier medal with a clasp and also in the great war.

Brigade Surgeon Wellington Gray Bombay Medical Service (ret.) died on July 15th aged 85. He was born on September 29th 1841 the son of the late St George Gray of Drumranish. He was educated at Trinity's College Dublin where he took the Licence in Medicine in 1865 and that in Surgery in 1866. Entering the Indian Medical Service as assistant surgeon on March 31st 1866 he became brigade surgeon on September 1st 1883 and retired on April 12th 1893. He was the author of *The Botany of the Bombay Presidency in the Bombay Gazetteer*, published in 1886.

Universities and Colleges.

UNIVERSITY OF LONDON

UNIVERSITY COLLEGE

A public lecture delivered in English and illustrated with lantern slides on the photochemistry of vision will be given by Professor Fritz Weigert of the University of Leipzig on Wednesday October 7th at 5.30 p.m. in the Physiology Theatre. The chair will be taken by Sir John Herbert Parsons F.R.S. F.R.S.

A course of eight lectures on the physiology of hearing and vision will be given by Mr R. J. Lythgoe M.A. B.Cb. (Scholarship in Physiology) on Mondays and Wednesdays at 5 p.m. beginning October 12th. The lectures are open to students of the University and others interested in the subject without fee or ticket.

ST THOMAS'S HOSPITAL MEDICAL SCHOOL

The following scholarships have been awarded

Entrance Arts Scholarships (value £50) Mr A. G. Sanders and Mr J. F. E. Bloss
Entrance Science Scholarships (value £150) Mr H. M. Robertson (value £50) Mr D. O. Clark
The William Tate Scholarship (value £25) Mr A. M. Eas on

GUYS HOSPITAL MEDICAL SCHOOL

The following Senior Science scholarships have been awarded

O. A. Beadle (War Memorial Scholarship £20) L. T. Ride £20

Medical News.

H R H THE DUKE OF YORK, K G, will lay the foundation stone of the College House Extension at St Thomas's Hospital at noon on Monday, November 2nd. The ground and first floors of this building, which is being erected opposite the hospital in Lambeth Palace Road, will house the Students Club premises, while the upper four floors will provide resident accommodation for some sixty students, in addition to members of the resident staff of the hospital.

THE annual service of the Guild of St Luke will be held on St Luke's Day, Sunday, October 18th, in Westminster Abbey, at 6.30 p.m., when the preacher will be the Rev. Father Jenks. Those members of the profession desiring to take part in the procession are requested to wear academic dress, and to communicate beforehand with the secretary of the Guild, the Rev. H. Kirkland Whitaker, M.D., Chaplain's House, Banstead Downs, Sutton, Surrey.

THE first social evening of the new session of the Royal Society of Medicine will be held, as already announced, on Tuesday, October 27th, at 8.30. Fellows and then guests will be received by the President, Sir St. Clair Thomson, who at 9.30 will give a short address on 'Shakespeare as a guide in the art and practice of medicine'. The library will be open and various objects of interest will be exhibited, including a display of drugs mentioned in Shakespeare's plays, lent by the Wellcome Historical Medical Museum, and arranged by Mr. C. J. S. Thompson. The annual dinner of Fellows and Members of Sections of the Society will be held on Thursday, November 19th, at 8 p.m., at the Hotel Victoria, Northumberland Avenue. Tickets, price 15s. each, exclusive of wine, may be obtained from the Secretary, 1, Wimpole Street, W.1. Ladies may be invited.

THE Fellowship of Medicine will hold a series of free lectures on tuberculosis in the lecture room of the Medical Society, 11, Chandos Street, during October, November, and December. The first will be given on October 12th at 5.30 p.m., by Dr. L. S. Burrell, on tuberculosis from the physician's viewpoint. On Monday, October 5th, the Central London Throat, Nose and Ear Hospital will begin a three weeks' course in laryngology, rhinology, and otology. The operative surgery and the clinical classes may be taken together or singly. The London School of Hygiene and Tropical Medicine will hold the first two of a series of eight clinical demonstrations on October 6th and 8th at 2 p.m. Dr. G. C. Low and Dr. Manson Blair will consider the more important diseases of tropical countries. Other courses in October will be given as follows: a combined course in children's diseases at the Paddington Green Hospital, Victoria Hospital for Children, and Children's Clinic from October 12th, a course in urology at St. Peter's Hospital on October 19th, and a course in dermatology at St. John's Hospital from October 26th. Copies of any syllabus, together with the Fellowship programme, may be obtained from the Secretary, 1, Wimpole Street, W.1.

AT the meeting of the Royal Anthropological Institute to be held on Tuesday, October 6th, at 8.15 p.m., at 52 Upper Bedford Place, W.C.1, a communication illustrated with lantern slides and exhibits on early man in Palestine and the Galilee will be made by Mr. F. T. T. Petro and Sir Arthur Keith. At the meeting held on Tuesday of this week Dr. Aleks. Hrdlicka (Washington) exhibited the human skeleton remains recently discovered by him in the Rhodesian Man Cave, Broken Hill, Rhodesia, and discussed the nature of the deposits of the cave.

A POST GRADUATE course will be held at St. Mary's Hospital during this week end (from October 3rd to 5th inclusive), open to all medical practitioners without fee. The subjects to be dealt with include the management of urinary obstruction, differential diagnosis of gall stones, haemorrhagic ovarian cysts, minor surgery and some applications of physiology in general practice, clinical aspects of malignant disease of the colon, overlooked causes of fever in children, clinical types in gynaecology, chronic toxæmia, and cancer of the breast. The first class commences at 11 a.m. on Saturday; two classes will be held on Sunday morning, and the Monday classes extend from 10 a.m. to 4.45 p.m.

A COR in the children's ward of the Bristol General Hospital was on September 25th, dedicated to the memory of the late Dr. Alexander Cochran.

MR. C. C. CLAYTON, C.B.E., Ph.D., M.P., a director of the United Alkali Company, and Professor H. C. H. Carpenter, F.R.S., Professor of Metallurgy in the Royal School of Mines, have been appointed to be members of the Advisory Council to the Committee of the Privy Council for Scientific and Industrial Research.

THE freedom of the Royal Burgh of Tain was conferred upon Mr. John Fraser, professor of clinical surgery in the University of Edinburgh, on September 25th. In an address the Provost recalled the fact that Professor Fraser was born and educated at Tain, and that after his graduation at Edinburgh he specialized in surgery, he had gone from strength to strength and from honour to honour until his name was known throughout the land as one of the most skilful and successful surgeons of the day. The Right Hon. Ian Macpherson, M.P., and Sheriff Principal Mackintosh congratulated the youngest burgess upon the honour conferred upon him. A public luncheon was subsequently held at the town hall, when the health of Professor Fraser was pledged with enthusiasm.

THE memorial cross erected by the Imperial War Graves Commission in the naval war cemetery at Lyness, Orkney, was unveiled on September 29th by Sir William Watson Cheyne, Bt, F.R.C.S., F.R.S., Lord Lieutenant of Orkney and Shetland. The ceremony was attended by representatives of H.M.S. *Nevenge*, the flagship of the Atlantic Fleet, and of H.M.S. *Uchagay*. Sir Watson Cheyne, it will be remembered, served as consulting surgeon to the Royal Navy with the rank of Surgeon Rear Admiral during the great war.

MR. BASIL GRAVES, who was recently appointed honorary surgeon to St. Paul's Eye Hospital, Liverpool, has been given temporary leave in order to conduct a post graduate course at the Bellvue Hospital Department of Ophthalmology, New York University, on the advanced principles of special methods and technique employed in clinical microscopy of the living eye.

THE first annual Norman Lockyer lecture, established by the British Science Guild as a means of periodically directing the attention of the public to the influence of science upon human progress, will be given by Sir Oliver Lodge, F.R.S., on Monday, November 16th, at 4 p.m., in the hall of the Goldsmiths Company (by kind permission of the Master and Court of Assistants of the Company). The subject of the lecture is 'The link between matter and matter'. Tickets of admission may be had from the Secretary, British Science Guild, 6, John Street, Adelphi, W.C.2.

THE third session of the Liverpool Psychological Society will open on October 6th, when Mr. G. C. Field M.A. will deliver the President's inaugural address at the University. In the society's syllabus prominence is given to the psycho-analytic and medical aspects of the subject. The programme may be obtained from the Secretary, the University, Liverpool.

THE annual business meeting and autumn dinner of the Queen's University (Belfast) Club London will be held at 7 and 8 p.m. respectively, on Thursday, October 15th, at the Connaught Rooms, W.C.2. Members of the University wishing to join the club are invited to communicate with the Honorary Secretaries, 132, Harley Street, W.

THE autumn general meeting of the Institution of Heating and Ventilating Engineers will be held on October 6th, at Caxton Hall, Westminster, at 7 p.m. A paper by Mr. E. Over, B.Sc., on the practical measurement of air flow, will be followed by a discussion.

SEVERAL courses of lectures have been arranged by the British Institute of Philosophical Studies for the coming session, which opens on October 5th. Professor I. H. Pear will lecture on psychology, Professor James Johnstone on life and man, and Professor Leonard Russell on the conception of matter. An announcement of these lectures will be found in our advertisement pages.

THE British Social Hygiene Council will hold a dinner on Monday next, October 5th, at 8 o'clock, in the Prince's Restaurant, Piccadilly, to meet the members of the second Imperial Social Hygiene Congress.

THE fortieth annual meeting of the Caledonian Medical Society will be held at the Central Station Hotel, Glasgow, on Friday, October 9th, at 3 p.m., under the presidency of Dr. Neil F. Kerr. This is the third occasion on which the society has met in Glasgow, since the last meeting in 1914 the membership has increased from 275 to 420. Any member of the medical profession will be heartily welcome to attend, and members may introduce lay friends. Dr. Kerr kindly invites the members to tea after the meeting. The annual dinner will take place the same evening, at 7.15 in the Central Station Hotel, tickets, exclusive of wines, 12s. 6d. each.

THE Council of the Harveian Society of London has selected the following subject for the Buckton Browne prize: 'The etiology of high blood pressure and of the respiratory phenomena associated with high blood pressure and chronic nephritis'. Particulars regarding the prize will be found in our advertisement pages this week.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **British Medical Journal** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the **British Medical Journal** must communicate with the Financial Secretary and Business Manager, British Medical Association House Tavistock Square W C 1 on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the **JOURNAL**, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the **British Medical Journal** are **MUSEUM 9361, 9362 9363, and 9364** (internal exchange, four lines).

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin), and of the Scottish Office 6 Dunsinagh Gardens Edinburgh (telegrams *Associate, Edinburgh*, telephone 4361 Central).

QUERIES AND ANSWERS

VACCINES FOR SLEBORRHIC ALOPECIA

"M" inquires whether acne vaccine or autogenous vaccines have ever been used for premature baldness (alopecia simplex) due to sebaceous disease and with what results. The patient is a male 30 years of age and our correspondent would be glad of hints for treatment.

INCOME TAX

Partnership Practice—Assessment

"R C W" has lately taken a partner and has been informed (1) that a partnership is assessed in one sum to income tax and (2) that the books are required to be audited by a recognized accountant.

"* (1) This is correct according to law and practice the amount of tax payable, however is not affected, as the partnership assessment is merely the aggregate of what would be the several liabilities of the separate partners. "R C W" should remember that the assessment should be based on the past three years' profits of the practice not including for instance the earnings of his new partner before joining the partnership. (2) We know of no such obligation attaching to partnerships as such. It may however be true that partners frequently adopt the rule of employing an independent accountant to certify the amount of profit divisible between them and that where that is done the revenue authorities expect, perhaps not unnaturally, to have the income tax returns corroborated by production of copies of the accounts.

Book Debts—Sale of Practice

"G L C" gave up his practice at April 30th 1925. The inspector proposes that he shall account for tax (1) on one twelfth of the (average) income tax assessment for 1925-26 plus (2) on the amount of the book debts due to him on April 30th 1925.

"* (1) Is correct, (2) is incorrect. It is not a fact that this amount of book debts has not been taxed. G L C has paid tax year by year on his earnings for this financial year. It is true that an artificial basis was adopted for computing the amount of those profits—for example the three years' average of his cash profits but that (cash) basis was adopted for mutual convenience as being in the long run equivalent to the value of book debts and expenses incurred" basis. The proposition that the amount of these debts is not chargeable to income tax is the corollary of the revenue's proposition that the cash basis is not permissible in the early years of a practice.

Motor Car Transaction

J C O R states that the inspector refuses to allow the excess of the cost of a new Rover car over the amount received for a side-car combination.

"In so far as the cost represented outlay on improving the equipment of the practice it is undoubtedly capital expenditure and as such inadmissible. What J C O R is entitled to claim is the difference between the cost to him of his side car combination and the amount he received for it."

Enlargement of Garage

"J B W" explains that, in consequence of purchasing a larger car he has had to expend money on enlarging his garage and entrance gate. Is there any allowance for this?

"* No, the expenditure relates to an improvement and as such must rank as capital expenditure. The renewal cost of the old car is, as "J B W" suggests the excess of its cost to him over the amount received for it but the depreciation allowance is due on the full cost (£300) of the new car."

LETTERS NOTES ETC

A DISCLAIMER

Drs D JUSTIN DAVIES and LUCY S DAVIES (Leicester) write: Will you allow us through the columns of the **JOURNAL** to disclaim all responsibility for paragraphs which have appeared in the public local press concerning us? Not only have such references been unsought by us, but have caused us great distress and have in every way been actively opposed by us.

THROUGH EXPRESS TO THE RIVIERA

THE through express Calais-Vintimille (in connexion with the 11 o'clock service from Victoria) will be reintroduced as from November 2nd. This train will provide sleeping accommodation in the form of wagon lits lits salon, and couchettes also first and second class ordinary seats and restaurant car. Accommodation may be reserved at the P L M Railway Offices 179, Piccadilly, W 1, or through any touring agency.

MEDICAL WOMEN IN THE SEVENTEENTH CENTURY

DR C SUFFEAD (London N) sends the following extract from the *Genealogist's Magazine* relating to the licensing of two medical women to practise in the reign of James I.

"... in the month of November 1613 granted a licence to Anne ..."

as those granted to men

ences are contained in the same

Syringe for SELF ADMINISTRATION OF INSULIN

DR T MABURY HILLIARD (Blackpool) writes to recommend a modification of the Record syringe which he has devised in order to ensure automatic control of the dose of insulin thus enabling the patient to administer it himself. By means of two lock nuts on the piston shaft any required dosage may be obtained without risk of alteration or the destruction of material by frequent sterilization. The syringe is made by Messrs Allen and Hanburys.

THE ROAD TO OLYMPIA

We are asked to say that medical practitioners who are members of the Automobile Association and intend going by road to the Olympia motor show may obtain full directions as to the best routes from the patrols at the A A telephone boxes on the outskirts of London.

COLOUR SCREENS

DR HORATIO MATTHEWS (London W) sends the following note for the information of those medical men who take a practical interest in the technique of colour photography. He writes: In colour photography the registration of this fine colour screens is a matter of some difficulty. It was thought, however that the cinema film which allows the use of much coarser colour screens, should be used. The screen is so simple as it looks, but is operated by delicate machinery. The threads must have been costly pastimes. The method I adopt is simple and inexpensive. Since it breaks down however where every other attempt must finally do—namely at registration of one film with another for purpose. I have no further use for it, and willingly give it to any other worker in this field. My method is to grease mats then to cut the surface by compound knives and then to pass the film on to the dry bath. This stains the exposed part of the film along the fine cuts made by the knives but leaves the greased part protected and ready for further operation by the knives and different colouring.

VACANCIES

NOTIFICATIONS of offices vacant in universities medical colleges, and of vacant resident and other appointments in hospitals will be found at pages 43 44 45 48 and 49 of our advertisement columns and advertisements as to partnerships assistantships and locum tenencies at pages 46 and 47.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at pages 119 and 120.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL
MEETING, BATH, 1925

SECTION OF THERAPEUTICS

Professor R B WILD, M.D., F.R.C.P., President

DISCUSSION ON
TREATMENT OF CHRONIC ARTHRITIS

OPENING PAPERS

I—Sir THOMAS HORDER, Bt, K.C.V.O., M.D., F.R.C.P.

[Abstract]

THE key to success in the treatment of cases of arthritis is given by a full consideration of the etiological factors entering into them.

These etiological factors are various, and in the great majority of cases, if not in all, more than one factor is present. In many cases several factors contribute to produce the clinical picture. In such cases the more correctly the value of the particular factors is estimated and dealt with the better will be the response to treatment.

No doubt in some cases there are etiological factors which are at present obscure, this applies especially to the group of arthritides to whom the term "rheumatoid" is given. Here the value to be assigned to the factor of microbial infection is often doubtful.

But that the *infective factor* is present to some extent in almost all cases of chronic arthritis seems certain, though the degree, and the manner of its operation, are not seldom difficult of elucidation. Even in cases which at first sight seem independent of infection there are good reasons for thinking that the microbial factor is contributory. Joint disease due primarily to trauma, to gout, and to trophic diseases of the spinal cord are instances of this statement.

If we construct a table of the various types of arthritis met with recording as the element of infection is a dominant etiological factor, or recording as it is not, we should get some such result as this:

INFECTIVE FACTOR	Joint Disease	
	High	Low
	<ul style="list-style-type: none"> Conorrhoeal rheumatism Chronic pyaemia Arthritis due to streptococcal, pneumococcal, dysenteric, and coliform infections Tuberculous and syphilitic arthritis 	<ul style="list-style-type: none"> Arthritis in association with focal sepsis Rheumatoid arthritis Osteoarthritis
	Gout	
		<ul style="list-style-type: none"> Arthritis in tabes syphilis, omphelia, hemiplegia and paralysis agitans
		Trauma

The brackets indicate roughly certain groups of cases having close resemblances when regarded from the etiological point of view.

Arthritis as a definite expression of *focal sepsis* forms an intermediate group between the cases of direct joint infection and those termed "rheumatoid," which, owing to our present ignorance of the degree to which the element of infection is present, form the crux of the therapeutic problem.

Drainage

In this intermediate group, drainage or other appropriate treatment of the area of focal infection is the first step in treatment. But it is essential to explore the whole field before condemning any one area unless the evidence against this area is overwhelming. More than one area is sometimes involved, in which case it is important to

determine as far as possible which is primary, and attend to that first. If teeth and tonsils, or teeth and gastrointestinal tract, are both involved, the teeth should receive thorough attention and an interval be allowed before drastic measures are employed in regard to the tonsils and the bowel. So also with the throat or nose on the one hand and the rest of the respiratory tract on the other.

Although it should probably be an invariable rule to disallow all "devitalized" or dead teeth in arthritides, it is advisable to explain the reason for this fully to the patient, and to get him to accept joint responsibility for the sacrifice of mechanically useful teeth. Apical infection can, of course, only be determined or excluded by a good set of radiograms.

Both the prostate and the uterus are capable of holding up micro-organisms and causing chronic arthritis without evidence being available from even the most thorough bacteriological examination. In the absence of evidence of focal sepsis elsewhere, the history of prostatitis at some previous date justifies treatment based upon this origin being the seat of infection. Previous emetage, for whatever purpose undertaken, similarly lends presumptive evidence, though less strong, to regarding the uterus as the seat of focal sepsis.

In the alimentary tract, although the caecum, appendix, gall bladder, diverticuli are occasionally the source of the toxæmia, the area infected is much more often diffuse, and probably the greater part of the colonic mucosa. It is here that the bacteriological evidence is least decisive in regard to diagnosis. Not every arthritis whose stools are reported to contain atypical organisms owes his disease to this fact. On the other hand, it is quite common to receive a bacteriological report that the intestinal flora are normal in cases in which the arthritis is an expression of intestinal subinfection. It is regrettable that there is not more uniformity amongst laboratory workers in regard both to nomenclature and to technique in these investigations.

Streptococci, both hæmolytic and non hæmolytic, are probably by far the most common micro-organisms concerned in the infective element in arthritis. This holds good equally for intestinal as for other subinfections. Advantage may be taken of this fact in treatment when the bacteriological evidence is indecisive.

Antigen therapy should be supplementary to drainage of the infected area, not a substitute for it. The decision to employ antigens should be deliberate, and the decision being made, the choice of remedy and system of dosage should be very carefully considered. The patient should be warned against quick results and encouraged to co-operate in a thorough trial. His immunity mechanism should not be flogged, but rather coaxed, by the remedy.

In undertaking drainage of the intestine, consider the diet, both from the point of view of lowering the bacterial content and from that of mechanical cleansing. These considerations are probably of greater importance than is the use of "intestinal antiseptics." Amongst the latter measures, however, the older agents, such as mercury and salol, should not be forgotten. The value of a drug is rarely proportionate directly to the amount of money spent upon advertising it.

Chronic Arthritis Part of a General Disease

In the great majority of cases chronic arthritis is part of a general disease. The patient requires treatment as much as, and sometimes more than, the joints. This fact involves two important factors—the nutritional and the nervous, they overlap in many cases.

Nutrition and Nerves

In treating the *nutritional factor* the general habits must be passed in review. Much the same regime should be adopted as is followed in any case of chronic infection—for example as in pulmonary tuberculosis is ample fresh air, bodily and mental relaxation, the avoidance of colds, a full and liberal dietary and graduated exercise. Diet fads are to be rigidly avoided. The best drugs in this connexion are vitamin, iron, cod liver oil, and the hypophosphites.

On the *nervous plane* a series of strains should be remembered: emotional shock, the prolonged nursing of friends or relatives, child-bearing, the menopause, fears of crippling, etc. The more robust forms of psychotherapy are often indicated. Habits of invalidism and the paraphernalia of the sick-room must be combated.

As part of the general disease, *endocrine disturbances* are not seldom present, giving the endocrinologist a large field to exploit. Small doses of thyroid are often helpful, especially in the older patients.

The *metabolic factor* is difficult to assess, but should be carefully sought. The experienced observer can often detect the factors of gout even in the presence of obvious sepsis. To omit appropriate treatment is to leave untouched an important and sometimes very amenable part of the pathogenesis. Colemium and alkalis are indicated for acute or subacute exacerbations, in chronic conditions atophan or atequinol should be tried. The last named drug is sometimes very useful even when gout is not obviously present.

For effusions, whether into the synovial membranes or into the articular and periarticular structures, iodine is invaluable, and should be exhibited with system. Better than the potassium salt probably are certain organic derivatives, but nothing seems to excel the tincture, given in the form of the French Codex preparation (10 per cent). It is best ordered in minimum doses, taken in milk, between meals. 1 minim a day with an increment of 1 minim daily until 30 minims are reached, keeping at this dose for a month, and then gradually diminishing, the course being thus one of three months' duration. When the dose reaches 6 minims daily it may be taken in two doses, and when the dose reaches 9 minims it may be taken in three doses.

The best treatment for the state of *physical and mental depression—misère*—so common in arthritis, is on the lines already mentioned under nutritional and nerve factors. For the relief of pain in addition to the local measures (see below) there is nothing as a rule so helpful as aspirin. This drug is perhaps disallowed too frequently, or only permitted parsimoniously. But it is doubtful if the disadvantages are so great as is often thought. Its greatest disadvantage probably is that it often renders patients less inclined to co-operate with the more fundamental points in their treatment owing to the comfort they get from its use. But it is doubtful if there is greater value in denying them this comfort. The best time to give aspirin is at bedtime. Pyrimidon is also useful for pain. If narcotics are used, and this should only be in exceptional cases, small doses of codein may be chosen, combined with aspirin and caffeine. Blisters and counter-irritants have their uses.

Climato is perhaps of less moment or is certainly less popular in treatment to-day, with increased knowledge of the various factors at work, than formerly. The indifferent food, the risk of intercurrent infections, and the strain of travelling make a trip to foreign climes of dubious advantage. There is the added obstacle that such an enterprise holds up most of the other helpful measures of treatment.

Considerations of *spa treatment* I will leave to those who follow me and who are expert in its principles and applications. It is sometimes said that the modern conception of the infectivity of most cases of chronic arthritis makes the idea of spa treatment irrational. But taking the view that arthritis is a general as well as a local disease, this reasoning becomes fallacious. If, as already observed, the metabolic, the nutritional, and the nervous factors enter into many cases, it is clear that there is a large function for spa treatments, quite apart from the local effects upon the joints. Spa practitioners are twitted, somewhat pardonably in that they have added the Plombières douche, the extraction of dead teeth, and even the exploitation of vaccines to their former armamentarium, thus exposing the slender nature of their indigenous weapons. But, quite apart from the fact that patients will often take even these things much more seriously at Bath than at Brixton, there is undoubtedly a great field for the treatment of the chronic arthritis by spa measures as ever. Of radium waters and radio-active mud we are only now beginning to learn the potentialities, nor shall we probably get further

until we have some reliable means of assaying the content of the active principles.

Local Treatment

In dealing with the local treatment it is necessary to remember that structures other than the mere tissues of the joint proper show the effects of inflammation and malnutrition: the bursae, the tendon sheaths, the fasciae, the nerve trunks, the skin, and especially the muscles. If local measures are to be really useful, all these must be passed in review and their condition noted. No mere rule of thumb treatment is of any service, rather does such absence of method or reason often render disservice. *Massage*, so eminently useful in the majority of cases, is grossly abused in others, where muscle spasm exists as a contraindication, though usually temporary. *Ionization* and *diathermy* have their advocates, and what is termed, with an attractive note of hope and economy, electrical massage. Unless the electrotherapist can tell us clearly what is his conception of the pathology of the local condition and what it is he aims at doing, we may at least hesitate to follow his advice, however enthusiastically given. There is one *sine qua non* in regard to all local measures, and that is the necessity for getting the patient's confidence, unless this is secured the result is doomed to failure.

In the restoration to function of the wasted muscles and the stiffened joint, active movements undertaken by the patient take a very prominent place. No amount of merely passive movement ever succeeds in substitution for this. Therefore the patient must be constantly encouraged, adjuved, if necessary almost, though never quite, threatened into making these efforts for herself under pain of permanent crippling. Simple forms of apparatus which assist voluntary efforts are useful—balls of different sizes to be clenched by the hands, the wheel of a sewing machine for the wrists and shoulders, a treadle machine for the ankle and hip.

General Effects of Local Treatment

All efforts made to restore and improve the function of diseased joints react beneficially on the disease itself. This should be explained to the patient. Moreover, the practitioner should have constantly before him the possibility of spontaneous arrest of the disease, or arrest as the result of his general treatment. For the patient to arrive at this desideratum with joints irrevocably fixed, or with joints still partially mobile, is so great a difference as to justify every effort, since from now onwards much more approximation to normal function than might be expected may well follow persevering with methods of re-education.

The orthopaedic treatment of fixed joints resulting from chronic arthritis is a science and practice in itself. Its importance is even yet scarcely appreciated. The first essential to correct methods is a good radiogram. The second is examination under a general anaesthetic. Experience shows that in many cases several slight forcible movements, at intervals determined by the particular case, are better than one severe wrench.

II—PRESTON KING, M.D.,

Honorary Consulting Physician Royal Mineral Water Hospital, Bath

I FEEL it a great honour to be asked to bring before you the hydrotherapeutic treatment of these arthritic cases of which Sir Thomas Horder has spoken. And first may I say with what pleasure I have listened to Sir Thomas's very able and interesting address upon the subject.

In discussing the treatment of chronic arthritis, and especially when doing so in this city, our thoughts must necessarily turn to the thermal water, for these cases form the majority of all those that come to Bath for help. I have no fear in bringing this form of treatment to your notice, for after many years of experience I am fully convinced of its efficacy.

I think that this branch of therapeutics is not properly understood or sufficiently appreciated by a great number of the members of our profession. By some, spa treatment, if it is not still looked upon as a mild form of delusion, is

regarded as something which will do no harm, and may at least be tried. I hope, in what I have to say to show you that it is far more than this, that it is, indeed, of real benefit in chronic arthritis, and supplies a way to relief that is wanting by all other means. As Sir Thomas Horder says, we are sometimes tempted for adding Plombières, massage, electricity, etc., to our means of cure, as if we did not believe in the waters by themselves, but I would like to remind you, gentlemen, that the thermal waters, in their internal and external use, are to be regarded by their reasonable advocates as one of the constituents of our pharmacopoeia, and, like any other of these remedies, they have their proper use in appropriate cases, and in none more than these we are considering. I want what I have to say upon the subject to do to be understood as applying to spa treatment generally, and anywhere but naturally my remarks must be chiefly based on what is done here, since I have no experience of water treatment anywhere else.

Bath possesses the only thermal springs in the United Kingdom. The waters rise to the surface at a temperature of 117°F and in a volume of about half a million gallons daily. The analysis of these waters is open to you all, and is contained in the handbooks that are published so I need not trouble you with that now, beyond saying that they contain no specially active salts, and are therefore classed among those that are called "indifferent." These various "indifferent" spa waters, however, are all known to have a special character of their own in the treatment of disease, but to what that special character is due we do not know. Bath waters are slightly diuretic as compared with ordinary water, and are also iridiorretic to a marked degree. Naturally this latter fact is made much of by the city authorities in matters of advertisement, but whether we are justified in laying any stress on this property to explain their action I do not know. I do know this, however, and it is one thing that is certain about their use—and that is that certain cases, and especially those which are due to gout, do improve here in a wonderful way.

There is one other factor which helps in water treatment, as in all other medicines we prescribe, which is beyond the reach of the analytical chemist, and that is faith, which works towards recovery. The patient, after a long illness and the use of many remedies, finds himself at a health resort, amid surroundings laid out for treatment, and in a place where the whole atmosphere breathes hope of recovery. Faith and suggestion of good to follow help him. But, indeed, the waters and the "cure" generally are not peculiar in this matter. Faith and suggestion of help are in all the medicines we prescribe if they are to aid recovery, and this power of suggestion will often vary with the hand that writes the prescription. I entirely agree with Sir Thomas Horder that it is necessary to gain the patient's confidence. For instance, some quite simple mixture given by a great Harley Street physician will contain this force to a high degree, it will be treasured for years and handed round to friends with never-failing good effect. The modern psychoanalyst has done his best to ride this useful steed, suggestion, to its death, he would almost have us believe it was now forled in his own stable, forgetful of the fact that its first sire was coeval with the art of medicine.

Chronic arthritis must be taken to include all those joint affections which vary from the early synovial swellings to the advanced cases of osteoarthritis. It is the result of many different causes and cannot be classed as a distinct disease. Even the milder and the more severe forms of which I have spoken have by no means any necessary connexion with each other for the origin and cause of each is often quite distinct. Modern pathology has shown that the arthritis often results from an infection in some distant centre very frequently from the teeth. When a pathogenic organism is found a vaccine is made, and used in many cases with very encouraging results. Often no such organism can be isolated, and then we are driven back to some irregular attack of gout or rheumatism or to an old and half forgotten injury for the cause. Sometimes even this fails, and the attack seems to have "come of itself." From all this it will be understood that in treating

chronic arthritis by hydrotherapeutic methods we are treating results, and not causes, and the cases as we see them will vary, as I have said, from those of slight stiffness and pain on movement and a little synovial thickening to those later stages of disorganized joints with eroded cartilage, irregular bone formation, and fibrous or even bony ankylosis. These patients come for cure, but it is obvious that no benefit, beyond perhaps some alleviation of pain, is possible.

In the treatment of chronic arthritis by waters, or by any other means, it is not only the stiff and painful joints, but also the patient behind them that we have to think of. It is of little use in the end to see the swellings reduced and the joints more free if the general health suffers in the process. This especially applies to those asthenic cases of rheumatoid arthritis in women where the fusiform synovial enlargement of the joints, especially of the smaller ones, is accompanied by a quick pulse, a moist skin, and general debility. Such cases not only do not improve but tend actually to get worse by bathing. For them a general tonic treatment, with good food, fresh air, and massage, is by far the best. Some casts of hands from cases such as these are shown. I took them many years ago at the Mineral Water Hospital.

In treating chronic arthritis by means of baths it can easily be understood how grateful to the patient is the immediate effect of the hot water, it lessens the tension and relieves the pain and allows more movement to the joint. Bath, with its abundance of hot water, can supply this treatment freely in its so-called deep and reclining baths. This is its oldest form of cure, the one upon which its reputation was first founded, and it still remains its peculiar specialty. Immersion in the water is followed by the patient in hot sheets and blankets for from fifteen to twenty minutes, and this time might be extended with benefit and comfort. A glass of the water is taken while in the bath, and this encourages a more healthy action of the skin during the pack.

Another very useful method of using the waters in these cases is by means of the Air and Vichy douche and massage system, and I would here enter a mild protest against the continued use of these foreign names, if I use them to-day it is because we have no generally accepted English terms to take their place. In these treatments the patient is not immersed in a bath but has streams of water directed on him while seated on a chair, as in the Air system, or when lying on a padded table, as in the Vichy. The latter has thus the advantage in certain cases of allowing a more complete relaxation of the muscles, while the massage is taking place in either case attention is especially directed to the joint affected and the treatments are followed, as in the case of the immersion baths, by rest in the hot pack.

In some cases of chronic arthritis the colon is suggested as being the source of the trouble and infection. Whether this is exactly so or not, the fact remains that much benefit follows a thorough washing out of this organ. This is done by means of the Plombières system, where a pint or more of hot water is allowed to flow into the rectum, acting as an ordinary enema, to be followed by another and more copious flow which reaches the whole course of the colon. It can easily be understood that a thorough irrigation of this kind does much good by washing out the larger bowel and removing certain accumulations of small deposits that are not got rid of naturally.

And then for the more direct treatment of affected joints by water there are the aerated and whirlpool baths. These came into use during the war for the treatment of injured limbs. As their name implies, the water is in a violent state of agitation as it flows in under considerable pressure and out again. During this treatment the limb is subject to severe pounding, and massage by the water with the result that pain and swelling are relieved and mobility assisted.

Many cases of chronic arthritis improve more when active movements on their own part are encouraged rather than when they are subject to the passive movements by the masseur. For these the warm swimming bath is very useful. In this supported by the water, with plenty of room to move the limbs can be freely exercised and extended and a coordination in walking is established. The tone of the

muscles is also restored—and, after all, there are no muscles so suitable for moving a joint towards recovery as are its own.

A properly equipped bathing establishment such as you see here, or at any other of our English spas, contains many subsidiary forms of treatment for chronic arthritis. Ionization is one of these, and can be applied directly to the joints affected through packs of lint soaked in a weak solution of sodium salicylate, lithium, or an iodide, it is often of great use in reducing the synovial swelling. Then also there is the radiant heat, either by the Greville or the Dowling system, where the whole body or a particular joint is exposed to a temperature considerably above boiling point. And then there is a room which looks like a cross between a gymnasium and a torture chamber, where by mechanical contrivances passive or active movements can be obtained by means of wheels and pulleys. This system is useful in some of these cases of chronic arthritis where the stiffness of a joint is due to fibrous adhesions. It can easily be understood, however, that it needs using with care, lest by too much force the condition of some quiet joint be converted into a more acute and painful arthritis.

These various treatments—electricity, heat, movements—the adjuncts of a bathing establishment, can, of course, be obtained at home, but, if they are used there at all, it is perhaps only in a half-hearted fashion. They are certainly of more help in conjunction with the waters and during a course of baths. In many cases of chronic arthritis when ionization, for instance, has previously failed, it is found to give relief during a course of treatment here.

In conclusion I would ask you not to judge only of water treatment in chronic arthritis by what I feel I have very imperfectly laid before you to-day, but to see the process and perhaps try it for yourselves, and on your return home I suggest that you try it for some of your gouty and rheumatic patients by sending them, not abroad, but to Bath, or to some other English spa, instead.

GENERAL DISCUSSION

Dr NATHAN MITCHELL (London) said that the generally accepted methods in the treatment of chronic arthritis were the eradication of the foci of chronic infection and the improvement of the circulation in the joints by electrical and other measures. The results were good, but there were some failures, and many of the "cures" were incomplete. If the general validity of the original hypothesis was accepted, and the potency of the therapeutic agents admitted, adequate explanation of the lack of universal success was needed. It could be furnished as follows: (1) Swallowed organisms frequently set up chronic infection of the bowel. Infective streptococci could be recovered from the stools of most patients with chronic arthritis, even many years after extraction of teeth. Cultures taken at laparotomy showed the widespread nature of streptococcal infection of bowel. Organisms were most abundant in the ileo-caecal region, but might extend upwards in pure culture as high as the duodenum, and could be recovered from neighbouring lymphatic glands. Staphylococcal infection of the ileum and lymphatic glands also occurred, but less commonly. (2) General depression due to toxæmia of ordinary intestinal putrefactive type might nullify all efforts to stimulate the body to throw off the chronic infection of the joints. (3) Endocrine defects (especially thyroid), often caused by the same subinfection as the lesions in the joints, handicapped the defensive mechanism seriously. (4) Secondary invasion of damaged joints by other organisms had also to be considered. Focal infections induced by autogenous vaccines suggested strongly that streptococcal infections sometimes followed upon a primary staphylococcal arthritis during the height of which staphylococci had been grown from the fluid in the joints, and that secondary invasions by intestinal streptococci sometimes affected joints originally damaged by streptococci from the mouth. He intended shortly to publish an account of cases of chronic arthritis due to *B. fallax*, a little known microbe studied in the past chiefly in connexion with war wounds. This organism could be grown from articular cartilage removed at opera-

tion. In certain insidious cases it had appeared to be the primary bacteriological factor, but it probably played an equally important part as secondary invader, keeping up residual inflammation in joints already damaged by infective cocci. In such cases a small overdose of the corresponding vaccine sometimes precipitated an attack closely resembling acute rheumatism of childhood, even in middle-aged patients suffering from arthritis of very indolent type. It formed agglutinins readily, and with correct dosage improvement was rapid and uniform.

Dr C. B. FRANK (Medical Officer in Charge Electro-Therapeutic Department, Royal Free Hospital) thought that in the very helpful survey of the etiology and treatment of chronic arthritis by the opening of the discussion three points stood out in particular: first, that chronic arthritis was not a local but a general disease, secondly, that some factor (or) was responsible for the determination of its various local manifestations, and thirdly, that success in treatment depended largely on the ability to break into the vicious circle of the very chronic or stationary type of cases. From every point of view, and especially that of the electrotherapist, he found himself in sympathy with the broad outlook taken by Sir Thomas Horder, and he therefore ventured to put forward some tentative views as regards the importance of certain physical types in determining the nature and course of chronic joint affections. In practice, even electrotherapeutic department there were always to be found very many cases of chronic arthritis undergoing various forms of electrical treatment. From amongst these cases could be picked out one group who, while making little or no progress to recovery, were tolerably comfortable as long as they could continue treatment, but who lost ground as soon as this treatment was discontinued. This group, for want of a better term, might be called the stationary group. Then there was a smaller group of patients who were making steady progress towards recovery, and this might be called the progressive group. Finally, there was an all too large group who derived no benefit from electrical treatment, and whose crippling slowly advanced year by year—the "permanently unfit for occupation" group. It was remarkable that in each of the groups receiving some benefit—namely, the stationary and progressive groups—they found a curious selectivity as regards treatment, one patient responding only to ultra-violet light, another to radiant heat, another to diathermy, another to citrophoresis, and others only to combinations of these treatments. A close study of the affected joints showed first of all that clinically similar joints were to be found in each of the three groups, and it was therefore not possible to prophesy merely on inspection of a joint how favourable or unfavourable response to electrical treatment would be. Nor was it possible to foretell, except in rare cases, from the condition of the joints alone the kind of electrical treatment likely to be beneficial. There existed apparently similar joints requiring different electrical methods, while clinically dissimilar joints might be benefited only by one kind of electrical treatment. It would therefore appear that some factor not connected with either the causative organism or toxin or with the situation of this organism determined the nature of the joint swellings, and whether these should be resistant or not to treatment. Long experience in the detailed examination of pilots and others had made him aware that in all probability there were certain basic physical types, and he was strongly of opinion that differences in these types largely determined the response of the joints to the infecting source and the ultimate reaction to treatment. In this connexion Draper's recent work on physical types in relation to disease was of particular interest. Primarily, the examination of any fresh case should therefore be directed to assessing the type of innate physical constitution, and secondarily to the site and extent of any focus. When special examinations for pilots were first instituted there came to be recognized a cardio-vascular debility type, a nervous instability type and a malnutritional type. Briefly, the cardio-vascular debility type presented a rapid pulse with a poor response to exercise, cold, clammy, and poorly coloured extremities, abnormal engorgement of the jugular veins,

a high pulse pressure, and allied signs. The nervous instability type presented exaggerated reflexes, tremors, poor sense of equilibrium, and generally erratic responses to any test to which they might be put. The malnutritional type were chiefly noticeable from their sallow complexions, poor posture, abnormal mobility of joints, and tonelessness, particularly of the antigravity muscles. If cases of chronic arthritis were regarded from this standpoint, it was easy to understand differences in the pain, joint swelling, or destruction of articular surfaces that might be found from case to case. Also, since the extent of any cardiovascular debility might roughly be measured, and since they knew by the researches of Group Captain Fleck that flying stress was proportional to the degree of pre-existing cardiovascular or other debility, they obtained perhaps an explanation of why apparently similarly affected joints responded in different degrees to treatment. His next step when examining any case of chronic arthritis was to determine the presence or absence of any of Head's areas of hyperaesthesia. This he carried out, not by Head's usual procedure, but by employing a small faradic current, and although this current would not define areas, as Head pointed out, as accurately as the pin method, he was of opinion that it did differentiate the degree of hyperaesthesia or hyperaesthesia accurately and rapidly. The presence of a positive zone should not be used to make a diagnosis of this or that focus of infection, but should be regarded merely as a strong and reliable indication that the corresponding organ was in a state of abnormality. The nature of this abnormality must be determined by other methods. But as long as any definite zone was present in a case of chronic arthritis, the rate of response to electrical treatment was certain to be unsatisfactory, and treatment directed to the organ indicated by this or that area had, in many cases, proved of benefit, particularly in prostatic and cervical cases. As a further guide to the selection of treatment he had formulated certain rough or tentative working rules, as follows: (1) That there was, not seldom, some definite clue to the causative disease to be found from the actual joints affected, or from the order in which they became affected. Thus, a careful history and examination in cases of gonococcal arthritis usually brought to light the fact that the first discomfort appeared in the metatarsophalangeal joints. Similarly, in cases of an intestinal origin, discomfort or limitation of movement was first found in the spine, especially in the region of the lower dorsal vertebrae. These instances could be multiplied and could naturally be used to assist in diagnosis. (2) That the less a joint was free to move the less was electrical treatment likely to be effective unless this could be directed to some central focus, such as the cervix or prostate, or unless the focus had already been discovered and received adequate treatment.

It was obvious that if the physical types to which he had referred showed great differences in their reactions to the stresses of training for flying and required different methods of treatment when they broke down, so would these same types, when affected by disease, require special methods of treatment partly directed to improving their basic condition and partly applied to their affected joints. It was, he thought, in the instant recognition of what was required for the type of patient that the genius of the opener of the discussion particularly showed itself. From the electrical treatment point of view Dr Heald tried to secure, in all cases, the closest collaboration with the doctor in charge of the case so that the diseased joints, the focus (if any), and, above all, the physical condition, might be treated as a co-ordinated whole. Since he began to recognize that the underlying physical condition was of prime importance in cases of chronic arthritis, he had tried combined electrical treatments with considerably improved results as regards the group classification, one part of the combined treatment being directed to the patient as a type, the other to the existing condition. Thus, greatly valuable as the Cunningham and Robinson method was in cases of chronic gonorrhoeal arthritis, the results could be definitely improved in the nervous instability type of patient by combining ultra-violet light baths with the diathermy treatment. Indeed, in the nervous instability class of patient general ultra-violet light treatment in

combination with selected local treatment to the joints materially enhanced the chance of success, while in the cardiovascular debility type diathermy given from the chest behind to the abdomen, with or followed by local joint treatment, had now become for him a routine practice. In the muscular debility type the form of general treatment that produced the most favourable response was either the sinusoidal bath or the rhythmic induced current. In all cases where some form of combined electrical treatment was considered necessary the importance of simultaneous medical measures could not be exaggerated, indeed, it was only the essentially healthy type who, he found, were cured by local electrical treatment only.

Dr Heald then pointed out that the value of electrical treatment should not, in any case, be belittled on the results of cases treated by unqualified individuals, who necessarily could have no knowledge or appreciation of the clinical and pathological factors combined in every case of chronic arthritis, unless such treatment was closely supervised by the physician in charge of the case.

Dr PATRICK WATSON-WILLIAMS (Bristol) said that his experiences had led him to conclude definitely that "focal sepsis," which Dr Mutch had stressed as usually the essential cause of rheumatoid arthritis was at any rate the determining factor in a very large percentage of cases, and that in the recognition of this was the key to the pathogenesis and therapy of this group of diseases. Nevertheless, when treatment came to be considered, it must be realized that often degenerative changes had developed beyond the hope of success following therapeutic measures limited to the elimination of focal sepsis and subinfections, which in course of time might have subsided by auto-immunization while leaving a disastrous legacy of crippling and painful deformity. Then biologically therapeutic measures properly prescribed and carried out afforded most, if not the only, relief. But careful search for the existence of focal sepsis was called for in every case of rheumatoid arthritis, and even in cases of long standing the detection of such a source of infection and its elimination often proved immensely helpful. In an address to the Bath and Bristol Branch of the Association in 1922¹ he had described several such cases, and in the drainage and disinfection of a sphenoidal sinus infection (streptococcal), after many years spent in treatment at various spas, was strikingly successful. In doubtful cases, before directing attention to the bowel, uterus, or urethra, it was well to seek first for such sources of infection in the upper or tract of teeth, because these parts were accessible and the presence or absence of infection there was most readily determined. It was noteworthy that many rheumatoid arthritis cases were nemasthenic, and as there was no more frequent cause of what was called neurasthenia than focal sepsis, it was probably right to attribute the arthritis and neurasthenia to one and the same cause. In the earlier phases of arthritis the patient was often more neurasthenic and depressed than later when the crippling and general condition was more disastrous and distressing. He suggested that this might be due to the earlier depressing effect of focal sepsis being overcome by auto-immunization.

Dr E. P. CUMBERBATCH (London) said that Sir Thomas Horder had remarked that diathermy had its advocates in the treatment of arthritis. The speaker was an advocate of diathermy in the treatment of one form of arthritis—namely, that due to the gonococcus. It was a rational form of treatment, for the reasons that the gonococcus had a low lethal temperature and that the tissues which it infected could be heated en masse by the diathermy current. In order to obtain success the treatment should be applied to the urethra and cervix uteri in females and to the prostate and seminal vesicles in males. The joints themselves need not be included in the treatment. It was all important, however, that the diathermy should be applied with correct technique and in correct dosage. The details of the methods which had been devised by his co-worker Dr Robinson and himself had been recently published in a monograph

¹ Rheumatoid arthritis due to infection of the nasal accessory sinuses. BRITISH MEDICAL JOURNAL, January 21, 1922.

Diathermy could, he believed, be regarded as a specific for gonococcal arthritis in early cases the arthritis could be cured, in advanced cases it could be arrested. In cases of infective arthritis in women the cervix uteri as a focus from which metastatic infection could be disseminated was very frequently overlooked. Endocervicitis, hitherto unsuspected, was often found in women suffering from arthritis. In a few of these cases gonococci had actually been found, in others there had been found coliform organisms, diphtheroid bacilli, or *Streptococci faecales*. In cases of non-gonococcal arthritis it was found that the application of diathermy to the cervix, in some instances, was able to arrest the arthritis, in others it was not successful so far as the arthritis was concerned. But it removed the clinical signs of endocervicitis and the patients' general health improved. Diathermy had been applied to a few patients who were, clinically, cases of rheumatoid arthritis. These patients were young women, apparently virgins, in whom there was no history or evidence of gonococcal infection. In these cases the diathermy was applied by an intra-rectal electrode, and the contents of the pelvis were heated. In some of these cases, though not all, the arthritis was apparently arrested.

Dr DAVID CAMPBELL (Glasgow) said that he would like to draw attention to two great groups of chronic arthritis of unknown origin which were from the pathological point of view quite dissimilar. The first was rheumatoid arthritis, essentially a disease of fibrous tissue. That disease bore on the face of it the stamp of an infective disease. The second type was osteo-arthritis. Here the pathological changes were quite different from those seen in rheumatoid arthritis. These two types should be discussed separately. With regard to osteo-arthritis, very little could be said. So far as he knew, there was no way in which this process, whatever it might be, could be altered or checked. But he was quite convinced that a good deal could be done in the way of amelioration by proper treatment at any spot or by massage. A good deal of the pain was superficial, although so far as he could see there was nothing which could check this pathological change. In rheumatoid arthritis generally, by the time such cases were seen in hospital, there were two quite definite and distinct problems facing the therapist. The one was the orthopaedic problem, the other was the problem of stopping the infective process. He desired on this point to make one observation. In the early stages of the disease the chief factor in causing limitation of movement was pain in the tissues of the joint, or, almost as frequently, in the tissues around the joint. He had seen cases where a knee-joint or wrist joint was put up in plaster, and when the plaster was removed the joint was completely ankylosed, and any attempt to increase the range of movement was associated with great pain and disturbance to the patient. He was convinced that the procedure of splinting in rheumatoid arthritis might be carried too far and do more harm than good. From the beginning the patient should be encouraged to move the affected joint, and if this were done many disastrous sequelae could be prevented or greatly minimized. Next came the question of dealing with the infective joint. He thought that Sir Thomas Horder was guilty of a little mild irony when he suggested that they should treat the cause. The cause was quite unknown. That brought him to the question of focal sepsis, with regard to which he might, perhaps, be allowed a healthy scepticism. The physician used that blessed term "intestinal toxæmia" and saddled the gut with the whole responsibility. He knew that there were cases in which, after the removal of some focus of infection, there was apparent clearing up, but Dr Writtlehouse had stated that in spite of the removal of foci of infection cases were coming to Bath in the same or greater numbers than before. He agreed that if there was any focus of infection it should, on general principles, be removed, but he must express the gravest doubts whether that was really an explanation of the disease. Dr Campbell had treated nearly 200 cases of this disease during the last four or five years and with the exception of three cases, he had not seen any which, on any logical grounds whatever, could be accepted as being due to some focus of infection.

There was no specific drug which could be used. General antiseptics given by the mouth or by ionic medication through the skin could not be got into the blood in sufficient concentration to produce any effect on the organism. With regard to specific vaccines, he did not see how a specific vaccine could be prepared if the cause of the disease was not known. It was a curious commentary on the specificity of treatment by vaccines that in certain diseases such as typhoid and pneumonia, where the causative organism was definitely known, such vaccines were generally admitted not to be in the least efficacious. But lest he should appear as a therapeutic nihilist, he would suggest that some benefit could be obtained from the use of non-specific vaccine therapy—that is to say, protein shock therapy. He did not think this would cure every case—far from it, probably 20 per cent of the cases would show no improvement whatever. A certain number would improve for the time being, but would collapse at a later stage. Out of 70 such cases which he had treated during the last five years, and the last of which left the hospital eighteen months ago, 16 showed no improvement whatever in hospital, 54 were improved, some of them very much so, and out of those 54, 38 had until the present time been able to carry on their work, and had had no recurrence of the disease, in the other 16 the disease had definitely relapsed after periods varying from three to six months or a little longer. Therefore he thought that in cases of rheumatoid arthritis of infective type protein shock therapy was worth trying. He had not observed any case of pleurisy following the use of typhoid vaccine, which was the one he had used, but he had seen two cases which had had albuminuria previous to the injection and developed later a transient hæmaturia.

The PRESIDENT of the Section (Professor Wild) said that he could speak feelingly on the question of infection as a cause of chronic arthritis. He had a condition in his own hands which resulted not from a focal but from a general infection. Some thirty-five years ago he was unfortunate enough to contract a severe attack of scarlet fever in hospital work. At the end of a fortnight his temperature went up again, and he had a very sharp attack of post-scarlatinal rheumatism, with swelling of the joints, in the hands particularly. So far as he knew he got perfectly well in five or six weeks, but years afterwards he gradually noticed the onset of pain and stiffness in the joints of the fingers and the hands. Only those joints were affected that had been primarily involved in the post-scarlatinal rheumatism, he never had any trouble anywhere else. He found an osteo-arthritis developing, with a certain amount of crippling in the fine movements of the hands. He received various treatments, but he could not say that they afforded any particular benefit. It was necessary to make the best of the situation, and to make the hands as useful as might be in the circumstances. None of his colleagues was able to find any focal infection, unfortunately, because that seemed to take away any possibility of permanent cure. But there were one or two points resulting from his experience of the last twenty years which perhaps were worth noting. One thing which had hardly been mentioned in that discussion was the question of climate. The condition of his hands as regards capacity for work depended a good deal upon the weather. By pains in various joints he could foretell the onset of damp weather about twenty-four hours before the barometer fell. Why should an increase in the moisture of the atmosphere cause changes of a sensitive nature to take place in joints that were continually bathed in fluid? The only explanation that he had been able to find was the result of some observations made by a chemist, Dr Thompson of Manchester, during experiments he carried out on the estimation of the amount of carbonic acid in the expired air in the case of mice kept in chambers in which the humidity of the air was varied. When the humidity reached a certain point the elimination of carbonic acid from the body was much diminished. It seemed to the speaker that it was quite possible that one might find in the accumulation of carbonic acid in the body some explanation of the obscure pains. He was rather confirmed in this opinion by the result of experiments on his own diet. He

found that if he took sugar in a little excess this was followed by an increase of joint pains. Everyone was aware of the readiness with which sugar was oxidized in the blood and tissues, and it was possible that so readily oxidizable a carbohydrate as sugar might easily lead to an increase of carbon dioxide in the blood. The questions of climate and of diet were important factors in the treatment of many of these cases of chronic arthritis. With regard to drugs, the only thing that he had found of any use was small doses of thyroid extract for about two or three weeks, this often seemed to be beneficial. Another question was that of movement in joints. He found that the best thing for his own joints was to move them, in spite of the pain. If they were rested too much they were more stiff when he began to try to use them again. The use of them deliberately for work which involved the movements of the joints most affected was often attended, after a day or two's exercise, by a diminution rather than an increase of the pain. He thought that patients should be encouraged to use the joints provided no acute inflammatory symptoms were present at the time.

Dr P. HAMIL (London) thought that in discussing various kinds of treatment there was a little risk of a narrow view being taken owing to enthusiasm for some particular line. There was quite clear evidence that focal infections could play a definite part in causation, but it was well not to be content with one focus. He himself, while in India, had what was reasonably diagnosable as dysenteric arthritis, and it was perfectly clear that there was association between the pain and swelling of certain joints and relapse of colonic discomfort. On coming back to this country from India the same thing occurred from time to time. His dentist could not satisfy himself that there was anything wrong with his teeth, but the x-rays showed the presence of certain abscesses. The offending teeth were removed, and since that date the arthritic discomfort and intestinal instability had greatly diminished. But after a focal sepsis was eradicated there still remained dissemination. If reinforcements could be cut off, the body was able to deal with the army in the field, and this raised the question of both local and general resistance. He thought that cases should be treated on the broadest possible immunological lines. No method which was likely to produce good results should be ruled out. With regard to the question of rest, harm could be done by a too rigid splint, but surely it was one of the first principles that when an organ was acutely inflamed it should be given rest. If a limb were splinted it should not be put in plaster, but the management should be such that a certain amount of exercise and massage could be carried out. He was still unrepentant with regard to his own use of splints in moderation. Another point was to encourage the local nutrition of the joint as much as possible, and here a little exercise and massage were serviceable. The use of thyroid extract and iodides was, no doubt, of some value. With regard to spa treatment, any method which gave the patient comfort and encouragement was useful. The earliest advice on the treatment of osteo arthritis was that given by the prophet Isaiah—to strengthen the weak hands and confirm the feeble knees—that is to say, to exercise and support the muscles.

Dr H. WARRY CROWE (Harrogate) said that it seemed to be agreed that chronic arthritis was almost always infective in origin. If that were so, then surely therapeutic immunization should be successful. In these diseases—arthritis and non-articular rheumatism, for they could be classed together—were found the classical conditions in which vaccines ought to do well. Here was a low-grade chronic infection in which the antibodies of the host were being slowly used up and not rapidly replaced as in acute diseases due to virulent germs. Yet in practice the balance of opinion was unfavourable to this method of treatment. Why should there be this divergence between theory and practice? He believed it to be partly the fault of bacterial technique but not mainly so. The chief fault was with the clinician. The technique of immunization was wrong. Every active case of chronic arthritis under vaccine treatment almost without exception passed through a stage of

sensitiveness to vaccine. Sometimes this was so extreme that vaccines were for a time not tolerated at all. The clinician failed frequently to recognize this state of affairs. At first the patient improved, but a stage soon arrived when he got sensitive. If now the doses were not greatly reduced, failure, even disaster, might result. He did not hesitate to say that when the clinician recognized this fundamental fact his results would be very much better. He would venture the suggestion that this state of sensitiveness was an essential factor in the cure, and that it was only because the patient was insensitive to the low grade erosive organisms that he fell a prey to the disease.

Dr A. P. THOMSON (Birmingham) said that he had come to hear this discussion in order to get help in the solution of the difficult problem of the proper advice to give to a patient with chronic arthritis. He was glad that Sir Thomas Horder had made it clear that the first step was to endeavour to assess in each case, as the result of careful examination, the relative importance of the infective factor. If it were clear that the factor of infection was important, the patient should be urged to submit to the wearisome and expensive investigation that might be necessary to trace its source and to determine its specific treatment. He was bound to say, however, that in the course of consulting practice it was common to meet patients who had been very thoroughly investigated and treated in this way and who had not derived much benefit from the experience. With this considerable group of patients he found himself often in a position of some difficulty, and the principle by which he was guided was simple. It had become clear in the course of the discussion that the general condition of the patient was now recognized by everybody as of extreme importance, and if in an individual case it appeared good he did not hesitate to advise treatment by protein shock. He could not agree with the opener of the discussion that this method should be reserved for the stagnant cases, for, theoretically at any rate, the general stirring up of immunity should be most profitable when the patient had some reserve, and practically the result was sometimes brilliant, though it must unfortunately be admitted that failure was frequent. In the remainder of this group where the general condition was poor and the patient seemed exhausted by pain, worry, and loss of sleep, he first turned to palliative measures of various kinds which he had no doubt were most advantageously applied at a spa like Bath, some of these cases recovered sufficiently to warrant the use of shock therapy later on.

Sir THOMAS HORDER, replying, said that he concurred in the duty of the opener of a discussion not to state with any great bias his own personal views, but simply to outline them, and to give a general review of the subject, that was what he had aimed at doing. The course of the discussion had demonstrated what he had said—that it was not possible to dissociate the treatment of chronic arthritis from considerations of etiology. It followed that in a subject like chronic arthritis, where, as he had expressed it, there was an x factor present, there should be discordant views, both as to etiology and as to treatment. He had his own views, of course, some of them quite strong views, he had his own rules of practice, and so forth, and it had been interesting to him to hear one speaker in the discussion refer to Dr Mitchell's "long hand." Well, in that morning's discussion it might have seemed to be a long hand, but before he (the speaker) was quite so much interested in the clinical manifestations of medicine as he was now there was a time when he spent a good deal of his working day in the pathological laboratory. He had no word to say against the bacteriologist, without whom he could not get along to day, but he thought there was no reason why he should not occasionally "gum" him up. It had been explained to him that the reason why he received these different reports from three bacteriologists with regard to the same material was due to the fact that the material was mislabeled. But was it not the bacteriologist's function to say that the material sent to him was mislabeled? If the bacteriologist himself allowed the material to get mislabeled that was not the fault of the physician sending

the material. As to the diurnal variation, was it not for the bacteriologist to inform him—a mere clinician—that unless he sent him daily specimens for three, five, seven days (it was for him to decide the number), he could not obtain any information to carry conviction to his own mind? These were matters of technique. All his three bacteriological colleagues who sent these differing reports sent him vaccines or were prepared to do so with great conviction as to their benefit to the patient, but they were different vaccines! There must be something wrong, therefore, in the liaison between the bacteriologist and the clinician, and he did not think it was entirely the clinician's fault if that liaison was not as close and as scientific as it might be. He thought that Dr David Campbell was rather moving to the "left"—if he might put it that way—when most of them were moving to the "right," and this seemed a little odd. Dr Campbell appeared to be trying to get cohesion again in that group of arthritics which the rest of them were trying to break up. The more thoroughly they examined the arthritic patient, clinically and bacteriologically, the more convinced they became that this group would be broken up. That there was a residuo they all admitted, whatever name was given to it, it might be well not to give a name at all, or to put the name in quotation marks, so as to prevent misapprehension, but the more they investigated the individual case the more convinced they must be that the infective element was very high. The question as to whether it was a residual infection, whether some of these patients were partly carriers, and for that reason, or partly by reason of their joints being sensitized, got waves of reinfection, was very important,

and it all had a bearing upon the treatment of the individual case. One of the most important contributions to the etiology, and therefore to the therapeutics, was Dr Mutch's reference to the flora of the lower part of the small intestine. Dr Mervyn Gordon and he had previously referred to certain *post-mortem* observations which linked up a little with these very important observations to which Dr Mutch referred. It reminded him of Sir James Mackenzie's lament that so many abdomens were opened and so few scientific observations made, but here was a scientific observation which would be of the utmost value. Dr Mutch had not told them about the question of controls, but there was no doubt that he would report in due course. The types of patients mentioned by Dr Heald were interesting and important. Dr Heald had put somewhat systematically what he (the speaker) referred to loosely when he said that these patients fell into groups as to their nutritional and nerve state quite apart from the infective process. The type of patient should influence not only the choice of local treatment but of general treatment also, but he accepted willingly Dr Thomson's suggestions as to the types of cases in which one should or should not give protein shock. Comment had been made on his remark that the ideal state for protein shock was the stationary case. He did not advise protein shock for the patient who was improving by any other method. Dr Hamill's remarks were also very appropriate. Dr Hamill had taken the wide view which he (the speaker) thought (to come back to his main thesis) the discussion had strengthened—that arthritis was a general disease with local manifestations, and for that reason the patient must be studied quite as much as the joint

ON THE TOXIC NATURE OF THE STROMA OF RED BLOOD CORPUSCLES,

AND A METHOD OF TREATMENT OF BACTERIAL INFECTIONS BASED THEREON *

BY

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THE purpose of this communication is, first, to state, and to support by clinical and experimental evidence, the hypothesis that the constituents of the stroma of red blood corpuscles, when set free into the circulation by the destruction of the cell, have a toxic character and must be regarded as a factor in many diseases, and, secondly, to give an account of a method of treatment based on this hypothesis and designed to immunize the body against this cellular toxin.

Perhaps I can best introduce the subject by briefly relating the circumstances in which the inquiry originated. While on military duty in India I was struck, as all who have experience of tropical diseases must be, by the close clinical resemblance between sudden and severe attacks of malaria and bad cases of heat-stroke. Thinking that there might possibly be a factor common to these two conditions, it occurred to me that the destruction of red corpuscles might be the factor, and that the toxin responsible for the pyrexia in both diseases might be something set free from the red cells by their destruction in large numbers. Two points had to be determined: (1) whether destroyed red cells were actually toxic, (2) whether destruction of red cells could be brought about by the action of the sun. As regards the first point, evidence will be adduced later, but it may be mentioned here that Adams¹ has suggested that the pyrexia of malaria may be due to destruction of red cells rather than to any toxin produced by the parasite itself, and Brown² has shown that haematin causes chills and fever, and has suggested that some, at least, of the symptoms of malaria may be due to the action of haematin formed by the destruction of red cells. In order to decide the second point the following experiment was carried out:

Action of Sunlight on Drythrocytes

On a day when the temperature in the shade was 104° and in the sun 120° (June, North-West Frontier Province) a test tube containing washed human red corpuscles suspended in isotonic saline was exposed to the direct rays of the sun. It was placed in a beaker half-full of water and wrapped round with lint in order to keep the temperature of the fluid approximately that of the wet bulb thermometer. At first every two minutes and afterwards at longer intervals a drop was taken from the surface of the fluid and examined under the microscope in the laboratory a few yards away. A second tube was kept in the shade and used as a control. In the tube exposed to the sun, even after only two minutes, definite changes were observed: many small globules were seen, some adherent to the red cells, others free. The number of these globules was increased in films examined later. In two hours the contents of the tube were chocolate-brown in colour and only a granular debris was seen microscopically, no whole red cells remaining. No change was seen in the control tube.

As the cells were exposed in a glass tube, which would, of course, entirely cut off the actinic rays, allowing only the heat rays to penetrate, the final change, seen after two hours, was undoubtedly due to heat alone, but the changes seen in the first few minutes, before the temperature could have been appreciably raised, were, I believe, due to actinic rays falling directly on the surface of the suspension (the tube being filled nearly to the brim and the sun being nearly vertically overhead).

It is known that ultra-violet light has a haemolytic and, to a less degree, a stromolytic action.³ Details of further experimental work with ultra violet light are given below.

The Toxic Nature of the Stroma of Red Cells

The first experiment to decide this point was carried out on the same day that I first exposed red cells to the sun, and was unsuccessful. The tarry material was allowed to settle at the bottom of the tube and 5 c.cm. of the brown supernatant fluid was injected deeply under the skin. Nothing happened, beyond some discoloration of the skin, and I now know that the toxic element is not soluble in saline but remains in the tarry material consisting of the broken down cells. The supernatant fluid is brown from altered haemoglobin and is not toxic. The other experiments have been done in England.

* A paper read before the Leuceser Medical Society

TOXIC NATURE OF THE STROMA OF RED BLOOD CELLS

[THE BRITISH MEDICAL JOURNAL 641]

Washed red cells, made up to the strength of whole blood, were heated in a water-bath to 56° C for two hours, by which time most of the cells were broken up, and 1 ccm was injected under the skin of the forearm. At the same time the same amount of washed but unheated red cells was injected into the other forearm as a control. Cultures were previously taken to show sterility. The results were as follows. In twelve hours after a pinkish tinge replaced a brownish one. A few hours later the part became swollen and rather tender though not actually painful. This condition remained for about forty-eight hours, when the colour changed and the swelling disappeared, a small hard nodule remaining for several days. There was no appreciable though sometimes the swelling and hyperemia were more marked and lasted longer. As regards the control, there was no general reaction. There was no bruised appearance around the site of injection. No indurated nodule remained afterwards.

The result of this experiment, which has been repeated many times, seemed to me strong evidence of the point I was trying to prove—namely, that the stroma of red cells is toxic to the individual from whom the cells were taken, it is, however, inconclusive, because proteins may be so altered by heat that a non-toxic substance might become toxic by being heated to 56° C. It became necessary, therefore, to use a method free from this objection. In support of this hypothesis I found striking evidence in which he showed, working at the subject from the point of view of the activities of leucocytes, that the stroma of red corpuscles, set free from the cell envelope by grinding in a mortar, was toxic to leucocytes, whether of the same or of another individual. This observation suggested two lines on which to work. First, to isolate the stroma by mechanical means, and, secondly, to use the leucocyte as a criterion of indicator of toxicity in addition to the method of subcutaneous injection.

In all the experiments of which I shall now give a brief account I have had the great advantage of working in association with Mr. Bond, to whom I am indebted as much for his encouragement as for his great technical skill and wide knowledge of the properties of leucocytes. All the experiments with leucocytes have been carried out by Mr. Bond.

I Washed red cells destroyed by heat (56° C) were shown to be toxic to leucocytes as shown by arrest of emigration and by alteration in the iodophil reaction. Unheated cells showed no toxic action.

II Washed red cells ground to a pulpy like debris in a mortar with sterilized silver sand were shown to be toxic to leucocytes and to give rise when injected under the skin to a reaction similar to that described as following the injection of heated cells except that there was no brown staining. As a control in the latter part of the experiment (the supernatant fluid containing haemoglobin was injected under the skin of the other forearm at the same time. No inflammatory reaction occurred but a brown (sunburn tint) stain appeared. (It is remarkable that the clear red solution of haemoglobin resulting from grinding the red cells should produce only the yellow green colour of a bruise.) The supernatant fluid was not toxic to leucocytes.

III Experiment II was repeated substituting powdered glass for the sand and using as a control a suspension of the powdered glass. The same results were obtained but it was found that the glass had a slight inhibitory effect on leucocytes.

IV The experiment was therefore repeated with cells ground without any titrating medium. Complete destruction of cells is tedious by this method and it is difficult to prevent contamination by air borne organisms. The leucotoxic effect was the same as in the preceding experiments and was quite definite.

V Washed red cells were haemolysed by repeated freezing and thawing. No leucotoxic effect was observed.

VI Cells taken by distilled water gave no reaction when injected under the skin.

VII Action of ultra violet light. (1) A thin film of washed red cells was exposed on a slide to a 24 inch water-cooled mercury vapour lamp at a distance of 24 inches. The slide being moved from time to time to ensure a uniform exposure. In three minutes the colour of the fluid had become brownish. Microscopically no changes were observed in the red cells.

(2) 1 ccm of a similar suspension was allowed to fall drop by drop on the surface of a cylinder of ground glass placed at a distance of 24 inches from the lamp. The exposure lasted for one hour though of course, any given part of the film would

actually be exposed for a very small fraction of that time. At the end of an hour the following changes were observed. (a) Haemolysis, few unaltered cells remained but many ghosts and disintegrated cells were seen. (b) The fluid was definitely brown in colour. (c) Examined with the spectroscope a broad band was seen in the position of the typical methaemoglobin band but no oxyhaemoglobin bands could still be seen. (d) The disintegrated cells were shown to be toxic to leucocytes.

As a control in this experiment, cells prepared in the same way were exposed to the lamp for the same length of time and at the same distance, but the quartz lens was covered with a mica film. Beyond slight haemolysis and very slight leucotoxic effect, both evidently due to slight mechanical damage to the cells from frequent dropping on the glass, no changes were observed.

[Mr. C. J. Bond then gave a lantern demonstration illustrating some of the foregoing experiments and gave a more detailed explanation of leucotoxicity. He said:

Some years ago I showed that disintegrated red cells, after grinding in a pestle and mortar, exercise an inhibitory or toxic action upon both native and foreign leucocytes when incubated with them in a closed glass cell. These observations bear on the problem of the reaction produced by the subcutaneous injection of disintegrated red cells. The next step was to show that red cells destroyed by exposure to a temperature of 56° C for two hours, when incubated with whole human blood exercise the same inhibitory and toxic effect on the leucocytes as that exercised by red cells disintegrated by mechanical means. One drop of a suspension of red cells destroyed by heat was incubated with two drops of my own blood in a closed cell for half an hour. On washing away the clot in a gentle stream of normal saline the emigration field of leucocytes on the floor of the cell, instead of forming a thick carpet, was composed of a few isolated cells, some of which showed cytolytic changes. The effect of forming a thick is to prevent the emigration of leucocytes from the incubated clot, and to bring about degenerative changes in the few cells which do emigrate and remain adherent to the slide, it is to this inhibitory and denaturing influence that the term "leucotoxicity" is applied. The experiment has been carried out with different concentrations of red cell debris and with native and foreign blood. Thus the suspension of red cell debris allowed to dry on one half and hour on examination after removal of the clot, a thick carpet of emigrated leucocytes will be found on the print printed with the whole red cells and only a few degenerating leucocytes on the area painted with the disintegrated red cells.

From these and other observations it is, I think, clear that the stroma of disintegrated red cells (not the haemoglobin) exercises an influence on living leucocytes which (1) if not too concentrated inhibits or delays emigration from an incubated blood clot, and (2) in higher concentrations brings about cytolytic changes in the leucocytes which adhere to the slide. There is reason to believe that this toxic property resides in the protein element of the stroma and not in the haemoglobin.

The following clinical observations also have a bearing on the problem of red cell toxicity. I have already shown that if two or three drops of blood taken from the finger of a patient with malaria, during a rigor, be incubated in a closed cell very few leucocytes emigrate from the clot, and those which adhere to the slide show cytolytic changes. This property of emigration is not entirely due to the present during the attack, because if the clot from which the poor crop of leucocytes has been obtained be detached from the slide and gently washed in normal saline and incubated on a fresh slide, a fresh crop of more active cells can be obtained.

I have recently confirmed these findings in several cases of general malaria in which malaria has been induced for therapeutic purposes, and in which the emigration picture

could be observed before the injection of the malarial blood, during the pre-eruptive period, during the administration of quinine, and after recovery.

I have also ascertained that similar conditions obtain in paroxysmal haemoglobinuria. Thus, incubation of blood taken from the finger of a child during an attack gives an emigration picture very like that of malaria during the rigor, only a few degenerating cells adhere to the slide, and this condition remains, in a diminishing degree, for several days after the urino has become clear and free from haemoglobin. Later on, during recovery, free emigration of normal cells occurs. As I have stated elsewhere,² similar conditions are found in certain other diseases, the emigration picture being unlike that seen in pneumonia and some other bacterial infections.

It is evident that the employment of disintegrated red cells as a vaccine in controlled doses with the object of immunizing the body against a toxin of red cell origin is a matter of great interest and importance.]

The toxic nature of the stroma being shown, it is now necessary to inquire by what means red cell destruction is brought about in the body in disease, in order to discover if this toxic agent is of any clinical significance. We have seen that red cells can be destroyed by the rays of the tropical sun, by the ultra-violet light, by heat, and by mechanical means. If it can be shown that bacteria have a similar destructive action the possible importance of this cellular toxin becomes apparent. It is well known that certain bacteria—for example, haemolytic streptococci—have this property.

In order to investigate this matter further I enlisted the co-operation of Dr. Mackrell, pathologist to the Leicester Infirmary, and he very kindly has carried out the following observations.

[Dr. Mackrell gave a demonstration illustrating the haemolytic properties of certain bacteria. He said:

In order to test the action of different bacteria on red cells, tubes containing 5 c.cm. of isotonic broth to which two drops of human blood were added were inoculated with the organism under observation and incubated at 36° C., smears of the deposit were made every few hours. In this way streptococci, *B. coli*, *B. typhosus*, diphtheria bacilli, pneumococci, staphylococci, and diphtherioids, all freshly isolated, were tested. The staphylococci, many virulent strains of which were tested, the typhoid bacillus (isolated from a chronic osteitis), and several strains of diphtherioid bacilli had no apparent effect on the corpuscles, even after forty-eight hours' incubation. *B. coli* isolated from the uterus in a case of puerperal sepsis showed well marked haemolysis in four hours, some isolated from a case of cystitis took twenty-four hours to show haemolysis, while a strain isolated from the faeces caused no haemolysis at all in the first few subcultures, though by repeated subculturing and growing in the presence of human blood it haemolysed as rapidly as the one obtained from the uterus. Diphtheria bacilli caused haemolysis within twelve hours, and pneumococci took a little longer.

In all these cases a diffusion of the haemoglobin took place before the actual destruction of the cell envelope, and the haemoglobin was apparently unchanged. In the case of the streptococcus the action is somewhat different, the red cell being first broken up and the haemoglobin being altered so that the broth has a brownish tinge. These experiments tend to show that many organisms, not only the well known haemolytic ones, act upon red cells and destroy them, and probably produce some, at least of their effect in the body by this means.

There remains the much more difficult problem of demonstrating the presence of an immune body in the serum of normal individuals who have received a series of injections of destroyed red cells, and of patients suffering from diseases associated with blood destruction.

Various methods of complement fixation were tried, using the patient's serum as the specific serum, the antigens tried were (1) a suspension of cells destroyed by heat, (2) an alcoholic extract of red cells, and (3) an acetone extract. The results have so far been negative, though in a case of malaria (benign tertian, before administration of quinine) a deviation of two minimal haemolytic doses

was constantly obtained with each antigen. In two cases of pernicious anaemia the results were inconclusive, as on that occasion the antigen itself was incomplementary. On the whole the results so far obtained have proved disappointing, but the failure is quite possibly due to the method of preparing the antigen. Further work will be done upon it.]

CLINICAL APPLICATION

We now come to the clinical application of the theory which I have endeavoured to put forward. If it is true that bacteria can destroy red cells and that the effect of such destruction is to set free a cellular toxin into the circulation, one may look upon a bacterial infection as having a dual pathogenic effect—first, the effect of the specific toxin of the organism concerned, and secondly, the effect of the endocellular toxin. It may be impossible definitely to distinguish the effects of one of these factors from those of the other, but we may perhaps assume, from what we know of the results of rapid red cell destruction in malaria, that pneumonia, generally observed in most infectious, is due, at least in part, to the endocellular toxin. The method of treatment that I have devised and practised is based on the view that the natural defensive powers of the body are in most cases adequate to deal with the bacterial invasion, but that they are handicapped and sometimes rendered ineffective by the debilitating effects of this secondary pathological factor. I am, therefore, at immunizing the body against this toxin, just as by bacterial vaccines we aim at immunizing the body against the bacterial toxin. There is no reason why the two methods should not be used in conjunction, but I have hitherto not used this combined method, except in a few cases, because of the difficulty of interpreting the results. The method of bringing about this immunization is by the subcutaneous injection, at regular intervals, of a suspension of red cells destroyed by heating them for two hours at 56° C.

The method of preparing the material for injection is as follows.

Twenty cubic centimetres of blood are drawn from a vein into a sterile bottle containing 10 c.cm. of citrated saline to which 0.5 per cent of phenol is added as an additional safeguard against contamination. (In the experiments with leucocytes the phenol was omitted.) The red cells are thrown down by centrifugalization and the serum and citrate solution replaced by sterile normal saline and made up to 20 c.cm. The suspension of red cells is then put up in ampoules containing 1 c.cm., and the ampoules heated to 56° C. for at least two hours in a thermostat. A slightly lower temperature fails to destroy all the cells. A higher temperature results in a sticky fluid which will, with difficulty, pass through a hypodermic needle. One cubic centimetre is sufficient to set up a moderate local reaction when I have used more I have had a rather severe reaction.

I have in all cases kept to the same dose throughout a course of treatment, though it may quite possibly prove to be an advantage to increase the dose gradually. In acute cases the injection is given every three or four days, in chronic cases once a week. Children receive a small dose. As a general rule it is convenient and perhaps advisable to use the patient's own blood, though often, especially in children, it is more convenient to use one's own or my healthy blood. Mr. Bond's experiments seem to show that there is little difference in toxicity, whether the patient's own cells or those of another individual are used, though homologous cells are perhaps slightly more toxic.

RESULTS OF TREATMENT

To test the effect of this method of treatment I have tried, as far as possible, to select cases where patients were suffering from bacterial infections against which they were making no headway, where surgical treatment had failed to bring about recovery, and where no other treatment suggested itself as likely to be of value. Up to the present I have not used it in cases where other methods are being used, because of the difficulty of interpreting the results, and consequently have not used it in puerperal fever or other very acute infections. Suitable test cases are not very common in the surgical wards and out-patient department.

Tuberculosis

Tuberculosis of the urinary tract unsuitable for surgical treatment seemed to me to provide the most severe test of the efficacy of the method, being a disease where the

tendency to natural cure is slight and where the progress can be observed by bacteriological as well as clinical evidence. I have treated six such cases, two of which have only recently come under treatment and are therefore not reported here.

CASE I

A woman aged 28 with tuberculosis of the urinary tract had been in a sanatorium for six months, and afterwards had had a course of tuberculin injections for another six months. When examined she had severe cystitis, tubercle bacilli were present in large numbers in the urine and catheterization of the ureters showed that both kidneys were affected. There was an associated coccal infection. The symptoms were pyuria, occasional haematuria, painful and frequent micturition and pyrexia. Treatment by injection of destroyed red cells (her own) was begun and continued at weekly intervals for twenty-four weeks with an interval of four weeks after the first three months. Improvement though gradual was continuous and definite tubercle bacilli could not be found in the urine after three months' treatment and have not been found since though searched for many times. Her general health has improved greatly and she is able to do her ordinary work. She has had no other treatment except a short course of lavage of the bladder to clear up some cystitis that remained. It is now two years since treatment was begun.

CASE II

A woman aged 47 gave a history of painful and frequent micturition for some months with increasing debility. Cystoscopy revealed a ragged ulcer on the right wall of the bladder and some general cystitis, partly obscuring the ureteric orifices. Tubercle bacilli were found in the urine. After twelve weekly injections tubercle bacilli could no longer be found, and have not been found since though searched for several times. Treatment was stopped but resumed a few months later as pain on micturition was complained of. She had eight more weekly injections after which no urinary symptoms were present. I had occasion to treat her a year later for uterine haemorrhage and examined the bladder. No trace of the ulcer could be seen and the bladder appeared to be healthy. Treatment was begun in July 1923, at the first examination of urine in January 1925, no tubercle bacilli were found, but pus cells and staphylococci were still present in the urine.

CASE III

A man aged 48 whose right testis had been removed three years previously for tuberculous disease. He was admitted on account of occasional haematuria and some frequency of micturition but no pain, tubercle bacilli were found in the urine. There was also a discharging sinus from a tuberculous focus in the sternum of some four months' duration. The patient was a healthy looking man though he had lost weight. He has now had weekly injections for three months and is still under treatment. Tubercle bacilli are still present but his general health has improved remarkably and he has put on nearly a stone in weight. The focus in the sternum has apparently completely healed. The ureters were not catheterized on account of the orifices being obscured by general cystitis.

CASE IV

A girl aged 19 with very advanced renal and bladder tuberculosis. After treatment for a few weeks without benefit it was realized that the case was quite hopeless, the patient died very soon after.

Many cases of bone and gland tuberculosis have been treated by this method, but as in all these cases other methods of treatment, local and general, have been employed at the same time, details of particular cases do not carry much weight. One such case may, however, be worth mentioning.

CASE V

A boy aged 13 had tuberculous lesions in a metatarsal bone in each foot. Skiagrams showed evidence of bone disease, a focus in the fleshy part of the nasal septum and a swelling apparently tuberculous in the left wrist. The diagnosis was made only on clinical grounds and on skiagraphic appearances. Local treatment consisted only of immobilization of the wrist and he was kept entirely off his feet. He has had treatment by injections for four months, a very striking improvement in general health with increase in weight was seen soon after the treatment was begun and the local lesions are now nearly healed though there is still slight discharge from the bone foci and a dry granulating area on the septum which will probably require local treatment. He was treated as an out-patient.

Non tuberculous Infections

The following are cases of non-tuberculous infections treated by this method.

CASE VI

A male aged 18 with persistent pyrexia and metastatic abscesses following operation for suppurative appendicitis. For a month after operation temperatures varying from 101° to 104° were recorded daily, and several metastatic abscesses were opened. After the second injection definite improvement was observed, the temperature rising only once to 101° the third injection was followed by almost normal temperature 100° being recorded once. Six injections were given the temperature remaining normal after the fourth. At the same time the improvement in the general condition was most striking and the abdominal wound previous to sluggish and discharging healed rapidly. The injections were given every four days.

CASE VII

A female child, aged 5 was admitted with empyema. She was suffering also from pychitis (*B. coli*) and had a mitral systolic bruit apparently organic. After thoracotomy and drainage the temperature still remained irregular and a second collection of pus in the chest was drained without effect on it. A month after the operation the child was very gravely ill, the temperature being 103° to 104° daily. After the second injection (three days' interval) a striking fall in the temperature was observed and except for a sudden rise to 103° for a few hours a week later the chart remained almost normal for a month and a very marked improvement in general health coincided with the disappearance of the pyrexia. As the temperature again became irregular for a few days two more injections (0.5 c.c.) were given, with the same result as before. Some pus cells still remained in the urine when the patient was discharged.

These are examples of cases treated on the surgical side, but it must be acknowledged that there have been failures. A case of pulmonary infection after operation for perforated gastric ulcer and a case of actinomycosis, among others, were not benefited in any way. Also some cases of multiple sinuses from bone necrosis of very long standing, which I have been allowed to treat by the courtesy of the officers in charge of the Pensions Hospital, Leicester, have not shown any material improvement. By the courtesy of my medical colleagues I have treated a few medical cases.

CASE VIII—Persistent Urticaria

A man aged 27 had suffered since 1917 from troublesome urticaria affecting the skin of the limbs and face and quite unresponsive to treatment. It had appeared during military service and he was drawing a pension for it. After seven injections (weekly intervals) the attacks had ceased and had not recurred several months after, since when I have lost sight of him.

A case of "urticaria dermatographica" was not influenced by a course of injections.

CASE IX—Pulmonary Tuberculosis

A man aged 56 whose general condition was fairly good presented evident signs in the lungs and tubercle bacilli in the sputum. For some reason he had refused to remain in a sanatorium for more than a few weeks. After treatment by injections for four months no tubercle bacilli were found in the sputum after two examinations and his general health had improved.

Though this case is mentioned I do not, of course, claim that this method of treatment is applicable to pulmonary tuberculosis, though on general grounds it might be considered to be worthy of a more extended trial.

My hope that general paralysis might reasonably be expected to be favourably affected by this method of treatment was based on the now well known results of treating general paralysis by infecting the patient with the malaria parasite. I suggest that this "treatment by malaria" really amounts to a periodical intravenous injection of destroyed cells, and that the beneficial effects are due to an immunizing reaction against this cellular toxin in the way that I have described. A patient was referred to me as being, clinically, quite definitely a case of general paralysis, though no Wassermann test had been done (he was not a hospital patient). After eight injections the improvement in mental and general condition was quite definite, and, I am told, has been maintained, though partial lack of bladder control remains.

HELIO THERAPY

I believe there are strong grounds for regarding heliotherapy, as carried out with such success by Professor Rollier in Switzerland and Sir Henry Gray in Hampshire, as being really a method of application of the treatment by immunization. I suggest that the mode of action of heliotherapy is briefly as follows: (1) Although it has not been proved that the tubercle bacillus has a hemolytic property, like many other pathogenic bacteria, it is probable that the pyrexia, anaemia, and debility are due, in part, to the endocellular toxin. The natural defensive powers of the body are capable, up to a point, of dealing with the tubercle bacillus but are handicapped by the action of this toxin. (2) The sun's rays destroy a certain number of red cells in the superficial capillaries, probably first destroying the endothelial cells forming the capillaries. (The bronzing of the skin may be evidence of blood destruction, but this is uncertain, it is well known that those patients do well whose skin bronzes readily.) (3) The destruction of red cells in the skin sets free a small amount of the endocellular

toxin which acts as an immunizing agent, being favourably placed for acting in this way.

The process of exposure to the sun must be gradual or a dangerous reaction may be set up, the explanation of this is, I think, that the destruction of a large number of cells, before immunity to the toxin has been set up, results in the formation of an excess of the same toxin that is already producing the symptoms of the disease, in the same way that an overdose of a vaccine is followed by a severe reaction.

It is impossible to believe that the rays of the sun can have such powers of penetration as to have any direct bactericidal effect on tubercle bacilli deeply situated in a gland or bone. The explanation that I have suggested seems to me to be more probable, and certainly more tangible, than that given by Dr Rosset in Professor Rollier's book on heliotherapy.

The energy given out by the radiations is stored and carried in the blood stream to every part of the body, when liberated it stimulates the intracellular processes of oxidation and reduction.

In this connexion it is of particular interest to note that guinea-pigs inoculated with hæmatopoiphysin require an extraordinary hypersensitiveness to sunlight and ultra-violet rays. I do not know what explanation of the phenomenon has been given, but I believe that it may be regarded as an anaphylactic reaction, the hæmatopoiphysin (a derivative of red blood cells) sensitizing these animals so that a subsequent dose of a similar or closely allied substance, liberated by the destructive action of sunlight on red cells, rapidly produces toxic symptoms.

SUMMARY

It is well known that the red corpuscles of animals of one species are toxic to animals of another species, Vedder⁶ has shown that human red cell stroma, freed from hæmoglobin, is exceedingly toxic to rabbits. In this communication an attempt has been made to show that the stroma of human red cells, when disintegrated by heat or by mechanical means, is toxic to the individual from whom the blood was withdrawn and to other individuals, it is also shown that many bacteria have a disintegrative effect on red cells. It is inferred therefrom that this endocellular toxin is a factor in causing the manifestations of bacterial infections, and a method of treatment is suggested based on these deductions and aiming at immunizing the body against this toxin.

The toxin produced by the destruction of red cells is probably an example of a "poison of metabolic origin," such as gastrin, hepatotoxin, etc., though in most cases these toxins have been produced by the injection of the particular cells of one animal into another of a different species. G. Bolton⁷ produced an isogastrotoxin by immunizing the rabbit with the gastric cells of a rabbit, and Ehrlich⁸ has shown that an isohæmolysin might be formed in the goat by the injection of goat's blood which would dissolve the blood of another goat. I am not aware that it has been previously shown that human disintegrated red cells are toxic to the same and other individuals.

Reference must be made to a paper by S. G. Billington,⁹ in which he describes how certain "cocoid bodies" are formed from the red cells when a few drops of blood are added to a tube of distilled water with 0.5 per cent ammonium carbonate and heated to 58° C. These cocoid bodies he regards as possibly allied to or identical with microorganisms, and he has treated a large number of bacterial infections with vaccines prepared from these bodies. I have found that the debris resulting from heating washed red cells in the way I have described consists, microscopically, of similar "cocoid bodies", if the medium is normal saline the spheres are large—about a quarter the size of red cells—while if weak saline, or distilled water, is used they are smaller and have the appearance and often the arrangement (pairs, short chains, etc.) of cocci. Their staining reactions, however, are these red cells.

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SOME NOTES ON EPIDEMIC ENCEPHALITIS

BY

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It is not my intention to attempt to give anything like a complete account of the cases of epidemic encephalitis admitted to the fever hospitals under my care during the very sudden and extensive epidemic in Belfast during the spring and early summer of 1924. I shall merely endeavour to refer to some of the outstanding features of that outbreak, and to give some notes and figures gleaned from my experience of that very large number of cases.

The outbreak began at the end of March, 1924. For the first three weeks the cases were few, about the middle of April there was a sudden large increase in admissions, and cases continued to come in large numbers until the end of June, when the epidemic ceased even more suddenly than it began. This seasonal outbreak coincides exactly with our experience in 1920, the only other year in which there has been any extensive epidemic in Belfast. The total number of cases admitted to the fever hospitals in the outbreak of 1924 was 183.

Differences in the type of attack in the cases in this recent outbreak, compared with the earlier epidemics, have been noted everywhere, but I think much, though not all, of this difference is more apparent than real. The descriptions of the signs and symptoms in the early stages of the disease which have appeared in medical literature are necessarily to a large extent based on observations made on cases after their admission to hospital. Whereas in the earlier outbreaks cases very rarely reached the hospital until lethargic symptoms had developed, in this epidemic the cases were much more quickly diagnosed, and were frequently sent to hospital in the stage of excitement and insomnia. This naturally left with the hospital physician a very different picture of the early signs. I know that, speaking for myself, I did not fully recognize until the outbreak of 1924 the very great diagnostic value of a history of persistent insomnia, mental excitement, and talkativeness at the onset.

SYMPTOMS

The prominent symptoms at the onset of this outbreak were (1) flitting superficial neuralgic pains, (2) nocturnal insomnia, often complete and lasting for several nights, (3) mental excitement and exaltation, great restlessness and talkativeness, a little later came (4) diplopia and other eye signs, (5) muscular twitchings of varying degree, (6) delirium of varying degree, and later still (7) lethargy of varying degree. It is, of course, true that in many cases some of these symptoms were entirely absent.

1. *Neuralgic pains* were reported in the large majority. Common sites were the scalp, over the ears and sides of the neck, often extending over the shoulder and arm, the forearm, the fingers, especially the thumb, over the iliac crests, one or both, occasionally pains in the leg or foot were present at the onset, but more commonly this was later, and often very troublesome, manifestation. In a few cases the first symptom was pain high up in the axillæ, and in some very acute pain in the perineum. In many cases if the painful part were firmly handled the pain was slight or absent, but light touching or stroking was intensely painful.

2. *Nocturnal insomnia* was present in a large majority as a very early sign. Many patients were unable to sleep at all for four, six, or even eight nights.

3. *Mental excitement, restlessness, and talkativeness* were very common at the onset, the talkativeness was particularly striking in many cases seen in the very early stage. In many there was a history that if left alone the patient whistled or sang all through the night and more than one patient after admission to hospital treated the ward to a continuous vocal concert throughout the night.

* Abstr. of a paper read before the Ulster Medical Society on

4 *Diplopia and other Eye Signs*—Diplopia was present in 73 per cent of my cases, generally it was not observed until the second or third day. In some it was the first symptom complained of, but in most of these cases careful inquiry elicited a history of previous weakness and restlessness. Squint, nystagmus, and partial loss of accommodation were frequent. Conjunctivitis was noted in only a small proportion.

5 *Muscular Twitchings*—Here I think there was a marked difference between the recent cases and those seen in former outbreaks. Twitchings, myoclonic jerks, and general choreiform movements were much more commonly seen in this outbreak. They were present to some degree in over 70 per cent of my cases. In many the jerking was mild, confined to the limbs, with, in some, twitchings in the lips, tongue, and eyelids, in these they generally passed off in a few days. In many they were very severe and persisted for weeks or even months. In several the patients looked, at first sight, like severe cases of chorea. In these the skin over all prominent parts was often greatly excoriated from rubbing on the bed and clothes. Myoclonic jerking of the abdominal muscles were common, with or without pain, and often slow in clearing up. In one very severe case the abdominal jerks were still present, at the rate of twenty to the minute, at the end of five months.

6 *Delirium* was noted in 52 per cent, it varied in degree from slight nocturnal mutterings to severe maniacal states somewhat resembling delirium tremens. In several instances it was necessary to sheet the patient down in bed. Hallucinations were noted in several cases.

7 *Lethargy* was present at some stage in 72 per cent, it varied greatly in degree. Generally it appeared in the third or fourth week. In many it was at first only in the daytime, the patient continued wakeful at night. Later it was continuous. In a few cases there was profound coma lasting for weeks, necessitating nasal feeding, etc. In a few lethargy was the first sign observed.

Herpes was noted in 6 per cent, generally on the lips or nostrils, but occasionally at other sites.

Respiratory Disturbances—Attacks of polypnoea were common both in early and late stages. Many showed sudden attacks of very rapid shallow breathing (60, 80, or 100 a minute) lasting from a few minutes to hours, especially during sleep, and often accompanied by pricking.

Polyuria was common. One patient, a woman of 48 with a very severe attack, was at the twelfth week passing 500 to 600 ounces of urine a day, with a specific gravity down to 1002. This rapidly became normal after lumbar puncture.

Cerebrospinal Fluid—Lumbar puncture was made in many cases. Little that varied from the normal was found except an increased sugar content. This increase in the sugar is a valuable diagnostic sign, especially in differentiating from meningitis. If there be no increase in the sugar content the case is almost certainly not epidemic encephalitis. Of course it does not follow that if there is an increase the case is one of encephalitis, but it is one important point in favour of such a diagnosis.

Paralysis—Paralysis or paresis of the facial nerve was noted in only a few cases in this outbreak. In my experience it was much more common in former epidemics. Paralysis of deglutition was also less commonly met with in the recent cases.

House Distribution—In very few instances had we more than one case from one house. No member of the staff at either hospital contracted the disease.

Encephalitis during Pregnancy—In the earlier outbreaks of encephalitis it was, I think, the general opinion that, if the disease occurred in a pregnant woman, the outlook was very grave. Very high mortality rates, even as high as 60 per cent, were recorded. In an early report of the Ministry of Health the death rate in such cases was given as 44 per cent. Larger experience has tended to modify this view, and evidence is gradually accumulating

that these high rates of mortality were exceptional, later records show a very much lower death rate. Among the 183 cases in our fever hospitals last spring there were ten cases in pregnant women, with one death—a mortality rate of 10 per cent, this is lower than the case mortality in the whole series (11.4 per cent). In only one of my cases was the pregnancy interrupted, although many were very severe. Two children born in hospital were healthy and have remained so.

PROGNOSIS

In the earlier epidemics in Britain, the Continent, and America, in the years 1918 to 1921, the case mortality rates, calculated on the deaths in the acute stage, were everywhere high—up to 50 per cent in some places. In the report of the Ministry of Health for 1919-20, which dealt with over 1,200 cases, the mortality was 48 per cent. Such figures are certainly misleading, they are arrived at by taking the number of cases notified and the total deaths certified. Everyone interested in the subject knows that, especially in the earlier years, large numbers of cases escaped notification. Professor Hall, in his very excellent work on *Epidemic Encephalitis*, published last year, says: "One may say that in every 100 cases 25 die, 25 recover practically completely, whilst 50 recover with residua", adding that "Such a statement can only be taken as very crude." With larger experience the death rate in the acute stage is gradually being placed lower. In the 183 cases in the hospitals under my care in the spring of 1924 the case mortality was 11.4 per cent. It is very difficult to calculate the correct mortality rate—so many cases recover completely, or almost completely, for a time, some for a few weeks, some for months, and some for years but sooner or later develop serious after-effects which prove fatal.

Percentage of Complete Recovery—Very varying estimates have been given. After our first epidemic waves had passed I think the general opinion was that, roughly, 20 per cent recovered completely. I have always been very sceptical about this recovery rate. As a result of further experience there has been a tendency to put this percentage lower and lower. My own belief is that the percentage of complete and permanent recovery is very small. In a recent discussion on encephalitis in one of the large cities in England the physician who opened it placed the complete recovery rate at 50 per cent, but some of the subsequent speakers questioned this. I think such a complete recovery rate must be very exceptional. My own belief is that if we were to put the percentage of complete recovery at 5 we should at least be much nearer the mark. I am not forgetting that some patients which I had in hospital five or six years ago are still earning their living at their usual occupations and are reported well, but close inquiry has nearly always shown that all is not absolutely well with these patients, and I think that even now, after a lapse of five years it is too soon to sound the "all clear" signal. Riddoch has reported the results in 83 cases which recovered from the acute attack in the London Hospital, they were examined at long intervals after discharge. He found "residua in almost all" (Hall). My own experience coincides with this.

Cause of the Lethargy—The question of the cause of the lethargy cannot be answered at present. Several very ingenious hypotheses have been suggested. I shall briefly refer to a few.

I That the lethargy is due to a "cut out" of the afferent stimuli to the thalamus. There is much to be said for this theory, and it is supported by many authorities whose opinion must carry weight.

II That it is due to changes in the pituitary. Inflammatory changes in the pituitary—congestion, venous thrombosis, and necrosis—have been noted frequently *post mortem*. You will remember that Professor Simmons pointed out the frequent finding of such changes in the autopsies on the earliest cases seen here several years ago. It has been held that under normal conditions the secretion of the pituitary counteracts fatigue. If this is correct

then any inflammatory process which decreases the secretion must increase fatigue and lead to drowsiness, and if there is permanent necrotic destruction this theory would explain the permanent loss of energy which is met with so often as an after-effect in these cases

III That there exists a definite "sleep centre," and that this centre becomes involved in the pathological process. Various authorities put forward this theory, and very different are the sites they suggest for this "sleep centre." Other authorities maintain that the lethargy of epidemic encephalitis has no relation to normal sleep

IV That it is due to blocking of the aqueduct, leading to dilatation of the ventricles with fluid and increased pressure

Whatever may be found to be the true explanation I think it will certainly not prove to be due to blocking of the free passage of cerebro-spinal fluid through the aqueduct. My reasons for saying so are

(1) If a lumbar puncture be made in a case showing deep lethargy and all the fluid which will flow drained off, it will be found that the amount is quite as large as will be obtained from puncture in a case of similar duration which does not show lethargy

(2) If in a deeply lethargic case the puncture be repeated daily the amounts of fluid obtained will be approximately the same, 40 to 60 ccm being the usual amount

(3) If in a deeply lethargic case a lumbar puncture be made and the fluid allowed to flow until only a few drops a minute come away, and if then the patient's head be raised from the pillow and the chin elevated, so as to allow further drainage of the ventricles, the flow through the cannula will immediately increase and a considerable additional amount of fluid will pass off

(4) If in a deeply lethargic infant, with open fontanelles, a lumbar puncture be made, the flow of the fluid can be immediately and markedly increased by pressure on the fontanelle. Removal of the pressure instantly retards the flow, which increases again with renewed pressure on the fontanelle

I have not yet met with a case in which these tests gave any different result, even when the lethargy amounted to complete coma of several weeks' duration. That being so I think that blocking of the aqueduct as the cause of the lethargy may be definitely ruled out

TREATMENT

The course is so irregular, and is subject to such wide fluctuations, such sudden improvement in symptoms, only to be followed by relapses, that it is exceedingly difficult to form anything approaching a correct opinion on the results obtained by any line of treatment. This being so, it is only natural to find in the medical journals from time to time very glowing and enthusiastic accounts of the results obtained by some new (or often very old) therapeutic measure

Many of the treatments suggested, and even enthusiastically recommended, can only be described as weird in the extreme. Let I fancy most of us who have been called upon to treat any considerable number of cases have, doubtfully, employed some of these extraordinary treatments, the rationale of which we could not see, only quickly to abandon them

[Dr Robb then reported his results with very many lines of treatment. He was not satisfied he obtained any good results with hexamine, sodium salicylate, "fixation abscess", diphtheria antitoxin, intravenous injections of the patient's own cerebro spinal fluid, frequently repeated lumbar puncture and drainage, intramuscular injections of sterilized milk, and intravenous injections of "argotropon" (1 per cent colloidal silver and 20 per cent hexamine), as suggested by Marburg and favourably reported upon by Professor Wimmer. Marked relief in chronic cases of Parkinsonism and disturbance of sleep followed the continued administration of 1/100 grain of hyosine hydrobromide three times a day by the mouth, but it was not curative, and the symptoms quickly returned on suspension of the treatment.]

Concluding, Dr Robb said

As a result of my experience in attempting to treat these cases I find myself in complete accord with Professor Hall when he says

"At present any reliable therapeutics, either for the disorder itself or for its many after-results, does not exist"

At the same time it is true that a great deal can be done to relieve the very many present troubles these patients suffer from by the judicious use of palliative measures

ENCYSTED PLEURAL EFFUSION CONTAINING CHOLESTERIN

BY

E O A SINGER, M B, AND E V WHITBY, M B,
M R C P, CAPTAIN R A M C D M R E, MAJOR R A M C

The following case may be of interest on account of the unusual occurrence of a large amount of cholesterol in an encysted pleural effusion

Corporal N, aged 34 years came under our care at the British Station Hospital, Rawalpindi, towards the end of March 1924. He was complaining of pain in the left side of the chest due to fibrinous pleurisy on that side. There were no symptoms pointing to any lesion on the right side of the chest. Examination however, showed an area of dullness extending to about two inches above the liver dullness in the right axilla. This dull area fell short of the spinal column by about two and a half inches posteriorly. The breath sounds were diminished. The heart was not displaced. The temperature was normal, and there was no expectoration.

Paracentesis followed by aspiration was performed, and 25 ounces of a brownish shimmering fluid were withdrawn. It contained crystals of cholesterol. No organisms were found nor hooklets of *Taenia echinococcus*. A culture was sterile. A differential blood count gave the following result

Polymorphonuclear leucocytes	69 per cent
Lymphocytes	24 "
Large mononuclears	4 "
Eosinophils	2 "
Basophils	1 "

The urine showed no abnormality. Nothing could be found to account for the presence of the large amount of cholesterol in the pleural effusion. There was no history of any lung or liver trouble, or of dysentery.

The patient was later transferred to a hospital in a hill station for further treatment, and was discharged from there as a convalescent to light duty. He again came under our observation early in January, 1925. He was then feeling fairly well but complained of breathlessness on exertion, and inability to do any heavy work. The heart's apex was well inside the nipple line in the fifth left intercostal space the sounds were rather faint. The blood pressure was systolic 136 diastolic 76 mm Hg. The thorax did not move freely on respiration. No abnormality was noted in the left lung but there was moderate dullness in the right axilla as high as the third rib, posteriorly it reached to within two inches of the spinal column. The breath sounds over the dull area were faint, there were no accompaniments, vocal resonance was diminished and slightly egophony.

Paracentesis and aspiration were again performed, and 30 ounces of fluid very similar in appearance to that obtained on the previous occasion were withdrawn.

Pathological Report.—Smear negative to the tubercle bacillus. Culture sterile. Fluid contains a large quantity of cholesterol crystals. Some dullness remained after aspiration, and this showed a tendency towards increase. A fortnight later a second aspiration was performed and a further 7 ounces of fluid were withdrawn.

Throughout the patient's stay in hospital the temperature was normal. There was no wasting and no glandular enlargement. There was no increase in the respiration rate while the patient was at rest. The pulse varied from 68 to 100. The urine showed no abnormality.

X ray examination on April 3rd, 1924, showed that at the base of the right chest there was a very dense shadow with a well marked, sharply defined upper margin, suggestive of an encysted empyema. The root shadows were heavy with some slight increase of linear markings in both lung fields. There was no displacement of the heart which was central and dystrophic. There was some impairment of excursion of the right diaphragm. After aspiration of fluid the upper margin of shadow was still well defined, but collapsed to the side of the chest.

General Observations on the Case

1 No cause was discoverable to account for the presence of the cholesterol in the pleural fluid

2 The effusion showed a marked tendency towards recurrence

3 The effusion was encysted, and there was no apparent connexion with the liver

4 In spite of very considerable effusion there was no displacement of the heart

INFECTED MYOMA COMPLICATING PREGNANCY CIRCULAR SECTION FOLLOWED BY TOTAL ABDOMINAL HYSTERECTOMY

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HOSPITAL

The case here recorded is published to complete my series of Caesarean sections followed by hysterectomy for myoma myomectomy, but the infection of the tumour would have rendered myomectomy or simple Caesarean section a dangerous operation.

M.S., a primigravida, aged 28, married five years, was admitted to University College Hospital on June 12th, 1924.

Menstruation had always been regular every four weeks was free from shreds or clots lasted three to four days and required the use of two or three dapers a day. It had always been painful and had occurred for the first time on September 24th, 1923. The patient complained of frequent and painful micturition and of continuous pain in the lower abdomen and in the left or right side according to her position in bed. The heart and lungs appeared to be normal. The abdomen was enormously distended owing to an excessive amount of liquor amni. The foetus was in the first vertex position the head above the brim. On vaginal examination the cervix was found to be displaced somewhat forwards by a firm tumour which at first was taken for a dermoid. On further examination it was not certain that the tumour was not the breech of a second child for the cervix was in the middle of the pelvis and not pushed forwards to the extent it would have been by a dermoid.

In order to clear up the diagnosis a thick sound was passed into the uterus, it went in front of the tumour which was evidently a fibroid of the posterior lower segment. Caesarean section was performed on June 14th, 1924, before the onset of labour. The child, a girl weighing 9 lb 10½ oz, was delivered in 106 seconds and then removed by total abdominal hysterectomy (Doyen's method) being united by a purse-string suture. The vagina was left open up with through and through stitches of silk-worm gut (tied over gauze), silk (continuous for the peritoneum and interrupted for the skin). The operation lasted fifty-two minutes. The wound healed by first intention and the patient made an uninterrupted recovery. The mother suckled the child and left the hospital quite well on July 11th with her child which weighed 10 lb 10 oz. In the post-ter wall of the lower segment was a fibroid measuring 4½ by 4½ by 4 in. The tumour hardened by formalin measuring on section to have a fibrous stroma with a pinkish grey centre and a darker purplish grey zone at the periphery (see Figure). Under the microscope the tumour was a necrobiotic fibromyoma. Immediately after removal it was examined bacteriologically by Dr. Goodhart. The tumour was sutured with a hot iron and then cut into with a sterile knife. Cultures were then taken from its substance; these gave a mixed growth of *Staphylococcus albus* and a diptheroid bacillus.

It is well known that many necrobiotic fibroids are sterile, and can be removed with safety some contain

inert germs, and for these total abdominal hysterectomy is the safest operation. I have removed by that operation from a virgin a myomatous uterus in which the tumours enclosed abscesses containing a pure culture of streptococci, and a simple recovery ensued. On the other hand, a case treated by conservative Caesarean section in which the tumour was infected with the *Bacillus Welchii*, succumbed rapidly to gas gangrene.

My friend Dr. Philip D. Turner has published an admirable case where he saved a patient suffering from infected fibroids by performing total abdominal hysterectomy six hours after labour. His case should be an encouragement to resort to hysterectomy when sepsis develops after myomectomy, or conservative Caesarean section for myoma, has been performed.

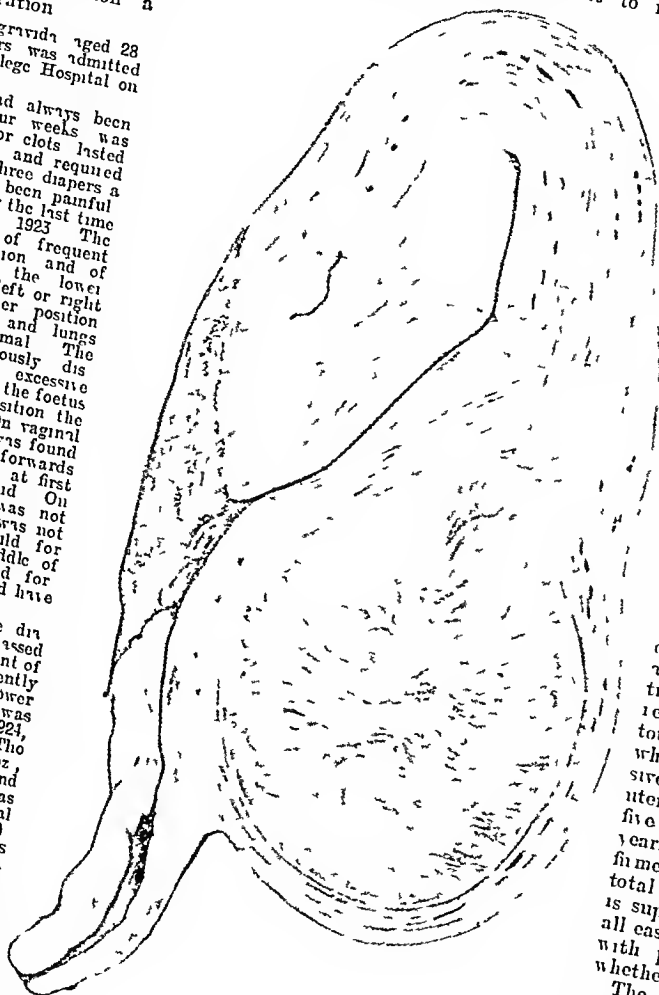
The not infrequent presence of infection in myomata points to the necessity of caution in deciding on conservative operations, especially when they are associated with pregnancy. It would be a great help if a rapid bacteriological examination at the time of the operation could definitely decide on the presence and the nature of infection, but I am not sure that bacteriologists will assume this responsibility. The case now published completes the list of my hysterectomies for myoma complicated pregnancy, the other six have been published already. All the seven mothers recovered, and all the children, except one dead before the operation, survived.

The first of the cases, operated on in 1892, was amputated, the stump being treated extraperitoneally, the remaining six were treated by total abdominal hysterectomy, which I have employed exclusively for the removal of the uterus during the last twenty-five years. That twenty-five years' experience has confirmed me in my opinion that total abdominal hysterectomy is superior to "subtotal" in all cases, whether complicated with pregnancy or not and whether infected or not.

The points in which it is superior were mentioned in these columns in 1902. It has amongst others the important advantage that the patient is freed from the danger of malignant disease of the cervical stump. This is a very real danger of which I have

seen six examples, and I have referred to many others in a letter to this Journal, commenting on a paper by Dr. Fletcher Shaw, who had had three cases of cancer of the cervical stump after amputation of the uterus in the course of eighteen months. The following week Dr. Fletcher Shaw replied "I opened this week's Journal in the full expectation of finding a letter from Dr. Herbert Spencer, not was I disappointed. I think however, further discussion had better be left open until I have published my paper in full."

This reply is less enlightening than would be the long-delayed further contribution by Dr. Fletcher Shaw to the discussion in these columns which I learned from a private



Drawing by Mr. Shiells of the hardened uterus in sagittal section showing the tumour and the Caesarean incision

letter from him in September, 1924, he is in a position to make I asked him then privately, and I ask him now publicly, to make it

REFERENCES
F. H. P. Spencer: Tumours complicating Pregnancy, Labour and the Puerperium (Harrison and Sons, 1920), p. 19. Ibid. p. 32 and British Medical Journal February 7th 1920, p. 183. Proc. Roy. Soc. Med. vol. III (Obstet. and Gynaecol. Section), p. 61. British Medical Journal 1902 II p. 1131. Ibid. 1923 II p. 1184. Dr. Fletcher Shaw kindly sent me a reprint of his paper in September of last year.

TREATMENT OF RHEUMATOID ARTHRITIS BY INTRAMUSCULAR INJECTION OF GUAIACOL, IODINE, AND CAMPHOR

BY

S. WATSON SMITH, M.D., CH.B., M.R.C.P. ED.,

BOUPHENOETH

THE result of the intramuscular injection of guaiacol, iodine, and camphor dissolved in oil has been satisfactory in nine cases of rheumatoid arthritis and articular fibrositis, other than the post-infective, gouty, and gonorrhoeal forms. The cases represented each phase of the disease from the early and the subacute to the rigid and deformed chronic case. The disorder is nowadays assumed to result from a chronic auto-toxaemia of alimentary system origin, and treatment is directed at the detoxication of the whole tract, the aim being to control infection, to prevent the formation of toxins, or to limit their absorption.

Of the nine cases mentioned, four had had carefully prepared auto-vaccine administered during many months, with little apparent benefit. All had had the various other methods of treatment usually employed. In one the use of the combined oil was eminently satisfactory, he was a man, aged 55, who for three years had suffered repeated exacerbations, and whose joints were so painful and stiff that he was almost completely helpless. He had twelve doses, ranging from 0.25 c.c. of the oil for the first dose to 1 c.c. after the third injection, each dose was given at an interval of three days, massage and movement were steadily employed during the whole course, the joint movements had become so free that he complained that his limbs "nobbled too much." Two years have passed since he is walking about freely, and declares himself cured. In the case of a woman, aged 35, who was from the first bedridden, and as bad a case as I ever saw, the result was almost equally good, after a month's regular treatment with the oil she was, during the second half of each day, able to move about quite comfortably with the aid of a stick. Three other cases reported definite steady relief, and showed decided improvement in greater freedom from attacks, in diminished pain, and in being able to move about more easily. The remaining four declared slight benefit after a short course of injections, but they hardly had a fair chance because of the short time during which the treatment was in their cases available.

I do not suggest that the oil will displace vaccine or other treatment, but rather that it should be employed along with those other general and local means commonly used. It is likely to be most useful if backed by the other means it commands—such as full diet, carefully chosen so as to fortify and, at the same time, to obviate any putrefactive or fermentative process in the intestine, generous allowance of fluids given night and morning and between meals, with, at all times, alkali added, saline laxatives, colon lavage, which can be quite well carried out in the patient's own home, and kaolin, with an intestinal antiseptic by the mouth especially if there is diarrhoea. For the articular lesions, gentle massage and passive movement, resistance exercise, and ionization, may each be used to get the best out of the oil. In the management of attacks the oil seems to be of great use, especially when the joints are rested by partial or complete immobilization, and other methods such as active hyperaemia are used. It appears to do good in most cases and harm in none. It seems to me that the oil will be of value where vaccine has failed to detoxicate effectively because of some masked or latent focus of infection having been missed or overlooked, though carefully searched for. It may prove particularly useful where an auto-vaccine appears, after prolonged trial, to

have failed. My personal opinion is that if such a presumed carefully prepared vaccine does fail after four months of fair trial, it is waste of time to continue longer with it, either a fresh search should be made or this guaiacol-iodine-camphor substituted. A patient is too often allowed to drift after vaccine has been used unsuccessfully. If, on the other hand, every source of infection can be well controlled or removed, then the oil given into muscularity will, I believe, be the best treatment to overcome the later effects of the toxæmia.

I had previously used an iodized oil, but the result was not good, then a guaiacol iodine oil which was prepared proved to be much too painful and irritating in use. I now use exclusively an oil obtained for me by Dunean, Flockhart and Co. which contains the three drugs, it is non-irritating, is exact as regards strength, and it answers all requirements. It is made up in ampoules, each containing 10 per cent guaiacol, 10 per cent iodine, and 5 per cent camphor added for its analgesic and stimulating effects, these being useful particularly in frail and depressed persons. The injection is given into the gluteus muscle, or, better still, deeply into the vastus externus about the middle of the thigh, a sterile wide bore platinum needle being used, the same procedure is repeated every second or third day, a fresh site being chosen in the same region of the thighs alternately. It is rather important to treat the syringe carefully, a Record answers well, and after use it should be cleansed with, and stored in, methylated spirit. My practice has been to boil the syringe and needle in a small copper sterilizer for ten minutes before going out in the morning, then to lift out the tray containing syringe and needle, and decant off the water. The ampoule of oil is next placed in the sterilizer so that the heat may liquefy the oil, the tray replaced, and the whole carried in the ordinary handbag. The injection can now be made while the syringe and oil are hot and before the patient gets out of bed. The method has the advantage of being handy and time saving. The ampoule should be handled gently—if the oil is split the odious clinging smell and trail of guaiacol will ensue. Future care in its use. Between exacerbations, and to encourage the patient to move about so as to overcome stiffness and adhesions, the injections may equally well be made in the consulting room. Three syringes and three needles may be carried in a tray at the same time, providing syringe and needle are not returned to the sterilizer after use. In no case did I find any serious general reaction or after-effect, there was some pain and stiffness in and around the affected joints twenty-four hours or so after the injection, with malaise and slight rise of temperature, one came to expect it, but it was transient, and there was no evil effect other than this—no discomfort of any consequence from local reaction, in no case did iodism occur. The urine should be tested and, as far as possible, disease of the kidneys excluded before commencing the treatment, and again, occasionally, during its continuance. By intramuscular injection the full measured dose finds its way promptly into the circulation, and no nodule can be felt at the site of injection next day or afterwards. The highest dose given at any one time was 1 c.c., 0.25 c.c. was injected to begin with, and the seal quickly mounted till 1 c.c. was reached, this quantity was then gone on with, being repeated every third day, or, when thought necessary, every second day.

It is well known that rheumatoid arthritis needs prolonged management, and is difficult to treat successfully or expeditiously. Not one of the drugs employed in its treatment is emulsive, guaiacol being the only generally useful one amongst them. The disease is commonest after 40 years of age, in poorer women especially, at a time of life when they should begin to be able to command better health and some rest and leisure, such cases are pathetic to see, and most of them suffer their disability with amazing fortitude.

In those who cannot afford spa treatment, or who, because of the disability consequent upon pain, adhesions, and deformities, are unable to proceed to a hospital outpatient or electrical department for the special methods there available, the method by intramuscular injection of guaiacol-iodine-camphor oil is particularly useful, it is

quite inexpensive. Its further and more extensive use has to be made before the correct and exact dosage in each phase of the disease is confirmed, and before it can be determined which types of the disease are likely to benefit most by its exhibition. I can find no record of its previous use in rheumatoid arthritis. After a few injections there is a strong smell of guaiacol noticeable in the breath, indicating that the drug is being excreted by that channel. For that reason it is possible that an oil containing guaiacol alone, used intramuscularly, might be of use in tuberculosis.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

PULMONARY EMBOLISM FOLLOWING OPERATION FOR CATARACT

The operations which most commonly give rise to pulmonary embolism are those upon the female genitalia and operations for hernia and appendicitis. Pulmonary embolism following an ophthalmic operation is sufficiently rare to make the following case of interest.

A married woman, aged 62, was admitted to the Stockport Infirmary on July 24th, 1925, suffering from senile cataract in the right eye. She had previously been a healthy woman and nothing abnormal was detected on physical examination.

On July 25th I removed the lens under cocaine anaesthesia. She was kept in bed and made very satisfactory progress until August 1st (eight days after the operation), when in course of conversation with some neighbouring patients, she suddenly collapsed, became very cyanosed and died a few minutes later.

At the autopsy, at which I was assisted by my colleague Mr. Lambert Rogers, we discovered enormous dilatation of the right heart, due to complete occlusion of the left branch of the pulmonary artery and partial occlusion of its main trunk by a large mass of blood clot, partly recent, partly old.

This case is not only of interest because of the infrequency of the condition following eye operations, but also because it appears to lend some support to Mr. Lockhart-Mummery's recent statement that the fatal clot forms, not at the site of operation, but in all probability in the great veins of the lower abdomen, probably partly as a result of stagnation towards the banks (the vein walls) of the venous blood stream, and also of the liberation into the circulation of thrombinase from the site of operation.

I am indebted to Dr. H. V. White, under whose care the patient was admitted, for permission to record the case.

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Surgeon Stockport Infirmary

MALIGNANT DISEASE IN NATIVE RACES

In view of the recent discussions on deficiency diseases, the incidence of cancer among native races, and their relation to one another, the following notes regarding the primitive Hadendowa tribes (Fuzzies) of the Sudan may be of interest.

These tribes live an isolated life scattered over a wide area in dry desert country, rising to a maximum of 6,000 feet in the hills along the Red Sea coast. They subsist principally on the milk of the camel, goat, sheep, or cow, supplemented by a small amount of millet and meat. The milk is drunk cold, and the millet and meat cooked. Constipation is very prevalent. They practise circumcision. Deficiency diseases are practically unknown, and diseases particularly aggravated by insufficient diet rare. Malignant disease is very rare. During the last twelve months I have seen in the whole province two cases—one of epithelioma of the vulva, and the other of a malignant parotid tumour, both were verified by the Wellcome Laboratories at Khartoum.

Among Sudanese natives generally, in the Red Sea Province, the commonest form of carcinoma is cancer of the breast. But statistics are of little use as the number of cases is so small. Simple tumours, particularly lipoma and fibroma, are fairly common.

The Hadendowa are a race of disputed origin, probably neither Arab nor negro, so that the rarity of cancer among

Africans would appear to be due to local conditions and diet rather than to racial immunity. It is curious that both cancer and deficiency diseases should be so rare, as the Hadendowa are liable to most ordinary complaints, particularly arthritis, rheumatism, and syphilis.

I am indebted to Dr. Atkey, Director of the Sudan Medical Service, for permission to publish these notes.

ERIC D. PRIDIE,

Port Sudan, Red Sea Province
Sudan

Sudan Medical Service

SCROTAL HORN

The rarity of cutaneous horns in these days seems to justify reproduction in the JOURNAL of the accompanying photograph of a scrotal horn.



The patient was a workman, aged 72 years, who stated that the horn had grown in two years—a somewhat remarkable history considering the size. The base was $1\frac{1}{2}$ by $1\frac{1}{2}$ inch, and the horn was bifid. There was a sealy condition of the skin at the base of the horn which shows white in the photograph, and a rudimentary horn appeared at the edge of this area. The man had pared away the point of the horn because it was digging into the skin of the scrotum. The appearance of the horn was that of a rough finger nail. There was a hydrocele of long duration on the affected side. The photograph was taken by Dr. Scott of Broxburn.

Starlaw by Bathgate

JOHN F. LANG, M.B., Ch.B.

OVARIAN GROWTH IN AN ABNORMALLY DEVELOPED WOMAN

The unusual state of development presented by the patient whose case is set out below is the reason for placing it on record. The uterus and left ovary were present only as rudimentary bodies showing no trace of development, the left broad ligament also was undeveloped and no Fallopian tube could be felt on that side.

On July 13th a woman aged about 40 attended hospital complaining of a large abdominal swelling and asking for operation. Her history was that the tumour had grown slowly for the last two years. The woman had never menstruated and in the early days of her marriage she had suffered from dyspareunia. On palpation a large tumour was found slightly fixed in the pelvis but otherwise movable, and extending well up above the umbilicus. Further examination revealed normal external genitalia, a vagina which easily admitted two fingers but no trace of the cervix uteri or of the division of the vagina into fornices. Bimanually no uterus could be felt. The woman's breasts were small but a general inclination to stoutness prevented any unduly masculine or undeveloped appearance of the patient.

On July 24th abdominal section was performed and a solid looking growth of the right ovary, which was attached by a thick pedicle to the broad ligament, was removed. Along the outer side of the growth was an apparently normal Fallopian tube. After removal of the growth the rest of the pelvis was explored. The only trace of uterus and left ovary were two bodies the size of peas situated behind the bladder and in the left pelvis for a respectively. The left broad ligament was undeveloped and no Fallopian tube could be felt. In section the removed ovary, which weighed 5½ lb. showed typical fibroid structure.

The patient made an uneventful recovery, and returned home three weeks later.

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D. ELSIE CAMPBELL, L.R.C.P. and S.I.

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Reviews.

PHYSIOLOGY OF SEXUAL REPRODUCTION

THE textbook of Dr FRANK H. A. MARSHALL on *The Physiology of Reproduction* is so well known and so highly appreciated that a smaller book on the same lines by the same author is assured of a welcome. It is entitled *An Introduction to Sexual Physiology*,¹ and is designed to meet the needs of biological, medical, and agricultural students. Though the book is not large the subject is dealt with much more fully than in general textbooks of physiology. Much has been learnt in recent years about the physiology of reproduction, and Dr Marshall not only relates it but helps the reader to form an estimate of its value. We have chapters on anatomy, on the maturation of the spermatogenic cells, on the menstrual cycle, on puberty and the climacteric, on pregnancy, parturition and its sequelae, on the internal secretions of the organs of reproduction, on heredity and sex, and on fertility. All these subjects are treated upon a wide basis of comparative anatomy and physiology. Finally there is a section upon the effects of fertility upon population.

The book should be an admirable textbook for students, and is so simply and clearly written and illustrated that it will be of value to all persons of education who desire first-hand information upon such important subjects as many of those enumerated above, particularly perhaps on the effects of internal secretions, heredity, and fertility.

THE HISTOLOGY OF INTRAPERITONEAL ADHESIONS

WERNERSCHLAGER, in a book on the morphology and histogenesis of intraperitoneal adhesions,² gives the results of an exhaustive study of the process of non-specific chronic inflammation of the peritoneum. Starting with a critical examination of the observations and opinions of previous workers and of the literature, he proceeds to describe the results obtained by himself from cultures of peritoneal exudates *in vitro* and from adhesions experimentally produced in rabbits by means of injections of a solution of iodine and by mechanical means. The descriptions of the inflammatory process are exceptionally clear and complete and are illustrated by numerous excellent figures. Among the subjects dealt with of special interest at the present time are the question of the origin of the collagen fibres, the nature of the serous endothelium and its power of preventing the formation of adhesions, and the presence of nerve fibres in the latter.

The author considers that the various forms of leucocyte that migrate into the exudate are of secondary importance in the production of adhesions. The fundamental factors, he holds, are the proliferation of fibroblasts in the subserous layer of the peritoneum and their migration into the fibrous exudate, and the formation of fibroglia fibrils—the precursors of collagen fibres. The subserous layer of the peritoneum is described as undergoing oedematous distension under the influence of the inflammatory irritant, in the oedematous fluid delicate fibrils (fibroglia or precollagen fibrils) make their appearance and extend into the fibrous exudate covering the surface of the peritoneum, and there become converted into collagen fibres. Simultaneously with the formation of fibroglia, a proliferation of fibroblasts occurs in the subserous layer, and the cells migrate into the exudate by what is described as a "gliding" movement along the collagen fibres and the meshes of the fibrous exudate. It will thus be seen that the author does not regard the collagen fibres as being derived from fibroblasts, but as having an independent origin.

On the difficult question of the nature of the serous endothelium the author, notwithstanding the views that have been expressed as to its epithelial origin and embryogenesis, regards its cells as related to those of connective tissue, and more particularly to fibroblasts. He finds that

¹ In *Introductory* by *Physiology* by F. H. A. Marshall, F.R.S. London and New York: Green and Co. 1925. (Demy 8vo 112 pp. net.)
I have searched for it in *Histogenese der intraperitonealen Verklebung* by W. Wernerschlag, Leipzig: F. C. W. Vogel 1924. (Demy 8vo 40 pp. bound M 43.)

fibroblasts may become flattened out on the serous surface and form a layer exactly resembling the normal endothelial layer, on the other hand, the normal endothelial cells may, during the inflammatory new formation of connective tissue, become converted into forms resembling fibroblasts. With regard to the defensive property of the serous endothelium, it is held that, if unimpaired, it prevents the formation of adhesions but since the vitality of the cells is readily affected by the irritant causing the inflammation, this property is practically negligible, an intact layer of injured cells affords no protection. In dealing with the subject of the innervation of adhesions the author refers to the unsatisfactory results frequently obtained with Golgi's silver impregnation method, in tissues which certainly contain nerves these are by no means always revealed by the method. However, in three out of seven instances of experimentally produced adhesions the presence of nerve fibres was satisfactorily demonstrated. They were also found in the adhesions between stomach, omentum, and abdominal wall in a case of second laparotomy for gastric ulcer. Both medullated and non-medullated fibres may be present, and they mainly follow the course of the blood vessels in the adhesions. It is suggested that they form the anatomical substratum of many of the multifarious painful symptoms to which peritoneal adhesions are known to give rise.

THE PSYCHOLOGY OF THE EMOTIONS

As the outcome of an intensive clinical study of manic depressive insanity Dr JOHN T. MACCARTHY has written a volume entitled *The Psychology of Emotion: Morbid and Normal*,³ in which he aims to establish the thesis that the symptoms are explicable on a psychogenetic basis, and also to shed some light on the nature of the emotion generally.

Much of the book is taken up with interesting descriptions of the clinical material upon which the author's theoretical views are based. He finds that the various forms of manic depressive insanity assumes can be divided into stupor reactions, involuntarily melancholia, manic states, anxiety states, depressions and perplexity states, and he describes and discusses his cases in successive chapters under these headings. It is one of the chief aims of the author to demonstrate that the wide range of symptoms observed in these various types of reaction can be regarded as the expression of common psychological processes which give a unity to the whole group. Briefly, he finds the symptom of manic depressive insanity to be due to the flooding of consciousness with repressed and primitive images which deflect interest from reality and which furnish the material for the delusions and hallucinations constituting the content of the psychosis. The behaviour and emotions he regards as logically determined by the imaginary elements which occupy the conscious field, and in this respect manic depressive insanity can be clinically differentiated from dementia praecox, in which the emotional reactions are incongruous with or inadequate to the delusions expressed. Further more, the author discovers a clinical distinction between dementia praecox and manic depressive insanity from the fact that the fantasies in the former are more primitive and infantile than in the latter.

The clinical section of the volume will probably be most helpful to the psychiatrist as it contains a number of useful suggestions for the differentiation of benign from deteriorating psychoses. The consistency or otherwise between thought and emotion is always a most important diagnostic symptom, and the author's suggestions may be regarded as an elaboration of Bleuler's dictum "I suspect in the extreme cases we now no longer ask, Is it manic depressive insanity or schizophrenia? but to what extent manic depressive and to what extent schizophrenia?"

The book as a whole is somewhat difficult to read as the author's treatment of his subject is involved, and it would have been a great advantage if he had found himself able to develop his arguments more briefly and concisely. The views elaborated as to the nature of manic depressive insanity would seem to be descriptive of what occurs rather

³ *The Psychology of Emotion: Morbid and Normal* by John T. MacCarthy, M.D. Hopkins. M.A. Cantab. The International Library of Psychology, Philosophy and Scientific Method. London: Kegan Paul, Trench, Trubner and Co. Ltd. 1925. (Demy 8vo pp. xvi + 539 2s. net.)

than explanatory of why it should. The ideas which invade consciousness in this psychosis are common to all mankind and find delusional expression in most forms of psychosis. Dr MacCurdy's work leaves us very much in the dark as to why in certain persons these ideas of death, unworthiness, poverty, ambition, wealth, and unrestrained eroticism should assume psychotic intensity. Though psychological methods of approach are essential for an understanding of a patient as a person, we cannot but feel that researches into the physical condition of his organism will be more likely to provide an explanation of his disease. There are so many forms of psychosis where mental disturbances are known to be the expression of a disordered organism, that it seems highly probable that the emotional fluctuations of manic depressive insanity are due to delicate biological changes which are at present not understood. It is difficult to ignore the fact that recent investigations into the physical conditions found in dementia praecox have shed considerable light on the abnormal reactions in this disease, and it would now be very difficult to ascribe these to psychogenetic causes.

Though we do not find the theoretical views propounded in this volume altogether convincing, Dr MacCurdy has undoubtedly made a sincere and painstaking effort to understand the strange ideas and abnormal behaviour of mentally disordered patients. His work makes it clear that there is much to be learnt from the investigation of the content of a psychosis, and a careful study of this volume should give the psychiatrist increased insight into his cases.

SURGICAL PATHOLOGY

In the preface to their *Text-Book of Surgical Pathology* MARSHALL and PRYER refer to the paucity of works on this subject in this country. We have many good books on general pathology, but students and teachers are under the necessity of searching through the pages of the textbooks on surgery for the details of surgical pathology, and they will welcome the appearance of this book.

The authors have deemed it unnecessary to incorporate an account of general pathological changes, such as inflammation, they conclude that by the time a student finds it necessary to resort to a work on surgical pathology he will already have become informed about these processes. The various chapters, therefore, deal with the special pathology of the several regions of the body and the organ systems. The lesions are clearly and concisely described, with their immediate consequences, complications, and sequelae. The text is illustrated by a considerable number of figures, many of them being photographs of actual specimens, not a few of them leave something to be desired in point of distinctness, but if a student is wise he will place very little reliance on pictures, however good, but will get his knowledge from the specimens themselves. A special feature of the book is the endeavour made to correlate embryology, anatomy, pathology, and clinical characters. The authors may be congratulated on having carried out this part of their task with considerable success, it will constitute one of the chief attractions of the book, and will, as they suggest, be of particular value to candidates for the higher examinations. Although the book is very complete as regards the subject-matter included in it, its size has, without undue condensation, been kept within moderate bounds, and forms a handy volume which students will find it an advantage to possess.

FATS AND THEIR ABSORPTION

The second edition of *The Fats*,⁵ by Professors LEATHER and RAPER, which has appeared fifteen years after the issue of the first edition gives a full and well written summary of knowledge of these substances. It begins with a general account of the chemistry, extraction, estimation, and physical properties of the fatty acids, fats, and glycerol. After this introduction the physiology of the fats is treated at far greater length than it was in the first edition of the book, a fact which should make it of the greater interest to

the chemist, biochemist, and physiologist alike. The authors note that the formation of fats in the animal body from protein is very difficult to demonstrate, almost all the instances in which this transformation has been supposed to be proven being based on errors of one sort or another.

The well ascertained fact that in the process of intestinal absorption fats are first hydrolysed, and then resynthesized after passage into the epithelial cells of the mucosa, is explained as due either to the need for a mechanism to prevent the absorption of substances such as petroleum that are like the fats, but unsatisfactory for supplying the body's need of energy, or possibly to the necessity for enabling the organism to recombine the fats absorbed into fats or glycerides that are not identical with those in the food. The formation and excretion of "ketone bodies" in all forms of carbohydrate starvation are described, it has been termed "ketogenesis," and the word "antiketogenesis" is used to designate the effect of carbohydrates in inhibiting their formation and the occurrence of acetonaemia, but the mechanism whereby the carbohydrates bring this about remains obscure. The authors define protoplasm as "a complex equilibrated system in which, side by side with colloidal solutions of proteins, fatty components together with cholesterol, though quantitatively less in amount, play a role which it is impossible to say is less essential than theirs."

The volume ends with a bibliography and an adequate index, it may be warmly commended to all students of chemistry and physiology as containing an admirable account of the fats occurring in nature.

COLOUR-BLINDNESS

COLOUR vision is a subject of great theoretical interest to the physicist, the physiologist, and the psychologist, and of practical importance in many trades and occupations, consequently it has inspired a vast literature. The great mass of the papers has been written from the physical standpoint, and written admittedly in support of one of the many theories which from time to time, from before the Christian era to the present day, have been advanced to explain the phenomena met with. Dr MARY COLLINS, in a new book on *Colour-Blindness*,⁶ has set out to investigate the problem purely from the psychological standpoint, avoiding as far as possible a bias for any preconceived theory.

The subject is one of extreme complexity, showing great variations in its individual manifestations. It is a subject, too, which, especially in its psychological aspects, is still in a state of uncertainty, and on which opinions differ widely. The main value, therefore, in the scientific sense, of Dr Collins's work is the detailed and careful record of facts elicited in the systematic examination of ten congenital dichromats showing various degrees of red green colour-blindness. The subjects, moreover, were all university students accustomed to experimental procedures, and therefore may be regarded as fairly to be trusted. As an accurate account of observed facts the investigation will have a permanent place in the literature of the subject.

Of practical value, and of no small interest, is the comparison of the various methods of testing for colour-blindness. This was ostensibly the main object of the investigation, and the importance of the inquiry can be appreciated when we realize the very high proportion of people with abnormal colour vision (35 per cent of males) and the importance of detecting them. Not only does this apply in the stock example of the engine driver who cannot distinguish between red and green, or the doctor who failed to diagnose scarlet fever, or the undertaker who is said to have covered a coffin with bright red in place of black, but in innumerable occupations the disability entailed involves a considerable amount of hardship and confusion both to the subject and to those dependent in one way or another upon his judgements. Dr Collins's observations show the surprising degree of uniformity that can be reached when using different test systems, provided reasonable precautions are taken in their application. She finds the most

⁵ *Text-Book of Surgical Pathology*. By C. Jennings Marshall, M.D. M.R.C.S. Eng. and Alfred Pryer, M.D. Ch.B. Birm. M.R.C.P. 173 figures. 21 net. London: E. Arnold and Co. 1925. (Demy 8vo 1p. 4s.)

⁶ *The Fats*. By J. B. Leather, M.A. M.B. F.R.S. and H. S. Raper, C.B.E. M.B. Ch.B. D.S. Second edition. Monographs on Biochemistry. London and New York: Longman, Green and Co. 1925. (Sup. roy. 8vo pp. vii + 232, 12s. 6d. net.)

⁶ *Colour-Blindness*. By Mary Collins, M.A. B.Ed. Ph.D. With an introduction by Dr James Drever. International Library of Psychology, Philosophy and Scientific Method. London: Kegan Paul, Trench, Trubner and Co., Ltd. New York: Harcourt, Brace and Co. 1925. (Demy 8vo pp. xxx + 237, 10 figures 1 plate 12s. 6d. net.)

uniformly trustworthy of all the methods to be Edridge-Green's lutein test, who has modified Holmgren's wool test by reducing the number of confusion colours and increasing the number of test stems, and, with these improvements, finds this somewhat discredited test the most to be trusted of the simple methods. On the whole the subjective tests are the most trustworthy, this was to be expected since the error no objective control is possible and the examiner is entirely dependent upon the examinee, tests involving comparison are generally the most satisfactory, as here the subject is compelled to furnish some degree of objective evidence of the sensation he is experiencing.

On the theoretical side of the problem the general conclusion is reached that no one of the theories is thoroughly satisfactory, they fit the facts in the extreme forms, but fail to explain the milder cases. Dr DREYER, who writes an introduction, claims that the results obtained tend to support the "opponent colours" theory of Helmholtz. The two results to which greatest attention is drawn are confirmatory. These are, first, the gradation in the degrees of colour-blindness met with, a subject dealt with by R. A. Houston, and reduced to a numerical scale by Abney and Watson, and, secondly, the verification of the occurrence of two neutral bands, one in the red-green and another beyond the spectrum in the complementary purple, which is a necessary and direct corollary of the three components theory of Helmholtz.

The psychological method of approaching this problem is full of pitfalls. Probably in the past it has received too little attention, for the great difficulty in appreciating the true nature of colour-blindness and correlating the experiences of colour defectives with the experiences of normal individuals is undoubtedly psychological. No one "sees" or does not "see" red (a psychological consideration which seems sometimes to have been forgotten in this as in many other works). We experience a sensation which we have learned to interpret as red. The red blind subject experiences a sensation also, but it is impossible for any individual to assess or accurately evaluate the nature of his or any other individual's subjective sensations. The colour-blind appears to have a definite colour system of his own with individual characteristics of interpretation. Our only method of approximate estimation is by the observation of differences in judgement or conduct in the reaction of these abnormal to external stimuli from the judgements we ourselves form, or the reaction of the generality of people to the same stimuli. Therefore we can have no scientifically accurate idea either of the physiological sensations of the colour-blind or of their psychological counterparts.

PORTRAITS OF VESALIUS

MR SPIELMANN is to be heartily congratulated upon his scholarly and exhaustive monograph on the *Iconography of Andreas Vesalius*,¹ for he has produced a book which will assuredly take rank as the most authoritative work on the subject. Mr Spielmann has brought to his task an immense amount of labour, learning, and skill, and throughout the book he has approached the subject in a most temperate and judicious manner. Wedded to no theory, and entirely unbiased, he has examined critically the claim of every known portrait of Vesalius to be regarded as authentic. When his minute examination is concluded the claim to authenticity of the majority of portraits of Vesalius falls inevitably to the ground, and only a mere remnant of really undisputed representations remains.

We now know the precise value to be attached to that multitude of portraits of Vesalius in existence fondly believed by the possessors to be "drawn from life." The great anatomist is not the only distinguished figure in science to whom violence has been done by attaching his name to portraits which by no stretch of imagination could be held to represent him, for Harvey has suffered in the same way, and requires the same able treatment. Indeed, the persistence with which a great

name in science is attached to portraits bearing little or no resemblance to the known authentic portraits of the individual can only be accounted for by the desire of the owner to label the unknown with a high sounding title, owing either to his ambition as a discoverer or to enhance the value of his property. Engravers have sometimes contributed to the fraud, for there is the case of Richard Lower, the physiologist. When he died, and an engraved portrait was demanded, no portrait was found to be in existence, but the engraver was equal to the occasion for he took the engraved portrait of Lovelady, the poet, and substituted the name of Lower in the inscription.

In the case of Vesalius all that is to be known about his various portraits and engravings can be learned from Mr Spielmann's admirable work, and to everyone interested in the subject we can heartily commend the book.

NOTES ON BOOKS

LORD RIDDELL is to journalism as Talfest to wit—he is not only the cause of journalism in others, but is a journalist himself. Give him a subject, or better a book of two or a subject, and he will presently produce you an essay neatly put together containing a great deal of matter in small space and full of shrewd observations, but frequently disclosing the author's own opinion only by implication, if at all. An exception is an essay entitled "Is Britain a Back Number?" It is a spirited reply in the negative. He enumerates the most notable changes in modern life, from steam and the internal combustion engine to wireless, and the most recent discoveries as to the constitution of matter, he includes also the development of humanizing ideas in industry, and shows in passing that he appreciates what has been done in bacteriology, protozoology, and physiology. It is characteristic of his humour to suggest that American millionaires whose lives have been lengthened by golf "should subscribe to a fund to discharge the British debt to America in recognition of what Scotland has done for them." Lord Riddell's first collection of essays was *Some Things that Matter*, his new volume is entitled *More Things that Matter*.²

MR DAVID MASTERS'S little book *New Cancer Facts*³ is addressed to the public and is largely occupied by a collation of Dr Louis Sambon's recent investigations. The first of the five illustrations is a photograph of Dr Louis Sambon sitting on a penny in Iceland, the next three are six pictures illustrative of Dr Sambon's field work in Italy, and the last is intended to represent the microbe of cancer as discovered by Dr James Young, of Edinburgh. Dr Glover, formerly of Toronto, is also mentioned, and Mr Masters believes that the microbe he has described is the same as Dr Young's. It is difficult to believe that a book of this sort can do any good, whereas obviously it can do harm, because it gives a very inaccurate idea of the state of scientific opinion about cancer. Such a jumble of new cancer opinions (not facts) is especially unfair on Dr Sambon, whose careful epidemiological studies deserve much better company.

A pamphlet, which has almost the dimensions of a hand book, on *Radium, its Production and Therapeutic Application*, has been published by Watson and Sons (Electromedical), Ltd., of London, in conjunction with the Radium Belge, of Brussels, whose agents they are in this country. The Belgian house during the last few years has exploited some rich uranium radium deposits in the Belgian Congo, and has established a reduction plant at Oelen, near Antwerp, for extraction and purification. It is stated that about 95 per cent of the world's demand for the element is now supplied from this Central African source. The little book describes, with much interesting detail and illustration, the processes involved in the separation of radium, the character of the radiations, the technique of measurement, standardization, and screening and the nature and use of the subsidiary substances which radium forms in its process of decay, the first of which, of course, is radium emanation. The section on radium as a therapeutic agent suffers from rather unritical optimism, but there is a great deal of interesting matter in the description of the various forms of contact, applications, and accessories, showing how particularized the application of radium has now become. It is curious that in a work so devoted we have been unable to find any mention of means of protection for the radium worker.

¹ *The Iconography of Andreas Vesalius*. By M. H. Spielmann, F.S.A. Wellcome Historical Medical Museum Research Studies in Medical History No. 3. London: John Bale Son and Daniel Co. Ltd. 1925. (Cr. 8vo pp. xxxvii + 243. 68 plates. 12 figures in the text. 30s net.)

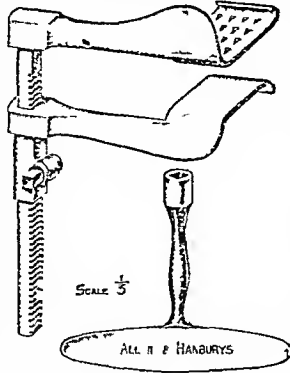
² *More Things that Matter*. By Lord Riddell. London: Hodder and Stoughton. 1925. (Demy 8vo pp. 319. 7s 6d net.)

³ *New Cancer Facts*. By David Masters. With an introduction by Sir James Cantlie, B.Sc. F.R.C.S. London: J. Lane The Bookers' Head Ltd. 1925. (Cr. 8vo pp. viii + 83. 6 plates. 2s 6d net.)

MEDICAL AND SURGICAL APPLIANCES

A Modification of Tuffier's Thoracotomy Retractor

Mr CECIL P G WAKELEY, FRCS (London) has found Tuffier's thoracotomy retractor unsatisfactory the retraction obtainable being usually inadequate owing to difficulty in opening the blades by means of the thumb crew. Attempts to do this have often resulted in torn gloves. De Quervain's retractor, although mechanically efficient—retraction being controlled by a ratchet or cross handle—is he considers too unwieldy for general use. Messrs Allen and Hanburys have made for Mr Wakeley a modification of Tuffier's retractor fitted with a powerful ratchet screw it is operated by a removable T-shaped key (see illustration). The instrument, he finds, has the advantage of being small and yet sufficiently powerful to give good retraction. Furthermore the key can be removed and does not hamper the operator.



THE MOTOR SHOW.

FEATURES OF INTEREST TO MEDICAL MEN

By H. MASSAC BUIST

A forecast of the general mechanical and price tendencies to be revealed at the opening this week at Olympia, Kensington, of the nineteenth annual International Motor Car Exhibition, promoted by the Society of Motor Manufacturers and Traders, under the patronage of the King, appeared in these columns last week. A tour of the exhibition in the making proves that there is little to add to what was said then, save in matters of detail. For instance, the tendency to introduce middle size overhead valve, six-cylinder engines is further emphasized by the 2,613 c.c.m. overhead camshaft, overhead valve, Austro-Daimler of nominal 19/70 h.p., the construction of this is interesting in that the flywheel is so set as to lag behind the crankshaft and effectively to damp the development of any "period." This car has four speeds forward, anti-rattle rear springs, wire wheels, and four-wheel brakes. The number of six-cylinder engines of moderate size is also increased by the introduction of the £16 tax Waverley, with Meadows engine, Marles steering gear, and double quarter elliptic rear springs, and of the 3,583 c.c.m. side-by-side valve engine, £23 tax Hupmobile, available as a four-seater open car at £425, or as a saloon for £25 more, thus being supplementary to the "straight-eight," and the smallest of the multi-cylinder engines yet sent over from America. Again, in the interval all prices have had to be fixed and announced. Thus the new 14-h.p. side-valve engine £13 tax Hillman described last week will be on sale with four-seater touring body and complete all-weather equipment at £295, a "Special" version being available at £320, while the four-door saloon on this four-wheel braked chassis is listed at £345.

The Redesigned 18 h.p. Six Cylinder Armstrong-Siddley

Among the firms making changes in the design of six-cylinder engines which have been on the market for some years Armstrong-Siddley adopts monobloc construction in the new 18 h.p. engine for the "Mark II" chassis, the R.A.C. rating being 19.8 h.p. and the cylinder volume 2,872 c.c.m. This engine is installed in two types of chassis: one is the well known 18 h.p. type, the other follows the lines of the 14-h.p. machine, but is equipped with the V-fronted cooler common to all the 18-h.p. types. In both models four-wheel brakes are standard equipment and the road springs live axles. The dynamo, the engine starter,

and the carburettor are notably accessible, all the units being placed high. A crankcase breather has been incorporated near the outer extremity of, and within, the offside rear engine bearing arm. A float type oil level indicator the amount of lubricant in the sump. The improved 30-h.p. engine car is shown for the first time, as well as the 14-h.p. type with frame of conventional construction, half-elliptic springs, and four-wheel brakes.

Common sense Six Cylinder Calcott Practice

There is nothing experimental about Mr Leo Shouter's design of the new (nominal 16/50-h.p.) 2,565 c.c.m. inclined side-by-side valve, six-cylinder engine Calcott chassis. It is listed at £400 complete with four-wheel brakes, and characterized by an eminently common-sense use of well proved practice. This engine has B.H.B. type thickening aluminium pistons with split skirts to prevent slap. Pressure lubrication is employed. Though using one jet only, nevertheless the carburettor achieves the effect of the twin type. A slipper type vibration damper is placed in the front end of the crankshaft, so that when vibration would tend to develop the clutchlike action of the spring-loaded flywheel allows it to move microscopically in relation to the crankshaft, thereby damping out any tendency to the reproduction of the reciprocal action of the shaft itself.

Points Concerning Singer Types

Singer does some striking things in the matter of price—for instance, the introduction of a pushrod and rocker operated 1,776 c.c.m. six-cylinder monobloc engine nominal 14/34 h.p. chassis with Rubury front-wheel brakes and saloon body at £375, the tax being £150. The design is notably clean, the crankshaft has three main bearings, a hot-spot is provided, and mechanical lubrication is employed, balloon tyres are furnished. In regard to the well known smaller four-cylinder 10/26 h.p. engine model, the design of the bonnet has been modified and the petrol filler position been made more convenient. Front-wheel brakes have been standardized on the Alford and Alder pattern manufactured under Rubury patents. In this design the cam spindle is at the bottom of the drum and is universally jointed to an actuating rod carried on the axle. The location of the joint and the angle of the rod are such that when cornering a differential braking effect is obtained automatically. The front axle and landing details have been redesigned in conformity with the requirements of the braking system.

1 Four-wheel Braked 14 h.p. Crossley Coach

The 14-h.p. and the 19.6 h.p. side-by-side valve four-cylinder engine Crossley cars now have four-wheel brakes, the lesser machine being available in standard form as an enclosed carriage of the coach type at £455, being in its line a new standard in values for British-built machines. An outstanding novelty presented this year, too, is the departure by this firm from four-cylinder to six-cylinder practice, thereby entering a new market with an overhead valve 2,692 c.c.m. 18/50 h.p. six-cylinder engine chassis. This is shown in stripped condition, and incorporates well proved up to date constructional practice as the result of seraching tests over a long period. It is designed to have a range of travel from walking speed to over a mile a minute on the direct drive, with silent and smooth functioning, also moderate fuel consumption and low traction rating. It is listed complete with five-seater touring body and all weather equipment at £675 only.

Fiat's Wide Range

Though having a factory at Turin with a frontage over a kilometre long nevertheless the Fiat company has built entirely separate works for the production of its £8 tax, 7-h.p., 990.05 c.c.m., overhead valve, four-cylinder engine, centrally controlled, three speed, £185 chassis with 2 ft. 4 in. wheelbase and low-pressure tires. This is its chief novelty this year. At the opposite extreme the company displays a £1,250 Berlina on the £27 tax, six-cylinder, overhead valve 40 h.p. engine chassis of very distinctive design, which is also shown as a torpedo. Of course, the 10/15 h.p.

side valve and the 15/20-h p four cylinder engined types and the 20/30-h p, side-by-side valve, six-cylinder engined types are continued. Chief interest, undoubtedly, centres in the entirely new hydraulically controlled four-wheel brake, 7-h p chassis that is sold with a two seat coupé body and dickey painted grey and upholstered in red leather at £315.

Standard Developments

Standard makes progress in two directions—in offering, on the one hand, cars at still more attractive prices, and, on the other, in presenting them in appreciably developed condition, notably as regards coachwork. Thus the "Coventry" two seat and the "Knowle" four seat types on the 11-h p chassis are available each at £225, the "Piccadilly" saloon on the same chassis costing £30 more, while the "Chalcote" coupé and the "Stratford" five-seater are listed each at £365 and the "Pall Mall" saloon at £450. The larger chassis is fitted with four-wheel brakes, shock-absorbers fore and aft, and improved steering gear. Drop windows with mechanical regulators are available on the new 14 h p open bodywork, and the two-seater is now really a coupé with glass windows. On the lesser chassis the valve gear is now enclosed, a higher and more imposing radiator is furnished, there is a petrol filler outlet underneath the bonnet, and the front springs are stronger. Likewise the bodies have been redesigned and provided with wider seating and higher sides. The equipment is comprehensive, and most ingenious use has been made of mechanical lifters for adjusting the side-screens on these cars, which have smarter lines.

Swift's Rapid Progress

During the last twelve months Swift of Coventry has made extraordinarily rapid progress, Mr. Muri Wild being now works manager. The design has been advanced appreciably, but confined wholly to the application of sound practice. Thus all chassis are now listed with large diameter four-wheel brakes, and the engines have detachable cylinder heads and aluminium pistons. A wholly new chassis now added to this firm's range is the 1,956 c.c.m., side-by-side cobalt-chrome steel valve four-cylinder engined 12/35-h p machine, the latter figure being the power developed by each unit before it is placed in a car frame. Here the crankshaft is driven by helical gears. The gear box is controlled by the driver's right hand and provides four speeds forward. This new car is shown as a bare chassis, also as a five-seat tourer with four doors and as a four/five seat saloon.

Wolsley's Popular Appeal

Wolsley incorporates a four-speed gearbox and a single dry-plate clutch in the 16/35-h p side-by-side valve four-cylinder engined type. The crankshaft engine is now equipped with bob weights to balance each crank pin individually. The 11/22 h p overhead valve four-cylinder engined chassis (altogether a larger car) is presented with radiator, bonnet, and scuttle of more ambitious and improved appearance. For the rest, Vickers's motor manufacturing concern develops the chassis of its three model programme in minor details only, and makes full use of its very ample resources to provide even better coachwork than formerly. Thus the saloon-limousine on the 24/55 h p six-cylinder engined chassis, the dearest vehicle on the list, is priced at £1,300. Four-wheel brakes are fitted as standard to this and to the 16/35-h p model, whereas they are available at £12 10s more on the 11/22-h p type, which last named is offered with four-seat body at £235 complete, plus the cost of four-wheel brake.

The New 9/20-h p Humber Light Car

Humber makes a serious bid to enter the light car market by superseding its 8-h p type by an overhead inlet, side-by-side exhaust valued 1,056 c.c.m. four cylinder monobloc 9/20-h p engined chassis. This car takes full scale four seat four door bodywork with sloping windscreen and celluloid all-weather side-punching equipment. The

right-hand controlled gearbox gives three speeds forward. The pedal leverage of the large diameter contracting band transmission brake at rear of the gearbox is variable it will. Contracting band brakes are also furnished to the drums of the rear wheels. Hartford shock-absorbers are fitted behind Luots grensegun system of lubrication is employed throughout the chassis, which has a wheelbase of 8½ feet. It is listed with four-seat touring body at £260 and as a four-seat saloon at £315. A four door touring body is available on the 12/25 h p chassis, which is now equipped with a wider cone clutch of greater diameter, and which can be furnished with front-wheel brakes at an extra charge of £25, whereas "f.w.b." are standard on the 15/40 h p chassis.

De Dion Bouton Coachwork Schemes

The £10 tax, side valve four cylinder 10/20 h p engined De Dion Bouton chassis with four-wheel brakes and Rudge-Whitworth detachable wire wheels, which was described in these columns last week, is shown with a standard four seat touring body with an adjustable front seat, five lamps, a speedometer, and electrical bulb-horn, a toolbox, and a combined foot rest to the rear seats, together with a hood envelope, price £295. Another of these chassis is shown with London built "H H H" two seat, three quarter type coupé-cabriolet with double sunl dickey, two doors, the windows being fitted with automatic raising and lowering devices. The leather hood folds, and there is an oval window in the back. The equipment is very complete and the price £395. In regard to larger De Dion Bouton models, the £13 tax 12/28 h p overhead valve four-cylinder engined type also has Rudge-Whitworth wire wheels and a London built "H H H" two/four interior seated all-enclosed coupé cabriolet body of a registered design, with two adjustable front seats, two occasional seats, and two exceptionally wide doors. The windscreen is of the V-type, the hood of folding leather, cloth lined. The windows are fitted with mechanical raising and lowering devices, and there is an interior electric light as well as ample accommodation for luggage. The price, complete with all equipment, is £695. Another of these chassis is shown with "H H H" London built four door saloon, with double adjustable front seats, and three windows each side, price £715. The remaining exhibit is a 15/43-h p overhead valve four cylinder engined £16 tax model with London-built "H H H" six seat Pullman landauletto with four wide doors and three windows, mechanically controlled, on each side, the price being £907 as shown. The cost of the chassis is £495.

The New 13-h p Clyno

The new 13 h p four-wheel braked Clyno car, to which reference was made in these columns last week, has a side-by-side valve 1,496 c.c.m. four cylinder engine with a three bearing crankshaft and adjustable tappets. The gearbox, which gives three speeds forward, is mounted on the front end of the torque tube. The particular form of spiral bevel gear employed in the back axle has been evolved by the manufacturers. The front suspension is by half-elliptic springs, a form rendered necessary on account of the equipment of front-wheel brakes. This car is marketed in very complete form as regards accessories at £298 as a four-door saloon, and at £30 less as a four seater, with adjustable front seats in both cases. The folding-head type coupé costs £285, and the two seater £40 less.

Ford cars are, of course, ineligible for display at this exhibition.

Accessories

As usual, the accessories section is almost bewildering in its variety. Those who do not understand how to handle tyres may be interested to know that the way to fit and to take off Dunlop balloon tyres of the wire type is being demonstrated by experts on Stand No 504. These men are competent to answer any questions concerning tyre or wheel equipment problems. The exhibit is a very comprehensive one and includes some efficient non-skid Fort Dunlop made "Warwick" tyres of low selling price.

British Medical Journal.

SATURDAY, OCTOBER 10TH, 1925

RHEUMATOID ARTHRITIS

It is certainly in accordance with 'the eternal fitness of things'—to quote one of Bath's most illustrious frequenters, Henry Fielding—that no small part of the time of the Sections at this year's Annual Meeting should have been taken up by discussions on arthritis. For the treatment of chronic joint disease has been the preoccupation of the physicians of Bath for many generations, and the Sectional authorities were wise in selecting subjects for discussion on which the physicians on the spot are peculiarly well fitted to speak with authority as to the practical outcome of their experiences. Fortunate, too, was the Section of Medicine in its choice of the opener of the discussion, for Sir Humphry Rolleston is distinguished by his wide knowledge, his breadth of view, and the judicial quality of his mind. The text of his paper, together with a full report of the speakers who followed him, was published in our last issue (p. 589). Wisely, as we think, the Section restricted itself to a discussion of the causation and treatment of rheumatoid arthritis, and this restraint was justified, for the opening paper of Sir Humphry Rolleston showed that this subject, narrow as it might seem to be, offered ample field for his survey, and afforded matter for a whole morning's debate.

Attempts at more or less elaborate clinical classification of the forms of chronic rheumatic disease of the joints have been many in the past, but in this country they have been generally abandoned. Osteoarthritis at one end of the scale and rheumatic synovitis at the other are distinct enough, but they merge into one another through so many grades as to make it in a large number of cases impossible to assign them to either category. Sir Humphry at the outset excluded from his survey advanced cases of osteoarthritis, especially in the hip in old people, while admitting that such a condition may be the outcome of rheumatoid arthritis. After laying before his hearers with judicial impartiality the claims of the advocates of various methods of treatment, he refrained from expressing any decided opinion upon them, but—to pursue the judicial metaphor—put five questions to the jury and left the verdict to them. The subsequent speakers to a great extent ignored these questions except the first—namely, 'Is rheumatoid arthritis always infective in origin?'—to which no one ventured to return a categorical answer either in the negative or the affirmative sense, although most of the speakers expressed the opinion more or less strongly that infection was one of the most, if not the most important of the factors in its etiology. Any estimation of the importance of constitution and of disorders of metabolism in the development of the disease was scarcely attempted, but we think that few would deny that in a number of cases constitutional and metabolic disturbance forms a striking feature. It is evident that we must wait satisfactory answers to the opener's questions until long and painstaking research has very greatly increased our knowledge.

As Dr. Rupert Waterhouse pointed out for more than a quarter of a century the septic focus of infection has been accused of causing rheumatoid arthritis, and

treatment by removal of such foci has been carried out on a very large scale, and at the same time great improvement has occurred in the general standard of hygiene of the upper alimentary canal, yet, unhappily, he has not been able to recognize any beneficial effect on the incidence of the disease as manifested in the patients who seek relief at Bath, he states, on the contrary, that his personal impression is that the number of sufferers from crippling arthritis increases year by year. The contribution of Sir Robert Jones on the necessity for movement and the prevention of ankylosis in bad positions met with general acceptance, and it is to be hoped that the importance of this palliative treatment is now more widely recognized than it was a few years ago. The question as to the relation of tuberculosis elsewhere to chronic arthritis met with a general negative. Those speakers who referred to it excluded all connexion between the two except in the problematic creation of a *locus minoris resistentiae*. The tuberculous rheumatism of Poncet and Leriche has never won support in this country, and not much is now heard of it in France.

The field of the discussion in the Section of Therapeutics, of which a report appears in this issue (p. 633) was broader, for, although it was nominally confined to the treatment of chronic arthritis, it dealt in fact with its pathology as well, and Sir Thomas Horder, who opened it, included in his tabular statement chronic arthritis of all kinds—from that due to gonorrhoea at one end of the scale of infectivity to that due to trauma at the other. The discussion, however, limited itself in the main to a consideration of arthritis in association with focal sepsis, a form which the opener tried to distinguish from rheumatoid arthritis, thereby avoiding the difficulty of answering the question whether the latter is always septic in origin. It is acknowledged that the treatment of infective foci, no matter apparently how thorough may fail to check the progress of the disease, but it can in no case be confidently asserted that all such foci have been discovered and dealt with, a vaccine—such as that of the *Micrococcus deformans* of Crowe, of which Sir Humphry Rolleston spoke—may, however, reach the hidden source of trouble and determine a cure. How far disorders of the endocrine glands, such as hypothyroidism, may be primary or secondary causes of arthritis is a question which cannot yet be fully answered, but research in this direction may in the future throw much light on causation and lead to therapeutic advances.

Various forms of irradiation have their records of striking cures, and the treatment by protein shock has its advocates, who have recorded some impressive results. Thus, besides the elimination of septic foci and of all other obvious impediments to the recapture and retention of health there are many means at our disposal and it is to be hoped that no arthritic in the future may be justified in echoing the words in St. Mark's gospel regarding the woman which had in issue of blood twelve years—that she had suffered many things of many physicians and was nothing bettered but rather grew worse. Yet the difficulty is often great of deciding which particular therapeutic measure is best suited to a particular case and the patient may have much to go through before relief is obtained. Nevertheless, the impression made by a study of the reports of these discussions is on the whole encouraging. The various means of treatment which were considered are not antagonistic and the adoption of one does not necessarily counterindicate the use of another. Everyone will admit that septic foci are dangerous, and that

whether there be symptoms of arthritis or not steps should be taken to eliminate these possible sources of disease. Whatever special treatment is decided on, the judicious practitioner will insist on the adoption of the best obtainable hygienic and moral environment, not omitting close attention to diet and the restriction of the carbohydrate intake. Gout and rheumatism are seldom confounded nowadays, but the traditions of former times still exert their influence, and there remains a tendency to restrict the use of meat in the latter disease merely because meat has been found to have a bad effect in the former.

MEDICAL POLICY OF THE COLONIAL OFFICE

In his speeches at the Imperial Social Hygiene Congress this week the Secretary of State for the Colonies has made a declaration of policy of first rate importance. In particular he has stated that he and those with him at headquarters who have to look at such questions as the eradication of tropical disease realize the increasingly important part that medical service has yet to play in the whole scheme of administration in the tropics, and the increasing attention that administrators are bound to devote to the medical aspect of the problem, and again, that his department is considering in what way and in what form the medical side of the Colonial Office can be still further strengthened.

The reorganization of the Colonial Office is, indeed, the necessary complement to the creation of the Civil Research Committee if the ideal of efficient administration is to be realized, since the Colonial Office is the main channel through which the influence of the Research Committee must be brought to bear in a large part of the empire, and as the first field of the committee's activity has been found in public health, so the creation of an adequate medical department at the Colonial Office—a reform long overdue, as we pointed out when Mr. Amery first announced his purpose—is an even more vital necessity now than hitherto. We look, therefore, with anxiety for a more detailed statement as to the scheme now being elaborated. Until the Colonial Office itself gives effect to the principles which it should seek to enforce upon local administrations much of its work must remain nugatory. There is work of the first importance centrally for a distinct medical section, under a medical head, who must have free access on the one hand to all sources of information affecting his work, and on the other to the responsible Minister in charge of the department.

Meanwhile we welcome Mr. Amery's recent statement as an indication that the Colonial Office at last appreciates an aspect of the imperial health problem too often overlooked in the past. Research in tropical diseases is as necessary as ever, but it is unfortunately a fact that in the tropical dependencies execution already lags far behind knowledge. The immediate task before the Colonial Office is to impress upon the local administrations the necessity for maintaining health services adequate in personnel and in material resources, and for adopting a progressive health policy. There has been in some quarters a tendency to regard these services as mainly, if not exclusively, responsible for the health of European officers, and even where this is not so the establishment has too often been wholly inadequate for the discharge of other functions. Even now, when verbal recognition of medicine as a productive service is becoming general,

both the clinical and public health branches of the services are too often understaffed, while health programmes accepted in principle are again and again postponed indefinitely for lack of funds, little heed being paid to the wastefulness of such so-called economy. Beyond this the development of health policy is in some colonies fatally hampered by the absence of a responsible medical head of the health services, and then consequent subordination to lay control. It is conditions such as these which, together with definite inadequacy of remuneration and uncertainty as to future developments, have recently forced the British Medical Association in many instances to dissuade its members from entering upon a career which should be among the most attractive open to a medical practitioner of energy and imagination. The shortage of personnel is, in fact, due not only to mistaken economy, but also to a dearth of suitable candidates. This feature of the situation depends, not, as has been suggested in various official documents, on a "lamentable ignorance among medical students as to the prospects which the Colonial Medical Services hold out," but rather on a correct appreciation of the present limitations of those prospects.

If, however, we may take Mr. Amery's words at their face value, this state of affairs may soon be remedied, for all that is necessary is to secure conditions of service making for efficiency, and to restore the confidence now lacking in the guarantees offered by the Colonial Office. In this task the Secretary of State may depend upon the cordial co-operation of the Association, which has consistently laboured to establish such conditions, and to this end is prepared to place at the Minister's disposal experience derived from a membership which covers the whole of the dependencies under consideration. If the Association's advances have not always been met officially in the spirit in which they were made, it is none the less ready to renew them as occasion offers, recognizing, to quote Mr. Amery's own words at the Congress dinner (reported at page 676 this week), that "not the least of the functions of the Colonial Office is to act as an Imperial Ministry of Health, and that one of its primary tasks is to create enthusiasm for the work of physical regeneration."

INTERNATIONAL CO-OPERATION IN SCIENCE

ONE section of the work of the League of Nations which received prolonged consideration at Geneva during the recent Assembly is that known as intellectual co-operation. A year ago the Assembly authorized the establishment in Paris of an International Institute of Intellectual Co-operation, to be under the control of the League, but subsidized by the French Government. The choice of Paris was criticized at the time because it suggested that France had some pre-eminence in culture, but ultimately the proposal secured something like unanimous approval. The institute has now been definitely constituted, and will be in full working order during the present year. The French Government is supporting it at an estimated annual cost of two million French francs (£20,000). The director is M. Julien Luchaire, inspector-general of public education in France and laureate of the French Academy. M. Luchaire a fortnight ago gave the delegates assembled at Geneva an account of what has been already done and what it is proposed to do. He said that the institute had been organized in seven sections—namely, general relations, university relations, bibliography and science, legal relations, literature, art and information. The chiefs appointed to these sections are respectively an Englishman,

a Pole, a German, a Spaniard, a Chinese (a lady), a Belgian, and an Italian. To the science section a very ambitious programme is committed. In the first place, it will endeavour to organize an international analytical bibliography in all branches of science. So far as physics is concerned, a large number of reviews publish articles on this subject, and there are three reviews which prepare a fairly wide analytical bibliography, but hitherto these have competed uselessly with one another, while being individually incomplete. The Committee on Intellectual Co-operation has had a meeting with the directors of these three publications, and an agreement has been reached whereby, through a division of the work, physicists of all nationalities will have an opportunity of becoming fully and immediately informed of the immense production throughout the world in this branch of science. Another task before this section or the institute is to create a liaison between the libraries of all countries, particularly with a view to arranging specialized centres for the collection of scientific documents. A system for the international loan of books and the exchange of scientific publications is also to be brought into being. Investigations are to take place with a view to the setting up of new international institutes of research, and measures likely to encourage young people devoted to scientific research are to be examined. Then the unification of nomenclature and of standards of measurement in certain sciences is to be attempted, a beginning has already been made with regard to the terms employed in nosology. Another task proposed is the diffusion by means of analytical summaries of scientific work performed by nationals in countries whose language is not widely known. Among the questions referred to the section charged with general affairs is the setting up of an organization for the preparation of youths for international careers. The question had already been considered by the Committee on Intellectual Co-operation sitting at Geneva of the establishment of an international university or an institute of international studies under the auspices of the League, and now the Paris institute is to give the question a more detailed examination. A scheme for study tours and exchange of students of all countries has also been approved. Another proposal, from Rumania, is the flotation of an international loan for the restoration of science in certain countries, particularly those which suffered most severely from the war. The information section of the new institute is to examine questions concerning books—for example, the question of introducing uniformity of size and paper measure, and of undertaking a campaign against the use of papers and inks of inferior quality whereby the printed record is likely in course of time to be destroyed. M. Luchaire concluded his address with an eloquent tribute to M. Henri Bergson, who has been chairman of the Committee on Intellectual Co-operation since its foundation but was unable to go to Geneva this year owing to ill health. He spoke of Bergson as a great citizen of the intellectual world who had devoted all his time during recent years to the work on intellectual co-operation, giving second place even to those philosophical speculations which had been his glory and his delight. A telegram of greeting and homage was sent to M. Bergson from the delegates at Geneva.

THE PREVENTION OF RICKETS

THE discovery of the value of cod liver oil and ultra violet rays in the treatment of rickets has not unnaturally led to the suggestion that these agents may be of still greater service in prevention. In the autumn of 1923 the United States Children's Bureau, jointly with the pediatric department of the Yale School of Medicine, organized an experiment on a large scale with a view to gauging the practical utility of this suggestion. A children's bureau

was set up in a district of the city of New Haven, Connecticut, to deal with a population of about 13,500, one-third of whom were negroes and the remainder American, Italian, Irish, and Polish. The infants born in the district during the first two years of the experiment were examined and put on a course of cod-liver oil and indoor and outdoor sun baths, commencing, if possible, before the end of the first month of life. They were re-examined monthly for any signs of rickets, and intensive treatment was given when found necessary. Control material was provided by the examination of children in the district under 5 years of age at the time when the investigation started, and later on a further control group was provided by children who had not had this preventive treatment for some reason or other, though born in the district since the autumn of 1923. A preliminary report by Dr. Martha M. Eliot of the results obtained up to the present appears in the *Journal of the American Medical Association* for August 29th (p. 656). Of the 216 infants born during the twelve months following August 15th 1923, only 23, or 11 per cent, gave at no time any evidence of rickets, 179, or 83 per cent, were shown radiologically to be suffering from mild rickets before they were 8 months of age, while the remaining 14, or 6 per cent, were found to be rickety only after the age of 8 months. In 90 per cent of the 179 cases rickets was recognizable before the infants were 6 months of age, in 65 per cent before 4 months, and in 12 per cent before 2 months. It was much more difficult to make an early diagnosis of rickets by clinical examination, because the ricket deformities begin as exaggerations of the normal shape of the bones and cartilages. The x-ray diagnosis, therefore, preceded the clinical diagnosis by a considerable interval—a point of obvious practical importance. It is suggested that the high rate of the occurrence of rickets may be looked on as physiological rather than pathological, being due to the growth impetus outstripping the power of calcification. About 75 to 80 per cent of the infants were breast-fed, and the question of the dietary of pregnant mothers is also being studied. Large, rapidly growing breast-fed infants and premature babies seemed in particular to need antirachitic treatment. This "physiological rickets" can, it appears, be prevented from becoming pathological by treatment, if applied early. Experimental work on corresponding lines is being done in New York, Cincinnati, and elsewhere, and this combination of clinical and statistical methods of research should throw light on important problems of medicine and public health.

MYXOEDEMA

ATTENTION was first drawn to this disease in 1873 by Sir William Gull, who described it under the title of "A cretinoid state supervening in adult life in women." Four years later the condition was labelled "myxoedema" by William Ord. The clinical and pathological descriptions given by Ord reawakened the interest in the functions of the thyroid gland, which had been only feebly aroused by Schiff's original thyroidectomy experiments some twenty years before. Schiff returned to his investigations on the thyroid gland in 1884, and was the first to try the effect of transplanting the gland in order to counteract the results of extirpation. Meanwhile, Kochei had been describing his cases of "cricheva strumipriva," which Felix Senon later showed to be identical with those of myxoedema. Fortunately the relief of this condition was not to be dependent on the chance of a successful transplantation, as George Murray was able, in 1891, to cure such a case by injecting a glycerinated extract of the gland—a method soon to be abandoned when it was shown by Howitz in Denmark that results were equally good and infinitely easier to obtain by oral administration of the gland extract raw or cooked. It is those early days of thyroid medication—

days which were ushering in an era of therapeutic resources of apparently endless possibilities—that Dr A A London and Sir Joseph Verco recall in an interesting retrospect of their clinical experiences of myxoedema. Thirty years ago papers were read by them and by Dr T W Corbin (who died in 1922) to the South Australian Branch of the British Medical Association on this subject. Reference to them will be found in the first edition of Allbutt and Rolleston's *System of Medicine*. Dr London recalled the first case which came to his notice, in 1883. On the patient's return to Australia several years afterwards he was able to relieve her symptoms by injecting her with thyroid substance in the manner recommended by Murray. The patient died at the advanced age of 86 of cerebral haemorrhage. That myxoedema did not necessarily shorten life was shown by another case of Dr London's—that of a lady who had been under thyroid treatment for almost a third of a century, and who had attained the age of 91. Several points are suggested to Sir Joseph Verco as an outcome of his last thirty years' experience of myxoedema. Pleading for alertness in recognizing the less usual manifestations of the disease, he urges the necessity of bearing in mind that a menorrhagia or an epilepsy might be due to a myxoedematous state. Such conditions consequently require to be treated, not as substantive diseases, but as manifestations of a thyroid deficiency. In cases of long-standing myxoedema, the true nature of which has not been recognized, the patient may be so ill as to be unable to move about the house or even to rise without flinching. The initial doses should then be small (one or two grains daily), otherwise a catastrophe may result. Very soon the dose can be increased to ten or fifteen grains a day. Again, in myxoedematous patients the thyroid tablets must be taken prominently and regularly, and not to impress this indelibly upon the patient is, he says, a grave dereliction of duty on the part of the doctor.

PHYSIOLOGY AND ORTHOPAEDICS

The ultimate aim of orthopaedic surgery being a restoration of function, a knowledge of the normal function of the body as far as movement and posture are concerned is essential to the orthopaedic surgeon. Mr A S Blundell Bankart, in his presidential address to the Section of Orthopaedics of the Royal Society of Medicine on October 6th, emphasized this by taking as his subject "The physiology of muscular action." He referred first to Sherrington's work on postural activity, which had gone to show that skeletal muscle manifested its activity not only in the phasic, quick, transient contractions associated with voluntary movements, but also in tonic, slow, and prolonged contractions which maintained posture. These functions are physiologically distinct, and, it has been recently suggested, anatomically separate. The changes which a striped muscle fibre undergoes in voluntary contraction or relaxation are essentially chemical in nature, probably associated with some change in surface tension, and certainly accompanied by marked metabolic changes. Voluntary contraction is a tetanus produced by a succession of stimuli each muscle fibre obeying the "all or nothing" law, the degree of muscular contraction depending upon the number of fibres taking part and hence upon the strength of stimulus received. Muscular education is therefore a bad term; remedial exercises educate reflexes. Another term regarded by Mr Bankart as unfortunate is "antagonist"—the muscles on the opposite side of a joint, following the law of reciprocal innervation, really co-operate in any movement. When this reciprocal innervation is absent, as in spastic paralysis, then antagonism is

actually present. The nature of response to stimuli in unstriated muscle is different, being essentially slower and more prolonged, and this is probably due to the fact that the unstriated muscle fibre offers more resistance to the impulse. Such increased resistance or viscosity probably explains the nature of response in a striated muscle in postural activity. Such activity entails practically no increase in metabolism such as occurs in the isochemical changes of voluntary contraction, and is probably therefore a physical change, and in terms of colloids represents a change from sol to gel in the muscle cells. There is therefore no physiological reason why these two activities of striated muscle should be performed by different parts of the individual fibre nor by different fibres. Mr Bankart said that the evidence brought forward by John Hunter in support of the latter theory needs critical examination, in a recent review of the whole subject Walsh had stated that Hunter's experiments and cases are inconclusive. Mr Bankart's own experience in the operation of sympathetic amputation has been that the evidence is all against the sympathetic innervation of certain special muscle fibres concerned with tone. Sherrington has shown that tone is a proprioceptive reflex, and postural deformities are due to a defect in normal postural reflexes. Remedial exercises are used to treat this condition, and if movement and posture are due to separate mechanisms it is difficult to see how the re-education of muscles in respect of movement can improve posture. The recasting of remedial exercises was, Mr Bankart said, long overdue, particularly with reference to resisted movements, which were very valuable, and the posing and posturing of ballet dancing might be successfully imitated. The transplanting of tendons in the lower extremities should only be carried out with a clear idea of the mechanism of postural tone. The application of physiology to orthopaedics opens up a very wide field for investigation, and should go a long way to clearing up much of the uncertainty now existing as to the most appropriate remedial measures.

CHARLES DICKENS'S MULBERRY TREE

In one of the illustrations to Mr Munhead Little's article on the site of the British Medical Association's new House, published in our issue of July 18th (p. 113, Fig. 5), a mulberry tree is represented as standing at the back of Tavistock House, in which Charles Dickens once lived. The photographic original of the illustration was taken about the year 1901, just before the house was pulled down. It shows a well-grown tree standing by itself, but in the four and twenty years that have since elapsed the garden was neglected, and shrubs and other trees were allowed to grow close round the old tree and more or less choke and conceal it, so much so that at the time of the opening it was scarcely to be distinguished from the mass of foliage around it. As the result of representations that were made to the Duke of Bedford's agent, that gentleman consulted his Grace, who gave instructions that the shrubs should be cleared away and a railing placed round the tree. The clearance has now been made, so that from the south garden of the Association's House the tree is clearly visible. Like all good mulberry trees that have reached a respectable age, it is propped up, but less elaborately than Milton's mulberry tree in the grounds of Christ's College, Cambridge. There seems some reason to suppose that in the time of Charles Dickens's tenancy the garden of the house extended further towards Tavistock Place and included the tree. The existing railings do not appear to be old enough to have been erected before Dickens gave up the house in 1860, they are, however, shown in the photograph. The interest in the old tree—it is probably nearly 100 years of age—is sentimental, but such sentiments are widely held, many trees are associated with famous individuals, and

¹ Myxoedema. A Sequel, by Mr A A London M.D. Myxoedema by Sir J Verco M.D. F.R.C.S. (Medical Journal 1924) July 4th 1925)

it is still not unusual to plant trees to commemorate great events or the visits of important persons, therein perhaps unconsciously exhibiting a survival of the tree worship of our primitive forebears which was once world-wide. The old crulpr in Gray's Inn Gardens is associated with the name of Francis Bacon and remembered by the graceful verses which were written of it by J. K. Stephen, albeit the tree can hardly be 300 years old. The names of many other historical or mythical persons which have been associated with venerable trees will no doubt suggest themselves to readers.

MEDICAL LINKS WITH DR JOHNSON

THE celebration on September 19th of the 216th anniversary of the birth of Samuel Johnson brought many distinguished Johnsonian scholars to Lichfield. At the festival supper the toast of "Dr Johnson and his physicians" was proposed by Mr S. C. Roberts, secretary to the syndics of the Cambridge University Press and the author of several books about Johnson, who remarked on the intimate and personal association of the great man with the medical profession from his earliest years. One of his godfathers was a doctor, whose daughter Johnson later took into his household. Another medical associate was a Dr James, whose powders were a favourite household remedy in the eighteenth century, and who published a medical dictionary with the aid of Johnson. Other medical friends mentioned were Lawrence and Bathurst, the latter of whom was described as "a very good hater." Johnson was himself something of an amateur physician and surgeon, and prepared a special mixture by powdering dried orange peel. Towards the end of his life he took an interest, that may have been embarrassing to his attendants, in the surgical treatment of his dropsy. Dr Robert Hutchison, who replied to the toast, gave a lecture on Dr Johnson's doctors at the May social evening of the Royal Society of Medicine (BRITISH MEDICAL JOURNAL, May 9th, 1925, p. 895). On the present occasion he pointed out how far Johnson was ahead in some respects of the medical knowledge of his times, as, for instance, in his disapproval of routine blood letting. One of Johnson's friends, Sir John Flower of Lichfield, had written one of the earliest treatises on asthma, and was a pioneer in the matter of cold baths. In the Ivy Club there were three doctors out of ten members, none of whom was notably successful in medical practice. Included in the literary club, however, were medical members, some of whom attained great eminence, as, for example, Sir Richard Warren, the most successful physician of his day who left £150,000 when he died. Another medical member wrote a good textbook, and was an advocate of one meal a day, though his own daily meal was large and lubricated with a tumbler of strong ale, a pint of brandy, and a bottle of port.

INTERNATIONAL ASSOCIATION OF MEDICAL MUSEUMS

BULLETIN No. XI of the International Association of Medical Museums contains several short communications on museum technique, photography, and microscopic and bacteriological technique. One of the most interesting of these is an article by Dr Maude D. Abbott on the Wyatt Johnson descriptive classification of museum specimens, as applied in the pathological museum of McGill University. We see also that the laboratory technicians in Washington and Baltimore propose to form an association of laboratory technicians, which would have as its object the dissemination of technical knowledge along medical laboratory lines and the maintenance of a high standard and ideal among this body of workers. A precedent for such an organization has already been established in Great Britain in the

Pathological and Bacteriological Laboratory Assistants' Association, which has done a most valuable work during the thirteen years since its foundation. We are glad to notice that the American laboratory technicians have sought the advice and example of the Pathological and Bacteriological Laboratory Assistants' Association, an account of whose objects and proceedings is printed in Bulletin No. XI of the International Association of Medical Museums.

MEDICAL SOCIETY OF LONDON

THE programme for the first half of the 153rd session of the Medical Society of London has just been issued. The annual general meeting, on Monday, October 12th, at 8 p.m., will be followed by the presidential address. The subject of Sir Holburt Waring's address is "Osteopathy, chiropractic, and medicine," and it will be followed by a discussion. Clinical evenings will be held on October 26th and November 23rd, when cases and diagrams will be shown and discussed. On November 9th a discussion on "Obscure pyrexia in childhood" will be opened by Dr Robert Hutchison, followed by Dr Wilfred Pearson and Professor F. S. Langmead. Another discussion has been arranged for December 14th, when "The treatment of genito-urinary tuberculosis in the male" is to be introduced by Mr Cyril Nitch, followed by Mr Kenneth Waller and Dr Stephen Gloyne. The dates of Dr L. Fairclough Buzzard's Lettsomian Lectures on "The principles of treatment in relation to diseases of the nervous system" are February 15th and 24th and March 15th. The Annual Oration will be delivered in May by Sir Berkeley Moynihan, Bt. The syllabus of the second half of the session 1925-26 will be published early in January. The honorary secretaries are Mr J. E. H. Roberts, F.R.C.S., and Dr T. G. Chandler.

INFLUENZA

THE Registrar-General's returns suggest that influenza is again tending to become epidemic. The deaths in the great towns during the last three weeks have been 11, 26, and 41. The notifications of pneumonia have amounted to 417, 578, and 764. The numbers are not very great, but the upward movement is somewhat unusually early in the season. The distribution of cases of pneumonia suggests that it is in the north midland and northern parts of the country (including the north-west) that the epidemic will develop first. The returns for London do not show so regular a change, the deaths from influenza have been 1, 7, and 5 in the last three weeks, the notifications of pneumonitis 29, 68, and 79.

A CONFERENCE on the subject, "How the midwife can help in the reduction of maternal and infantile mortality," will be held at the Royal Society of Arts, John Street, Adelphi W.C.2 on Monday, November 9th, from 5 to 7 p.m. The chair will be taken by Sir Francis Champneys, Bt., M.D., chairman of the Central Midwives Board. The midwife's place in the maternity service will be discussed by Dr John S. Fairbairn, obstetric physician to St. Thomas's Hospital, the midwife in independent practice, by Miss E. M. Doubleday, of the Post-Certificate School, the midwife's work in rural areas by Dr F. E. Fremantle, M.P., and the midwife's work in large centres, by Sir John Robertson, M.O.H. Birmingham. A general discussion will follow.

THE Home Ambulance Service of the Joint Council of the Order of St. John and the British Red Cross Society (19 Berkeley Street, London, W.1) has issued a new edition of its list of ambulance stations, showing the address of each and the officer in charge. We recently (August 29th, p. 396) gave an account of the work at present carried on with so much success by the Home Ambulance Committee and described the means taken to keep the ambulances at all the stations in good working order.

Opening of the Winter Session.

POETRY AND PHYSIC*

BY

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THE present is perhaps not an inappropriate time to consider the relations between poetry and physic, for less than a year ago (on October 23rd, 1924) we celebrated the 80th birthday of Dr Robert Bridges, Poet Laureate since 1913 and the only medical man among the eighteen holders of the office of Versificator Regis, dating from Edmund Spenser in 1591. The nearest approach to a medical laureate was Robert Southey, who for a time was a medical student.

Newcastle upon Tyne, too, has its medical poets, for Mark Akenside (1721-1770) composed his successful didactic poem, *Pleasures of the Imagination*, in this his native town before leaving for London and dropping the pursuit of the draggled muses—to quote the words of another medical poet, Oliver Goldsmith. Thomas Trotter (1760-1832), after a rather turbulent career as a surgeon in the Royal Navy (1779-1802), retired to Newcastle a disappointed man, and in 1829 published a volume, entitled *Sea-weeds, Poems Written on Various Occasions, Chiefly during a Naval Life*, and thus, as sometimes happens to medical men, returned to the poetic activity of early youth.

On grounds of ancient heredity poetry and physic should be closely allied, for Apollo, the god of poetry and culture, was the father of Aesculapius, the tutelary divinity of the healing art, and those who practised medicine were dignified as "the children of Apollo." In the time of the renaissance of learning medicine was one of the several branches of knowledge coming within the purview of a philosophic scholar, and these were the days of the scholar physicians, such as Linacre. The relations between literature and medicine form an interesting episode in the history of letters, but the connexion has of necessity become less intimate with the advance and increasing specialization of knowledge and technique. Even in the experience of those now living it seems to some that poetry, in spite of the volumes of *Georgian Verse*, has less appeal and is less read than in Victorian times.

Some years ago the idea struck me that it would be interesting to collect the works of medical men who were also poets for our profession provides ample opportunity for observing man and his manners, women and their ways, human nature and its nakedness, and the beginnings, ends, and tragedies of our fellows. Such a hobby is attractive for the light it throws on the personalities of the past and for the pictures of eminent physicians such as Sir Henry Hallford composing elegant Latin verse (*Vagae Medicae*, 1842) as he drove from one noble sick room to another, Sir Richard Blackmore, the opponent and victim of the wits, rolling out his eternal epics to the rumbling of his coach's wheels, and thus contrasting with the humbler practitioner, John Mason Good (1764-1827), translating Lucretius into blank verse as he trudged through the London streets to his poor patients, this literary task, conscientiously undertaken for his mental education occupied six years. But I had barely started when Dr C. L. Dana of New York kindly sent me the charming catalogue of his collection of poetical works written by medical men, which, covering a period of two thousand years and containing 157 names and 295 works, compelled admiring interest while defying competition.

The relations of medicine and literature have often been the subject of addresses and articles, and I would specially refer to Sir Edmund Gosse's brilliant Lloyd Roberts Lecture on

Personal relations between literature and medicine,† to which I am much indebted. In 1669 the distinguished Dutch anatomist Thomas Bartholinus published a small work of 149 pages *De Medicis Poetis*. Broeckx, in his *Dissertation sur la médecine poétique belge*, arranges fifty of his countrymen in alphabetical order, and Académie Chéreau gives in alphabetical

order no fewer than 479 names, but modestly says that Traut cannot put forward any competitors to the poet physicians who are mentioned in order, presumably of merit: Francesco Redi, Bellini, Blackmore, Haller, Alenside Grainger, Erasmus Darwin, Armstrong, Carth, and others. In his scholarly introduction Dan passes in review the medical poets from classical times, from Impedocles (B.C. 500) and the times when the Theriacal or Emetic for all poisons was a favourite subject for the verses of Alexander, Andromachus, and Macer Floridus, up to the present day.

Uses of Poetry

Defined as articulated music by John Dryden, poetry has to please what a great painter's masterpiece is to an ordinary photograph. It is eminently creative, medicine, though similarly constructive in its curative and older function, has as its highest aim the prevention of disease, and therefore, like the police, plays the rather negative part of eliminating the factors responsible for disorder and destruction. But in their different ways scientific medicine and poetry both aim at the attainment and perpetuation of the good, the beautiful, and the true.

Though it is not always recognized, poetry has a most practical bearing on our work a day world by increasing the joy of existence. With their realistic and idealist sides medicine and poetry are complementary, and certainly poetry provides a relief from the ugliness and drabness of life. No doubt the idealism of the poet's eye "in a fine frenzy rolling" so remote from the sordid material details of fleshly infirmity, would appear to set an insuperable gulf between him and the physician. But each of those concerned with these contrasted aspects of life may gain by adopting colouring derived from the other.

Medical men, however, are probably more likely to gain by the culture and wide vistas opened by poetry and letters than are poets by a scientific or medical training. In his *Essays in Criticism* Matthew Arnold indeed insisted that without poetry science would be incomplete. Poetry implies spontaneity and imagination which should not degenerate into poetic licence, and imagination, or the creative faculty, is a form of divination of the greatest importance in medicine. Indeed, according to Sir Clifford Allbutt, the responsibility of a university is confined to ensuring a certain development of mind and imagination in its graduates. Imagination is a necessary stimulus to really good work, especially in original research, it is as essential as is the cold logical sense of proportion which controls within proper bounds the investigations thus inspired, for it is the most fruitful initiative to lines of pains taking and laborious investigation. That familiarity with good poetry should improve a medical man's literary style is so obvious that one example only will be cited, and that from holy writ. St Luke, the beloved physician, was, as Miss Melan Stawell shows, a Roman and not a Greek, and modelled his style in the Gospel and Acts of the Apostles on Virgil.

Like music, poetry of course has an effect on the mind, and the finer forms exert a powerful influence for good. Robert Graves says: "A well chosen anthology is a complete dispensary of medicine for the more common mental disorders, and may be used as much for prevention as cure." There can be little doubt of the value of poetry as a relief to the mental fatigue caused by the monotony and squalor of life such as we often see it, but it is possible that Robert Lynd is right in reproaching us for neglecting its psychotherapeutic uses. But he says that we are more accustomed to advising people to eat lettuce than to read poetry, and that in view of our silence Graves is justified in advocating the medical applications of poetry. In a passage that reads like a page of Aristotle seen through the spectacles of Dr Freud,† For Graves suggests that as poetry is the transformation into dream symbolism of some disturbing emotional crisis in the poet's mind, it is able to help other men similarly affected by supplying an allegorical solution of the trouble. Not only may reading poetry soothe the jangled nerves of a jaded labourer and provide an antidote and an antidote to the mental hyperchlorhydria born of the too material and stereotyped formulae of medicine, but active composition of verse is a means of

* Introductory Address (delivered) at the University of Durham College of Medicine, Newcastle upon Tyne, October 6th, 1925.
† *British Medical Journal*, October 2nd, 1925, 1, 52.

relieving the overburdened mind by providing a safe outlet for emotional excitement.

The valuable property of "clinical instinct," which, although sometimes ridiculed as the assumed armour and decoration of the ignoramus or the quack, has a certain resemblance to the poetic faculty, and, moreover, is a real asset in practice. Clinical instinct is the power of arriving without a conscious logical process at a definite conclusion, and is often possessed to a high degree by old nurses who know, but cannot give their reasons, whether a patient is going to recover or die, and by practitioners of long experience who similarly cannot explain the steps by which they reach a diagnosis and prognosis. It may be assumed that they unwittingly draw on a buried experience which, without their conscious remembrance, recognizes in the patient signs presented by one in the long past. In diagnosis, therefore, there are the two processes—the consciously logical, and the rarer, but not necessarily less correct, the unconscious. In the writing of poetry there are also these two methods—the conscious effort and the impulsive pouring out pell mell of verse, the meaning of which, though quite clear to others, may not at the time be obvious to the writer.

Poetry as a Means of Communicating Knowledge

The prolific multiplication of books by printing has rendered the transmission of knowledge so easy that it has led to the conviction that prose is the only proper method of conveying technical knowledge, but, of course, it was not ever thus. In early times medical, like other lore, was largely handed down in the form, convenient for memory, of verse. In the past the famous *Regimen Sanitatis* of Salerno (? 1100 A.D. and an early printed book in 1480) was the most popular poem in medical literature, up to 1835 there were 119 editions of the Latin text, 33 German translations, 14 French 9 English, 9 Italian. As recently as 1920 an edition of Sir John Harrington's English version was published. It was much in request as a handbook of domestic medicine, and, as was so frequent in the days before printed books, became much altered in the course of many copyings, successive scribes adding at their own discretion or indiscretion. Thus the early copies contained about 360 lines, and the later ones over 1,000. Johann Joachim's *Parno us Medicinalis* (1663), written in the style of the *Regimen*, was, according to Dana, notable as the first systematic exploitation of opotherapy and details the applications of twenty-four substances in man's body useful in medicine. Next in popular importance to the *Regimen* Sir William Osler placed Girolamo Fracastoro's *Syphilis et Morbus Gallicus* (1530), which gave us the name of a disease, the etiological importance of which it is even now difficult to estimate. David Hume's *Scott's chief Latin medical poet* being the author of two volumes *De hominis præcatione anatomie morbis internis* (1596), another Scot John Armstrong (1709-1772), produced *The Famous Art of Prescribing Health* (1744), a didactic poem in four books, which, with its personal appeal, had a great vogue.

Can a Doctor be a Poet?

Ever at any rate in the recent past, have at the same time been equally distinguished as medical men and writers of poetry. Probably the best instances are the two Americans, Oliver Wendell Holmes (1809-1894), professor of anatomy for forty-four years, and S. Weir Mitchell (1829-1914) the neurologist of Philadelphia. This association, however, has been so rare that it has even been asked, "Can a doctor be a poet?" and with a wider application. Is there any inherent incompatibility between the lancet and the lyre? Thomas Denman (1733-1815), the obstetrician in a letter to comfort his former pupil the famous old Bath physician Caleb Hillier Parr for the tardy advent of patients during his early years of practice, touched on the perennial problem why one medical man succeeds while another fails remarking "What is very hard, and I know two or three instances of it is that a man shall be esteemed as a friend acknowledged to be a man of parts, but none of his friends thinks of employing him in his profession. Thus I can hardly explain him by the old saying 'He is too good a poet to be a good physician.' This was in the very early years of the nineteenth century more than a century after the appearance of Samuel Butler's *Dicynary* (1699), a medico-political satire and picture of the famous quarrel between the College of Physicians and the Apothecaries, which Sir Edmund Cosseville, then a fully qualified *comp de grace*

to the popular belief that the pursuit of poetry and of medical practice were incompatible.

It has long been a widespread conviction which the ever increasing extension of knowledge and the resulting specialism would tend to strengthen, that a man cannot be first rate in more than one line of work. It is true that some men are so gifted that whatever profession they adopt they will make their mark at or near the top, Goethe and Albrecht von Haller in the past were examples of pre-eminence in poetry and medical science respectively, and efficiency in their second subject. Benjamin Ward Richardson believed that if John Keats had once tasted the true spirit of medicine he would have become one of her greatest sons—in addition, perchance, to the some eight or ten of the men of all time whom medicine claims as her own, her poets of nature.

In the light of experience and in obedience to popular prejudice against serving two masters or mistresses, some medical men have concealed their poetic powers and productions, or have put them aside in a napkin during their active professional life. To publish anonymously and to await the verdict before declaring the responsibility is not peculiar to any profession, and ours is no exception. There has been some discussion whether the unauthorized and anonymous editions of Sir Thomas Browne's *Religio Medici*, which contain a number of poetic fragments in the text, appeared entirely without his knowledge, but Geoffrey Keynes, in his fine bibliography of Sir Thomas Browne, scouts any such sharp practice on his hero's part, though this is perhaps rather a hard saving for what, after all, seems a harmless experiment. From internal evidence Chereau ascribes thirty-two unsigned poems to medical men among his collection of French physician-poets. Pseudonyms also have naturally been employed.

Marl Alenside (1721-1770) brought out the *Pleasures of the Imagination* in his twenty-third year, and then, becoming a haughty physician to St. Thomas's and Christ's Hospitals, and Gonistomian and Croonian Lecturer at the Royal College of Physicians, remained to all intents poetically dumb until the year of his death. Possibly he was influenced by the example of his senior at the College, Sir Richard Blackmore (1653-1729), Physician in Ordinary to William III and Queen Anne who persisted in the practice of physic and the publication of epics, with the result that he became the butt of the wits, whom, it should be remembered, he had in the first instance attacked in a *Satyr against Wit* (1700).

Garth and John Arbuthnot (1657-1735), the only hegetter of the character of John Bull, were both court physicians and accepted equally by the wits and by the medical world of what has been called the Augustan Age in England. That they had personal charm is well known and this is perhaps the reason why Blackmore, their apparently heavy colleague at the College and the court, had such a different reception. At any rate, Garth and Arbuthnot's success proves that in spite of popular prejudice it was not impossible to be accepted as a physician and a poet at the same time at least in those days. Even now with all our intensive specialization, there are not wanting men of world-wide reputation who can write fine verse. Henry Heids *Destroyers* and Donald Ross's poems are instances that at once spring to mind but it must be admitted that their services to medical science outshine even their poetical works. Sir Donald MacAlister's *Echoes* (1913) are an amazing *tour de force*, for he translates Roman into English, German into English and Scots verse and vice versa Russian and modern Greek into English and old Scots with the greatest skill and apparent ease.

Practitioners of Poet Medicine and Ver

It has been claimed for medicine by one of ourselves (Mitchell Branks) that it stands foremost among the professions in the number of men distinguished in literature who at least began life in our ranks. A long list might easily be compiled but it will be sufficient to give a few examples of those who have taken up medicine for a shorter or longer time and have, as one sage or another given their adhesion to the muse of song. Some have been poets who touched medicine, others practitioners who as a by-product or hobby, threw off verse, and some such as Georges Clemenceau in *Le Grand Pan* (1895), have preferred to write poetry in the form of prose. Some were transient students only and never qualified, S. T. Coleridge when less than 15 years of age, was seized with a passion for medicine and read many authorities, learning

Blancard's *Latin Medical Dictionary* almost by heart. Southey also entered on the physic line, but not for long. Francis Thompson (1859-1907), poet, author of *The Hound of Heaven*, and mystic, spent eight years at Owens College, Manchester, but as a medical student he was a misfit.

John Keats, as is well known, qualified in July, 1816, at the Apothecaries Hall, but this marked the close of his life's medical chapter. George Crabbe (1754-1832), according to Byron, Nature's sternest punter, yet the best, after a brief experience of poor practice took orders, and only ever criticised his medical knowledge on the bodies attached to the souls under his care. Medicine may be said to have refused the overtures of Goldsmith, the source of whose medical qualification has been a vexed problem of historical research, and Tobias Smollett, the author of odes as well as his more famous novels, intermittently attempted, but never really succeeded in, practice. Schiller gave up his post as a surgeon in the army as soon as he could.

Among those who continued to practise and publish their metrical products were Henry Vaughan (1622-1695), his *Retreat* appears to have stimulated Wordsworth to the ode *Intimation of Immortality*, and his poems were pervaded with an atmosphere of mystic rapture, he evidently was no commonplace person. James Granger (1721-1766) was successful in so far as his *Ode to Solitude* was applauded by Johnson, and he gained at least sensational attention for *The Sugar Cane*, the remarkable anticlimax in which, 'Sav, shall I sing of rats?' evoked a rebuke from the great lexicographer and laughter from the privileged audience to whom it was read. He carried on his professional and poetic activities concurrently, but, though able, he did not make medical practice lucrative. In the intervals of his more important work Edward Jenner (1749-1823) wrote occasionally in verse, such as the *Address to a Robin*. John Ferriar (1761-1815) of Manchester, advocate of the idea that anyone could become a genius if sufficiently industrious, was the author of a poem *Bibliomania* recounting the joys of book collectors, and became prominent for his attack on Sterne, whom he accused of plagiarisms, a failing which others in turn ascribed to the critic. He was active as a physician to the Manchester Infirmary until his death. W. H. Drummond (1854-1907), who has been called "the Poet Laureate of British America," struck out a new line as the interpreter of the French Canadian life and thought in *The Voyageur*, *The Habitant*, and other poems. He was of Montreal, and so was John McCrae (1872-1918), whose untimely death in the war removed a well-known pathologist, a physician of great promise, and the critical author of a number of poems, the best known of which is the exquisite rondeau *In Flanders Fields*. W. S. Thayer of Baltimore, another fastidious censor of his own creations, has often written but seldom broadcasted his verse.

Another group are those medical men whose poetic bent is not allowed to slumber before men until they are on the way to retirement when more leisure and freedom from any anxiety that obvious hobbies may damage their professional prospects permit the products and remains of youthful facility in verse to blossom forth. Weir Mitchell was a case in point, except for some unsigned verses in 1857, he published nothing for popular consumption until over 50 years of age. In spite of Sainte Beuve's dictum that in most men the poet dies young while the rest of the man lives on, it is therefore probable that poetic activity may be latent and be born again in more mature years, but whether the latest fruit is always the ripest is doubtful. Erasmus Darwin (1731-1802) was the author in his fiftieth year of *The Botanic Garden*, a poem in two parts, the *Economy of Vegetation*, and *The Loves of the Plants*. There is a special interest about him and his speculations on evolution in connexion with their possible influence on his grandson Charles Darwin, who entered, but soon abandoned, the study of medicine. Thomas Gordon Haake (1809-1895), a Victorian poet made a much cleaner cut between his professional and poetic life than did Erasmus Darwin, for he left physic with the definite intention of cultivating the muses about the age of 50, after which nearly all his poems were written.

It is seldom that one who starts as a poet takes up medicine comparatively late in life, the following examples show an infinite variety of interests. Thomas Lodge (1558-1625) had an adventurous career: the son of a Lord Mayor of London, he went to the Bar, travelled much, was a soldier and sailor too, not to say a freebooter, in the Spanish Main and the

Brazils, and was the persistent parent of plays, pamphlets, and poems. After 1595, a year of great literary activity marked by the appearance of four books, he went in for medicine and, taking the degree of Doctor of Medicine at Avignon in 1600 and D.M. of Oxford in 1602, practised at first in Warwick Lane. Familiarity with the pen crippled him, in 1603, to dedicate to the Lord Mayor and Corporation a treatise on the plague then raging in London. Together with Matthew Gwinne and Raphael Thorus, both poets, the great William Harvey, and some others, he was, on May 11th, 1604, examined at the Royal College of Physicians, Lodge failed on that occasion, but was successful in 1609. Martin Llewellyn (1616-1682) also plied many parts: a scholar and poet, cavalier, until he was 32, when he was ejected from Oxford for his Royalist activity, then applying his genius to medicine he became a Fellow of the Royal College of Physicians of London, but with the return of the Stuarts he was made physician to Charles II and Principal of St Mary's Hall, Oxford, after four years he moved to Great Wymondley, where he practised and eventually became mayor, he wrote poems, published at intervals from 1646 to 1672. T. L. Beddoes published *The Bride's Tragedy* when 19 years of age, wrote dramas, became involved in political intrigues in Germany, and remaining abroad for the rest of his life decided, in 1825, to abandon literature as a profession in favour of medicine. He attained merit as a physiologist, took his doctorate in Zurich in 1835, was nominated as a professor but not appointed for political reasons, and did some practice. During twenty years of his medical life he was writing and polishing *Death's Jest Book or the Fool's Tragedy*, published in 1850 after his death.

A few born poets adopt medicine, and failing therein allow their true bent to come out, as in the case of Oliver Goldsmith. It must be exceptional, if not unique, for a well established poet to be summarily made M.D., even by the Archbishop of Canterbury—who still returns, but never uses, this power. Abraham Cowley (1618-1667), a scholar of Trinity College, Cambridge, wrote in 1639 an elegy on the death of his friend William Harvey, not to be confused with the discoverer (1578-1657) of the circulation, whom as Warden of Merton and a co-Royalist he very probably met at Oxford after his expulsion from Cambridge in 1643. It was at Oxford, on December 2nd, 1657, that Abraham Cowley was made D.M. by edict of the Government in order (so his biographer, Spurr, considers) to serve as a blind for his activities in the Royalist cause. Cowley never published any strictly medical work, and there is no evidence that he was specially interested in clinics.

Is any one branch of the medical profession more favourably placed and prolific in verse than another? From then up bringing and associations it would naturally be anticipated that the followers of pure physic would be more productive than the wielders of the knife: this is probably true, but perhaps enough has been said about those concerned with internal medicine. Some distinguished surgeons have been poets, or at least have ventured into verse. Richard von Volkmann wrote under the name of Richard Leander. Paul Broca was a poet (employing the anagram Bp Lacour for his pseudonym) as well as a surgeon and an anthropologist. Sir William Blizard, who was surgeon to the London Hospital for fifty-three years and operated there in his eightieth year, wrote an ode for the opening of its Medical School in 1785, which was set to music by Samuel Arnold, but drew from Sir Norman Moore the remark that had he been longer contemporary with Pope it would have certainly secured him a place in the Dunciad. Another President of the Royal College of Surgeons, the late Sir Rickman Godlee, wrote poems. Sir D. Arcy Power, ever ready to share his historical lore with others, has shown me some of his treasures of the sixteenth century poet surgeons, John Halle, Thomas Gale, Thomas Vicary, and John Read, while engaged in trying to raise the status of surgery in this country, found time to diversify their surgical works and to produce occasional poems. The poetic habit of these Elizabethan surgeons was a fashion which faded away, but no doubt will be revived in due season.

Of the various specialties one of the most select is that of the anaesthetist, and I have personal knowledge of one who, possibly inspired by their environment and provided with time for meditation while their surgeons are busy, have cultivated verse. Laryngology, now such an energetic and successful specialty, has, as indeed is only right, contributed

its quota of song. Men in general practice form the bull of the profession, and though not in the limelight, have done then share in keeping up the scholarly and poetical reputation of their profession. Some have been mentioned already, and of living men it is perhaps invidious to speak, for there are so many, and it is so difficult to keep in touch with all current poetry. Moreover, many hide their talent as if it were a secret vice.

What, then, is the conclusion of the whole matter as shown by experience? The reading of poetry is a help, comfort, and means of culture in our hours of ease and even of disease, and as a hobby the writing of verse is a happy issue for our emotions, for there is no greater pleasure than creating something. Surely these are enough to establish the advantages of the cultivation of poetry? More ambitious aims are hardly likely to tempt us, for it is fairly obvious that, as medicine and poetry are both jealous mistresses, a busy doctor can hardly hope ever to be a Tennyson or a Swinburne.

FIFTY FIVE YEARS OF PROGRESS IN SURGERY

BY

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SURGEON TO THE LEEDS GENERAL INFIRMARY

I FEEL it a great honour to have been asked to give the opening address of the Medical Department of the Leeds University as to-day is the fifty fifth anniversary of my entering as a student, and, with short intervals for post graduate study at home and abroad, it was my privilege to be attached, in one capacity or another, to my Alma Mater for over thirty years before making London my centre. It is therefore not an idle boast to lay claim to some knowledge, not only of the evolution of the Medical Department, but of the University itself, of which I am proud to be one of its early emeritus professors and to have been considered worthy of the distinction of receiving *honoris causa* the degree of Doctor of Science. Not the least among the great mercies vouchsafed to me is the privilege in my eighth decade of being able to accept your kind invitation to come and greet those who remain, alas too few, of my old friends, and to make the acquaintance of those new colleagues who are still carrying on the work so well that the reputation of this great teaching centre is increasing from year to year.

The Dean of the Faculty has, in his kind letter of invitation practically fixed my subject for me in stating: "There are now very few persons who can, from their actual knowledge, compare and contrast the nineteenth and twentieth centuries or even assess the causes and influences of the changes which have occurred." But when I began to consider how impossible it would be, in the course of an hour, to give any details of even the greatest discoveries that have been made during my lifetime, or even to describe all the changes that have transformed our own profession, I felt that it would be necessary to limit my remarks to my own sphere of work, which in itself is enough to mark this period as the most wonderful in the history of the world.

On looking back and reviewing the changes that have taken place in the art and science of medicine and surgery since the days that were to unlock the paths to progress were discovered, I am lost in wonder at the perseverance and tenacity, the skill and ability of those great men, whose conscientious labour accomplished so much in the absence of any accurate knowledge of the causes that led to want of success and were the prelude to successes that some of them lived to see and participate in. Among the many distinguished men of our profession of this and other countries, whose names will be ever remembered, I come that we of the Leeds School should especially bear in mind the Heys, the Tenles, Clifford Albutt, Wheelhouse, Jessop and McGill, my teachers and later my colleagues and friends. Although alas! they have passed away, their spirit continues with us to stimulate us to higher endeavours in continuing the work so well begun.

Address (abridged) delivered at the opening of the Medical Department of the Leeds Infirmary on October 1st 1925.

I had the good fortune to begin my life's work in 1870, when there were great advantages in writing and talking, put in the old order of things and being able at once to appreciate and participate in the reformation that came within the next few years of seeing the birth and growth of the science of bacteriology, the key that unlocked the way to the knowledge of the cause of so many diseases, of taking part in the infancy, the adolescence, and the sturdy manhood of its brilliant offspring antiseptic and aseptic surgery, and of having, the honour of making a personal acquaintance with, and of being an ardent disciple of, those two great masters—Lister and Lister. To those of my audience who are entering on their medical studies to-day, and to any other students who have not read them, let me recommend two books which will not only give you the greatest pleasure to read and carefully study, but which will stimulate you in your careers and afford you great examples to live up to. They are (1) *The Life of Pasteur*, by his son-in-law, Rene Vallery Radot, which I read when first published in the original, but which I have read a second time, with equal interest, in a very good translation by Mrs R L Devonshire, with an excellent introduction by my late distinguished friend Professor Osler. (2) *The Life of Lord Lister*, by his nephew, the late Sir Richard Godlee for some time a colleague of mine on the Council of the Royal College of Surgeons, and later President, who was himself a distinguished surgeon.

In the early seventies, it was possible to see hospitals ravaged with hospital gangrene, septicaemia, and pyaemia, when any operation, however simple, might, and frequently did, assume complications of the most serious import, often ending in death. For instance, I actually saw death follow the simple tapping of a hydrocele by an eminent surgeon. Secondary haemorrhage was of frequent occurrence, and it was usually considered advisable to have tourniquets at hand or even round limbs ready for the attendants to tighten up when the silk ligatures were due to separate. Ordinary compound fractures often ended in loss of life or limb or took weeks or months to heal, and not infrequently ended in shortened or crippled limbs. Lividities, pyaemia, septicaemia, and tetanus were never long absent from surgical wards. Erysipelas was explained by change of weather, tetanus by nerve irritation, tubercle by dirtiness, and rapid deaths from septicaemia by shock. Abdominal diseases were treated expectantly, practically always, and if we refer to the hospital reports of the very few cases operated on in the large London and provincial hospitals we shall see that it was a wise provision that such cases were handed over to the physicians by universal consent. They considered the adoption of palliative measures and the making of a diagnosis quite adequate, until Nature relieved the victims and enabled a confirmation or otherwise of their diagnoses to be made on the *post mortem* table.

Viewed from our present standpoint and our knowledge of surgical cleanliness, can we wonder at the state of affairs in the seventies, and even to the early eighties, when little care was spent on cleansing the hands and nails of surgeons, assistants, and nurses, and none in purifying the skin of the patient when perfunctory washing was supposed to be sufficient for the cleansing of instruments and sponges when silk ligatures, without any preparation, were taken straight from the storeroom cabinet, and often handed to the surgeon by the theatre porter who might at the same time be *post mortem* room attendant? Dressings were used as they were delivered from the makers. Clean and septic cases were operated on indiscriminately in the same theatre, and nursed and dressed in adjoining beds. The surgeons wore long special operating coats, made of firm cloth which buttoned up to the neck like a military garment in order to protect their own clothes and not as now sterilized garments, changed for each operation to guard the patient from contamination.

Entering on my studies in 1870 my qualification to practice was obtained in 1874 and the FRCS in 1878. Although engaged in general practice by force of circumstance I received the appointment of demonstrator of anatomy in the Medical School later followed by a lecturehip. A regular attendance in the wards of the infirmary and at the weekly consultations on rare or difficult cases, held in the operating theatre, at which the whole of the surgical staff attended diligently and a constant study of everything upper aiming to surgery, enabled me to keep abreast of all surgical advances.

and to attend, as occasion offered, post graduate work at other clinics

Soon after receiving my qualification in 1874 I was asked by a medical man if I would go to Glasgow to be present at an operation—amputation of the thigh for venio gangrene—about to be performed on a relation of his, by a general practitioner. The doctors arrived with two large stone bottles of whisky, which was poured into several washhand basins. Into one were placed the instruments and silk ligatures into another sponges, and into another dressings, while another served for soaking the hands of the surgeon and washing the patient's thigh at the line of amputation. The limb was amputated expeditiously and well, the vessels were ligatured with fine silk, the ligatures being cut short, the face of the stump was well sponged with pure whisky and the flaps were sutured, the stump being closed without drainage. Fine towels wet with whisky, were placed over the stump so as to make a complete and well padded dressing, which was then handaged on and supported by a short splint. The patient made a complete recovery, and the wound healed by first intention.

Thus I saw my first perfect aseptic—or should it be called antiseptic?—major operation, which made a great impression on my mind and served me as an example for many subsequent successes. I have often thought with gratitude of that able surgeon and his great skill. During all this time I had the opportunity of doing a fair amount of surgical work, such as occurs in general practice, and of obtaining results by antiseptic methods, which gave me as much pleasure as it gave comfort and safety to my patients, whose gratitude was an ample reward.

The year 1870 was the memorable and tragic year of the Franco German war, which was not only accompanied by frightful losses on the field, but by even more terrible losses through disease and of the wounded, who were dying in thousands, whether attended to or not for of those operated upon by far the greater number died of wound complications. It was only at the end of the war that there occurred to Alphonse Guérin the thought that "The cause of gunshot infections may perhaps be due to the germs or ferments discovered by Pasteur to exist in the air." It occurred to him to filter the air by means of cotton wool, and he also washed the wounds with carbolic solution or with camphorated alcohol before applying the wool. This was at the St. Louis Hospital, from March to June, 1871, in operating on the wounded of the Commune, and it was thought wonderful that out of 34 patients thus treated 19 survived. In 1873 Guérin, now a surgeon at the Hotel Dieu, asked Pasteur to come and see his dressings. A little later I had the opportunity of visiting that famous hospital and of seeing the voluminous dressings on the numerous amputations, practically the only operations then performed, and of witnessing some successes and many failures, for when the dressings were removed there were far too many sloughing flaps, with spreading gangrene, accompanied by collections of offensive pus, and even maggots, in the putrid mass. There are, of course, greater dangers than the germs from the air—those conveyed by hands, dressings, sponges, and instruments, and if precautions are not taken against them only very imperfect success can follow. It was not the art of surgery but the science that was at fault, for there were brilliant operators in those days, when rapidly was a legacy left by the pre-anaesthetic times, as witnessed by the amputation of limbs in periods of time marked by seconds.

In Lister's operations, instruments, sponges, and other articles used were all taken straight out of strong carbolic solution, and the same precautions were used for the hands of the surgeon and his assistants, and a special dressing of carbolic putty, or carbolic resin gauze, was placed immediately over the wound, under the outer dressings.

Although between 1867 and 1869, 34 out of 40 amputations had survived in Lister's wards, his isolated voice was not attended to, and not even his celebrated lecture in 1870 on

The utility of antiseptics applied to surgical practice received the attention it demanded. It is sad to think of the thousands of young men who perished in the ambulances and hospitals of France in 1870 and 1871, who might have been saved by Lister's method. But the heads of the profession in France took no interest in the rumours of the success being attained by antiseptic methods and even in his own country Lister's method was violently criticized and turned down. This opposition continued year after year to my knowledge, and even pursued Lister when he was appointed surgeon to King's College, London where some of his colleagues on the staff were his

bitterest opponents. As an ardent disciple, I had the advantage of following his work, as to the value of which I had had no doubt from the time I began my surgical studies and became acquainted with the doctrines of Pasteur and Lister.

Even in the early eighties, when I had the honour to be appointed honorary surgeon to the Leeds General Infirmary, my distinguished predecessor handed me with pride and with some ceremony his operating coat, which he was still using, and which he had used for years. It was covered with innumerable spots of old clotted blood. I began my work by wearing washable garments frequently changed, and when requesting the same for my assistants and nurses the question of laundry expenses was raised. At a later stage, when initiating the wearing at all my operations of boiled rubber gloves, on the advent of aseptic in place of antiseptic surgery, the complaint of extravagance was even more strongly urged, and was only settled, as time wore on, by the results, which compelled their general adoption.

During the time that operations were limited in number it was always possible to obtain the services of one of the qualified residents as anaesthetist, but when, as the result of greater success, operative work increased, students without any special training were allowed to administer anaesthetics. This, as will be readily grasped, frequently caused great anxiety to the surgeon and some danger to the patient. I therefore brought up the subject at a faculty meeting, and proposed that special anaesthetists should be appointed. Two specious arguments were raised against my proposal: first, that the cost of skilled and qualified anaesthetists would be a serious expense, and secondly, that students could only learn by personal experience, the result being that my resolution had not a single supporter, and was not even seconded. Considering the matter of such great importance, my only alternative was to ask for a special meeting of the whole weekly board, which included not only the faculty but the lay members of the board. After a full explanation of my views as to our responsibilities and the dangers to life, were the present system continued, it was a great relief to me when my resolution was carried without a dissentient vote in a very full meeting, and three anaesthetists were appointed without any delay. There are now no fewer than nine highly qualified anaesthetists on the staff, which of itself shows that the initial struggle was very necessary.

A comparison between the reports of 1870 and 1925 of the Leeds General Infirmary will perhaps illustrate better than any other plan what wonderful progress has taken place in fifty-five years, and how many new discoveries have been brought into our service in diagnosis and treatment during that interval of time.

1870—Departments				1925—Departments			
Medical	Surgical	Casualty,		Medical	Surgical	Casualty,	
Ophthalmic	Out patients	and		Out patients	Ophthalmic	Patho-	
Nursing				logical	Anaesthetic	Ortho-	
				paedic	Aural including ear		
				throat and nose	Gynaecological		
				Dental	General	Bacterio-	
				logical	Electric	and Radio-	
				Therapeutic	X Ray or Radio-		
				logical	Obstetric	Tutorial	
				Semi convalescent	and Nursing		
In patients 2548				In patients 11738			
Out patient attendances 4302				Out patient attendances 33646			
Operations excluding ophthalmic, 271 with 31 deaths=11.9%				Operations excluding ophthalmic, 6525 with 255 deaths=4%			
Ophthalmic operations 198				Ophthalmic operations 623			
Abdominal operations, 13 with 6 deaths=46.1%				Abdominal operations 2242 with 170 deaths=7.5%			

Abdominal Surgery

On taking up my appointment on the staff of the infirmary, abdominal surgery was practically confined to ovariectomy, of which the mortality was 25.6 per cent.

Before beginning my work I thought it would be helpful to visit various clinics, from which I returned more than ever impressed with the importance of strict cleanliness, as shown by the work of the late Thomas Keith in Edinburgh, to whom I owe a great debt of gratitude for his help and encouragement. At first, using antiseptics as advocated by Lister (which, although they kill the germs, at the same time damage the tissues), I became more and more impressed with the value of asepsis, or absolute cleanliness, which avoids the introduction into wounds of any germs, thus rendering the use of strong poisons, such as carbolic acid, unnecessary. Metchnikoff's researches, which showed the phagocytic power of the white

corpuscles in wounds, enabled the presence of the very few organisms in the air to be ignored, if every crevice was taken by the surgeon not to introduce any by hands, instruments, sponges, or dressings.

In 1889 I published a list of all my abdominal operations from the time of beginning my work in the infirmary. This paper was read at the meeting of the British Medical Association in Leeds in August, 1889.¹

There were 61 ovariectomies with only two deaths, equal to 3.2 per cent. 12 cases of cholecystotomy for gall stones and 1 of cholecystenterostomy without a death, 28 cases of radical cure of hernia, 6 cases of pelvic abscess, 5 cases of tuberculous peritonitis, and 2 cases of hydatid of liver all without a death. 30 cases of strangulated hernia with 5 deaths, all from gangrene or rupture of the intestine but none from wound complications. 14 cases of operation for myoma of uterus including hysterectomy, with 5 deaths and 15 operations for malignant disease too extensive for removal and cases of general peritonitis from ruptured viscera with 9 deaths.

This list serves to illustrate the great advances that had been made in abdominal surgery up to 1889.

On June 21st, 1884, I performed my first operation for gall stones, and began to devote special attention to diseases of the gall bladder and bile ducts. After an experience of nearly 200 operations for gall stones, in the absence of malignant disease, profound jaundice, or infective cholangitis, with the loss of only a single patient, and even if the complications above mentioned be included, with a mortality of only 2.7 per cent, I decided to give my experience in book form, under the title of *Diseases of the Gall Bladder and Bile Duct* including gall stones, which was published in June, 1897. As showing the extension of this branch of surgery there were no fewer than 205 operations on the gall bladder and ducts performed in the infirmary last year, as given by the report for 1925.

The surgery of the stomach, pylorus, and duodenum next formed a very interesting and new field of work, in a class of cases treated before the reformation of surgery entirely by the physician, with only moderate and usually temporary relief. The success of surgical treatment, which enabled the stomach to be accurately examined in the living subject, added enormously to our knowledge of the pathology, and enabled us to put in practice a number of new operations, or more efficient modifications of older ones. After an experience of over 200 gastric operations, I was again elected Hunterian Professor at the Royal College of Surgeons in 1900, and took as my subject for the lectures *Diseases of the Stomach and their Surgical Treatment*. As no work on gastric surgery had been published and as much new and original material had accumulated for the purpose, I decided to write a work having the same title as the Hunterian Lectures, on which in fact it was based. I was fortunate in securing the help and collaboration of my colleague and former house surgeon, Mr Berkeley Moynihan, now our distinguished Professor of Surgery, St. Berkeley Moynihan, Bt., whose brilliant career has been a source of great pride to us all, and to me especially, since we were intimately associated when he was appointed assistant surgeon to the infirmary. Our first edition was published in 1901 and a second edition in June, 1904, when we were able to report an experience of 218 posterior gastroenterostomies in simple diseases of the stomach, with a mortality of 3.2 per cent, a great contrast with the year 1885, when the mortality from all sources was 65.71 per cent, whereas in 1890 it was 47 per cent and in 1900 35.4 per cent. As showing the growing importance of surgical treatment in diseases of the stomach and duodenum there were no fewer than 334 gastric operations performed in the infirmary in 1924, whereas only 2 were performed in 1884, both of which ended fatally.

My work on the gall bladder and bile ducts frequently compelled me to have to manipulate and carefully examine the pancreas, an organ which the surgeon (with the few exceptions of obvious cystic tumours or acute pancreatitis) had had little experience in. This new method of learning pathology from the living subject led me to recognize the frequency of chronic pancreatitis both as a concomitant of gall stones and as a separate and distinct disease, the cause being the invasion of the ducts and the infection of the gland by the colon bacillus. This led to the suspicion that many cases of obstructive jaundice hitherto diagnosed as cancer of the head of the pancreas which ended fatally, were not cancer but cirrhosis of

the head of the pancreas, a sequel of chronic pancreatitis compressing the common bile duct, which in 75 per cent of cases is completely enclosed by pancreatic tissue. This at once led me to see that by draining the gall bladder, or, better still, by short circuiting it into the duodenum, an operation known as cholecystenterostomy, another route for the bile would be formed and the jaundice would be cured. My first operation of cholecystenterostomy, and the first in England, was successfully performed in the infirmary in March, 1889, and the patient was seen quite well nine years later. A small decalcified bone hollow which, in various sizes, I had invented for intestinal anastomosis, was employed, though in later cases I used simple sutures with equal success.

The successful results of operation in several cases of deep jaundice associated with distended gall bladder confirmed my suspicion of chronic pancreatitis being the cause, but it was not until April 1st, 1892, that the opportunity of verifying the pathology occurred. Other observations in the pathology of the living led to an explanation of the apparent cure of a number of cases of diabetes by the removal of gall stones from the common duct, where they had produced irritation of the pancreas and interstitial pancreatitis, leading to interference with the glycogenic function of the islands of Langerhans in the substance of the pancreas, which function the researches of Koite, Oser, and Opie had previously discovered. The recent and remarkable discovery of insulin shows the value of the elaborate researches on the islands of Langerhans that were made by Körte, Oser, and Opie so many years ago.

After the accumulation of considerable experience in operations on the pancreas, I had the honour in 1904 of being appointed for the third time Hunterian Professor at the Royal College of Surgeons, taking as the subject of my lectures "The pathology and surgery of certain diseases of the pancreas." These were subsequently published, along with numerous additions, in a work entitled *Diseases of the Pancreas and their Surgical Treatment*, in which I again had the collaboration of my colleague Mr Berkeley Moynihan. During the whole time of my work on the pancreas I had had the valuable help, in various chemical and pathological questions constantly arising, of my friend Dr P. J. Cammidge in 1907 we published a work together, dealing largely with the pathology of the pancreas.

I must apologize for occupying so much time with my personal experiences in the progress of the surgery of the gall bladder and bile ducts, of the stomach, pylorus, and duodenum, and of the pancreas—subjects that I have been so much interested in. They are, however, only part of the advances that have been made in abdominal surgery in our time. Witness the operation for appendicitis which in my early professional career was the cause of death in many cases chronicled acute peritonitis or typhilitis, and in which the time cause was not recognized even on the *post mortem* table. My first of many hundred operations was on June 8th, 1891, and to mark the progress and success of surgical treatment it is only necessary to refer to the infirmary reports for 1885 and 1925. In the former appendicitis is not even mentioned, whereas in the latter 788 operations are recorded, with a mortality of only 3 per cent. Of intestinal surgery there was mentioned only one operation in 1870 whereas in 1925 there were 180. Of renal and ureteral surgery there is no recorded case in 1870, but 85 operations are reported in 1925. Of splenic surgery and hepatic surgery there is no mention in 1870 but 6 of the former and 9 of the latter in 1925. In extrauterine gestation, a rapidly fatal disease operation was unknown before Lawson Tait's first case in 1883 followed by many others. In 1893, in my valedictory address at the termination of my office as president of the London Gynaecological Society, I reported 23 operations with one death from pulmonary embolism. These statistics prove the advances between 1870 and 1925.

Brain Surgery

In 1874, when attending a course of lectures on mental diseases at the Wakefield Asylum, given by Dr (now Sir) James Crichton Browne, I had the privilege of witnessing demonstrations on the localization of the functions of the brain, given by Dr (now my distinguished friend Sir) David Ferrier, whose remarkable discoveries, along with those of Dr Hughlings Jackson, rendered possible the subsequent brilliant work of the late lamented Sir Victor Horsley, who gave his life for his country in the great war.

¹ BRITISH MEDICAL JOURNAL 1889 II p. 113

The descriptions of the evacuation of localized abscesses of the brain, of the treatment of Jacksonian epilepsy, of the removal of cerebral tumours, of the extraction of bullets and other foreign bodies, and of many other operations, would sound like a romance did time permit of a description. These operations, many of which I have been privileged to perform both in civil practice and during the war, especially in the Dardanelles campaign, are among the great advances during the past fifty years.

The surgery of the spinal cord and of the nerves, all rendered possible by researches in anatomy and by Listerian methods, would need a volume to record, and during the war these improvements in treatment have been of infinite service.

Fractures

The treatment of simple fractures, some by wiring the bones, from the first cases of fracture of the patella wired by Lister to the more frequent wiring of other bones by my friend Sir Arbuthnot Lane, and the innumerable cases of compound fracture, especially of the femur, treated by Thomas's splints and other special appliances, and with an infinite care in dressings, have completely revolutionized this branch of surgery, leading to the saving, during the war, of many thousands of lives and limbs that must otherwise have been lost.

The enormous amount of valuable orthopaedic work done during and after the war in the various war hospitals, chiefly under the direction of that master of orthopaedic surgery, Sir Robert Jones, has resulted in a great saving of deformities among wounded soldiers. The importance of orthopaedics in civil life is shown by the valuable work of the orthopaedic department in the Leeds Infirmary, in which no fewer than 910 operations are recorded in 1924.

Surgery of the Prostate

The operation of prostatectomy initiated and carried to perfection (as shown by specimens in the museum of this Medical School) by my late colleague and friend, Arthur Ferguson McGill, one of the surgeons to the infirmary, whom to know was to love, has been of infinite service in prolonging life and adding to the comfort of thousands of elderly men, the remainder of whose lives would otherwise have been one of torment and sorrow. Had that great surgeon been spared to work for a few more years, I feel sure that his skill as a surgeon and his original and fertile mind would have been of still greater service to the profession and to mankind generally. It seemed to some of us very hard that the reward of his labours should have fallen to others, but fortunately the operation was taken up later, where he left it, by the late Sir Peter Freyer, in whose able hands it was carried out so successfully that in 1912 he reported in the *BRITISH MEDICAL JOURNAL* 1,000 operations of complete prostatectomy.

Surgery of the Heart and Lungs The X Rays

The idea that wounds of the heart are necessarily fatal was exploded some years ago, when Jamain collected 121 cases, of which 16 recovered. Tapping the pericardium for serious effusion and draining it for pus have been frequently performed. The experiences of the war, in the repair of heart injuries after bullet wounds and in the removal of bullets, have added considerably to our knowledge of cardiac surgery, and a number of cases have been recorded in which wounds of the heart have been sutured. In 1911 I reported two cases in which, after removing tumours of the chest wall, I had to excise considerable portions of the pericardium, and in which the gaps in the pericardial wall were successfully closed by flaps taken from the pectoral muscle.

Pulmonary surgery was one of the great triumphs of the surgery of the great war, and many lives that must otherwise have been lost were saved in the casualty clearing stations in France where I saw cases treated by the radical method of removing or bending back one of the ribs, freely incising the pleura so that the hand could be passed within the chest to draw out the injured lung, in order to arrest bleeding, remove bullets, and stitch up wounds in the lung. After washing out the pleural cavity the lung was returned, the pleura was sutured and the outer wound closed. These and other operations on the lungs and pleural cavities have paved the way to the more radical treatment of many chest cases in civil practice.

The wonderful discovery of the x rays by Poentgen has proved of so much value in the diagnosis of fractures and other

bone injuries and diseases, in the discovery of calculi in the kidneys and ureters as well as in the pancreas and bile passages, in the localization of foreign bodies in the heart, the lungs, the oesophagus, the stomach, the intestines, and in various parts of the body, in the diagnosis of diseases of the stomach and intestines by observing the passage of bismuth test meals, in observing the size and pulsations of the heart, and in many other ways, both for diagnosis and treatment, that there is now in every well equipped hospital an x ray department, in which much valuable work is being carried out by experts in this new branch of medical practice.

Pasteur's Influence on Medicine

The influence of Pasteur's work in medicine has been no less than Lister's work in surgery, for the germ theory of disease has led to a knowledge of the causes of the various infective and many other diseases, and by means of vaccination or protective inoculations to the prevention or relief or cure of many of them, for instance, tetanus, diphtheria, typhoid fever, cholera, spenic fever, malignant pustule, hydrophobia, staphylococcal diseases, such as boils, carbuncle, osteomyelitis, and acne, and some of the streptococcal infections. In the war many thousands of lives were saved by the preventive injections of antityphoid serum, with which we were all inoculated before going out to the front, and by the injection of antitetanic serum into every wounded soldier on the battlefield before reaching the casualty clearing station.

In obstetric medicine the influence of Pasteur's teaching, and his bold exposure of the carrying of puerperal infection by the direct conveyance of germs through dirty hands, instruments and dressings of those attending the lying-in woman, brought about such a change in the death rate as to appear almost miraculous. The saving of life has been almost as great as that brought about by the antiseptic system in surgery. Puerperal fever, that terror of the lying-in woman, has been practically abolished. For instance, in the maternity department of the Leeds Infirmary during 1900 there were 547 women delivered without a single maternal death.

Of Pasteur's many other discoveries and victories there is no time to speak, but I ask my audience, Was there ever such a benefactor, not only to his country, but to humanity in general and to the world at large? His life rings with the spirit of service.

Cancer

On December 1st, 1904, I had the honour of being appointed by the Council of the Royal College of Surgeons to give the Bradshaw Lecture. My subject was Cancer and its treatment. Although acknowledging that we really know nothing of the true cause of cancer, I ventured to disagree with the conclusion of the superintendent of the Imperial Cancer Research Fund, that it is not permissible to seek for the causative factor outside the life processes of the cells, and suggested that the cause might be found in some of the ultra-microscopic organisms that are known to be the causes of various diseases, such as measles, scarlet fever, small pox, and cerebro spinal meningitis.

The wonderful work of Dr Gye and Mr Barnard, F.R.S., recently published, seems to point to the possibility of their having discovered a filter passing organism which they believe, as the result of much careful experiment, to be the real cause of cancer. The epoch making discovery in microscopy that, by using the short rays of the violet end of the spectrum or the x rays to illuminate the object and a specially constructed microscope, the filter passing organisms can now be seen, may be the key that is to unlock another pathological problem, as not only may we be able to see and possibly isolate the various filter passing germs, which are no longer ultramicroscopic, but to isolate the cancer germ itself, and if so the possibility of finding a vaccine or serum as a preventive or cure of the disease. It is reasonable, therefore, to believe that successful treatment may be, within a not far distant period, an accomplished fact. This would indeed be a triumph of discovery to the credit of this half century. Until such a discovery is completely established let us not forget that, by the early diagnosis and the complete removal of the growth along with the nearest chain of lymphatics and glands, cancer is frequently a curable disease, as I know from my own personal experience in a large number of operations, in a certain number of which there has been no return over a period of several years.

Conclusion

In the time at my disposal I have tried to show the immense progress that has taken place in surgery during the past half century. I have also tried to show what a close connexion exists between the science and art of our profession, and how very necessary it is, if we are to continue our march of progress, that experimental research should not only be untrammelled by factions and unreasoning opposition, but that it should receive greater recognition, encouragement, and support at the hands of the public. An even closer alliance between the physician, the surgeon, the pathologist, the bacteriologist, and the physicist is desirable, as the time is coming when preventive measures, some of which I have portrayed, will save much operative work, and when it will be thought a greater triumph to prevent than to cure disease.

It is quite evident that methods which were considered sufficient years ago are totally inadequate today. We may modify but we cannot prevent the world's advance, and while times change men change with them. The medical profession is imbued with a spirit that half a century ago was undreamed of. Not only have apparently insurmountable difficulties been overcome, but habits of thought have been attained which have made such achievements possible, and a scientific attitude of mind has become characteristic of our profession, as it has of the leaders in every branch of the world's progress.

THE MEDICAL CAREER PREPARATION AND EQUIPMENT

ADDRESS BY SIR HERBERT WATERHOUSE AT CHARING CROSS HOSPITAL

The prize distribution at Charing Cross Hospital Medical School took place on October 5th, when Sir Herbert Waterhouse, M.D., F.R.C.S. (consulting surgeon to the hospital), gave an address.

The dean of the school (Dr W. J. Fenton) mentioned in his report that, although a decline in the number of students entering had been anticipated, there was practically no diminution. The students and post-graduates now in the school numbered 150 and 13 men and 19 women had qualified during the past year. The post-graduate class had been attended with marked success, and it was hoped to extend this work very considerably.

Sir HERBERT WATERHOUSE, after a reference to his own long association with Charing Cross, remarked that it was a pleasant fact that in the study of medicine each succeeding year was less of a drudgery and more interesting than the year before. During the earlier years the study of anatomy might be found wearisome, and dissecting somewhat unpleasant, but this foundation of professional knowledge must not be neglected, for a good knowledge of anatomy could only be acquired in the dissecting room, and surgery, as one of his old teachers used to say, was only common sense applied to anatomy. With regard to lectures, he could not hold the view, popular in some quarters, that they were useless, although in his own student days he thought them more numerous than was necessary. He advised students to keep their reading always a few days ahead of their lectures so as more intelligently to assimilate the latter. It was only when a start was made on clinical work in the hospital, however, that the real fascination of the study of medicine began to be appreciated. It was a good plan for each student to choose his or her own physician and surgeon and attend the man so chosen in all his visits to the hospital. The student who flitted from one clinical teacher to another would doubtless learn much of value, but he would not see the same cases treated throughout the whole of their stay in hospital, and he would not acquire the same personal knowledge of disease and its treatment as he would by the adoption of the other plan. If a student was constant in his attendance upon the visits of his chosen teacher he would insensibly follow that teacher in his mental processes, and would find himself doing almost instinctively, what the teacher himself was likely to do in similar circumstances. The speaker had had the good fortune to be house surgeon to the late Sir William MacEwen. For six months he studied his great intellect as closely and devotedly as he was able, and in later years he often found himself doing something instinctively, and, on pondering the

matter, realized that he was following the example of his great master.

During their final year students would do well to devote their attention to special departments, particularly those for diseases of the eye, ear, and throat. These important branches of surgery were usually neglected by students, to the detriment of their patients later on. If every surgical examination paper contained a question on diseases of the eye, ear, and throat, these important subjects would no longer remain in their present comparative obscurity. Immediately after qualification and registration, the young medical man or woman would do well to join one of the medical defence societies. The majority of patients were grateful and appreciative, but now and again one was found who was cantankerous and litigious, and such a one had no difficulty in discovering a solicitor to encourage him. The newly qualified doctor would also do well to obtain a resident appointment as house surgeon or house physician (preferably both). It was impossible to overestimate the value of such a post. He had never known anyone consider as wasted the time spent in holding resident hospital appointments. After a profitable year as a hospital resident, the young medical man or woman would be well advised, circumstances permitting, to study abroad for at least one session. Foreign study widened a man's mental outlook and helped him to get rid of many of the faults of insularity. It was an enormous advantage to a practitioner to have a sound knowledge of French and German—languages so important for scientific medicine.

The purpose of some of those he addressed would, no doubt, be a specialist career, but the large majority would be content with the role of general practitioner. In the speaker's opinion a really good general practitioner represented the highest development of the profession. It was comparatively easy to know practically all there was to be known about one branch of medicine, it was far more difficult to know—as some first-rate general practitioners of his acquaintance did know—almost as much about every branch. Of the general practitioner three great things were required. The first was a thorough knowledge of medicine in all its branches. The second was the faculty of inspiring confidence in a patient, and in this connexion he urged practitioners not to be too chatty with their patients, they might find themselves contradicting at one visit what they had said unwittingly when they visited the patient before. 'If you are certain of your ground, speak but little, if you are not certain, speak less.' The third qualification was sympathy, which must never degenerate into sentimentalism such as he had heard in consultation at some bedside. Sympathy in the practitioner was an invaluable, indeed an essential, thing, but it must be blended with firmness and decision.

The annual dinner of past and present students of Charing Cross Hospital Medical School took place on October 5th at the Adelaide Gallery (Gatti's Restaurant), and was well attended. Dr W. J. Fenton was in the chair. The only toast of the evening was 'Our most illustrious doctor, His Majesty the King,' which was duly honoured. There were no speeches, but several anecdotes and fisherman's yarns were told. During the evening Mr John Goss with the Cathedral Quartette gave a selection of songs, and Mr Hubert J. Foss accompanied on the piano.

MEDICINE AS A CAREER FOR WOMEN

ADDRESS BY SIR CHARLES SHERRINGTON AT THE LONDON SCHOOL

The inaugural address at the London (Royal Free Hospital) School of Medicine for Women was delivered on October 1st by Sir Charles Sherrington, O.M., President of the Royal Society. The dean of the school, Dame Louisa Aldrich-Blake, presided.

Sir CHARLES SHERRINGTON said that he imagined that in this particular school, whatever might be the case in any other, all the students desired to enter the profession of medicine for no other reason than that medicine really appealed to them. That in itself was a pledge of enthusiasm, and no small asset to student and teacher alike. In the nature of things there were not so many callings open to women as to men, but medicine at least offered to women the opportunity of earning their

living. The average annual earnings of medical practitioners had been estimated at between £500 and £600, a low figure, but not a discouraging one in the present era of national economy and fortitude, and a figure which applied equally to women and to men. General practice represented the main path of the profession, but there were other far from negligible services, such as consulting and specialist work, the medical branches of Government departments, and municipal and county posts, and all these fields also had been entered by women.

But it was as true of women as of men that they did not live by bread alone. Medicine had been termed, with some justice, a poor trade but a noble profession. One of the things which made it attractive was that it was not only an honourable art, but a progressive science. Among the callings which were informed by progressive science it stood almost alone in its availability for women. Engineering depended upon a science perhaps equally progressive, but engineering was hardly a field in which women in any number could enter. The woman who yearned to be in the mid current of progress, and to feel and understand and further that progress, could rest assured that medicine would give her the opportunity in the fullest and most satisfying ways. He instanced some of the outstanding achievements of medicine within a period much shorter than that covered by living memory: for example, the control of many infectious diseases in the sense of disentangling the hold of the particular infective agent, the progress made in the relatively new subject of serology, the turning of the position with regard to deficiency diseases (in which victorious campaign women had borne a conspicuous share), the recent research in cancer, the discovery of insulin—these and other modern instances, selected at random, were well calculated to justify enthusiasm for medicine.

It was difficult (Sir Charles Sherrington continued) for the student to find time for all he had to learn. The introductory sciences had perforce to be curtailed because they were introductory, and economy of time was obtained by getting as much as possible of the introductory science done in the ordinary school years, and thus was the more advisable because the science subjects were to dry really essential to general education. He wished there could be found in the curriculum a place for teaching the principles of scientific psychology, for a grounding in the modern study of this subject was a great help in a professional career. With regard to the sciences which came later in the curriculum, these must all be regarded as a part of medicine itself. Differentiated as they necessarily were, and dealt with by separate specialist teachers, they were essentially one. The more that histology, anatomy, physiology, biochemistry, bacteriology, and pathology were all made to overlap and integrate, the better would all and each of them be grasped.

Medicine had two aspects—that of a science and that of an art. At their extremes the science and the art were clearly distinct, but in the middle region they were scarcely to be separated. As to what science was and what art was, he would take refuge in saying that all definitions were difficult and all comparisons odious. But he had seen such a thing as branding in some hands an art and not a science, in some an art and a science both in others a science but not an art. Science had laws which were quite unbreakable, hence Bateson's wise advice, 'Cherish your exceptions, for in nature every seeming exception was but obedience to another law. Art, on the other hand had laws which changed. The laws of the Romantic school of yesterday were not those of the Classic school of the day before. Hence the stability of medicine, which had become scientific. Fashions in branding might change, the principle of asepis always remained. But the point was that science and art dovetailed in medicine. It was a mistake to suppose that the division between science and art in medicine corresponded to the division between the laboratory and the ward. Science could enter into the handling of a case in the ward or in the out-patient department just as much as into laboratory observation. In medicine the clinical and the laboratory studies, each supported and fructified the other. The laboratory and the clinic each put its question in its own way to the problem before it; each knew its own laws, the tactics of each were independently pursued, but the problem was common to both. Term work was the happy and proper counterpoise to the competition which was so largely the rule of life. It was teamwork that built the cathedrals of a former age, and in this day of scientific medicine it was rearing something not less glorious.

Women seemed to be specially fitted for term work. He deprecated anything which would interfere with the freest co-operation between women and men. Women and men, working together, eluded and amplified each other's powers. The superimposed portraits (on the Galton principle) of men and women doctors might yield a composite prophetic picture of the ideal physiognomy of the profession. Women and men were not wholly unlike. There was something of man in woman, and something of woman in man. The existence of that school and its success showed that woman's rightful place in medicine was won, not by running at the possession of man's particular qualities, but by applying to medical work her own womanly nature. It seemed to him regrettable that the London County Council should have made a regulation that married medical women were ineligible for medical officerships. It had been estimated that 30 per cent of medical women married, though the figures for former students of that school were higher than that. The fact that women should enter and practise medicine freely was only another evidence of a progressive profession.

Those who went first along any path found it more lonely and difficult than those who followed after, and the school did well to remember with pious honour those who had led the way. All new social adaptations came slowly. Reform was not, as Rousseau thought, a simple return to nature. Perhaps, like the ancients, he was of opinion that we were descended from the gods. But after him came Darwin. The speaker, as a mere man, had had many reminders of mental kinship to primitive forebears. When he kept chimpanzees in his laboratory he was accustomed to visit them every day, and on one occasion, after leaving the room and locking the door, it occurred to him to turn back and see what the chimpanzees were doing immediately after his departure. He stooped and looked through the keyhole, and on the other side of the keyhole was the eye of a chimpanzee!

The convincing logic of your case stands plain to me. Sir Charles Sherrington concluded. "One of the things this school has proved is that women are well able to fulfil the expanding social duties that send them forth. Every case of sickness is not only a problem for medical science and art, but the suffering of a fellow creature, and women at least will not forget that. There is a story of a man who, after being refused by a lady, entered a medical career to harden his heart! But it is wholly a mistake that medical routine tends to blunt the feelings. Egotism may harden the heart, but knowledge never. Medicine enhances compassion and instruments it. Pure science, it is true, is intellectual and abstract, like mathematics, but at the bedside the case is always concrete. Science teaches humility, and humility is close to sympathy. Sympathy armed with understanding is surely what medical women stand for. I would assure those who by reason of their enthusiasm for medicine enter upon it in this school that their enthusiasm is well founded."

ST BARTHOLOMEW'S HOSPITAL

ANNUAL DINNER

THE annual old students' dinner of St Bartholomew's Hospital was held this year again in the Great Hall of the hospital, and the chairman, Mr JOHN ADAMS, F.R.C.S., was supported by a large and distinguished gathering.

After the health of the King, its patron, had been honoured, the toast of 'Prosperity to St Bartholomew's Hospital' was proposed by the chairman, who remarked that no hospital in the world had such traditions as theirs, which dated back more than 800 years. In the absence through illness of the treasurer, Lord Stanmore, the toast was responded to by Sir William Lawrence, Bt, senior almoner. He said that the preliminary task of the reconstruction committee was well in hand, plans and sketches had been drawn up, and these would be submitted soon to a court of governors. The plans for the rebuilding of the hospital provided for more than 700 beds on the present site, and for a paying patients block with upwards of 80 beds. The historic Great Hall so dear to the hearts of them all, would be left undisturbed, and in the reconstruction of the hospital the future development of its medical college had not been forgotten for the greatest asset of Bart's was its old students. In proposing from the chair 'Prosperity to the Medical College' Mr John Adams spoke of the splendid

record of the school from generation to generation, and of the great progress made since he entered in October, 1868. The school then numbered 223 students, this year there were 700, and of these 80 per cent were taking university courses. Recent honours conferred on St Bartholomew's men were Sir Thomas Horder's K.C.V.O., the well-merited knighthood of Mr James Berry, Sir Humphry Rolleston's appointment to the Regius Chair of Physics at Cambridge, and Professor Lovatt Evans's election as F.R.S. Mr McAdam Eccles, in responding to the toast, said how glad they all were that this should be proposed by John Adams, a beloved old student and still a Bart's man. The departments of Physics, Physiology, and Pharmacology were now established in the new building on the other side of Giltspur Street, but Anatomy still awaited better quarters. The staff now included four professors of the University of London, and he looked forward to seeing these chairs endowed for research. Lastly, he mentioned the work of the deep x-ray therapy department, second to none in the country, and the aid given in this and other directions by the physicist to the hospital, Professor Hopwood. The health of the guests was submitted by Sir Anthony Bowlby, Bt, who said of the representatives of the governing body that, like their predecessors, they loyally co-operated with the staff in all work for the hospital and college. He welcomed the presence of the medical heads of the three Services—Lieut General Sir William Leishman, D.G.A.M.S. (the first who had ever climbed to the top of the tree through his purely professional work), Surgeon Vice Admiral Joseph Chambers, Medical Director General R.N., and Air Commodore David Munro, R.A.F. Another guest, Sir Archibald Garrod, though one of themselves, was present that evening as Regius Professor of Medicine at Oxford. Sir John Bland Sutton, Bt, in reply, recalled some personal associations with Bart's: his deep affection and regard for the memory of Sir James Paget, his honorary membership of the Abernethian Society, his appreciation of the help given to him on the Council of the Royal College of Surgeons by Bart's men, notably by his predecessor in the presidential chair, Sir Anthony Bowlby, and his long friendship with John Adams. The last toast, received with great enthusiasm, was that of The Chairman, proposed by Dr W. Langdon Brown, who described John Adams as the youngest of old students, and one who, amid all the pressure of a long life of busy general practice, had found time for scientific work and study. After a few words in warm acknowledgement from the chairman the company broke up, to meet again in the library for coffee and gossip.

ST MARY'S HOSPITAL

ANNUAL DINNER

THE annual dinner of St Mary's Hospital Medical School was held on October 5th, at the Courtauld Rooms, Great Queen Street, the chair being taken by Mr Leslie Paton.

In proposing the toast of 'St Mary's Hospital Medical School' the chairman quoted Ecclesiasticus on the value of music combined with good wine and brevity of speech. He paid a sympathetic tribute to the memory of Sir Anderson Crichtett, and spoke of his kindness of heart and great power of inspiring co-operation. Of the three functions of a teaching hospital—namely, the care of the sick, research, and its teaching function—the last was perhaps the greatest, since it resulted in the spirit of the hospital being reflected throughout the world. If the teaching was well done the remaining two functions of the hospital would be similarly successful. St Mary's had always enjoyed a great reputation as a teaching hospital. In reply to the toast Mr A. R. Prideaux, chairman of the hospital board, referred to the financial position of the hospital and to illustrate the enthusiasm inspired by a great hospital he related how Mr Otley, the late assistant engineer had left £1,200 to the hospital the greater part of his estate, although he had received a salary of no more than £3 to £4 a week. The x-ray department was now complete and in good working order, deep therapy and electrotherapy for children could now be provided on the most modern lines. Within the next few days the hospital's wireless installation would be complete, thanks to the readers of the *Daily News*. Dr C. M. Wilson, dean of the medical school, also replied to the toast. He mentioned the

very gratifying attendance at the post graduate course held during the previous week end. One of the advantages possessed by the hospital was the relatively great possibility of medical students obtaining house appointments. The chairman's health was proposed by Dr R. H. Miller in a witty speech.

LONDON HOSPITAL

OLD STUDENTS' DINNER

THE annual dinner of the old students of the London Hospital was held on October 1st at the Trocadero Restaurant. The chair was taken by Sir Hugh Rigby, K.C.V.O., senior surgeon to the hospital, and nearly 200 old students were present. The chairman congratulated the hospital on its great and increasing prosperity. He said that the school showed no signs of "birth control," and though labour might sometimes be difficult, his sons were more numerous than ever, and as devoted as ever to the mother who gave them birth. Personally, thanks to the wizard hand of Lord Knutsford, the hospital had never been more prosperous, and the appreciation which laymen felt for its work was well illustrated by the generous gifts of £10,000 each from Lord Besset and Mr Barron for a clinical theatre and a pathological laboratory respectively, as well as by the latest gift of £50,000 from an anonymous donor for research. With the development of the Medical Unit, of the system of annex hospitals, and of changes in the organization of the receiving room and the out-patient department, many old traditions were passing away, but he hoped that nothing would ever be done to disturb the responsibility with which the residents were entrusted, to which they so largely owed the splendid type of practitioner whom everyone associated with the hall-mark of the London Hospital. Team work was the great demand of the present day, but nowhere could be found a more united or a more devoted team than the past and present students of the hospital which he and his audience were proud to own as their mother.

WESTMINSTER HOSPITAL

At the opening meeting, on October 1st, of the session of the Westminster Hospital Medical School, after the introductory address, of which a report appeared in our last issue (p. 623), a memorial tablet was unveiled by Professor E. A. Gardner, Litt.D., Vice-Chancellor of the University of London, in the pathological laboratories to record the gift of £20,000 by Mr A. J. H. Carhill for the promotion of pathological research. The dean, Dr A. S. Woodcock, in his annual report, drew attention to the fact that in the final medical examination an average of 80 per cent of the students had been successful, as compared with an average of 52 per cent for all the London hospitals. The various societies and clubs were flourishing, and there was now a possibility of obtaining a sports ground. The hospital had been the first to start a post-graduate and Fellowship of Medicine class, which had proved so successful that the experiment was being repeated. A course had also been arranged for officers of the Royal Army Medical Corps, and the War Office had asked that this should be continued twice a year.

The annual dinner of past and present students was held in the evening, with Dr H. B. Brackenbury in the chair. The proceedings were described by the chairman as being "not prosy, but convivial," and the meeting represented a family gathering of those who were always proud to call themselves students of the hospital. Dr Charles Roper, responding to the toast of Westminster Hospital students past and present, remarked on the gratifying increase in the percentage of old Westminster students on the staff of the hospital, and indulged in various reminiscences of old times. Mr R. G. Hodges replied for present students. These speeches were appropriately followed by a mixture of melodies popular twenty-five years ago with familiar tunes of the present day.

England and Wales.

HEART DISEASE IN WALES

DR G ARBOUR STEPHENS, consulting cardiologist to the King Edward VII Welsh National Memorial Association, contributed to the *Western Mail* for September 23rd an article on the prevalence of heart disease in Wales. He referred to the recent publication of the Medical Research Council in which Dr Matthew Young, in describing the geographical distribution of heart disease in England and Wales, pointed out that the three Welsh counties of Denbigh, Carmarthen, and Cardigan headed the list of death rates. Among women in Carmarthenshire it reached the high figure of 3.151 per 1,000 for women over 25 years of age. In Cardiganshire and Pembrokeshire, where there were no specially adverse industrial conditions, the death rates from heart disease were very high, whereas Glamorganshire, where the industrial strain was heavy, came low on the list. Dr Stephens remarked that the lowest mortality from heart disease in Wales was in Anglesey, and showed that the moist atmosphere associated with an island was not an important element in causing the disease. Carmarthenshire, with its very short sea coast, had a high mortality. He found, similarly, that housing accommodation could not be incriminated, since it was very inadequate in Glamorgan, where the cardiac death rate was low. The fact that Cardiganshire and Carmarthenshire showed a high death rate from heart disease, and were also noteworthy for the incidence of tuberculosis, seemed to Dr Stephens to indicate that there was a close connexion between rheumatism and tuberculosis. Both diseases, he stated, occurred in persons with a particular predisposition, which, in his opinion, was very closely associated with, or even due to, a lowered vitality caused by poor or injudicious feeding. He added that Cardiganshire and Carmarthenshire were drained of their milk and eggs for the benefit of the industrial areas, and that such nutritious Welsh foods as "cawl" and "flummary" had given place to tea and white bread. Dr Stephens, therefore, appealed for careful and widespread attention in Wales to the provision of more nutritious foods, especially those containing calcium.

THE LATE DR GORDON DILL

At the third annual general meeting of the members of the British Provident Association for Hospital and Additional Services, held on September 21st, a resolution, moved by Mr W McAdam Eccles (honorary secretary), and seconded by Sir Arthur Stanley, was adopted, expressing great regret at the death of their colleague Dr J F Gordon Dill, and placing on record their high appreciation of the public-spirited enthusiasm he had for long displayed in connexion with the establishment of schemes designed to assist the voluntary hospitals of this country, while at the same time benefiting the community in need of the services of those institutions. The resolution further recorded that it was to Dr Gordon Dill's imaginative faculty and his statesmanlike outlook that the association owed its conception and establishment, and that as its honorary secretary he gave of his time and energies without reward, other than the warm and sincere admiration of his colleagues and the gratitude of his fellow-citizens.

BRITISH SPA FEDERATION

The autumn meeting of the British Spa Federation was held last week at the picturesque little Lincolnshire resort of Woodhall Spa. Those present included Sir Ernest Baim (Hullington), Alderman T H Cooper (Buxton), Sir George Hastings (Strathpeffer), Alderman Stewart (Cheltenham), Mr John Hattou (Bath), honorary secretary of the federation, and representatives of all the leading British spas. The efforts the home spas are making to meet the severe competition of their foreign rivals were reported, and the respective advantages discussed and decided upon further steps to be taken in this direction. On the score of efficiency and completeness of equipment the British spas fear no comparison with those abroad, and through the federation they are endeavouring to thrash out their own problems which in many ways resemble those with which so many British

industries are faced to day. The important question of spa treatment for insured persons suffering from rheumatic diseases was further considered. The British spas are unanimous in their desire to see the benefits of mineral water treatment made available for those who have hitherto been unable to afford it, and a special subcommittee, consisting of representatives of Bath, Buxton, and Harrogate, was appointed to go into the complicated details which would have to be settled to enable this scheme to work as the federation intends it should work if it is adopted—namely, to the satisfaction of the insured patients and their doctors, and at the same time without interfering with the routine and comfort of the ordinary visitors who now go to the British spas for the cure.

CENTRAL MIDWIVES BOARD

The Central Midwives Board for England and Wales met on September 24th for a penal session, and again on September 25th, for the ordinary meeting. Sir Francis Champneys, Bt, presided. Consideration was given to the draft of a proposed revised regulation under the Public Health (Ophthalmia Neonatorum) Regulations, 1914, and copies of draft circulars intended to be addressed to certain local authorities in connexion therewith. The Board welcomed the proposed regulation, which should have the effect of settling the long standing difficulty in the matter of dual notification of ophthalmia neonatorum. It was resolved, however, to ask the Minister of Health to ensure that any circular should make it clear that, although a midwife would be relieved of responsibility as far as the local sanitary authority was concerned, she must still summon medical aid in all cases of inflammation or discharge, however slight, and notify the local supervising authority that medical assistance had been summoned—in accordance with the Board's rules. A letter was read from the Association of Municipal Corporations forwarding suggestions in connexion with the proposed conference between the Board and local supervising authorities. With reference to communications from the Society of Medical Officers of Health and from the College of Nursing, the Board recorded its opinion that all proper interests were adequately represented upon it, and that it was not desirable at the present time to reconstitute the Board. In reply to a letter from the medical officer of health for the county of Durham, the Board agreed that the professional association of a midwife with an unregistered medical practitioner was undesirable, and might come within the meaning of the word "misconduct" in Rule D 1. Approval was given to the draft of a memorandum on pemphigus in the newborn child, submitted by the chairman, and this was ordered to be printed and incorporated with the Board's rules. A resolution was adopted recording deep sympathy with the family of the late Dr W C Swaine and appreciation of the valuable service rendered by him as an examiner at the Bristol Centre. Miss Lily Anita Baker, MB, FRCS, was appointed to fill the vacancy at the Bristol Centre.

Scotland.

HOUSING IN SCOTLAND

At the invitation of the Glasgow Corporation the Prime Minister, on October 1st, formally opened the Knightwood and Kelmsdale housing schemes. The Knightwood scheme will provide accommodation for 15,000 people. It will form one of the most extensive garden cities in Scotland, covering about 650 acres on both sides of the Great Western Road at the existing boundary of the city. The total number of houses is 3,336, and in addition shopping centres, churches, parks, and recreation grounds will be provided. Building work is well advanced and provides three, four, or five roomed houses of attractive design. Mr Baldwin declared the scheme open, and said that there was no more hopeful and helpful work to-day than housing. The housing question should be taken to-day as the provision of shells had been taken in the war. Afterwards Mr Baldwin made a statement upon housing at the City Chambers. The Government, he said, had

decided to increase the Wheatley subsidy for the first 4,000 houses of alternate types in Scotland by a premium of £40. Though in England arrears in housing were being overtaken, they were, he believed, still accumulating in Scotland. In the past year under all the housing schemes fewer than 4,500 houses were built in Scotland, and this year it was not expected that more than 8,500 houses could be finished throughout Scotland, while the normal annual requirements of the country, on the other hand, could not be put at less than 10,000. The position was even worse than it appeared from these figures, for about 1,500 of the total 7,000 houses were being built in connexion with slum clearance schemes and were merely replacing bad houses by good ones. The root of the difficulty in Scotland had been that in the past they were accustomed to build in stone, and the great increase in the cost of building in this way had forced them to change over very largely to brick construction, for which the supply of labour was very inadequate. There was an accumulated deficit of some 150,000 houses. The only method suggested for dealing with this deplorable situation was to use the immense capabilities of the engineering industry, which at the present time was largely idle. He understood that the people living in steel houses found them very satisfactory in every way. Steel houses cost practically the same as brick houses, and though they would last at least forty years it could not yet be said that they would have the same life as the brick houses. If manufacturers were to lower their prices, orders must be large, not less than for 1,000 houses of any type. The Government was arranging with the Board of Health to act as a clearing house for orders from local authorities if it was desired, and to negotiate on their behalf the best possible price with the manufacturers concerned. The Government was prepared to give its strong support in carrying out a programme of auxiliary housing by the use of new methods of construction designed to produce houses rapidly, and at the same time to employ men who at present were idle. He appealed to Scottish local authorities generally, but especially to those of Glasgow and the surrounding districts, to make immediate application to the Board of Health with a view to participating in these schemes. There were at present only some 6,600 men employed in Scotland on local authority housing schemes, while there were over 60,000 unemployed in the city of Glasgow alone.

Correspondence.

TUBERCLE FREE MILK

SIR,—The interesting letter in your issue of October 3rd (p. 627) by Mr S. T. Irwin raises two important points of interest from the public health point of view.

1. It is possible, and by no means infrequent, for children to develop acute adenitis as the result of drinking milk containing bovine tubercle bacilli. The period of incubation is variable, but generally four to twelve weeks before the acute symptoms appear. The infection seems to occur through the tonsils, or through the base of a carious tooth.

2. A child which has been breast-fed or fed on pure milk is much more likely, when it receives tuberculous milk for the first time, to develop tuberculosis. The child which has been for some months fed on milk containing a few bacilli becomes to some extent immunized against bovine infection, and requires a heavy dose to produce adenitis or other forms of tuberculosis.

I have always maintained, rightly or wrongly, that all forms of surgical tuberculosis occurring in the human body are the result of infection by the bovine bacillus, generally conveyed by milk, and that a child which has been so infected is protected against primary pulmonary tuberculosis, which is always caused by the human tubercle bacillus. It is therefore of the highest importance to have a tubercle-free milk for children.—I am, etc.,

London, Oct. 4th.

NATHAN RAW

SIR,—The letter of Mr S. T. Irwin in your issue of October 3rd (p. 627) on the above subject implies a suspicion which is raising again that rather dangerous doctrine that the drinking of milk from tuberculous cows has a certain advantage in the production of an acquired immunity to tuberculous disease. As an explanation of the case which he describes I do not think that any such assumption is justifiable.

Infection with tuberculosis is not always a chronic affair. Although I have no exact figures to give I am perfectly familiar with the type of onset which he describes, a recent case known to me having occurred in the child of a personal friend, the child died later.

In none of these cases, of course, was it possible to define the actual period of infection, but the route onset, with congestion of, and perhaps pain in, the throat, and rapid swelling of the upper members of the deep cervical chain of glands, is not uncommon. In the child referred to a diagnosis of mumps was confidently made by the family practitioner, an epidemic of this disease being prevalent at the time. None of these cases had had tuberculin-tested milk, so that the question of lack of previous immunizing facilities as a result of infection from a milk source did not arise.

Is there not a perfectly reasonable explanation of these cases, even if we can exclude a sudden massive infection from a human source? The course that may follow an infection is surely determined by certain points which have been proved very conclusively by experimental means—the massiveness of the dose, the virulence of the organism, and that largely unknown factor mentioned by Mr Irwin, the lack of immunity of the patient. The actual period of time taken by the blood cells in transporting the infecting bacillus from the point of infection to the nearest glands is certainly very small.

Few escape infection at one time or another, but those are fortunate in whom the infection is postponed to the later years of childhood, and in whom the dose received is small and not repeated. Is this not the real danger? Repeated infection of a young child whose absorptive surfaces are active and whose lymph channels are free tends to lead to one result if that child has not the immunity conferred by a previous mild infection and the presence of a resulting concealed tuberculous focus on which the immunity depends. The chance of the presence of this depends on the chance of luck in receiving a regulated dose at an earlier period.

The fight for clean milk is an uphill one, and we should be particularly careful as a profession not to queer the pitch by suggestions which are not founded on a proper conception of the processes at work in tuberculous infection. The child quoted by Mr Irwin received at the age of 2 years the infection which he would presumably have got in any case at some time or another. If he started life with no specific immunity, then his response to infection would almost certainly depend on the size of the dose received and the frequency of the repetition of the dose. If he had received a small single dose it might, if absorbed, have produced the small lesion necessary for the production of immunity. If he succumbed suddenly to a large dose when it came, as many small children do, it is difficult to see what bearing the previous drinking of tuberculin-tested milk could have on the point at all.

Mr Irwin is asking, of course, for records of cases occurring under conditions similar to those of the case quoted, but let us be more than careful in our conclusions regarding the reasons for a particular course taken by the infection. We can all give disheartening records of disease, deformity and death in those to whom clean milk was unknown, and in whose case the milk concerned was, as in Mr Irwin's case, the probable source of infection.—I am, etc.

Ed. Fortune Oct. 5th

C CAMERON

SIR—Mr S. T. Irwin's interesting letter on "Tubercle-free milk" in the *Journal* of October 3rd raises a most important and practical point. I have heard of similar cases, some even more disastrous than the one quoted. By giving butter obtained from the ordinary market, I imagine that tubercle bacilli will occasionally

be given to the child. My practice with my own children has been as follows. Since weaning they have had certified milk from tuberculin-tested cows. The butter they have had, however, was ordinary country butter. When away on holiday where certified milk was unobtainable we decided to let them have one glassful of fresh unboiled milk a day, and at other times boiled milk. In this way we have hoped possibly to give an immunity without running the risk of a too massive infection.—I am, etc.,

F G CHANDLER, M.D., F.R.C.P.

London NW 1 Oct 3rd

A FRENCH VIEW OF FREUDISM

SIR,—It is with considerable interest that I have noted your review (September 19th, p 519) of Dr Laumonier's book, *Le Freudisme Exposé*, and the subsequent letter of Dr R MacD Ladell (October 3rd, p 627), who says that there is a "sufficient common ground between McDougall, Rivers, Adler, Jung, and Freud" to provide a solid basis for the understanding and treatment of neurotic conditions.

I enter a caveat, that in these matters we are not dealing with social or political compromises but with facts of nature, and that nothing can give a ground for understanding any phenomenon but the scientific study of the conditions that produce the phenomena. The citation of authorities is the method that was in vogue particularly prior to the day of Galileo in mechanics and of Pasteur in medicine, but it did not lead to the development of science.

Let me take one point out of many where a scientific examination riddles Freud's theories. He deals extensively with dreams, which depend on memory, and with memory itself, but nowhere in his writings, or in his work, is it possible to find any evidence, apart from a few shrewd observations and various extraordinary dicta, that he has seriously studied these subjects at all.

One of the chapters of my own book on psychology deals with memory, but in preparation for that part of the work I instituted a series of observations and experiments specially devised to determine certain points. Among the by-products of this work, which occupied many years, is the conclusion that much of what Freud lays down dogmatically is—I am a little alarmed at the dyslogistic terms that spring to my mind, but I will paraphrase them in the words—"not scientific."

Those who do not care to read my own book may refer to the notable work of Professor Dugas in the Bibliothèque Scientifique series *La Mémoire et l'Oubli*, where my experiments are frequently referred to and cited as decisive in the questions concerned.

But of what avail, even amongst scientists, is science in comparison with a popular boom launched with the great motive forces of sex and money?—I am, etc.,

London NW Oct 5th

ARTHUR LACHEN

SIR,—I gather from Dr R MacD Ladell's letter on your review of Dr Laumonier's "statement" of Freudism (*Le Freudisme Exposé*) that Freud's views on infantile sexuality are very clear—as clear as the proverbial "mud in a wineglass." If so, it is unfortunate that so many of Freud's disciples seem unable to decant the crystal vintage. As I hold it wise that cults should be investigated before they are condemned—whether they be hypnotism, homoeopathy, osteopathy, psychoanalysis, spiritual healing, or even spiritualism—I have submitted various patients to psychotherapists. I do not know whether the cures were wrongly selected, or whether the psychotherapist was unsuitable. Unfortunately the results have been uniformly unsatisfactory. From your review it seems to me that Dr Laumonier has suggested possible explanations for these failures.

As a result of these experiences in practice I view with some alarm the proposal implicit in the last paragraph of Dr Ladell's letter. From time to time appeals are made for the better treatment of some class of sick person. The argument is that at present they do not receive "anything like adequate treatment," "public facilities are all but non-existent." As a result the "economic loss to the community must be enormous." Consequently something—probably expensive—must be done at once. This line of argument, when applied, as Dr Ladell applies it, to neurotic

patients, must inspire one with terror. I trust that our psychotherapists will absorb the moral drawn by a reviewer from Dr Laumonier's book, and that they will submit the doctrine of Freud to further scientific investigation before they invite the public to embark on an anti-neurosis campaign.—I am, etc.,

Felstead Oct 5th

CHARLES BUTT

THE MORTALITY AND COMPLICATIONS OF DIPHTHERIA

SIR,—I regret that my letter (August 29th, p 383) inquiring as to the causes of the disappointing result of antitoxin treatment in checking diphtheria mortality, has elicited so little reply.

Dr Knivett Gordon (September 19th, p 542) thinks that the cause is that antitoxin is not given sufficiently early. Doubtless this is a considerable factor, and, if it were the principal or only cause, could constitute a reproach to the profession. But I cannot help thinking that other causes are at work. It seems to me that antitoxin has changed completely the clinical picture of diphtheria. True we do not get cases needing tracheotomy as formerly, but, on the other hand, we find almost invariable post-diphtheritic paralytic of greater or less severity, with increased tendency to heart failure, and also, I think, nephritis in a way in which it used not to occur. I still hope that some whose experience covers pie antitoxin days will give an opinion.

Dr Knivett Gordon, I am afraid, did not read my letter very carefully. The figures quoted referred to the whole country, and not to these districts, which are certainly no worse than others—rather better.—I am, etc.,

Brom grove Sept 27th

H CAMERON KIDD

MEDICAL WITNESSES TO EARLY CHARTERS

SIR,—In amplification of my remarks on this subject (BRITISH MEDICAL JOURNAL, September 26th, p 571), may I be allowed space in which to record one more charter with medical witnesses, which I have met with since sending in my paper? It will be found on page 101 of *The Chronicle of London*, by J H Round, in a charter of Geoffrey de Mandeville, Earl of Essex and Constable of the Tower. Round states that "it is difficult to resist the impression, from the appearance among the witnesses of a Templar and two doctors, that this was an act of restitution by the earl when he was lying on his death bed in 1144."

The medical witnesses are Einnulf and Iwodus, and they sign last. The Templar's name was Pagan. Without giving the text of the charter I may be allowed to abstract what Round says of the subject.

"In 1125 the 'soke' of the *Onlhtengild* was transferred by that body to Holy Trinity Priory. The land was in 'East Smithfield,' outside the wall from Aldgate to the Thames, and immediately adjoining the Tower precinct. The Priory having acquired the soke, complained that successive Constables of the Tower had encroached on this land to make a vineyard." This is followed by a long document in Latin and by a charter of King Stephen, in which occurs "in perpetuum terram suam de Smethefelda quam comes Gaufridus preoccupaverat ad vineam suam faciendam."

Einnulf and Iwodus, if in attendance at the passing of him whom Round speaks of as "the dreaded and unsuspicious earl," deserve to be remembered by the medical profession. Perhaps they helped in more ways than one in this act of restitution. Who knows what the effect of a mediaeval purge may have been on such a magnitude as Geoffrey de Mandeville?—I am, etc.,

London W Sept 30th

R R JAMES

COLLECTIVE INVESTIGATION OF RHEUMATOID ARTHRITIS AND ALLIED CONDITIONS

SIR,—I cordially agree with every word of Dr J S Kellett Smith's letter in your issue of September 26th (p 583). I foresee one difficulty, which we must try to overcome—namely, we must educate the public to understand the need for such investigation before we can hope for funds. That is a formidable undertaking, and it is our first task.—I am, etc.,

Jersey Sept 27th

SYDNEY WHITBART

Obituary

JAMES NIVEN, M A, LL D, M B, B Ch,

Late Medical Officer of Health, Manchester

DR JAMES NIVEN, formerly medical officer of health for Manchester, whose death occurred on September 30th while on a visit to the Isle of Man, was the son of Charles Niven, and was born at Peterhead on August 12th, 1851. He entered first at Aberdeen University, where he graduated M A in 1870. He then went to Queens' College, Cambridge, where he was bracketed eighth wrangler in the mathematical tripos of 1874 and was elected Fellow of his college. He took the degree of M A Camb in 1877, and, having decided to enter medicine, became a student at St Thomas's Hospital, and graduated M B, B Ch Camb in 1899.

He had the advantage, somewhat rare in the present day, of spending several years in Manchester in private practice before entering on an official career. He was first medical officer of health for Oldham from 1885 to 1894. Then he succeeded Dr Tatham, who had resigned the Manchester health officership when appointed to follow Dr Ogle as medical statistician at Somerset House. From 1894 until his resignation in 1922 Dr Niven worked on in Manchester, and his name will ever be associated with the health advancement of that great city.

In 1923, under the title *Observations on the History of Public Health Effort in Manchester*,¹ Dr Niven published an account of his work, which should be an inspiration and a stimulus to every health officer. The arrangement of the book shows the thoroughly practical bent of the author's mind. He begins in a fashion which would have seemed straight away the sympathy of Chadwick and Southwood

Smith. His first subject is the influence of dirt, and his opening statement reads "It will be found, I believe, that by far the most important influence which has governed the improvement of the public health in Manchester, apart from economic conditions, has been the removal of organic filth, whether without or within the habitations of the people." He proceeds, "Probably the next in importance has been the control of infectious disease." Also, "No less weighty in their effects have been the economical factors and the consequent diminution of poverty." On this triple foundation other things of highest importance are superimposed—the treatment of venereal disease, the control of tuberculosis, and of milk and food, improvement of housing, maternity and child welfare, and training at school. Much the largest section of his book is devoted to infectious diseases, which receive fuller treatment than, for example, maternity or child welfare. Dr Niven may perhaps on that account be regarded as old-fashioned—to which recusation he might possibly have replied that the younger men may be well-fangled, while an impartial referee might hold that there should be no lack of attention to either part of the service.

The judicious and unbiased character of Dr Niven's mind

¹ See BRITISH MEDICAL JOURNAL, 1923, vol II, p 468.

is well shown in his calm and careful discussion of two subjects connected with infectious disease—namely, the causes of the decline in prevalence and fatality of scarlet fever, and the influence of small pox hospitals on the spread of infection in the surrounding area. Looking back on his long and full experience, he quietly and, as it were meditatively, sets forth the various considerations relevant to each, and strains no point unduly in favour of one or another view.

Throughout his career he devoted very special attention to the control of tuberculosis, and to securing for Manchester a clean and safe milk supply. In both he worked in the closest harmony with the late Professor Sheildon Delepine, and Manchester has indeed been fortunate in having in its service two men whose functions and ideals, from the administrative side on the one hand, and the laboratory side on the other, combined so admirably for the benefit of the great community which employed them, and also of the country as a whole.

Niven was intimately acquainted with the views and policies of contemporary workers, and strove to adopt what was good in every one of them, combining them into an administrative practice of his own without magnifying any individual feature of it. In the control of tuberculosis he realized alike the importance of building up personal health in resistance of attack, and prevention of infection by sputum or otherwise in households where the disease existed. But he did not attach exaggerated value to institutional isolation as a means of protecting against spread of the disease. His view in 1923, as in 1906, was that "while the value of segregation carried out under suitable conditions is recognized, it is not believed to have exercised the influence claimed for it in the past. Much more is believed to have been due to growing prosperity, better and cheaper food, cheaper clothing, improvement in housing, increased facilities

for travel with consequent diminution of intermarriage, improvement in the conditions of labour, etc." But the working class houses of Manchester were mostly of five or six apartments, and the need for institutional segregation was not so great as in less favoured places.

The long fight which he, with the support of Professor Delepine, conducted for the establishment of a clean and pure milk supply for Manchester makes one of the finest chapters in the history of that great municipality, but even in 1923 he did not regard the victory as completely achieved. So long ago as 1894 he expressed the view that milk should be sold only in protected containers—that is to say, that the milk trade should be a bottle trade. Even yet that ideal is not completely realized. As regards the condition of milk production, he wrote in 1923 "The fact is that the great bulk of the cowkeepers have even yet no conviction which would enable them voluntarily to take the necessary measures of cleanliness—the kind of conviction, that is, which results in semi-instinctive action." And again he says "The fact is that the farmer is inert, and in spite of prolonged agitation and discussion the general public is little less so", so that now "The necessary measures of reform will have to be formulated and imposed by Government if clean milk is to be obtained." As a



The portrait by

DR JAMES NIVEN

(Landscape)

member of the departmental committee on tuberculosis in 1912 Dr Niven took his due share in the work assigned to that body.

A direction in which he did almost pioneer service was in investigation of the influence of fly prevalence in the spread of infectious disease, especially of typhoid fever and summer diarrhoea.

There is temptation to extend the story of Dr Niven's activities into other spheres of municipal progress, but space forbids. He had a personality which commanded the respect and ensured the affection of all who had the privilege of his friendship. He was no orator. Slow of speech, reserved in manner, his learning was concealed by diffidence and modesty. He did not carry his heart on his sleeve, and quite possibly some part of the public may not have realized how big a man he was. If so, that has been their loss. But so far as the writer of this notice has observed, no health officer can have done more than, if indeed so much as, Niven in training, both in the spirit and practice of public health, so many assistants who have now achieved success and distinction in many spheres of public work. Dr Niven had conferred on him the honorary degree of LL.D. from Aberdeen University, and received much honour from his public health colleagues and contemporaries, including the presidency of the Section of Epidemiology of the Royal Society of Medicine and of the Section of Public Health at the Annual Meeting of the British Medical Association in Manchester in 1902.

J C M

Dr Niven was a widower, and is survived by three daughters, for whom much sympathy will be felt. He belonged to a distinguished family. A Cambridge wrangler himself several brothers were also wranglers. One was Sir William Davidson Niven, K.C.B., formerly director of studies in the Royal Naval College, Greenwich, and Fellow of Trinity College, Cambridge. Another was Charles Niven, D.Sc., F.R.S., professor of natural philosophy in the University of Aberdeen from 1880 until his resignation in 1922. Dr Niven's own bent towards, and distinction in, mathematics naturally led to the statistical presentation of public health problems in his numerous annual reports.

At the inquest held at Douglas on October 2nd a verdict of death from poisoning while temporarily insane was returned. Evidence given by a friend, Mr. Lang, deputy coroner for Salford, was to the effect that Dr Niven had become despondent since his retirement and had failed physically. There were no financial or family troubles.

Dr VERTER CLARK, who succeeded Dr Niven as medical officer of health for Manchester, has, in response to a request from us, sent the following tribute to his memory. The death of Dr Niven has removed one of the most eminent figures from the circle of public health and preventive medicine. His reputation on all subjects affecting the physical welfare of the people was certainly not exceeded by any of his contemporaries, and the solidity of his work in itself has raised a lasting monument to his memory. It is peculiarly within that circle of the section of medicine to which he devoted his life that his memory is most affectionately held, and his outstanding gifts and attainments revered, but his purely personal attributes are perhaps those which will linger most in the minds of those who had the good fortune to come intimately into contact with him. A man of unbounded courage and tenacity in support of his views he nevertheless exhibited in remarkable degree the combination of simplicity of character and very high intellectual ability found only in the kindest natures. There was no time when he was too pressed by public or private affairs not to be interested in the welfare of those surrounding him, and the sympathy and gentleness which characterized him in his personal relationships found expression not only in words but in actual personal and material help whenever that was possible to him. His innate shyness at times gave the impression to those who did not know him well of an abrupt personality, but no judgement of this nature lasted long if the personal contact with Dr Niven continued. His tastes like his life were quiet and simple, and his most intimate friends learned to regard him with an affection which is rarely accorded by

one man to another. The intensity of his diligence, and a passion for accuracy and completeness in all his work, inspired his staff with a like zeal, and his influence on public health in England in this direct personal manner will long be felt through the numerous medical officers now working in preventive medicine who owe their early training and instruction to him. We revere his memory as a departed master in his work, and we grieve at the loss of the trust of personal friends.

Dr R. G. McGOWAN (honorary secretary of the Manchester Division of the British Medical Association) writes: The medical practitioners of Manchester would, I am sure, wish to place on record their appreciation of the late Dr Niven, and their deep regret at his most untimely end. During his long service in and to the city he had many schemes to initiate and plans to carry out that might easily have aroused antagonism or voice among the general practitioners, but none of us, having met him personally, could nurse resentment long against Niven. The plain honesty of purpose, the desire to help, and the foresightedness of the man were too great for much resistance, and he earned us with him many times when a lesser man would have failed. Others can, and doubtless will, speak more fittingly of his attainments in his own special work, those of us engaged in general practice can speak with gratitude of the kindly manner in which those attainments were always freely at the disposal of those who wanted help in their work, and all who were in any sense his contemporaries can only feel that they have lost an old and valued friend.

A JUNIOR COLLEAGUE writes: All who have served under Dr James Niven will feel the sense of intimate personal loss caused by his tragic death. To the outside world he was an austere, severely conscientious, and capable medical officer of health. Another side of his character was presented to those of us who had the honour to work under his direction. Dr Niven had the gift of getting the best work from his subordinates—one could be certain that any work performed would meet with generous recognition. The value of such work was most often due to his inspiration and guidance, but his junior colleagues invariably received the whole credit. His kindly thought for his assistants followed them after they left Manchester, he kept in personal touch with many, and delighted in hearing of their advancement. An appreciation in the *Manchester Guardian* states that he was "so intensely simple as to puzzle sophisticated people"—it was perhaps this quality of mind which endeared him to children and which caused us to marvel at the ease with which he gained their confidence and affection. The feeling of personal allegiance which was called forth by his gentle and transparently honest character permeated his whole staff, and there are many old colleagues in whose thoughts the "old man" will remain as a much-loved and honoured memory.

SIR ALAN MANBY, K.C.V.O., M.D., F.R.C.S.,
Physician Extraordinary to H.M. the King

We regret to record the death, which took place at his home at East Rudham on September 29th, of Sir Alan Manby, for many years the trusted medical attendant of the Royal family in their home life in Norfolk. He was physician extraordinary to the King, and had been surgeon apothecary to the King and Household at Sandringham, and to Queen Alexandra, and physician extraordinary and surgeon apothecary to King Edward VII. His health had been failing for some months past.

Alan Reeve Manby was born on June 4th, 1848. His father, Frederic Manby, practised at East Rudham, as his grandfather had done before him. From Epsom College he was sent to Guy's Hospital, and obtained the L.S.A. in 1869 and the M.R.C.S. Eng. diploma in the following year. After qualification he served as obstetric resident at Guy's Hospital, and then went to join his father in the family practice. In 1888 he took the M.D. degree of the University of Durham, and in 1918 was elected a Fellow of the Royal College of Surgeons as a member of twenty years' standing. His first appointment to King Edward, then

Prince of Wales, as surgeon apothecary at Sandringham, was made as long ago as 1885, he accompanied King George and Queen Mary (then Duke and Duchess of York) as medical attendant during their tour of the Dominions in 1901. He received the honour of knighthood in 1903, and was created K C V O in 1918. He was also a Knight Commander of the Danish Royal Order of Dannebrog.

Sir Alan Manby was for many years an active member of the Norfolk and Norwich Medico-Chirurgical Society, and served as president in 1892. In 1896 he was president of the East Anglian Branch of the British Medical Association, and held office as vice-president of the Section of Obstetrics when the Association met at Oxford in 1904, and vice president of the Therapeutics Section at the Toronto meeting two years later. At the Annual Meeting at Ipswich in 1900 he had been honorary secretary of the Section of Pharmacology and Therapeutics. For seven years he was a member of the Parliamentary Bills Committee of the Association. He contributed a number of papers to medical periodicals, in 1873 he invented a flexible spiral probe, and in 1886 a modified form of lithotrite.

Sir Alan Manby married in 1876 Charlotte Anne, daughter of his neighbour the late Edmund Farrer, of Pettywards Hall, Swaffham. He is survived by Lady Manby, by his son, the Hon Mr Justice Percy Manby, Judicial Commissioner of the Federated Malay States, and Judge of the Supreme Court, Straits Settlements, and by his daughter, who is the wife of Dr F J Williams, surgeon apothecary to His Majesty's Household at Sandringham and to Queen Alexandra.

Dr MAURICE MOTTAM (Sibford Ferris, Banbury) writes May 1, as an assistant for five years to the late Sir Alan Manby add a little to what has already appeared? No one who worked under him could fail to be impressed by his loyal support in public and the help and advice which he gave in private. He was, I believe, a strong advocate of the apprenticeship system, and regretted its abolition. He held that both employer and employed had a very definite duty towards each other—that while the assistant should work honestly and well in his chief's interest it was equally incumbent on the older man to instruct the younger in all those matters appertaining to the conduct of a practice to which no attention is given in the ordinary medical education. He was insistent on the fact that a practice should be managed on business lines and held that this could be done without any loss of professional prestige. From the purely professional point of view his teaching drawn from a life's experience, was most valuable. Though a countryman, he was not perhaps a keen horseman as were some of his contemporaries, but, being a mechanic of no mean order, it is not surprising that he was found among the pioneers of the motoring movement when the transition from horse drawn to motor conveyance set in, and to such men we owe much of the luxury of the modern car, for they are luxurious by comparison his first car, if I remember rightly, having neither hood windscreen, nor pneumatic tyres. He foresaw how far reaching might be the effects of certain innovations, such as the introduction of certificated midwives, on the general practitioner. One cannot but feel that if every newly qualified man could put in one year at least as assistant to a man of Sir Alan Manby's stamp it would be greatly to the advantage of the profession as a whole.

JAMES W RUSSELL, M D, F R C P,

Physician Birmingham General Hospital Professor of Medicine, University of Birmingham

We record with regret that Dr James W Russell, senior physician to the Birmingham General Hospital and professor of medicine in the University of Birmingham, died on September 20th at Hay Tor, Devonshire, where he was on holiday.

James William Russell was a member of a notable Birmingham family which for several generations has been represented in the medical life of the city. His grandfather was a prominent general practitioner, his father a leading consultant, who was for many years honorary physician to the General Hospital. Dr Russell was born in Newhall Street, Birmingham, in 1863. He received his early education at the Edgbaston Proprietary School and proceeded to Cambridge, where he took the degrees of M B, B Ch in 1890 and of M D in 1893. He became a

Member of the Royal College of Physicians in 1893, and was elected a Fellow in 1905. After leaving Cambridge he studied at Guy's Hospital, London, and Queen's College, Birmingham. In March, 1891, he was appointed resident medical officer at the General Hospital, Birmingham, and fifteen months later he became assistant physician, holding the post until January, 1912, when he was appointed honorary physician. For some years before he became professor of medicine he was lecturer on clinical medicine under the Clinical Board of the University. He was consulting physician to the Birmingham and Midland Eye and Throat Hospital, the Royal Institution for the Blind, the Sutton Coldfield Cottage Hospital, the Dudley Guest Hospital, the Smallwood Hospital, Redditch, and the Corbett Hospital, Stourbridge.

At the Annual Meeting of the British Medical Association held in Birmingham in 1911 Dr Russell was vice-president of the Section of Neurology and Psychological Medicine. His contributions to medical literature were few by comparison with the scope and originality of his work. He was a true lover of music, and was one of those responsible, during the years immediately before the war, for a series of promenade orchestral concerts conducted by his friend Sir Landon Ronald, which performed invaluable service in raising the standard of public appreciation of music.

For the following appreciation we are indebted to Mr ALBERT LUCAS, F R C S, late senior honorary surgeon to the General Hospital, Birmingham. My friendship with the late Dr James W Russell dates back to 1891, when we were the senior residents at the General Hospital and were colleagues on the staff until his death. It was a great grief to us to hear of his death, although it had not been unexpected. Russell was a man who was not merely liked and respected but was greatly beloved by everyone—patients, nurses, students, and his colleagues. I think there was no physician in this city whose help was more sought after by practitioners and his colleagues in cases of serious illness in their own households. He was to me the type of a perfect physician—a sound teacher, a careful diagnostician, and one who, before everything, considered the interests of his patients. His health was never good, but he did not spare himself when he conceived it to be his duty to go to the hospital or elsewhere at any time of the day or night to see some urgent case, a most conscientious man it would be difficult to imagine. He was a most unselfish and considerate colleague, extremely modest and reticent, but possessed of a strength of character that was not at first obvious to those who did not intimately know him. We shall all greatly miss him.

A COLLEAGUE writes: James Russell was a man of a type rarely met with, combining outstanding ability and skill with a diffidence amounting almost to self-abasement. As a physician he was philosophical, learned, and possessed of a rare clinical instinct. He put his work, the good of his patients, and the interests of the General Hospital and of the medical school among the first considerations of his life. As a teacher he was pre-eminent. He was not in eloquent or a striking lecturer—he was not sufficiently dogmatic to be the latter—but he took wide views, never unduly protruding his own opinions, though he possessed strong opinions, but always giving a well balanced and comprehensive account of his subject. As a bedside teacher Russell was at his best. He never gave way to the temptation of teaching the transcendental, but made his students understand that their most important work in the wards was to learn the elements of physical diagnosis rather than to study rare diseases. Generations of students of the Birmingham school will be the first to acknowledge the debt they owe to Russell, both for his teaching and for the example he set them. He was indeed a "*Châlier sans peur et sans reproche*," who always took the line that he considered the right one, no matter what the consequences might be to him. The writer was associated with him in hospital and university work for many years, and, though differing from him at times, always realized that Russell had the highest motives for what he did, and that no thought of self ever prompted his actions. In Russell Birmingham medical life loses a loved and honoured leader.

SIR H R WHITEHEAD, K C B, F R O S,

Major General A M S (Ret.)

MAJOR GENERAL SIR HAYWARD READER WHITEHEAD, K C B, Army Medical Service (retired), died at Landhurst on September 28th. He was born at Grafton, Bucks, on July 14th, 1855, the second son of the Rev. T. C. Whitehead, headmaster of Christ's College, Finchley, and was educated at Charing Cross Hospital, taking the M.R.C.S. in 1877, and the F.R.C.S. in 1880, in which year he also took the L.R.C.P. Ed., and subsequently the D.P.H. of the London Colleges in 1890. Almost immediately after qualifying he was appointed assistant surgeon on the staff of Charing Cross Hospital, and also of the Royal Westminster Ophthalmic Hospital. He joined the Army Medical Department, now the R.A.M.C., in 1882, and it may be noted that at the same examination at which Whitehead entered the Army Medical Department the late Lieut.-Colonel A. W. D. Leach, who took first place for the I.M.S., was also an assistant surgeon on the staff of the Royal Westminster Ophthalmic Hospital.

Whitehead was gazetted surgeon in 1892, reached the rank of colonel in 1905, became surgeon-general in 1909, and retired in December, 1917. From 1891 to 1896 he filled the post of assistant professor of military surgery in the Army Medical School at Netley. When he left Netley he was sent to India, and soon after served on the north-west frontier in the Tirah campaign of 1897-98, when he was present at the action of Dargai, the capture of the Samragha and Aihangra passes, the operations against the Khani Khel Chitkani tribe, and those in the Bara Valley, was mentioned in dispatches in the *London Gazette* of April 5th, 1898, received the frontier medal with two clasps, and a special promotion to lieutenant-colonel. After his promotion to colonel, while holding in administrative post in India, he served on the north-west frontier again, as principal medical officer, in the Mohmand campaign of 1908, he was mentioned in dispatches in the *London Gazette* of August 14th, 1908, and received the medal with a clasp.

On promotion to surgeon-general in 1909 he was posted to the Southern Command, and in 1912 was transferred to the Eastern Command, and held this post for the first year of the war. In July, 1915, he was sent to Malta, and in March, 1916, was appointed principal medical officer of the British forces at Salonika, remaining there till September, 1917. For his services in the late war he was mentioned in dispatches in the *London Gazette* of December 6th, 1916, and November 14th, 1917, and received the K.C.B., having previously been given the C.B. in 1909. He was also a Knight of Grace of the Order of St. John of Jerusalem, and held the Commandership of the Legion of Honour, the second class of the Serbian Order of St. Sava, and the Greek Order of the Redeemer. He was the author of the article on tropical enteric fever in Davidson's *Hygiene and Diseases of Warm Climates*. In 1893 he married the second daughter of the late Colonel H. Cayley, I.M.S., but leaves no children. His nephew, Major N. T. Whitehead, M.C., R.A.M.C., is Government Bacteriologist in the Wellcome Tropical Research Laboratories, Khartoum.

The death occurred on September 27th of Dr. GEORGE SCOTT CARMICHAEL at his house in Edinburgh. Dr. Carmichael had been in poor health for some time, suffering from a cardiac affection. He was born in 1875 and educated at George Watson's College and at the University of Edinburgh, where he graduated M.B., Ch.B., with first class honours, in 1900, taking the M.D. degree in 1904. He had obtained several prizes and scholarships during his course of study, being Vans Dunlop scholar in 1896 and taking the Allan fellowship and Berney prize on graduation in 1900. After graduation he became house-physician to the late Sir Thomas Fraser and was subsequently house-physician in the Hospital for Sick Children, Great Ormond Street, London, and resident physician in the City Fever Hospital, Edinburgh. He returned to Edinburgh as assistant to Sir Thomas Fraser in the University department of materia medica, and while so employed carried out research upon the action of venom of *Bungarus coeruleus* (common lizard), which was published in the *Transactions of the Royal Society*, London, in 1904. He joined the College of

Physicians at Edinburgh as a Member in 1911, and in 1919 proceeded to the Fellowship of this college. For some twenty years before his death he had been in general practice in the Morningside district of Edinburgh. Here he carried on a large practice and enjoyed in a very high degree the confidence of his patients and the good will of the medical profession in Edinburgh, by whom his early death is greatly deplored.

IMPERIAL SOCIAL HYGIENE CONGRESS

STATEMENT BY THE COLONIAL SECRETARY

IN connection with the Imperial Social Hygiene Congress, held at the British Empire Exhibition, Wembley, a dinner took place at the New Princes' Restaurant, Piccadilly, on October 5th, in honour of the overseas delegates attending. The chair was occupied by the Right Hon. Sir Auckland Geddes, C.M.G., M.D., president of the British Social Hygiene Council (formerly the National Council for Combating Venereal Diseases), the body which had charge of the arrangements for the congress. Conspicuous among those attending were officers deputed by the Government of India and by provincial governments and Indian states.

The Right Hon. L. S. Amery, M.P., Secretary of State for the Colonies, in proposing the toast of "The Empire," said that not the least of the functions of the Colonial Office was to act as an Imperial Ministry of Health. Not that his department directly administered health matters, but in dealing with the different administrations which were directly dependent upon the Colonial Office one of the primary tasks was to create enthusiasm for the work of physical regeneration and the building up of healthy populations. That idea had found no greater champion than his famous predecessor, Mr. Joseph Chamberlain. Lord Cromer also did a great deal for medical work in the empire. In the Colonial Office much had been accomplished by the advisory medical committee, and there had been a steadily increasing recognition of the importance of medical service. His department was now considering in what way and in what form the medical side of the Colonial Office could be still further strengthened. He paid an eloquent tribute to the medical services in the colonies, and also to the value of medical missions, in Africa particularly. The most difficult task of all was to educate the colonial peoples themselves in the elements of health and sanitation. In most parts of the empire the teaching of these things mattered even more than most forms of book learning. He regarded imperial social hygiene as at once one of the most serious and most hopeful movements of the time.

Viseount WILFREDOW, in responding, said that there was nothing more important for the British Empire than to endeavour in every way possible to raise up a healthy, virile people in the future, and that was the purpose at the back of the British Social Hygiene Council. On returning from India he was very glad to have the opportunity of continuing some imperial service as a vice-president of that organization.

Sir AUCKLAND GEDDES said that the congress was an assured success, and he thanked Mr. Amery for making it possible. An essential part of government must come from a number of bodies comparable to the British Social Hygiene Council, which kept a necessary point of view steadily before Ministers and officials, and before the public also.

Sir ALFRED MOND said that the pioneers of the movement to combat venereal diseases had every cause to congratulate themselves. For an expenditure of £318,000 a year the figures for syphilis in four years had been reduced to less than one half, and the other figures also showed substantial reductions. In these days of economy there was one form of retrenchment which he hoped would never be made—the withholding of expenditure for stamping out disease. The legacy of his own tenure as Minister of Health of which he was proudest was the Imperial School of Hygiene, an institution which he hoped would in time render vast service in many directions, especially in tropical medicine. Sir WILLIAM SCROOPE proposed the health of the delegates and the toast was responded to by Sir CLAUDE HILL, director general of the League of Red Cross Societies.

In the course of the dinner messages were communicated from the High Commissioners for Australia, Newfoundland, and New Zealand, emphasizing the importance of the work of the congress and congratulating the organizing society on the new evolution in its history indicated by its change of title. Sir JAMES ALLEN, the High Commissioner for New Zealand said that the whole question of combating venereal diseases was receiving serious consideration and attention in his Dominion, where, quite recently, new legislation had been brought into being conferring additional powers on the authorities responsible for the prevention and amelioration of these diseases. At the opening meeting of the congress appreciation of the work done by the council was expressed by other colonial representatives, including the High Commissioners for South Africa and the Irish Free State, and by the Prime Minister of Malta. Representatives of the services also spoke to the same effect.

Universities and Colleges.

UNIVERSITY OF LONDON

The Rogers prize value £100 will be awarded for an essay on dissertation on the value of various methods of investigating disease of the pancreas, which must be received by the Vice-Chancellor on or before April 30th. The prize is open to all persons whose names appear on the *Medical Register* of the United Kingdom. Further information can be obtained on application to the Academic Registrar.

KING'S COLLEGE

At the meeting of the delegacy held last week Mr. Harry Gordon Reeves M.Sc. was elected as the first holder of the recently established Berridge Studentship. The studentships were founded this year on the occasion of the closing of the bacteriology and public health department and to commemorate the fact that this department founded in 1898 by Professor D. M. Crookshank, was the first academic department of public health in this country. One studentship of the value of £100 per annum is offered annually for research in physiology as applied to public health and the usual tenure is two years.

UNIVERSITY OF BRISTOL

The following candidates have been approved at the examination indicated:

FINAL M.B. CH.B. (Part II) in Public Health only completing Examination—C. L. Hyatt H. J. Satchwell

VICTORIA UNIVERSITY OF MANCHESTER

The following candidates have been approved at the examinations indicated:

DPH—Part II R. B. Boston P. D. Connolly F. R. Gilmore A. C. Newnham Part I George I. Brodie Margaret Sproul

UNIVERSITY OF GLASGOW

The following candidates have been approved at the examination indicated:

FINAL M.B. CH.B.—W. J. Aitken J. W. M. Alexander W. Allison G. S. Anderson F. Aspin W. J. C. At Catherine D. Briggs A. M. Cam Burnside J. F. Chri Carrigan A. Dale Cuthbert M. A. Dunl I. I. Dixon G. Gillies W. Gillies W. Hope W. Hosie Jeanie M. C. Howitt D. G. Hunter Elizabeth F. Hunter J. Jarvie D. Johnston B. Johnstone Annie C. Kerr C. S. Kerr J. G. Kidd Isabel C. King P. S. Kinloch A. P. Laird Elizabeth H. Livingston M. J. Macdonald G. T. MacGregor J. M. McIntyre A. A. Mackenzie Agnes I. H. McLean W. MacLennan Mona H. Macneil J. S. M. T. Nimmo Janet S. P. Owen J. Parker Margaret F. Laton W. D. Peock Pauline Iodach Elizabeth M. Rattray J. Ribchester C. G. Rippon Ruth W. L. Ross A. G. Shanks Helena M. Shanks T. M. Sharp R. A. Shearer Jean W. Smellie Vida J. M. Stark H. S. Stewart Edith L. Stocker E. Syson D. Thomas Jean C. Thomson J. V. Thomson H. A. Walker Maggie B. Walker I. B. Watt Hon. Mrs. C. Weir Evelyn A. Weisman A. F. Wood Dorothy I. V. Whiteford Elizabeth C. Whyte T. Young Teh-wang Yung J. V. M. Davies M. Freeman S. M. Galbraith W. Hutchison John I. Johnston A. MacEwan J. F. Macfarlane D. G. D. McGregor

* Passed with distinction in Surgery

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At the monthly meeting of the Royal Faculty of Physicians and Surgeons of Glasgow, 5th George Street, Mr. J. M. P. Williams was admitted (after examination).

Medical News.

A COURSE of lectures on preventable diseases will be delivered at the Royal Institute of Public Health on Wednesday afternoons, from October 14th to December 16th. The lectures deal with medico-social problems, and include such subjects as the prevention of tuberculosis, rheumatism, cancer, infection in ships, and puerperal sepsis. Professor J. C. G. Ledingham will deliver the Harben lectures from December 9th to 11th inclusive, his subject being current problems in bacteriology and immunology. Further information may be obtained from the Secretary, Royal Institute of Public Health, 37, Russell Square, W.C.1.

A SERIES of lectures and demonstrations will be given at the Ancoats Hospital, Manchester, during the Michaelmas term commencing on Thursday, October 15th, when Mr. D. E. Hughes will deliver the first of a series of three lectures on the significance of urinary symptoms. On Thursday, November 5th, Mr. H. Platt will give the first of three lectures on the treatment of common fractures, with practical demonstrations. The lectures will be given on Thursdays at 4.15 p.m., tea will be served at 3.45. Further particulars can be obtained on application to Dr. Frank Holt Diggle, Honorary Secretary, Post Graduate Course, 26, St. John Street, Manchester.

A COURSE of lectures on pulmonary radiology with practical demonstrations will be given at Leysin (Switzerland), from November 3rd to 7th, by Dr. Jaquerod and Mr. Lauffenburger, radiologist of the Stat on Climatique de Leysin. Particulars as to the journey from Aigle to Leysin and information respecting accommodation in Leysin can be obtained from M. Lucien Emery, Administrateur, Grand Hotel, Leysin.

UNDER the auspices of the Society for the Study of Intoxication the eleventh Norman Kerr Memorial Lecture will be delivered by Dr. R. Herod, director of the International Bureau against Alcoholism, on October 13th, at 4 p.m., in the hall of the Medical Society of London, 11, Chandos Street, W.1. The subject will be "Alcoholism as an international problem."

A NEW series of weekly lectures at the Hospital for Sick Children, Great Ormond Street, W.C.1, commenced on Thursday last, when Mr. P. G. Doyle dealt with pharyngeal disease. On October 15th Mr. Fairbairn will lecture on spinal cases, and on October 22nd Dr. Frow will speak on acidosis. The lectures, which are free to medical practitioners, commence at 4 p.m.

At a meeting of the Society of Superintendents of Tuberculosis Institutions to be held at 122, Harley Street, on Monday, October 19th, at 3 p.m., papers will be read by Dr. J. W. Linnell on diagnosis and treatment and by Dr. F. R. Walters on needs and indications in pulmonary tuberculosis.

THE annual meeting of the British Dental Hospital will be held at the rooms of the British Dental Association, 23, Russell Square, W.C.1, on Thursday, October 15th, at 8 p.m. An address will be given by Dr. James Wheatley, County V.O.H. and School Medical Officer, Salop, on the subject of dental propaganda. The President, Sir Harry Baldwin, will take the chair.

At a meeting of the council of the Medical Defence Union, held on October 1st, Sir Herbert Waterhouse, F.R.C.S., consulting surgeon to Charing Cross Hospital was appointed President of the Union for the ensuing year, vice Mr. W. G. Spencer retired.

THE first number of the new monthly official organ of the Fellowship of Medicine was published on October 1st, and bears the title *The Post Graduate Medical Journal*. Besides detailed information about post-graduate classes, printed in a supplement, it contains introductory notes by Sir William Hale White and Sir Berkeley Moynihan, and the text of lectures delivered for the Fellowship this year by Sir Humphry Rolleston, on the medical aspects of gall stones, and by Dr. T. Watts Eden on the prevention of puerperal sepsis.

THE Fellowship of Medicine has arranged a series of free lectures on tuberculosis during October, November, and December in the lecture room of the Medical Society of London, 11, Chandos Street at 5.30 p.m. The first will be given on October 12th by Dr. J. S. Burrell, on tuberculosis from the physician's viewpoint. A two weeks' combined course in diseases of children with morning and afternoon sessions, will start on October 12th at the Paddington Green Children's Hospital, Victoria Hospital, and the Children's Clinic will participate. At St. Peter's Hospital a four weeks' course in urology will be held from October 19th to November 14th. From October 26th to November 20th the St. John's Hospital will hold a special course in dermatology. There will be a two weeks' intensive course in medicine, surgery, and the special departments at the Royal Northern Hospital.

Presidential Address ON OSTEOPATHY, CHIROPRACTIC, AND MEDICINE

DELIVERED BEFORE THE MEDICAL SOCIETY OF LONDON

BY

SIR H. J. WRIELAND, CBE, MS, FRCS,

SURGEON TO ST BARTHOLOMEW'S HOSPITAL

WHEN I was elected president of this society your secretary informed me that it was the custom for the incoming president to address you on some general subject in connexion with our profession. In discussing with him what might be a suitable subject, it was suggested that I should address you on "Osteopathy, Chiropractic and other Cults, and Medicine." This subject appealed to me to a certain extent, since during the past three or four years I have had so many inquiries from medical friends as to what was the exact nature of osteopathy and chiropractic, what advantages and results were to be gained from its employment, and what were its disadvantages and dangers.

In order to make myself as clear as possible I think it will be best for me to give you a commencement definitions of both osteopathy and chiropractic, and a statement of the principles, or so called principles, on which they are founded.

OSTEOPATHY

Osteopathy is a system of treating disease without drugs, and is based on the belief that all disease is caused by some part of the human mechanism being out of proper adjustment or alignment, as in the case of a misplaced bone, cartilage, or ligament, or in the case of adhesions or contractions of muscle resulting in unnatural pressure on, or obstruction to, a nerve, or a blood or lymph vessel. This definition is the one given in one of the latest American dictionaries and with slight variation that adopted by many of the osteopathic schools and practitioners. On investigation, however, one finds that the different practitioners of osteopathy have varying ideas as to what is exactly comprised within the meaning of the term and what limitations there are in the treatment. A later definition would appear to be more comprehensive and to include a use of the term "inhibition." According to the osteopaths, "inhibition" is the relief of pain, or spasm of the muscles, by the application of steady pressure.

The cult of osteopathy was founded by a Dr Andrew Taylor Still, a practitioner in the State of Missouri, in 1873. The first College of Osteopathy was opened in Kirksville, Missouri, in 1890, by Dr Still and a Dr William Smith, who was a medical graduate of Edinburgh.

According to Dr Still, all disease is due to, or dependent upon, a disturbance of the nerves or blood vessels of the different parts of the body, especially in connexion with the nerves coming out from the spinal column. A further and extended version of the theory of Dr Still was the assertion that the human body normally contains all materials which are necessary for healthy function, and if the circulation within the body is normal these elements will maintain health. The impairment of the circulation, which prevents the so-called elements or vital materials being properly supplied to the different parts and organs, is the cause of disease. The defective circulation, he says, is produced by the action of the vasomotor nerves. These nerves he assumes, are affected by the pressure from ligaments, bones, or muscles in the region of the spine, or by reflex irritation from a disturbance in the viscera or other parts of the body.

In short, then, osteopathy may be said to be a "therapeutic measure" or agent which is used for the treatment of all disease. The nature of this therapeutic measure is apparently a mechanical one, and consists really in making an alteration in position and relations by digital pressure or manual manipulation of the supposed diseased parts. In a narrower terminology osteopathy assumes that all diseases are due to an "osteopathic lesion," these lesions

being in connexion with the ligaments or joints of the spinal column.

The term "subluxation" has been used very extensively by practitioners of osteopathy to express a slight irregularity in position in the spinal column, its bones, ligaments, or muscles.

According to the osteopaths the abnormalities of the spinal column, which in their view give rise to disease, and which are called "osteopathic lesions," may or may not be shown by palpation, inspection, or x-ray investigation. Often, however, they are said to be characterized by localized areas of tenderness and muscular spasm. The osteopaths say that osteopathic lesions ought to be found in connexion with the spinal column, its ligaments, muscles, and joints, in all diseases. The site of the lesion varies according to the locality of the disease, the nature of the affection apparently not having any influence on the exact site or locality of the supposed "lesion." According to *Osteopathic Pathology*, if the stomach is the site of an ulcer or tumour, or is displaced into some abnormal position, the site of the osteopathic lesion in the spinal column would be the same, hence the osteopathic treatment or removal of the osteopathic lesion would be the same. Similarly, according to osteopathic pathology, cancer of the kidney, nephritis, enlargement of the kidney, or tuberculous of the organ would all show a similar osteopathic lesion in a definite portion of the spine, different from that effected in diseases and affections of the stomach.

The treatment adopted by the osteopath is by manipulation to correct the so-called deformity, or osteopathic lesion, to bring into proper apposition displaced bony surfaces, to relax muscular spasms, and to eradicate tender points.

As regards acute infectious diseases, the osteopath claims that circulation of the blood along the courses of the nerves and the blood vessels is interfered with, and therefore portions of the human body are unable to withstand the onslaught of the disease. He asserts, can be cured by "replacement of subluxation." If that is necessary to enable the human organs to withstand any of these diseases.

CHIROPRACTIC

Chiropractic has been defined as the philosophical science and art of things natural, and a system of adjusting the subluxated vertebrae of the spinal column by hand for the restoration of health. This cult was "discovered" by a layman, D. D. Palmer, in 1895, who founded the Palmer School of Chiropractic in 1895 at Devonport, Iowa, U.S.A. This has been continued by him and his son since then.

The theory of chiropractic says that all disease is the result of pressure upon nerves as they emerge from the spinal canal. This pressure is assumed to be caused by an abnormal position of the vertebrae. According to Palmer, diagnosis is not necessary for the treatment of disease. All that is requisite is to relieve pressure on nerve roots. This having been done, whatever the nature of the disease, health will follow. A more recent definition of chiropractic (Gk *cheir*, hand, and *praxis* to do) is "a system of adjustment consisting of palpation of the spinal column to ascertain vertebral subluxation, followed by the adjustment of them by hand, in order to relieve pressure upon the nerves at the intervertebral foramina so that nerve force may flow freely from the brain to the rest of the body."

The osteopath and chiropractor each states that he can cure practically all diseases, injuries, or malformations by manipulating the spinal column and putting displaced vertebrae in correct positions after what he calls "subluxations" have occurred. Diseased conditions of the eye and the ear which give rise to either blindness or deafness are treated by them in a similar manner, although the nerves of these organs are not given off from the spinal cord and do not pass through the spinal canal and its foramina.

In the United States of America "investigators" have been treated in osteopathic and chiropractic schools, and they have had their spinal columns examined by x-rays both before and after osteopathic or chiropractic treatment. No change has been apparent to trained x-ray

experts, although the osteopath or the chiropractor has claimed that he has first diagnosed and then reduced subluxations of the vertebrae.

From osteopathy and chiropractic many other cults have sprung, and it is not necessary for me to say much concerning them. About one, however, I might say a few words, and that is niroprathy. The practitioner of this cult states that the basal centres of life are all located in the medulla oblongata, or basal portion of the brain. The nearest portion of the surface of the body to the medulla oblongata is the nape of the neck. Therefore, in order to apply manipulations for the cure of disease, these are given to the nape of the neck.

I was interested to read a prospectus of one of the chiropractic schools, in which it is stated that chiropractic "is a science of adjusting the cause of disease by relieving by hand misplacements of the twenty-four movable vertebrae of the spinal column or disalignment of the sacro-iliac joints, and so relieving pressure on the nerves which radiate from the spine to the various parts of the body." In order to do this no medicines are prescribed, no surgical instruments are necessary—only thumb pressure and free rubbing with the heel of the fist. Everyone who can read and write can soon be taught to become proficient in the science of chiropractic. In order to be successful, however, it is necessary for the practitioners to deny and abuse regular medical practitioners, drugs, and other forms of therapeutic treatment. In order to be successful it is necessary that free advertisement should be practised, since a considerable proportion of the populace are much more prone to believe extravagant assertions contained in displayed advertisements than the wise counsels given to them by their regular medical practitioners.

It will thus be seen that both osteopathy and chiropractic first of all assume as basal facts conditions which are absolutely untenable scientifically. The osteopath thinks that all disease is caused by interference with the blood and nerve supply, and that relief of this condition by manipulation will cure all disease. Chiropractic assumes that all disease is dependent upon pressure on one or other of the spinal nerves, and that relief of this pressure will cure disease. Niroprathy assumes that all disease is due to pressure in connection with the medulla oblongata, and that manipulation of the nape of the neck for the reduction of this pressure will cure disease.

From these definitions it will be seen that all these cults base their theory and practice on a primary dogma which is untrue. It is interesting to note in some of the prospectuses in the United States that the chiropractor constantly asserts that there is no necessity for him to have any proprietary qualifications beyond those of his so-called chiropractic college. He diagnoses and repudiates the diagnosis of disease and states that a knowledge of bacteriology, pathology, and chemistry is not necessary. All that is necessary for the osteopath or chiropractor in the treatment of his patients is to apply his criminal principle in all cases without examination and without diagnosis.

In the United States of America, which is the primary home of osteopathy, chiropractic, and all the derivative cults, there has sprung up within the last twenty years a considerable number of irregular medical schools, or self-called colleges, teaching the principles and practice of their cult, and labelling the students attending them with their so-called "degrees." In the main it would appear that these schools have taken the place of those low-grade medical schools which had to close their doors owing to the action of the American Medical Association in grading the medical schools and colleges, and the general enforcement of certain standards of curriculum and equipment. These schools apparently in all instances are proprietary, and are run much more as regards private gain for the proprietor than for the provision of well qualified practitioners of the healing art for the community.

COURSES OF INSTRUCTION

Apparently the only essential elementary education which is insisted upon by most of the osteopathic and chiropractic schools is ability to read and write. No examina-

tion in preliminary education and no attendance at a high school is required. The duration of the course in most of these colleges appears to be three years. These three years, however, are stated to be of six months each, and it is the usual practice for them to be continuous. Thus a student of an osteopathic or chiropractic school or college may attend and complete the whole of his course in eighteen months. A study of the prospectuses of many of these schools shows that very little instruction is given in the basal sciences, such as chemistry, physics, biology, and physiology, and what is given is of didactic character. Laboratory instruction in the modern acceptance of the term does not seem to exist. In most of the schools diagnosis of disease is not considered necessary, and clinical teaching as practised in an ordinary medical education does not exist, no hospital clinical facilities being available.

After the "three years" (course of instruction) graduation takes place and degrees are conferred. The osteopathic colleges confer the degree of D O (Doctor of Osteopathy), and the Chiropractic College D C (Doctor of Chiropractic) and Ph C (Philosopher of Chiropractic).

It would appear that the examinations are purely formal, and all candidates who have paid the fees and may have attended the courses of instruction are given the degrees. At one of the largest colleges, which professes to have over 3,000 students in attendance, there is apparently one examiner for the graduation of students. Concerning the examinations, one "candidate" who was an "investigator" of these cults deliberately answered all the questions wrongly. This did not matter—he passed and was granted his degree.

At one of the largest schools of chiropractic in the United States in the course of instruction "philosophy" is given the first and most prominent place. Anatomy is taught by a lecturer who apparently has never gone through a regular course of dissection of the human body, and has no recognized medical diploma or degree. The teaching is entirely didactic, and no dissection of the human body is practised, but on occasions dogs are used for dissection. Obstetrics and gynaecology are taught without in patients in a hospital. One of the most prominent courses of instruction in the curriculum is what is called "salesmanship." In this course personality, personal magnetism, and psychology, various forms of advertising, selling the patient, and selling the services of the practitioner, are given, much more time and prominence being given to these subjects than to study of diseased conditions. As regards infectious and contagious diseases, these he treats in the same way as all others. He states that there is no necessity to isolate. Consequently he is prone to carry scarlet fever, diphtheria, etc., broadcast.

As an explanation of the effects of osteopathy and its use as a therapeutic agent, the osteopath states that "osteopathy is something which cannot be learnt from books but only by personal instruction from a previously qualified osteopath."

The osteopath or chiropractor during the student curriculum is taught the best method of advertising and selling his services, so that when fully fledged, and having received his degree, he may at once be in a good position to attract practice.

Recruits, or students, for the colleges apparently are obtained to a great extent by allowing advertisements, in which a would-be osteopath or chiropractor is offered inducements which suggest earning large incomes and becoming a member of a respectable and valued profession. A considerable number of the students appear to be drawn from the poorly educated classes, and to have had little general education. As an experiment a friend of mine in one of the United States requested his secretary to write to a large chiropractic school, saying that her occupation was that of a chauffeur. In reply she received an invitation to join the school without delay, and all the inducements just mentioned were offered to her.

The methods of practice by osteopaths and chiropractors would appear in the main to be similar. Both assume the existence of subluxations and displacements of the spinal column located in various levels according to the supposed site of the disease. The chiropractor generally takes with

him, if he visits a patient, what is known as a "chiropractor's table." This is a long table padded at each end and with an interruption in the middle. The upper portion of the chest of the patient when undergoing treatment rests on the upper padded part, and the pelvis and limbs on the lower. The treatment in the main consists of application of pressure and manipulations at the supposed site of the osteopathic or chiropractic lesion. The treatment appears to be the same for all diseases, and consists of applying what is described as the chiropractic thrust or thump. This is done by first of all localizing the exact spot, or supposed site, of the lesion, such as the apex of the spine of a vertebra, then the pisiform bone of the right hand of the osteopath or chiropractor is placed on this spot, the wrist of the right hand is then grasped with the left hand, and a firm sudden pressure applied. The force and the method of applying this particular thrust varies with the different practitioners. In some cases I have been informed that the operator immediately after he has given a thrust or thump simultaneously makes a chiding noise with his tongue and explains to the patient that the displacement has been reduced. It is usual for the osteopath and chiropractor to recommend that a regular course of treatment should be taken by the patient.

DANGERS OF THE PRACTICE OF OSTEOPATHY AND CHIROPRACTIC

Since most of the practitioners of osteopathy and chiropractic have no general knowledge of the nature and diagnosis of disease, patients who are suffering from serious affections are very liable to be severely damaged by an osteopath or chiropractor. As illustrations I might mention

1 *Appendicitis with Abscess*—Many cases are on record where an osteopath or chiropractor has been called in to treat a patient for abdominal pain, the cause of which pain was appendicitis with abscess. "Treatment" has been applied, the abscess has been ruptured, and the patient has died from acute peritonitis. In connection with the treatment of appendicitis by chiropractic methods one chiropractor in Brooklyn states that when a chiropractor is led to suspect appendicitis—"which disease," he asserts, is due to displacement to the left of the second lumbar vertebra, this displacement of the second lumbar vertebra in between the first above and the second below resulting in a pinching or nipping of the nerves on the right side between the vertebrae—"replacement" of the subluxated second lumbar vertebra by correct manipulation by the hands relieves the nipped or pinched nerves, and in most cases causes a resolution of the inflamed and diseased appendix and recovery." This is a typical example of the so-called pathology which is given by the osteopath and chiropractor in his explanation of disease.

2 *Malignant Disease*—Many cases are on record where the manipulations of an osteopath or chiropractor have caused acute dissemination of carcinoma and sarcoma. Some years ago I had an example of a similar kind. The patient was referred to me at St. Bartholomew's Hospital. He stated that he had a displaced cartilage of the knee. For this he had consulted and had been treated by one of the well known osteopaths or bonesetters in this country. Manipulations were carried out on numerous occasions over a period of nearly a year. The patient's funds having gone, and being unable to pay for further "treatment" and manipulations, he consulted a private doctor, and was sent to me at the hospital. On examination he was found to have a large anconatous growth in the upper end of the tibia, which necessitated amputation of the limb. A section of the amputated limb showing the growth is in the museum of St. Bartholomew's Hospital.

3 *Tuberculous Disease of the Joints*—I have seen several cases of tuberculous disease of the joints which have been treated by such serious damage has been done by and movements. Many other surgeons to my knowledge have had similar experiences.

4 *Acute Infectious Diseases*—In the United States many cases of acute infectious diseases, such as diphtheria, smallpox, scarlatina, and so on, have been treated by chiropractors, and epidemics of disease established owing to the chiropractor carrying the infection broadcast.

THERAPEUTIC VALUE OF OSTEOPATHY AND CHIROPRACTIC

As regards the therapeutic value of the work of the osteopath and chiropractor (manipulations of the spinal column and so-called replacement of subluxated vertebrae), it can be stated that these manipulations in some diseases and abnormal conditions do no harm, but in the majority of diseased and abnormal conditions considerable harm will be done, and in some cases irreparable injury.

Concerning the advantages of osteopathy and chiropractic as a therapeutic measure, it appears to have given considerable relief to a number of patients suffering from obscure and painful affections of the dorsal region of the trunk. Some of these cures have probably been due to suggestion, others to the direct results of manipulations, and breaking down or separation of adhesions between muscles or nerves and adjacent tissues by fibrous tissue.

It is a curious fact that the ordinary medical man has a wholesome horror of using considerable force for the breaking down of adhesions, owing to the fear of doing serious injury, the osteopath, chiropractor, or bonesetter has no such fear, and uses considerable force, and effects in many instances what the medical man was afraid to do. During the latter period of the war when I had the inspection of the surgical military hospitals in London I found this was a marked feature in military surgery, consequently my time was considerably occupied in dealing with cases of adhesions of one kind and another.

In connection with chiropractic, Dr. F. H. Albce says that in all his experience, and in all his examinations of the spinal column, and in all the operations which he has performed, he has never discovered any foundation for the chiropractic theory. The spinal foramina through which the nerves pass are too large to permit any pressure except in cases of dislocation of the vertebrae, and then paresis or paralysis results. He states that in his opinion chiropractic is a menace to the public at large. In the first place it entirely ignores bacteriology and leaves doors wide open to the spread of contagion. He states that propaganda leads people to throw their money away on false promises of health and tends in some cases to delay proper treatment until it is too late.

POSITION OF OSTEOPATHS AND CHIROPRACTORS IN THIS COUNTRY

Unless possessing a medical qualification from some recognized medical licensing body osteopaths and chiropractors cannot be registered by the General Medical Council, and can only carry on their practices here as unregistered and unqualified practitioners. They cannot sign death certificates, they cannot sue for fees for services rendered, they cannot obtain an authorization for dangerous drugs, and they are liable to prosecution for malpractice.

It would appear that the object of osteopaths and chiropractors is to obtain legalization and registration by Act of Parliament. It would seem that they desire to be recognized as drugless healers with limitations as regards practice. On the face of it recognition might appear to be easy, but it has been found by experience in some of the States in America where such licensing has been established that limited registration for medical practitioners for the treatment of disease is very unsatisfactory. There is always the question as regards diagnosis and to what extent manipulative methods may be employed. I have often been asked what is the position of the General Medical Council and the qualifying bodies in connection with the practice of osteopathy and chiropractic. My reply has been that our medical practice laws ought to be amended so as to place all practitioners of the healing art on the same educational level.

There is no doubt that the so-called success in practice of the osteopath and the chiropractor is largely due to the following facts:

1 *That patients look upon medical matters and their diseases as being allied to mystery.* This is a survival, in all probability of the days when the practices of the priest and the doctor were combined.

2 *The public is always dissatisfied with a doubtful diagnosis given by a physician or surgeon, and of his inability to explain the nature of a disease in a few words, and also cure it with a definite remedy.* It is desirous of having given to

it a simple statement of why the patient becomes diseased and how he may be cured. It does not matter how improbable or how untrue an explanation of this kind is, provided there is a small amount of plausibility. Consequently large numbers of educated and intelligent people are imposed upon by the superficial so-called "explanation" of the osteopath and chiropractor. Thus it is very easy for the chiropractor to assert that every physical process of the human frame is due to something passing along the nerves, and that the important nerves lie in the spinal column, from whence they go to their destination. Subluxations or dislocations of the spine cause pressure by the bone on these nerves, interference with the passage along the nerves of the vital force to the different parts of the body, and so cause every variety of disease or deformity. To the public very often such an explanation as this is thought to be sufficient even as regards diseases of the eye and ear, although the nerves of these organs do not pass through the spinal column. As regards diseases due to micro-organisms, he explains that infection only proceeds when displacements of the spinal column have occurred, and the vital force is prevented from going to the distant parts of the body, and hence the germs are then able to cause the various diseases, owing to a diminished supply of "vital force" in these parts.

3 Ability to advertise. Individuals who are seriously ill, or suffering from an incurable disease, very often grow desperate in searching for a cure, their mental condition becomes affected, and their judgement weakened, so much so that they readily fall into the clutches of the osteopath, chiropractor, the charlatan, the quack, and pretended healer after reading some misleading or lying advertisement. The plausible osteopath or chiropractor says that physical interference with the circulation and passage of vital force along the nerves is the cause of disease, and when the interference is sufficiently severe is the disease itself. These interferences, he explains to the patient, take place in the spinal column, and he asserts that the removal of these pressures is the removal of the cause of disease, that this is essentially the work of the chiropractor, that his highly cultivated sense of touch enables him to appreciate these interferences by palpation, that he readjusts the bones and relieves pressure, and so restores harmony between the brain and the tissues and organs of the body. He also promises the patient a cure if he will go through a course of treatment. A favourite device which is made use of by many osteopaths and chiropractors when explaining the cause of disease to patients, prospective or otherwise, is to take two dorsal or lumbar vertebrae, articulate them together, place in one intervertebral foramen a piece of rubber tubing sufficiently large to fill the aperture, and then to make a slight displacement of the bodies of the two vertebrae. This displacement, of course, at once diminishes the calibre of the tube, and according to the osteopath or chiropractor diminishes the flow of blood or vital force along the nerve emerging from the foramen, and so interferes with the nutrition of the parts or organs supplied by the nerve, thus causing disease or a tendency to disease. The osteopath or chiropractor giving such an explanation omits to mention that the nerve does not fill more than one-half of the aperture, that it is surrounded by a large quantity of fatty and fibrous tissue, and that to produce the amount of displacement necessary to press on the nerve in the manner mentioned would require a traction force of more than half a ton. Such, however, is the ignorance and gullibility of the average member of the community on matters medical that he is readily imposed upon by the plausibility of the osteopath or chiropractor, and believes in his statements.

According to recent information it would appear that considerable numbers of so-called graduates of the osteopathic and chiropractic colleges have been turned out in the United States. The majority of these would appear to be individuals who have had very little preliminary education, no basal scientific training, and no practical knowledge of anatomy, physiology or applied chemistry, and no experience in diagnosis of disease in living patients. Many of these have received their so-called diplomas after a course of study by correspondence, others again, after a short stay in one of the schools above mentioned. Many of

these come to this country and establish practice, and by blatant advertisement establish their cult.

THE DUTY OF THE STATE

The increase in the number of osteopaths, chiropractors, and other cultists in this country is considerable. As they claim to be licensed to practise the art of healing, it appears to me absolutely essential that there should be further regulation by the State of all those who take into their hands the responsibilities of the lives of others, and that everyone who is licensed to practise as a medical practitioner in any form should be placed under the same requirements of knowledge and experience. Such regulation and licensing by the State is due, not only to the members of the medical profession, but also to the members of the population as a whole. The progress of the community depends to a great extent on the health of the people. The State, therefore, ought to take a strong stand in protecting the health and preserving the life of its various citizens.

According to all the known facts of pathology and the causes of disease, it is essential before making attempts to treat a patient that the practitioner of medicine should be able first of all to make a diagnosis, and recognize whether the patient is suffering from a disease or not, and, if not, he cannot be in a position to treat intelligently and look after a patient by any method. In addition, it is necessary that he must have a knowledge of the different therapeutic measures and materials which are used in the treatment of disease, so that each individual patient may be treated in the proper manner.

Concerning the practice of medicine, it is maintained by some that an individual's disease is his own concern, and that he has a perfect right to employ anyone, trained or otherwise, to treat him. There is no doubt that it is a dangerous fraud for an individual to represent himself as qualified to treat disease and care for the sick by claiming the possession of knowledge and experience in treating disease which he does not possess. This means that no individual has a right to commit a fraud. It ought to be the duty of the State to prevent the perpetration of dangerous frauds, especially when they concern, not merely the individual who is defrauded, but other members of the community.

It appears to me that it is essential for the good of the community that all individuals licensed to treat the sick members of the community should have received the same basal education, and should have passed through practical courses qualifying them to obtain diplomas or degrees. At the present time the minimum curriculum in this country is a five years course of study after having passed a preliminary examination in general knowledge, and a pre-registration examination in elementary chemistry and elementary physics.

It has been urged by the osteopaths and chiropractors that they ought to be treated in the same manner as dentists under the new Dentists Act and receive a partial licence to practise as osteopaths and chiropractors. The practice of osteopathy and chiropractic cannot be compared with that of dentistry. The dentist first diagnoses and then treats diseased teeth only, he does not treat other diseases, and does not assume that all diseases in the human frame are dependent on the diseased condition of the teeth. If the methods of the osteopath and chiropractor were followed by the dentist, then the dentist ought to make a claim of this kind, saying "that every diseased and deformed condition of a patient is due to the poisonous chemical substances produced in decaying teeth being absorbed into the body and conveyed by the blood vessels to different parts of the body and there causing disease." Such a claim by the dentist would have much more right to recognition as a pathological fact than the claim by the osteopaths or chiropractors that all diseases are due to misplacements and subluxation of the spinal column involving either the spinal nerve or the blood vessels in connexion with them. It seems to me, therefore, that this contention of the osteopath or chiropractor ought not to be seriously considered and certainly not allowed by our Legislature. The only satisfactory method of protecting the community from fraud in connexion with disease is to ensure that every individual who treats disease shall be licensed only after having passed

through a satisfactory educational career. In these circumstances I maintain that even osteopaths, chiropractors, or other cultists who wish to practise in this country ought to go through similar courses of instruction before being licensed to practise the healing art.

In this connexion it appears to me that instead of the Legislature making possible the licensing of osteopaths in a very limited form of practice, the Medical Acts ought to be so strengthened that it would not be possible for the community to be treated by them or any other unqualified charlatan or quack. From a practical point of view it appears to me that the members of the community ought to be educated as to the real position and the nature of the practice of osteopaths, chiropractors, and other cultists. This might be effected by making instruction in general and personal hygiene compulsory in our schools. A small textbook on the subject should be available, and it ought not to be impossible to arrange that a course of instruction on this subject should be given in all our elementary schools. The Legislature, through its Education Acts and by its medical officers, makes periodical examinations of school children as regards their general health, teeth, mentality, and so on. If this is possible surely it would be an easy matter to arrange that a course of instruction such as outlined above should be given by its medical officers.

In a similar manner a course of instruction should be given in our secondary and public schools, and an appropriate textbook provided. By means of instruction of this kind at an early stage of an individual's career he might be taught to have a definite and correct opinion as regards disease and the proper methods of its treatment. Some people have advocated that the medical profession should undertake a scheme of propaganda by film, lecture, and otherwise for the education of the public and their protection from unqualified medical practitioners. This might be very desirable, but it does not appear to me that it ought to be carried out necessarily by some organization or other of the medical profession, since this profession would lay itself open to the criticism that it is a trust which is trying to protect itself. It should be done, if considered advisable, either by the General Medical Council in a manner similar to that carried out for the education of the community in dentistry by the Dental Board, or by the Ministry of Health. Perhaps the latter body is the more correct one for this purpose, since the General Medical Council is primarily concerned with education and registration, and unless provision is made for the purpose does not possess the necessary funds.

A Lecture

OF

SOME INTESTINAL DISORDERS OF INFANCY*

BY

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No infant, whether fed at the breast or with artificial food, escapes having indigestion in one form or another. We do not have to go far to explain this. During infancy the stomach and intestines are worked at a very high pressure to digest the food required for the infant's maintenance and growth. Any overtaxing of its powers is likely to be followed by disturbed function. The commonest causes of indigestion in infancy are practically those of adults—for example, more food is taken than can be digested, or an improper food is given, which cannot be digested without the child getting colic and flatulence. There is no fact more clearly established than the great importance to the health and life of infants that they should be breast-fed for at least six months. If the infant is so fed for this length of time, even in the poorest surroundings and poverty, it will stand a very good chance

of living. The baby will escape the many pitfalls and dangers which lurk behind food out of a bottle.

It is the duty of every medical man and woman to persuade mothers to breast-feed their infants, and often a little perseverance on the part of the mother will enable her to do this, even in cases where it appears at first almost impossible. Directly a baby is weaned, especially in the first few months, difficulties are liable to arise, such as what to feed it on, how to prepare the food, the quantity to give, and so on. Even one or two breast-feeds a day, with the rest of the feeds of cow's milk, are a great help.

When the time for weaning comes, about the eighth to ninth month, it should be done by gradually replacing the feeds from the breast with the artificial food chosen. It is always a good thing to give one feed a day of artificial food from a bottle at about the fourth or fifth month, so that the infant becomes accustomed to the bottle and weaning can take place easily when it becomes necessary. This also gives the mother greater freedom. It is often a struggle to wean a baby all at once, and the one bottle early on enables weaning to be done at any time. It is seldom that breast-feeding is inadvisable. A mother with phthisis should not suckle her baby, for the reason that the mother will very readily infect her child, and it is injurious to her own health. Again, the mother may have wasted so much during pregnancy that her health will not stand the strain. There are practically no other reasons for the mother not trying to feed her infant.

Milk

There is perhaps no single factor in connexion with infant mortality so important and so full of pitfalls as the supply of milk. The general public know little about milk, and they are quite content as long as the milk is delivered regularly and is not sour. The quality of milk supplied to most large towns is not good, and until this is improved we cannot reduce infant mortality to what it should be. The infant does not know the possible results of the food it is getting and can only express disapproval by its cries, vomiting, and diarrhoea. It is common for one food after another to be tried with bad results, and our methods of feeding infants in the past have been too haphazard. Cow's milk, when pure, is an ideal food, but it is of all foods the most difficult to preserve and to handle successfully. To ensure artificial feeding being a success the mother must be taught how to modify it so that the infant can take it and digest it well. Cow's milk can be modified in so many different ways that practically every infant can take it and thrive. Cow's milk has an advantage over all patent foods in that it can be made to resemble human milk closely.

Many proprietary foods have the disadvantage of an excess of starch, and infants fed on them may apparently thrive and become fat, but they are often by no means healthy. It is not the large, fat babies which are the healthiest and the ones to stand best the strain of a severe illness. In the majority of cases where cow's milk has been tried and found to fail it has not been given in the proper quantity and strength. Foreign countries are more strict than we are in the use of proprietary foods for infants. Such foods need careful preparation, and it is a common fault to prepare them too weak.

In some cases the wasting or failure to gain in weight is the fault of the infant, and not of the food which it is having. Certain infants, although fed well, and even breast-fed, do not thrive, and this is sometimes seen in a family when each successive infant dies at the age of 3 or 4 months or sooner.

As a result of faulty feeding, an infant suffers from malnutrition, which is a comprehensive term covering a low condition of health and a lack of resistance to disease. Insufficiency of food is probably of less importance than unsuitability. Irregularity of feeding is often the cause of wasting, as it produces indigestion. It is common to find a wasting infant fed whenever it cries. Irregularity is a common cause of indigestion in adults, but the digestion of infants is even more easily upset. Feeds too large for the age are a common mistake and not recognized at first,

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for the infant may do well and have big gains in weight each week. After a time there is an upset in the digestion and the weight becomes stationary and then begins to fall. Such cases are very difficult to treat. The diluents used in the modification of cow's milk are sometimes at fault, it is common to make barley water far too thick, with the idea that the food will be stronger and hence the infant will gain the quicker. Plain water as a diluent has the great advantage that it takes no making, and there is not so much likelihood of mistakes. Lately, we have had much success with malt stock (Mottershead, Manchester). This is an active malt preparation and made with milk. It is a copy of the "malt suppe" used abroad very largely before the war. It must always be remembered that the strength of a food and the amount given at each feed should be according to the infant's weight and not according to its age.

Flatulence and Colic

We often see a baby who according to the mother—and, I may add, the father too—is always crying. This in most instances means colic with a certain amount of flatulence or wind. Colic should never be regarded as a trivial symptom, it is often most difficult to alleviate and it causes much trouble to the parents. The baby is often only quiet when it is asleep—the rest of the day and night it is crying. It keeps the neighbours awake and is a perfect nuisance. Such a baby generally fails to gain weight, for it is the placid one that does the best. Moreover, in bad cases of colic, convulsions are liable to supervene. The main causes of colic are flatulence and undigested food, with constipation. Taking flatulence first, it is remarkable how much distress and disturbance it can cause. It often leads to vomiting after the feeds, as the wind bungs the food up with it, this leads to wasting from want of food, and so intensifies the crying from hunger. Hiccups is also a common accompaniment of flatulence.

Causes of Colic

An investigation of the diet will generally reveal the cause. First, too large feeds at too frequent intervals are being given. These large feeds distend the stomach and dilute the gastric juices. It is always good to calculate how much food an infant is having in the twenty-four hours. Hardly any infant—no matter how heavy—needs more than 40 oz of food in twenty-four hours. Personally, I am generally in favour of three-hourly rather than four-hourly feeds. Another common cause is too much carbohydrate in the food—either too much sugar is added to each feed or a potent food containing much starch is given to the child. An ordinary cow's milk feed needs about one teaspoonful of cane sugar added to each feed, and there is no advantage to be gained by using sugar of milk. It is often good to change the kind of sugar used in order to vary the taste of the feed. It is not surprising that a baby will get tired of a certain food which is given day after day.

Treatment

A fairly weak feed should be started with and then gradually strengthened. Always feed according to the weight not according to the age. It will need a good deal of perseverance to get the baby right. Pick the baby up after a feed to let the wind come up. If the colic is at all severe, peptonized milk is likely to suit well, for the digestion of the curd is done for the baby.

A mixture such as sod bicarb gr 3, spt amm atomat min 12, tr card co min 3, syr zingib min 5, aq errui ad dr 1 four times a day before a feed may help a good deal. The bowels must be kept well open and an aperient given regularly each day, and not when the child is constipated. It is no use waiting to give the aperient when the child is constipated—the need is to anticipate the event. Much constipation in infancy and childhood could be prevented by good training from the earliest days. The same applies to older children, especially those attending school. It is often the custom for the boy or girl to rush off to school directly after breakfast. Time should always be made for going to the closet before school. Another thing to remember is that it is no use sending a child to the closet to stay there for an unlimited time. All he does is to twiddle his thumbs or read a book.

Intussusception

Before leaving the subject of colic, the possible presence of intussusception must be borne in mind. Any infant who suddenly begins to kick and scream without obvious cause may quite likely be starting with an intussusception. Such an infant soon begins to vomit and to strain as if it wanted to pass a stool, but nothing escapes except a little blood and mucus. On examining the abdomen with a warm hand it is usually found more or less soft, and the tumour may sometimes be felt. In very fat infants it may be quite impossible to detect the tumour. The rectum should not be carefully explored with the finger, and the apex of the tumour may be felt, and the exploring finger on being withdrawn may be streaked with blood. The position of the tumour varies, of course, according to the length of the included gut and according to how long the intussusception has lasted.

Many cases are very difficult to diagnose especially in the early stages, and what I think often happens is that an infant starts with an intussusception which unfolds itself on its own. It is impossible to say so quite definitely, but we see patients whom we strongly suspect of having an intussusception but who suddenly get well and stop the crying from pain and the straining.

The large majority of cases occur under the age of 1 year, and a common age is 6 months. Breast and artificially fed infants suffer alike, and it is often the big fat babies which get it.

Treatment consists in performing a laparotomy at the earliest possible moment, and if this is done in the first twenty-four hours all should go well. The outlook becomes increasingly serious the longer it is left, and it is nearly hopeless after the fourth day, for the reason that the gut is likely to be gangrenous. Once an intussusception takes place no medical treatment is of any avail: the child must be operated upon and the gut unfolded.

Diarrhoea in Infants

Diarrhoea is perhaps responsible for more deaths than any other disease during the first year of life. Thus used to be specially the case during a hot dry summer. However, by improved sanitation and by the prevention of flies, it is now much ameliorated.

It is the wearily babies, fed on artificial food, that suffer from enteritis. Of these foods condensed milk is perhaps the worst, for it contains so much sugar, and its stickiness attracts flies to infect it. Vomiting may accompany the diarrhoea, and makes the trouble worse. Such an infant wastes very quickly and goes downhill: the eyes get that peculiar sunken look, the limbs become flabby, and the skin harsh and dry. The wasting is produced by the great loss of fluid, and the infant, as it were, dries up. All young children stand loss of fluid very badly, and it is a mistake to withhold water from a child at any time.

A purge should be given at once to clear the infecting microbes away. Castor oil serves the double purpose of producing a good clearing out and then constipating, which is exactly what we want. If castor oil cannot be tolerated on account of vomiting give half a grain of calomel instead. All milk should be stopped. This is perhaps the most important of all. Water with a little sugar may be given, and the infant cannot have too much. It should be given every hour by the mouth, and the infant will take this well, as it is thirsty. If there is vomiting, fluid must be given, as saline solution, by the rectum every four to six hours. Salines are easy to give by the rectum in children, and a mother can be taught to carry this out. In severe cases it may be necessary to give the saline solution subcutaneously or through the anterior fontanelle into the superior longitudinal sinus. Albumin water is being given up, as it contains little food, and any good that it does is most probably due to the water. Often we have to make a pretence of giving some food in deference to the parents, in these cases however may be recommended. As soon as the diarrhoea is abating I would suggest giving a weak dried milk feed for a short time before starting with the cow's milk.

Sequelae

An infant may be left with a weak digestion and fall into a state of marasmus. Bronchitis is a very common accompaniment, and such patients must always be kept very warm. After prolonged enteritis, swelling of the backs of the hands and dorsum of the feet is common. This is toxic oedema, and has nothing to do with kidney disease. Drugs form a minor part of the treatment. Bismuth in some form does, however, help to diminish the number of motions, and small doses of opium at the proper time. Never give opium at the onset or if the infant is collapsed. Opium is however, useful when the large bowel is affected and there is excessive peristalsis going on.

Pyloric Stenosis in Infancy

A clear understanding of the condition and the recognition of the importance of early diagnosis, and so treatment, is most important. I am quite sure that if pyloric stenosis in infants could be recognized early many lives would be saved. It is a more common condition than is usually thought to be the case. By pyloric stenosis we mean a great hypertrophy of the circular and longitudinal muscles which control the passage of food from the stomach to the duodenum. The muscle here becomes enormously thickened and hypertrophied so as to block the pyloric canal. The consequence of the block is that the stomach wall also increases in thickness as it tries to force food through the tight pylorus. As the food cannot get through the pylorus it is vomited forcibly. In the great majority, the infant is a boy. Many cases occur in the first-born, there is a special liability for any first-born infant to have an abnormality.

The symptoms do not appear till the infant is at least two weeks old, and the commonest time for the vomiting to start is at the age of two to four weeks. It is forcible and projectile in character and large in amount, for more than one feed may be brought up at a time. Constipation is marked, for little passes through the pylorus. The wasting is rapid and progressive, as little food is retained. The infant is greedy for the feeds, as it is hungry. This is quite unlike ordinary dyspepsia.

Waves of peristalsis may be seen passing across the abdomen, due to contractions of the stomach. They are best seen while the infant is having a feed or soon after. This peristalsis may be seen in other conditions besides pyloric stenosis, but it is especially well marked in it. The pylorus may be felt under the right rectus muscle, about an inch above the umbilicus. If the tumour is not felt, this fact should not disturb us as the detection of the tumour is often quite impossible. I am quite convinced that so soon as the condition is diagnosed surgical intervention alone will give the best results. Although medical treatment has undoubtedly been successful in a number of cases, much valuable time may be lost, and the infant will be, in consequence, less able to stand the operation. The best operation is that devised by Ramstedt. It consists in a transperitoneal incision of the hypertrophied pyloric ring leaving the mucous membrane intact, thereby restoring the continuity of the alimentary canal. The mortality is now being very much reduced by this method, and it should be only about 10 to 20 per cent., or even less.

Breast-feeding is a great help in the after-care of these cases, and the mother should be carefully looked after to see that her milk does not cease during the short operation period. If the infant survives, there is no disability left in the future.

PARTIAL INTESTINAL OBSTRUCTION IN A CHILD DUE TO POST-RECTAL TERATOMA

BY

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This case is interesting on account, not only of the rarity of the tumour described, but also of the condition of bowel obstruction resulting from it.

Bland Sutton¹ states that post-rectal teratomas are very rare. There is a specimen in the Middlesex Hospital museum containing hair, grease, and a tooth. The origin

of these tumours is obscure. They are probably the result of incomplete dichotomy at an early stage. Keen removed a tumour connected with the skin by a cartilaginous tract resembling a tether. Some post-rectal tumours have been described communicating with the sacral dura mater and resembling spinal bifida sacs.

D. C., a boy aged 4 years and 5 months, was sent to the Derbyshire Children's Hospital by Dr. G. S. Sims of Derby on February 5th, 1925. The mother stated that the boy had been very constipated for a few weeks, and that a fortnight previously his abdomen had suddenly swelled up. On close questioning she admitted that the child's bowels had never been regularly moved since birth. There had been no vomiting nor any failure of appetite.

The boy was somewhat undernourished. The abdomen was enormously distended and resonant all over. A hard mass could just be felt on deep palpation above the pubes. Peristalsis was easily seen. The liver dullness was normal, the spleen could not be felt, and there was no shifting dullness in the flanks. Both testicles were in the scrotum. There was a slight rise of temperature, but this rapidly fell to normal. The pulse was 128.

On rectal examination the pelvis was found to be filled by a large hard mass lying behind and somewhat to the left side of the rectum. The bowel was so tightly compressed that it was impossible to pass the finger beyond the mass. During the examination a burst of flatus suddenly escaped and the distension of the abdomen became distinctly less marked. The urine contained no acetone or diacetic acid.

A status tube was passed at intervals followed by an injection of pituitary extract. The size of the abdomen was much reduced by this procedure but the effect was transient. Occasional enemata produced fair results, but with only temporary effect on the abdominal distension. A radiogram of the pelvis showed nothing abnormal.

Operation

On February 16th the abdomen was opened by a left paramedian incision displacing the rectus outwards. A very small quantity of blood-tinged fluid was noticed in the peritoneal cavity. The large intestine was enormously distended and hypertrophied, being about the size of the inner tube of a bicycle. The lower part of the small intestine also was both distended and hypertrophied. This was less marked higher up and the jejunum appeared quite normal. The pelvis was completely filled by a hard retroperitoneal mass the upper convex surface of which was covered with distended veins and rose well above the brim of the pelvis.

The growth was obviously inoperable. A small gridiron incision was accordingly made near the right anterior superior iliac spine and the mass exposed retroperitoneally incised and some fragments secured for microscopic examination. The general condition of the child not being very good a descending colostomy was performed through the laparotomy incision and a Paul's tube inserted.

Pathological Report

The section shows a remarkable new growth, consisting of a mass of tissue which on close inspection, is seen to be made up of small papillary outgrowths of fibrous stroma covered with epithelium of an elementary type. It is practically certain that this is part of a teratoma. What the tissue is it is impossible to say—it is too slightly differentiated to have a special function or name; this may be the main element of its malignancy, which is evidently of a high order. If the entire aberrant mass could be examined there is little doubt that other tissues would be discovered though in the case of a malignant overgrowth of teratomatous tissue it is quite usual for one type of tissue to become considerably more increased than the remainder.

After-History

The child was fairly comfortable after the operation and the abdomen greatly diminished in size. The chief difficulty was in passing urine and it is probable that the immediate cause of death on March 5th was uraemia. For the last few days the patient was semi-conscious.

Post mortem Examination

The bladder was much distended and its walls very thin. The colon both above and below the colostomy opening had contracted down in a very striking manner. The liver and other viscera appeared normal. A spherical mass of friable tissue the size of a small orange was lying between the rectum and the sacrum—somewhat enveloping the former. This mass, on close inspection appeared to be composed of several different tissues, and contained numerous tiny hard nodules (cartilage). No hairs or teeth were found.

The section shows various tissues including muscular, nervous and epithelial cells, all in a primitive state of development. There can be no doubt that the tumour is a teratoma. There is cartilage and a calcified area in the section but no actual bone formation. The period of partial isolation from the main mass of the foetus must have been quite early.

It would appear to be a matter of doubt whether this tumour was highly malignant or benign. Some of the sections suggest the former but several cases have been described in which similar tumours have eluded discovery until fairly late in life.

I am indebted to Dr. T. A. Knott of the Clinical Research Association for the pathological reports.

REFERENCE.

¹ Bland Sutton. *Tumours, Innocent and Malignant* sixth edition p. 512.

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SECTION OF LARYNGOLOGY, OTOTOLOGY, AND RHINOLOGY

ARTHUR H CHIFFLEY, CBE, FRCS, President

DISCUSSION ON
OVERLOOKED CASES OF FOREIGN BODY IN
THE AIR AND FOOD PASSAGES

OPENING PAPERS

I—CHEVALIER JACKSON, M.D., Sc D., F.A.C.S.,
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NOTES ON SYMPTOMATOLOGY AND DIAGNOSIS

It seems necessary at the outset to state that this presentation is from the author's individual viewpoint, which means that of one who metaphorically as well as actually, sees narrowly through a small tube. For a presentation from the broad viewpoint of the internist the reader is referred to the Lunnern Lectures (1924) by Professor Thomas McCrae, who has seen, probably, more cases of foreign bodies in the lower air passages than any other internist. However, all of the present article is clinical in character, and is prepared from carefully recorded data concerning cases seen by the author's associates—Dis Ellen J Patterson, Gabriel Tucker, and Louis H Cleif—and himself.

Of the 1,485 cases of foreign bodies that have come to the Bronchoscopic Clinic during twenty years there have been over 200 that had been overlooked for periods of from one month to thirty six years. A broad consideration of the histories of these cases shows the outstanding fact that the failure to recognize the presence of a foreign body was due, not so frequently to inability to make the diagnosis, as to failure to attach sufficient importance to the consideration of foreign body as a diagnostic possibility. Foreign bodies have been regarded as curiosities of medicine rather than as routine possibilities for exclusion.

A careful analysis of all the cases in which records were adequate, however, shows that the chief factors in the overlooking of the foreign bodies (not in the etiology of the accident itself) in the respective cases are:

- 1 Failure to consider the possibility of foreign body
- 2 Absence of a history of foreign body
- 3 Skepticism as to the possibility of the presence of a foreign body, in some instances even in the face of a very positive circumstantial history of the accident
- 4 Apathetic attitude of the practitioner
- 5 The symptomless interval
- 6 Multiplicity of foreign bodies
- 7 Waiting for spontaneous expulsion of the foreign body
- 8 Simulation, in cases of foreign body of the signs and symptoms of relatively common diseases such as asthma, bronchitis, pneumonia, bronchopneumonia, emphysema, abscess, bronchiectasis and tuberculosis. Encountering daily these common conditions the practitioner does not feel called upon to go out of his way into the realm of seemingly remote possibilities like foreign body. Until the practitioner deems it necessary to exclude foreign body in every case of acute or chronic pulmonary disease foreign body in the lung will continue to be overlooked.
- 9 Lack of emphasis in medical teaching on the exclusion of foreign body in every case of acute or chronic disease of the chest.
- 10 Groundless assumption of passage by bowel
- 11 Character of the foreign body

Absence of a history was frequently a factor. It arose from such circumstances as these:

- 1 The patient being too young to tell of the accident which occurred when older observers were absent
- 2 The patient being unconscious from sleep, epilepsy, coma and the like or oblivious from delirium, shock, emotional excitement, distraction or alcoholic intoxication
- 3 Failure of those present to realize the true character of the initial symptoms
- 4 Forgetting of the accident by the patient or his relatives

5 Fear of ridicule. Not infrequently the attitude of the practitioner first seeing the case has been such that the patient feared he would be considered hysterical or morbidly introspective or even ridiculous, if he mentioned the matter consequently he has omitted mention of the foreign body accident to later physicians.

6 Failure of the practitioner to inquire carefully and persistently for the initial symptoms especially choking and gagging. Many times have we had cases in which the parents at first answered negatively yet on close and persistent questioning were able to recall a choking and gagging attack.

That absence of a history of foreign body accident is of little or no importance diagnostically is proved by over a hundred cases at the Bronchoscopic Clinic. It is very common for babies to be brought in with maize, milk-leaves, water-melon seeds, safety-pins, and all sorts of foreign bodies, with no knowledge on the part of parents as to how the accident happened. Many cases have occurred also in adults. For instance, an intelligent retired business man, sober and wide awake, while spurring his own throat aspirated the cap off an atomizer, nearly as large as a thumb, without knowing it. It was discovered in the right bronchus by means of the x-rays while the patient was under climatic treatment for supposed tuberculosis, and was removed bronchoscopically. Obviously, if an intelligent man, wide awake and sober, can aspirate so large a foreign body without knowing it, a negative history may be worthless diagnostically.

Ignoring a History of a Foreign Body

It is remarkable to note how frequently a clear and circumstantial history of a foreign body accident has been brushed aside. This has happened even in the face of the most positive and clear-cut signs and symptoms, and in many instances we have been amazed at the positiveness with which the practitioner has told the patient that the symptoms and signs could not be due to a foreign body, and that no foreign body was present. We are often not quite sure there is no foreign body present, and often keep a patient under observation a long time before deciding in the negative. It frequently happens that we do diagnostic bronchoscopy before reaching a decision. Occasionally, when this procedure is negative, we are still uncertain as to the possibility of a small fragment of non-opaque foreign body in a minute bronchial branch, which of course cannot be entered. Such cases require watching, sooner or later signs will develop. There is only one way, it seems to us, of avoiding this error in every case in which there is the slightest intimation of a foreign body accident or of the patient having had an attack of choking, gagging, strangling, or coughing, should be regarded as *prima facie* a case of foreign body. Unlike our good old English common law in which the accused is not to be regarded as innocent until proven guilty, a foreign body should be regarded as being present until its absence is proven by every means at our command. Our justification for this rather strong statement is the fact that our histories show dozens of cases in which a child, after having choked and gagged with food or some foreign substance in his mouth, was taken to a practitioner or to a dispensary, or to an out-patient clinic, when entirely symptomless. The temperature, pulse, and respirations being normal, and a cursory physical examination being negative, the parents were reassured and sent away. In some instances they were told to return if the child seemed unwell. In either class of case the symptomless interval, often prolonged, prevented connection of the initial symptoms of foreign body aspiration with the slow and tardy development of symptoms. Patients with any history, however vague, of choking, gagging, or strangling, or of any circumstance suggestive of foreign body should be put through all the diagnostic steps enumerated below, and should be kept under close daily observation until it is clearly evident that no foreign body is present.

Apathetic Attitude of some Physicians

In mailed contrast to the practitioner who thinks there could be no foreign body in the lung because the patient is not very ill, there have been a few instances of a "let alone" attitude, or at least a failure to realize the ease and relative certainty with which a foreign body can be bronchoscopically removed from the lung.

Symptomless Interval
Of all the factors in the overlooking of foreign bodies in the lungs the outstanding one is the symptomless interval. In aspirated metallic foreign body, if non-obstructive, may remain for months in the tracheo-bronchial tree without a single symptom. During this time the accident has been forgotten by the patient, or, if it has not, this symptomless interval is used deductively for the occlusion of foreign body as an utter impossibility. All of us have had a crumb of bread or a drop of water, or a drop of sugar-laden saliva, get into our larynx, and we remember the violent strangling cough provoked, and the subsequent lingering irritation. With this experience in mind it naturally seems incredible that a sharp pin or a sharp and rough tack could remain in the tracheo-bronchial tree for months without a single abnormal sensation or a single symptom. This is one of the chief factors in the overlooking of foreign bodies in the lungs. If the patient comes in at a later stage, when suppuration has been established, the practitioner may, if he considers the possibility of a foreign body, ask the patient if he had swallowed or inhaled any foreign substance at the time the cough began. The foreign body accident may have occurred months before the cough and expectoration were so obtusive as to be noticed by the patient.

It is therefore necessary to inquire closely and persistently as to any recollection of an attack of choking, gagging, or struggling at any time, no matter how remote. The symptomless interval in cases of oesophageal foreign body is not so marked as in the bronchial cases. In one of our patients an intelligent woman aged 43 the subjective sensation of foreign body had so completely disappeared that I was inclined to let her go home. Yet Dr. Gabriel Tucker insisted on oesophagoscopy examination because of a slight irritation of the opaque capsule. He removed a spicule of bone that had penetrated the mucosa and would have almost certainly caused mediastinal trouble. In a number of other cases we got a history of the patient having thought himself rid of the foreign body because of the disappearance of subjective sensations. In most cases adults have felt a sensation at least during deglutition, but most of the cases of overlooked foreign body in the oesophagus have occurred in children too young to tell of their sensations.

Multiple Foreign Bodies

Since the warning in the early days of the work we have been constantly on our guard against overlooking other foreign bodies after the removal of the first one or more. In the case of foreign bodies opaque to x-rays this is easily guarded against by the rigidly enforced rule to have an "after x-ray," as we call it, in every case. Incidentally this guards against chargin in case of later aspiration or swallowing of another foreign body by a child or a hysterical or a demented patient, as has occurred a number of times but the chief purpose is to guard against overlooking in case of unsuspected multiple foreign bodies. In one case there were in all, thirty-seven foreign bodies. In the case opaque to x-rays, others not. Following on many of them opaque to x-rays, patient radiologically examined some of the bronchus removed in entangled "burr" of the bronchus to the tuberosities of the ischia, we were prepared after having removed an entangled "burr" of the multiple intestinal foreign bodies. This undoubtedly saved the child's life, because one of the foreign bodies, a needle, remained ten days in one place. This we regard as a lesson learned because we have found that sharp foreign bodies do not as a rule, penetrate the intestinal wall, but ulcerate through it. Therefore we call upon the abdominal surgeon to consider the advisability of operation after a sharp foreign body has been in one spot as long as four days. In this case we waited a little longer than we should otherwise have done, because of the serious state of the child from ulcerative oesophagitis and tobacco poisoning. The abdomen was opened by Dr. Thomas A. Shallow who found that the needle had ulcerated its way through the intestinal wall for a distance of half the length of the needle. Its slow progress through had allowed time for protective adhesions to wall off the infection so that general peritonitis had not followed, and the child made a perfect recovery.

Multiple Dental Foreign Bodies
A man aged 40 thirteen months prior to admission had a tooth extracted under gas anaesthesia the tooth breaking into a number of fragments. Two weeks later cough and fever developed for which a physician treated the patient under a diagnosis of acute bronchitis. Blood tinged sputum appeared and the patient consulted another physician who ordered an x-ray examination. This revealed an amalgam filling which was removed through the mouth by a bronchoscopist. Cough and foul expectoration persisting the patient was treated for six months by autogenous vaccines for pulmonary abscess with improvement. The cough and expectoration persisting though less another x-ray examination was made which revealed a fragment of tooth in the right bronchus. For the removal of this he was sent to the Bronchoscopic Clinic for recovery.

Comment—This case strongly emphasizes the importance of our rule always to have a thorough careful ray study made after bronchoscopic removal of a foreign body. It illustrates also the necessity for remembering that foreign bodies especially dental foreign bodies may be multiple. It also confirms our oft-repeated advice to exodontists to match together all fragments of teeth and filings to see if all are accounted for. As the course of the abdominal surgeon counts the sponges if anything is missing a radiological examination should be made at once. Another point is that cough or any bronchial symptom after (even months after) extraction of a tooth should be considered a case of foreign body until proved otherwise. Such a rule might have prevented a year of lung suppuration in this case.

Waiting for Spontaneous Expulsion

This was the cause of prolonged sojourn (one month to twenty years) of foreign bodies in the lung in a number of cases. A symptomless interval following, and the patient drifting into the care of another physician, the foreign body was overlooked in a number of such cases that finally came to the Bronchoscopic Clinic for removal of the intruder. It is impossible to compile general statistics that will afford useful percentages as to the frequency of spontaneous expulsion, but of the cases that have come under our observation only about 3 per cent of the foreign bodies known to have reached the bronchi have been coughed up. In some of these cases the coughing up could not be said to have been entirely spontaneous, since they occurred after a preliminary bronchoscopy for the dilatation of a bronchus narrowed by secondary inflammatory processes, or chronic. We shall probably do full justice to our patients if we tell them that while there is a possibility of the foreign body being coughed up, it rarely happens, and waiting is dangerous.

Erroneous Diagnoses

In 218 cases of overlooked foreign bodies in the air and food passages the following erroneous diagnoses were known to have been made: pneumonia, bronchopneumonia, empyema, tuberculosis, asthma, bronchiectasis, pulmonary abscess, enteric fever, malaria, gastritis, cyclic vomiting. In addition to the foregoing there were correct diagnoses of lesions present, but the foreign body as the primary factor was overlooked. These cases included not only bronchiectasis, pulmonary abscess, empyema, and pneumothorax, but secondary forms, such as myocarditis.

Pneumonia

It is amazing to look over our records and find how frequently pneumonia was the erroneous diagnosis, not only in the cases in which the foreign body was overlooked, but in cases in which the foreign body was known to be present. We are often asked if it is safe to remove a foreign body during the "pneumonia." As my colleague Professor McCrue will tell you, pneumonia, as the term is understood by internists, is exceedingly rare as a complication of foreign body in the lung and why misinterpretation of the physical signs leads to this erroneous diagnosis. We often see the signs of a supposed pneumonia promptly disappear after the removal of an obstructive foreign body in the lung. I am not qualified to speak on any matter dependent upon diagnosis by physical signs but I fortunately have had close co-operation with Professor McCrue and other leading internists, who assure me that these patients do not have true lobar pneumonia. A very large proportion of patients with overlooked foreign bodies give a history of recurrent attacks of supposed pneumonia, which are evidently conditions due to inter-

mittent obstructions to drainage, the physical signs of which are misinterpreted. Dr. Willis F. Manges, who has seen more of these cases than any other roentgenologist, has demonstrated over and over again that the x-ray signs of pneumonia are absent in these cases.

Empyema

It has been pointed out by Professor McCrae in his writings, and very frequently on our patients clinically, that while the misinterpretation of the physical signs in cases of foreign body as indicating pneumonia is open to just criticism, it is not surprising that the erroneous diagnosis of empyema has been made by misinterpretation of the signs elicited in drowned lung and atelectasis due to foreign body. The differentiation by physical signs will be considered by Professor McCrae. Of course, pleural involvement and even rupture of the suppurating focus into the pleura may occur in cases of foreign body with obstructed upward drainage, but it is rare, an erroneous diagnosis of empyema where none exists is quite common. Over a hundred of our cases had been needed with negative results before coming to the clinic, and in twenty-seven rib resection had been done to explore a pleura that was found normal. In other cases the operation was arranged for and indications ordered for operative localization, but, these showing a foreign body, the operation was abandoned and the child was referred to the clinic, where removal of the foreign body caused disappearance of the signs erroneously interpreted as those of empyema. The following cases will serve as examples of the relatively frequent error of overlooking a foreign body under an erroneous diagnosis of empyema.

A boy aged 6 choked and coughed while playing with a tack in his mouth. The boy and his mother were both sure that the tack went down, but when the child became ill two days later the physician called disbelieved this and made the diagnosis of grippe. A week later the diagnosis was pneumonia. A few weeks later another physician made a diagnosis of abscess following lobar pneumonia. A surgeon called in made a diagnosis of empyema, needing was negative but two ribs were resected. The pleura being found normal, the wound was closed and primary union was obtained. Then, after four months a radiogram was taken and the mother's constant contention that a tack was the cause of the child's illness was verified.

This case illustrates the attitude of some men toward the possibility of foreign body as a cause of pulmonary disorder and indicates the importance of excluding drowned lung from foreign body obstruction in every case of supposed empyema. We have had a large number of similar cases.

A girl, aged 3, had been ill for a year and nine months. She had been treated for bronchitis and pneumonia. A diagnosis of left-sided empyema was made and external drainage was advised. Preparatory localization with the x-rays was ordered. This revealed a screw in the left lung with a large area of 'drowned lung' but no evidence of empyema. The child was then referred to us. She was extremely ill with septic fever from the pulmonary suppuration but ultimately made a good recovery after the bronchoscopic removal of the screw. Close questioning of the mother elicited the fact that twenty months before, when the child was 16 months of age, it had an alarming attack of choking, coughing and gagging while sitting on the floor. It was some time after this that bronchial symptoms began, and the mother had not connected the incident with the lung condition nor had she mentioned it to the medical men who were about to do a thoracotomy for a supposed empyema, but the outstanding fact remains that she was never questioned closely as to a paroxysm of choking, gagging, and coughing. Our records show that these initial symptoms are rarely absent though they may not have been observed or remembered. Close questioning will sometimes elicit recollection. Regardless of history of foreign body, as Professor McCrae will explain, drowned lung should be distinguished from empyema.

Pleurisy

Pleurisy was the erroneous diagnosis in at least seven cases, in which there probably was no pleural involvement. In some of the cases the practitioner probably had in mind effusion because of the impaired percussion note at the base due to atelectasis or drowned lung.

'Cold on the Chest'

This was most often a diagnosis by the laity, but it was an important factor in the overlooking of foreign bodies by physicians. It most often occurred in cases of seeds, nut-kernels, nut-hells, bones, and other substances in foods. The usual way in which children get fragments of nut-kernels into the lungs is in eating nut-candies and nut-

cakes. Choking while eating such things is usually considered of little moment by parents, and thus leads to the primary overlooking. The laity are obsessed with the idea that any little 'draught' can cause a 'cold,' and every child is exposed to a draught every day of its life. The parents, when finally they take the child to a physician, tell with much circumstantial detail of baby having 'caught a cold' which did not 'clear up.' This primary diagnosis by the laity has unconsciously led many practitioners away from all thought of a foreign body. Close questioning as to choking while eating in every case of the layman's 'cold on the chest' in the case of babies, and thoroughly following up the suggested means of exclusion of foreign body, will, by early diagnosis, enable the bronchoscopist to save the lives of many children.

Asthma

Asthma was the erroneous diagnosis at some stage of the case in so many (48) of our cases that we feel it is not unreasonable to urge that foreign body should be excluded in every case before finally confirming a tentative diagnosis of asthma. In some of our cases the only asthmatic symptom was the presence of the 'asthmatic wheeze,' which is diagnostically so valuable a symptom of any kind of foreign body in the larynx, trachea, and larger bronchi, but in other cases the simulation of the prominent features of bronchial asthma was so close that little criticism could attach to the practitioner who made the erroneous diagnosis. For instance, it is quite common in cases of vegetable foreign bodies to get a definite statement that the child has been awakened suddenly in the night with a violent paroxysm of coughing, accompanied by loud wheezing, possibly also strangling and cyanosis. These attacks in cases of vegetable foreign bodies are probably due to the accumulation of secretions during the first sleep of the tired child, secretions being usually abundant in cases of foreign bodies of this type. Asthmatic symptoms were sufficiently prominent to mislead the practitioner in 18 cases of foreign body, not in the passages, but in the oesophagus. There were three classes of these cases. In some cases there was wheezing due to compressive narrowing of the tracheal lumen by the presence of a relatively large foreign body on the membranes and, in children, very yielding 'putty wall' between the oesophagus and the trachea. In other cases there was overflow of secretions and food into the larynx. In a third group of cases trauma by the parent's finger in efforts to remove the foreign body or trauma from the use of instruments by our predecessors in the case had caused acute oedematous laryngitis.

Diphtheria

A croupy cough is a logical sequence of foreign body in the larynx, yet tolerance to the presence of a foreign body in the larynx is so quickly established that its presence may not be suspected. A symptomless interval of a few hours, or in some cases even a few weeks, before croupiness started, was noted in most of our cases of laryngeal foreign bodies. During the interval there was little or no noticeable cough in cases in which the foreign body was fixed. The unsuspected presence of a safety pin in the larynx in three of our patients led to the administration of antitoxin. One of these patients, aged 2 years, was sent in for a supposed post-diphtheritic stenosis of eight months' duration. Tracheotomy had been performed at the time of the supposed diphtheria, when the child was 14 months of age. Removal of the open safety pin resulted in cure and decannulation without any treatment for stenosis. In the other two safety-pin cases tracheotomy had not become necessary, one of the patients was sent in because the croupiness did not disappear within a few weeks after the administration of antitoxin, the other patient, after three months, developed swelling in the front of the neck, for which an x-ray examination was made. Similar cases have been reported by Henry B. Oton and others. Diphtheria has been much more frequently the erroneous diagnosis in cases of foreign body, not in the larynx, but in the trachea and bronchi. This is particularly true of vegetable foreign bodies, because of the intensity of the local reaction to their presence.

especially in children. Logan Turner pointed out many years ago the peculiar histological structure of the subglottic larynx in children, which renders them peculiarly subject to oedematous subglottic laryngitis. Crampness in diphtherial children is due chiefly to this same state of subglottic oedematous laryngitis, though in diphtheria the subglottic region is reached by extension from above, while in tracheo bronchitis due to vegetable foreign body the extension is from below. Vegetable foreign bodies led to an erroneous diagnosis of diphtheria in 17 cases. In 4 of these diphtheroid bacilli were present, but as no characteristic membrane was found the presumption was that these patients were croupous. The foreign bodies included peanut kernels, walnut kernels, beech-nut shells, maize, and water melon seeds.

Winter Bronchitis

This was a symptom, and had been the diagnosis, in 18 cases of overlooked foreign bodies, and it is interesting to note that in 5 of the 18 cases the foreign body was in the oesophagus, not in the air passages. Tracheo bronchial symptoms are present in almost all cases of obstructive foreign bodies in the oesophagus. Referring, however, only to "winter bronchitis" in cases of prolonged oesophageal sojourn of an overlooked foreign body, there were 2 cases in which the foreign body had ulcerated through the "puity wall" into the trachea. In 3 other cases there was only the aspiration of the overflow to account for the bronchial symptoms prominent only during the winter.

In the other 13 cases in which the diagnosis of "winter bronchitis" had been made, there had been an overlooked foreign body in the tracheo bronchial tree. One very instructive case of this kind is the following.

Serew in Bronchus for Twenty Months

A female child aged 3 months developed in February a loose cough without much systemic disturbance. Details as to the physical signs found are not available but they were thought to have disappeared along with all the symptoms except slight wheezing during the following summer. In the autumn the cough returned became loose and productive and continued throughout the winter seeming to excuse a diagnosis of winter bronchitis. The second summer the symptoms moderated but did not disappear. In November (twenty months after the initial symptoms) a diagnosis of pneumonia followed by abscess and empyema was made, and external operation for drainage was deemed necessary. For localization for operative purposes an x-ray examination was made, and the shadow of a metallic foreign body, a serew, was found. The mother then made the statement that she remembered that the child (then 3 months of age) had choked and gagged while sitting on the floor a few weeks prior to the onset of the bronchial symptoms. The child was then sent to the Bronchoscopic Clinic where the serew was removed by bronchoscopy through the mouth. There was no pneumonia, no empyema, and the child made a perfect recovery under open air conditions, without any external procedure.

The clearing up of the symptoms of purulent bronchitis during the first summer after the aspiration of the serew, notwithstanding the continued presence of the serew, is of utmost importance. That the serew was present during this period is proved by occasional asthmatic wheeze. In explanation of the summer abatement of the symptoms it seems a logical inference that there would be greater resistance to the secondary suppurative processes (which, of course, constituted the basis of the incomplete diagnosis of "winter bronchitis") during the open-air environment of summer. Supporting this inference we have the observation elsewhere mentioned of the great general improvement and the gain of 15 lb under an outdoor antituberculosis regime, notwithstanding the presence of an overlooked beef bone in the bronchus.

It would seem wise carefully to exclude foreign body in every case of "winter bronchitis," and especially to be on guard against the inference that disappearance of symptoms in summer time excludes the possibility of foreign body. Other important points are the mistaken diagnoses of pneumonia and empyema, which were not present. The pathology on which these erroneous diagnoses were made was "drowned lung" a condition in which all the passages are filled with pus without breaking down of the structural elements. Another case illustrative of overlooked foreign body erroneously diagnosed "winter bronchitis" is the following.

Brass Tag fastener in the Bronchus for Seven Years

A woman aged 23 had cough, foul expectoration, and slight fever at times during seven years. During the last two years there had been some loss of weight but the patient was not emaciated nor did she have a septic look. The exacerbation of the symptoms in winter with almost complete disappearance in summer had led to a diagnosis of winter bronchitis. During the last winter the dullness at the base had led to a diagnosis of empyema, but needling proved negative. An x-ray examination made by Dr. Willis F. Manges showed no fluid in the pleura, but revealed a metallic object in the lower lobe of the right lung with an abcess below it. The mother and the patient recalled the choking of the patient then a girl of 16 by a tag fastener while at work in a stocking factory. The accident had been mentioned to the earlier physicians in the case but the possibility of foreign body was brushed aside so brusquely by them that the mother did not mention the matter to later physicians. Bronchoscopic removal resulted in a perfect cure without any external drainage; all the symptoms disappeared in six months. Eleven years later an x-ray examination by Dr. Manges revealed no abnormality in the lungs and physical examination by Dr. S. Solis Cohen showed no abnormal signs. The patient now fourteen years after bronchoscopic removal weighs 172 lb and is in perfect health. She has married and has a robust 8-year-old son.

The severe exacerbation of symptoms during the winter months and their almost complete subsidence during the summer is very striking and was noted by the family and by a number of physicians. At the bronchoscopy it was noted that obstruction of the bronchus was not complete. Our experience in many similar cases indicated that foreign body should be excluded in every case of what is rather loosely termed "winter bronchitis," and especially so in young subjects. The amelioration of the symptoms in summer has been almost exclusively in the cases of foreign bodies not of vegetable character, and not completely obstructive. In case of complete obstruction to drainage the symptoms usually persist and increase progressively in severity. Vegetable foreign bodies in the bronchus of children, even if not completely obstructive at first, soon become so, and, if unremoved, prove fatal too soon for the seasonal differences to be observed.

Tuberculosis

Many patients are sent in for removal of foreign bodies after months or years of treatment for supposed tuberculosis in institutions. Such cases are becoming somewhat less common since the intensive work in all phases of diagnosis and treatment of pulmonary tuberculosis has led to more critical work in "non-bronchial" cases, and routine x-ray examination in all cases. There is no reason why a tuberculous patient should not aspirate a foreign body as well as a normal person, yet among the hundreds of cases of foreign body in the lung that have come to the clinic we have found tubercle bacilli present in only one, and that a mere coincidence. This absence of genuine tuberculosis is interesting in connexion with the fact that all the older textbooks stated that foreign body in the lung ended in phthisis pulmonalis. This was, of course, prior to the discovery of the bacillary nature of tuberculosis, when chronic pulmonary septic conditions were not accurately differentiated.

Malaria

The intermittent temperature which in some of our cases has been singularly regular in its fluctuations has in a number of instances led to an erroneous diagnosis of malaria. One is reminded of the wholesale mistaken diagnosis of malaria in what was really typhoid fever demonstrated by Professor Osler in Brooklyn many years ago. Such a mistake could only be made through lack of care and thoroughness in making a diagnosis. The differential diagnosis between malaria and chronic pulmonary sepsis is easy. The important thing is always to exclude foreign body in cases of chronic pulmonary sepsis.

Enlarged thymus gland was the erroneous diagnosis in many cases in some the radiologist being unfamiliar with the x-ray diagnosis of non-opaque foreign body, had overlooked it and had treated the child with the therapeutic ray. In other cases the diagnostic examination for suspected thymic hypertrophy had revealed the presence of metallic foreign body. The following case is illustrative of a number of phases of this subject.

admission, and some of these were fatal. In two cases the foreign body had been driven into the mediastinum. One of these patients recovered after peroral bronchoscopy and removal of the foreign body from the mediastinum.

After-Care

Prolonged suppuration due to a foreign body lodged in a bronchus is kept up chiefly by the presence of the intruder itself. After removal usually no treatment other than rest and fresh air is necessary. Only in one case have we found it necessary to dilate a fibrous stricture after removal of a foreign body. This we did bronchoscopically. In many cases bronchoscopic dilatation was necessary before removal to get at the foreign body, but further dilatation during convalescence was necessary only the once.

After-Results in Overlooked Cases

One of the most remarkable things is the recuperative power of the lung from the seemingly very serious pathological condition produced by a foreign body after the intruder has been removed. In cases of non obstructive metallic foreign bodies, recovery is a logical sequence. On the other hand, bronchial obstruction with years of extensive imperfectly drained suppuration due to the continued obstructive presence of a foreign body is usually followed by complete recovery, and this in a time relatively so short as to be in marked contrast to the progress of suppurative pulmonary disease of other etiology. It would be out of place here to cite many cases, and it is unnecessary since many have been published. A boy with a metallic umbilical tip in his lung from 2 to 9 years of age, with very extensive pathological changes in his lung, is now, six years after removal, perfectly well. He has no cough, and no expectoration, the physical signs and the x rays, we are assured by his father, a physician, give no evidence of any abnormality in the lung. A woman with pulmonary abscess and almost moribund from twenty-six years' sojourn of a glass collar button in the lung, is entirely free from cough and expectoration and weighs 186 lb. Another woman is practically well after the removal of a safety-pin that had been in her lung for thirty-six years. Many other cases could be cited to show that prolonged suppuration from foreign body is not often followed by permanent changes of the bronchiectatic type, which are so common after other conditions, such as pneumonia, influenza, and pertussis.

CONCLUSIONS

Of the 1,485 cases of foreign body in the air and food passages that have come to the Bronchoscopy Clinic, over 200 had been overlooked for periods of from one month to thirty six years. An analysis of these cases as to the causes leading to the failure to make the proper diagnosis leads us to the following conclusions:

1 Prolonged sojourn of foreign bodies in the air and food passages is not due so often to inability to make a diagnosis as to the fact that foreign body does not occur to the practitioner as a diagnostic possibility. As Sir James Mackenzie has said, it is the general practitioner who sees the beginnings of disease. That he does not include foreign body as a diagnostic possibility in every case of acute or chronic disease of the subpharyngeal airway is the fault of medical education, which rarely includes foreign body in the list of diagnostic possibilities to be excluded in every case of pulmonary disease.

2 Simulation of the signs and symptoms of relatively common diseases such as asthma, bronchitis, pneumonia, bronchiopneumonia, empyema, abscess, bronchiectasis, and tuberculosis. Encountering daily these common conditions, the practitioner does not feel called upon to go out of his way into the realm of seemingly remote possibilities such as foreign body. Until the practitioner deems it necessary to exclude foreign body in every case of acute or chronic pulmonary disease foreign body in the lung will continue to be overlooked.

3 A common reason why foreign bodies in the air and food passages are overlooked is the failure to attach sufficient importance to the initial symptoms of choking and gagging with any substance even food, in the mouth. These symptoms are almost never absent. In a child no one may have

been present to observe them, but more often they have been forgotten, and if so, only close cross questioning will bring them to mind.

4 The chief etiological factor in the overlooking of foreign bodies in the tracheo bronchial tree is the symptomless interval between the initial symptoms of choking and gagging and the later onset of pulmonary symptoms. This interval may last for a period varying from a few hours to two years, and is rarely absent. During the symptomless interval all symptoms, including cough, are slight or entirely absent. If the practitioner should think of foreign body at all he is apt to ask if the patient got anything "down the wrong way" at the time the cough began.

5 Our experience leads us to believe that if every practitioner who has children to treat would be as careful to exclude foreign body in the air passages as he is to exclude Banti's disease, many lives would be saved.

SYMPTOMATOLOGY AND DIAGNOSIS OF FOREIGN BODY IN THE AIR AND FOOD PASSAGES (Summary)

Since the prevention of the overlooking of foreign bodies in the air and food passages necessitates full appreciation of the essential points of symptomatology and diagnosis, it seems well to append here the summary of the points formulated by the author from the cases observed during the last thirty years.

Initial symptoms are choking, gagging, coughing, and wheezing, often followed by a symptomless interval. Foreign body may be in the larynx, trachea, bronchi, nasal chambers, nasopharynx, fauces, tonsil, pharynx, hypopharynx, oesophagus, stomach, or intestinal canal, or may have passed by bowel, been coughed out or expectorated, with or without the knowledge of the patient. Initial choking, etc., may have escaped notice, or may have been forgotten.

Laryngeal Foreign Body

One or more of the following laryngeal symptoms may be present: Hoarseness, croupy cough, aphonia, odynophagia, haemoptysis, wheezing, dyspnoea, cyanosis, rhinœa, or subjective sensation of foreign body. Croupiness usually means subglottic swelling. Obstructive foreign body may be quickly fatal by laryngeal impaction on respiration or on abortive coughing expulsion. Lodgement of a non obstructive foreign body may be followed by a symptomless interval. Direct laryngoscopy for diagnosis is indicated in every child having laryngeal diphtheria without faucal membrane (No anaesthetic, general or local).

In the presence of laryngeal symptoms, think of the following:

- 1 Foreign body in the larynx
- 2 A foreign body loose or fixed in the trachea
- 3 Digital efforts at removal
- 4 Instrumentation
- 5 Overflow of food into the larynx from oesophageal obstruction due to foreign body
- 6 Oesophago-tracheal fistula from ulceration set up by a foreign body in the oesophagus followed by leakage of food into the air passages
- 7 Laryngeal symptoms may persist from the trauma of a foreign body that has passed on into the deeper air or food passages or that has been coughed or expectorated
- 8 Laryngeal symptoms (hoarseness, croupiness, etc.) may be due to digital or instrumental efforts at removal of a foreign body that never was present
- 9 Laryngeal symptoms may be due to acute or chronic laryngeal diphtheria, pertussis, infective laryngotracheitis, and many other diseases
- 10 Deductive decisions are dangerous
- 11 If the x-ray examination is negative laryngoscopy (direct in children indirect in adults) without anaesthesia general or local is the only way to make a laryngeal diagnosis
- 12 Before doing a diagnostic laryngoscopy preparations should be made for taking a swab specimen and for broncho-copy and oesophagoscopy

Tracheal Foreign Body

(1) Audible slap (2) palpatory thud and (3) asthmatic wheeze are pathognomonic. The tracheal flutter has been observed by McCrae. Hoarseness, dyspnoea and cyanosis are often present. Diagnosis is by radiology, auscultation, palpation, and

bronchoscopy Listen long for an "audible snap," best heard at open mouth during cough The asthmoid wheeze is heard with the ear or stethoscope bell (McCrac) at the patient's open mouth History of initial choking gagging and sneezing is important if elicited, but is valueless negatively

Bronchial Foreign Body

Initial symptoms are coughing choking asthmoid wheeze etc noted above There may be a history of these or tooth extraction At once or after a symptomless interval cough blood streaked sputum metallic taste or special odour of foreign body may be noted Non-obstructive metallic foreign bodies afford few symptoms and few signs for weeks or months Obstructive foreign bodies cause few signs for weeks or months, they give rise to atelectasis, drowned lung and eventually pulmonary abscess Lobar pneumonia is an exceedingly rare sequel Vegetable organic foreign bodies—pearl kernels beans watermelon seeds etc—cause at once violent laryngitis with toxaemia cough fever etc the being inversely to the age of the child bodies after months or years produce embargues which cause chills fever sweats emaciation, clubbed fingers incurved nails cough foul expectoration haemoptysis in fact all the symptoms of chronic pulmonary sepsis abscess bronchiectasis etc also signs which may suggest pulmonary tuberculosis but the apices are normal and tubercle bacilli are absent from the sputum

Physical Signs

Mere mention of physical signs is included here for the sake of completeness Those interested in this subject should not fail to read the articles by Professor Thomas McCrac, who has seen more cases of foreign body in the air passages than any other internist His experience is analysed and presented in form for the utmost usefulness to the clinician in the *Lundgren Lectures for 1924*

Radiology is a most valuable diagnostic means, but careful study of the physical signs by an expert is absolutely essential in all cases Expert x-ray work will usually show all metallic foreign bodies and many of less density, such as teeth, bones, shells, buttons, etc If the x-ray examination is negative for foreign body, but indicates bronchial obstruction, diagnostic bronchoscopy should be done

Pearl kernels and water-melon seeds in bronchi (and, rarely other foreign bodies) produce obstructive emphysema of the invaded side Radioscopy shows the diaphragm flattened, depressed, and with a less excursion on the invaded side, at the end of expiration the heart and mediastinal wall move over toward the uninvaded side, and the invaded lung becomes less dense than the uninvaded, from trapping of the air by the expiratory valve-like effect of obliteration of the "foreop spaces" that during inspiration afford air ingress between the foreign body and the swollen bronchial wall This partial obstruction causes obstructive emphysema, which must be distinguished from compensatory emphysema, in which the ballooning is in the unobstructed lung, because its fellow is wholly out of function through complete "corking" of the main bronchus of the invaded side (Ighite-Manges) Obstructive atelectasis (Manges) occurs when the obstruction is complete, air below the obstruction is absorbed, the lung collapses, and the mediastinum moves over to satisfy the vacuum Both emphysema and atelectasis call urgently for bronchoscopy, whether there is a history of foreign body or not

Oesophageal Foreign Body—After initial choking and gagging or without these, there may be a subjective sense of a foreign body, constant or, more often on swallowing Painful and difficult deglutition or aphagia may, or may not, be present Haematemesis and fever may occur from the foreign body or from rough instrumentation Symptoms referable to the air passages may be present, due to (1) overflow of secretions on attempts to swallow through the obstructed oesophagus (2) erosion of the foreign body through the oesophagus into the trachea, or (3) trauma inflicted on the larynx during attempts at removal, digital or instrumental, the foreign body still being present or not

Diagnosis is by x-rays first without then if necessary, with a capsule filled with an opaque mixture Flat objects, like coins always lie with their greatest diameter in the coronal plane of the body, when in the oesophagus, in the sagittal plane when in the trachea Lateral, antero-posterior and sometimes also quartering radiograms are necessary One taken laterally, low down on the neck but clear of the shoulder, will often show a boue, invisible in the antero-posterior exposure

II—THOMAS McCRAL, M.D., F.R.C.P., Professor of Medicine the Jefferson Medical College

Let me pay a very pleasant compliment to a worker in internal medicine by asking him to take part in a discussion in your Section This association is necessary if we are to improve our handling of the problem of foreign bodies in the air passages You have the right to ask of the general practitioner and the world in internal medicine that they should be alert and make the diagnosis promptly We have the right to ask that certain of you acquire such skill in bronchoscopy that we can refer patients to you with the assurance that they will be skilfully handled, and that, if necessary, a bronchoscopy for diagnosis can be done with perfect safety May an outsider make a suggestion? It is that in the larger cities one man, or several men working together, be encouraged to devote special attention to bronchoscopy It is only in this way that the highest efficiency can be maintained It may require some generosity of spirit for other men and other hospitals to refer these patients to one man and one hospital in a community, but in this way the best may be done for the patient

Professor Jackson has discussed in detail the causes responsible for a failure to recognize the presence of a foreign body in the air passages Nothing need be added to his summary, and perhaps my part is best filled by discussing some of the problems in physical diagnosis which are involved Emphasis must always be placed on the importance of the failure to consider its possibility To lessen this mistake a steady process of education is essential So long as a foreign body in a bronchus is regarded as something like a fairy tale little progress can be made At our attitude, before my education in this particular was undertaken by Dr Jackson, was to regard it as such a remote possibility that it did not enter into practical work An interesting result of the spread of knowledge regarding foreign bodies is seen in the Jefferson Hospital, to which more and more patients are being sent under the suspicion that they may have aspirated some substance The proportion of suspicious cases in which no foreign body is found is steadily increasing, which is encouraging Those of us who are teachers should impress on our students the importance of this subject

A brief statement of some of the problems connected with the physical signs and diagnosis may be made There is no rule of thumb by which the presence of a foreign body can be recognized, but there are general principles which assist greatly The symptoms and signs must be carefully observed and then thoroughly studied If this is done the majority of the cases are easily recognized, but there is a small group in which the interpretation of the signs is perhaps as difficult as any problem in physical diagnosis The x-ray study, in good hands, is of great value, but very often, unless the physical signs are properly interpreted, this is not considered necessary and consequently is not done Physical signs cannot determine the character of an opaque object as an x-ray study can, but as a general rule physical diagnosis should determine the presence of a foreign body just as accurately In the case of a non-opaque foreign body unless the x-ray worker is expert and can interpret the changes in the lung, the internist has rather the advantage It should always be a matter of team work between the two methods

Certain divisions can conveniently be made—as, for example, between (1) foreign bodies of vegetable nature and (2) other substances, or (1) the general symptoms and signs, and (2) the local signs The possibilities for variation are many A few of these may be discussed If a foreign body gains entrance to a bronchus certain mechanical results follow (a) the bronchus is plugged completely (b) the bronchus is partially obstructed (c) the action may be ball valve letting air in but not permitting it to pass out and (d) there may be variations such as are due to secretions plugging a bronchus entirely for a time and then escaping so that air can pass Lastly, some objects such as a common pin may cause no obstruction and the only physical sign is decreased expansion on the affected side The resulting signs in the affected portions of lung evidently may vary greatly

3 Repeated observation at short intervals if there is any doubt

4 An x-ray study should be made, but not to take the place of physical diagnosis. The internist should endeavour to make out as much as the radiologist

GENERAL DISCUSSION

DR WILLIAM MILLIGAN (Manchester) said that he desired to thank Dr. Chevalier Jackson for what he thought was a "record" communication, not only with regard to its wealth of material, but also with regard to the masterly manner in which it had been presented to the Section. Many of the points raised were of great practical importance. He regarded the intimate co-operation with the radiologist as of the utmost value, but where a negative report was given he thought that in any doubtful case an endoscopic examination should always be made. The foreign body might not be opaque to x-rays, and disastrous results might ensue if the endoscopist did not proceed to make an examination. Then, again, he was in favour of a very complete examination of the whole throat and of a second x-ray examination after removal of the foreign body, as other foreign bodies might be present. He gave illustrations of such cases. The presence of a persistent cough without any very definite explanation called for a thorough search of the respiratory tree, as foreign bodies had a curious way of finding their way into the bronchi without the individual being aware of how they got there. He had known patients diagnosed and treated for tuberculosis for years, but who had recovered entirely after the removal of an unsuspected foreign body. He considered that a very severe cross examination of patients and then history should always be made in doubtful cases, as much useful information was often forthcoming as a result. In diseased conditions of the air passages and of the lungs endoscopy was gaining a very important place, and he thought that greater attention should be given to it in the medical curriculum.

DR IRWIN MOORE (London) associated himself with others in expressing his great pleasure at being present on this memorable occasion to share in the welcome and congratulations offered to Professor Chevalier Jackson. He would like to ascertain from him details as to the methods he employed in dealing with tooth-plates imbedded in the oesophagus, and fixed by double-wire hooks embedded in the walls, also as to the best method of endoscopically ascertaining the position of, and successfully removing, pins aspirated into the lower and posterior lobe bronchi. All would agree with him that these cases presented the most serious difficulties in removal, and constituted the most problems with which the endoscopist had to deal. In this country owing to ill fitting dental plates and the bad habit of wearing them during sleep, a considerable number of dentures had been accidentally swallowed—in some cases with disastrous results. Many such cases had been recorded. He hoped that the folly and risk of this habit would be brought home to the public through the opinions expressed at this meeting, also by means of the *post-mortem* specimens exhibited in that portion of the Pathological Museum associated with the Section.

He referred to the case of a male phagm 1918 accidentally swallowed a portion of an upper dental arch two reversed hooks attached which became firmly lodged in the anterior wall of the trachea to the air passages may be free. Eight weeks after the flow of secretions on attempts to swallow, failure to find he obstructed oesophagus. (2) erosion of the wall was invited to through the oesophagus into the trachea, and denture—which inflicted on the larynx during attempts at removal, while it was or instrumental, the foreign body still being present. While it was

Diagnosis is by x-rays, first without then, if oesophageal with a capsule filled with an opaque mixture. If so postpone like coins always lie with their greatest diameter in the coronal plane of the body when in the oesophagus, or later sagittal plane when in the trachea. Lateral, or the posterior, and sometimes also quartering radiographs are necessary. One taken laterally, low down on the patient's side of the shoulder, will often show a bone, attempts at the antero posterior exposure

removed. The *post-mortem* specimen was exhibited in the museum connected with this Section.

A similar case was admitted, the same year, to the London Homoeopathic Hospital, in which an upper denture had been impacted for three years in the oesophagus, 1½ inches above the cardiac orifice, being hung up in this position by two metal hooks curved in opposite directions. He (the speaker) was asked by Mr. Dudley Wright to attempt its removal, following previous attempts, not only by peroral endoscopy, but also through the cardiac orifice by gastrostomy. On passing the oesophagoscope the denture, with the mesor teeth pointing upwards, was easily seen, and was grasped by forceps but it could neither be moved nor turned in any direction. The cutting shears at that time were too short to reach the denture, and the case was postponed until a longer pair could be made. The patient however refused to return to hospital for a further attempt at extraction, and died three years later from a post-mediastinal abscess caused by ulceration and perforation of the gullet wall.

Dr. Irwin Moore said he would be glad of any suggestions from Professor Jackson for dealing with such difficult cases. Next he referred to a case recorded by the late Mr. Hunter Tod in 1917, before the Section of Laryngology, Royal Society of Medicine.

A child, aged 12, accidentally swallowed (inhaled) a pin 1½ inches in length, which was located by x-rays in a lower posterior lobe bronchus. Systematic examination of the bronchi with the bronchoscope failed to find the pin while under control of x-rays and the fluorescent screen in the antero-posterior position the tube was seen in close contact with the pin and the latter within the grasp of the forceps, yet the pin could neither be seen nor removed. A lateral x-ray view showed the tube and forceps some distance away from the pin. Fortunately the pin was coughed up eighteen months later.

He (the speaker) would like to learn from Dr. Chevalier Jackson the best method, in his experience, of locating by means of the bronchoscope and x-rays foreign bodies in this situation. He differed from the opinion expressed in 1923 by Dr. Chamberlain of Cleveland, Ohio—in a discussion on a paper read by Dr. Ellen Patterson, entitled "Foreign bodies in the respiratory tract and oesophagus"—that the larger number of foreign bodies discovered in the lungs in America, in comparison with those in this country, could be accounted for by the fact that they did not look for them, and by the more thorough way in which they were searched for in that country by x-rays. This implied that a large number of foreign bodies were overlooked in this country, which, however, did not appear to be the case. That unilateral affections of the lungs—for example, bronchitis and localized bronchiectasis—strongly suggested the presence of a foreign body was well known to every endoscopist. He would admit that in some cases, especially in children suffering from unilateral affections of the lungs, and treated by the general physician, the question of a foreign body being the causative factor was not sufficiently considered, and was possibly overlooked altogether. He advised that more attention should be paid by the physician to the possible presence of a foreign body in all cases of lung affections, and that greater consideration should be given to the physical signs, and a more thorough examination made with the x-rays, and in doubtful cases with the bronchoscope.

MR. HERBERT TILLEY (London) said he had listened with much pleasure to the brilliant demonstration of Dr. Chevalier Jackson, and perhaps the detailed consideration of one case of his own might help to emphasize certain important points. The case was that of a little boy who inhaled into the left bronchus a paper-fastener with the extended wings lying upwards. A consideration of the immediate and later symptoms, together with the treatment accorded to them, illustrated some of the pitfalls which might lead to the overlooking of a foreign body, and the steps which should be taken in an endeavour to avoid them.

On October 2nd 1920 J.H. aged 5 swallowed a paper fastener. A violent fit of coughing immediately occurred and lasted about five minutes. This was accompanied by pain in front of the left chest which persisted off in some three hours. Four days later while at a children's party, such an alarming fit of coughing came on that the child's father and doctor were sent for and the patient was taken home. He remained in bed for a month with symptoms of acute bronchitis of the left lung. As these did not clear up a skigram of the chest was taken on November 29th but the result was so imperfect that it afforded no clue to the cause of the trouble. From that date to the removal of the foreign body the father stated that the child was always bronchial and short of breath, and the noise he made at night was like an passing

through a small hole." On different occasions he would "suddenly get cold and the temperature rise as high as 104° the attacks sometimes ended with vomiting followed by a sound sleep then all would be well again until similar symptoms reappeared." In June 1921, his tonsils, which were much enlarged, were enucleated, because it was thought that they kept up the bronchitis," but the chest symptoms were in no way benefited by the operation.

Since August, 1921, the attacks of pyrexia occurred every two or three weeks and especially after any exertion such as walking, in the meantime the appetite was failing and milk became the favorite food. A further consultation was held and the question of removing the appendix was discussed. During June, 1922, the child was so far from improving that Dr. Batty Shaw was then asked to see him. The chief physical signs which he found in the patient's chest were: expansion of the chest very poor, nearly all breathing being done by the diaphragm. The right chest however expanded a little, but the left especially in the lower part in front collapsed on inspiration, moreover, the left lung behind was dull on percussion vocal fremitus was normal, and I heard a rale on two.

In view of the history of the case and that the physical signs were chiefly located in one (the left) lung, Dr. Shaw advised that the chest should be screened" and Dr. Salmond's services were enlisted. He clearly demonstrated that the foreign body was lodged in the left bronchus with the chips fully spread and pointing upwards. The *corpus delicti* was removed next day, and the facts just recorded, together with some operative details were published in the BRITISH MEDICAL JOURNAL of November 1st 1922.

The lessons to be learnt from this story were the following:

1. The chief reason why the case drifted on after the initial accident was because the chest was not radiographed by an expert directly the trouble occurred. The first skiagram was made nearly a month after the initial symptoms, and then it was so defective that the physicians in charge of the patient were put off the scent and lulled into a sense of false security concerning the cause of the trouble. Not till twenty-one months had elapsed was a second screening made, this time, fortunately, by Dr. Salmond, when the foreign body was clearly demonstrated. During that interval of time the boy had had his tonsils and adenoids removed because it was thought they were the cause of the recurrent attacks of pulmonary symptoms with pyrexia, and he narrowly escaped being deprived of his appendix, which was deemed responsible for increasing malnutrition and indefinite abdominal symptoms. It might therefore be stated that a defective radiogram might be a positive danger rather than a help in diagnosis, and conceivably that a good one would often be invaluable.

2. The clinical history also emphasized the fact that the examination for the cause of chronic pulmonary symptoms, especially in a young child, could not be considered complete until the chest had been screened by an expert radiologist. This would be more than ever advisable if the physical signs were predominantly unilateral. Mr. Tilley wondered how many cases of bronchiectasis, recurrent attacks of "bronchitis," "pneumonia," "tuberculosis without tubercle bacilli," and "chronic cough" had been caused by the presence of an overlooked foreign body. He had reported such cases in the *Lancet* (November 7th, 1908, and April 22nd, 1911).

3. It might be asked, "Could radiography be of any value in diagnosis when the foreign body was not opaque to the x rays?" It might be so, and in this way. If the chest was screened at the moment of full inspiration and again on deep expiration, a comparison of the two negatives would often show a striking difference between the lights and shadows produced by expansion and contraction of the lungs, and a lack of the normal difference between these phases in the affected lung. This should at least arouse the suspicion of the physician, and lead him to consider the advisability of direct tracheo-bronchoscopy.

4. The physical signs recorded by Dr. Batty Shaw, and especially his reference to the fact that the lower front part of the left lung "collapsed on inspiration," should in this case have suggested to the earlier medical attendants of the child that there probably was some definite obstruction in one of the main bronchial tubes on that side.

With regard to foreign bodies being overlooked in the oesophagus, Mr. Tilley had only time to say that they might easily be missed: (1) when they did not cause much or any difficulty in swallowing, (2) when they were sufficiently large and of such a shape as to cause more difficulty of breathing than of swallowing, and hence were liable to mislead the physician as to the seat of

trouble, (3) cough might be produced by an oesophageal obstruction causing mucus to overflow into the larynx, and possibly only in this way, (4) an experienced endoscopist had often failed to find the foreign body when it had been in the cervical portion of the gullet because, if the head of the recumbent patient was overextended, the end of the tube would pass in front of and then beyond the obstruction. (A two shilling piece in his collection of foreign bodies had been missed in this way.) To obviate this possibility the head of the patient should be well flexed as soon as the end of the tube had passed beyond the cricoid narrowing into the upper end of the gullet.

Mr. F. B. WAGGOTT (London), after paying his tribute to Professor Jackson's monumental achievement, maintained that no examination for suspected foreign body was complete without a skiagram taken in the right antero-lateral position. In order to emphasize the deep nature of direct antero-posterior skiagrams he passed one round which, though clear and well defined, showed absolutely no trace of abnormality in spite of the actual presence of an exceptionally massive piece of bone lodged behind the manubrium sterni (fragment of sheep's vertebra exhibited, measuring $1\frac{1}{2}$ by 1 by $\frac{4}{5}$ inches, swallowed in his soup by a soldier of 20, who recovered after oesophagotomy). In well developed adults lateral skiagrams of the chest were often obscure, but those taken in the right antero-lateral position revealed not only small and comparatively transparent foreign bodies, such as bone fragments lodged in the gullet and trachea, but also those which were completely transparent, such as masses of meat and vegetables, the outlines of which were defined by the ingestion of barium or bismuth salts. The same method was employed in diseases of the gullet and trachea.

Mr. D. A. CROW (Brighton) said they had listened with enjoyment to men of very great distinction, there did not therefore seem any great reason why a junior surgeon should speak, unless it was possible that a brief account of early difficulties while they were fresh in his memory might serve to encourage some of his contemporaries, and profitably remind his seniors of stumbling blocks which they had encountered and had now forgotten. In his own short experience the laryngologist had been overlooked more often than the foreign body, the foreign body had been recognized, even demonstrated by a radiogram, and then left untreated. In the fullness of time the laryngologist would be offered a full responsibility in these emergencies. Secondly, these foreign body cases were rare, and their very scarcity made them difficult. In a hospital practice which provided him with about 500 operations a year, Mr. Crow had only been asked to deal with 8 cases of foreign body in two and a half years (two coins, two bones, one piece of meat, one piece of glass, a safety-pin, and a cherry stone). These were successfully dealt with except the cherry-stone, for the removal of which there was no adequate equipment at the time. The patient died. Infrequency of cases was a test of the endoscopist's patience and resolution, for the maintenance of equipment in a state of perfection and oneself in a state of constant practice, with the slenderest chance of being called upon to deal with a case, demanded of the surgeon an almost quixotic attitude of mind, in addition to a reckless expenditure of money and energy. Yet this difficulty of the scarcity of cases was a little compensated by the frequency with which they were called upon to perform oesophagoscopy in cases of suspected malignancy. This was a procedure well worth while, both from the patient's point of view, in that a confident negative opinion would give him great ease of mind, and from the point of view of the surgeon, who had had one more opportunity of acquiring skill and confidence. Thus it happened that the passage of the instrument, so easy in theory and so difficult at the outset in practice, became after a while a matter neither of doubt nor anxious concern. Many times, less than a year ago, he had failed to get past the cricoid constriction. There was a stigma in the experience of the endoscopist when for fear of doing harm, he proceeded with altogether excessive gentleness, and unless that stage was passed through there did not seem hope for a high success in his

ultimate work. Another difficulty had been the impossibility of forming a permanent team in hospitals, where of necessity residents and nurses were not permanently appointed. Much energy was expended in searching for and training fresh helpers every few months. Though he was conscious that he did not express the general feeling in this country, he did not find it easy to escape from the logic of the permanent team and the concentration of cases amongst a few well chosen and well equipped men, when he reflected, first, on the scarcity of cases if widely distributed, and secondly, on the unnecessary reduplication of the mistakes which inevitably occurred in the early experience of anyone undertaking this difficult work, nor could he imagine anyone who had seen team work in Professor Jackson's clinic remaining unconvinced to this view. In the three years 1921 to 1923, 147 fatal cases of foreign body occurred in Great Britain. The small number of fatal cases testified to the efficiency of British endoscopy, but the fact that there were any fatal cases at all conveyed the impression that there might be a wasteful diffusion of experience among many men, not all of whom were able to use it with profit.

A scheme for the training and appointment of an endoscopist for each county would, at this moment, have a rather absurd air of impracticability about it, and would by no means recommend itself to any of them, but until the need was greatly appreciated, surely certain laryngologists should be looked to in each district as men specially qualified for endoscopy. The remainder would be only too glad to be relieved of work for which they might have no particular taste, but which they were forced into doing by an uneasy sense of duty. There in this country had also an apprehension of the narrowing effect of extreme specialism, but he was persuaded that narrowness of vision was a congenital, not an acquired, defect, and that the specialist who ended up with a narrow outlook had just the same narrow outlook before he became a specialist.

Mr G. Ewart Martin (Edinburgh) said that he felt it a great honour to be asked to follow in discussion his friend and teacher Dr Chevalier Jackson. They had listened with much enjoyment to his great exposition. His work on endoscopy had stimulated them in this country, and they could only hope to follow him in a poor way, and carry out his suggestions and methods. Mr Martin was sure, however, that there was less opportunity of using the bronchoscope here, probably because its uses were not generally taught or widely enough known. In the hospital clinics in this country a case with a foreign body in the bronchus was rarely seen—so rarely, in fact, that he was forced to believe that in affections of the lungs the possibility of there being a foreign body present was too often forgotten, and the x-ray and the bronchoscope were too infrequently used in diagnosis of such cases. He could not believe that in the States, especially in Pennsylvania, whence Dr Chevalier Jackson drew a great many of his cases, children were more apt to inhale foreign bodies than in this country. It might be so, but Mr Martin thought it was much more likely that there the foreign body was much more sought after.

In Edinburgh, in the last eighteen years, they had records of only eleven cases where foreign bodies in the lower air passages had been diagnosed, and removed or coughed up. However, there were other uses of the bronchoscope than for the diagnosis and removal of foreign bodies, and it was here that they got the experience the necessity for which Dr McCrue had impressed on them. During the last three years they had been interested in its use in the diagnosis and treatment of certain affections of the chest. That the bronchoscope could be used in diagnosis of conditions of the chest was not fully recognized. The diagnosis of bladder and renal diseases was not completed until the cystoscope had been passed and an interior view of the bladder gained, along with the ureteral openings. Similarly, in obscure conditions of the chest, the bronchoscope should be employed to obtain a view of the inside of the bronchi and the openings of the smaller bronchioles. They had been using it for diagnostic purposes, especially in a Ministry of Pensions Hospital, among cases suffering from chronic chest affections many of them following the inhalation of

poison gas. It had been very interesting to note the physician's difficulty in coming to a definite diagnosis in these cases. Among cases diagnosed as bronchitis following gassing, no infection of the bronchi had been found, but there was present a very marked lower tracheitis. In others diagnosed as bronchiectasis there was found a simple chronic bronchitis with peribronchial thickening, the bronchi being practically immobile. Most interesting still, in the bronchoscope they had found a means of treating bronchiectasis, and very satisfactory results had been obtained by lavage of the bronchiectatic cavities through the bronchoscope. Mr Martin had been using the aspiration method suggested by Dr Chevalier Jackson, with the addition of boric lavage, passing the suction bronchoscope down to the mouth of the cavity, through this a two-way cannula was passed into the cavity, aspirating with the suction pump. After that, boric solution was injected through the second cannula, and the cavity then washed out. In some of the cases he had finished by painting the cavity with absolute alcohol. By this means there was set up a slight irritation of the cavity walls which tended to their adhesion. At the same time a spasm of coughing was set up, and this ensured that no purulent secretion was left above in the bronchus. Mr Martin gave a brief summary of a few cases.

Case 1—A D, a male with a history of definite bronchiectasis, coughing, and vomiting after food. There was a fusiform dilatation of the left posterior small bronchus extending for about 1½ inches, and 1 inch in diameter. About 2½ ounces of pus were sucked out with the first lavage. This was repeated a month later and again on four separate occasions with an interval of a month to six weeks between the treatments. The patient was fit to return to work and had put on 3½ st. The cavity was practically reduced to less than an inch in size and the cough had disappeared.

Case 2—J R, aged 24, admitted to hospital with bronchiectasis following pneumonia. Here again the left posterior bronchus was affected. There was a small spindle-shaped cavity washed out, which bled freely. Lavage was carried out on four occasions between the first and second occasions there was an interval of three weeks between the second and third occasions an interval of five weeks and then an interval of one month between the last two occasions. The cavity was very much reduced in size. There was still some cough and sputum but no odour.

Case 3—Miss G. had a ten years history of bronchiectasis following the inhalation of a tooth. On bronchoscopy there was seen a large cavity on the right side fairly far out. No signs of a tooth could be found nor was there any sign in a previous radio gram. Lavage had been carried out on six occasions at varying intervals usually of three weeks to a month. There was now practically no fetor from her breath, no sputum and she had put on weight and felt very comfortable. Unfortunately in this case after the last two treatments though the cavity had been found to be very much reduced in size, there had been a good deal of bleeding and haemorrhage following the lavage, rather alarming to the patient.

Case 4—G N, aged 50, admitted with left sided bronchiectasis. A bronchoscope was passed down to the division of the small bronchi. There was no coughing up of pus until this was reached. The mouth of the posterior small bronchus was poulticed and on passing lower there was an immediate gush of very foul pus. The cavity was then distinguished and washed out with boric solution. The lavage was repeated on three occasions with an interval of three weeks between the first and second lavages and a month between the last two. On the last occasion the cavity could not be distinguished and there was no pus or sputum. Two months later unfortunately when at work the patient developed pneumonia on the right side from which he died but curiously enough there was no extension of the pneumonia to the previously affected side and no coughing up of pus during the pneumonia.

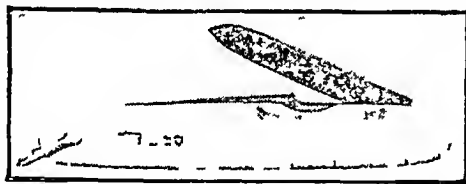
Case 5—A boy aged 17 on examination showed the right side of the chest completely dull. The x-ray examination showed complete dullness of the right side. Various attempts had been made to tap the chest by needling all failing. The case was diagnosed as a lung abscess. With suction bronchoscopy the chest was quite easily emptied about 6 ounces of pus being drawn off but no definite cavity formation could be made out owing to the congestion of the whole of the right bronchus. The boy was better next day but the improvement did not continue. An external operation was then suggested as it was thought that with the bronchoscope we could not hope to be successful. The boy unfortunately collapsed during the anaesthetic before the external operation.

Altogether Mr Martin had had the opportunity of treating 14 cases of bronchiectasis. Of these 1 was a definite failure, 2 showed very little improvement and he did not continue with the treatment beyond the second time, 4 cleared up completely, 2 were clearing up and would probably only need one or two aspirations; the others were at present under treatment and showing improvement. He

had found that between the first and second lavages an interval of only two or three weeks should elapse, between the second and third lavages an interval of three weeks to a month, and after that an interval of one month. Bronchial lavage was preferably carried out under a local anæsthetic, the pharynx and epiglottis being sprayed with less than 1 ccm. of a 10 per cent solution of cocaine (in children 5 per cent). Under a general anæsthetic bronchial lavage had been found difficult and at times a rather alarming, and he did not think it advisable. In one of the later cases, a child of 12, he tried the second lavage under a general anæsthetic, the previous lavage having been done under local anæsthesia, he was very much happier with the local anæsthetic than with the general anæsthetic. The initial bout of coughing brought up a large amount of pus which was inhaled, and the condition and colour of the patient gave rise to continual alarm. In this form of treatment there was a hope of benefiting those bronchiectatic cases which in the past had gone on for long periods, a nuisance to themselves and to their friends, in their continual coughing and unpleasant breath. The possibility, of course, of a foreign body being present should never be overlooked, for this, more often than not, was the origin of the bronchiectasis. With the use of a distal lighted bronchoscope, and the examination so easily made, a means was offered of diagnosing and treating conditions of the chest which in the past were left untreated and only theoretically diagnosed.

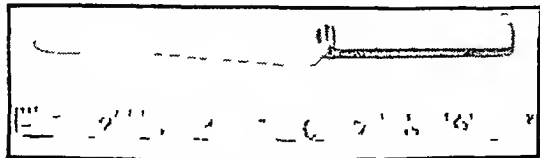
Mr MUSGRAVE WOODMAN (Birmingham) described two cases which came under the category of overlooked foreign bodies in the oesophagus, and showed lantern slides illustrating them.

Case 1—A boy, aged 16, was admitted on the medial side complaining of vomiting and pain in the chest. No history of the ingestion of a foreign body was given (or asked for). The case presented some peculiar features and an x-ray examination revealed



the presence of an open penknife in the gullet. The sharp end of the blade was pointing downwards and removal was easy. Had the point presented upwards it would have been necessary either to close the knife *in situ* or to smother the sharp end of the blade with forceps.

Case 2—A woman, aged 23, was confined. Six weeks later she was removed to hospital and admitted with a diagnosis of post partum meningitis. She had a high temperature was conscious but in great pain, the outstanding feature of her case was intense rigidity of the head and neck. When the history was elicited she admitted having swallowed a large poultry knife fourteen days



previously. This was shown to be present on x-ray examination and appeared to be in the mid-thoracic region of the oesophagus. Under local anæsthesia a Jackson's tube was inserted rapidly down the oesophagus, which appeared to be empty. On retracing the route a small slit-like opening was found in the posterior wall of the pharynx immediately above the entrance to the oesophagus. The tube was then passed through this slit and entered at once a connective tissue zone full of pus and gangrenous granulations. It was passed downwards into the mediastinum and soon wandered in a maze of vessels in which localization was difficult or impossible. But no knife was found. An external incision had to be made and a gush of air indicated that the pleural sac was open. Fingers were inserted through the slit and the handle of the knife felt and removed. The patient subsequently died. The knife had entered the pleural sac near the apex, grazed the side of the lung and its point had entered the diaphragm. The striking point in this case was that in a moment of insanity the patient had

attempted suicide and, failing, had made no mention of the fact to her friends and she had actually wallowed about for fourteen days with the knife *in situ*.

Sir JAMES DUNDAS GRANT (London) said that among the foreign bodies with which he had had to deal three might certainly claim to have been overlooked—one for a year, another for twenty weeks, and a third for over eight months. The first patient had suffered from cough and fetid expectoration for about a year. Dr Perkins found dilatation of a bronchial tube, and a radioscopic examination revealed a safety-pin, which was extracted by low bronchoscopy. In the second a rabbit bone was supposed to have been swallowed. There was severe cough and copious expectoration of sweet offensive odour and of the colour at times of raspberry sauce. It was only after twenty weeks that he presented himself, and the x-rays showed an opaque spot at the level of the fourth intercostal space anteriorly (and of the eighth rib posteriorly) suggestive of a foreign body. He had already developed clubbing of the fingers. By superior bronchoscopy Sir James Dundas Grant was able to see the foreign body and to extract it along with the bronchoscope by means of Killian's forceps. The third was a boy who was taken suddenly ill with vomiting, pain on the left side of the chest, and a good deal of cough which soon subsided. He recovered sufficiently to go to the country, but eight months later, after a period of comparative latency, was found by Dr Perkins to have collapse of the left lung. He referred the patient to Dr Melville for x-ray examination, who found at the level of the left bronchus a shadow characteristic of a collar-stud. The speaker was unable to introduce a sufficiently large tube through the larynx, but through a high tracheotomy opening he was able to remove the collar-stud by means of a short bronchoscope. He asked Professor Jackson whether he had been able to utilize lipiodol or bismuth in the detection of foreign bodies which were not opaque to the Roentgen rays. He congratulated Professor Jackson on the wonderful power of endurance displayed by him in this lecture demonstration, and assured him that he was probably the only one who could have invited the attention of the large audience as he had done.

Dr PATRICK WATSON-WILLIAMS (Bristol) said that while associating himself with the warm gratitude to Dr Chevalier Jackson, so eloquently expressed by Sir StClair Thomson, he did not propose to refer to his own relatively small experiences in bronchoscopy, but would touch on Dr Jackson's explanation of the different pulmonary symptoms in cases of (1) nearly complete bronchial occlusion—for example, by a per-nut or bean causing emphysematous dilatation of the corresponding lobes—and (2) complete bronchial occlusion resulting in atelectasis. These different results, due to such slight difference in obstruction, Dr Jackson explained, were due to dilatation of the bronchus on inspiration and contraction during expiration, which in incomplete obstruction allowed inspired air to enter but caused it to be locked in on expiration, while with complete obstruction no air could enter and what was beyond the occluding bean became absorbed, hence atelectasis. This dilatation and contraction of the bronchi, and its very important bearing on medicine and surgery in relation to chest affections, Dr Watson Williams had described and stressed in a paper in 1903,¹ and he believed it was the true explanation. But Dr McCrae had drawn attention to the value of unilateral deficiency of chest expansion as an indication of foreign body in a bronchus, which from its position or size was incapable of causing obstruction, and Dr Jackson's reference to the obstructing per-nut could not possibly apply in the conditions described by Dr McCrae, or afford the explanation of Dr McCrae's sign, which was of such import in cases of non-opaque non-obstructive foreign body in a bronchus. The speaker believed that the explanation lay in the neural inhibitory effect on the normal dilatation and contraction of the corresponding bronchus that the presence of the foreign body exercised, and that in such conditions dilatation on inspiration was below normal, and hence the corresponding lung was expanded less than that on the normal side, despite the absence of any obstruction.

¹ On the probable rhythmical contraction of the bronchial muscular coat as a factor in pulmonary disease. *Bristol Med Chir Journ* March, 1903.

BRONCHOSCOPY FOR DISEASE *

BY

CHEVALIER JACKSON, M D, So D, F A C S

In suppurative conditions due to foreign body abundant experience has demonstrated that no procedure other than bronchoscopy is worthy of a moment's consideration. In suppurative conditions due to causes other than foreign body the status of bronchoscopy is altogether different, it is merely an adjunct to the medical and surgical care of the case. Both the physician and the surgeon have found a bronchoscopic assistant of great usefulness in diagnosis and in treatment of certain classes of cases.

Pulmonary Malignancy

Malignant disease of the lung is a mild, and for a long time purely local, process. The bronchoscope is the only means by which an early diagnosis can be made with the certainty required by the surgeon. When the bronchoscope is resorted to early, a positive diagnosis of primary pulmonary malignancy enables the surgeon to cure by lobectomy. One of the most striking things in bronchoscopy for disease is the frequency with which the bronchoscopist finds unsuspected cancer in a patient treated for months, even years, for a supposed benign or tuberculous suppuration. We think every case of haemoptysis in which no tubercle bacilli can be found should be bronchoscopically examined for diagnosis.

Suppurative Pulmonary Disease not due to Foreign Body

Hippocrates and his predecessors preached drainage of suppurative areas. Throughout the centuries since the days of Hippocrates this has remained the unshaken foundation of all surgery of suppurative disease. The only modern thing is the discovery of the feasibility of drainage through the mouth. The question therefore is, How efficiently can we drain suppurative areas in the lung with the bronchoscope? So far as experience up to the present is an indication we may answer. In a few cases it is hopelessly inefficient, in other cases curatively efficient, in most cases, stagnation is prevented, the odour disappears, and the general and local conditions improve. Until 10,000 cases small furnish data for analysis it will be impossible to classify cases beforehand as to indications for bronchoscopy. Of bronchoscopy for suppurative disease of other than foreign body origin we can only say positively that we can safely and successfully combat stagnation in the bronchi. It becomes a question, then, of how great a factor endobronchial stagnation is in the perpetuation of pulmonary suppuration.

Let us consider for a moment the normal physiological mechanism for the prevention of stagnation of any excess of secretion in the bronchi, large and small. There are three mechanical factors—namely, (1) the "squeeze" of thoracic compression of the lung in cough, (2) the cough blast, (3) ciliary action. Upon the efficient and co-operative activity of these three factors drainage of the human lung depends. A chain is no stronger than its weakest link, and the weakest of the three links in this chain is the ciliary link. It is not at all certain that the ciliary link is the weakest under normal or mildly pathological conditions—in fact, my personal opinion is that it is the most efficient of the three—but I am equally convinced that the ciliary link is the first to weaken and break down in the presence of gross inflammatory changes in the mucosa of bronchi, large and small.

To be convinced of these two statements one has only to see the stream of pus distributed along the posterior wall of the bronchi in recent suppurative conditions of mild degree, evidently an upward flowing stream, and to compare it with the stagnant pool or adherent patch of stale or foul pus in chronic conditions. Considering the structural delicacy of the cilia it is logical to suppose—and the supposition is supported by histological studies—that violent or long-continued inflammatory processes destroy the cilia or impair their activity in the area affected. Then enters

another factor to impair ciliary activity—namely, obstruction due to inflammatory swelling of the mucosa, which, as all bronchoscopists have seen, objectively obliterates the smaller bronchi. Still another factor to impair ciliary efficiency appears if the inflammatory process continues and the already impaired ciliary action is not aided—namely, the development of granulations. The subjacent impaired, or even unimpaired, cilia, if such exist, cannot do much in the way of forcing pus through a bronchus whose lumen is completely occluded with granulations dovetailing together in their mutual approach from opposite positions in the bronchial wall. And, moreover, it must be noted that granulations have no cilia. Hence, a granulating area creates a gap in the continuity of ciliary effort. A ciliun, like an individual in the line of a bucket brigade, can pass on only what is received from the adjoining co-worker. The unreplaced dropping out of a number of individuals in the line stops the transmission. This in the bronchi means stagnation, and we may say that stagnation is one of the chief factors in the development of pulmonary abscess and of bronchiectasis.

Bronchoscopic Aspiration

The pathological considerations referred to in the foregoing paragraphs give us an explanation of the remarkable results obtained, clinically, from bronchoscopic aspiration in certain cases. These results have amply justified the statement that the bronchoscope is the most efficient means yet discovered of combating stagnation of pus in the bronchi. The larger bronchi are quickly emptied with the aspirator. The "squeeze" of the thoracic compression of the lung during cough forces up the pus from the bronchioles and obstructed smaller bronchi, and the multiple minute pockets, into the larger bronchi, whence the aspirator can readily remove the pus.

Multiple foci of suppuration deserve separate consideration. Usually the separate foci can be reached in turn by the aspirator. If not, however, they may be fairly well drained by the squeezing due to the compression of the whole lung by the cough. This mechanism is endoscopically obvious during bronchoscopy in suppurative cases. The visible pus in the larger bronchi is removed by aspiration, and the bronchi are for a moment visibly clear of pus. The next cough forces up a quantity of pus from certain bronchi or fistulae. This in turn is aspirated. The next cough forces up more pus, but the quantity is less. This is aspirated, and is replaced by a still less quantity. This cycle is repeated until all the communicating cavities and fistulae are clear.

Summarizing, it may be stated that in any case of suppurative focus communicating with a bronchus, and in which the surgeon and the internist deem external operation not strongly indicated, bronchoscopic aspiration should be used to supplement medical care. A very satisfactory percentage of such cases will be cured. The chief contraindications to bronchoscopy are (1) a moribund condition of the patient, (2) imminent rupture of the focus into the pleura.

Suppurative Foci not Communicating with a Bronchus—These can be penetrated with the bronchoscope if deemed advisable, but the wisdom of doing so has not yet been demonstrated. If for any reason the surgeon deems external operation inadvisable, bronchoscopic penetration may be considered. In such cases spontaneous rupture into the bronchus or the pleura usually occurs sooner or later, and delay in external operation is very rarely advisable.

EVOLUTIONARY FACTORS IN THE PRODUCTION OF PHARYNGEAL DIVERTICULA

BY

V E NEGUS, M S, F R C S

(Abstract)

MR NEGUS commenced by describing the site of exit of the pouches under consideration as between the lowest circular and adjacent oblique fibres of the inferior constrictor muscle of the pharynx. He referred to the importance of longitudinal muscle fibres in pulling the pharynx and oesophagus

* Abstract of chalk talk and cinema demonstration.

over a bolus of food, in much the same way as that in which a snake appears to creep forward over a rabbit when swallowing it.

The obstructing action of the powerful and tonically contracted crico-pharyngeus muscle was pointed out, and the function of the muscle was described as one related to the necessity for prevention of an entrance into the oesophagus during inspiration, in order to ensure its passage into the lungs. This function was said to be most important in those animals with a narrow laryngeal aperture and in those which close the glottis when the thorax needs to be fixed during independent use of the fore limbs.

The function of the cartilages of Santorini was given as that of suspension of the oesophagus, in such a way that when the larynx is closed for deglutition the oesophagus is opened in a funnel-like manner.

The absence in man of longitudinal muscle fibres in the posterior part of the pharynx at its lower end was compared with the condition in various animals.

The role of the posterior palatine folds was spoken of in relation to olfaction and deglutition, especially with regard to direction of food into the mouth of the oesophagus, and it was pointed out that keen-scented animals have strong folds in close relation to the larynx, and that most herbivorous species have a complete girdle called the arcus palato-pharyngeus, made up of these palatine folds united posteriorly.

It was shown how descent of the larynx in the neck of man for various reasons has led to fanning out of the inferior constrictor muscle.

The reasons why pharyngeal diverticula do not occur in various types of animals was compared with the condition of man, in whom the predisposing factors were given as these. First, descent of the larynx and fanning out of the inferior constrictor muscle, associated with absence of longitudinal fibres in the lower pharynx posteriorly, so that during swallowing upward pull of various muscles and downward pull of the oesophagus cause stretching in the position where a diverticulum arises. Secondly, lack of relaxation of the crico-pharyngeus muscle because of delayed passage of an excessively large bolus. Thirdly, absence of directing posterior palatine folds because of the degeneration of the olfactory sense and the lack of necessity for combined respiration and deglutition. And lastly, attachment of the oesophagus in part to the cricoid cartilage, and not entirely to the cartilages of Santorini, with the result that funnel-like opening is not efficient.

[The paper will be reported in full in the *Journal of Laryngology and Otology*]

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

ACUTE APPENDICITIS IN AN OCTOGENARIAN

Cases of appendicitis in patients over 80 years of age must be rare.

Mrs P., aged 86, suffered from acute abdominal pain late one afternoon. Dr Owen Foulkes Evans was called in and suspected acute appendicitis, the temperature was slightly elevated. Next day she was worse, and I saw her in consultation and found great abdominal tenderness in the right iliac fossa and rigidity, the temperature was 100° F. It was now definitely a case of rapid acute appendicitis. She was operated upon twenty-two hours from the commencement of the symptoms, and we found, immediately under the parietal peritoneum, a large, green, distended appendix showing a pale area at one spot, the appendix was evidently on the point of bursting. On removal it was found to be full of stinking material, and the whole was gangrenous. There was some turbid material in the pelvis. She made an uninterrupted recovery. The wound was not drained.

Liverpool.

W. THELWALL THOMAS

RECTAL INJECTION OF TARTAR EMETIC FOR BILHARZIASIS

Since reading, at the time, the article by H. F. Wilson of Livingstonia, Nyasaland, published in the *BRITISH MEDICAL JOURNAL* of January 28th, 1922 (p. 137), giving the results of his treatment of bilharziasis by rectal injections of tartar emetic, I have, since that date, and in consequence of reading that article, used exclusively that treatment.

I commenced, as he did, with graduated doses, but ultimately came to the conclusion that a single dose, large enough to destroy the parasite, was the only rational treatment for this disease.

I have given as much as 19 grains in one dose, without unpleasant effect. But this was not given as a first dose, neither was it given to a case of bilharziasis. I have not given a larger dose than this, because 19 grains is so much in excess of the minimum dose universally lethal to the parasite that to experiment with larger doses seems useless. The last case I treated, a native boy of about 17, had but one injection, of under 6 grains. After this injection the ova disappeared.

I dissolved the weighed dose of tartar emetic in four ounces of warm water, and injected with a four ounce all-metal ear syringe, over whose metal nozzle had been drawn the soft rubber conical end-piece shown in Down Brothers' catalogue, as No. 1683, on p. 389. With vaseline applied to the anal canal, the insertion of this soft rubber end-piece is easy. I think half an hour in the recumbent position, after the injection, is sufficient, and have been indifferent as to whether the bowel was emptied previously or not.

The simplicity, safety, convenience, and efficiency of the rectal administration of tartar emetic appear to make its intravenous injection in bilharziasis no longer a justifiable treatment, and they further appear to open up new possibilities in the direction of eliminating human schistosomiasis from any district. Whether the routine injections towards that end should be given every seventy days, or at some other interval, will have to be decided by further experiment.

J. BARCROFT ANDERSON, M.D., D.P.H.

London.

TORSION OF A LARGE DERMOID OVARIAN TUMOUR

THERE were some circumstances in the following unusual case of a dermoid ovarian tumour which are of interest.

A single woman, aged 39, a cook, was exceptionally uncommunicative towards her mother and sisters, and never discussed her health with them. She resolutely avoided medical advice.

When first seen at 9 p.m. on June 19th the abdomen was enormously distended and she was acutely ill. She said that for the last ten years she had noted a fullness and swelling of the abdomen which had gradually increased, but although she had lost weight recently she had carried on her work and even cycled up to seven days before.

On June 10th, preparatory to a day's excursion in a car she said she had laced her corsets extra tightly, and that she had been jolted about because she had been seated on the floor of the car on the return journey. She felt very ill that evening and suffered thereafter from severe vomiting and diarrhoea coupled with rapidly increasing abdominal distension. It seemed almost incredible that the abdominal wall could stand the tension existing, the temperature was 102° F. and the pulse rapid. She was immediately transferred to Cirencester Hospital, where she was operated on at 11 p.m.

The tumour was exposed through a left paramedian incision and was found to be markedly adherent to the parietal peritoneum. The wall of the tumour was a quarter of an inch thick and densely adherent to it were most of the coils of the small intestine and great omentum. An incision released approximately 4 quarts of yellow pulaceous fluid. The tumour arose from the left ovary and had undergone torsion; it was removed. The patient stood the operation well but died four days later.

The tumour was exceptionally big, weighing, after the loss of the 4 quarts of fluid, 18 lb., which makes the total weight approximately 25 lb. It was multilocular and contained masses of yellow pulaceous material mixed with hairs, together with portions of bone, cartilage, and fibrous tissue.

The remarkable feature of the case was the small interference this huge tumour had produced and the way in which the patient had even cycled until seven days before the operation.

The rapidity of the final enlargement was another astonishing feature, and the provisional diagnosis when she was first seen, of an ovarian tumour with torsion of the pedicle causing oedema of the tumour, seems to be the best explanation of the chain of events.

J S ROBINSON, M B Dub, F R C S Ed,
Honorary Assistant Surgeon, Cheltenham
General Hospital

J H GROVE-WHITE, M D Dub,
Physician, Cirencester Hospital

Reports of Societies.

OSTEOPATHY, CHIROPRACTIC, AND MEDICINE

At a crowded meeting of the Medical Society of London on October 12th, Sir HOLBURN J. WARING was inducted in the chair of the society by his predecessor, Dr E M CALLENDER, and delivered his presidential address, taking for his subject "Osteopathy, chiropractic, and medicine." The address is printed in full at page 679. After a vote of thanks had been recorded, discussion was called for.

Sir STCLAIR THOMSON said that it was rather depressing to national pride to think that all these things seemed to arrive in England when they were dying out in their own country. It reminded him of what the Germans used to say, that Oxford was a place where German philosophy went when it died. These various cures led sometimes to confusing results, and he recalled a remark by Henry James, who, talking of the mind cure and the faith cure, explained that the difference between the two was that the mind cure required no faith, and the faith cure required no mind. The speaker told the story of a lady of the manor, a "Christian Scientist," who, meeting a little girl whose mother was ill, told her to tell her mother that she was not ill, but only thought she was. A few days later the lady met the child again, and the child, on being asked how her mother was, replied, "Please, ma'am, she thinks she's dead!" The president had suggested some methods of combating quackery, but the speaker feared that for his own part he was getting somewhat cynical. He called to mind the remark of Carlyle about the inhabitants of these islands, also a remark of Bishop Creighton, quoted by one speaker at the recent Church Congress, that although it might be true that the tiger and the ape in man had died, there was plenty of evidence that the donkey still survived. He had often wondered why these things were so popular in America and in this country, and apparently had no vogue in France or Italy, but in those Continental lands there were healing shrines and doubtless other forms of supposed cure which could claim remarkable results in functional disorders.

Dr DES VOEUX reminded the meeting that quacks had existed throughout the history of medicine. They would continue to exist, and he thought that as long as the medical profession could not cure all ailments quacks ought to exist. If they did any good they were a benefit to the public, and if they did any harm they were a benefit to the profession! When "bonesetters" first came in they "wiped the eyes" of many elect surgeons, and most medical men had experience of cases in which these persons had got rid of icks and pains and had cured people of their disabilities when the doctors had been unsuccessful. From what he had heard from his own patients the same thing was true of osteopaths by their manipulations they gave relief to reflex pains elsewhere. It would be most unwise for the profession to do anything to discourage this sort of irregular practice. He had known very many cases where such persons had done no good, but he had known very few cases where he could honestly say that they had done a great deal of harm, and at any rate it was a comfort to patients to feel that if the doctors could do nothing for them they could go to somebody else. There were people who had incurable cancers, and discovered some new flicker of hope by this recourse, and he did not think they should be discouraged. What he did dislike was quackery within the profession.

Dr E M CALLENDER did not agree. He had seen many sad cases in high positions in society. He knew of a case in which three children were allowed to die of tuberculous meningitis without any steps being taken to protect them from the disease other than "Christian Science" treatment. He had seen a family of children in a West End square treated by an osteopath for whooping-cough, and allowed to cough and vomit and lie awake at night with nothing done for them except the rubbing of their backs. One lady came to him to be treated for some other condition, and he noticed her cough, which was symptomatic of chronic bronchitis, but she told him that she did not want his treatment for that because she was being treated for it by an osteopath.

Mr J E H ROBERTS said that a few months ago he saw a case which had an interesting bearing on the discussion. It was that of a man who had had a bullet wound and other injuries in the war, and had suffered for some time from incomplete paraplegia, but recovered completely, and had had no ill effects for four or five years. At the end of that time he began work as a dustman, and on lifting the heavy bins got severe pain in the lumbar region. On x-ray examination it was quite evident from the lateral view that he had a subluxation of the second lumbar vertebra upon the third, the displacement forward being nearly half an inch, and he had bony changes in the articular processes. The bullet, which was lying harmlessly in the muscles, had nothing to do with the pain, but the bone displacement, the result of another injury, gave trouble when the man lifted heavy weights. With that kind of displacement, according to the theory of the osteopath, there should be compression of the nerves coming out from the intervertebral foramen, but the man had no pain at all from those nerves, nor did he develop appendicitis or carcinoma or any other fell disease. The speaker happened to meet an osteopath—a "D.O." of somewhere in America, who had also a British medical qualification—and said to him, "You say you can cure by osteopathy subluxation of the spine. Here is a condition which has been present for five years. Can you reduce it?"—and he showed him the x-ray photograph. "Oh," said the osteopath, "but that is a real subluxation! I should not advise you to touch that." It was very interesting to observe the attitude of the osteopath when confronted with a lesion which was demonstrable on an x-ray plate.

Mr WARREN LOW could not echo Dr des Voeux's eulogies, though he agreed that the profession should leave them alone. He did not think that a medical organization ought to take any notice of irregular practitioners, by prosecution or otherwise, but it was very necessary for medical men individually to keep clear of them, and it was a pity that any members of the profession should meet them, even occasionally, in consultation. Sir Holburn Waring's suggestion had been that some department of State should undertake the education of the public so that they might be possessed of sufficient knowledge of themselves to see through the claims of some of these persons. There was one group of cases in which sometimes the osteopath had his greatest successes—persons who had sustained some injury to the back and had complained of pain for a long time afterwards. The course of events depended a good deal upon the class of society to which such people belonged. If they belonged to the leisured class, with no financial interest in the continuance of their disability, they were cured quickly by the osteopath or got well of themselves. But the speaker had had to do with certain cases of men who got more or less of a living out of it, men who were perhaps hurt on the railway five years ago and had had pain ever since, and he had never yet found an osteopath who could cure them.

Dr E GRAHAM LITTLE, M P, said that the question of osteopathy would probably come up in the House of Commons quite soon as a consequence of the meeting held at the House six months ago. That meeting had been called by a number of members who were in favour of osteopathy, and was addressed by a qualified medical man who had for saken the ordinary practice of medicine for this new cult. All the medical members of Parliament attended the meeting, and after an hour's talk by the visitor each of them was allowed three or four minutes, after which they

were told that no further information from the medical point of view was required, and a resolution was carried. The ominous part of the business was the fact that it was the Ministry of Health which appeared to be most sympathetic to this movement in favour of osteopathy, and there was all the more need, therefore, for the medical profession to voice the opposition. He was in agreement to some extent, however, with Dr. des Voeux. There were cases in which the osteopath and the chiropractor, quite unwittingly, had done a considerable amount of good to the patient under their treatment, and occasional cases of this kind to some extent explained the remarkable vogue which these practices had acquired. The public had been severely blamed that evening by one speaker, but, after all, one should place oneself in the position of the patient who had been discouraged by the little that regular medicine could do in his case. He mentioned one case known to him of a man who had come from abroad to seek relief for a condition which affected his sight. He was sent in the first place to a neurologist, who examined him and said he could do nothing for him. Then he went to an oculist, who prescribed another pair of glasses which suited him less well than the pair he had been using. Finally he went to another neurologist who suggested an operation, but candidly explained that it might be of no use and might result in permanent disfigurement. The man paid the consulting fee of this neurologist, and forthwith put himself in the hands of a quack, who, by assiduous treatment, was at any rate making the man feel that he was getting better. The only success of what was called "bonesetting" should serve as a warning to the medical profession against taking too decidedly negative an attitude. In Parliament, where there was a feeling that jealousy on the part of the medical profession was confusing the issue, there would be quite a good deal of support for osteopaths.

Mr. HOLBURN WARRICK could not agree with Dr. des Voeux that irregular practitioners should be allowed. It was the duty of the Government to protect the citizens from fraud. With regard to Dr. Little's statement as to what had occurred in the House of Commons, he imagined that few members of the medical profession realized that there was really a definite proposal that osteopaths and chiropractors should be registered in this country. If this came about it would mean that there would be a considerable number of practically uneducated people placed in the position of treating all kinds of disease. In every State in America where the experiment had been tried, the so-called limitation of practice of the osteopath and the chiropractor had proved impossible to carry out. He was strongly of opinion that the frauds which would be possible here if osteopaths and chiropractors were licensed ought not to be permitted. It was a great pity if the Ministry of Health was the weak spot in the armour, but there was nothing to prevent the licensing bodies in the profession from discussing the question and deciding what measures ought to be taken. It would be disastrous if the osteopath and the chiropractor were licensed to practise.

DIFFICULTIES IN THE USE OF INSULIN

A discussion on "Difficulties in the use of insulin" took place in the Section of Therapeutics and Pharmacology of the Royal Society of Medicine on October 13th.

Dr. GEORGE GRAHAM, President of the Section, in opening the discussion, said that on a similar occasion in the Section two years ago the main concern of the speakers was to show that insulin was a very great discovery, and that it could be used with safety, provided reasonable care was taken. In the two years which had elapsed it had been shown conclusively that insulin was a very potent drug. Some patients who were now under treatment looked and felt so well that no one would suspect them of having any disease so long as the food they were avoiding at meal-times was not noticed. The great majority of patients, if not quite so well as this, were immeasurably better than before the discovery of insulin and only a small minority remained invalid. But although the general position was satisfactory many points of difficulty arose in the technique of treatment. Dr. Graham analysed the group of patients in whose treatment he had taken a share at St. Bartholomew's Hospital during the last two years. These had all

been in hospital previous to 1925, and afterwards attended the out-patient department, the great majority of them every two or four weeks. Of 86 patients treated with insulin, 68 were still under treatment and 18 had died. This number of deaths seemed large, but on analysis there was evidence that in 12 cases another disease was present, which probably precipitated death. Of one case, however, which died in hospital, he gave a long account, the case had to be regarded as one of progressive degeneration of the islets of Langerhans in spite of adequate doses of insulin, and there was a second case which, he suspected, died (at another hospital) from the same cause.

With regard to the maintenance of the fasting value of the blood sugar within normal limits, among the patients he had treated in hospital or nursing home so far there had been only two with whom it was impossible to attain this ideal. He expected these two cases to do badly afterwards, but actually they were both alive and fairly well two years after treatment was started. One woman whose blood sugar in the morning before the insulin injection was never less than 0.18 per cent now had a blood sugar of 0.25 per cent; she took 35 units of insulin a day, and ate a diet representing 1,000 calories. At first she gained weight very rapidly, but now maintained her weight, and was capable of doing her housework. These two cases notwithstanding, he still believed it to be a great advantage to the patient if the blood sugar could be maintained within normal limits, provided no discomfort was caused. He had watched many patients in the out-patient department develop high blood sugars in spite of treatment, and had been able to measure the decrease in tolerance by the increase in insulin requirements. It was, however, impossible to say for certain that the downward progress would have been more rapid if the blood sugar had been allowed to remain high. He had tried in all his cases to keep the morning value of the blood sugar—that was, after an ordinary breakfast—below 0.13 per cent. If a patient receiving only one dose of insulin had a raised blood sugar in the morning the dose was increased by 2 units so as to avoid two injections a day, but if this increase caused signs of overdose at midday without lowering the morning blood sugar a second daily dose was clearly required. Originally it was advised that the evening dose should be smaller than the morning on account of the danger of hypoglycemia at night, but he had been forced of late to increase the evening dose in certain cases considerably above the morning dose. A case which suggested a smouldering tuberculous infection dealt with the increased evening dose, patients with tuberculosis usually developed pyrexia in the evening, so that the high evening dose might have been required to counteract the effect of the pyrexia. With minor infections which might cause a raised blood sugar in a diabetic patient, his plan was to increase the insulin by 1, 2, or 3 units as soon as the illness started. On any signs of overdose the insulin was reduced. If the infection was severe the urine should be collected as far as possible in three-hourly periods and tested for sugar, and the dose of insulin might have to be very largely increased. If, for example, the patient developed a carbuncle the actual dose of insulin might have to be over 200 units a day. The danger in these cases was, not in giving too much, but in giving too little. It required courage to increase the dose from 20 units to 200, but it could be done as the doctor gained knowledge and confidence in insulin treatment.

Adjustments of Insulin Dosage to Exercise

Dr. R. D. LAWRENCE referred to the changes in the dose of insulin rendered necessary by increased activity on the part of the patient. One of his cases was a gardener who periods of activity varied. He had been on constant diet for one and a half years, and had had 10 units of insulin in the morning and 6 in the evening. In the spring, when very busy with his work, troublesome symptoms of hypoglycemia showed themselves, and the insulin accordingly was reduced until 6 units once a day sufficed to keep his blood sugar at the same level as the two doses a day had done before. But on entering a rest period his blood sugar began to mount up, and soon he was passing sugar most of the day. His insulin was then raised to 8 units in the morning and 5 in the evening, and this kept him at the right level, but on

resuming his former activity he got hypoglycemia, and the insulin had to be reduced again. Another patient who ordinarily led a sedentary life played tennis at the weekend, and on a dose of 16 units of insulin in the morning and 12 at night, which kept him right during the week, he got serious symptoms of hypoglycemia within a few hours after his game. Eight units maintained him in the same condition when engaging in this exercise as 16 units had done when he was leading his sedentary life. This man went on a vigorous holiday, and, instead of lowering his insulin, raised his diet, doubling his carbohydrates, and was sugar-free all the time, and even got occasional hypoglycemia. To increase the food during activity rather than to reduce the insulin would be the more physiological way of proceeding, but it was rather complicated. With regard to infections, among the forty or fifty patients who came to him regularly at the hospital he had not had a case of serious infection, and had not noticed that colds in the head, save in one case, appreciably caused glycosuria.

Dr E P POTLON said he had found that the mild cases of diabetes did better with small doses of insulin than with dieting alone. He described one such case of long standing in which, before the patient suffered from giddiness on and this had disappeared when he was put on small doses of insulin. In very wasted patients there was a great danger in treating with insulin unless a large amount of carbohydrate was given. He also described one curious case which dated from the pre-insulin days. The disease started as a pancreatitis, with jaundice, and a mild diabetes followed. The patient was eventually treated with insulin, and the sugar tolerance curve remained more or less stationary. There was now, however, some slight degree of deterioration, and this patient had always the particular symptom of pain in the epigastrium and mild attacks of jaundice. Possibly, dissection of the gall bladder might be attempted, but it seemed a drastic thing to open it on these rather slight indications.

Canadian Experience

Dr C H BEST of Toronto, who was associated with Dr Banting in the research on insulin, spoke at the invitation of the President. He said that it was very interesting to learn that the problems confronting the clinicians in England with regard to insulin were very much the same as those which confronted the clinicians in Canada. Cases which came regularly to the out-patient department seemed to get along comfortably, the trouble arose in cases which were seen only at irregular intervals. To overcome this difficulty the General Hospital at Toronto had developed a special branch of its social service department for keeping in closer touch with these patients. As Dr Graham had said, the occurrence of infection in these diabetic cases under treatment was the great bugbear of the clinician, and there did not seem to be any particular way of overcoming it save by early recognition of the infection and increasing the dose of insulin or adjusting the dietetic treatment. In the cases in Toronto where there had been no infectious progress had been very smooth. It might be of interest to state that the first patient who ever received insulin—a lad named Thompson, on January 11th, 1922—was now a very healthy young man, and to all appearance perfectly normal. The experiences described by Dr Lawrence were interesting, and in line with what one would expect from the increasing tolerance of diabetics after exercise, as noticed even before the days of insulin.

Use of Insulin for Child Diabetics

Dr G A HARRISON spoke of difficulties in the use of insulin in the case of children. In children it was essential to give a sufficient number of calories to permit of growth, and the diets, therefore, were relatively large. On account of these high diets in children the difficulties of insulin treatment were perhaps greater than those encountered among adults. Some American writers appeared to have come to the conclusion that if the daily requirement of insulin was 10 units it was a safe working rule to give one injection only, but if it exceeded 10 units more than one injection should be given. This might serve as a rough and ready rule, but it should not be followed out to an extreme

In severe cases requiring large doses of insulin these writers favoured the giving of three or four injections, usually one before each of the principal meals, and another at midnight. In children this would be a very serious undertaking for those who had supervision of them. It had to be remembered that very often the moment of injection was one of terror for the child, also the skin became extremely hard with multiple injections. The speaker tried to work with a maximum of two injections in twenty-four hours. In very severe cases he had failed to get the blood sugar normal for the whole twenty-four hours, the patients tending usually to have a rise in blood sugar after the night's rest. Inter-current sepsis was apt to be very sudden and serious in children, and to cause a great deal of worry to the family doctor. The doctor heard, perhaps, that the child was not taking the prescribed diet, and, thinking of the dangers of hypoglycemia, he stopped the insulin entirely, but here he was in a difficult position unless he had access to frequent blood sugar estimations. One would assume that reduction of diet required a reduction in insulin, but the patient suffering from an acute illness might have a considerable carbohydrate store from which to draw. If the requirement of insulin had exceeded 10 units the insulin should never be omitted completely, even if the patient was taking no food at all. Dr Harrison suggested that milk be substituted for the prescribed diet, and that if the dose of insulin had been 10 units it should be reduced to 5, and if it had exceeded 10 units it should be reduced to two-thirds. In these acute cases he could not advise the complete omission of insulin.

Experiments on Blood Sugar in Animals

Dr P J CAMBRIDGE said that it appeared to have been taken for granted that all forms of diabetes were the same. His experience was that the condition met with in children was distinct in etiology and perhaps had a distinct origin. Some recent experimental work in which he had participated was of interest in this connexion. It had shown that a high blood sugar was of a Mendelian recessive character. If an animal with high blood sugar were mated with a normal blood-sugar animal the progeny would have normal blood sugar, but on breeding from these a proportion of high blood sugars and normal blood sugars in accordance with the Mendelian theory would be found. The reason why a high blood sugar was a Mendelian recessive was probably that the level of the blood sugar depended on a number of factors. He, with others, had proved by chemical experiments that insulin and adrenaline had opposite effects upon the activity of certain sugar ferments, whereas insulin and pituitrin had not opposite effects, but neutralized each other chemically. If a patient with a normal pituitary were given constantly excessive doses of insulin his pituitary gland would probably be exhausted, and a condition of diabetes insipidus in a mild form would be set up. Experience of elderly diabetics showed that the majority had a hyperactive thyroid. There was no direct antagonism, apparently, between the thyroid and insulin, but thyroid did activate adrenaline, and therefore when there was a hyperactive thyroid a force opposed in its activity to insulin was increased. If a patient with such a thyroid were given sufficient insulin to make him sugar-free, and then as a result of diet and careful treatment had his thyroid activity diminished, the insulin hitherto given without difficulty would be found to be an overdose.

PERUTERINE INSUFFLATION OF FALLOPIAN TUBES IN STERILITY

At a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine, held on October 1st, the President, Mr T G STEVENS, in the chair, a paper was read by Dr I C RUBIN of New York on the diagnostic value and therapeutic application of peritoneal insufflation of the Fallopian tubes in cases of sterility.

Dr Rubin said that he had begun the search for a non-operative method of determining tubal patency in 1914 by animal experiments. Collargol was injected through the uterus into the Fallopian tubes, and radiographs were

prepared. The use of gas instead of opaque solutions commenced in November, 1919, at the Mount Sinai Hospital, New York. Oxygen was allowed to pass into the peritoneal cavity of a patient who came to the hospital for the relief of sterility. The abdomen was seen to swell, the patient complained of distension and epigastric pain, in the upright position pain was also felt in the shoulders and in the diaphragmatic region, and general pneumoperitoneum was shown by x-ray plates. The quantity of gas introduced at this first experiment was estimated to be about two litres, and it was realized that less gas must be used, some manometric control instituted, and some method devised for measuring the volume of gas. With the aid of the siphon volumeter and a mercury spring-type manometer, a small degree of pneumoperitoneum was found to be easily demonstrable by fluoroscopy. Carbon dioxide gas was substituted for oxygen, since it was very rapidly absorbed from the peritoneal cavity, and, when used in amounts of 150 ccm. or less, the phenic irritation and shoulder pains were only momentary. The test thus became simple, it required only one or two minutes to perform, and the patient could leave after five or ten minutes in perfect comfort. After describing the apparatus and technique employed, Dr. Rubin proceeded to explain the interpretation of the results. When the Fallopian tubes were normal the mercury rose to 40, 60, 80, or even 100 mm., and dropped 10 to 40 points, with frequent fluctuations, until the cannula was withdrawn. Usually there was slight pain referable to the uterus, lateral pain was seldom felt. The fluctuations in pressure were due to tubal peristalsis. When, however, one Fallopian tube was closed or stenosed and the other was normal, the patient complained of pain on the side of the obstruction, with both tubes stenosed or closed the pain was bilateral. This pain, due to distension of the tubes on the proximal side of the point of obstruction, occurred whenever there was obstruction at any point beyond the isthmus. When the manometer rose to 200 mm. of mercury, and uterine colic, or pain referable to the suprapubic area, was felt, but no pain on either side, the closure was situated at the intramural portion of the tubes, or very near the isthmus of each side. The high pressure required to overcome the organic obstruction or stenosis was distinguishable from that due to tubal spasm. As contraindications and dangers, Dr. Rubin cited pelvic or genital suppuration, pelvic tenderness, inflammatory masses, and pyrexia. At the time of insufflation the patient must not be menstruating, nor bleeding from other causes, nor should the test be performed in the presence of serious cardiac, renal, pulmonary, or great general metabolic disturbance. There was practically no danger in the method when properly performed, and untoward effects only followed in the infrequent instance of chronic tubal suppuration where the fibrinated end was still open, the pus was, however, usually innocuous.

Passing to the therapeutic application of tubal insufflation, Dr. Rubin stated that though up to the present the collected data were inadequate, yet in one series of 1,000 consecutive insufflations 95 cases of pregnancy had been voluntarily reported, and in another series of 763 patients 52 pregnancies had followed. He believed that the test could be considered of definite value when a woman, sterile for a previous period of five years or more, became pregnant during the month after peruterine insufflation. He considered that this procedure aided the sterile woman by establishing patency of the genital tract from the external os to the abdominal opening of the Fallopian tubes, by the expulsion of a mucous plug, not visible at the external os, but occupying the deeper portion of the cervical canal, by straightening out tortuous tubes, dislodging a mucous impaction from a narrow to a wider portion of the tube, and by separating adhesions at the fibrinated ends, and by the mental impression on the patient. He concluded with a list of indications for peruterine insufflation. This included primary sterility, primary sterility in which the patient had passed through a gonorrhoeal pelvic infection, sterility following a pelvic exudate or abscess complicating a puerperium or abortion, primary sterility after peritonitis of appendicular origin, one-child sterility without definite history of pelvic infection after the removal of one whole tube and part of another for hydrosalpinx or pyosalpinx,

and as a therapeutic measure to eliminate the tubal factor in sterility.

Dr. T. W. EDEN said he had used the apparatus introduced into this country by Currier of Montreal, solely as a method of diagnosis, and he did not know that therapeutic effects were claimed for it until listening to Dr. Rubin's paper. He thought that an extensive use of the apparatus by a number of different observers should be made before accepting the view that the passage of gas through the uterus and tubes could clear away organic obstructions which were the cause of sterility. He agreed that a complete block could be registered by this instrument even when the tubes were patent. He had recently had two such patients, both having been operated upon immediately after the test was made. In one the block was apparently due to kinking of the tube from retroversion, in the other the only morbid condition found was a small interstitial fibroid in the fundus which might have so distorted the uterine cavity as to prevent the gas from entering the tubes even under considerable pressure.

Mr. S. FOSSDIKE said that inflation of the uterus and tubes had become a routine procedure in the diagnosis of female sterility, and the question was which was the best technique. Dr. Rubin, with some justification, considered his apparatus the best, condemning the syringe and bulb methods on account of possible fallacies due to a faulty bulb or leaking valve. Mr. Fossdike had been using the bulb method for some time, and found it sufficiently reliable to justify him in continuing with it, considering its simplicity. In about 5 per cent. of cases air failed to pass through the tubes where it was found that they were patent on subsequent examination with hysterosalpinx. The greatest drawback to Dr. Rubin's method was that he relied upon the x-ray diagnosis of pneumoperitoneum. In Mr. Fossdike's method the patient was in the Trendelenburg position, and the vagina was filled with saline solution to indicate any escape of air. The pubic area formed the dome of the abdomen, and the diagnosis was established by auscultation over the abdominal aorta where the air bubbles could be heard escaping, and by percussion over the suprapubic area where an increasing note of tympanites proved the pneumoperitoneum. Inflation alone was insufficient, and it was necessary to carry the investigation further by means of opaque substances, if inflation was negative nothing was known as to the site of obstruction, which knowledge was essential for the ultimate decision whether an abdominal operation was justifiable. Dr. Rubin discredited the investigation by opaque substances on the ground that he was able to decide the seat of obstruction by the area in which the patient complained of pain—that is, centrally or laterally, the speaker hoped that Dr. Rubin would correct this impression by trying a series of cases with opaque bodies.

Mr. VICTOR BOWLEY said that Dr. Rubin's work constituted one of the biggest advances in gynaecology of recent years. One of the most important things that inflation had taught was the futility of a large proportion of the salpingostomies performed before Rubin's discovery. He was perfectly certain in his own practice that in nine out of ten cases the tubes had remained blocked at the uterine end in spite of the new abdominal ostium. A new set of statistics would have to be prepared dealing with the cases operated on since inflation was practised as part of the operation. He doubted very much whether inflation in the consulting room would ever come into vogue in this country. The majority of women here would not submit to any operative procedure without an anaesthetic, and, moreover, it increased the danger, as Dr. Rubin had pointed out, of the procedure being carried out by relatively unskilled practitioners in unfavourable surroundings.

Mr. ALEC BOURNE had been using the form of apparatus demonstrated to the Section of Obstetrics and Gynaecology of the British Medical Association at Portsmouth in 1923 by Dr. Gilman Currier, of New York, and had been very pleased with the results obtained. He thought that in routine practice the use of x-rays was a serious disadvantage, and if proof of successful insufflation could be obtained by simpler means than radiography the apparatus would have a much wider scope.

Reviews.

INTERNAL SECRETIONS

Drs DODD and DICKENS, in their book *The Chemical and Physiological Properties of the Internal Secretions*,¹ have collected a large amount of very interesting information. They explain in their preface that the book makes no claim to originality, but was published largely in the hope of sparing other workers the dreary task of rummaging the endless literature dealing with the internal secretions. Fortunately, in addition to collecting the literature they have also edited it, and have thus spared their readers from being asked to read accounts of masses of wholly unreliable work, with which the literature of the subject unfortunately abounds. The book is concerned chiefly with the chemistry of the internal secretions, which is one of the most complex and difficult subjects in biochemistry.

The first chapter deals with the chemistry of insulin, and gives a very clear account of the remarkably rapid development in the method of insulin extraction which has occurred since 1922. The rapidity of the advance is indicated by the fact that in that year the yield was only about 10 rabbit units per kilo of pancreas, whereas to-day yields of over 2,000 units per kilo are obtained. Moreover, by the original methods the end-product only had an activity of one rabbit unit per 20 mg., whereas products 200 times as active are now obtained. The account of the way in which one advance has succeeded another during this short period is very interesting. In the case of the thyroid and the adrenals biochemistry has advanced a stage further, for the formulae of the active principles is known, and in the chapters dealing with these substances a full account is given of the complex methods by which thyroxine and adrenaline have been isolated and their formulae determined. The chapter on pituitary extract is not quite so satisfactory, but in this case nothing has been ascertained concerning the chemical nature of the active principle, and we do not even know whether it is one substance or four, consequently it is not easy to give an account of its chemical properties. A short but very interesting chapter is devoted to the ovarian secretion. Allen and Dorcy have evolved a method for estimating quantitatively the activity of ovarian extracts by observing their effect on the oestrous cycle of rats. This method promises to establish knowledge of the internal secretion of the ovary on an accurate basis. The authors point out that this will now prove of the greatest importance both to clinicians and physiologists.

The fact that it is now possible to collect sufficient reliable data to write a book on the chemistry of the internal secretions is pleasing evidence that knowledge of this subject is rapidly advancing. The authors have had the advantage of dealing with an aspect of internal secretion which is wholly dependent on experimental evidence, most of it quantitative, hence they and their readers have been spared the vague guesses and unsupported hypotheses which bulk so largely in much of the literature on this subject. The book will be of great value to all who are interested in the physiology of internal secretions.

ALCOHOL IN MEDICAL PRACTICE

Dr C C WILKES, in his book *Alcohol in Medical Practice*,² makes a strong attack on the use of alcohol in therapeutics, but as he is careful to give facts and authorities in support of all his conclusions his book is a great deal more interesting and instructive than is often the case with works of propaganda.

He has collected statistics from nearly all the hospitals in the British Empire concerning their expenditure on alcohol in 1900 and 1923 respectively. These figures show that the consumption of alcohol in hospitals all over the world has decreased in a remarkable manner during the

last twenty-five years. The average consumption per patient per annum has sunk in the last twenty-three years from the equivalent of 6.8 oz of brandy to 1.3 oz. Owing to the rise in the price of alcoholic drinks, however, the expenditure per occupied bed has only sunk from 13s in 1900 to 9s in 1923. The expenditure of the various hospitals is set out in detail and some remarkable variations are to be noted. For example, the expenditure on wine and spirits in the London teaching hospitals varies from 5s 2d to 32s 7d per occupied bed. The author very reasonably adduces this variation as evidence that the use of alcohol in disease is determined more by custom or caprice than by any obvious therapeutic necessity.

He has no difficulty in demonstrating the complete falsity of the popular view that alcohol is a stimulant and in particular he shows that the pharmacological evidence is unanimous in proving that alcohol does not act as a circulatory stimulant. Furthermore, he has collected an imposing amount of clinical opinion against the use of alcohol in pneumonia and shock. In the chapter on alcohol as a food and gastric adjunct it is shown that it is a very expensive food of peculiarly limited value. The action of alcohol as a gastric adjunct is not denied, but the author urges social reasons against its prescription as an aid to digestion.

The final chapter of the book deals with the evolution of medical opinion regarding the action of alcohol, and it is particularly interesting to read the arguments used by Drs Todd and Chambers for and against alcohol in the early sixties. Dr Todd believed that alcohol augmented the generation of nervous power, increased the animal temperature, strengthened the action of the heart, reduced the frequency of the pulse, and that, by its action as a food, it shielded the tissues from the influence of oxygen. Naturally he believed that it was difficult to give too much of a substance endowed with these remarkable properties. Dr Chambers, on the other hand, believed that alcohol lessened the power of the nervous system, and arrested and obstructed the vigour of vital action, and thus diminished vital metamorphosis. It is only when the reader is referred to controversies such as these that he realizes of how recent growth is the science of physiology. The author, however, has no difficulty in showing that the whole tendency of modern medicine has been to whittle down the therapeutic claims made for alcohol and steadily to diminish its use. The book concludes with the words, "Thus we reach, under the converging influences of scientific and sociological evidence, the position of to-day in which we find all the world over an increasing disposition to entail in every direction the use of alcohol in the treatment of disease." As the author remarks, "To no other pharmaceutical or therapeutical question is it more difficult to bring a clear and unbiased mind than to that of the use of alcohol." He would probably not claim to be unbiased, but he may reasonably claim that he has been perfectly fair in marshalling the arguments against the use of alcohol in medicine, and he is to be congratulated on his industry in amassing the interesting statistics reproduced in this volume.

MYOPE CLASSES

Dr JAMES KERR has written a very instructive little book on the work of the London myope classes. Anything that Dr Kerr writes upon school medical work must command attention, for he was so intimately associated with that work both in Bradford and in London for many years during a period marked by a wave of reform in school methods and the beginnings of regular school medical inspection and of treatment. His book is entitled *School Vision and the Myopic Scholar*.³ It is an account of the general processes of vision particularly as affecting children with short sight. There is a brief history of the origin of the myope class, which dates from a paper read by Mr Bishop Huxman at the International School Hygiene Congress in 1907, and

as a fortunate result fourteen myopes and six others with very defective vision were gathered into a class which was opened at Boundar Lane in January, 1908. From this the whole system has been developed by watching every opportunity. This was a class for helping lame dogs over stiles to use Harman's phrase, but as most of its attendants were short sighted and it was out of

³ *School Vision and the Myopic Scholar*. (Book for Teachers and School Workers.) By James Kerr M.A. M.D. D.P.H. London: George Allen and Unwin, Ltd. 1925. (Cr. 8vo pp. 155, 28 figures 5s. net.)

¹ *The Chemical and Physiological Properties of the Internal Secretions*. By F. C. Dodd, Ph.D. B.Sc. M.B. B.S. and F. Dickens, M.A. Ph.D. Oxford Medical Publications. London: Humphrey Milford, Oxford University Press, 1925. (Demy 8vo pp. xiv + 214, 3 figures 8s. 6d. net.)
² *Alcohol in Medical Practice*. With a chapter on the Evolution of Medical Opinion. By C. C. Wilkes, M.R.C.S. L.R.C.P. London: H. K. Lewis and Co., Ltd. 1925. (Cr. 8vo pp. 177, 185 figures 3s. 6d. net.)

the agitation for special education for high myopes that it had come the name 'myope class' became established.

Dr Keil does not like the name, but concedes that it has become fixed. Since the book is intended for the use of tenebrists and school workers, he gives clear and simple accounts of the anatomy and physiology of the eye, of some of its most common defects, and particularly of myopia. The educational treatment of the defective children is then dealt with in detail. There is a glossary of medical terms. The book is well written and is calculated to be useful to those who have to tend and educate children with defective vision.

DISEASES OF CHILDREN

THE appearance in English of Professor L. FEER's book, *The Diagnosis of Children's Diseases*,⁴ is to be welcomed. The translation is from the third edition, and has been done by Dr C. A. SCHERER. The book is of a special kind, for it is not a textbook of disease in childhood, but a systematic description of the symptoms and physical signs of disease, with special reference to diagnosis. The reader will find little about etiology or pathology and almost nothing about treatment, so that the book must be studied along with some complete treatise. But symptoms (in the broad sense) are the manifestations of disease, and it is by observation of these phenomena of disturbance that a diagnosis is made. It is of great value to the student and practitioner that symptoms should be studied as a branch of knowledge and training, and the thanks of teachers and students alike are due to Dr Feer for making this interesting experiment in the presentation of his subject. The symptoms and signs of disease dealt with in the book are those revealed by the bedside examination of the child, and throughout the attempt is made to reach a diagnosis by these alone, and to resort to more technical and elaborate tests only for corroboration of the clinical diagnosis. After some introductory remarks about special difficulties and special methods in the clinical examination of infants and young children, the study of symptoms is begun in a systematic way. The facial expression, the form of the body as a whole, the parts of the body, such as the skin, hair and nails, hands and feet, eye, ear, nose, mouth, and so on, are successively dealt with, abnormalities and their significance in diagnosis are systematically described.

Although the book is thus one on the symptomatology of disease in children and on clinical methods of examination, it is more than a dictionary of symptoms. Under each system there is a short account of the commoner diseases—for example, of the diseases of the bronchi and lungs, of pulmonary tuberculosis, of congenital and acquired heart diseases, and of the nutritional disorders.

The illustrations are numerous and they are unusually good. It is seldom that the finer shades of facial expression are so well brought out. There is a special index of illustrations arranged according to diseases. The book is an interesting experiment, and ought to be useful to both the student and the practitioner, read in conjunction with an ordinary textbook. It gives the ripe experience and observations of a distinguished physician and teacher, and Dr Scherer has done good service in making it available to the medical profession in Great Britain and America.

In his book on the dystrophies of adolescence⁵ Professor V. HUTINEL discusses the subject in an appropriately general and philosophical way. Dystrophy is taken to be almost any disturbance of the normal life-process, that disturbance may be local or general, it may be atrophy or hypertrophy. Thus obesity and emaciation, gigantism and dwarfism, are alike regarded as dystrophies, further, dystrophy may have only a local manifestation, and genu valgum, scoliosis, with many other examples, are described as "dystrophies monosymptomatiques." In a preliminary chapter normal life in its periods of growth, maturity, and decline is described, and then a short account is given of the "dystrophies" of infancy and childhood, including rickets, the wasting diseases proper, status lymphaticus, and the uremias. The

ground is thus cleared and a correct mental focus adjusted for the main subject—the dystrophies of the period of adolescence, when the sexual functions come into play and the activities of human life become complete. The glands of internal secretion and the vegetative nervous system are described in relation to normal nutrition, and interesting clinical examples of their disturbance are given. A good deal of emphasis is also laid on congenital syphilis as a factor in cases of general malnutrition and disturbed health in adolescent life, and some striking cases are quoted. At the same time a warning is sounded against an exaggerated view of its importance—"il serait imprudent de le voir partout." The book is a philosophical essay on a very wide subject, although it does not neglect clinical applications. It is based on wide experience, and is written in a most graceful and attractive style.

SAVINGS

THE professional man who is a master of his own work recognizes that he is at sea in the field of another profession, yet there are occasions when it is imperative that he should be sufficiently instructed in some other work to allow him to wall wail. In no circumstance is this knowledge more necessary than in the investment of savings. It is not easy to save, but it is still less easy to secure those savings. The days of the stocking and iron box are gone. We seek to make our savings reproductive, it is good that they should be. The talent wrapped in a napkin is of little use to anyone, wisely invested it will earn other talents.

Mr HARGREAVES PARKINSON has written a most useful little book entitled *The A B C of Stocks and Shares*.⁶ It is a guide to the investor. He describes the working of the Stock Exchange, the relative spheres of the broker and jobber, modes of buying and selling, and settlements. The distinction between investors and speculators, and such terms as "bull," "bear," and "stag," are explained. The net of the bucket-shop dealer is spread in the sight of the reader. The values to the investor of debentures, preference and ordinary shares, and their relations to different types of companies, are given. Finally, the reader is told how to read a balance sheet, and what to look for as indicators of the stability of the company. The prudent investor will take the opinion of his broker, who should be a member of the Stock Exchange, but for all that he should have a nodding acquaintance with the data given in this book.

NOTES ON BOOKS

DR G. S. HAYNES'S small book of *Notes on Medical Case Taking and the Examination of Patients*⁷ is designed for the use of students at the very beginning of their clinical work in the patient departments. It begins, as the title indicates, with the interrogation of the patient, and the examination. Dr Haynes's description of the theory and practice of physical examination starts the reader on sound lines which he will, later on in his career, find continued in the larger works of other authors (such as Hutchinson and Ralby) that may be regarded as the standard authorities in common use. The book is well and clearly written, and may be recommended with confidence to those for whose use it is designed.

In compiling his *Textbook of Biology*⁸ Professor W. M. SMALLWOOD adopted an unusual plan. He begins with the frog, the first part of the book being intended to teach the fundamental principles of biology as illustrated by a complex animal. From the complex he passes to the simple and expounds the fundamental principles of biology as illustrated by unicellular organisms. With these types as a basis the author proceeds to the systematic study of various plants and animals, and, finally in the fourth section, leads the reader to theoretical interpretations of biology such as the theory of evolution and heredity. Instead, therefore, of beginning at the bottom of the evolutionary tree and expanding upwards Professor Smallwood works on the plan of

⁴ *The Diagnosis of Children's Diseases*. By Prof. Dr L. Feer. Translated by C. A. Scherer, M.D., F.A.C.P. London: J. B. Lippincott Company, 1925. (Med. Bio. pp. xvii + 551. 257 figures. 35s. net.)
⁵ *Les Dystrophies de l'Adolescence*. Par V. Hutinel. Paris: Masson et Cie, 1924. (Med. Bio. pp. 232. 15 figures. Fr. 16.)

⁶ *The A B C of Stocks and Shares*. By Hargreaves Parkinson. Longmans, Green and Co. London. 1925. (Fcap. 8vo. pp. viii + 57. 3s. net.)
⁷ *Notes on Medical Case Taking and the Examination of Patients*. By G. S. Haynes, M.D. London: Baillière Tindall and Cox, 1925. (Roy. 8vo. pp. 243. 245 figures. 16s. net.)
⁸ *A Textbook of Biology*. By William Martin Smallwood, Ph.D. Fifth edition. London: Baillière Tindall and Cox, 1925. (Roy. 8vo. pp. 747 + 393. 245 figures. 16s. net.)

beginning with the forms of life with which the student is most familiar and works out from this in both directions. It appears that this method of presentation has been appreciated by the students the author teaches, judging from his remarks in the preface to this edition.

Dr RICHARD H. HUNTER'S *Short History of Anatomy*, which is intended for medical students entering on their anatomical course, fulfils its purpose well. It gives a concise and readable account of the subject from the time of Hippocrates to the passing of the Anatomy Act in 1832. The student will not only learn from this book something about Herophilus, Galen, Sylvius, Vesalius, Fallopius, the Hunters, and the Monros, to mention only those who have given their name to some anatomical structure, but will also gain a clear idea of the difficulties with which the early anatomists had to contend. The work is to be warmly recommended to the student who wishes to take an intelligent interest in anatomy.

* *Short History of Anatomy* By Richard H. Hunter M.D. London John Bale Sons and Daniels on Ltd. 1925 (Cr 8vo pp. 51 2s net)

MOTOR CARS FOR MEDICAL MEN.

FINAL IMPRESSIONS OF THE MOTOR SHOW By H. MASSAC BUIST

THE curious policy of the Standard Company in respect of the manner in which its new 12/24-h.p. car was placed on the stand on press view-day, and announced to the press later, explains why it has been missed over. The procedure is not calculated to assist in securing it that measure of attention it might otherwise have received. The announcement on behalf of the company states that this car is supplementary to its 11 h.p. and its 14 h.p. types. It is a £12 tax chassis with an overhead valve four-cylinder 1,943 c.c.m., 12/24-h.p. engine, having forced lubrication and magneto ignition, a right-hand controlled three-speed gearbox, a dual-plate clutch, gartered half-elliptic springs back and front, supplemented by shock absorbers, reinforced balloon tyres, and four-wheel brakes. It is catalogued at £215, or with five-seat body at £275, and as a saloon at £335, both with four wide doors. The open car is of the all-weather hooded type with separate and adjustable front seats, the windscreen being of the two-pronged type. When out of use the six detachable side-screens are stored behind the rear upholstery.

Standard light car bodies have always been notable for their roominess. This 4 ft 8 in. track and 9 ft 4 in. wheelbase chassis provides room for spacious coachwork without excessive overhang required.

Low of the seven lights on the saloon can be lowered into, or raised out of, the hollow doors by means of automatic regulators. The back light extends almost to the full width of the car panel. Companions are fitted at each side of the rear seat, being sunk flush into the body framing. The equipment is comprehensive, and the buyer has the choice of three colour schemes.

The Ford Fiat Cablegim

But the sensation of motor show week has been furnished by the cablegim from America to the effect that Ford and Fiat had formed a world-wide combine. This is the first exhibition at which the 7-h.p. overhead valve four-cylinder engine half-elliptic spring four-wheel braked Fiat chassis has been shown in the form selected for standardization after over three years of experiment by the pioneer firm of the Italian industry, which has the largest output of cars in Europe and the greatest international reputation in long-distance road racing during the last twenty years. That chassis shows in every line advanced standard car construction of the most efficient, durable, refined, and economical sort such as could have been arrived at by no other means. It is one of the two most completely self-explanatory examples that this exhibition affords of what experiment means to the advance of automobile construction for world-wide daily service to the public.

I cannot get an official denial of the statement contained in the above mentioned cablegim—I deliberately phrase the matter so—and it is within my knowledge that for a long time past the leaders of the American industry (which knows nothing about the small car for which there is, never

theless, a world-wide demand) have been experimenting with the Morris as evolved and built in this country, with the Citroën as evolved and built in France, and with others. With their world-wide ramifications, the major American organizations consider they have the middle size and large car trade in every country in their hands. But they recognize that the conditions in their own country have not been ripe for the introduction of the small car, that there nevertheless exists a world-wide demand for such a product outside the borders of the United States, that the problems of successful design require much greater knowledge and experience than their automobile engineers possess, and that there is not a moment to be lost if the well-impoised countries—Britain, France, and Italy—are not to enjoy practically the monopoly of this branch of motor car building. Nor will the American Government look down on the contrary, it is urging transatlantic manufacturers to go ahead with small car building without waiting, an appreciable demand within the borders of the United States. To this end it has shown them how an export market could be found for an output of 40,000 small cars of any one make in twelve months, considering activities all over the world being directed to getting statistics of local conditions which, in the aggregate, total that figure.

What American Motors Want to Know

Operating solely on its own initiative, the Fiat Company could entirely recast the small car proposition the world over by the standardization of this new 7 h.p. chassis because it is theoretically a correct automobile engineering job from end to end. It is a design which lends itself to stampings and pressings, and therefore to reproduction by hundreds of thousands or millions of examples. Despite its simplicity, it is "stiff" in a sense new to small car practice even as it is, of light weight, simple and road-worthy, as the frame, half-elliptic suspension, low centre of gravity, and four-wheel braking details attest. I do not think I shall prove a false guide in intimating that it eclipses the remarkable 10/15 h.p. Fiat, itself world famous for efficiency in a quite different class. The new small car can take any type of body suitable to the medical man's needs.

Whether the individual has a practical or merely an academic interest in its advent, this chassis should be looked at because it can explain much to those unversed in technical matters concerning the vital problem of what it is essential to incorporate in a sound engineering job and what can be left out with advantage. That I am not suggesting a waste of time will be obvious from the fact that the American automobile engineers are unable to think in the simple terms that experiment has enabled these Italians to employ.

How to Learn to Judge a Car

I have to record two other last impressions of new design as introduced at this show, which are calculated to be of service to the medical man. It is that he should make careful inspection of the new £18 tax nominal 17/75-h.p. overhead valve six-cylinder engine £650 Daimler chassis with right hand controlled gearbox providing four speeds forward, single plate clutch, spiral bevel back axle drive, and internal expanding brakes on all four wheels. This machine presents in middle size car practice a blend of Anglo-Franco-Italian automobile engineering design in the light of the latest experiences. Only the expert looking at it can realize fully how clever has been the solution of the problems involved. Instead of conveying the idea that it is probably the second most difficult chassis to design of any at the show, it will strike the average motorist that it must have been the easiest because the way everything is done looks so obvious.

The other chassis should be studied in part only at this juncture for the purpose under consideration. The single sleeve valve six-cylinder engine 11-h.p. chassis indicates what will be done universally somewhat in this style one day to rid us of the nuisance of spring shackles and shackled lubrication.

Whoever studies these examples will furnish himself with means to understand the metrics of motor car design more clearly, in other words, after giving himself such a lesson he will see more in any chassis he looks at.

British Medical Journal.

SATURDAY, OCTOBER 17TH, 1925

OSTEOPATHY AND CHIROPRACTIC

IN an article on osteopathy and chiropractic published in our issue of May 31st, 1924 (p. 963), we endeavoured to outline the main features of those cults, and hinted that a surplus of this American product was likely to be dumped into this country in the near future. It is impossible to estimate the number of arrivals since that date, but the settlement has so far advanced as to induce osteopaths to demand formal recognition and a legal status, a matter to which we made reference in a leading article on April 11th last (p. 706). Their cause has also been espoused by a small group of members of Parliament, and the Minister of Health (Mr. Neville Chamberlain) has received a deputation in support of it.

The subject is one that bears, not only on the safety of the public, but also on the interests of medical practitioners, who will, therefore, be well advised to make themselves acquainted with its details. For this reason we welcome the forcible pronouncement of Sir Holburt Waring in his presidential address to the Medical Society of London published in our present issue at page 679. He has done good service to the profession in making plain the real nature of these cults and insisting on the necessity of taking steps to counteract their influence. As several speakers seemed to recognize in the discussion (reported at page 701) which followed the address, the problem of finding measures that will prove effective is not easy of solution, and is not likely to be solved without a thorough understanding of the conditions to be dealt with.

It will be noticed that there are two distinct cults, although they both rest on the same fundamental tenet—that the displacement of anatomical structures from their normal positions is the sole cause of disease. The practical distinction between the cults is that osteopathy claims to be progressive, while chiropractic is stationary. The whole pathology of the chiropractor is embraced in one fundamental tenet. He needs no knowledge of disease, he merely needs to know in what part of the body the disease, whatever its nature, exists, his tenet assures him that the cause lies in the subluxation of a definite vertebra, and this he pretends to reduce. With this slender stock in trade of knowledge and technique he has proved a stupendous financial success. This was the original form of chiropractic, and it remains the same to day, the cult flourishes in America, and is probably more widespread in this country than some of us suspect. It is obviously pure nonsense, and therefore the appropriate measure to adopt in the first instance is to examine our existing laws and inquire whether they are adequate to their purpose and efficiently administered. It is the duty of the Legislature to leave no stone unturned to protect the less educated of our people from such persons and should the existing enactments appear to be insufficient, one of the recommendations of the Select Committee on Patent Medicines (1914) might perhaps afford a precedent. The Committee advised that the advertisement and sale of medicines pur-

porting to cure certain diseases, such as cancer, consumption, epilepsy, locomotor ataxia, and Bright's disease, should be prohibited. A similar index might be drawn up and chiropractors prohibited from treating diseases enumerated in it. The principle was embodied in a bill—the Proprietary Medicines Bill—introduced on behalf of the Ministry of Health into the House of Lords in 1920 by Viscount Astor, then Parliamentary Secretary to the Ministry. The bill contained a list of diseases in a schedule. It passed through the Committee stage in the House of Lords, and there were promises that it should be introduced in the House of Commons in the following year, but the then state of parliamentary business rendered them impossible of fulfilment.

The conditions are somewhat different as regards osteopathy. Doubtless a large number of osteopaths differ very little from the chiropractors above described, they may have a smattering of medical science, which not improbably renders them the more dangerous. But many have a considerable knowledge of modern medical science while retaining, or professing to retain, their original dogma. Thus we find it stated in the Supreme Court of Washington in 1917 that "a perusal of the successive catalogues of the schools of osteopathy will show that their teachings are gradually being expanded, and that the more modern of them now teach in some degree much that is taught in the older schools of medicine." Some osteopaths have even taken the regular medical degree. It is evident that we are here dealing with a different type from that of the chiropractor. Probably, however, in the majority of cases, the education of osteopaths is totally inadequate. Sir Holburt Waring points out that a student of an osteopathic or chiropractic school or college may attend and complete the whole of his course in eighteen months, laboratory instruction in the modern reception of the term does not seem to exist, and in most of the schools diagnosis or disease is not considered necessary, and ethical teaching is practised in an ordinary medical education is not given. We feel sure that the medical profession at large will endorse the opinion expressed by Sir Holburt Waring that "instead of the Legislature making possible the licensing of osteopaths in a very limited form of practice, the Medical Acts ought to be so strengthened that it would not be possible for the community to be treated by them or any other unqualified emulans or quacks", and that everyone who is licensed to practise as a medical practitioner in any form should be placed under the same requirements of knowledge and experience."

There is one further point deserving the consideration of the profession. Osteopaths, even without a licence, are engaged in practice, and, as we have already mentioned, some few have medical degrees. We have in Sir Holburt Waring's address the picture of the licensed and qualified osteopath as he is known in his native land. Whether he believes in his doctrine is a matter for his own conscience, but there can be no doubt that the retention of the name pains. It would be interesting to describe the numerous troubles that the medical profession in America has suffered from osteopathy did space permit, but one detail may be mentioned, since it is pertinent to the point we are dealing with. In some of the States medical men have publicly expressed the opinion that unless the tide of osteopathy and chiropractic is in some way stemmed they will themselves be under the necessity of resorting to wholesale advertisement if they are to hold their own! The name draws even in

this country, and that without the licence and qualification, nor is this by any means confined to the uneducated. The reason why this should be so is doubtless capable of analysis, we merely draw attention to the fact in order to suggest that medical men should take measures to inform their patients of the absurdities of these and other cults. A small volume, entitled *The Medical Follies*,¹ has recently been published by Dr Morris Fishbein, the editor of the *Journal of the American Medical Association*, it is written in an admirable style, and contains most entertaining and racy descriptions of celebrated founders of quack systems. If medical men would place a copy of this volume on their waiting room tables we think it would serve a useful purpose in disseminating a knowledge of the true inwardness of osteopathy, chiropractic, and other such pseudo scientific systems.

FOREIGN BODIES IN THE AIR PASSAGES

We publish this week (p. 686) the paper by Professor Chevalier Jackson of Philadelphia on overlooked foreign bodies in the air and food passages, with which he introduced the discussion on this subject in the Section of Laryngology, Otology, and Rhinology at the Annual Meeting of the British Medical Association at Bath, he afterwards gave a demonstration of the mechanical problems met with in the bronchoscopic and oesophagoscopic extraction of foreign bodies.

It is hardly an exaggeration to say that no greater development has taken place during the past quarter of a century in medicine and surgery than that of peroral bronchoscopy. Just as the laryngoscope in the past brought the larynx into view, so endoscopy has revealed the entire length of the oesophagus and the cavity of the stomach, and it has also exposed all the ramifications of the bronchial tree to direct vision. The rapidity of progress in this special branch during recent years is shown by the fact that it is only thirty years (1895) since Kirstein, following the work of earlier pioneers in the development of oesophagoscopy, first showed to laryngologists the possibilities of peroral endoscopy by introducing his direct method of examining the larynx—a method which broke entirely fresh ground, and was quickly followed by tracheoscopy and bronchoscopy.

Kilhan, greatly impressed with Kirstein's work, immediately began to devote his whole time to the study of endoscopy, with the result that, two years later, he was able to demonstrate the practicability of bronchoscopy, and to show that the air passages could be explored far beyond the bifurcation of the trachea. His early demonstrations created a profound impression, and laryngologists of every nation commenced vigorously to study this new branch. By introducing bronchoscopy Kilhan created a method by which a great saving of life has been accomplished, as shown by a reduction in the death rate from laryngoscopic cases of 30 per cent to between 5.3 and 1.7 per cent at the present day in the hands of the skilled endoscopist. By bringing to perfection instruments and technique he also made it easier for others to follow and carry on his work. Among those who followed in the footsteps of this great teacher, the father of bronchoscopy, no name stands out with more brilliancy and honour than that of Chevalier Jackson, who may well be termed the doyen of

endoscopists. The great Bronchoscopic Clinic which he initiated and has built up by his indefatigable energy stands as a landmark of his genius and of the work he has accomplished. This was recognized in 1920, when the University of Pennsylvania—the oldest university in the United States—established the first chair for the teaching of bronchoscopy and oesophagoscopy, and Chevalier Jackson, in whose honour the chair was founded, was made professor.

Nor were British laryngologists lacking in initiative or skill in developing this new branch of their specialty, for they early recognized the practical importance of Kilhan's work and quickly adopted his methods. Waggett, and D. R. Paterson (of Cardiff), in 1903 and 1904, were the first in this country to take up the study of Kilhan's work, Paterson contributing a paper to this JOURNAL in 1906 on "The direct examination of the oesophagus and upper air passages," while a paper by Waggett on "Direct laryngoscopy, bronchoscopy, and oesophagoscopy" followed in 1908.¹ Since that date many comprehensive articles have been published, and many cases of successful removal of foreign bodies have been recorded in our columns. During recent years endoscopic technique has been greatly improved and simplified, and the direct examination of the bronchi and oesophagus has become in this country part of the everyday life of the laryngologist, with the result that the removal of foreign bodies is now only recorded when some special feature or difficulty deserves recognition.

Endoscopy is not confined to the few. Each and every laryngologist has become his own endoscopist. Every young laryngologist considers the subject a part of his specialty, and trains himself to be capable of dealing with any case of foreign body which may come under his care. That this is so is confirmed by a summary of such cases compiled and published by Irwin Moore, which shows that 174 cases of foreign bodies successfully removed from the air and food passages, and reported to the Section of Laryngology of the Royal Society of Medicine between 1908 and the present date, were dealt with by thirty-six separate laryngologists, without special trained assistants or trained team work beyond the co-operation of a radiologist. These cases do not by any means represent the total number of foreign bodies removed in this country.

Chevalier Jackson's paper on overlooked foreign bodies, published in this issue, is of the greatest clinical and practical importance, in view of the fact that as many as 1,485 cases of foreign body have passed through his hands during the past twenty years, and that the data for his paper have been carefully compiled by him with the assistance of a skilled and devoted group of associates—Dr Ellen Patterson, Dr Gabriel Tucker, Dr Louis Cleif, and Dr Willis Manges—and the valuable help of Dr Thomas McCrue, Professor of Medicine in the Jefferson Medical College, Philadelphia, who, it will be remembered, delivered the Lumen Lecture before the Royal College of Physicians in 1924 on "The clinical features of foreign bodies in the trachea and bronchi." Amongst these 1,485 cases there were over 200 in which foreign bodies had been overlooked for periods varying from a month to thirty-six years, owing as Professor Jackson points out, to insufficient consideration being given—from a diagnostic standpoint—to the possibility of the presence of a foreign body. This is a large percentage in view of the fact that 98 per

¹ *The Medical Follies*. By Morris Fishbein. M.D. New York. Boni and Liveright. 1925. (Cr. 8vo. 1p. 223. 2 dollars.)

cent of foreign bodies in the bronchi and lung tissue, localized by present day methods, can be successfully removed by the skilled endoscopist with the help of *personal endoscopy*.

From a careful analysis of all the cases which have come to his clinic Chevalier Jackson enumerates the pitfalls which may lead to the overlooking of the foreign body, and cites illustrative cases. He is of opinion that one of the chief causes of failure is that a foreign body does not occur to the physician as a diagnostic possibility even in cases in which clear positive evidence is present, he attributes this failure to faulty medical teaching and training, and to the fact that a foreign body is rarely included in the list of diagnostic possibilities that ought to be excluded in every case of pulmonary disease. He lays it down as a general rule that the possibility of a foreign body must always be remembered in every ailing or sick child. The overlooking of foreign bodies may also be caused by failure to attach sufficient importance to the initial symptoms of choking and gagging, which are rarely absent when a foreign body reaches the air or food passages. Again, he lays down the rule that every case in which there is the slightest intimation of a foreign body, or of the patient having had an attack of choking, gagging, strangling, or coughing, should be looked upon as *prima facie* an example of foreign body. He maintains, in short, that a foreign body should be regarded as present until the contrary is proved by every means at command. The physician may be deceived by the absence of any history, especially in children, or he may not inquire with sufficient care as to an attack of choking or gagging.

The outstanding factor, however, in the overlooking of foreign bodies in the broncho-tracheal tree which deceives the physician is the "symptomless interval," often of prolonged duration, between the initial symptoms of choking and gagging and the later pulmonary symptoms. It is also to be remembered that in any given case more than one foreign body may be present, and that though one has been removed another or several others may remain. This mistake may be guarded against by the rigid enforcement of the rule always to have an *airway* examination made, not only before but after removal of any foreign body. It is possible that a foreign body may be coughed up, but this rarely happens, and waiting may be dangerous. Cases under Jackson's observation showed that only 3 per cent of foreign bodies known to have reached the bronchi were coughed up. The intimate association and co-operation of the physician, the radiologist, and the laryngologist in dealing with foreign bodies is consequently one of the most important factors in successful diagnosis and removal. A negative radiological report should not be taken as excluding the presence of a foreign body, but should always be followed, if there is any doubt, by endoscopic examination.

Cases of foreign body in the air passages may simulate in their physical signs and symptoms such common diseases as asthma, bronchitis, bronchio-pneumonia, empyema, abscess, bronchiolism, and tuberculosis. Chevalier Jackson maintains that until every medical practitioner is taught to consider it necessary to exclude the possibility of a foreign body in every case of acute or chronic pulmonary disease foreign bodies in the lungs will continue to be overlooked. Such conclusions and advice coming from a distinguished and experienced specialist should be taken to heart by every medical practitioner.

JAMES NIVEN

SIR GEORGE NEWMAN has sent us the following. I regret that, owing to my absence in Geneva on official business, I was unable to respond to your invitation to write a few lines on the loss which the medical profession has sustained by the death of Dr James Niven. At the Ministry of Health we all had a profound appreciation of this remarkable man, who was one of the deepest and most original thinkers that the public health service ever had. Again and again those who believed that they had broken fresh ground found the problems stated and their solution proclaimed in Niven's writings of years before. But he was always glad to help in subjecting even his own conclusions to the fire of criticism, and so long as the truth appeared to be more nearly revealed he seemed as enthusiastic in discovering flaws as in vindicating any theories of his own. His writings were not a reflection of the fashionable views of the moment, they were the result of original thought and prolonged personal observation. Indeed, they are to medical workers a legacy of immense value. His annual reports were studied by his colleagues in the public health service as classical statements which seemed to belong to the grand period of the middle nineteenth century. Much less was known of his writings than deserved to be known, as a great deal of his best work was only recorded in the annals of the Manchester City Council. They were, in his active period, extremely numerous, varied, penetrative, and suggestive, and his reputation amongst medical officers of health was such as no other man of his generation enjoyed. Niven's outstanding characteristic was his amazing vividness for work. He took to work as his pleasure, vocation, and duty. Not only did he labour for long hours and consume much midnight oil, but he worked with a fury of concentration that would soon have worn him out if he had not possessed an iron constitution. He never expressed an opinion on a subject until he had mastered it in detail, and any report presented to him which lacked the thoroughness he loved would lead to an interview in which the reporting officer was likely to be subjected to a ruthless cross-examination. Labour-saving devices did not appeal to him. He seldom dictated, but wrote out his correspondence and reports in his large, firm, characteristic calligraphy. Niven was not quick to comprehend a new idea. It would be received with something in the nature of a blank stare, which gradually changed into an expression of tentative welcome or rejection. In some matters, however, he had an intuitive quickness of apprehension. His judgement of a man was soon formed. But he had an open mind, and was always ready to consider any proposal, no matter how wild it may have appeared at first sight, or how much opposed to his own views. His habits of work were neither methodical nor conventional. He would carry important letters in his pocket, and discover them by accident inconveniently late for reply. Yet the working of his mind was a model of method. It worked like a first-class, well oiled, logical machine guided by a keen, critical judgement that rarely misled him. The expression of his considered opinion created the feeling that there was nothing more to be said. He was not a diplomat. He lacked the art of managing men to gain his object. His naive sincerity and his concealed but fiery sympathy with the suffering and the weak seemed an uncertain equipment for negotiations in municipal and professional affairs. But he met the cutest diplomatists apparently without being aware of their designs, and after a little hesitation calmly led the way to his appointed goal. His ideas triumphed by reason of their intrinsic merit, backed by his transparent sincerity. He was not a "popular" officer, but he was profoundly respected for his public spirit and his selflessness of aim. He scorned advertisement and the petty arts by which some men seem to advance in public

life. At our table round he was Sir Bois, grave and solid and thoughtful, but his smile when it came was a sunny one. Niven had reserves of manner which not infrequently warmed into asperity. Many who met him thought he was cold, but he was actually extraordinarily warm-hearted and kindly. In his intimate he had the tenderness of a woman and an unexpected and ample capacity for affection. Perhaps his most striking personal characteristic was the power he had of awakening in almost passionate affection in those who worked intimately with him. His staff became his disciples. When they met in later years he generally became the subject of their talk, and often stories of him were exchanged. The unique humour of these generally lay in some clash between Niven's great-hearted, absent-minded simplicity and the conventionality of some accidental circumstance. "I often think of you all," he wrote in one of his letters to an old pupil, "though only a dumb person." He found difficulty in making friendships, and much of what he wanted to say remained unsaid. Niven's department in Manchester was the training ground of many public health workers in whose memory he will live as the master from whom they learned their craft and as a dearly loved friend. They will remember those times when, at the close of some specially urgent and strenuous task, the "old man" over his pipe would pour forth a stream of reminiscence or humorous comment, expressed with a felicity of epithet and brilliant terseness of phrase that unfortunately seldom found its way into his public utterances. In such moments his rare and richly gifted spirit found congenial expression. His humour bubbled over, his good nature became a pervading influence. To those who were privileged to work with him the shock of his tragic passing has been keenly felt, but his memory remains as an inspiration and a precious possession, and his work endures, not as a memory only, but as a driving force and a guiding light of world-wide influence. Niven lives, and will live, in the results of his work, and such was the consummation which to his strong soul was that which was most "devoutly to be wished." He had no thought for self, and his kindness and generosity to those who were privileged to work with him is shown in his *Observations on the History of Public Health Effort in Manchester*, published at the time when he relinquished office. It might indeed be said of him—"His life was gentle, and the elements so mixed in him, that Nature might stand up and say to all the world, 'This was a man'."

OPPORTUNITY IN THE SERVICES FOR RESEARCH

LIEUT. GENERAL SIR WILLIAM LEISHMAN, K.C.B., F.R.S., Director General of the Army Medical Service, devoted his presidential address in the War Section of the Royal Society of Medicine on October 12th to the subject of research in the services. He explained that by research he meant, not only those experimental inquiries demanding expert knowledge and special equipment, but any work which had for its object to add to the existing knowledge of the causes, treatment, and prevention of disease. It was true that in view of diminished personnel the present time did not seem quite appropriate for suggesting to overworked officers that they should voluntarily add to their already heavy duties, but, after all, the services were only passing through a temporary phase of depression, and such a phrase, familiar enough to those who had seen long service, eventually passed away, and was succeeded by conditions better even than those which had preceded it. The facilities which the services presented for such research as he had defined were far greater than those enjoyed by most civil practitioners. Excellent material was available in the men over whom the medical officers had constant supervision, the past history of these men was well known and fully recorded, they were available for systematic or

periodical examination, and uniform standards of procedure could be employed. All this was, as a rule, out of the question in civil practice, save perhaps in connexion with schools and certain other institutions. The abundance and variety of the morbid conditions which came under observation in the services also called for remark. It was not infrequently said by people outside that officers in the service saw only the commoner ailments to which healthy young manhood was liable, and that the bulk of their experience was in the treatment of minor complaints and venereal disease. But this was not true even at the time when he joined the army, in 1887, and nowadays the volume and importance of medical and surgical work in the army—and he thought he could speak for the other services as well—compared favourably with that of all but the largest metropolitan or provincial hospitals. The equipment of the theatre and the laboratory in the services was maintained in a condition well abreast of modern requirements. Whatever tests were considered necessary as helpful to diagnosis or accessory to treatment were readily available, specialist and consultant services could be procured immediately, and altogether, in all but the most isolated stations at home or abroad, it was possible to carry out every method of investigation, and to observe and record the progress of cases by the most modern standards. Furthermore, all officers enjoyed the privilege nowadays of admirable post-graduate courses, just at the moment in their professional careers when they were likely to benefit by them most. Whether or not their professional predilections were sufficiently definite to lead them to seek for further special instruction in a particular branch, they were all given the chance of bringing themselves well up to date in their rapidly moving profession. A man in the services, therefore, was well equipped for making valuable observations along many lines of professional work, either by himself, or, what was often more desirable, with the readily available help of specialist colleagues. Thereby he made his professional life infinitely more interesting to himself, and there was always a chance that a particular investigation might end in bringing to light something of great importance. But Sir William Leishman warned intending investigators that two qualities were essential—absolute honesty and inexhaustible patience. The investigator needed some of the qualifications of the dour fly fisherman, for whom there was such hope in every cast as to carry him happily through a blank day and leave him with cheerful anticipations for the morrow. He went on to indicate, in admirably chosen words, the method of mental approach towards a piece of research. The young officer, he said, should begin by asking himself in what particular line of professional work he was most interested and would most desire to become expert, he should then think over the many branches of the chosen subject and select one or two of them for closer scrutiny. He should lay special stress on cases which in his own experience had puzzled him, in which he had felt unsatisfied as to explanations of etiology, or in which the treatment had proved in his hands unsuccessful, and, of course, he should acquaint himself with the literature of the subject. Presently he would find certain questions, challenges, and criticisms shaping themselves in his mind, and he should then ask himself how he could make and record his observations so as to give a clear-cut answer to his own questions. But he had also to remember that he must convince others as well as himself, and that those who heard or read his work would be quick to notice the absence of any relevant detail. With care, honesty, patience, and a cheerful philosophy he might confidently hope to reach some result worthy of communication to a society or journal. Better advice than this to the young investigator we have never heard. Sir William Leishman next touched on the value of collective research, in which several workers in different

places concentrate on the same investigation. It had been followed in the army with encouraging and substantial results, although the exigencies of the service had brought some promising lines of investigation to a premature halt. Such research not only accelerated progress, but multiplied the checks upon each observer, and the mere fact that workers at a distance from one another were engaged on the same problem and confronted the same difficulties stimulated intercommunication and broke down the isolated feeling of the worker who pursued a solitary line. In conclusion, the president spoke of the way in which the services, with their ideal conditions for observation and control, might help the civil side of the profession, which itself had been so generous in help to the services.

SIR WILLIAM HAMER

SIR WILLIAM HAMER, medical officer of health and school medical officer to the London County Council, who retires on December 31st next after serving the Council for a period of nearly thirty-four years, including fourteen years in his present position, will be entitled to a retiring allowance of £1121 a year, but in order to secure the benefit of his advice and experience after his retirement the Council, at its meeting on October 13th, decided to retain his services in a consultative capacity for a period of two years, and that he should receive a fee of 600 guineas a year for these services. At the same meeting a report was presented by Sir John Gilbert, chairman of the General Purposes Committee, placing on record the appreciation felt by the Council for the valuable services rendered by Sir William Hamer to the cause of public health in London during the period of his association with the Council. It was stated that one of the most important developments with which Sir William had been associated had been the growth and organization of the school medical service. When he took up his appointment in 1912 the scheme of medical inspection and treatment was in its infancy. Under his control it had become a far-reaching undertaking under which every year 300,000 children were medically inspected, 300,000 children seen by school dentists, over 1,000,000 vaccinations made by school nurses in connexion with the personal hygiene scheme, 1,500,000 attendances made by 230,000 children at hospitals and treatment centres, and over 100,000 attendances made at dispensing stations. The activities of the school medical service during this period had resulted in striking improvements in the health and physique of the children in the schools. On the general side of the public health work the most important development of Sir William Hamer's tenure of office had been the adoption of a comprehensive scheme for the treatment of tuberculosis, under which provision was now made for the institutional treatment of over 6,000 patients annually. Other new and important services which had been placed under his direction and control since 1912 included the scheme for the diagnosis and treatment of venereal diseases, the work of the former chemical department, the medical examination and supervision of defectives under the Mental Deficiency Act, the supervision of lying-in homes, and the supervision of nurse infants under the Children Act. His researches into the incidence of infectious diseases had made him one of the most distinguished authorities upon epidemiology. In particular his work upon typhoid fever and upon influenza and its associated group of diseases had furnished a series of brilliant reports to the Council, and had contributed materially both to establish clearer conceptions of the nature of these diseases and to open up new lines of preventive measures. There is reason to hope that, although the retirement of Sir William Hamer is on the ground of health this will not preclude him from undertaking the limited duties of the consultative post.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, ST ANDREWS

IN an address introductory to the winter session of the James Mackenzie Institute for Clinical Research, St Andrews, the honorary director (Dr Maitland Ramsay) gave illustrations from ophthalmology of the extreme value of symptoms in early diagnosis, and demonstrated how a knowledge of the mechanism of their production throws light upon the pathology of disease. While the act of sight is dependent on the integrity of (a) the dioptric apparatus, (b) the rods and cones, and (c) their nervous connexions, the functional unit which transforms light into nerve impulses consists of the rods and cones—an illustration of the essential importance of a study of receptors. Like all functional units, their efficiency is proportional to the state of their capillary blood supply, interference with which results in lowered efficiency. Disturbance of rods and cones leads to disturbance of light minimum, while diminution in activity of ganglion cells and nerve fibres is followed by alteration in the light difference. Congestion of the chorocapillaris, therefore, is followed by change in the light minimum and congestion of the capillaries supplied by the retinal artery by change in the light difference, these two symptoms being therefore of great diagnostic value. He added numerous illustrations to show the value of recognition of early symptoms in the diagnosis of serious diseases of the eye.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

THE new session of the London School of Hygiene and Tropical Medicine opened on October 5th. The class for the general course is full, and a number of applicants have been unable to gain admission. This is interesting in view of the fact that the course now occupies twenty weeks instead of eleven as formerly, and that the fee is thirty guineas in place of twenty. It will be remembered that the board of management adopted a scheme for the establishment of four research studentships, the holders of which, in addition to carrying out research in their respective subjects, are to act as demonstrators in the school. The posts were advertised, and from a number of applicants the following were selected by the Appointment Committee: Entomology, Dr Mary V. F. Beattie, helminthology, Dr Dorothy I. Milne, protozoology, Dr S. Anneke, tropical bacteriology and pathology, Dr W. K. Duncombe. Fourteen students have been enrolled for the special course in parasitology for the DPH. Thirteen of these are candidates for the examination. A few students have also been admitted for special courses. The new buildings of the school have not yet been begun, but we understand that the preparation of the plans is in an advanced stage.

I EM HETEP, THE EGYPTIAN DEITY OF MEDICINE.

THE eighty-fifth session of the Reading Pathological Society was inaugurated on October 8th by the customary oration, the orator on this occasion being Sir William Arbuthnot Lane, Bt, whose subject was "The causation of disease and the failure of civilization." A ceremony of unusual interest preceded the oration—the presentation by Sir Stewart Abram, physician to the Royal Berkshire Hospital and an ex-president of the society, of a president's badge or jewel as a souvenir of his term of office. Hitherto medicine has recognized as its patronal deity the somewhat legendary Aesculapius, who is supposed to have lived at the time of the siege of Troy, but of whom no biographical details are extant. The new badge of the Reading Pathological Society represents the far more venerable Egyptian deity of medicine, I-em-hetep or Imhotep, whose name signifies "he who cometh in peace." This famous Egyptian

lived about 2,900 years B.C., and was a learned, many-sided man, who filled, amongst other offices, that of vizier to a Pharaoh of the third dynasty named Zoser. Further, he was a noted architect, and built the earliest pyramid known to history, the Step Pyramid of Sakkarah, near Cairo. Above all, however, he was distinguished as a physician,



and so impressed his fellow countrymen with his skill in the *ars medendi* that he was eventually acknowledged and worshipped throughout Egypt as the deity of medicine. In his honour temples were erected in various parts of the country, and to them flocked patients from far and near. Many miraculous cures are reputed to have taken place at his shrines. The jewel presented by Sir Stewart Abiam consists of a pendant in hand chiselled gold and enamel, designed and made by Mr Omar Ramsden of London. The oval plaque of enamel represents I-em-hetep, the Egyptian god of medicine, the image of the god being

based on an exquisite early bronzo statuette in the Wellcome Historical Medical Museum. The god is shown in profile, seated on a golden "throne of knowledge," while his feet rest upon a footstool representing the solid earth, which is surrounded by a green band symbolizing the cultivated strip of land that is watered by the Nile. The river is of heraldic blue and white, flowing by in full tide; the background shows the blue sky of the East. The delectably wrought frame is surmounted by a double-headed and winged serpent, from which is suspended the Egyptian "ankh," the symbol of life. The border is made up of lotus buds springing from a lower space inscribed with the name "I-EM-HETEP." At the back is engraved the following inscription: "George Stewart Abiam commended me to be wrought for the Reading Pathological Society, in October of the year of our Lord MCMXXV." After a few words by the donor of this artistic badge, a cordial vote of thanks was proposed by the president of the society, Mr W. B. Nelson, who expressed the gratitude the society felt for this unique gift. In supporting the resolution Dr J. B. Hurry gave a sketch of the life of I-em-hetep, and pointed out how preferable it was for medicine to have as a patron deity a man of flesh and blood who had played a great part on the stage of history, rather than the semi-mythical Aesculapius, who is supposed to have lived about 1,700 years after I-em-hetep. To the Reading Pathological Society belongs the honour of having been the first in this country to recognize the claims of I-em-hetep to be regarded as the deity of medicine. "I-em-hetep," to quote the late Sir William Osler, "is the first figure of a physician to stand out clearly from the mists of antiquity."

AN UNUSUAL ANAESTHETIC FATALITY

An inquest was held by the West Ham coroner on October 8th on the body of a lad, aged 16, who died in most unusual circumstances at Queen Mary's Hospital, Stratford. On September 7th he had a cycling accident resulting in a fracture of the jaw, and an operation was performed on October 5th. Dr J. Keith Davidson, house surgeon at the hospital, said that in the course of the operation warm air had to be used in order to keep the patient's teeth dry. It

was applied with a dental syringe. Ether and oxygen was the anaesthetic employed. On the third application of the syringe an explosion occurred at the back of the boy's throat. Acute haemorrhage followed, and despite every attention the patient died within ten minutes, he had been under the anaesthetic for twenty-five minutes. Mr Percival P. Cole, surgeon to the hospital, who performed the operation, said that the light at which the dental syringe was warmed was fully six feet away from the operation table, there was no naked flame near. Within two or three seconds of the explosion bright red blood came from the patient's nose, and the whole apparatus burst into flames. Mr Cole explained that during the war 1,600 patients suffering from similar injuries passed through his hands, and what was done here was merely routine work. The explosion, he thought, must have arisen from the mixture of vapours he himself used the syringe, and satisfied himself that it was not red-hot. The teeth had been smeared with alcohol in order to make them perfectly dry, otherwise the dental cement would not adhere. The explosion occurred when the operation was practically over. He had never heard of such an accident before. Dr Niel McDonald, anaesthetist to the hospital, who gave the anaesthetic, said he had never come across anything like this before, nor had he seen any account of such a thing in surgical literature. Dr Angus Kennedy, who made a *post-mortem* examination, said that the cause of death was rupture of the bronchi and collapse of the lungs, there was no sign of burning in the mouth. The jury returned a verdict that the boy's death was an accident caused by the explosion. We understand that Dr McDonald intends to communicate a report of the case to the Section of Anaesthetics of the Royal Society of Medicine.

CHARLES BELL AND MODERN NEUROLOGY

At the opening meeting of the Section of Neurology of the Royal Society of Medicine, held at the Middlesex Hospital on October 8th, Dr H. Campbell Thomson gave his presidential address on "The work of Sir Charles Bell in relation to modern neurology." Dr Campbell Thomson began by pointing out that men of science were most often remembered by some particular discovery associated with their names, while the principles underlying such a discovery and the position the discoverers held with regard both to their predecessors and to those that followed were apt to be overlooked. Sir Charles Bell was no exception to this rule, and while his name is particularly associated with the functions of the spinal roots, his work was closely linked to what had been taught in previous times and also formed an important starting point for those who came after. Bell came from Scotland to London in 1804, and evidently found his first Sabbath in this city very depressing. He took a tumbling down house in Leicester Street, Leicester Square, and here founded his famous museum, which was purchased by the Edinburgh College of Surgeons in 1825. Bell's main interest at first lay in anatomy, but he soon realized the importance of function in relation to structure. In 1807, as shown by a letter to his brother, he was already on the track of the problem of nerves of sensation, and was considering the doctrine of the specificity of nerves. His work on this subject consisted at first in the examination of all the spinal nerves, in which their exact resemblance to one another was noted, and by experiment Bell showed that the two roots had different functions. The cranial nerves next received attention, it was the fifth alone which appeared to him to resemble the spinal nerves and be responsible for the double function of sense and motion. He particularly investigated the nerves of the face, and by experiments on an ass he was able to show a difference between the functions of the fifth and seventh nerves. The physiology of the nervous system at

this period was practically in the state in which it had been left by Galen, and there was intense antagonism in certain quarters to Bell's views, which, however, in the words of one of his contemporaries, "led to the entire remodelling of nervous physiology." Bell's accuracy of observation is well shown by his description of the hemiplegic's inability to raise the shoulder voluntarily while the paralysed muscles contracted during respiration, and he concluded that there must be a separate innervation for voluntary and involuntary movements. He also recognized the importance of muscle sense, and after confirming the observations of Meckel and Monro on the distribution of sensory nerves to muscles, he concluded that the impulses passing from the muscles to the central nervous system were essential for "the governance of the muscular frame." Bell anticipated the later discoveries connected with reciprocal innervation when he attached a weight to the tendon of an extensor muscle, and observed that the weight descended on the contraction of the opposing flexor muscles, to explain this he imagined the occurrence of peripheral inhibition. A certain amount of controversy has taken place over the part Bell took in differentiating the spinal roots, and in this connexion an address to the British Association in 1833 by Dr W. C. Henry was, Dr Thomson said, of great importance. In dealing with the then recently acquired knowledge of the physiology of the nervous system Henry stated that the honour of the discovery belonged "exclusively to Sir Charles Bell." He went on to say that Mayo had, by his study of the cranial nerves, been able to correct certain errors in detail in Bell's work, and Henry also disposed of Magendie's claims by pointing out that this worker had stated that his experiments were made without knowledge of those made earlier by Bell. Despite the fact that some of Bell's conclusions were incomplete or failed to stand the test of time, his work gave such an impetus to physiological research that he has been compared with Harvey. Bell's talents as an artist are well shown by the illustrations in his *Anatomy of Expression*, and his position as a surgeon was fully recognized. He was elected surgeon to the Middlesex Hospital in 1814, and he founded the medical school of that institution a few months before being invited to occupy the chair of surgery at the University of Edinburgh in 1835. During Dr Campbell Thomson's address certain of Bell's sketches, including "Sunday in Scotland" and "Sunday in England" and illustrations from his *Anatomy of Expression*, were shown by the epidiascope. His portrait and an interesting collection of sketches, books, and other relics were afterwards on view.

JAPANESE HEALTH ORGANIZATION, PAST AND PRESENT

If anything is needed to demonstrate the value of the League of Nations' organization for the interchange of study by medical officers of health, it will be found in the publication of thirty-six lectures¹ which have been prepared by various Japanese authorities for the instruction of medical officers of health from Far Eastern countries during an interchange study tour in Japan between October and December. These lectures cover the whole field of hygiene. Sanitary administration, water supplies, disposal of waste products, control of food, milk and beverage—serums and vaccines, mineral springs, patent medicines—opium and narcotic drugs, and the various branches of social medicine and social hygiene are not only described as they exist in Japan, but each subject is introduced by a most interesting and instructive account of its history in Japan from the earliest times. In the lecture on water supplies for example we are told that the existing waterworks in

Tokio are the oldest in the empire, and date back to the year 1590. Again, in connexion with food supplies we learn that animal meat was used as a food until the introduction of Buddhism some fourteen hundred years ago, when an imperial decree prohibited the eating of the meat of cow, horse, donkey, dog, or chicken—a prohibition which seems to have held good until the restoration in 1868. The whole series of lectures is full of curious and interesting information of this kind, and their publication by the League of Nations now provides those who may not have the good fortune to take part in the interchange study tour in Japan with a compendium of facts of an historical, scientific, and instinctive character which greatly enhances the admiration we already have of the work of the medical officers of that fascinating country.

THE "NEWELL TREATMENT OF TUBERCULOSIS"

This number of cures for tuberculosis submitted every year for public appreciation does not seem to diminish. As a rule, after a hectic career in the advertisement columns of newspapers and magazines, and even on omnibuses and hoardings, most of them cease to occupy any large place in the public eye. Some continue their career on a smaller scale of notoriety, others apparently disappear altogether. Last spring John Bull published some articles on the "Newell" treatment of tuberculosis. The treatment was to be administered by hypodermic injection, and it was announced that the medicament was to be supplied only to members of the medical profession. No indication was given as to its ingredients. A number of letters were received at the head office of the British Medical Association from medical men asking for information, but no satisfactory reply could be made as the composition of the remedy was not stated. Accordingly, on April 28th the Medical Secretary wrote to Dr J. Stenson Hooker, who, it was understood, was then acting as chairman of a committee of medical men which had been established to investigate the treatment. Dr Cox inquired what arrangements were being made to deal with the matter in accordance with the traditions of the profession. Dr Hooker, in his reply, said that the discoverer had asked that for the present the composition of the remedy should remain a secret, and added that "in view of the huge and vital issues at stake the committee and myself have agreed to grant this, to us, very reasonable request." This is the only foundation for a paragraph which appears in a pamphlet recently issued to the medical profession. The paragraph is "The British Medical Association, a short time afterwards [after April 2nd], wrote the Chairman of the Committee of Investigation asking for information concerning the movement, and that body was supplied with the information applied for." The information actually supplied was of the nebulous kind we have indicated, and nothing more was done at the time. On September 10th a notification was received to the effect that Dr Stenson Hooker had found "it necessary to transfer the supervision of the dispatch of the Newell treatment for tuberculosis to H. W. White, M.R.C.S., L.R.C.P., Chairman of the Medical Committee of Investigation, at 23, Fitzroy Square, London, W.1." It was added that Dr Stenson Hooker retained "the position of vice chairman to the committee and chief medical officer at the principal London clinic for treatment" in Spanish Place. The pamphlet referred to is entitled, "Treatise of the Newell Tuberculosis Treatment, for circulation to the Medical Profession only", in it we read that the sponsors for the Newell treatment "are dealing with something which is whole spheres above 'medical others'." The next section of the pamphlet professes to give the nature of the ingredients of the remedy. It is stated to contain five constituents. Of the first it is said that "it promotes healthy suppuration, or rather, healing suppuration", of the second, that it is

¹Health Organization in Japan. League of Nations—Health Organization—C. 11.332. (Pp. 230)

of a vegetable nature, a non-irritating tonic known to ancient writers, including Dioscorides and Pliny. The third constituent, it is said, is also vegetable, and was well known to the ancients, especially to the Egyptians. Of the fourth constituent it is stated that it is "a salt," that its employment is followed by leucocytosis and that it is a vaso-dilator. The tuberculi deposits soon become, the pamphlet states, infiltrated by the leucocytes and undergo fibroid degeneration, so that eventually the imprisoned bacilli and their products become disintegrated and rendered harmless. The fifth constituent is said also to be a vegetable and to act as a powerful stimulator to the liver and to aid the stomach in digestion. As will be seen from what has been said, and more fully from the pamphlet, there is here no disclosure of the nature of the ingredients of the alleged remedy. Another section is headed "Reasons for not divulging the exact nature of the formulae employed." These reasons are that the committee "are immediately, vitally, and successfully dealing with an immenso problem rather than spending our time and energy in theorizing first and healing afterwards," and that the ultimate verdict "must be given by the patients and the public in general." The pamphlet states that the committee is steadily compiling the results of the treatment, and proposes to publish them. Meanwhile it gives some samples which do not appear to rise above the testimonials which are very commonly given to any remedy for consumption newly advertised. It seems to us that medical practitioners can have no hesitation in making up their minds as to the course they should take, and the pamphlet itself, apart from what we have said, affords sufficient ground for a decision.

INCOME TAX

It is at this time of year that the general issue of notices of assessment is made, and medical practitioners are advised to examine these unwelcome documents closely and without delay. If the figures are not understood or the amount of the assessment is considered excessive, a letter should be sent at once to the inspector of taxes asking for further information or objecting to any particular figures, even in the former case it is sometimes advisable to state that the assessment is objected to because the twenty-one days allowed for the lodging of objections may be held to bar a future request for a reduction of the gross assessment. This applies more particularly to cases where the depreciation allowance authorized by this year's Finance Act can be claimed and has not been received. Personal allowances and reliefs for 1925-26 can be claimed at any time, within six years, but in this connexion also promptitude is desirable, the Inchequer is entitled to a sufficiently large share of a practitioner's earnings, it is quite unnecessary to inflate that share by procrastination or neglect.

THE MEDICAL PROFESSION AND THE ARTISTS' RIFLES

The close bond uniting the medical profession to the distinguished corps known as the Artists' Rifles is not generally known. In the old Volunteer days, long before the Territorial Army was organized, a company in the corps was composed entirely of medical students and doctors, Guy's and St Thomas's Hospitals providing most of its members. After a lapse of many years this bond has been restored by the presence of the Artists as the guard of honour when H.M. the King opened the British Medical Association House in Tavistock Square. The new building and the Artists' headquarters in Duke's Road are only, as the cron flies, about 150 yards apart. We understand that the corps needs recruits, and fathers with sons in London pursuing their medical or other professional studies might do far worse than urge them to join. Besides serious

military instruction, the corps affords opportunities (so hard to find in London) for every kind of sport, is well as an occasion for joining a "school of arms" with a record at the Military Tournament of which it is justly proud.

FILTERABLE VIRUSES.

VACCINIA AND VARIOLA

For some years the Medical Research Council has promoted researches into the nature and properties of the so-called filterable viruses and into the widely various and destructive diseases with which they are associated. One of the workers engaged in these researches is Dr Mervyn Gordon, F.R.S., who has carried out his investigations at St Bartholomew's Hospital. He has already reported research work on the virus of influenza, and three years ago addressed the Section of Bacteriology of the Annual Meeting of the British Medical Association on this subject. He found himself handicapped, however—partly owing to the irregular supply of material, partly by lack of knowledge of how to handle such organisms as the virus he had isolated, but chiefly by the difficulty in deciding whether the illness from which an experimental animal suffered after inoculation with this virus was true influenza or not. It was also often hard to say whether the experimental animals that showed no symptoms escaped through a natural or acquired immunity. Therefore he determined to concentrate his attention on a filter-passing virus that would produce an unmistakable lesion in a laboratory animal, and he chose vaccinia as the virus to study, in most of his experiments he used rabbits—animals which respond to inoculation with vaccinia virus by typical cutaneous lesions. Dr Gordon gave a preliminary account of his results to the Section of Pathology and Bacteriology of the Annual Meeting of the British Medical Association at Bath this year. His remarks were published in our issue of August 1st (p. 192), his full text is published in the report of the Medical Research Council now issued.

The report consists of three chapters, the first is a general introduction defining the object of the inquiry and giving an account of the work of previous investigators with regard to vaccinia and variola, it is accompanied by a long series of references to the literature. The second chapter describes and discusses Dr Gordon's own studies of vaccinia, and the third deals in the same way with his investigations of variola. The report is very well put together, each chapter being divided into sections with explanatory titles.

INTRODUCTION

The first thirty pages of the introductory chapter contain in a series of sections a condensed review of previous investigations along lines similar to those which Dr Gordon himself has undertaken, and form a valuable contribution to the literature of the subject. The new work reported in later pages was planned in the following way. Since the microscopic examination and conventional culture tests have presented great difficulties, Dr Gordon has confined himself to experimental work, and employed the skin of the rabbit as a "reagent" for detecting the presence of vaccinia virus, and succeeded in making his tests quantitative by submitting his material to a known degree of dilution before inoculation. The virus grows in the rabbit's skin, and he increased his stock of virus by scraping the lesions. Having standardized this method he embarked on the extensive research described in the next two chapters of the report. During the time that this experimental study of the virus of vaccinia was in progress, five outbreaks of small-pox in various parts of the country provided an opportunity of comparing specimens of the virus of variola with that of vaccinia. He was able, therefore, to extend the field of his investigations, and bring an already acquired expert method to bear on the important practical questions of the relation between vaccinia and variola and the comparison of the virus obtained from severe cases of small-pox with that from the milder cases sometimes referred to as *alastrum*.

¹ Medical Research Council Special Report Series No. 68. *Studies of the Viruses of Vaccinia and Variola*. By M. H. Gordon, M.D., C.B.E., D.M. F.R.S. H.M. Stationery Office. (Pp. 125 with 5 plates 1 in colour Price 3 6d net.)

STUDIES IN THE VIRUS OF VACCINIA

Using the shaved skin of a rabbit as an indicator for determining the presence of vaccinia virus, and working with tenfold dilutions of the pulp obtained from his living cultures, Dr Gordon set out, in the first place, to compare the relative potency of various specimens of calf lymph supplied in this country for purposes of vaccination. He observed great differences in the efficacy of these, some being active at a dilution of 1 in 100,000 and others only at 1 in 10. By cross-protection experiments he proved that the reciprocal immunizing action of these individual strains of virus was identical. He examined the value of certain disinfectants for destroying the virus of vaccinia *in vitro*, and noted in particular the exceptional capacity of potassium permanganate for destroying the virus, a capacity apparently superior even to that of mercuric chloride.

Effects of Heat

Studying the effect of heat, he found that while exposure of a suspension of vaccinia virus for thirty minutes to 55° C reduced the amount of living virus very greatly (the reduction amounting to over 99 per cent), in the case of strong suspensions some living virus could still be detected after the application of this amount of heat. In spite of the lethal effect of heat, however, he found that, provided the specimen of vaccinia virus was used in a fresh condition and was of good potency, this material, even after being heated for thirty minutes to 55° C, was quite capable of producing an excellent degree of immunity. Thus a rabbit so protected successfully resisted over 1,000 minimal vaccinal doses of virus. With the above mentioned reservations as to the source of the virus, he states that the full prophylactic effect could be obtained irrespective of the route by which the heated virus was administered, whether intracutaneous, subcutaneous, intravenous, or intrathecal. But temperatures higher than 55° C materially reduced the prophylactic efficiency. After subcutaneous injections of the virus immunity began to appear about the fourth day, and rapidly increased during the next two days. In ten days immunity was well established, and in a hundred days a decline was apparent.

Specific Antibodies in the Blood

The next step in this research was a study of the specific antibodies which appear in the blood of a rabbit after inoculation with vaccinia. Dr Gordon investigated three of these specific properties of immune serum—the complement fixing antibodies, the agglutinins, and the lysins. Both complement fixing antibodies and agglutinins appeared in response to injection of either raw virus, or of virus that had been heated for thirty minutes to 55° C, and these antibodies were found to be specific to the viruses of vaccinia and variola.

Having succeeded in demonstrating active immunity to vaccinia and in defining the specific antibodies in immune serum, he proceeded to ascertain whether the serum of rabbits immunized against vaccinia is capable of protecting others from this disease. This was accomplished without difficulty and a serum prepared, 1 ccm of which would protect against 100 minimal vaccinal doses of vaccinia virus. It is interesting to note that the behaviour of an antiviral serum resembles that of the better known antibacterial serums in that the titre of an immune serum in complement fixing and agglutinating antibodies is not necessarily an index of its protective value.

The complement fixing antibodies and agglutinins in antivaccinal serum can be used, not only to detect the presence of vaccinia virus in a given material, but also, within limits, to measure its abundance. Using these tests in conjunction with the more delicate cutaneous virulence test Dr Gordon showed that the virus of vaccinia is affected by gravity and may be spun down to the bottom of a tube by centrifuging. After passing a suspension of vaccinia virus through the Beilfeld filter all three indices were negative—namely, cutaneous virulence test, complement fixation and agglutination. In some later experiments however a portion of the virus passed through a Beilfeld filter so that it seems that in certain circumstances the virus is filterable. The conclusion to be drawn from these experiments is that the virus of vaccinia is certainly particulate.

Susceptibility of Nasal Mucosa

In testing the permeability of various surfaces of the rabbit to the virus of vaccinia Dr Gordon found that the virus of vaccinia can make its way through the nasal mucous membrane, the ocular conjunctiva, or the external auditory canal, and produce immunity. Under natural conditions, and in the complete absence of trauma, the nasal mucosa is by far the most susceptible and permeable to the virus of vaccinia. When a small quantity of potent lymph was planted on the nasal mucosa, the rabbit, after an incubation period of six to eight days, developed a condition of acute nasal catarrh, indistinguishable in appearance from that of acute "cold in the head" in the human subject. The virus of vaccinia appeared to be very plentiful in this acute nasal discharge, especially at the onset. Later catarrhal bacteria, such as pneumococci, could be found in films stained in the usual manner. Dr Gordon draws attention to the importance of these observations in a paragraph we quote from page 135 of the report:

"The pronounced susceptibility of the nasal mucosa of the rabbit to the virus of vaccinia and the acute attack of nasal catarrh that follows after an incubation period when this virus has gained access to its nasal mucosa are matters that serve to raise the question whether the main natural mode of spread of this bovine disease may not be in part by the respiratory tract rather than entirely by fortuitous cutaneous inoculation as hitherto supposed. As it is evident that the disease which we call vaccinia is linked up to the group of influenza and acute nasal catarrh by this observation, further information is desirable as to the natural distribution and mode of spread of vaccinia virus in the animal kingdom. Such an investigation can be advocated with the more confidence since we possess a triple index whereby to identify the presence of vaccinia virus and to estimate its abundance."

STUDIES OF THE VIRUS OF VARIOLA

It was mentioned above that the occurrence of outbreaks of small-pox in this country gave Dr Gordon an opportunity of extending his researches to variola virus. He compared the viruses of alastrim. He writes:

When an attempt was made to obtain specimens of the virus of variola for investigation however it was found that cases occurring in this country and included at present in the general returns as small pox are clinically of two different types. It would seem that nowadays the classical form of variola with its clinical severity and high mortality among the unvaccinated is comparatively uncommon; the bulk of the cases now occurring being instances of a benign form of the disease known elsewhere as alastrim in which while the general features are those of small pox the malady is generally mild, the almost uniform tendency of the affected even when not previously vaccinated being towards recovery. As alastrim appears to breed true this vast difference from typical small pox as regards severity has caused the question to be raised as to whether alastrim may not be due to a different virus from that producing the severe type of variola, and Garrow has even gone so far as to suggest chiefly on epidemiological and clinical grounds that the two diseases are in fact different, and that this mild type of variolous disease should be called paravariola.

From the experimental point of view the issue presented by alastrim may be put as follows: Is the virus of alastrim merely an attenuated strain of variola or is it specifically different after the manner that varicella apparently differs from variola? Since the chief object in taking up the study of variola virus was to compare its qualities with those of vaccinia in the following experiments specimens of the virus both of alastrim and of the severe type of variola have been compared with that of vaccinia. Although the relationship of alastrim to variola and varicella was not the primary object of study but rather the relationship of all three to vaccinia some of the information obtained has a direct bearing on the question formulated above.

The material that has been submitted to investigation came from five outbreaks of small pox three of which were instances of alastrim and two of the severe type of variola.

The alastrim material was obtained from Gloucester (1923), Chesterfield, and Ashington. Material was also obtained from a case of confluent small pox in Surrey, and from a small but fatal outbreak at Willesden.

Inuses of Alastrim and Confluent Small-pox

Dr Gordon compared the viruses of alastrim and of confluent small-pox as regards pathogenicity, immunity relative to vaccinia, and resistance to heat and disinfectants. Both the virus from alastrim and that from confluent small pox were found to be inactivated by exposure for half an hour to 55° C, and both viruses were destroyed by potassium permanganate at a dilution of 1 in 10,000. Animal experiments with virus obtained from cases during the Gloucester outbreak of alastrim showed that the virus of the Gloucester outbreak had some protective effect against vaccinia.

Rabbits and monkeys were inoculated cutaneously both with the virus of variolium and confluent small-pox. Neither virus affected the rabbit, but both gave positive results in the monkey, producing a local papulo-vesicular lesion which was more severe with the virus from the case of confluent small-pox than with that from the milder type of the disease. Particularly important is the fact that vaccinia was found to protect the monkey against both these forms of variolium virus, and the action was found to be reciprocal, but Dr Gordon noted that the degree of protection afforded by vaccinia against vaccinia was inferior to that afforded by vaccinia against variolium. Neither of these forms of variolium virus was found capable of affording any pronounced degree of protection to the rabbit against vaccinia. In the future perhaps some of the laboratory reactions which are described in this report may come to have a practical application in the diagnosis of small-pox, especially in doubtful cases where such help is most needed. This likelihood is suggested by the fact that antivaricellal serum prepared from the rabbit was found to give a positive result, both in the complement fixation test and in the agglutination test with material from all of five outbreaks of variolium, three of which were examples of the alastrum type and two of the severe type of the disease.

Some control observations were carried out with material obtained from cases of varicella. This virus proved inert when inoculated cutaneously into either the monkey or the rabbit. Material also from six outbreaks of varicella when examined with antivaricellal serum by the complement fixation and agglutination tests gave in all cases a negative result.

By none of the tests which Dr Gordon employed could any difference be detected between the virus of the mild or alastrum type of small-pox and the more severe type of this disease, except in regard to virulence to the monkey. Jenner also held that the mild and severe small-pox were one and the same disease, as is proved by some striking quotations from his writings which Dr Gordon supplies on pages 106 and 107 of this report.

CONCLUSION

In conclusion it may be observed that this report carries our knowledge of virus diseases appreciably forward. By his accurate quantitative technique and by the definition he has given to experimental and serological tests, Dr Gordon has not only cleared up many doubtful points with regard to vaccinia virus, but has provided reliable methods which may be advantageously used in the study of other virus diseases. His observations on the relations of alastrum and confluent small-pox, though they do not decide all the debatable points which have recently arisen, are forceful arguments and promise that if the accurate methods he has devised were employed in a large series of cases some of the outstanding problems might soon be solved.

VOLUNTARY HOSPITALS IN GREAT BRITAIN

SIXTH ANNUAL REVIEW

Dr F. N. KAY MENZIES, director of hospital services, Joint Council of the Order of St John and the British Red Cross Society, has issued a sixth annual report on the voluntary hospitals in Great Britain, excluding those of London. The report contains sixty tables analysing the hospital position in the provinces and Scotland, and Dr Menzies also reviews, in the light of the statistical records, the recent recommendations of the Voluntary Hospitals Commission.

Hospital Statistics for 1924

Of the 793 voluntary hospitals in Great Britain outside London all but 38, and those quite small institutions, are covered by the review. The figures show a steady increase in the number of in-patients and a quite noticeable increase in the number of out-patients, the number of new in-patients treated during 1924 in the 749 hospitals which gave this detail was 614,609, and the number of new out-patients 2,496,485. The pressure on the large hospitals (those with 100 and more beds) has reached a point at which

over 88 per cent of the beds are kept in constant occupation. In the 14 medical school hospitals in England and Wales, where the average occupation reaches almost 90 per cent, approximately 20 patients are treated in each bed annually. In 605 hospitals in England and Wales, 420,000 surgical operations under general anaesthetics took place last year, and in 79 hospitals in Scotland 80,181 such operations. The increase in out-patient work, though most pronounced in the ophthalmic and renal departments, has been, with the exception of venereal work, a general one. One fact brought out is that the ratio of out-patient to in-patient work decreases in the general hospitals and increases in the special hospitals as the institutions become smaller.

The Financial Position

The financial totals are best set out in the following form

	Ordinary Income	Extraordinary Income	Ordinary Expenditure	Extraordinary Expenditure
England and Wales (662 hospitals)	£ 4 510 667	£ 1 655 182	£ 4 526 182	£ 1 216 524
Scotland (93 hospitals)	£14 692	£99 031	£69 374	£48 407
Totals	£7 999 772		£5 760 487	

Ordinary income failed to meet ordinary expenditure by just under £40,000, but 61 per cent of the hospitals had a surplus on ordinary income. Extraordinary income in the table includes receipts for capital purposes, and extraordinary expenditure includes expenditure of capital. The total amount received in legacies was £1,175,427, of which about 20 per cent was earmarked. In Scotland free legacies were more than sufficient to pay half the ordinary expenditure.

In England and Wales an increase in workmen's contributions is shown all along the line. The income from this source, including the Hospital Saturday Fund and contributory schemes, was £1,249,153, an increase of about £157,000 on the year before. Patients' contributions (£644,214) and payments by or on behalf of patients (£1,022,894) show on the whole a very slight decrease, and the income received from public services remains very much the same (£378,680). Subscriptions (£638,203) have slightly increased, and donations (£719,253) rather more noticeably diminished. The expenditure per available bed in the case of 594 hospitals giving details averages nearly £107 a year, and in Scotland, for 93 hospitals, £115 a year. A curious difference is noted between the average annual cost per occupied bed in the English group of medical school hospitals (£182), and the corresponding figure for the Scottish group (£143), but the English hospitals with medical schools treat approximately twice as many out-patients per occupied bed as the Scottish. In Scotland workmen's contributions (£178,184), patients' contributions (£53,475), and payments by or on behalf of patients (£108,145), all show slight increases. The amount received from public services (£54,670) has declined a little, and is £3 less per available bed than in England. Donations are well maintained, but subscriptions show an almost constant fall during the last five years. Since 1920 the Scottish hospitals have increased their invested funds by £1,500,000, compared with an increase during the same period of £3,500,000 for the hospitals of England and Wales.

Recommendations of the Voluntary Hospitals Commission

The Voluntary Hospitals Commission has estimated the number of additional beds now needed to be 10,000 in England and Wales including London. Dr Menzies estimates that the capital expenditure involved in this provision will be £5,000,000 and the annual maintenance cost £1,250,000. It would probably require five years to build, equip, and staff the accommodation represented by these additional beds. Can the hospitals, without State aid, undertake this obligation? During the last four years the average annual increase of beds in the voluntary hospitals of England and Wales including London, has been 1,350. This is an abnormal figure, and Dr Menzies thinks the

¹ *British Medical Journal*, August 15th, p. 265.
Including the 118 hospitals in London the total voluntary hospital provision in Great Britain is 911 hospitals with 59,551 available beds.

normal increase may be placed at 1,000. Thus about half the additional beds which the Commission considers necessary will be forthcoming during the next five years from the ordinary financial resources upon which voluntary hospitals rely for their support. With a view to avoiding the necessity for a large Government grant, several suggestions have been made in the press, such as a closer co-operation between hospitals, relief from local rate charges, and exemption from legacy duty. Dr Menzies says that the first of these is an ideal which has proved in practice almost unattainable, and he gives reasons for thinking that the other suggestions are not likely to find acceptance with the municipal and State authorities. A desirable development would be the institution of a central fund for provincial hospitals, similar to King Edward's Hospital Fund for London, but such a scheme would take time to mature, and the present need is urgent. He believes that the maintenance cost of £1,250,000 a year for these additional beds would be found by the supporters of voluntary hospitals as and when required—in a foreword Sir Arthur Stanley does not seem to share his optimism—but that the Voluntary Hospitals Commission, in view of certain economic facts, and especially of this additional maintenance burden, is thoroughly justified in recommending the Government to make a substantial grant towards the huge capital expenditure.

Special Hospital Problems

Some interesting articles are appended to the report, including one by Mr H. S. Souttar, who urges the need for hospital provision for the middle class, either by the provision of special hospitals or—a more practicable proposition in the absence of assistance from the State or from generous donors—of paying wards in voluntary hospitals.

Mr Bishop Hamman, in another article, sets out the advantages and disadvantages of general hospitals with special departments as against special hospitals set up for the diagnosis and treatment of certain particular diseases. His conclusion is in favour of the general hospital with a range of special departments covering all modern requirements. He makes certain exceptions in favour of the special hospital, but he thinks there is no justification for separate hospitals for many of the conditions or the special treatments for which these at present exist, and that the need is better met by departments in, or in association with, a general hospital, which is the ideal unit of hospital organization.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY

The annual general meeting of the Medical Sickness, Annuity, and Life Assurance Society was held at the offices of the company, 300, High Holborn, W.C., on October 12th, when Dr F. J. ALLAN was in the chair.

CHAIRMAN'S ADDRESS

The chairman congratulated the members on the satisfactory report which the directors were able to present on the work of the company during the past year. He pointed out that while the business of the society had increased the ratio of expenses showed a decrease of nearly 2 per cent as compared with the previous year. Referring to the foundation of the society, he said it was the first and pioneer to initiate the system of insurance against sickness. It was founded largely through the exertions of the late Mr Ernest Hart, Editor of the BRITISH MEDICAL JOURNAL, who was led in 1883 to undertake the work through numerous letters received from members of the profession, pointing out the hardships which medical men and their families suffered during illness. The scheme adopted was to provide a weekly sum which would cover the extra expenses which illness entailed, and loss of income should the illness be prolonged. An important feature, however, was that if the illness became permanent the payment was continued up to the age of 65 years. This had been found very valuable by many who became incapacitated, and in some instances it constituted the sole income of the recipient. It was hoped that in the meantime members would have taken out an annuity policy for the rest of their lives and thus compensate for the cessation of sickness pay at 65. The society was now paying over £5,500 a year to those who had done so. With regard to life insurance the society, in its earlier days, was registered under the Friendly Societies Act which limited the amount of insurance to £300. This restriction prevented

the society from giving benefits which many medical men wanted, and eventually, in 1920, it was converted into a limited company on a mutual basis, since when it had been able to extend its sphere of operations in many directions for the benefit of the medical and dental professions. The careful way in which the finances of the society had been handled had led to the building up of a fund invested in first class securities, which would enable it to meet any claim which might arise without any strain on its resources. The funds for the sickness and accident insurance had been kept entirely distinct from those of the other branches of insurance, and recent events had proved the soundness of his procedure. In explaining why the society was able to offer better terms for sickness and accident than other companies, Dr Allan said that it had no dividends nor agents' commissions to pay. The society could now offer many different methods of sickness insurance to meet varying requirements. The scheme for newly qualified practitioners was proving a success, and consideration was continuously given to plans for future developments. The board of directors met weekly, or oftener if necessary, and gave individual attention to each proposal. The directors, representing as they did all branches of the medical and dental professions, were able to appreciate risks which could not be done by companies whose boards consisted of lay members. Since the reorganization of the life insurance branch in 1920 over £500,000 of new business had been transacted. The combined policies covering sickness, accident, and life assurance were becoming increasingly popular, as was also the educational policy of the society which included provision for a member's widow should the father die.

The chairman concluded his address by moving the adoption of the report. The motion having been duly seconded was carried unanimously.

Dr F. C. Muttley and Sir William Willcox were re-elected to the board of directors and Messrs Harber, Sturges and Fraser were re-elected auditors.

On the motion of the CHAIRMAN, a vote of thanks was recorded to the manager and staff generally for their excellent work during the past year.

Sir WILLIAM WILCOX moved a vote of thanks to Dr Allan for presiding and for the admirable work he had done for the society. The motion was carried, and the CHAIRMAN's reply concluded the proceedings.

England and Wales.

LIVERPOOL MEDICAL INSTITUTION JUBILEE MEMBERS
A SPECIAL general meeting of the Liverpool Medical Institution was held on October 8th to congratulate Drs A. Craigmyle and A. C. E. Harris and Mr Frank T. Paul on the attainment of their jubilee year of membership of the institution. The president, Mr R. C. Dun, and Mrs Dun received the members, and visitors and ladies were specially invited to be present. After tea, the assembly met in the theatre. The secretary read letters of regret from those unable to be present, and the president proposed in grateful terms a resolution of congratulation by the president, council, and members to the three members who celebrate this year their fiftieth year of membership.

Dr Alexander Craigmyle

Dr Richard Caton, emeritus professor of physiology, in support of the resolution, said that he had first met Dr Craigmyle, an Aberdonian graduate in arts and medicine, with a distinguished career as a student, when he was appointed house-surgeon at the Northern Hospital. There Dr Craigmyle at once revealed himself to be an assiduous officer, indefatigable in his duties and most considerate to the patients under his care. What he was as a young house-surgeon, he continued to be in practice in Wallace, where he was for many years among the leading practitioners of that growing community. Fifty years was a considerable span of human existence, but looking at Dr Craigmyle, who was now living in retirement, he could not help remarking on his vigour, and wished him health and happiness to enjoy the ease he had so meritoriously earned.

Mr Thelwall Thomas called to mind his first acquaintance with Dr Craigmyle for whom he acted as locum tenens. He was impressed with the student character which Dr Craigmyle displayed throughout his long career of medical practice. He was medical officer of health for Wallace, one of the founders of the Victoria Central Hospital, and

for many years one of the honorary surgeons attached to it. Dr Crugmille's public services were well known in the borough of Wallasey. Mr Thelwall Thomas touched upon his private life in most appreciative terms, a true friend and a helpmate to many of the young medical men who settled in the rapidly growing district of Cheshire. Although no longer residing in Wallasey, Dr Crugmille had left behind a memory of kindness towards his colleagues which they would ever cherish and of high esteem among those who were his patients.

Dr Crugmille expressed his sincere thanks for the honour that had been paid him, and his unfeigned pleasure in being a member of the institution which he joined shortly after coming to Liverpool. Speaking of his house-surgery in Liverpool, he stated that almost all the cases of compound fracture died of septicaemia. This was before the introduction of Lister's antiseptic system with its attendant the change was remarkable. He remembered well the removal of a loose body from the knee joint carried out under strict Listerian principles, which was crowned with success, much to the joy of those who had care of the case. He would always look back upon that day as a memorable one in his life, he valued highly the all too kind terms in which his friends had thought fit to characterize his life's work.

Dr A C E Harris

Sir James Barr regretted that Dr Harris was not able to be present to receive the congratulations of the members, but Mrs Harris, who was present, would be able to convey to her husband the high esteem and affection that his professional brethren had for him. He recalled the first time he met Dr Harris, who had settled in practice in Birkenhead, a friendship begun in 1874 had remained untroubled up to now. He spoke feelingly of the loveliness of Dr Harris, his never-failing courtesy, and his sound knowledge of clinical medicine. Singularly void of self-advancement, self-abnegation, it could be truthfully said, was his characteristic. He had filled the office of vice-president, and the presidency had been offered to him on more than one occasion. He was president of the Birkenhead Medical Society, and in the midst of his professional work took a keen interest in public affairs. He was a member of the borough council of Birkenhead, and at one time chairman of the Education Committee. Since 1894 Dr Harris had been a magistrate, and evinced on the bench those painstaking qualities which had ever been his characteristic as a medical practitioner. In Birkenhead he had endeared himself to his fellow practitioners by his transparency of purpose and sincerity of heart.

Dr Edgar Stevenson seconded the resolution, and in fitting terms dwelt on the personal attraction of Dr Harris. He recalled his first meeting with him and the impression left upon his boyish mind. It was not to be wondered at that Dr Harris had gained a place in the esteem and affection of all with whom he came into contact.

Mr Frank T Paul

Mr Rushton Parker, professor of surgery, gave his reminiscences of Mr Frank T Paul, who in 1873 came to Liverpool to fill the newly created post of resident medical officer to the Royal Infirmary. Mr Parker traced rapidly his further progress, not only as a teacher in the then Royal Infirmary School of Medicine, but as a surgeon, and the world-wide reputation he enjoyed as a pioneer in abdominal surgery.

Mr Thomas H Bickerton, consulting ophthalmic surgeon in seconding the resolution, gave an account of Mr Paul's life during the past fifty years. He enhanced his remarks with personal touches, alluding to Mr Paul's recreations: he was a skilled canoeist and yachtsman who had gained prizes in racing events, an interesting and informative companion in a country ramble, an excellent photographer, horticulturist, cricketer, cyclist, and motorist. His serenity stood him in good stead, both when a work and at play. Equanimity was ever retained in the most trying circumstances. A consummate pathologist, morbid anatomy, naked eye and microscope was the sure foundation on which his surgical skill was built. It was not a matter of surprise that his fame as a surgeon was world-wide. Paul's tube would always keep his memory

green in abdominal surgery. As a teacher he was clear and precise, careful in statement and master of the subject on which he was lecturing. The microscopic specimens cut by his own master hand, and distributed to the students whom Mr Paul was lecturer on histology, are in the possession of many of his former pupils—a living testimony to his skill. Mr Paul practised the antiseptic method from the very outset, previous to this all the cases of hernia during the first year he was at the Royal Infirmary died. Mr Bickerton, in conclusion, said that if he had to choose a motto for his friend, and one that had characterized all his actions, it would be "Let all things be done decently and in order."

Mr Paul expressed his great appreciation of the honour the members had bestowed upon him in assembling to congratulate him on his fifty years' membership. Dr Crugmille and Harris were old friends, and his pleasure was enhanced by the fact that they shared in those congratulations. Mr Paul gave an interesting review of his activities, and mentioned that one of the very few honours he craved about was to become president of the Liverpool Medical Institution (1906-1908). In his retrospect he paid a high tribute to the education he received at Guy's Hospital. There he acquired a good experience in several branches, ophthalmology, laryngology, and minor surgery and dentistry. His love of the country and outdoor pursuits he attributed to his happy childhood, which was lived in the country in Norfolk. Upon his colleagues at the Royal Infirmary, where Mr Paul was on the active staff for twenty years, he bestowed grateful words of appreciation of their help and steadfast friendship. The great war brought him into contact with many other surgeons at Fazakerley Hospital, and thus he was able to cement new ties of friendship. In conclusion, Mr Paul said that he was much indebted to his professional brethren in the various acts of kindness that he had received during his active life. He still hoped to continue his surgical work at the cottage hospital to which he had been appointed as operating surgeon.

A great surprise awaited the members when Mr Keith W Monsarrat asked Mr Thelwall Thomas to present Mr Frank Paul with a birthday gift. This took the shape of a volume of the most important surgical papers Mr Paul has written during the past fifty years. The leading surgeons in Liverpool and neighbourhood had combined to give a tangible token of the high esteem in which they held Mr Paul, and took advantage of this opportunity of presenting him with a copy of his works. The copy, which is to be handsomely bound, unfortunately was not ready. Mr Paul replied, and was much pleased with the signal honour his colleagues had shown him.

THE ANNUAL MEDICAL SERVICE IN LIVERPOOL

The annual medical service in Liverpool will take place on Sunday, October 18th, at 3 p.m. in the Cathedral. Members of the medical profession, who are requested to wear academic dress if possible, and their friends should be seated not later than 2.40. Tickets for the service can be obtained from Dr John Owen, 13, Rodney Street. The offertory will be in aid of the Royal Medical Benevolent Fund. It is hoped that the attendance will be a large one. Any medical man who may be prevented from being present can forward a donation to the local honorary treasurer, Dr J Ernest Nevins, 32 Princes Avenue, who will gratefully acknowledge its receipt.

LEEDS GENERAL INFIRMARY NEW RADIOTHERAPEUTIC DEPARTMENT

By the generosity of two donors—Mr J B Syles of Horbury, near Wakefield, who has presented the building, and Miss Walker, Newton Hall, Chapelton, Leeds, who has presented the artificial sunlight apparatus—the General Infirmary, Leeds, is now possessed of one of the largest and best departments of its kind in this country. The new building measures over 100 ft by 45 ft, and contains eleven treatment rooms, as well as a workshop and instrument, waiting, staff, and dressing rooms. The building is very airy and well lighted, and a broad corridor down the centre provides access to the various rooms. Five of the treatment rooms are devoted to deep x-ray therapy, and

each cubicle is equipped with apparatus capable of generating 200,000 volts and upwards. Provision is made for the housing of the apparatus in a large instrument room. Special care has been taken to provide for the adequate protection of the staff by heavy lead linings in all the cubicles, and the controls are placed in a special room outside without any reach of the operator. The cubicles are lofty, and are lit from above, while central heating has been adopted throughout the building. The artificial sunlight department consists of six treatment rooms. The two largest, measuring 20 feet square, will be for men and women respectively. Dressing rooms are attached to each, and an observation room is provided so as to control both treatment rooms. Each room is equipped with two "mountain sun" mercury vapour lamps and two arc lamps, together with special radiant heat lamps. A separate room for the treatment of patients unable to sit or stand is equipped with lamps which can be used while the person reclines on a couch. Another room is reserved for children, and similar equipment of arc and mercury vapour lamps has been provided here. A special room for treatment by the Kromayer lamps is placed at the end of the long corridor, and one of the largest rooms has been set apart for Finsen light treatment of lupus and similar diseases. At present, upwards of one hundred cases a day have been receiving artificial sunlight treatment, but the new department will be able to deal with upwards of three hundred.

Scotland.

POST-GRADUATE WORK IN GLASGOW

FROM November to May weekly demonstrations in medicine, surgery, obstetrics, and various special subjects will be held at different hospitals in Glasgow, on Wednesday afternoons. An inclusive fee of three guineas is payable for attendance. The Glasgow Eye Infirmary has arranged three special courses. A course for medical practitioners on the diagnosis and treatment of external diseases of the eye will be held on Tuesdays and Fridays, from October till December, and a practical course for ophthalmic surgeons on the use of the binocular microscope and slit-lamp is being arranged for October and November on days to suit the convenience of those participating. From January to May a course qualifying for the diploma in ophthalmic medicine and surgery of the Royal Colleges of Physicians and Surgeons of England will be given. A limited number of clinical assistantships are available for graduates who wish to study in detail one or other of the specialties, such graduates must enrol for a period of three months. This provides exceptional opportunities for those who wish to specialize, and for practitioners from overseas. A copy of the syllabus and further information may be obtained from the secretary of the Post-Graduate Medical Association, the University, Glasgow.

ANNUAL REPORT OF REGISTRAR-GENERAL FOR SCOTLAND

The seventieth annual report of the Registrar-General for Scotland, dealing with the year 1924, has just appeared. The population of Scotland at the middle of the year is estimated as 4,881,637, being 19,463 less than that of the previous year. The decline is attributed to the numbers of people emigrating in recent years.

Births and Marriages

The number of births registered in Scotland during the year was 106,900, which is the smallest number of births registered in Scotland since 1860, with the exception of three of the war years, 1917, 1918, and 1919. The births are 5,002 less than those of the previous year, and 11,700 less than the mean of the numbers for the preceding five years. The birth rate of the year was 21.90 per 1,000, which is 0.93 less than that of the previous year, 2.43 less than the mean of those of the preceding five years, and 1.64 less than the mean of those of the preceding ten years. The illegitimate children registered during the year numbered 7,085, which is the smallest number yet recorded. The marriages recorded during the year numbered 32,352, which is 2,848 less than in the previous year.

Deaths

The deaths registered during the year numbered 70,357, which is 7,074 more than in the previous year, 1,212 more than the average number registered in the preceding five years, but 1,584 less than the average number registered in the preceding ten years. The number is greater than that of the years 1923, 1921, 1920, and 1917, but is still less than a number of other years subsequent to 1868. The infantile mortality rate of the year was 97.7 per 1,000 registered births, which is 18.8 more than that for the previous year, which had, however, the lowest recorded rate. This is the sixth year in which the infantile mortality rate has been less than 100.

With regard to causes of death, out of the 70,357 persons who died during the year, 35,168 were males and 35,189 were females. The deaths of males numbered 3,486 more than in the previous year, and those of females numbered 3,588 more than in the previous year. The general Scottish death rate for the year was 14.41 per 1,000, which is 1.50 more than that of the previous year, and 0.23 more than the mean of those of the preceding five years, but 0.48 less than the mean of those of the preceding ten years. The maximum death rate (23.58) occurred in Scotland in 1864, and from 1855 to 1890, with the one exception of the year 1856, the national death rate has been constantly over 20 per 1,000, and from 1891 to 1893 over 19 per 1,000. It fell below 18 for the first time in 1894, below 17 in 1896, below 16 in 1909, below 15 in 1916, below 14 in 1921, and below 13 in 1923, with a slight rise in the year under review. Of the total number of deaths, 54 per cent were registered in the larger burghs. In the whole of the death rate was 15.83, while in the smaller burghs it was 13.18, and in the county districts 12.96. In the larger burghs, taken individually, the uncorrected death rate varied from 18.3 in Perth, 17.0 in Anstruther, 16.8 in Paisley, 16.7 in Dundee, 16.5 in Glasgow, 16.1 in Edinburgh, to 13.7 in Dunfermline, 12.5 in Kilmarnock, and 7.6 in Clydebank. In five of these burghs (Dunfermline, Clydebank, Kilmarnock, Perth, and Aberdeen) the corrected and adjusted death rate was lower than the national death rate, while in eleven it was higher. Of the total number of persons who died, 24.2 per cent were children of less than 5 years of age, and 36.8 per cent were aged 65 and over. The deaths of children of less than 1 year numbered 10,446. These deaths numbered 1,621 more than in the previous year. The infantile mortality rate of 97.7, although higher than that of the year 1923, and also of the years 1921, 1920, and 1916, is lower than in all other previous years since 1855. It had reached a maximum of 138 in 1897, but since 1915 had been only three times over 100. The oldest person whose age has so far been verified in Scotland died during 1924 at the age of 106 years 213 days; the age was verified by reference to an old parochial register. The previous oldest, in both cases females, had been aged 106 years 194 days. So far careful investigation has verified in all 95 instances of attaining to the age of 100.

Infectious Diseases

Deaths from enteric fever numbered 34, which is the smallest number of such deaths yet recorded in Scotland. For the first time no deaths from typhus fever were registered in Scotland, and in 1924, as in the two previous years, 1922 and 1923, there had been no deaths from small pox.

Measles was responsible for 1,592 deaths, which were 471 more than in the previous year. These deaths constituted 2.26 per cent of the total deaths and equalled an annual death rate of 33 per 100,000. In the larger burghs it equalled 46 in the smaller burghs 20 and in the county districts 20. The persons dying were chiefly children up to the age of 5 years.

Scarlet fever caused 410 deaths, which is the largest number since 1916 and 58 more than in the previous year. The number, however, is small compared with the numbers in the earlier years of registration. From 1855 to 1876 these deaths almost constantly numbered over 2,000 annually and were at a maximum in 1874, with 6,321 deaths. The first year in which deaths from scarlet fever numbered less than 1,000 was 1855, and the first in which they fell below 500 was 1903. The smallest number dying from this cause in any one year was 163 in 1918.

Whooping cough was responsible for 1,625 deaths (757 males and 868 females). The number was 636 more than in the previous year and the largest number of deaths from this cause in any year since 1917. Of the total number dying from whooping cough 43.5 per cent were children of less than 1 year old and another 51.4 per cent were children of between 1 and 5 years of age. The months of the year in which the greatest

number of deaths from whooping-cough were March, December, and April.

Diphtheria was responsible for 442 deaths, or 50 less than in the previous year, making a death rate of 9 per 100,000, which rate is the lowest yet recorded from this cause.

Influenza was responsible for 2,490 deaths, which is 1,959 more than in the previous year.

Tuberculosis accounted for 5,653 deaths, or 137 fewer than in the previous year. This is the smallest number of deaths from tuberculosis yet recorded in Scotland, the previous minimum being 5,737 which occurred in 1921. The maximum number of deaths recorded from this cause was 13,027 in 1870, and compared with this maximum year the year 1924 shows a reduction of 56.6 per cent. Of the deaths from tuberculosis 3,887 were due to tuberculosis of the respiratory system, which is 103 less than in the previous year, and the least number yet recorded in Scotland from this cause.

Cancer and other forms of malignant disease caused 6,498 deaths, or a death rate of 133 per 100,000. Both the number of deaths and the rate are the highest yet recorded. The death rate from this cause has risen steadily from 42 per 100,000 in 1870 to 49 in 1880, 54 in 1890, 74 in 1900, 93 in 1910, and 113 in 1920. In 1921 and 1922 the death rate was over 120 while in the last two years it has been over 130. Of the total deaths from cancer 2,867 were among males and 3,631 among females. The most frequent sites of fatal malignant disease were in males, the stomach, intestines, rectum, liver, oesophagus, prostate and tongue, while in females they were the stomach, breast, intestines, uterus, liver, and rectum.

Syphilis was the stated cause of death in 151 instances, which is 17 less than in the previous year. These deaths equalled a death rate of 3 per 100,000, which is the same as in the previous year.

Diseases of the nervous system accounted for 8,668 deaths of which 5,983 were due to various forms of apoplexy.

Diseases of the circulatory system accounted for 8,405 deaths, of which 7,339 were due to diseases of the heart. Diseases of the respiratory system, other than tuberculosis, caused 12,082 deaths, which is 2,991 more than in the previous year. These included 4,480 deaths due to bronchitis, 3,541 to bronchial pneumonia, and 3,165 to lobular pneumonia. The total pneumonia deaths of 7,691 equalled a death rate of 153 per 100,000, which is 59 more than in the previous year. A maximum pneumonia death rate had occurred in the year 1918 at the rate of 238 per 100,000.

Deaths attributable to violence numbered 2,589, which was 130 more than in the previous year. Of these, 2,205 were due to accident, the chief cause being burns or scalds in 330 cases.

The report deals with the vaccination of children born during 1923, who in ordinary course should have been vaccinated during that year or during the first half of 1924. The children born in the year 1923 numbered 111,916, of whom 7,611 died before reaching the statutory age for vaccination (6 months). Of those surviving that age (104,305), 64,659, or 61.99 per cent, were either certified as having been successfully vaccinated, or were reported as being susceptible to vaccination, while 38,815, or 37.21 per cent, were reported to be unvaccinated at the end of the year 1924. The majority of these 32,451 were unvaccinated by reason of a declaration of conscientious objection on the part of parents. The percentage thus remaining unvaccinated through parental conscientious objection formed 31.11 per cent of the total children. This percentage of conscientious objection varied from 84.1 per cent in Shetland to 8.9 per cent in Wigtown, 9.5 per cent in Peebles, and 9.6 in Nairn, while in Aberdeen the percentage was 8.6, in Edinburgh 20.8, and in Glasgow 22.9.

Correspondence.

POETRY AND PHYSIC

SIR.—The very interesting and scholarly address recently delivered by Sir Humphry Rolleston, a summary of which is given in your issue for October 10th (p. 660), is so suggestive that he must be held primarily responsible for this attack upon your space.

The address is a plea for the cultivation of poetry by our own profession. Non-poetry has suffered and still suffers from being so much read but so little heard. Its primary appeal is not to the eye but to the ear, a fact better appreciated in the dawn of the art than it is now. It is a pity that we have no class in these days corresponding with the sharpshooters, who of old were so successful in popularizing the poetry of their own time. What is wanted as a first

step towards the wider appreciation of poetry is not so much to read more as to hear more.

The cultivation of poetry by the medical man and scientist is of both utilitarian and æsthetic value. "Imagination," says Sir Humphry, "is a necessary stimulus to really good work, especially in original research." It may well be that the mental myopia induced by the narrow scrutiny of minutiae of facts is responsible for the dearth of great generalizations. The history of science shows us over and over again that a man "voyaging in strange seas of thought" may, if he be short of sight, find himself marooned on a desert island of fact, apparently cut off from the main continent of truth, when all the time the path is open were not his eyes holden so that he cannot see. This kind of error is best cured by the cultivation of the imagination which a study of poetry brings. Indeed, a wise age may put the poet's imagination to better use than we do, and it may be considered necessary to attach a poet to the permanent staff of every research laboratory. May not the man of imagination sometimes greatly assist the man of fact by finding short cuts to discovery of which the latter is not aware?

Apart from its utilitarian aspect the cultivation of poetry has, as Sir Humphry Rolleston points out, a great æsthetic value. The act of creation has a stimulant effect which no tonic in the *Pharmacopœia* can rival. If you can think at all no thoughts can delight you as your own. But the creative effort required for poetry is arduous, and perhaps the practitioner, tired from his busy day's routine, would be better advised to emulate, if he can, Sir Donald MacAlister by taking some fine thought already born in a foreign language and assisting at its palingenesis in his native tongue. This is still creation, though creation at second hand, for a really good translation must necessarily be creative. There is, too, in translation an element of adventure. The translator is a "bringer-over," or, in better parlance, a ferryman. Even if he founders with his cargo he will have perished in a good cause.

Certainly it is no vice to write poetry, though it may be one to publish it—an offence, however, easier to commit in times past. The day is no longer when an aspirant can circulate copies in MS. of his effusions to indiscreet friends in the secret hope that one of them will hand the script to the printer, and he be forced in mere self-defence to give to the world "a full and intended copy of that piece which was most imperfectly and surreptitiously printed before"—I am, etc.,

Sarbiton Oct 9th

E. W. ADAMS

MEDICAL WOMEN IN MIDDLE-ÆVAL TIMES

SIR.—The history of medicine has now become a serious discipline. It has its own scientific journals and its own methods of research. Its results are recognized by the general body of historians. Men of learning now look to those who write upon medical history for the same intellectual integrity as is exhibited in other departments of historical research. It has therefore become of importance for the advancement of learning, and is, moreover, not without some practical importance for the good name of the medical profession, that unguarded statements or untenable conclusions on medico-historical topics should not be carelessly thrown off. In a note in your issue of October 10th Dr. Redmond Roche writes as follows:

Under the Benedictine monks the first university of modern times came into existence at Salerno and there in the twelfth century women were admitted to the university and to the medical school, and the department for diseases of women was handed over to women professors. It has been said of the famous St. Hildegard (who died in 1179) that her writings disclose a better knowledge of science than any other writer man or woman, of her time. Reuss, editor of an edition of her works, says she knew many things unknown to the physicians of her time.

There is hardly a phrase in this paragraph that does not need revision. Salerno was not in our sense a university, but only a medical school. There is no evidence that this medical school was under or was founded by or was the work of Benedictines. There were no "professors" at Salerno in the twelfth century, and none of the teachers can be shown to have been women. The works ascribed to Salernitan women have been proved to be compiled from more ancient writings, and there is evidence that the

compilation of them was the work not of women but of men. There is no evidence for the existence at any time of a department for the diseases of women at Salerno. There is no evidence that women were "admitted" to the "university" in the twelfth century and very little that they were admitted at any other time.

St Hildegard did not die in 1179, but was alive and in fairly vigorous health at that date. The medical writings ascribed to her are but doubtfully hers. So far from disclosing a better knowledge of science than those of any writer of her time, they exhibit in fact backward material, and are far inferior to the translations being made from the Arabic by her contemporary Gerard of Cremona. The main interest to historians of the "scientific" works ascribed to Hildegard is precisely that they give a glimpse into the medicine of an earlier age than her own. In other words, their backwardness is their chief value. From the historian's point of view their chief drawback is, however, that they are not quite backward enough, for much that is in them can be traced to other sources.

Lastly, it would perhaps be needlessly harsh to recall the fact that the life of Saint Hildegard was not altogether truthful, were it not that the Roman Catholic Church, to which she adhered with greater vehemence than orthodoxy, has itself promulgated this conclusion.

If Dr Rocho seeks evidence for these revisions of opinion he will find it in the very extensive scientific literature on Salerno and on Hildegard that has appeared during the last quarter of a century. This literature will incidentally reveal to him the fact that the imperfect edition of the works of St Hildegard that appeared in 1882 was, with the exception of a single text, printed from earlier editions. Reuss was not its editor, though he did write an introduction to this single text.

It appears to me that the time has arrived when wild and undocumented statements concerning medieval medicine should cease to be bandied about. While such treatment of historical problems is liable to injure the cause of historical truth in general, it is certain to detract from the interest and value of medical history in particular.—I am etc.,

London W C 1 Oct 10th

CHARLES SINGER

SURGICAL TREATMENT OF MITRAL STENOSIS

SIR,—We have to congratulate Mr. Soutter on successfully introducing a finger through the mitral valve of a living subject (BRITISH MEDICAL JOURNAL, October 3rd, p 603).

Examination of specimens at this hospital has shown us that in some young subjects mitral stenosis can be very extreme, the valve orifice barely admitting the tip of the little finger. Moreover, the fused cusps in these cases are often consolidated into a hard mass almost cartilaginous to the touch, the auricle is ballooned out, behind a ventricle starved of blood and withered in consequence.

Such cases are rare, but appear to us to be those calling for surgical relief of the obstruction. The tenacity of the valve mass necessitates the use of a cutting instrument.

In selecting cases of such high degree of mitral obstruction electro-cardiograms form an important part of the examination.

We would refer to some papers we published last year—the technique of mitralotomy in the *American Journal of Surgery* May 1924 and the relief of mitral obstruction, *New Zealand Medical Journal*, June, 1924.—We are, etc.,

J STICKLAND GOODALL

L C ROGERS, F R C S Edin

National Hospital for Diseases of the Heart London Oct 6th

SIR—I read with great interest Mr. Soutter's account of his operation on a case of rheumatic carditis (October 3rd p 603). I was not surprised to read that the mitral orifice was not found to be greatly stenosed, partly because of the physical signs he so well describes, and partly because, having observed some few children with progressive mitral stenosis over a number of years, I think it is seldom that a true cicatricial stenosis is established during childhood at all.

It is still quite insufficiently realized that the pre-

dominant feature, not only of rheumatic carditis in childhood, but also, in severe cases, of the heart failure which follows it, is infective (that is, rheumatic) myocarditis, and not any merely mechanical deficiency of the valves. The close relation that undoubtedly exists between mitral endocarditis and heart failure due to progressive myocarditis has not yet been fully worked out, but possibly in these severe stages of the disease the endocardial vegetations are the main source and the myocardium the main recipient of the toxins which result in failure of the heart.

One would suppose that in order to obtain a more suitable case for surgical treatment it would be better to look for a patient whose stenosed mitral valve was merely the result of a completely healed rheumatic lesion in bygone years, and it is only in later life that such are commonly found—I am etc.,

Bread St Oct 10th

MARTIN O RAVEN

"CONGRISS ASPHYXIA"

SIR,—Your General correspondent's account (September 26th, p 576) of the conditions under which the health organizations of the League of Nations work is deplorable but not in the least surprising. The International Congress of Child Welfare recently held in the same city would appear also not to have been above reproach in this respect. Dr Cecil Reddie, at the First Guildhall School Conference, 1912, mentioned having attended a lecture on school hygiene in Germany in a room where asphyxiation was imminent, and my experience when listening to the teaching of hygiene in Munich in January, 1914, was far from favourable. Nor shall I ever forget the expression of horror with which a Parisian manservant received the intimation of my intention to sleep with the windows wide open one cold Easter.

At the same time it is but fair to admit that the "furtive Anglo-Saxon" has not a good record in this matter. The atmosphere of the office of a well known health organization is such that I invariably beat a hasty retreat after a visit. An educationist member of the London County Council used to amuse himself by counting the number of open windows in Huxley Street, while one of the worst colds which I can recall was the sequel to a committee meeting held in the room of a specialist in tuberculosis. After a meeting in Hampstead in support of the garden city idea, when the air was thick enough to cut with a knife, a joint letter from the late Dr. Claude Fawcett and myself poking fun at the promoters for their inconsistency, and inviting officials of churches and clubs to apply to the local health society for assistance in improving their ventilation failed to evoke a single response. Presiding at a meeting at Essex Hall for the same object, an eminent medical man told his audience that as the result of the foul air they were breathing they would all be physically deteriorated the next day. From these illustrations, which might easily be multiplied, it must sorrowfully be admitted that as a people we are still far from having learned that the saying "cleanness is next to godliness" is applicable to air as well as to other things—I am, etc.,

CHARLES E HECHT,

Honorary Secretary Food Education Society

Weiminster SW Oct 10th

ADDITIONAL VOLUNTARY HOSPITAL ACCOMMODATION

SIR,—As Dr Ferdinand Rees (September 26th, p 585) does not answer my questions we must assume he thinks that this country is falling behind other countries in healthiness, that nothing will save its position except the immediate provision of 10,000 hospital beds, and that some measure of nationalization is necessary for the purpose. I gather that any other method than nationalization is something to be ashamed of, and that those who are not socialists are silly. The simplicity of this division of parties in the State takes my fancy greatly. As a member of the silly group I tried to point out that hospitals on the voluntary system have done magnificent work in the past, that there are signs that they may continue to meet the needs of the community in the future, that in times when economy is necessary even the superb clinics of

Switzerland should not make us in a hurry to embark on new ventures that may be very costly in their results, and that the proposals of the Voluntary Hospitals Commission have the same nationalistic foundation as those of the socialists. In addition to this the Commission's plan will have far-reaching effects on the medical profession, and it surprises me that so little interest seems to be taken in the matter by medical men.

I am now meditating on the curious political fact that whenever anything is thought to be wrong with any particular service or institution the cause is sought in some lack of representation. "The Hospitals Association," says Dr. Rees, "has no sense of citizenship, its policy is selfish and mediocritous." The reason seems to be that neither he nor I is represented on that body—I am, etc.

Felstead Sept 28th

CHARLES BUTLER

LEEDS UNIVERSITY AND THE MEDICAL PROFESSION

Sir,—The old Leeds Medical School is approaching its century of existence, in which a steady progress of development has been marked from time to time by substantial additions to its accommodation. Since 1893, the date of completion of the present buildings, there have been no structural alterations commensurate with the progress of physiology and pathology, the closer co-operation of laboratory and clinical departments, and the increase of the general and special hospitals and the public health organizations, which all add to the obligations and opportunities of service of the Medical School.

The support given by the medical profession to the school in times past was both generous and important. The example of former days is our justification, at this critical time of need for expansion, for making a special appeal on behalf of the school.

The University is fully aware of the value of the Leeds Medical School, and desires very earnestly to promote the usefulness of this Faculty with no less care and energy than it devotes to the development of the Faculties of Arts, Science, and Technology. For this reason the urgent needs of the Faculty of Medicine have been acknowledged by the University, and in making its general appeal to Yorkshire it feels that the greatest assistance may be derived from the spirit of the profession which by its own endeavours raised a medical school from casual meetings in the back room of the old dispensary to a position of respect and eminence in the medical world.

At the present time there is neither accommodation nor equipment to permit the University to set men on to meet the demands for investigation and service required by the community. Even the present staff, honours and otherwise, are prevented from giving their energies and enthusiasm to current problems by this lack of facilities. It is earnestly hoped that the members of the profession will give all the assistance in their power towards the object of the University, which is to make its medical departments capable of acting as a fruitful and useful centre of research and information and equal to their obligations to our large industrial population—We are, etc.,

DEVONSHIRE,

Chancellor

J. KAY JAMESON,

Dean of the Faculty of Medicine

The University, Leeds
Oct 12th

THE SUPPLY OF ARTIFICIAL LIMBS

Sir,—Our attention has been drawn to the article in your issue of October 3rd (p. 619), and to the suggestion therein that the contract placed by the Ministry of Pensions with my company and Messrs Hanger may "produce a state of things in which further possible improvements in details and in types will be discouraged."

The Ministry of Pensions made it a *sine qua non* in giving the contract to our respective firms that a clause should be inserted fully covering the Ministry and pensioners in this respect. In consequence, the Ministry of Pensions has amplified its demands.

It is necessary to point out that this contract only applies to light metal limbs, of which ourselves and the other con-

tracting firm have probably supplied nearly 90 per cent of the total number supplied to date—I am, etc., for and on behalf of Pedestrian, Ltd.,

London W 1 Oct 13th

T. BRYANT SMITH,
Director

Obituary

R. C. CHICKEN, F.R.C.S.,

Consulting Surgeon Nottingham General Hospital

MR. RUFERT CICIL CHICKEN, whose death occurred on October 3rd, was born in Nottingham about 1850. After studying at Guy's Hospital, he obtained the diplomas of M.R.C.S. in 1872, L.R.C.P. in 1873, F.R.C.S. Eng. in 1875, and L.S.A. in 1877. He occupied the posts of house-surgeon and obstetric assistant at Guy's, registrar at the Plymouth Hospital, and professor of anatomy at the Royal College of Surgeons. On returning to his native town he became partner with Mr. Wychin, whose death in the early eighties left Chicken in sole charge of a large mixed general practice. This was a great handicap on a man who by previous training and natural aptitude was fitted to be a surgeon. Nevertheless, he found many opportunities of practising the art he loved, both among his own patients and those of his neighbouring colleagues who sought his opinion. Thus he was able to maintain his operative skill and keep in touch with the progress of surgery.

His long-cherished hope of obtaining a hospital appointment came to fruition in October, 1891, when he was elected to the staff of the Nottingham General Hospital. With characteristic generosity he remarked "Now I shall be able to help my friends." The next ten or fifteen years of his life were a period of great surgical activity, both public and private. Elected president of the Nottingham Medical-Chirurgical Society in 1892 he gave as his address "The treatment of hernia." As illustrating the wide range of his surgical interests, the following titles of papers, etc., contributed to the same society may be mentioned: "The surgical treatment of tumours of the thyroid" (1886, 1894), "Cystic tumour of testis" (1890), "Wolff's operation for loose fibro cartilage," "Trigeminal neuralgia, excision of a portion of the lingual nerve," "Trigeminal neuralgia, a modification of the operation for resection of the second division" (1892), "Patient after tiephoning for abnormal sensations in right thumb," "Lupus erythematosus," "Resection of intestine for intussusception" (1894), "Some operations in the hepatic region," "Indications for, and results of, removal of the uterine appendages" (1896-97), "Operation for perforated gastric ulcer" (patient shown, 1897), "Some operations on the digestive organs" (1897), "Excision of rectum for carcinoma," "Gastrotomy for oesophageal cancer" (1898), "Operation for gangrene of lung" (patient shown), "Abnormal semi-lunar cartilages," "Hydrocele," "Tubal abortion" (1899), "Ligature of common carotid (patient shown, 1900), "The bowels of appendicitis," "Elephantiasis of scrotum," "Radiograph of myositis ossificans" (1901), "Operation for musculo-spiral paralysis" (two patients shown), "Prostatectomy by Meyer's method" (1902). In spite of ill health, which clouded the latter years of his life in Nottingham, his surgical activity continued unabated and the above list might have been greatly extended. His long and painful disabilities with uncomplaining fortitude and quiet resignation. On his retirement from the hospital staff and from practice in December, 1907, he was appointed consulting surgeon to the hospital for life.

He was a sound and careful surgeon, well abreast of the knowledge and technique of his day. He did not adopt new methods without careful consideration and conviction of their utility. If he pinned his faith to sponges after the era of swabs had come in, he could claim with justice that his wounds remained free from sepsis. If he refused to treat his fractures along lines which at the time were new and revolutionary, he lived to see the day when some leading surgeons were advocating a return to older methods. In addition to his professional interest he was a man of wide reading and culture. A collector of old oak and silver, he was a student of local history and archaeology. He compiled and published a valuable *Index to Deering's History*

of Nottingham (1899) He also wrote a booklet on *Excavations at the Nottingham General Hospital during the Building of the New Wing* (1899) He had to fight for his position, and reached the goal in spite of difficulties. He fought without enmity, and did not cherish any aftermath of bitterness. He was of a kind and generous disposition, as many of his colleagues can testify, to whom he freely gave his time and skill in their sicknesses. To one of these who thanked him for his help he said, "Think of the pleasure I have had in doing it."

After leaving Nottingham Mr. Chicken acted as ship surgeon for a year or more, in the hope of regaining his health. During the war he held the post of surgeon to the Whipp's Cross War Hospital, Leytonstone. He also resided at Hemel Hempstead and Chichester. His last home was at Sandgate, Folkestone. He leaves a widow, one son, and two daughters.

C F SONNTAG, M.D. EDIN.

Professor, Zoological Society of London, formerly Hydrologist, Military Orthopaedic Hospital, Shepherd's Bush.

DR. CHARLES FREDERICK SONNTAG, Professor to the Zoological Society of London, died suddenly on October 10th at his residence in Belsize Park Gardens. He had contracted phthisis while on active service during the war, and his death, at the early age of 37, was attributable to this.

He was a native of Glasgow, and received his medical education at Edinburgh University, where he graduated M.B., Ch.B. in 1910, and proceeded M.D. with honours in 1912. Soon after the outbreak of war he joined the Royal Army Medical Corps and saw active service as regimental medical officer in several units of the Salonika Expeditionary Force. In 1916 he was invalided home, and the end of the war saw him in charge of the hydrotherapy department in the Military Orthopaedic Hospital, Shepherd's Bush. Although in the years after the war he became engrossed in anatomical research, he still continued his interest in hydrotherapy, and for some time acted as honorary secretary of the Balneological Section of the Royal Society of Medicine.

Sonntag even when at school had made a study of zoology and comparative anatomy, and was always insistent on the value of this training in his medical and surgical work. While engaged in his duties at Shepherd's Bush he attracted the notice of Professor F. Wood Jones, who, quick to notice Sonntag's abilities as a comparative anatomist, recommended him for the post of Professor to the Zoological Society, to which position he was elected by the Council in August, 1919. In spite of his failing health he threw himself into his new work with great ardour and enthusiasm, and the thirty papers on vertebrate anatomy which he contributed to the *Proceedings* of the society in the ensuing six years bear witness to his boundless energy. Much of his work was on the anatomy and physiology of the anthropoid apes, and in addition to several papers on this subject, in 1924 he published a treatise on the morphology and evolution of the apes and man. Besides his work at the Professorium he held the post of demonstrator in anatomy at University College.

He will be mourned by a large circle of friends, who looked upon him with that respect which is earned by honest hard work, and will remember him for his ready wit and cheery optimism in the face of much physical suffering. The funeral took place at Fortune Green Cemetery, Hampstead, on October 13th. Among those present were Sir Arthur Keith, Professor Elliot Smith, Professor J. P. Hill, Dr. P. Chalmers Mitchell, and many other scientific friends and colleagues.

G. M. V.

THE LATE DR. W. MORRISTON DAVIES

DR. J. B. PYLE (Loughborough) writes: "With regret I saw in the *Journal* of October 3rd (p. 629) an obituary notice of Dr. Morriston Davies. My chief recollections of him date back about fifty years, when he was the junior partner in the firm of Foster, Lucas and Davies. I was house-surgeon at Huntingdon County Hospital, and repeatedly I went with Dr. Davies to give an anæsthetic or to assist at an operation. Dr. Davies was one of Lord

Lister's early pupils, and introduced antiseptic surgery at Huntingdon with its primary technique. I remember one case of breast amputation in which hæmorrhage was kept up by the warm carbolic spray and ceased on its discontinuance. My memories of Dr. Davies are all happy ones, recalling to my mind youthful friendliness and enthusiasm."

Professor O. KUKULA, director of the first surgical clinic, and Rector Magnificus of the University of Prague, has recently died at the age of 58. He was the author of an important monograph on the pathology and treatment of appendicitis.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE

THE following candidates have been approved at the examinations indicated:

D.P.H. (BOTH PARTS)—*Old Regulations*: J. R. Hayman, J. A. G. Kedde, W. B. Stott. *New Regulations*: A. N. Fergus, Mary A. Hene, R. A. Mansell, C. F. Pedley, C. J. Stocker, F. C. Tibbs, M. E. Yee. DIPLOMA IN HYGIENE—A. R. Hassan, L. Shehata.

* Distinguished in Part I. † Distinguished in Part II.

UNIVERSITY OF LONDON

At the matriculation examination of the University of London held in September there were 42 successful candidates in the first division and 411 in the second division, in addition, 57 took the supplementary certificate for Latin.

UNIVERSITY OF ABERDEEN

At the opening of the winter session in the Faculty of Medicine of the University of Aberdeen on October 6th the Principal of the University, Sir George Adam Smith, welcomed informally Dr. Alexander Low, the newly appointed professor of anatomy in succession to Professor R. W. Reid, who has retired after thirty-six years' tenure of the chair. Tributes to Professor Reid and Professor Low were paid by Professor J. A. MacWilliam in his opening address to the class in physiology and by Professor Ashley Mackintosh in opening the class in medicine.

UNIVERSITY OF ST. ANDREWS

At the graduation ceremony held at St. Andrews University on October 9th Principal Sir James Irvine inducted Mr. David Dow, M.B., Ch.B., D.P.H., to the chair of anatomy in University College Dundee. There was a large attendance of students. In welcoming Professor Dow the Principal said he had fitted himself for promotion by a diversity of experience gained in a wider atmosphere than that of the classroom. For ten years he had combined his university studies with the practice of his profession in Fife and had found time to carry out researches.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

THE following candidates have been approved at the examinations indicated:

FINAL M.B.—Part I: S. Behr, Wilfreda, D. C. T. Pigott, W. F. La. R. M. Moore, G. V. Smith, P. M. Garry, T. F. Woods, L. R. Macfarlane, C. L. Day, N. Bernstein, D. M. Carson, G. M. Donald, A. C. Charles, J. A. FitzGerald. In completion: Kathleen E. Byrne, Evelyn D. Connolly, D. Blewitt. DIPLOMA IN GYNÆCOLOGY AND OBSTETRICS—J. Rego, Amy B. B. A. Perriton.

* Passed on high marks.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

Stratfield Research Scholarship

MR. NORMAN LESLIE CAPESEN, F.R.C.S., has been appointed Stratfield Scholar. The subject of his research will be "The comparative anatomy and function of the prostate gland." His research will be carried out at St. Bartholomew's Hospital and the Zoological Society.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A QUARTERLY Council meeting was held on October 8th when the President, Sir John Bland Sutton, Bt., was in the chair. Diplomas of Membership were granted to eight candidates.

The Gilbert Plane Medal

The Sir Gilbert Plane medal was awarded to the following medical officer of the Royal Navy in respect of the Promotional Examination 1925: Surgeon Lieutenant Commander Lionel Frederick Struonell, M.B., B.S.

Lectures

The Bradshaw Lecture on Gas Resonance was delivered by Mr. James Sherren on Wednesday, November 11th, at 5 p.m. and the Thomas V. medieval conception of the anatomy and nervous system by Professor William on November 18th, at 5 p.m.

Medical News.

A COURSE of four lectures on general anaesthesia, arranged by the Dental Board of the United Kingdom, will be given during the present winter session. The first lecture, entitled "Respiration in anaesthesia," and the second, on the absorption and elimination of volatile substances in the lungs, will be delivered by Professor Yandell Henderson of Yale University. The third lecture, on the circulatory changes in anaesthesia and the use of oxygen, will be given by Professor Leonard Hill, M.B., F.R.S., and the fourth by Professor Noel Paton, M.D., F.R.S., on the metabolic changes in chloroform poisoning. The lectures will be delivered in London at the Royal Society of Medicine, 1, Wimpole Street, on October 22nd, 23rd, and 30th, 1925, and January 11th, 1926, at 8.30 p.m., in Manchester, in the Medical School, University Buildings, on October 26th and 27th and November 3rd, 1925, and January 13th, 1926, and in Edinburgh, in the University, on October 29th and 30th and November 5th, 1925, and January 15th, 1926, at 5 p.m. The course is intended primarily for dentists and medical practitioners, tickets of admission are not required.

The Fellowship of Medicine announces that Dr Marcus Paterson will give a lecture on the diagnosis of pulmonary tuberculosis on October 19th, at 5.30 p.m., in the lecture hall of the Medical Society of London, 11, Chandos Street, W.1, members of the medical profession will be welcome. The Chelsea Hospital will hold a three weeks' course from November 2nd, consisting of demonstrations, operations, and lectures by members of the staff. Throughout November the London Lock Hospital has arranged a comprehensive course in venereal diseases. The Royal Waterloo Hospital will give a course from November 23rd to December 12th in the study of diseases of children and women from all aspects. From November 3rd to November 28th Dr Porter Phillips and Dr Thomas Beaton will give lecture demonstrations twice weekly on psychological medicine. An evening course for general practitioners has been arranged at the London Temperance Hospital from November 1st to 13th. There will be a course in diseases of the chest, heart, and lungs at the Victoria Park Hospital from November 9th to 21st. Copies of any syllabus and of the general programme may be obtained from the Secretary, 1, Wimpole Street, W.1.

DR PATRICK WATSON WILLIAMS will deliver the Semon Lecture in the Robert Barnes Hall of the Royal Society of Medicine on Thursday, November 5th, at 5 p.m.

THE Devon and Exeter Medical-Chirurgical Society will hold its first meeting on Friday, October 23rd. An address will be given by Sir St. Clair Thomson on the surgical anatomy of the nose and accessory sinuses.

AT the next meeting of the Medical Officers of Schools Association, which will take place at 11, Chandos Street, W.1, on Friday, November 6th, at 4.45 p.m., Dr A. I. Slimey, medical officer to Rugby School, will read a paper on the prophylaxis of common colds.

THE annual dinner of the University of Bristol Association of Alumni (London Branch) will be held at 7.45 p.m. on November 6th at Pagani's Restaurant, Great Portland Street, W. Viscount Haldane will preside and Professor Lloyd Morgan will be the guest of the evening. The charge for the dinner is 9s. exclusive of wine. Further particulars can be obtained from Dr Elizabeth Casson, Holloway Sanatorium, Virginia Water.

FOLLOWING the opening lecture of the winter session at the Central London Throat, Nose, and Ear Hospital by Dr. William Hill on October 6th, the annual dinner of the medical staff was held at the Trocadero Restaurant the next evening, with Mr Harold Kisch in the chair. A total of fifty-two were present, and among the guests were the lecturer, Dr. William Hill, Sir St. Clair Thomson, President of the Royal Society of Medicine, Sir W. Aitken, President of the Fellowship of Medicine, Sir Thomas Horder, Dr W. H. Kelton, Mr Herbert Paterson, Mr Herbert Lilley, Mr C. J. Badgerov, Mr I. B. Layton, Dr Watson Williams, Dr J. H. Chaldecott, and the chairman of the committee of management of the hospital.

THE annual dinner of the Manchester Medical School will be held in the Grand Hotel Manchester on Thursday, November 19th, with Mr C. Roberts in the chair.

THE first dinner meeting of the Hunterian Society of London will be held at Simpson's Restaurant Bird in Hand Court 77, Poultry, Cheapside, on Monday, October 19th, at 7.30 p.m. After dinner the presidential address, on light, will be given by Dr I. Howard Humphries.

DR JEAN CHARCOT the well-known explorer, and Dr Schleich, professor of otorhino-laryngology, in the Paris Faculty of Medicine have been nominated Commanders of the Legion of Honour.

THE annual sermon of the Royal College of Physicians of London, recently established by the Charity Commissioners under the Sadler Trust, will be preached at the Church of St. Mary le Bow on Monday, October 19th, at 12 o'clock.

THE freedom of the borough of Abergavenny has been conferred on Dr. William Dyma Steel, who recently retired from the office of medical officer of health for the borough after forty-two years' service. Dr. Steel was formerly President of the South Wales and Monmouthshire Branch of the British Medical Association and Representative and Chairman of the Monmouthshire Division.

DR J. CROSSIE DIXON of Banstead has accepted the unanimous invitation of the Barnes and Uxbridge Council to become a member of the borough for the coming year.

DR FRANKS MARRIOTT of Alfreton has been added to the Commission of the Peace for the county of Derby.

DR. HUBERT V. LEIGH, on the occasion of his leaving Treherius, has received from his friends and patients an illuminated address, and Mrs. Leigh a silver tea and coffee service.

AT the annual meeting of the Royal Academy of Medicine in Ireland held on October 9th the following officers were elected: President, Sir James Craig; General Secretary, Dr. T. P. C. Kirkpatrick; Secretary for Foreign Correspondence, Dr. L. L. Cassidy; Presidents of Sections (Medicine) Dr. F. C. Purser, (Pathology) Dr. Joseph W. Bigger, (Surgery) Mr. R. C. B. Vansell, (Anatomy and Physiology) Dr. C. M. West, (Obstetrics) Dr. D. G. Madill, (State Medicine) Dr. V. M. Syngé.

A STATUE to Pasteur was unveiled recently at Rio de Janeiro.

AN anonymous donor has given £50,000 to the London Hospital. The gift, which has been made through Viscount Knutsford, the chairman of the hospital, is to be devoted chiefly to research work, and special attention is to be given to rheumatic diseases and troubles arising therefrom.

DR HARVEY CUSHING, Moseley Professor of Surgery, Harvard University, and surgeon in chief at the Peter Bent Brigham Hospital, Boston, Massachusetts, was awarded the Cameron prize of the University of Edinburgh last year. He will deliver three lectures in the University this month, the first on Monday next, on the circulation of the cerebrospinal fluid, the second on Tuesday, on the pituitary gland, and the third on Thursday, October 22nd, on brain tumours. The lectures will begin at 4 p.m. on each day. Students and graduates in medicine are invited to attend.

THE King has granted to Dr. Percy G. S. Williams, Principal Medical Officer of Health, Cairo City, permission to wear the insignia of the third class of the Order of the Nile, conferred upon him by the King of Egypt in recognition of valuable services rendered.

THE thirty-second congress of the Italian Society of Surgery will be held at Rome from October 25th to 28th, when the following subjects will be discussed: (1) Treatment of Graves's disease (conjoint meeting with the Italian Society of Internal Medicine) introduced by Professor P. Fiori; (2) Intestinal obstruction (exclusive of strangulated hernia), introduced by Professors Gresle, Margarucci, and Ugo Stoppato.

A STAINED glass window erected to the memory of the late Dr. William Hurrell Mason was unveiled recently at St. Peter's Church, Hunlet Moor, Leeds, by the Vicar of Leeds, the subject of the window is "The Beloved Physician."

SIR WILLIAM D. NICHOLLS has given the mansion Ty To Maen at St. Mellons, together with its twenty acres of parkland, to the Cardiff Royal Infirmary for use as a convalescent home. Ty To Maen was the former residence of Mr J. C. Gould, shipowner and is situated in delightful country overlooking the Bristol Channel. It is expected that with but slight alterations the house will provide accommodation for some sixty or sixty-five beds.

THE September issue of *Medical Science Abstracts and Reviews* completes Volume XII and is the last of the series, the Medical Research Council having resolved to discontinue its publication.

THE annual report for 1924-25 of the Committee for Scientific and Industrial Research has been issued (H.M. Stationery Office, price 3s.). We hope to deal with this report later, but meanwhile may note that the expenditure amounted to £173,455, and that of this £50,000 was provided by fees for tests and for special investigations for outside firms or by contributions from co-operating bodies and £30,000 from repayments from the Service departments for work undertaken directly for them.

THE eighth Sicilian Medical Congress, which was to have been held this month, has been postponed until next April.

THE Wellcome Historical Medical Museum will be closed for cleaning and structural alterations from October 19th until November 30th.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the British Medical Journal alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the British Medical Journal must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W C 1 on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The TELEPHONE NUMBERS of the British Medical Association and the British Medical Journal are *MUSEUM 3861, 3862, 3863, and 3864* (internal exchange four lines).

The TELEGRAPHIC ADDRESSES are

EDITOR of the BRITISH MEDICAL JOURNAL, *Antiology Westcent, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent London*

MEDICAL SECRETARY *Medisecra Westcent London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Beacillus Dublin*, telephone 4737 Dublin), and of the Scottish Office 6 Drumsheugh Gardens, Edinburgh (telegrams *Associate, Edinburgh*, telephone 4361 Central).

QUERIES AND ANSWERS

"G H L" writes: I have as patient an elderly man suffering from chronic osteoarthritis of the left hip. He complains of a feeling of stickiness all over his body, but particularly over the affected hip. This is not imaginary, as the affected parts are distinctly sticky to the touch. Can any explanation of this condition be given?

TREATMENT OF NAEVUS

F E C" asks if trichloroacetic acid in crystalline form is a satisfactory treatment for a large superficial naevus on the abdomen of a young baby, and whether the application is painful. The child is in the country and it would be difficult to arrange for treatment with CO₂ snow or electrolysis.

ANOSMIA AFTER CORYZA

G S A" asks for suggestions for the treatment of the following case. A man, aged 55, who usually enjoys good health, suffered from an attack of coryza in February 1925. The temperature was 100° for two days, but he did not lie up, he lost his taste and smell, but thought nothing of this expecting it to return, but it has not, he has tasted nothing since. The sense of smell is present to a certain extent but perverted: food, coffee, turpentine ammonia, etc., all have the same musty order. What is the prognosis in these cases?

*. Anosmia is generally recognized as a widespread early symptom of influenza, and Smith Ely Jelliffe and H Lawson White (*Influenza* Essays by several authors edited by T G Crookshank) state that it may persist for a long time. White adds that perversion of smell is also a not infrequent complication, and regards the condition as a true neuritis of the olfactory nerve. Having encountered a case in which it persisted for twenty years, he recommends a very guarded prognosis. In the *Index of Treatment* by Hutchinson and Sherren it is stated that the most hopeful treatment of influenzal anosmia is the internal administration of large doses of strychnine and phosphorus, arsenic also may be tried.

INCOME TAX

Motor Car Expenses of Salaried Officer

W S G" receives a salary from a local authority, and also a mileage allowance, which he states covers running but not overhead costs. He has recently spent money on replacing his car. Is this allowable?

*. Our correspondent is entitled to deduct sums expended wholly exclusively, and necessarily in the performance of the duties of his office. If it is necessary for him to use a car for travelling on his professional work—as apparently it is—he can deduct the excess of the actual expenditure (excluding capital outlay) over the mileage allowance received. The matter is, however, by no means free from difficulty. In the first place, the authorities will probably expect him to substantiate beyond doubt his view of the allowance—that is that the local authority did not fix it on the assumption that it would cover overhead charges and secondly the renewal cost of a vehicle is strictly referable to its life in use and 'W S G' must be prepared to face a claim to set off any excess of allowance over running cost during the use of his recent car from the loss on the running of the car in the year in which the special expenditure was incurred.

LETTERS, NOTES, ETC

MEDICAL GOLF

THE Medical Golfing Society held its annual autumn meeting on October 10th and 11th at Dowl, by kind permission of the Royal Craguon Ports Club. The course was in excellent condition and the weather glorious. The results of the competitions were

Singles v Bogey—L W Bathurst 3 ap. *Second prize* W H

S. 9
11.

THE autumn meeting of the Shropshire Medical Golf Association was held on October 11th on the Wrekin golf course by kind permission of the committee. There was some fog in the morning but after 11 o'clock the weather was delightful and the course in

The Shropps owl (18 holes, medal play) scores were
was won by D

T R Elliott	82 - 9 = 73
A D Haydon	84 - 10 = 74
W B A Lewis	94 - 18 = 76
I B Richardson	89 - 11 = 78
J Glyn Pigott	98 - 18 = 80
H G Beckett	93 - 13 = 80

The foursomes v bogey were won by Drs Richardson and Beckett Drs Ireland and Higginson tying with Drs Wheatley and Elliott for second place.

Dr I B Richardson was elected captain for the ensuing year and Dr T R Elliott honorary secretary. A very hearty vote of thanks was passed to the returning captain Dr Higginson for the great interest he had taken in the association during his year of office. It was decided to hold the next meeting at Church Stretton towards the end of May, 1926.

COD LIVER OIL AND ULTRA VIOLET LIGHT

It has been suggested that the oxidation of cod liver oil causes it to emit ultra violet rays. This however is denied by F Daniels and R J Fosbinder who contribute to *Science* for September 18th 1925 (p 286), a brief account of experiments which they have made in the laboratory of physical chemistry at the University of Wisconsin. After bubbling oxygen through cod liver oil in a quartz cell for ten days, no darkening of a photographic film was discernible, nor was any trace of a photographic effect produced by heating cod liver oil to 100° C while oxygen was passed through it for three days. The oxidation however altered the character of the oil, as was shown by a change in its iodine number. A control experiment working properly and that the

lution of oxygen as the cure of the oxidized cod liver oil was on oxidized cod liver oil was were taken to expel dissolved unfortunate that the previous tinted ultra violet rays should have led to widespread speculation concerning the mechanism of the cure of rickets.

POETRY AND PHYSIC

"R C B" sends the following verses under the heading *Po eleganti Medico, malus Poeta*, a phrase assigned by Erasmus to Plutarch.

Though Providence meant to have us content
Some folks are well off and don't know it
So heed ere too late that victim of fate
The doctor who would be a poet
Once bright and alert and physico-expert
See him now count his feet in his walk
Or stopped in the street a patient's reet
Hear him stammer to rhyme in his alk
His patient in fear he'd comfort and cheer
By questions all cast into metro
Prescriptions he'd frame with a metrical aim,
He thought more effective and neater
Nocturnes he'd indite in the hours of the night
The mother with chloroform soothing
The baby newborn at break of the morn
He'd hail with an ode to its toothings
He failed for alas! this will come to pass
His life synopated until
In the season of cheer at the end of the year
He starved lacking rhymes for his bill

ROAD PLAYS

THE Dunlop Rubber Company Ltd has now issued the fourth and fifth volumes in its series of pictorial road plays *O, the Road*. The publishers are Ed J Bnrow and Co Ltd Chell a ham, and the price is 6d each. The fourth volume conducts the traveller to Holyhead, the other round the English lakes to Glasgow.

VACANCIES

NOTIFICATIONS of offices vacant in universities medical colleges and of vacant resident and other appointments at hospitals will be found at pages 37 39 40 41 44, and 45 of our advertisement columns and advertisements as to partnerships assistantships and locumtenencies at pages 42 and 43.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at pages 135 and 136.

The Harveian Oration

OR

HEREDITY IN RELATION TO
MENTAL DISEASEDELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS
ON LONDON ON OCTOBER 19TH, 1925,

BY

SIR FREDERICK MOTT, K B I , M D , LL D ,
FRCP FRCS

[THE ORATOR began by referring to Harvey's *de Generatione Animalium*, which, he said, stood in a place of equal honour by the side of his doctrine of the circulation of the blood. He mentioned the Harveian Orations by the late Dr Ormerod (1908), by Sir Bryan Donkin (1910), and by Dr Herbert Spencer (1921), who had dealt with various aspects of this book of Harvey's. Sir Frederick Mott then gave a sketch of the growth of knowledge with regard to Harvey's dictum, "*Omne inum ex ovo*," and continued as follows.]

Omne inum ex ovo—the life of the individual begins from the moment of penetration of the spermatozoon into the egg when the conjugation of the male and female gametes occurs. The spermatozoon provides one half of the nuclear matter (chromosomes), the ovum provides the other half. The spermatozoon carries into the ovum the centrosome, and in the process of repetitive cell division which follows it acts in such a way that every cell of the body contains an equal amount of nuclear material derived from each parent in respect to the hereditary material of the species. The discovery of the special sex chromosome in spermatozooids of insects shows that two sets of spermatozooids may be produced: those with an odd sex chromosome which gives males, those with a pair of sex chromosomes which give females, or, as occurs in some insects, one chromosome is small, that of the future male, and one large, that of the future female. Racial characters may not be equal in the amounts of nuclear matter in the form of chromosomes or genes derived from each parental stock, and still less those due to familial inbreeding, to which the greater number of mutations in man may be ascribed. Although there is disjunction of the paternal and maternal chromosomes, yet if these chromosomes are constituted by a series of genes or hereditary factors arranged in linear order, it follows that the crossing over of blocks of these genes may lead to fusion or transference and replacement of blocks of genes representing respectively maternal or paternal unit characters. Moreover, this crossing over of groups of genes in argument offers a germinal mechanistic explanation of facts observed by Galton in *Natural Inheritance*, where he says:

We appear severally to be built up of a vast host of minute particles of whose nature we know nothing or any one of which may be derived from any one progenitor but are usually transmitted in aggregate considerable groups being derived from the same progenitor. In the process of transmission by inheritance elements derived from the same race are apt to appear in large groups just as if they had clung together in the pre-embryonic stage as perhaps they did.

One of the most valuable contributions to our knowledge of character and temper depending upon an "inborn disposition impressed by Nature" was Galton's inquiry into the history of similar and dissimilar twins, it showed that temper and the raw material of character are inherited, so he found that identical twins brought up under a different environment remained temperamentally the same and of the same disposition, whereas dissimilar twins brought up in the same environment remained temperamentally different. We can only explain this on a chromosomal mechanistic basis by the supposition that in identical twins two male gametes conjugate with two female gametes in one ovum. But this inquiry of Galton's shows how much conduct and character depend upon inheritance. Moreover, an inquiry which I instituted and which was carried out for me by Miss Agnes Kelley in the parish of Bethnal Green showed that life tends to beget life.

This inquiry was made with the object of comparing the heredity and social conditions of a certain number of insane, mentally defective and normal persons. Sixty cases were taken in each group. The first group was of adult patients in the London County Council asylums, the second of high grade mental defectives the third of normal children from the elementary schools. The last two groups were at schools in different districts of Bethnal Green. Every care was taken to make as full and complete a family and social history as possible and pedigree charts were constructed. The report was published in Part II Annual Report of the Board of Control 1935 and the following is a very brief summary of the results of this inquiry.

Insanity was very much more prevalent in the pedigrees of insane persons than in those of mental defectives—namely, in the proportion of 50 per cent. as against 25 per cent. of the defective cases. Conversely mental deficiency was more apparent than insanity in the family histories of the defective children, while the charts of the normal school children only showed insanity and mental deficiency in a very small percentage of cases.

Good trades and high wages were rare in the mentally defective group. Though there were a few exceptions, the general type of employment was poor and 75 per cent. of the fathers were casuals and unskilled workers.

There was a corresponding dead level of poverty in the home conditions of these cases and the incapable mother was very conspicuous in this group. In few of the asylum cases and among still fewer of the mental defectives could the home conditions be described as good, while one third of the homes in each of the two groups were classed as homes in which the food was quite inadequate, the clothing very poor and bare necessities were lacking. The normal group showed a decided improvement in industrial conditions and in the care of home and children and there were very few cases of intense poverty or neglect. There was further a very striking contrast in the dependence on parish and charitable assistance among the families of the normal group on the one hand and of the insane and mentally defective groups on the other. The normals not only applied less often to the parish but they were also less well known to charitable agencies.

But mental deficiency exists in all grades of society, and in a number of cases heredity does not explain how it is that a child is born an idiot or imbecile and the brain is arrested in its development.

The foundations of moral and intellectual characters are inborn, but the influence of education, example, and environment generally is much more potent for good or evil than in the case of physical characters. Unfortunately the high grade imbecile and moral imbecile are fertile, and as they have only a narrow margin of highest control they readily yield to the impulses of the passions and animal instincts, or are unable to resist temptation when opportunity offers. Speaking of this raw material of character, which in a great many instances results from a failure of the latent potentialities of the fertilized ovum, Sir Thomas Browne (whose birthday it is to-day) clearly recognized the inborn disposition when he said: "Bless not thyself that thou wert born in Athens, but among thy multiplied acknowledgements, lift up one hand to heaven that thou wert born of honest parents, that modesty, veracity, and humility live in the same egg and come into the world with thee."

From time immemorial the influence of the sexual function on physical structure, character and conduct has been known but it is only within recent times that experimental investigations and clinico-anatomical observations have shown that this influence is dependent upon an internal secretion of an interstitial gland of the testis and ovary respectively which can function independently of the genetic structure. The testis secretes a hormone which determines prior to birth, the physical and mental sexual characters and at puberty the secondary sexual characters. The reproductive organs are functionally correlated with the endocrine system of glands, especially the cortex, adrenals, the pituitary, and the thyroid. As the sex instinct gradually matures a progressive mental and bodily evolution takes place in the male and female, in accordance, not only with the innate dispositions due to sex, race and familial ancestry, but with the evolution of character due to good or bad habit formations. Habits acquired in early life, although not germinal and transmissible, nevertheless form such stable organized reflex patterns in the nervous system as to be capable of profoundly influencing such inborn dispositions as the moral sense, the self-regarding sentiments, the emotions and passions, and their proper control. At the adolescent period a new great vital urge, stronger even than self-preservation energizes all the organs and tissues of the body, especially the nervous system, for the supreme biological end of reproduction and preservation of the species.

I will now give a short account of my own investigations regarding the interstitial cells in man and their functions. Examination of the testis of a full-term twin foetus showed tubules containing embryonic spermatogenic cells, between them, lying in loose connective tissue, were seen abundant polygonal cells with a round nucleus lying in an eosin-stained cytoplasm. Many of the cells had the appearance of young cells. There was plenty of evidence of nuclear mitosis, and I came to the conclusion that numbers of the cells had attained maturity and were on the way to a regressive atrophy, leaving only the nuclei. These cells contain a lipochrome substance and lipid granules. I found that about the fourth month the seminiferous tubules are twice the size of those at birth, instead of being separated by loose connective tissue containing abundant Leydig cells, they are closely approximated, the Leydig cells have almost disappeared, and there are no lipid granules visible. At the eleventh year I observed very little change in the size of the tubules and the interstitial cells are only discernible by examination with an oil immersion lens. Little or no interstitial lipid is seen. There are commencing manifestations of nuclear activity and karyokinetic figures, but no spermatids or spermatozoa. The Leydig cells do not reappear until puberty, when the generative function commences, and the sexual hormone from the interstitial cells begins again to pass into the circulation and determine the bodily and mental secondary sexual characters.

Seeing that the male sexual hormones are active for probably more than six months in pre-natal and post-natal periods, it follows that this influence must have been operating on all the somatic cells, including the nervous system, during all that time. If there be an elective storage of the sexual hormone in the nervous system, as Steinach's experiments indicate, then a masculine behaviourist tendency may thus early be engraven upon the nervous system. Moreover, by the sensitizing influence of the testicular hormone, the primary male characters are in this early stage made dominant in all the bisexual somatic cells. The belief in the occurrence of male sex-dominance at an earlier age than the existence of a secretion of the female sex hormone has received fresh support in the very interesting solution of the riddle of the "free martin" by Lillie. He reports a case in which the female characters of a female twin calf were more or less completely suppressed and certain male structures developed as a result of anastomosis of the placental blood vessels with those of the associated male twin calf. This can only be explained by the influence of a soluble and diffusible hormone derived from the male and carried to the female by the circulating blood.

There can be no development of sex characters without all the other organs of internal secretion participating, all of the ductless glands, and especially the thyroid, the pituitary, and the adrenal, are influenced by the internal secretion of the sexual glands, and the latter are undoubtedly influenced by the former; indeed, there is a harmonious functional interrelation between the reproductive organs and the whole endocrine system.

I have recently investigated a case of distrophic adiposo genitalis affecting an epileptic imbecile aged 29 at death. There was no hair on the face, there was polyuria and marked sugar tolerance, there was infantilism of the external genitals, the atrophic undescended testes were no larger than pins and showed microscopically both interstitial cells and spermatogenic cells replaced by fibrous tissue and fibroblasts. Associated with this testicular atrophy was a markedly atrophic pituitary and atrophic thyroid gland, moreover, the cortex adrenalis was much diminished in thickness.

The increase in growth of the long bones of youths retarded in early life is due to retardation of endochondral ossification, and supports the view that the internal secretion of the testis controls calcium metabolism. Similarly, in the female there is a relation between the ovarian internal secretion and calcium metabolism, for removal of the ovaries benefits and sometimes cures osteomalacia. Again, the release of calcium from the pelvic bones during pregnancy and parturition may be regarded as a physiological process brought about by an internal secretion of the ovary, the phosphate of lime thus released being utilized by the mammary gland.

It is generally assumed that the source of the sexual hormone of the female is connected with the development of the Graafian follicle, and that the cells of the zona granulosa and the internal thecal cells of the follicle secrete a specific soluble substance which passes into the blood and determines the female characters. It may, therefore, be supposed that a continuous conversion of primordial follicles into immature Graafian follicles, from earliest infancy onwards, provides a feminizing hormone to counteract the pre-established male dominance in the bisexual cells of the body. This formation of atretic follicles, and subsequently corpora atretica continues until menstruation occurs and maturation with dehiscence of the follicles takes place. I have found that ovaries at birth and in early infancy contain numerous immature Graafian follicles. Should this follicle formation not occur to a normal physiological extent, it is conceivable that, having regard to the selective action of the hormone on the central nervous system, as revealed by Steinach's experiments, there would be a tendency to masculinization especially revealed in mental qualities. The whole of the somatic cells of male and female are, until the dawn of adolescence, engaged in growth and self preservation, in preparation for reproduction and preservation of the species.

Disorders and diseases of the mind have long been associated with two conditions—namely, heredity, and the critical periods of life (adolescence, when the sex instinct matures, and the climacterium, when the sex instinct wanes). These are physiological conditions. Pregnancy, parturition, and lactation in the female are likewise physiological conditions.

Two distinguished Haverham Orientors, the late Dr Ormerod and Sir By in Donkin, have dealt with the subject of heredity in relation respectively to nervous diseases and criminology, based upon wide experience, but neither of these has treated of the relation of heredity to insanity based upon the study of pedigrees, statistical data, and pathological findings.

EVIDENCE OF HEREDITY IN CERTAIN TYPES OF MENTAL DISEASE

There are three types of mental disease in which the naked-eye appearance of the brain do not afford any indication of an exogenous cause of the disorder and loss of mind presented by the symptoms during life. I include them in one group, and they are termed respectively dementia praecox, manic depressive insanity, and involutional melancholia—the two latter may terminate in dementia.

Through the study of a large number of carefully constructed pedigrees by myself and co-workers, extending in many instances to four or five generations, and of statistics based on a card system extending to four thousand related individuals, who have been or were at the time in one of the ten London County asylums, I have come to the conclusion that there is a signal tendency to antedating in respect to these types of insanity, that is to say, if a parent suffered with manic depressive insanity, or a parent or grandparent with involutional melancholia or senile dementia, one or more of the descendants may suffer during adolescence with dementia praecox. In the construction of pedigrees I was particularly struck by the fact that two, three, or even four or five members of the same co-fraternity at about the same age suffered with mental disease—usually dementia praecox, sometimes with manic depressive insanity, not infrequently with dementia praecox and imbecility. This is a more striking proof of hereditary transmission than when mental disease is transmitted in successive generations.

When there is evidence of insanity or epilepsy in both stocks, or a general neuropathic tendency indicative of mental instability, the liability to dementia praecox is greatly increased in the descendants, therefore in advising (as one often has to do) in regard to marriage, evidence pointing to these special forms of mental disease in both stocks, on one side, still more when on both sides even if shown in collaterals, induces one to say definitely from a eugenic point of view that it would be inadvisable—inasmuch as the risk of an insane inheritance for the children is so much the greater.

Moreover, in some of the pedigrees it looked as if there were segregation of unit characters, for I was able to find healthy children who married and had a healthy grown-up progeny in the same co-fraternity with cases of dementia praecox, manic depressive insanity, and imbecility. But, as the late Dr Ormeiod and Sir Bryan Donkin pointed out in their interesting *Harvard Orations*, there are too many complicating factors to permit of Mendelian principles, which are so striking in animals where breeding can be controlled, being applied in relation to mental diseases. I have to omit here the statistical data, but I should like to refer to one result of them, because it supports my premiss. Prior to the war the number of cases of dementia praecox admitted to asylums was about equal in the two sexes, likewise the average age incidence (about 23 years). During the war there were half as many male admissions of dementia praecox as females whose parents were or had been in the London County Asylum. The age of these males averaged 17.5 instead of 23.5, the reason being that those over that age had been conscripted, and I may state as confirmatory of this inference that 14 per cent of the insane in the army were cases diagnosed as dementia praecox.

THE NATURE OF DEMENTIA PRAECOX

By a comparison of the mental and bodily conditions of an acquired mental disease—general paralysis of the insane—with the mental and bodily conditions found in dementia praecox, I shall endeavour to show that in dementia praecox there is a vital defect of the reproductive organs, and of the brain in particular, and probably of the whole body, especially the endocrine glands.

I have investigated spermatogenesis in 108 cases dying in hospitals and asylums at different ages and in different bodily states, including normal death from shock of injury. I have found it active from puberty to old age (81), with individual variations in degree. In cases where severe chronic disease occurred in early life there has been found absence or deficiency of spermatogenesis. In adults dead of shock following accident, tuberculosis, dysentery, broncho-pneumonia, enteric fever, or gangrene of lung, active spermatogenesis was found. It was absent in several cases of prolonged extensive suppuration, and in several cases of cancer. But these were diseases in which an active prolonged cell nuclear proliferation had taken place.

In general paralysis local patches of atrophy of the testes with dense fibrosis occurred in many of the cases examined, but with very few exceptions, in a large number of cases, active spermatogenesis in all stages was found in spite of intercurrent disease. The atrophied patches were due either to gonorrhoeal epididymitis or localized syphilitic inflammatory affection of the testes. The dense white fibrous patches microscopically examined exhibited tubules consisting of thickened basement membrane without Sertoli cells or spermatogenic cells of any kind. The atrophic process was not due to a regressive atrophy, as in dementia praecox, but to a previous chronic inflammatory process. Thus, moreover, was shown to be the case by the fact that normal tubules with active spermatogenesis and Leydig cells could be found in the midst of the atrophied tubules. In spite of this secondary atrophy which affects the testes of many paralytics, the average weight of the pair after removal of the epididymis and tunica albuginea is 8 grams heavier than the testes of dementia praecox, whereas in the majority of cases of dementia praecox examined in emulsion of the testes revealed no spermatozoa, the converse was found in paralytic dementia.

In 27 cases of dementia praecox of which the testes were examined either commencing a partial, or a complete primary regressive atrophy was evident by the morphological and microchemical changes in the spermatogenic epithelial cells and the interstitial cells, with a corresponding thickening of basement membrane and overgrowth of interstitial connective tissue. With a few exceptions these testes of dementia praecox cases showed less evidence of active spermatogenesis than the testes of an old senile case aged 81 at death. In 27 per cent of the cases the interstitial cells showed the pigmentary degeneration found in old age.

I have no time to deal with the very important question of the influence upon the germ plasma of circulating toxins

in the blood. But the study of the testes of 108 cases dying of all forms of disease, and yet, except in dementia praecox and imbecility, showing with very few exceptions active spermatogenesis, appears to me to find a solution in the fact that a barrier of lipid granules, similar in chemical composition to the lipid granules in the cortex adrenalis, was found. These granules consist of a lecithin cholesterol ester. The cholesterol acts as an antioxidant. Now I found in cases of microbial toxæmia that the lipid cholesterol ester disappears from the cortex adrenalis, and some people speak of this gland as antioxidant in function on this account. It seems to prove that Nature will provide as long as it can for the protection of the germ plasma. There is evidence to show that these lipid granules are connected with oxidation processes, and would therefore protect the germ cells against poisons like alcohol circulating in the blood. Whereas in general paralysis clumps of eosin-stained cells could be seen in sections of the testes with a low-power magnification, in the great majority of cases of dementia praecox eosin-stained clumps were not visible, the appearances suggest a failure of these interstitial cells to mature. Fibroblasts and dense fibrous tissue tend to replace the Leydig cells. It is less easy to show the regressive atrophy in the ovaries for various technical reasons, but the study of 100 patients dying in hospitals and asylums led me to the conclusion that there is, similarly to the male reproductive organ, a tendency to regressive atrophy of the reproductive organs in the female in dementia praecox, as evidenced by the deficiency of the chromatin in the nucleus of the primordial follicles, their disappearance and replacement by fibroblasts. The organ shows a sclerotic condition even in many young women suffering with this disease.

To the first volume of *Libro en Honor of Ramon y Cajal's* seventieth birthday I contributed a paper upon "The genetic origin of dementia praecox," giving the clinical history and pathological findings in the brain and reproductive organs of a case of acute dementia praecox. The following is a summary.

There was a family history of insanity on both sides. A brother died in Charing Cross Hospital from a self-inflicted bullet wound of the brain. The testes were sent to me in 1916 as I had asked for the testes of cases dying of injury pronounced regressive atrophy was found. I put them aside after finding they were very abnormal and forgot all about them. Five years later I was asked to see a case at Claybury Asylum of acute adolescent insanity and I was struck by the patient's name and by the history of the brother having died from a self-inflicted bullet wound. I then recollected the name and recognized that it was the brother who had died in Charing Cross Hospital. There was a history of a sister who had been admitted four times to an asylum with manic depressive insanity with sexual delusions. A brother and sister were normal, all the five were highly intelligent. The blood and cerebrospinal fluid examined during life were both sterile and there was only slight leucocytosis. The patient died eleven days after admission. The duration of the mental symptoms was about two months. They were characterized by depression, suicidal tendency and delusions of persecution. He died of heart failure with cerebral congestion and oedema. The testes freed from tunica albuginea and epididymis weighed only 8 grams each which is less than half the normal weight. They presented a uniformly grey instead of a white appearance quite like the organ in advanced cases of dementia praecox. The microscopic appearances of regressive atrophy were in all respects a counterpart of those I had found in the testes of the brother. Sections of the testis revealed tubules in all stages of primary regressive atrophy. Some of the tubules showed only a thickened basement membrane lined by Sertoli cells without any spermatogonia or spermatocytes. In others there were all stages of regressive degenerative atrophy of the spermatogenic epithelium shown by a diminution or even absence of nuclear chromatin in spermatogonia, spermatocytes and spermatids. Where spermatids or spermatozoa were seen there was evidence of a microchemical or morphological change similar to the condition I have found and described in several early cases of dementia praecox. The interstitial tissue displayed an overgrowth of fibroblasts. The cells of Leydig were diminished in size and numbers. The nuclei of the cells were deficient in chromatin, smaller than normal, irregular in shape instead of round. The cytoplasm was deficient in eosin-staining substance and the appearance of the cells generally was that of a regressive atrophy. Pronounced nuclear and cytological changes were found in the cortical neurones generally but the small stellate cells of Cajal were particularly affected.

The microchemical and morphological changes of the nuclear material of the cortical neurones and of the testis in this case indicate in hereditary biochemical deficiency of nuclear material in two structures essential for the preservation of the individual and the species. It has been asserted that the nuclear changes in the reproductive

organs and the cortex of the brain in this disease are due to tuberculosis. In neither of these two young men was there any evidence of tuberculosis, but a strong family history of mental disease on both paternal and maternal sides.

Parallelism of Dementia with Cortical Destruction in General Paralysis

In general paralysis the degree of dementia can be correlated with the degree of decay and degeneration of the cortex caused by the spirochætal infection and the escape of toxins into the cerebro-spinal fluid. There is a proportional extent of chronic inflammatory change, thickening and adhesion of membranes, and atrophy of the convolutions, obvious to the naked eye and sufficient to account for the loss of mind. The parallelism is shown in the fact that if there is well marked speech defect, the left hemisphere will weigh usually 20 to 40 grams less than the right.

Chance is everything, hereditary disposition nothing, in this disease. There is chance of the individual being infected, but only 5 per cent of those infected owing to colonization of the spirochæte in the brain suffer from general paralysis. Likewise chance is everything in the juvenile form due to congenital syphilis.

No Macroscopic Changes in Dementia Præcox to Account for Loss of Mind

In dementia præcox the macroscopic appearance of the brain exhibits nothing abnormal, and even microscopic examination shows little. How can the mental symptoms, then, be correlated with the microscopic changes found in the cortex? Before considering this matter more fully, let me state what are the fundamental symptoms of dementia præcox: they are a weakening of judgement, of attention, of mental activity, of creative ability, the dulling of emotional interest, loss of energy, and, lastly, the loosening of the inner unity of psychic life. The biological view I take is that there is an inherent defect in the fertilized ovum, which shows itself in later life in two structures connected with the primal instincts of self-preservation and preservation of the species, and in those very structures where active nuclear formative processes take place—namely, the cortex cerebri and the reproductive organs.

The brain does not waste in dementia præcox because the axon remains alive and the white matter surrounding the axon does not degenerate. Now the grey matter of the cortex, where all the essential chemico-physical processes take place, according to Donaldson, does not amount to more than one-fiftieth part of the white matter of the cerebrum. Yet if there is functional or structural synaptic dissociation there will result a corresponding failure of psychophysiological processes and disintegration of the psychic unity according to the nature and degree of dissociation. Accordingly, to the naked eye the brain may appear normal, and even microscopic investigation may not disclose in many cases (where the mental symptoms are mainly due to suspension of function) histological changes sufficient to account for the symptoms, as in manic depressive insanity where the patient returns to normal mentality.

It may be asked how we can explain the dissociation (schizophrenia) from a physiogenic point of view. I should say by genetic inadequacy—namely, an inherent defect of the *vitæ propria* of the neurones, especially of those developed from the telencephalon. This portion of the neural tube is the latest to develop phylogenetically and ontogenetically. The countless millions and millions of neurones which constitute the cortex of the cerebral hemispheres have developed from a relatively very small portion of the original neural blastema. At birth further neuronic formation ceases, and further formative activity consists only in growth and extension of nerve cell processes. This continues until at 2½ years the brain has attained a size nearly two thirds of that of the adult. After this growth proceeds slowly until adolescence. There may be a varying amount of pre-natal complete arrest of neuronic development affecting especially those neurones of the highest level which are of evolutionary latest development—namely, the supragranular layer of pyramids and various grades of amentia may be the result. There may be various

degrees of partial arrest of growth and extension of the dendrons, by which there is only incomplete synaptic junction of many neurones of the highest evolutionary level. Such a condition may lead to a failure in the highest level of control without much morphological evidence of a mental defect. Lastly, there may be an inherent lack of durability of the neurones by which they are incapable of performing their functions of storage and transformation of energy during the life of the individual. In normal physiological conditions the neurones should be capable of functioning as long as the whole organism lives. Through an inherent defect they are apt to fail to function at the critical periods of life—namely, adolescence, the climacterium and senescence, physiological conditions of stress—gestation, parturition, and lactation—may occur in the female. Again, such causes of psychological stress as emotional shock, repression and frustration of the sex instinct, causing endocrine disturbance and insomnia, are exciting causes of the onset of disordered functions of the highest level of neurones. If a deficiency of thyroid secretion can arrest structure, and thereby function, producing cretinous idioey, it is not surprising that a deficiency of thyroxine in the blood should cause slowing of nervous function when the growth of the neurones is completed. But the thyroid gland's function is correlated with the whole reproductive endocrine system.

A noticeable histological feature in the brains I have examined of cases of dementia præcox is a morbid change in the nucleus. This change was first described by Nissl as occurring in the cortical cells. It was later described by Alzheimer and by most investigators since. It shows a swelling with often irregular infolding of the nuclear membrane, and deficiency or absence of the basophil staining of the intranuclear network by Nissl stain. In the light of recent researches on the chromosomes in relation to heredity this defect of nuclear chromatin, which occurs also in the reproductive organs, suggests a primary genetic defect.

Now the nucleus of the neurone plays undoubtedly an important part in the function of transformation and discharge of energy from the cell. Although the Nissl granules are artefacts and do not exist in the living cell, yet their presence in the body of the cell and dendrons, and the microchemical reactions they give—showing that they contain phosphorus and iron—indicate that in the living neurone there is a continuous interaction between the surface of the granules and the nucleus by the mediation of the cytoplasm. There is evidence that the granule which is contained in the body of the living neurone and its dendrons, but not in the axon, may form an oxygen surface, and that the iron of the nucleus may act as a catalase now if there is a nuclear failure, as histological observations show, this may account for the neurones being unable to transform and discharge energy along the axon. The neurone is still able to live and its axon is not wasting, therefore the brain does not waste. How, then, can we associate this evidence pointing to a defect in the specific functions of the evolutionarily latest and highest developed level of the brain with the philosophical teaching of Hughlings Jackson? The latter, in his discourse on "The factors of insanity," points out that positive symptoms such as illusions, hallucinations, and delusions, which are so frequently met with in this disease, are evidence of functional activity brought into relief by the negative condition of the highest evolutionary level.

It may be asked, What, then, is the original cause of this abnormal variation in the *inborn vitæ propria* of the fertilized ovum? It has been suggested that syphilitic antecedents may be the cause of dementia præcox, but I have been unable to find proof of this after examination of the cerebro-spinal fluid of a large number of cases of dementia præcox. It is a fact that these diseases do occur in primitive people, only the symptoms such as hallucinations and delusion, are coloured by social usages, customs, and beliefs. Antedating, by bringing on the mental disease at an early age, leads to segregation which together with regressive atrophy of the reproductive organs, tends to stop procreation. Moreover, the lowered vital resistance leads to tuberculosis. 80 per cent of cases of dementia præcox die of active pulmonary tuberculosis, a marked contrast to general paralysis. We observe there is thus a tendency to end or mend a degenerate stock.

THE PART OF HEREDITY IN THE ETIOLOGY OF MENTAL DISEASE

Lastly, from a practical consideration of the subject of insanity, it is very necessary to recognize that the germ cells of every person who is certified as insane and sent to a mental hospital are not necessarily possible potential transmitters of a mental disease. General paralysis of the insane and many other microbial infections leading to disordered mental functions are acquired diseases and are not hereditary. Neither is it right to assume that simple senile decay affecting the brain is transmissible, yet a large percentage of inmates of asylums are sent there on account of senility. These legal administrative conceptions of mental disease must therefore vitiate all statistics in respect to heredity as a cause of mental diseases, because based upon data in which admissions to a mental hospital are in many instances the sole evidence. This does not apply to the same extent to carefully recorded pedigrees, but even these are not free from error, for often all the information that can be obtained is that one or more members of the stock had been in an asylum.

How is the public to know the difference between an inborn tendency to insanity *ab initio* in the ovum, true heredity, and a condition which may arise after conjugation of the male and female germs while the developing embryo is still in the body of the mother? As Sir Bryan Donkin pointed out, congenital disease was confounded with hereditary disease even by medical witnesses who gave evidence before the Royal Commission on Feeble-mindedness. The term "hereditary syphilis" is a misnomer. Much may happen while the embryo is still in *utero*. The normal biological processes of nutrition of the developing embryo may fail, abnormal mechanical conditions may arise in the uterus, interfering with the proper development of the embryo, or mechanical conditions may arise in development of the embryo may arise, interfering with the development of structure. Of all the structures in the body of the embryo likely to be affected by a departure from normal dynamic biological conditions of growth, the great brain or cerebrum is the most likely. The neo-encephalon—the telencephalon, which by rapid cellular proliferation from the telencephalon, which by rapid cellular proliferation grow upwards and backwards to cover up completely the basal ganglia and mid brain to form the cerebral hemispheres. In that process many mechanical failures and accidents may occur, interfering with the vascular supply or nutrition of the rapidly proliferating cells, whereby the process may be arrested altogether, as in *ruencephaly* or imbecile. There is evidence of a possible vascular cause through a lack of correspondence in the normal rate of growth of the dura mater and soft membranes and the longitudinal sinus in a direction opposite to the current of the blood stream in the frontal lobes—an anatomical condition which favours venous stasis. This I have put forward as an explanation of the fact that the frontal lobes of the and atrophy in paralytic dementia, because the spirochaetes, being anaerobic, would develop more easily where there is venous stasis. Again prolonged labour and difficulties in delivery requiring the use of instruments may be responsible for injury of the brain.

Idiots and imbeciles occur in all grades of society (frequently they are the first-born), and it is not at all uncommon to find nothing in the paternal or maternal family history—even when a pedigree can be obtained of three or four generations—to account for this pronounced failure of development of the anatomical basis of mind. The late Dr Ashby considered that 25 per cent of the cases of idiocy and imbecility were due to causes other than heredity.

I feel that the subject is one which still requires an enormous amount of patient investigation before any definite conclusions can be arrived at and I am more than ever convinced of the wisdom of what Harvey's great contemporary Bacon said in his *Advancement of Learning*, *Dime* and *Human* when he wrote "First therefore in this as in all things which are practical we ought to cast up our account, what is in our power, and what not, for the one may be dealt with by way of alteration, but the other

by way of application only. The husbandman cannot command, neither the nature of the earth nor the seasons of the weather, no more can the physician the constitution of the patient, nor the variety of accidents. So, in the culture and cure of the mind of man, two things are without our command—points of nature, and points of fortune."

REMARKS
ON
SENSITIZATION AND DESENSITIZATION
IN SKIN DISEASE

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DISEASES of the skin may be divided for certain purposes into two groups—the first, where the cutaneous manifestations can be shown to be the direct result of the presence in the skin of a specific parasite, as in tuberculosis, syphilis, and scabies, and the second, where the eruption is the manifestation of a reaction to some process which may not have been adequately explained. In the first or parasitic group, because we possess a precise knowledge of the nature of the condition, we can often cure the disease by methods of treatment having as their object the destruction of the causal parasite. This does not apply to the second group, where we may only be dealing with a symptom, as in the case of eczema, urticaria, and other conditions, where, although the local treatment is often successful in removing the eruption, it does not necessarily cure the condition—using the term "cure" in its strict sense—because the factors bringing about the dermatosis may be uninfluenced by the remedies used. This treatment of a symptom is not confined to dermatology, for there are many other complaints, both medical and surgical, where the same method is adopted. Even in cancer,† to take what may be an extreme case, when the surgeon takes any with the knife the primary tumour, and so far as possible any other structures liable to continuation, the highly developed operative technique only removes the result of some mysterious agency, not the cause, for the cause of cancer is still an unsolved riddle. While the discovery of the pathogenetic bacteria made clear the nature of the first or infective group of skin diseases, it left, in the main, the second or symptomatic group unexplained. The doctrine of sensitization offers a possible solution to some at least of these conditions.

The Theory of Sensitization and its Applications

The theory of sensitization is based upon the only experiments of Richet, who, in 1902, demonstrated that when an animal is injected with certain proteins it develops a peculiar sensitiveness to subsequent and often very small doses of the same agent or antigen. The reaction following the second injection has been termed the anaphylactic shock, and may include a general disturbance besides cutaneous phenomena, as in some of the forms of serum sickness occasionally met with following the use of an antigen. It is now known that a great variety of different animal proteins, bacterial products, and even drugs A number of cutaneous eruptions appear to be attributable to this state of sensitization, and this theory of origin has in particular been applied to certain forms of eczema, urticaria, general pruritus, certain erythemas, and possibly seem a long cry from the relatively quiet efflorescences of serum sickness to the violent reactions observed in eczema and the other diseases catalogued above, but there is nevertheless a considerable body of evidence in favour of the view that the eruptions are the result of a special sensitization of the skin. With the object of avoiding a possible source of confusion two preliminary observations may be made.

Abstract of address given to the South Essex Division of the British Medical Association.
† This paper was written some time before Dr Gje and Mr Barnard had published the results of their researches.

In the first place, the names we attach to the various dermatoses may not designate specific diseases, but possibly only reactions arising from more than one cause, and this quality must obviously make the investigation of any one of them the more difficult. This statement is illustrated by consideration of the condition termed "dyssidrotic eczema, or dyssidrosis," recognized by an eruption of deeply seated vesicles affecting both hands, the fingers especially, and sometimes also the feet. It prevails in spring and summer, and this and the tendency to relapse at the same period of each year has led to the belief that sunlight has a direct effect in bringing about the eruption. Dyssidrosis is placed by many observers within the eczema group by reason both of its clinical and histological features. It would therefore appear to belong to the class of diseases which may be attributable to sensitization. Research, however, has shown that certain forms are of parasitic origin and due to the invasion of the skin by one of the ringworm fungi, as in the following case.

The patient a man aged 33 years came under observation in April, 1923. He had first suffered from the condition complained of in 1920, the eruption then attacking the hands and the feet. During the whole of 1921 he remained free, but was again affected in the following year. When seen in April his condition might be described as the classical form of dyssidrosis. As a routine measure the epidermic covering of some of the vesicles was removed with a curette and examined microscopically, and in the specimens thus prepared an abundant ringworm fungus was detected.

Daniel,¹ writing on this subject, states that in 80 per cent of the cases presenting the features of dyssidrosis it is possible to discover a mycelium in the squames, or in the roof of the vesicles, but he does not deny, and others positively affirm, that there does exist a true dyssidrosis, a condition *sui generis*, neither parasitic nor traumatic. In the case recorded above it would have been impossible even for a trained observer to distinguish by simple inspection alone—that is, without the aid of the microscope—between two completely different conditions.

Secondly, it has also to be recognized that although a state of sensitization may be shown to exist it does not necessarily follow that any given eruption is the result of this sensitized state, and two good examples of this circumstance are given by Whitfield² in his Lumlair Lectures. He cites there the case of an infant, aged 3 months, with acute eczema, who was so sensitive to egg that on one occasion, when a small quantity of egg-yolk was included in the food, severe vomiting and diarrhoea resulted, but without in any way affecting the eruption. His second case is similar to the first, for the patient, a child aged 14 months, was also egg-sensitive and also suffered from eczema. When egg was included in the dietary a marked general disturbance followed, with urticaria, but the eczematous eruption remained unaltered. These patients were both sensitized to egg, but in neither case was the eczematous eruption the result of egg-sensitiveness.

To demonstrate that any given eruption is the result of sensitization it is necessary to satisfy two conditions—first, that the patient is sensitized, and secondly, that the eruption is the result of this sensitization. It is not always possible to obtain the complete proof, and, indeed, in a considerable proportion of cases the argument will depend rather upon inference than fact. Sometimes all the conditions can be satisfied, as in the following two cases where the nature of the process and the effects of specific treatment are clearly displayed.

The first is recorded by Vidal, Abram, and Joltrain,³ where a man under their observation became so sensitive to emetine powder that the least contact with it provoked an attack of acute eczema. Knowing the nature of the antigen, these observers were able to desensitize their patient by a series of subcutaneous injections, using at first 1 c.c. of a solution of emetine 1 in 20,000, the strength being gradually increased. By this means the patient ultimately became completely free of his intolerance to the substance.

The second case was brought under my observation by Dr. Jonaiff when casualty medical officer at the Middlesex Hospital. A medical student working in the dissecting room developed formalin dermatitis of the hands, which interfered with his work and caused him considerable inconvenience. It was decided to attempt specific desensitization, and with this object in view the following

procedure was carried out. On November 29th an injection of 1 c.c. of a solution of formalin 1 in 1,000,000 was given, a second injection on December 3rd of 2 c.c. of the same solution caused a flaring up of all the lesions. Further injections were made on December 5th (4 c.c.), December 12th (0.4 c.c. of 1 in 100,000 formalin solution), and a final dose of a similar strength on December 18th. The rash had by this time completely disappeared, and the patient was able to resume his work and has had no further recurrence of the eruption.

While these cases illustrate in the most complete manner the relation of the sensitized state to certain forms of eczema, there are other, if less convincing, methods of demonstrating sensitization in many cutaneous diseases. There are, for example, phenomena preceding the cutaneous reaction—including among other things a fall of blood pressure, diminished coagulability of the blood, and leucopenia—termed by Vidal the haemochlastic crisis. As these are identical with the changes observed in genuine anaphylactic shock, their detection before the appearance of an eruption may be taken as evidence of a condition of sensitization. This method of proof has been used in a case of urticaria under the observation of Pagniez and Pasteur Vallery-Radot,⁴ the more important feature of which may be summarized as follows.

This particular patient was found to be sensitive both to vegetable and animal albumins, and in his case the haemochlastic crisis could be demonstrated before the urticarial rash appeared. But when aliments were ingested from which the harmful substances had been excluded both the cutaneous reaction and the haemochlastic crisis were wanting, while actually a leucocytosis and raising of the blood pressure occurred, such as would normally be met with during the digestive period. The nature of the eruption being in this manner proved, desensitization was brought about by a remarkably ingenious plan. One hour before his repast the patient was made to consume tiny amounts of the foods composing it, thus miniature meal desensitized him, and allowed him to eat subsequently without ill effects.

The protein skin tests have also been used for the purpose of demonstrating sensitization. The technique advocated by Engman and Wander,⁵ which has the advantage over others of avoiding the production of a wheal in urticarial subjects, is as follows. A number of incisions one-eighth of an inch long are made with a sharp von Pirquet knife through the epidermis of the forearm. These are moistened with decinormal caustic soda solution and then the test proteins are applied. A positive reaction consists of a distinct wheal surrounded by an erythematous blush. The well known case of Fox and Fischer⁶ affords striking proof of the practical application of this method. They refer to a man aged 35 years, with chronic eczema of the hands and wrists, who consumed considerable quantities of cabbage, and who, when tested, gave a strong positive cabbage reaction. When this vegetable was excluded from his diet the eczema got well, returning when cabbage was again eaten. He was thus cabbage-sensitive and the eczematous eruption was a manifestation of his sensitized state.

In adopting this method of investigation it is necessary to remember that while an individual may be sensitized to any given protein, it does not necessarily follow that the dermatosis is a consequence. Whitfield's two cases quoted above are striking examples of this fact. The reaction is also open to various interpretations, different observers adopting a different standard of the positive degree. Fox and Fischer appear to have summed up the position in saying that it is difficult at present to draw definite conclusions regarding the true value of the protein skin tests in eczema of adults, and they further add that these tests might prove useful in a small proportion of cases.

Approaching the problem in a novel manner, Cranston Low has, in a series of convincing personal experiments, investigated the effects of sensitization with *Primula obconica*. Before he began his experiments he was, he states, able to handle the plant, and even rub the leaf on his skin with impunity. He purposely scarified a small area on the back of the forearm, rubbing in the crushed

leaf and allowing the juice to dry on the region so treated healed completely, leaving a slight scar, but without itching or dermatitis. Although there was no evidence that anything unusual had taken place, a very definite deviation from the normal actually had occurred—the investigator was now sensitized to *Primula obconica*. Three weeks after the operation recorded above had been carried out the plant juice was applied to the unbroken skin on the same area of the arm, with the result that an intense vesicular dermatitis developed, attaining its maximum in rubbing the plant on the other forearm and the thigh, a characteristic reaction, but of lesser degree, was produced. Two weeks later the sensitized state still persisted, a reaction with the plant being recorded after this interval had elapsed.

The foregoing refers to specific sensitization where the harmful agent can be identified. In these cases specific desensitization can be attempted by administering in various very minute doses of the causal antigen with the object of "re-educating" the tissues. But the investigator will not always be in so favourable a position, and it will often be found necessary to assume that a state of sensitization exists. An eruption, for example, may be considered to depend upon bacterial sensitization of the skin from a focal infection of the teeth tonsils pelvis, or elsewhere the proof of the relationship between the two depending upon the improvement or disappearance of the eruption when the infected focus is identified and suitably treated. Examples of this relationship may be found in cases of lupus erythematosus and urticaria, where, as Barber⁸ has insisted, focal infection assumes a special importance. The following are examples of such a relationship.

A woman aged 22 came under observation with typical lupus erythematosus of the hands and feet of six years' duration which had resisted all the usual methods of treatment. During the course of the disease enlarged axillary glands considered to be tuberculous had developed their removal effected no change in the disease. It was noted that the tonsils were considerably infected and upon their enucleation the eruption cleared up.

Many dermatologists hold that lupus erythematosus should be included among the tuberculides, a group embracing a variety of dermatoses supposed to be due to the toxins carried by the blood from some distant tuberculous focus—the skin lesion. In this connexion it is interesting to note that Dr. Fordyce⁹ has stated that Dr. Cannon, his assistant, logical department of Columbia University, including tissue inoculation from cases of lupus erythematosus into guinea-pigs. Out of thirty cases inoculated, typical tuberculous theory of focal infection of the teeth, tonsils, etc., it implies that some cases of this disease are different from others, and further demonstrates the difficulty of separating apparently similar eruptive types.

Sensitization to bacterial products from a focal infection may sometimes be the cause of chronic urticaria and angioneurotic oedema, as in the following two cases, similar to those described by Buben.

The first patient a woman of middle age had suffered from repeated attacks of giant urticaria over a period of seventeen years during which time she had hardly ever been free from the eruption. It was discovered that certain of the accessory nasal sinuses were infected and when these were drained the urticarial manifestations ceased abruptly.

The second case is even more striking and presents some remarkable features. A woman aged 34 came to hospital giving a history of giant urticaria extending over five years. A search to discover the cause was at first without definite result and it was therefore decided to attempt desensitization by injections of whole blood. She received seven injections with the result that the eruption during the treatment became less and less pronounced and finally entirely disappeared. As during the whole course of her illness she had never been free from some degree of urticaria for more than a few days the hope that she had been cured was entertained. It was therefore extremely disappointing to find six weeks after the injections had been discontinued a return of the eruption in a severe form. Further investigation showed that one nostril was infected the purulent contents of an extremely offensive character. Suitable treatment of this focus resulted in what appears to be final cure.

This case shows the importance of a complete investigation in cases of urticaria, it also demonstrates that a non-specific method of treatment can exercise a real control over disease even when the cause remains operative.

Utilization of the Theory in Treatment

The theories of sensitization would have little more than academic interest were it not possible to utilize in treatment methods of desensitization based upon them. These may be divided into two groups—specific and non-specific. Specific desensitization may be undertaken by giving the sensitized individual a series of doses of the known harmful substance, beginning with very small amounts, which are gradually increased until ultimately a state of tolerance is acquired. While this is the more scientific method, the most extensive investigations often fail to reveal the nature or source of the offending agent, and it may be necessary to adopt the second form of treatment—namely, that has been criticized as empirical, and has been termed from its nature non-specific. This procedure assumes various forms, two of which may be adverted to here.

Non-specific desensitization may be brought about by the comparatively simple method of intravenous injections of physiological salt solution. Some observers attribute the results obtained to the contraindication of the solution with air borne bacteria, and believe that little or no effect follows the use of a solution from which bacteria and their products have been excluded, or removed by double distillation. There would appear to be some reason for this belief, and in the case quoted below the fluid was purposely allowed to become contaminated before sterilization for use.

The patient was a married woman aged 36 suffering from multiple arthritis and lupus erythematosus. No focus of infection could be detected in the teeth tonsils or elsewhere and she appeared to be free from any tuberculous taint. As the condition had failed to respond to a variety of local applications it was decided to attempt to desensitize her by intravenous injections of saline. The first injection of the series amounting to 50 c.c. was administered on September 3rd in all five injections were given at intervals of seven days in increasing quantities up to 200 c.c. of such a character as to interfere with sleep which had been the eruption steadily improved and although it was not completely removed it became of relatively slight degree. The injections were well tolerated and were followed by a moderate febrile reaction, excepting the last which caused the temperature to rise to 101°.

Injections of Whole Blood

Injections of whole blood—a method largely employed on the Continent, but apparently only used to a limited extent in this country—are often brilliantly successful. Auto-hæmotherapy owes its place in dermatology to Rana, who, in 1913 called attention to it and to the conditions in which it might be employed. The technique used by different investigators is not always the same, the following method appears to give satisfactory results and has been adopted in the various cases recorded below.

From a vein in the arm 5 c.c. of blood is withdrawn into a syringe and immediately injected deeply into the muscle high up in the buttock region in the position usually selected for intramuscular injections in this situation. It is important so to prepare the patient that no undue delay takes place between the withdrawal of the blood and its re-injection. If this be neglected the practitioner may find himself in the embarrassing position of having allowed the blood to clot in the syringe and being thereby prevented from completing the operation. If this precaution be taken there is little else apart from the usual aseptic regime, that need be observed, for the procedure would seem to be attended by little discomfort to the patient and to be only in the most cases any subsequent disturbance. I have once met with fever following the injection and once with severe urticaria. The application of the method will best be illustrated by the following series of cases.

Case 1—A female patient aged 75 with severe dermatitis herpetiformis of fifteen months' duration. The nature of the case was manifest from the type of the eruption its distribution including the mucous membrane of the mouth and from the marked eosinophilia. Treatment with whole blood and from the marked improvement in September 1923 and in all seven injections were commenced at weekly intervals. As a result the eruption cleared up and the patient seems to have made a satisfactory recovery. A certain amount of local treatment was carried out at the same time but in view of the duration of the complaint before the special method was undertaken and of the kind of treatment that had been

employed in this period, it may reasonably be assumed that the result should be attributed to the blood injections.

Case 2—A male patient aged 53 with chronic eczema of the hands and forearms existing from early childhood. Almost every recognized application had been used, with never more than temporary success. It was suggested to the practitioner in charge of the case that he should try the effect of a series of whole blood injections. Rapid improvement followed the patient in describing the result stating that his hands which had been severely affected, became like velvet.

Case 3—This case was also an example of eczema involving the face with considerable oedema. The condition had existed on and off for one year, and when seen a severe and acute phase had been in progress during three months. Various methods of treatment such as dieting and local applications had been employed without success. Following a series of whole blood injections the eruption completely cleared up.

Some of the most striking results following the administration of whole blood have been met with in urticaria, general pruritus, and especially in furunculosis. The following cases may be cited as examples of the application of this method in these conditions.

Case 4—A young male who had suffered from chronic furunculosis extending over about three and a half years. He had been treated with vaccines, colloidal manganese, and in other ways but without benefit. He was put on injections of whole blood, and immediately began to improve. After several injections he ceased attending hospital so that his complete history is unknown. As he was most enthusiastic about the treatment and as it inconvenienced him in no way, this may be taken to mean that he has been cured for he was completely relieved towards the end of the period during which he remained under observation.

Case 5 is somewhat similar. The patient a woman aged 23 had suffered from a succession of boils during two months. She was given five injections of her own blood. Improvement began at once, and at the termination of treatment she became, and has remained free from the complaint.

The next three cases to be recorded are examples of the results of this method of desensitization in general pruritus, a condition in which whole-blood injections seem to have a special use. It will be noted that in all the itching had been in existence for a considerable time, and that the benefit appeared to follow directly upon the injection.

Case 6—An example of severe general itching in a woman aged 45. This had been present for three years and had at one time undergone temporary improvement following the extraction of some teeth. The skin was extensively scratched with, in consequence, some degree of secondary pyoderma and lichenization. There was a history of wheals, but these were never seen on the occasions when the patient was examined. In all, six injections of whole blood were given. The itching entirely ceased, and no doubt in consequence of this, both the pyoderma and lichenization disappeared.

Case 7—A woman with severe pruritus and an indefinite history of urticaria of two years' duration. This patient gave a history of three attacks of food poisoning, and as she appeared to have had colitis a vaccine made from the intestinal flora had been used for some time but without effect. On April 20th 1925 she was given an injection of her own blood, following which the itching almost entirely ceased. Subsequently three other injections were given with the result that the patient has remained free from the pruritus.

Case 8—A man aged 64 came to the skin department of the Middlesex Hospital in December 1923 complaining of severe general pruritus of two years' duration. The skin was observed to be generally markedly infiltrated the lymphatic glands in the axillae, groins, supraclavicular regions, and on the lateral aspects of the thorax were enlarged and prominent so much so that Hodgkin's disease was suspected. The blood count was as follows: haemoglobin 82 per cent., red blood cells 4,800,000, white blood cells 12,800 differential count polymorphonuclears 77 per cent., lymphocytes 11 per cent., mononuclears 10 per cent., and eosinophils 2 per cent. One of the glands was removed for microscopic examination and presented the following features. The lymphoid tissue was generally reduced there was increase of the reticular elements but no giant cells were found present. This patient was taken into the hospital and while there four injections of whole blood were given. These were well tolerated except the third following which there was a considerable and prolonged febrile reaction. The result of treatment in this case was striking. The skin gradually became soft and pliable the glands disappeared the patient entirely lost all itching sensation and made a complete and satisfactory recovery.

When we undertake a form of specific desensitization we are, as the facts above demonstrate, in a secure position, but it is not so evident that our methods are of equal scientific precision when one of the non-specific methods is employed. The proof of the nature of the condition would then seem largely to rest upon the results of treatment, the argument being that because the condition for which treatment was undertaken gets well or improves, a desensitizing method having been used, therefore we have been treating a patient who has been sensitized, although the nature of the sensitizing agent or agents remains unknown. But even if we accept this point on admittedly an unconvincing one, we can still point to results obtained which must be satis-

factory both to the patient and the practitioner, whether we label them with a special name or not. The method, like others, has a limited application, but within those limits it would seem to have a distinct value and position in therapeutics.

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BIOCHEMICAL CHARACTERS OF CERTAIN BACTERIA

WHEN LIVING IN ASSOCIATION OR ARTIFICIALLY MIXED,
AND WHEN LIVING SEPARATELY

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SOME years ago I noted that when two species of bacteria are living together in symbiosis, or close association, or are artificially mixed, the symbiotic or mixed cultures may present certain biochemical characters which neither species possesses when grown separately. I will limit myself in this paper to touching upon the changes in fermentative properties, quoting only a few examples. The results of the complete investigation will be published at a later date in a more complete paper.

Bacteria Used

The bacteria I have used in my experiments are *Bacillus typhosus*, *Bacillus morganii* (Morgan's bacillus No. 1), *Bacillus dysenteriae* Flexner, *Bacillus proteus*.

The strain of *B. typhosus* was isolated from a case of typhoid fever, and shows all the typical serological reactions and biochemical characteristics of the typhoid bacillus, it is very highly agglutinated by typhoid serum, it does not produce gas in any carbohydrate, it produces acidity in glucose, levulose, maltose, galactose, mannitol, dextrin and sorbitol.

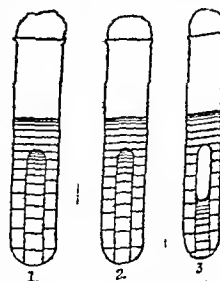
The strain of *B. morganii* was isolated from a stool, it is motile, it produces acidity and gas in glucose, levulose, and galactose, but neither acidity nor gas in any other sugar. In this paper I will refer to it as Strain S.

The strain of *B. dysenteriae* Flexner is serologically and biochemically typical, it produces acidity in mannitol. It was obtained from the Lister Institute.

The strain of *B. proteus* was isolated from a case of enteritis, it is motile and liquefies gelatin and serum rapidly, it produces acidity and gas in glucose, levulose, galactose, saccharose, and glycerol. It produces neither acidity nor gas in lactose, dulcitol, mannitol, maltose, dextrin, adonite, inulin, sorbitol, mesitol, salicin, amygdalin, isodulcitol, or erythritol. As I have stated in other publications, the term *proteus* covers a group of closely allied bacilli and not one species only. The strain I have used is very similar to the variety which I called *paradytiferus* (see Castellani and Chalmers's *Manual of Tropical Medicine*, p. 943). In this paper I will denote it as *B. proteus* (P).

B. typhosus + *B. morganii*

Action on Maltose—*B. typhosus*, as is well known, does not produce gas in maltose or any other sugar, only acidity. *B. morganii* (Strain S) has no action whatever on maltose, it produces neither acidity nor gas. Maltose peptone water tubes inoculated with *B. typhosus* alone or *B. morganii* alone and kept in the incubator for as long as a month never show production of gas. One would expect, therefore, that the mixture *B. typhosus* + *B. morganii* would not cause production of gas in maltose but it is not so. If a tube of maltose peptone water is inoculated with *B. typhosus* and immediately after with *B. morganii* and placed in the incubator at 35° C. for forty-eight



1 Maltose peptone water tube inoculated with *B. typhosus* gas absent. 2 Maltose peptone water tube inoculated with *B. morganii* gas absent. 3 Maltose peptone water tube inoculated with *B. typhosus* + *B. morganii* gas present.

hours, it produces gas in maltose but it is not so. If a tube of maltose peptone water is inoculated with *B. typhosus* and immediately after with *B. morganii* and placed in the incubator at 35° C. for forty-eight

hours, not only will acidity be produced but also a large amount of gas. The same result will be obtained if the two bacilli are previously mixed in plain peptone water and the peptone water mixture inoculated in tubes of maltose. The same result is also obtained if *B. morganii* is added to the maltose tubes twenty-four hours after inoculating with *B. typhosus*, if the interval is more than twenty-four hours then the production of gas is not so constant. When the two bacilli, *B. typhosus* and *B. morganii*, live naturally in close association the same phenomenon takes place, as shown by the following observation. The stool of a suspected typhoid case was examined bacteriologically, using MacConkey's medium plates. An exceptionally large number of white colonies developed; fifteen were picked out and further investigated by replating, etc. Twelve of them consisted of two organisms—*B. typhosus* and *B. morganii*, three of *B. morganii* alone. The mixed cultures derived from the colonies containing both *B. typhosus* and *B. morganii* produced gas in maltose, the cultures derived from the colonies containing only *B. morganii* had no action whatever on that sugar. Mixed cultures obtained artificially by inoculating agar tubes with both *B. typhosus* and *B. morganii* behave in the same manner—namely, when a loopful of the mixed growth is inoculated into a maltose peptone water tube acid and gas are produced.

Action on Mannitol.—As is well known, *B. typhosus* produces acidity only in mannitol, never gas. *B. morganii* has no action—no acidity or gas is produced. The mixture *B. typhosus*+*B. morganii* produced acidity and gas.

Action on Sorbite.—*B. typhosus* alone produces acidity, never gas in sorbite, *B. morganii* alone has no action whatever on sorbite; it produces neither acidity nor gas. The mixture *B. typhosus*+*B. morganii* produces acidity and gas.

Action on other Carbon Compounds apart from the above.—The reactions are seen at a glance in Table I, in which the fermentative characters are given of *B. typhosus* alone, *B. morganii* alone, and the mixture *B. typhosus*+*B. morganii*.

TABLE I

	Lactose	Saccharose	Glucose	Levulose	Maltose	Galactose	Mannitol	Sorbito
<i>B. typhosus</i>	O	O	A	A	A	A	A	A
<i>B. morganii</i>	O	O	AG	AG	O	AG	O	O
<i>B. typhosus</i> + <i>B. morganii</i>	O	O	AG	AG	AG	AG	AG	AG

O=Negative neither acid nor gas A=Acid G=Gas

From the table it is seen that certain sugars and other carbon compounds, which when acted upon by *B. typhosus* alone undergo a simple acid fermentation, and when acted upon by *B. morganii* alone do not undergo any fermentation, neither acid nor gas being produced, are capable of undergoing fermentation with production of gas when they are acted upon by the mixture of the two bacilli. In the carbon compounds in which *B. typhosus* alone produces no acidity and *B. morganii* alone neither acidity nor gas, their mixture produces neither acidity nor gas.

B. typhosus+*B. proteus*

The strain of *B. proteus* used (P), as already stated, has no action on maltose, mannitol, or sorbite; it produces neither acidity nor gas in these substances.

Action on Maltose.—*B. typhosus* alone produces acidity, never gas. *B. proteus* (P) alone produces neither acidity nor gas. Their mixture produces acidity and gas.

Action on Mannitol.—*B. typhosus* produces acidity, never gas, in this alcohol. *B. proteus* (P) has no action on it; neither acidity nor gas is produced. Their mixture, however, produces acidity and gas.

TABLE II

	Lactose	Saccharose	Glucose	Levulose	Maltose	Galactose	Mannitol	Sorbito
<i>B. typhosus</i>	O	O	A	A	A	A	A	A
<i>B. proteus</i> (P)	O	O	AG	AG	O	AG	O	O
<i>B. typhosus</i> + <i>B. proteus</i> (P)	O	O	AG	AG	AG	AG	AG	AG

Action on Sorbite.—*B. typhosus* produces acidity only, *B. proteus* neither acidity nor gas, their mixture causes production of acidity and gas.

B. dysenteriae Flexner+*B. morganii*

Action on Mannitol.—*B. dysenteriae* Flexner produces acidity only, never gas. *B. morganii* has no action on it, neither acidity nor gas is produced. The mixture *B. dysenteriae*+*B. morganii* produces acidity and gas.

Action on Maltose.—*B. dysenteriae* Flexner produces only acidity, never gas, *B. morganii* produces neither acidity nor gas, their mixture produces acidity and gas.

B. dysenteriae Flexner+*B. proteus*

Action on Mannitol.—*B. dysenteriae* Flexner produces acidity, never gas, *B. proteus* (P) produces neither acidity nor gas, their mixture produces acidity and gas.

Action on Maltose.—*B. dysenteriae* Flexner produces only acidity, never gas, *B. proteus* (P) produces neither acidity nor gas, then mixture produces acidity and gas.

TABLE III

	Lactose	Saccharose	Glucose	Levulose	Maltose	Galactose	Mannitol	Sorbito
<i>B. dysenteriae</i> Flexner	O	O	A	A	A	A	A	O
<i>B. morganii</i>	O	O	AG	AG	O	AG	O	O
<i>B. proteus</i> (P)	O	O	AG	AG	O	AG	O	O
<i>B. dysenteriae</i> Flexner + <i>B. morganii</i>	O	O	AG	AG	AG	AG	AG	O
<i>B. dysenteriae</i> Flexner + <i>B. proteus</i> (P)	O	O	AG	AG	AG	AG	AG	O

B. typhosus+*B. morganii*+*B. proteus*

Action on Maltose, Mannitol, and Sorbite.—*B. typhosus* alone produces acidity, no gas. *B. morganii* alone produces neither acidity nor gas. The mixture *B. morganii*+*B. proteus* produces neither acidity nor gas. The mixture of the three germs produces acidity and gas.

DISCUSSION AND CONCLUSIONS

It appears from my experiments that with regard to certain bacteria, when two species live in association or are artificially mixed, their mixture may present certain biochemical characters that neither species possesses when living separately. For example, *B. typhosus* alone produces acidity, never gas, in maltose, mannitol, and sorbite, *B. morganii* alone produces neither acidity nor gas in these substances, the mixture *B. typhosus*+*B. morganii* produces, however, both acidity and gas, although one would expect that by adding to a germ which produces simple acidity, never gas, a germ which produces neither acidity nor gas, there would still be only production of simple acidity.

The phenomenon of fermentation with production of gas of certain substances, such as maltose, mannitol, and sorbite, by adding to a germ which produces simple acidity in them, never gas, a germ which is apparently inert on those substances—that is, produces, alone, neither acidity nor gas in them—seems to depend to some extent on the fermentative powers of the second germ on certain other carbohydrates. For instance, not all bacilli inert on mannitol will cause production of gas in that substance when added to *B. typhosus*, which produces in it only acidity, a condition for the phenomenon to take place seems to be that the added germ, although inert on mannitol, must be capable of producing acidity and gas in glucose. It must be noted, however, that not every organism producing gas in glucose and neither acidity nor gas in mannitol will cause production of acid and gas in the latter substance when added to a producer in it of simple acidity, such as *B. typhosus*.

The subject is very obscure and requires much further investigation, but the fact remains that with regard to certain bacilli the mixture of two species may produce gas in certain substances although one species produces only simple acidity, never gas, in them and the other neither acidity nor gas.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL
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GYNAECOLOGY

Lady BARRETT, C B D, M D, M S, President

DISCUSSION ON
THE ROLE OF SURGERY IN THE TREATMENT
OF BACKWARD DISPLACEMENT
OF THE UTERUS

OPENING PAPERS

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It is probable that no gynaecological ailment has given rise to more discussions or acute differences of opinion than that of backward displacement of the uterus. One of the reasons for this is the fact that in many cases the varied types of backward displacement have not been clearly differentiated or defined. It is advisable to put on one side those classes of case about which everyone is agreed and to concentrate on the types about which there is room for discussion, and if possible to bring forward arguments supported by definite evidence on the pathological significance of a backward displacement of the uterus, and as to the conditions under which a backward displacement requires treatment. Accordingly I shall exclude from this discussion the following conditions:

(1) The mobile retroversion in which the uterus changes its position with the distension of the bladder, and may perhaps be found retroverted during an examination on one occasion, while on another it is in that position of anteversion which is regarded as normal. The misuse of the word "mobile" is the cause of much misunderstanding in its connexion with backward displacements, and I shall use it only for this class of case where symptoms should be absent and no treatment will be required. There is no doubt that in the past a great deal of unnecessary pessary treatment has been adopted for temporary aberrations which would very probably have righted themselves. I would emphasize, therefore, the importance of and necessity for repeated pelvic examinations before any treatment, either operative or otherwise, is undertaken.

(2) The fixed, adherent, painful displacements of the uterus where an infection, either puerperal, or of appendicular origin, or gonococcal, has been or is present.

(3) Retroversion of the uterus associated with prolapse. In both these classes the backward displacement is only part of a more complicated condition, and its treatment will also probably be an incident in the treatment of that condition.

(4) Leaving on one side these extreme classes, I shall direct particular attention to another group, which I shall describe as the immobile, non-adherent, backward displacement, and in this group I shall include both retroversion—namely, the backward rotation of the uterus round a transverse axis passing through the cervix—and retroflexion, which is actually not a displacement, but a change in the shape of the uterus.

In 1912, in a paper read before the North of England Gynaecological Society, founded on 100 cases of backward displacement treated by Gilliam's operation, I expressed the opinion which I had formed as a clinical assistant at the New Hospital for Women—where, though the cases were not uniformly gynaecological, a pelvic examination was made as a routine—that one did not often find a definite retroversion which was not giving rise to symptoms. I have not changed this opinion, but I think it would be useful if a series of cases taken from medical or surgical wards were to be investigated from this point

of view, so that we might have some statistics and not the vague statements which are so frequently made. It would also be helpful if the pathologists and infant specialists in maternity and children's hospitals could give us some idea of the frequency with which a congenital backward displacement is present in stillborn infants and in infancy and childhood. I have asked my colleague Dr Cyron, and he tells me that he himself has not seen one case. I believe investigations have been undertaken in certain ante-natal departments, but in cases of pregnancy it is possible that the normal uterine balance might be unduly influenced by the position of the ovum, which, if situated in the posterior wall, may produce a retroversion in the same way as a fibroid tumour in that situation. Such statistics would carry far more weight than the statements of gynaecologists, who are not usually called upon to examine normal women and girls. It would also be interesting to know on what statistics is based the statement so often made that backward displacements in single women cause no symptoms, and that if present they are due to neurosis.

The large numbers of such patients seeking treatment in whom only an immobile non-fixed backward displacement is present indicate that the condition is pathological, and the fact that in a very large number of these cases the symptoms disappear when the lesion is remedied must be taken as proof against this statement. From a study of several hundreds of cases in women of ages varying from 15 to 55, I am convinced that not only may this type of backward displacement exert a profound influence on the marital relations and reproductive function of the patient, but that it may have an injurious effect on her education, bodily activity, general well-being, and earning capacity. During school life there may be sufficient disability to interfere with regular school attendance or to depress the bodily health just below the standard of healthy well-being necessary for prolonged study and the sustained endeavour necessary to obtain a scholarship. For working women the loss of energy and periodical disablement often entailed by the presence of backward displacement is a very severe handicap. Also, even when the reproductive period of life is over, pathological conditions may be produced which may be the cause of troublesome and unpleasant symptoms in advanced years.

Before deciding the treatment (operative or otherwise) of such a condition, it is necessary to show that the position is pathological, and that it may produce morbid changes, not only in the uterus itself, but in the adnexa and possibly in the adjacent pelvic structures, which may give rise to a definite train of symptoms.

Many anthesis would derive from treatment any woman who complains of backache unless some cause other than a backward displacement can be found. The pain or discomfort is considered to be due to neurosis, and it is believed that treatment will make her worse rather than better. I should be inclined to argue that the presence of a chronic backache or pelvic discomfort is very likely to lead to a neurasthenic condition. Is it not a fact that special attention is now directed by alienists to the presence of pelvic lesions in the inmates of mental hospitals when they are asked *quid sit qua non* that any surgical operation should receive attention before improvement in the mental condition can be expected? If the cure of a backward displacement is part of preventive medicine, the gynaecologists ought not to be behind-hand. I entirely disagree with the view which would treat not the displacement, but only the complications of a displacement, and consider that it should be treated, if possible, before those complications arise. It is clearly wrong also to conceal from the patient the fact that such a condition is present, in the belief that such knowledge will make her neurotic. One is not infrequently consulted by women who after years of sterility have sought advice when treatment is too late, or who have had repeated abortions due to this condition.

CLASSIFICATION

1 *Congenital*—We are led to believe that an infant may occasionally be born with a backward displacement or, more commonly, may develop it during infancy, childhood,

or adolescence, and we occasionally find a small retroflexed undeveloped uterus which is very resistant to treatment. It is extremely difficult to prove that strain has any share in the causation, but I have certainly seen cases where the symptoms dated from heavy lifting (perhaps during the illness of a relative), or after a fall in the hunting field. Again, the condition is common in women who have laborious occupations, such as nurses and factory hands, but in both these it is possible that the malposition is already present, and that the strain only exaggerates it. Women whose occupation involves excessive standing, such as school teachers, shopgirls, or waitresses, certainly come under notice much more frequently than women who can live in easy life.

2. *Acquired*—(a) It is probable that during the early months of pregnancy the uterus in its softened condition may fall back if the ovum is situated in the posterior wall, and the normal equilibrium is disturbed. This would explain some of those cases where, in spite of the total absence of previous symptoms, the pregnant uterus may become incarcerated and retention of urine or a threatened miscarriage be the first abnormal symptom of which the patient may complain. Many of these cases right themselves, though this is less likely should there be any diminution in the conjugate, when the fundus may fall behind the promontory into the hollow of the sacrum, and treatment will be required.

(b) Fibromyomata of the posterior uterine wall or fundus are not infrequently associated with a retroversion, as is also a fibromyoma of the anterior wall when of sufficient size to push the rest of the uterus backwards.

(c) Desmoid tumours and other ovarian or uterine tumours may also be the cause of a backward displacement should they happen to lie forward.

(d) *Dorsal decubitus*. It may happen that during a long illness such as typhoid fever, the flabby uterus may fall back. Should the bladder be overdistended, the small intestine lies on the anterior surface of the uterus, and the displacement may become permanent.

(e) The commonest cause, however, is dorsal decubitus during the puerperium, when the softened uterus falls back under the sacral promontory as involution proceeds. The same incident may happen after an abortion.

PATHOLOGY AND ASSOCIATED PATHOLOGICAL CONDITIONS

The pathology of the retroverted uterus to a large extent depends upon the congestion and back pressure due to the interference with the circulation in the pelvic veins. This congestion, which is much more marked in the displaced puerperal uterus, is nevertheless often present in the nullipara though in a minor degree. The thin-walled veins of the broad ligaments may be recognizably distended, in extreme cases forming a varicocele. Such a condition is likely to cause a sensation of weight and fullness in the pelvis.

Again congestion may lead to increased weight and enlargement of the uterus, both conditions which more easily recognizable in the puerperal uterus, which may even be oedematous. In the same way hyperplasia of the endometrium may result, causing menorrhagia. The sluggish circulation in the cervix leads to a cystic condition, and Nabothian follicles may occur in the presence of a mild vaginal infection. The increased uterine discharge may show itself as a leucorrhoea, or sometimes as haemorrhage between the menstrual periods. An erosion of the posterior lip of the cervix is often present, due probably to the irritating character of retained discharge from the body during uterus. This usually disappears after reposition. The body of the uterus is occasionally incarcerated between the utero-sacral ligaments, and exceptionally a groove can be seen where the ligament presses on each side.

The effect on the ovary is seen first in an oedematous and cystic enlargement. The ovary which may be carried back deeply into the pouch of Douglas drops lower from its increased weight. There is a tendency later for thickening of the tunica albuginea to occur, the ovarian tissue being often replaced by a single cyst. This distention of normal ovarian tissue is one of the most formidable

sequelae of a backward displacement. The prolapsed ovary is in such a position that it is specially exposed to injury. Dyspnoea and thus the pelvic pain may result. The ovary, as it lies in the most dependent part of the pelvis, may readily become inflamed on the surface and adherent to adjacent structures.

As regards the adjacent structures, the round ligaments are usually stretched and lengthened, often attenuated and weak—possibly a cause rather than an effect of the displacement. The utero-sacral ligaments may be much shortened, especially if a retroflexion is present. Then, again direct pressure upon the rectum by the body of the uterus leads to engorgement of the inferior haemorrhoidal veins and the production of haemorrhoids, which may, however, be caused indirectly by the constipation which is a marked feature of these cases. Bladder complications are less frequent, the most striking is retention of urine, associated with the retroverted gravid uterus. Instances of frequency and incontinence occur sometimes in the nullipara, however, in the absence of cystitis and prolapse. One usually finds in such cases a very extreme displacement, the cervix pointing upwards behind the symphysis. On the whole, the bladder is much less frequently affected than the rectum in backward displacement.

SIGNS AND SYMPTOMS

One must be taken to ascertain that the symptoms complained of are due to the retroversion, and to exclude other pathological conditions, such as pelvic inflammation, bacilluria, etc., which may also be present, and which will persist if treatment has been directed only to the displacement.

The symptom most commonly complained of in the presence of an immobile, non-adherent backward displacement is a feeling of lassitude associated with pelvic discomfort and weight. Dysmenorrhoea is common, and is usually premenstrual in type. The patient often states that the periods, which started without pain, have become increasingly painful. This pain is probably caused by congestion and the extra muscular effort needed to expel the secretion. Backache, caused by the drag on the uterine supports, is common, and occurred in nearly every case investigated. Menorrhagia is not infrequent, and is also the result of the congestion and resultant hyperplasia of the endometrium. Leucorrhoea very often occurs. Sterility is common. It is probably the result of the abnormal position of the os uteri, and is often associated with dyspareunia, due to the tender displaced ovary or congested uterus. Iliaic pain may be due to referred ovarian pain.

Associated with the disordered uterine functions are abortions, but these are so common, and so often due to a syphilitic taint and to other causes, that it does not by any means follow that cure of the displacement will result in full term pregnancies. Ertulence and vomiting occasionally occur, and are probably reflex from direct pressure on the rectum.

In later life, in cases of neglected retroversion, the patient may complain of pruritus from an irritative discharge from the hyperplastic endometrium. In such cases adenomatous polypi may be found, which, though innocent, may bleed after the menopause. A purulent discharge may be the intermittent flow from a prometry, due to the retention of uterine discharge by the ill draining organ. This occurs most frequently some years after the menopause, when the uterine muscle has been replaced by fibrous tissue. In puerperal cases leucorrhoea may occur and give rise to rigors and serious symptoms if the condition is not diagnosed and relieved.

ILLUSTRATIVE CASES

Dysmenorrhoea and Menorrhagia

Case 1—A working girl aged 22 had been normal until a severe illness occurred when the periods became excessive and painful, menstrual and premenstrual pain being complained of which became increasingly severe. After six months dilatation and curettage were performed but no relief was obtained. The uterus was completely retroverted and the prolapsed left ovary was converted into a single cyst which was removed and Mayo's operation performed. Two years later the patient writes that she is menstruating quite regularly and without pain.

Case 2—A little girl aged 15 working for a scholarship in a secondary school, was sent from an adjacent county after ineffectual medical treatment. Menstruation had begun at 12 and was painful at the start. It had become increasingly severe and was accompanied by attacks of vomiting and faints. A dilatation and curettage were done together with Mayo's operation. A year later her mother wrote to say that she was completely cured; the periods were regular and free from pain and she had not had to miss school since she had returned after her operation.

Backache

Case 3—A housemaid aged 32 complained of backache, with dysmenorrhoea, menorrhagia, and leucorrhoea. The uterus was retroverted and the right ovary was cystic. After Mayo's operation and puncture of the cyst the patient wrote eighteen months later that the periods were regular and free from pain, and that she was completely cured.

Menorrhagia

Case 4—A nurse, aged 45, complained that the periods had always lasted seven to nine days and were occasionally accompanied by floodings. She was operated upon in 1921. Mayo's operation was performed, and the appendix (not adherent) removed. Four years later her doctor wrote to say that the periods were regular, free from pain and that the operation was a complete success.

Leucorrhoea

Case 5—A woman married twelve years had had one premature infant and had suffered from a continuous discharge and excessive periods for six months. There was a thick mucous discharge from the cervix and the patient had some cardiac trouble. After dilatation and curettage the uterus was fixed in position. The patient reported five years later that she had had no further discharge or excessive periods. When seen in July, 1925, the scar was firm and the uterus in good position.

Sterility

Case 6—A woman, married three years, complained of dysmenorrhoea and sterility. The uterus was retroverted and the left ovary cystic. After dilatation and curettage the left cystic ovary was removed and the uterus was brought up. A year later her first child was born, instruments being used, and two years later a second child—naturally. The periods five years after were regular and painless.

Case 7—A woman aged 26, married six years, complained of sterility and dyspareunia. In 1920, after dilatation and curettage when a thickened endometrium was removed, the cystic left ovary was punctured and the uterus fixed in position. Four years later (July, 1925) the patient was perfectly well and had had two children, one 4 years of age and one 4 months. The labours were normal and her periods were regular and free from pain.

Case 8—A woman aged 26 married three and a half years, complained of sterility, dysmenorrhoea, backache, menorrhagia, leucorrhoea and iliac pain. The uterus was dilated and curetted, the cervical glands showing proliferation and round celled infiltration of the connective tissue. The uterus was brought up. The patient five years later reported that she had had two children, both easy labours, and that she was quite well.

Iliac Pain

Case 9—A married woman aged 37 who had had six children and two abortions complained of iliac pain and a dragging sensation and was sent to Crofton Hospital protracted haemorrhoids and a retroverted uterus were present. She was there examined by Mr. Lister Jones who considered that it was useless to remove the haemorrhoids unless the position of the uterus was improved. The case was transferred to my gynaecological department and the oedematous retroverted uterus brought up after a curettage and removal of the haemorrhoids. The ovaries of which the tunica albuginea was rather dense were scarified. The veins of the broad ligament were markedly varicose. A year later the patient wrote: "I am pleased to say I feel a new woman now. I wish I had come years ago. I get up singing at the top of my voice now instead of crawling downstairs. I can enjoy my meals now and I never have to take medicine. This letter is I think sufficiently descriptive."

Rectal Symptoms

Pressure by the bulky retroverted and retroflexed uterus on the rectum sometimes gives the patient the sensation that the rectum is trying to expel something after the bowels have acted. This was the case with the following patient.

Case 10—A married woman aged 51 who had had three children, the youngest being 11 years of age, complained of severe iliac pain. She had had an appendix operation through an oblique iliac incision five years before but had experienced no relief. The uterus was in a position of extreme retroflexion, the cervix being up behind the symphysis, the posterior lip of the cervix was swollen and congested and marked haemorrhoids were present. At the operation in addition there was a marked varicocoele of the broad ligament.

Frequency of micturition is sometimes produced by pressure of the twisted cervix on the bladder, as in another case in which the retroflexed and retroverted uterus was practically upside down. The patient, a single lady aged 37, had suffered for years from frequency of micturition,

which had been a trouble to her all her life. She could only sleep about four hours. There was no cystocoele, and the x-ray report and bacteriological examination of the urine were negative. Operation has relieved this symptom.

Conditions Present after the Menopause

I do not think it is sufficiently recognized that a backward displacement may cause symptoms late in life.

Case 11—An unmarried woman aged 55 had always suffered from backache and leucorrhoea and had been informed as a girl that she had a displacement but no treatment had been suggested. Pruritus and a haemorrhagic discharge had been noticed after the menopause for two years, and pelvic pain which decreased when there was discharge. The uterus was completely retroverted and could not be replaced as it even under anaesthesia. Several simple adenomatous polyps were present in the cervix and were evidently the cause of the haemorrhage.

In the same way proptosis may also develop, even in the absence of malignant disease.

NEUROSIS

Case 12—A nurse aged 30, had had backache for even years with right iliac pain and leucorrhoea. The appendix was removed for flatulence three years before but the pain remained. A test was ordered by her doctor on the supposition of there being a morbid kidney but gave no relief and her ailments were ascribed to neurosis. At the operation the uterus was found impregnated in the pelvis and the right ovary was enlarged to the size of a Tangerine orange. It had twisted one turn and was converted into a haemorrhagic cyst. A cyst which was present in the left ovary was punctured, the right tube and ovary were removed, and the uterus was brought up by Mayo's operation. The patient wrote two years later saying that her complaint had been completely removed.

TREATMENT

There are two classes of case where the treatment of backward displacement is non-operative and where a cure may be obtained by milder measures.

(1) Pregnancy and the puerperium. In cases of early pregnancy posture or the use of a ring pessary will often remedy the condition. In puerperal case, in the process of involution the uterus may resume its normal position if replacement is effected sufficiently early, and the correction is maintained by the use of a Hodge pessary. In the same way the formation of a retroflexion may be prevented if the softened body of the uterus is hindered from bending backwards during the puerperium.

(2) In some cases where there is grave organic disease present, and an operation is contraindicated. It has been suggested that pessary treatment should be tried before any operation is undertaken to see if the symptoms are relieved. This is rather a clumsy method of making a diagnosis. In young girls it is obviously undesirable, and it is far better to have permission from the parents to confirm the suspected diagnosis under anaesthesia, and to proceed immediately to the necessary operative treatment. The only objection holds in the case of older women, who exhibit in many cases a marked disinclination for pessary treatment. The manipulation involved and the possibility of an unpleasant vaginal discharge are both repugnant to most women, and the fact that the patient's own neglect or forgetfulness may result in ulceration contraindicates this method.

After full consideration of the pathological changes, it is evident that the indications for operation should be widened to include the class of immobile, non-adherent backward displacements in the majority of cases. It is quite unjustifiable to wait for the onset of dyspareunia, sterility, or repeated abortions if there is an operation which will relieve the condition permanently with very little risk to life, and which is not likely to cause complications or risk in child-bearing. Such an operation, I think, we have in the modified Gilliam operation, commonly known as Mayo's operation. Since it possesses the advantage of the original Alexander method as regards the use of a muscular structure which will hypertrophy rather than a peritoneal band which will stretch, but not its disadvantages in the use of the weakest part of the ligament, and since, also, it gives access to the adnexa by the opening of the abdomen, there is much to be said for this operation. As the original Gilliam operation was performed the risk of an internal hernia into the aperture left on each side was obvious, though very few

cases have to my knowledge been reported. Mayo's modification avoids this danger, and as I think, the most physiological method which has been devised. I usually perform it myself through a low median subumbilical incision. After examination of the adnexa, sigmoid attachment, and appendix, I pass a pair of curved forceps between the cut peritoneal edges and extraperitoneal fat to the internal ring, avoiding any injury to the deep epigastric vessels. At the internal ring the peritoneum is perforated, the round ligament is seized in the forceps about 1½ inches from the uterus, and drawn through the aperture in the peritoneum which it fills. A second pair of straight Spencer Wells forceps pinches the rectus sheath and muscle, grasps the loop of round ligament, and draws it out between the skin and rectus sheath, to which the loop is secured by catgut (No. 2 chromicized 20 day Van Horn), about one inch from the midline on either side. Care is taken that there is sufficient but not too great tension to bring the uterus up into good position. I prefer to bring the ligament through the rectus sheath, as it is a firm structure and the movements of the muscle help to cause the round ligament to hypertrophy.

That hypertrophy does occur was shown in a case where sections were taken through the round ligaments some time after such an operation, a hysterectomy being required later. One ligament had given way and appeared as a very attenuated structure, while the other which had held firmly, was a solid muscular band.

In addition, should any stitch trouble occur, any suppuration would be superficial, and the operation is not only practically an extraperitoneal one, but an extramuscular one. I use catgut rather than any non-absorbent ligature material, as experience has shown that only in the most cases does the ligament give way. I think, however, it is necessary to give ample time for adhesions to consolidate and to keep the patients in bed rather longer than is necessary after many other abdominal operations.

I usually puncture any cysts of the ovaries which may be present but do not now resect them, and do not as a rule find it necessary to shorten the ovarian ligaments. If the uterus comes up well it usually brings up the ovaries with it. Examination of many cases later has shown that the cysts do not tend to re-form. Where the surface of the ovary is sclerotic I sometimes scratch, and I think this has had a beneficial effect in some cases.

Special care should be taken in bringing together the cut edges of that part of the rectus sheath between the loops of the round ligaments, which tend to draw apart these cut edges and to allow of the formation of a hernia. To avert this I usually employ some figure-of-eight or coil-screw Holden stitches for the skin and rectus sheath, employing catgut only for the peritoneum. Attention to this detail will usually result in a firm abdominal wall.

Is a dilatation and curettage of value in these cases? I think that it is of very temporary benefit, if any, in cases of backward displacement, but in the presence of hyperplasia of the endometrium it is advisable as a preliminary to a round ligament fixation, as it gives the tissues a chance to make a fresh start.

In this discussion I do not propose to deal with the merits or demerits of operative procedures other than the one I practise, but I should state that I have operated in at least twenty cases where a ventral suspension had been performed elsewhere and have found the peritoneal ligament very much lengthened. In one of these cases the patient a Frenchwoman reported as a symptom the sickening sensation she experienced when walking on her hands and knees, and which was probably due to the nipping of small intestine by this band.

On examining my case books I find that I have performed the modified Gilliam or Mayo operation more than a thousand times, either as a part of the triple operation for prolapse as a part of operations for chronic inflammatory trouble and other conditions, and in about 300 instances for cases of immobile non-adherent backward displacement—the class with which I am now dealing. There have been five deaths among the 1,000 operations—four in very complicated cases, one being from embolism and one from status lymphaticus. Among the 300 non-adherent cases

one death occurred—namely, in a Frenchwoman who came from the invaded area of Northern France and who died from an inoperable gas gangrene infection (*B. perfringens*).

RESULTS

I have endeavoured to ascertain the results of operation on the non-adherent cases, and have been able to trace 200 post-operative cases, of whom 73 were single and 127 married women.

Of the 200 cases traced—

- 136 (68 per cent) report cure of symptoms
- 29 (14.5 per cent) report improvement
- 31 (15.5 per cent) report no permanent benefit
- 4 (2 married 2 single) have died from intercurrent illness not less than eighteen months after operation

Of the 73 single women—

- 44 (60.3 per cent) report cure of symptoms
- 17 (23.3 per cent) report improvement
- 10 (13.7 per cent) report no permanent benefit

Of the 127 married women—

- 92 (72.4 per cent) report cure of symptoms
- 12 (9.5 per cent) report improvement
- 21 (16.5 per cent) report no permanent benefit

It is most interesting to note that contrary to the statement usually made, the results in the single women have been rather better than in the married.

Of the 73 single women 12 have married since the operation these report as follows:

- 5 are cured and have one child each
- 3 are cured and pregnant
- 1 has three children but is suffering from phthisis
- 2 are cured, but have no children at present
- 1 has had another operation, since marriage for sterility

This case was complicated by a chronic appendix

Of the 59 still single—

- 34 report cure
- 15 report improvement
- 2 report temporary improvement
- 8 report no permanent benefit

Of the 127 married women—

- 88 had previously had children
- 39 were sterile

Of the 88 married women who had had children—

- 59 (67 per cent) report cure
- 10 (11.4 per cent) report improvement
- 17 (19.3 per cent) report no permanent benefit

Of these 88 women 37 have been pregnant with 49 live births of which 3 only were instrumental. In addition there were 4 abortions 1 premature birth and 1 is pregnant.

Of the 39 married sterile women—

- 33 (84.6 per cent) report cure of symptoms
- 2 (5.1 per cent) report improvement
- 4 (10.3 per cent) report no permanent benefit

Of the same 39 sterile women—

- 23 (59 per cent) have had children
- 16 (41 per cent) have not yet had children

No woman who had been married more than seven years without having had children has had any after operation but several cases have become pregnant after six years sterility. The 23 women who have borne children have had among them 42 live births of which the first labour in three cases was instrumental. One was a case of contracted pelvis and has had two Caesarean section operations with living children. None have had abortions only but three abortions have occurred among them.

An endeavour has been made to ascertain the cause of some of the failures. In a considerable number of cases a gonorrhoeal infection was responsible others appeared to be suffering from menopause symptoms and others were cases where operation was undertaken many years after marriage.

II—H. RUSSELL ANDREWS, M.D. F.R.C.P.,

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With much that Miss Evans has said in her interesting paper I cordially agree, but I cannot endorse everything that she has said.

In cases in which the uterus is not only retroverted but also fixed there can be little difference of opinion: most people will agree that operative treatment is best. I have found, however, that in many cases the uterus is accused of being fixed when it is really freely movable. I have had many such cases sent to me, and have found that although the uterus was said to be fixed it could be moved up into position without difficulty. This mistaken idea that the uterus is fixed is due to one or both of two errors: (1) that vaginal examination is made with only one finger, and (2) that an attempt is made to lift up the uterus only in the middle line. If two fingers are used pressure can be

made higher up and further back, and if, instead of pressing a bulky uterus against the promontory of the sacrum, pessure is made to one side so as to dodge the promontory, many a uterus which is said to be fixed will go up into position easily.

There are some people who think, or at any rate seem to think, that almost every retroverted uterus requires operative treatment, and others who go to the other extreme and say that no retroverted uterus requires any treatment. A speaker at the last British Congress of Obstetrics and Gynecology said that he had not treated retroversion of the uterus for many years. I think that the safe course lies between these two extremes, and that in very many cases retroversion can be ignored, the patient being assured that there is nothing in the condition of her pelvic organs which calls for treatment—in this category come most if not all cases of single women and girls—but that in a small number of cases operation is indicated, and that it will give relief from troublesome symptoms and results. I cannot agree with the idea, so often expressed, that a mobile retroverted uterus of normal size may press on the rectum, causing difficult or painful defecation or piles, as I refuse to believe that an organ 3½ inches long can cause pressure when it is lying in a cavity the diameter of which is 4½ inches. I do not perform operations for retroversion often, but when I do it is usually on account of dyspareunia or of repeated abortions in a woman who has not borne a child. I am old-fashioned enough to believe that the body of the uterus is sometimes tender, and that the dyspareunia and pain caused by pressure in the posterior fornix are due to pressure on the uterus itself and not only on the ovaries, because in some of these cases the ovaries cannot be felt, and when the abdomen is opened the position of the ovaries suggests that they were out of the way of direct pressure. In such cases reposition of the uterus, followed by insertion of a soft ring pessary—I find that I use Hodge's pessary less and less as I grow older—often gives relief from the dyspareunia. In such a case suspension of the uterus by shortening the round ligaments usually gives permanent relief, if the patient chooses to have an operation rather than to continue to wear a pessary. The other class of case is that of the childless woman who has had a miscarriage, or two or three miscarriages, with no apparent cause except that the uterus is retroflexed. It is found in such cases that the uterus does not continue to increase in size after about the sixth or eighth week, and miscarriage occurs at about the twelfth week. The idea that the uterus is poorly developed in such cases is borne out by the miserably poor development of the round ligaments often found on opening the abdomen. In these cases there were usually no symptoms whatever before pregnancy. After a round ligament operation, or, in case when the round ligaments are so thin and weak that they cannot be trusted, a ventral suspension with formation of a septum in the vesico uterine pouch, the patient commonly carries a pregnancy successfully to term. In some of these cases of so-called congenital retroversion, an operation after some years of sterile married life is followed by pregnancy.

There is one point in the technique of the modified Gilman operation on which I wish to say a few words—namely, the practice adopted by many operators of bringing up a loop of round ligament through a small incision in the aponeurosis at each side of the abdominal incision. I have seen several cases in which the patient, some weeks or months after the operation, was alarmed at feeling a small sensitive swelling on each side of the scar, and her doctor to whom she showed it thought that she had a small hernia or two small hernias. In some cases the doctor was right! I have never made this lateral incision, but have always sutured the round ligament to the edge of the aponeurosis on the other side and have never had cause to regret it.

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THE surgical treatment of retroversion has been a subject for discussion ever since Schultz, about fifty years ago, showed that the normal position of the uterus is that of anteversion, opposed to the urinary bladder, and not vertical

in the pelvis as up to his time had been believed. Whether this discovery on the whole has been an advantage to humanity is a question. In view of the risks which have been run by women discovered to be suffering from retroversion and subjected to operation for its supposed relief it would almost seem that it would have been better had the profession remained in ignorance on this matter.

Schultz's treatment consisted in reposition manually, aided by the sound and sometimes by narcosis—with or without subsequent massage. He used an 8-shaped pessary, part of which, embracing the cervix, was supposed to keep the cervix posterior so that the treatment often failed as a matter of history. In fixed retroversions it did not succeed, and according to Sanger (1888) even when the uterus was not fixed it was far from satisfactory. Sanger found that 20 per cent of the patients were unrelied, and thus alone, he said, demanded that something further should be done. In this way the earlier gynaecologists became intent on the discovery of some operation of easy performance and free from risk, by which intractable cases could be efficiently dealt with, and by which, moreover, pessary treatment in the more amenable cases could be dispensed with.

The earliest attempts were most simple and consisted in cauterizing the posterior lip of the cervix and the adjacent part of the posterior vaginal vault, so that after ulceration the two healed together by cicatrization. Thus it was thought that the cervix, instead of persisting anteriorly, would come to be held posteriorly in the pelvis, and thus the body of the uterus, instead of being retroverted, would come to assume the anterior position.

This, however, was an uncertain method, and Sanger conceived the idea of shortening the utero-sacral ligaments from the vagina, or of inducing an aseptic adhesive inflammation in Douglas's pouch, by packing it with gauze after incising the posterior fornix, from which retraction of the cervix would result. He even conceived the idea of antecurving the uterus, incising the anterior vaginal fornix, opening the utero vesical pouch, and then fixing the body of the uterus to the vagina by silver wire. In this way the cervix would be forced back into its normal position. Or with a finger in the previously dilated uterus, one could pass a loop of silver wire from the anterior fornix through the vaginal wall and anterior uterine wall and out again into the vagina without making an incision.

Schelling (1888), however, performed the first vaginal fixation. By means of a special instrument inserted into the uterus by way of the cervix and made to pierce the anterior uterine wall and the adjacent part of the anterior vaginal wall, he brought a piece of silk from the vagina, through the puncture in the vaginal and uterine walls, out through the cervix, and tied the two ends together. In this way he thought to produce the beneficent anteversion. By care during this operation he thought to avoid the bladder, but had taken no thought of the uterus. Though modified by Zweifel and practised by others, the operation was little employed, though it stimulated thought. It led, after the temporary abandonment of abdominal section in these cases, to Dullens's anterior colpotomy (1892), an operation which came to be extensively employed on the Continent for dealing with intrapelvic pathological conditions, such as ectopic pregnancy, and which was completed by fixing the uterus to the vagina.

Prior to this, in intractable cases, the abdomen had been opened and cases of fixed retroversion treated by removing the ovaries. Koebele in 1877, doing this for retroflexion, brought the ligature ends out through the abdominal wound and thus performed the first ventrifixation. The next year (1878) Muller, having treated two cases of fibroid of the uterus complicated with prolapse by dealing with the stump extraperitoneally to cure the prolapse, suggested treating cases of obstinate retroflexion by fixing the uterine fundus or stump to the anterior abdominal wall. In 1880 Lawson performed ventrifixation twice, and Hennig once. In 1881 Schultz suggested that when a laparotomy was indicated for other conditions the fixation of the uterus to the anterior abdominal wall would definitely prevent the return of old flexions. He even thought abdominal section might be performed for the express purpose of dealing with fixed retroflexions—as, for example, in cases in which

separation of the adhesions with closed abdomen under deep narcosis had failed—but feared that the danger of the operation was too great.

From such beginnings were evolved the operations of vaginal fixation, which led to the interposition operation—an operation to-day of great value in the treatment of prolapse, or of pudendal hernia as I call it—and of ventrifixation and ventriuspension which time has shown to be of no value in cases of visceral extrusion. Whilst in Germany the danger of opening the abdomen led to intravaginal procedures, in this country the invention of Alexander's operation (1884) for the time being settled further inquiry, and for many years now backward displacements of the uterus have been surgically dealt with either by ventrifixation or some similar procedure—by some method of shortening the round ligaments, or by a plecting of the uterovaginal ligaments which Blair Bell some years back advocated and may even now practise.

But the question is whether any operation which inverts the uterus cures the patient. In this respect we must first quote the opinion uttered by Sanger in 1888 and Muller in 1895, that the symptoms of fixed retroversion are due more to the inflammatory state of the appendages and its consequences than to the position of the uterus. Removal of the diseased parts alone—treating the complications—said Gottschalk in 1892, relieves or cures these patients, a forcible inversion does not do more. In mobile retroversion, then, what are the symptoms? In the first volume of my *Statics* I have stated that such cases are symptom free. Certainly I do not know of any pathognomonic symptom, certainly it may be said that many women in whom the uterus is retroverted make no complaint and are quite unconscious of the displacement. If sterility, dysmenorrhoea, aberrations of the menstrual flow, leucorrhoea, and backache are symptoms which women with a retroverted uterus complain of, these complaints are often made by women in whom the uterus is anteverted. That menstruation may be normal and that pregnancy may occur in women with retroversion we know very well, nor is there any reason to suppose that retroversion *per se* causes backache. If the uterus is too big for the pelvis, or if the uterus be retroverted suddenly, pressure symptoms may arise, but even in these cases if the position be not corrected the symptoms often pass away. In other cases there are no symptoms—the condition is discovered accidentally, or the patient is suffering from a real but unobserved disease, the retroversion discovered and all the symptoms attributed to it.

There is another point to notice, which is that, although the operations performed for retroversion do invert the uterus, and so maintain it anteverted for some little time, they are not the cause of a persistent anteversion. Thus Osalis states that the round ligament fixation is but a temporary measure. On four occasions, he says, he had to reopen the abdomen of patients in whom several months to three years previously he had shortened the round ligaments by Alexander's method or by one very similar to Gilliam's. In every case the uterus, although anteverted, was no more held *in situ* by the shortened round ligaments, these had become elongated, in fact they had again partly resumed the sinuous appearance they have in health. The same is the case when ventriuspension has been done, in a case reported by Keller the uterus, anteverted by the operation, was found eight months later, when death after an abortion at three months had occurred, to be again retroverted and a long band had formed.

What then keeps the uterus anteverted after these operations? The causes of the maintenance of the anteverted position I have discussed in volume 1 of the *Statics*. It is the intra-abdominal pressure, the close packing together and compression of all the viscera—a condition of affairs which depends on the functional integrity of the abdominal wall muscles, thoracic diaphragm, and pelvic floor. The pressure within the abdomen maintains the uterus applied closely to the bladder and prevents the waves of pressure which arise within the abdomen during activity, and which are reflected from the hypogastrium into the pelvis from tilting the uterus back. But when the abdominal wall is weak the uterus is maintained less firmly against the bladder, and

times more easily enter the utero-vesical pouch and press the uterus back, the complete retroversion of which in such cases is only a matter of time. On examination we find a retroverted uterus, but the state of the abdominal wall is often overlooked.

In my clinical work I always complete my examination by observing the condition of the abdomen in the erect position. Usually in patients suffering from the so-called symptoms of retroversion one finds that when the individual is lying down the lower abdomen is flat, but that when she stands up it is distinctly bulged. If the pelvic floor aperture is intact, these patients are for the most part cured by fitting an abdominal support. I invariably advise a Curtis abdominal support. It works from before backwards, and increases the pressure within the abdomen; an elastic belt is not so good, at least in non-corpulent women. An elastic belt in such cases simply serves to press on the hips, but what is required is an antero-posterior compression. This assists the circulation—it prevents blood collecting in the large abdominal and pelvic veins, it causes a better return to the heart, there is a better output from the heart, and there is a better supply to the brain, to the limbs, and to the viscera. Thus the whole individual improves from being a cripple the patient becomes an active individual.

Let me quote a case. A doctor brought his wife with retroversion, backache, and vaginal discharge. She had been seen by a gynaecologist a year before—the uterus had been anteverted (so I was told) and a ring inserted. On examination I found a flaccid abdomen, and a ring in the vagina. After removal of the latter I found the uterus retroverted and, with a speculum, the cervix in the state of erosion. I treated the erosion, painted it with picric acid in spirit, prescribed a douche of chlorine, and ordered a Curtis abdominal support and a tonic medicine. The backache has all gone, the patient is in the best of health, but the uterus is still retroverted.

The weakness of the abdominal wall so common after pregnancy is the cause of many symptoms which have been attributed to retroversion of the uterus, thus dyspepsia, indigestion, and neurasthenic complaints are common in these cases. They vanish with proper treatment. Especially does the backache disappear. In the *Lancet* a year or two back a paper of mine appeared on this subject of backache. I referred to its surgical treatment, but this did not consist in a measure affecting the position of the uterus. In cases in which the Curtis support does not do well, as in parous women with mailed and persistent separation of the recti and considerable bulging of the whole abdomen, in which, with a Curtis support, the abdominal wall above the instrument rolls out over it, or in other cases in which great bulging of the abdominal wall muscles in the iliac regions occurs when the woman lying supine raises her head and shoulders, I have in one case of the former plicated the stretched aponeurosis between the recti, and in one case of the latter done a bilateral Lothuisen's operation with the best results. Both were advised to wear a Curtis support subsequent to the operation. The former patient I saw recently and scarcely recognized her, so much was she improved. Instead of presenting as a flabby inert individual, she appeared as a vigorous woman, vastly improved in health. The other patient, though suffering from some intracerebral thrombosis (so it seems), is up and about and now complains no more of her backache.

I have performed Gilliam's operation a few times for retroversion, but confess I have done so mainly for experimental reasons. The patients have expressed themselves as much improved, but it must be remembered that when a patient goes through the ceremonial of an operation she is impressed. There is the danger of loss of life and the return from anaesthesia. There is also the knowledge that the surgeon is a capable person, that he believes she will be better. This, combined with the rest in bed after operation, the cheery note maintained in the wards, and the desire to get well, plays some part in the cure. But especially is this ensured if the abdominal wall be good, or if such measures are taken to ensure a good intra-abdominal pressure. Such are my opinions on this matter; the surgical treatment of retroversion *per se*, I think, is a secondary affair.

GENERAL DISCUSSION

Professor W C SWANN (Bristol) said that in the majority of cases uncompleted retroversions produced no symptoms, and that in many of those cases in which symptoms usually attributed to retroversion were present some pathological lesion insufficient to produce evidence on examination was present. He recalled the period when the outfit of a gynaecologist consisted in the main of pessaries of varied and extraordinary shapes, the vast majority of which were now to be found only in museums. Surgical intervention should be restricted to those cases in which a definite departure from the normal other than mere displacement was present, or in which the displacement could be shown to be the cause of some definite disability. The uterus was a mobile organ, in fact almost the most mobile in the body in certain directions. No surgical procedure which produced absolute fixation or limitation of movement beyond the physiological extent should therefore be adopted. The mild, often chronic, infections which he believed were most often responsible for the symptoms attributed to retroversion should be dealt with by other means than major surgical operations. He suggested that these slight infections were much commoner than was generally supposed in women and girls who did not present any definite symptoms, and who therefore did not consult a doctor. He suggested that Dr Ivens and her women colleagues might be able to obtain valuable information on this point. The first aim should be to render the anatomical relations of the uterus such that intra-abdominal pressure could exercise its normal function as described by Dr Paramore. The structures which normally played the most important part in restoring the uterus to its position after physiological displacement were the round ligaments, and these should be shortened so as to restore to them their lost capacity for influencing the position of the fundus. If the isthmus of the uterus was displaced to the point of its normal position, the utero-sacral ligaments lengthened, and the pouch of Douglas unduly deep, the shortening of the utero-sacral ligaments and the obliteration of the pouch of Douglas would materially assist in attaining the object aimed at.

Mr F W MARLOW (Toronto) stated that he believed retroversion of the uterus was fairly common in girls and nulliparous married women, but in the great majority of such cases there were no symptoms and consequently no treatment was indicated. In his opinion retroversion seldom caused symptoms unless there was some accompanying descent of the uterus of a minor or greater degree, and in the vast majority of cases in which symptoms were present retroversion and descent could not be dissociated. In all cases it was most important to overcome the descent by well arranged plastic vaginal procedures and at the same time to bring the uterus into a position of anteversion so that the normal state of pelvic mechanics was restored. Regarding the use of pessaries, Mr Marlow stated that they could often be used with decided advantage as a temporary measure in cases in which for some reason an operation could not be proceeded with, and for testing out cases in which nervous symptoms were marked. Care must be taken that the pessary was suitable and well fitting in each case, and the hard rubber pessaries as purchased in the shops were seldom applicable without remoulding. Pessary patients must, of course, be well instructed and kept under regular supervision.

Dr FANQUHAR MURNAY (Newcastle-upon-Tyne) said that opinion had undergone a profound change, and those who still performed such operations were now severely criticized and asked to provide proof of justification for them. He considered that Dr Ivens had failed to prove her case, and he strongly supported what Dr Russell Andrews had said. The Newcastle school had for many years taught that such operations were not justifiable, and he had seen many women who had derived no benefit from the operation. With regard to the cases mentioned by Dr Russell Andrews—which were admittedly rare—he would certainly consider performing the operation if they failed to respond to simpler forms of treatment. He strongly deprecated the all too prevalent habit of giving women, especially those who

were young and nervous, a detailed description of their pelvic organs. Many women, in his opinion, suffered great mental anguish after being told that their uterus was displaced, "kninked," or "dropped," and he instanced the similar dread experienced by nervous patients who had been given exact details about their blood pressure.

Dr W A ANDERSON (Queenstown, New Zealand) asked whether patients who had symptoms due to retroversion were still beneficially treated by dilatation and curettage together with the plastic operation of the pelvic floor described by Footehill.

Dr IRITH MURRAY (Liverpool) contended that those who carried out a lesser procedure for the treatment of any symptom or group of symptoms were in a better position to judge whether enough had been done than were those who adopted a more extensive procedure. He included himself with those who only infrequently operated by the abdominal route for mobile retrodisplacements, and found no reason to be dissatisfied with his attitude. He considered the indications to be strictly limited to three groups of cases—namely, subinvolution with retroflexion, dyspareunia, and sterility. He was not sure that he could wholly justify his inclination towards abdominal operation for the first of these, but was under the impression that it was a successful supplement to a curetting in aggravated cases, and that it produced an earlier reduction in size than when a curetting alone was done. Dyspareunia resulting from prolapsed appendages could be very efficiently treated by bringing the fundus forward and retaining it there. For sterility associated with retroversion he preferred a pessary, but was ready to operate should the patient have any disinclination for that form of treatment. With very few exceptions the remaining cases coming for treatment of symptoms believed to be due to a backward position of the uterus were in reality suffering from either general debility, constipation, visceroptosis, scoliosis, or functional hyperactivity of sexual origin. In the last of these a curetting might sometimes help, but there was certainly no indication for anything further. He preferred a ventrisuspension, with a mesial septum dividing the utero-vesical pouch, to any method of shortening the round ligaments, it could be quickly carried out through a very small incision, was absolutely safe, and was reasonably permanent.

Colonel V B GREEN-ARMITAGE (Calcutta) quoted Sydney Smith to the effect that the further he moved towards the West the more sure he was that wise men came from the East. He himself was more certain that the wise women were in the East, for simple retrodisplacement of the uterus had been known for thousands of years in the literature of the Jews, Copts, and Hindus. But this condition only called for investigation and treatment if it was complicated by sterility, dyspareunia, or prolapse. In the East the abdominal pressure was well maintained by an excellent abdominal musculature. Moreover, massage and postural treatment had been recognized for thousands of years as a most adequate means of dealing with minor pelvic discomfort. But should any of the three symptoms above mentioned be present, then, and then only, it would be found that the Oriental woman would come for operative treatment, vaginal or abdominal. He was of opinion that to day in the West the glamour of a laparotomy was so greatly attractive to the young surgeon that he lost sight of the dismemberment necessary, and he feared, therefore, that a very large number of needless modified Gilliam operations were performed, to the detriment of scientific surgery.

Mr A E CHISHOLM (Dundee) asked Dr Russell Andrews for details of the operation for retroversion of the uterus which he employed. He made a plea for the operation of interposition in cases in which there was associated prolapse and cystocele with retroversion. He made mention of Dr Hugh Ferguson's modification of the Alexander Adams operation, and advised that the round ligaments should be made to burrow between the layers of the broad ligament to obviate the risk of internal hernia.

Mrs B L W STAYLAND (Hereford) strongly advocated exercises for increasing the strength of the abdominal and pelvic floor muscles. Exercises were far preferable to a supporting belt.

Mr D C RAINER, Vice-President (Bristol), agreed with Dr Andrews that retroversion in a non-gravid uterus causing retention of urine must be very rare. Cases of retroversion causing symptoms after the menopause must be very uncommon, and if the abdomen was opened in a case of this sort he thought hysterectomy would be the wisest procedure.

Dr RUSSELL ANDREWS then explained the technique of the operation he practised himself.

Miss IVENS, in reply, stated that she had only considered in her statistics cases of non-adherent backward displacement where the uterus was constantly found in a backward position. She thought a curettage was useful in cases of hyperplasia of the endometrium in nulliparae, as well as in cases of subinvolution. She was surprised that Dr Russell Andrews had not found backward displacement to occur fairly frequently in nurses. She emphasized the part played by the appendix in the causation of leucorrhoea in nulliparae. She thought that Alexander was responsible for the idea of utilizing the round ligaments in these cases, and that Gilliam, though his operation was imperfect, had indicated a method which, with an extraperitoneal modification, had led to a very satisfactory operation. She herself was of opinion that, when the symptoms were not relieved by operation, her diagnosis needed revision. She believed in telling the patient or her guardian what was the cause of her symptoms, as she constantly came across cases where patients sought advice after years of sterility, when it was too late for treatment to be of service. She agreed with Mrs Stallard that exercises for the abdominal muscles might be useful. Miss Ivens assured Colonel Green-Armstrong that she did the operation when she considered it advisable, and did not think many experienced gynaecologists would do it unnecessarily. She had been interested in the subject for a great many years, and thought this accounted for the large number of cases she had been called upon to treat.

191. PATHOLOGY AND TREATMENT OF EROSION OF THE CERVIX

BY

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EROSION of the cervix is undoubtedly the lesion most commonly met with in the female. According to varying estimates it is present, in greater or lesser degree, in 75 to 80 per cent of puerperal women and in about 25 per cent of nulliparae. Although considerable attention has been paid to this condition in recent years it is doubtful if, even yet, it has received the detailed study which it deserves. As the lesion may be difficult to cure, may cause much psychic distress, may be followed by grave sequelae, and as leucorrhoea, the main symptom, is often accompanied by physical and mental discomfort it seemed to me that the condition might profitably be discussed to day.

PATHOLOGY

The lesion is essentially inflammatory, and when first seen the inflammation is usually chronic in type. It must be remembered that the vaginal canal, communicating as it does with the exterior, normally harbours bacteria in the lower part but that the pathogenic action of these bacteria is kept under control by the acid reaction of the vaginal secretion due to the presence of Döderlein bacillus. Again, the vaginal mucosa is lined right up to the external os by stratified squamous epithelium which is resistant, it contains no glands where organisms might

penetrate and lodge. The cervical mucosa, on the other hand, is covered with columnar epithelium, which is invaginated to form numerous deep racemose glands.

The conditions, then, favouring infection of the cervix from below are either a lack of continuity of the squamous epithelium as occurs in a cervical laceration, or some factor which renders the reaction in the vaginal alkaline, such as the presence of lochia, both these factors are frequently present after labour. But erosion of the cervix may occur in nulliparae or even in virgins. In the latter case the condition is said to be due to the persistence of the foetal conditions in the cervix, where the gland bearing columnar epithelium is not confined to the cervical canal but extends partly on to the portio, producing a red area around the external os. This is known as a congenital erosion, such in erosion is usually of slight degree. But in many virgins, and also in nulliparae, the causative factor is probably more often anaemia or some other form of general ill health, which reduces the acidity of the vaginal secretion and lowers the general resistance to infection. In nulliparous non-virgins and in some puerperal women gonorrhoea is the cause of infection and in the former of these classes the gonococcus exercises its well known ability to penetrate and infect an intact mucous surface. In most cases, then, a greater or lesser degree of cervical laceration is present, but it is to be emphasized that the extent of the subsequent erosion bears no relationship to the degree of laceration. A very small laceration may be followed by extensive erosion and vice versa. It is the violence of the infecting organisms that counts.

The process of infection can be described briefly. The subepithelial tissues become hyperaemic and oedematous, with redness and swelling of the cervical mucosa. This is accompanied by an increase of the secretion from the cervical glands, which appears clinically as a mucoid or mucopurulent secretion to which the general name of leucorrhoea is given. As a result of this subepithelial infiltration a certain number of the squamous epithelial cells surrounding the external os are raised from their bed and finally cast off, leaving a red raw circle round the os. This raw area becomes covered by columnar epithelium which has been stimulated to grow out from the cervical canal. Racemose glands are carried out along with the epithelium, and may proliferate greatly, producing the condition described by Liden as pseudo-adenoma, and usually called an erosion.

Most authorities stress the point that this so-called erosion does not represent an ulcer, and that the red strawberry appearance is due to the deeper inflamed tissues being seen through the columnar epithelium. But parts normally covered by columnar epithelium—the uterine cavity or cervical canal—do not present this red appearance. Again, a more or less dense infiltration of lymphocytes is always found below the surface, indicating the presence of a chronic infection, and this would hardly persist if the surface were completely covered over. Further, on examining microscopically a large number of such cervixes, I have always found some solution of surface epithelium. There is in every section examined an area between the columnar covering on the one side and the squamous on the other where there is no surface epithelium and where the condition represents essentially a chronic granulating area.

The racemose gland ducts may become blocked by unsuspected secretion or constructed by periglandular fibrosis and the result, forming retention cysts which may in time impinge on the vaginal surface of the cervix, forming the well known Nabothian follicles. The chronic infection is likely in time to extend beyond the mucosa into the muscular tissue of the cervix, causing fibrosis which at first produces hypertrophy, but later leads to shrinkage of the cervix. Again, lymphatic spread is almost invariable and leads to thickening of one or other broad ligament. In a number of cases a definite fibrous scar can be felt extending from the laceration over the vaginal fornix. The utero-sacral ligaments are also commonly involved, and on pulling the cervix forwards resistance is felt and the patient cries out with pain. Prostatitis is often present in these cases, and may be due to conditions similar to those that

produced the cervicitis, but it is a separate condition, and the cervical erosion requires different treatment from the endometritis.

The infecting organism is usually one of the pyogenic cocci. Staphylococci and streptococci are the most common and are often present together. *B. coli communis* is a frequent cause, also the gonococcus. The last named may be very difficult to isolate in surface swabs, as it readily penetrates to the deepest parts of the cervical glands. The lesion produced by it, however, differs in no way clinically from that produced by the other organisms, and requires similar treatment.

The later sequelae of cervical erosion are important and may be serious. Space forbids more than their mere mention. They include general ill health due to constant leucorrhoeal discharge and absorption of toxins from the cervix, chronic pelvic pain and backache due to infection of the pelvic cellular tissue, and mental distress or even derangement. Sterility and a tendency to puerperal infection are quoted, but experience does not support this. The most important sequel, however, is undoubtedly carcinoma. The continued irritation of the epithelium of the damaged mucosa would appear to be a predisposing factor in the production of epithelioma of the cervix. This condition usually occurs in a puerous woman who is likely to be the subject of cervical erosion, in many cases the transition from the one condition to the other can be traced clinically and histologically, and there is little doubt but that erosion is the main predisposing factor in the production of carcinoma of the cervix. It is noticeable also that the carcinoma usually spreads most rapidly into the broad ligament which has been thickened and infiltrated by the spread of chronic sepsis from the erosion.

TREATMENT

Prophylactic treatment consists in giving a patient, and especially a puerperous patient, plenty of time in the first stage of labour to enable the cervix to be fully dilated normally before any manipulation such as forceps application is performed. If this were observed more fully than is the case a very large proportion of cervical erosions would be prevented, but not all, as the very smallest breach of continuity of surface may be followed by erosion, and in many cases it is impossible to prevent a small laceration during dilatation. There is little tendency for such a laceration to heal, as muscular contraction pulls the lips apart. Thus a certain number of small lacerations may not be evident at birth when the cervix is oedematous and ptulose, but when obvious laceration has occurred it should be accurately sutured with catgut in every case.

Curative Treatment

It is to be kept in mind that what we have to treat and heal is a chronic infective process which has penetrated to the deep glands or to the muscular tissue, and that when this is done the secondary parametric infiltration will to a greater or lesser degree resolve itself. The numerous methods of treatment suggested from time to time indicate how difficult it may be to effect a cure. The main lines of treatment recommended are the application of antiseptics, cauterization or electric treatment, radium, vaccine therapy, and operative treatment.

1 The antiseptics employed are usually 10 per cent formalin, iodized phenol, or 20 per cent argyrol. They are applied on mounted Playfair's probes after exposure of the cervix and removal of the green cervical mucus with liquor potassae. Assistance is necessary, the procedure has to be repeated two or three times weekly for several weeks, and the patient is apt to cease attending. Again, it is not to be expected that any surface application will penetrate to the deep glandular tissue far less into the muscular tissue, and the usual result of these applications is improvement during treatment with future relapse. Only in slight and early cases is cure to be expected.

2 Puncture with the actual cautery at a dull red heat causes improvement in many cases. It is important to puncture every Nabothian follicle with the cautery. Dickinson, Halli, and others have elaborated a technique of radial cauterization of the cervix from the external os.

An electric cautery is used, and the process is repeated twice weekly for four or five weeks. Dickinson describes this as "office treatment," and reports a large percentage of cures. It is the usual experience to find improvement after cauterization, but cure is not common, and so far as the writer can judge, even if successful the cervix is still left prone to the development of carcinoma. The passage of 20 m. of electricity through the cervix was advocated by Slown and Someville fifteen years ago. Good results were reported, but this line of treatment has never been generally adopted.

3 Radium has been used, especially in America, in the treatment of erosion, and while it is too early to pass an opinion it is probable that this is a most useful avenue to explore.

4 Autogenous vaccines have been used by Eyre, Gemmell, and others, but without appreciable benefit.

5 If the condition is advanced operation is usually required sooner or later, and various procedures may be adopted.

(a) Uterine curettage can improve only the associated endometritis, and cannot sensibly affect the cervical erosion. The ordinary curette cannot penetrate the hard cervix sufficiently to be effective, and any improvement produced will be slight and evanescent. Berkeley and Bonney recommend scraping the cervix with a Volkman's spoon, and this measure, combined as it may be with cauterization, is certainly effective in some of the less advanced cases. In a chronic condition which has penetrated to the glands and muscular tissue, however, it is difficult to see how all the affected tissue can be removed, and the usual experience is that, in such cases, recurrence takes place after a period of improvement.

(b) Pachelorrhaphy may cure the erosion, but the endocervicitis is likely to remain. There is a considerable tendency for the wound to break down after this operation, and the original lesion is re-formed.

(c) Removal of the affected mucosa constitutes the only reasonably certain method of cure. By this means the erosion and the affected mucosa of the cervix, usually the lower three quarters of an inch, are removed, and the healthy lips of endocervical and vaginal mucosa approximated by catgut sutures. In advanced cases amputation of the cervix is called for, but usually the type of plastic operation described by Bonney suffices, where the affected part is removed after reflecting the vaginal mucosa, which is afterwards incited to form a new cervical canal. Strimmdorf has introduced an operation of this type where he cuts from the periphery towards the cervical canal—the "coming out" operation—but the principle is the same as the other Schiöeder's operation, where the cervix is split bilaterally and the affected mucosa removed, has been found by the writer most effective in nulliparae with resistant leucorrhoea.

These operations are radical, but, in my experience, represent the only speedy, effective, and reliable prospect of cure. Regarding future impregnation and labour, Matthews, Cutis, and others declare that the former is not prevented and the latter not obstructed. I have personally attended many cases of labour after such a removal of cervical tissue, and in neither case was there any difficulty with the first stage, while examination later revealed no fresh lacerations.

It is to be emphasized that this lesion is essentially a precancerous condition of the cervix, it is only by prevention or cure by one of the methods described that the onset of carcinoma can be effectively prevented.

DISCUSSION

Mr D. C. RAYNER (Bristol) congratulated Dr Strachan on his paper, particularly in view of the opinions expressed at the first session of the Section as to the importance of this question. Mr R. H. PYRAMORE (Rugby) said that he had treated cases successfully with picric acid applications, and they had remained cured. He had also used the Paquelin cautery. Another speaker classified cervical erosions as (1) those of origin from tears, (2) those of inflammatory origin with no solution of continuity. The true ulcer type were cured by repairing the laceration, the

inflammatory lesions yielded very satisfactorily to treatment by glycerin tampons applied for twenty-four hours twice a week. He asked whether there was any added danger of cancer occurring after the use of the cautery. He also inquired as to the frequency of tuberculous infection of the cervical uterus.

Dr. STRACHAN, in his reply, said that piecic acid and tampons were both well recognized forms of treatment, but he had not found them give much relief. In severe cases nothing short of removal would suffice. It had to be proved whether the cautery could prevent cancer, and, on the other hand, they knew that cancer tended to grow on the scars of burns. By no means every case of laceration became cancerous, but nearly all cancers supervened on lacerations.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

OBSTRUCTION DUE TO GALL STONES

The note by Mr. Ross Smith on September 12th (p. 479), coinciding with the date of our second case in a few years, suggests that the condition may not be so much rare as unreported.

Case 1. A man of 62 with an old gall stone history, had obstruction about the middle of the jejunum. The symptoms were those of complete obstruction alternating with periods of relief, and passage of flatus—the stone acting as a ball valve (the stone measured $3\frac{1}{2}$ by 3 by 2 cm). After operation the patient did very well for twelve hours, then suddenly collapsed and died just as the house-surgeon came in response to an urgent call from the ward.

Case 2. A woman aged 65, had a history of gall stone of a month's duration. The stone was impacted about 9 inches from the ileo-cæcal valve. She lived for four days, and died suddenly after taking a dose of castor oil. This was in February, 1920.

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PROTEIN SHOCK IN EPIDEMIC ENCEPHALITIS

In the article 'Some notes on epidemic encephalitis' (BRITISH MEDICAL JOURNAL, October 10th p. 644) Dr. A. Cuddeh Robb arrives at the same conclusion, from the treatment of a large number of cases, as that expressed by Professor Hall: 'At present any reliable therapeutics, either for the disease itself or for its many after results, does not exist.' My own experience agrees with that of Dr. Robb, but in the case I now describe protein shock therapy seems to have played a useful part, and the leucocytosis evolved to have been associated with, if not to have caused, the elevation from profound stupor to normal consciousness.

A girl aged 15 contracted encephalitis in December 1924. Three weeks after the onset she became suddenly worse and almost comatose. Some improvement took place but she remained lethargic and the temperature was irregular until April 3rd, when Dr. Vaughan of Broadway invited me to see her with him. I found her lying on her back with her knees bent. She took no notice of her surroundings but reacted being examined. She only spoke to utter single words such as mother, orange, chocolate. Her whole body and limbs were in a state of spasmodic contraction. Flexibility of the neck was clearly exhibited. The tendon reflexes of arms and legs were very active. The right pupil was larger than the left. She continued in much the same state but it became more difficult to get her to take food and she had to be fed by the stomach tube from the middle of May until she was admitted to Cheltenham General Hospital on June 6th. She was then in a condition of deep lethargy, lay in bed with her eyes tightly closed and her four limbs in flexor contraction. She could be stimulated to groan or cry out by pinching the skin but could not be got to perk, she passed urine and faeces under her and had to be fed by the stomach tube. On June 26th her condition had not altered and she was given 2 drachms of strychnine in mill by intramuscular injection. The total leucocyte count rose from 5,600 per cmm the day before admission to 17,200 the day after injection and the percentage of polymorphs rose from 55.6 to 75.2. There was

little change in her clinical condition but her eyelids flickered and she seemed to me less deeply lethargic. On July 3rd she was given a second injection, this time of 3 drachms of milk. The leucocyte count the day before the injection was 5,200, and the day after 51,800. The relative percentage of polymorphs rose from 55.5 to 78.5. This time she felt the prick more gave a slight scream, and for the remainder of the day held herself as if in pain at the site of the injection. She also opened her eyes and looked round for the first time since her admission to hospital.

On July 8th she was given a third injection of milk, the dose being 3 drachms. The leucocyte count the day before the injection was 4,000 per cmm, and the day following 19,500 per cmm. The relative percentage of polymorphs rose from 65.5 to 81. This time the patient became very excited fifteen minutes after the injection and screamed violently all day. She spoke a few words, the first she had uttered since admission. She also drank 5 ounces of lemonade the first time she had swallowed anything voluntarily for eight weeks. From this time she made steady progress. On July 14th the arms and legs had relaxed and the splints which had been applied to all four limbs to prevent contractures were removed. After this date the stomach tube was no longer required as she took the food brought to her, and on July 18th she spontaneously asked for drinks.

She was given three more injections of milk on July 12th, 16th, and 21st. The lethargy gradually passed off and her general condition improved. She is still very thin and weak but is regaining muscular power. She is mentally quite clear and amuses herself with reading sewing and writing letters, which in composition and handwriting are above the average.

The blood examinations were made by Dr. J. B. Davey, honorary pathologist to Cheltenham Hospital, and accurate notes of the case were made by the house-physician, Dr. K. F. MacLenzie. Dr. Vaughan has kindly given me the clinical history of the patient when at home.

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AN EPIDEMIC OF MUMPS

The origin and course of a recent outbreak of mumps among the boarders at a boys' public school offered several features of interest.

The epidemic originated with a boy A, aged 16, who during the Easter school holidays went to stay with a friend. Another boy, B, also visited the house, and the two boys went out for the day motor cycling. They were in the open air all the time with the exception of having tea in the house. B was apparently quite well. A returned from the visit, and the next day to boarding school. A letter was received stating that B had developed mumps three days after the motor-cycle ride. A was thereupon sent home from school, and remained away three weeks and three days from the time of contact with B. As no symptoms of mumps had appeared he was allowed to return to school, but four days later (that is, twenty-eight days after contact) he developed the disease, thus the length of the incubation period was clearly twenty-eight days instead of twenty-one as is usually understood, and the infection was contracted by A from B during the prodromal period.

Of one hundred and seventy-five boys fifty developed the disease. As far as could be ascertained, only one had had a previous attack and that had been during the preceding twelve months. Of the boys under 12 years of age only three took the infection.

The general features were slight illness with a temperature not higher than 101° and lasting about three days. There were only two cases of unilateral swelling but several had swelling of the opposite gland a week after the first with a second rise of temperature. There were only three cases of orchitis, which were slight in character. A rather curious feature noted was that several boys developed a form of conjunctivitis. Five boys had high temperatures of 104° and over, and were acutely ill. Their hearts were dilated and a systolic murmur was heard at the apex, and two had an intermittent pulse. Three of the five had a slight scintilliform rash over chest and arms. All the patients were constipated and the stools were of a drabish green colour and very offensive.

From my observations in this epidemic I am led to the following conclusions:

- 1 That mumps may be contracted at any rate at the end of the prodromal period.
- 2 That the incubation period may be as long as twenty-eight days.
- 3 That testicular infection is comparatively rare.
- 4 That some patients may be acutely ill and show symptoms of a general toxic condition.

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Reports of Societies.

ELECTROLOGY A RETROSPECT

IN the Section of Electro-Therapeutics of the Royal Society of Medicine on October 16th the incoming President, Dr ALASTAIR MACGREGOR, delivered his address from the chair. This was entitled "Then and now," and took the form of a retrospect of the developments in the science and art of medicine, and in electriology particularly, which have occurred since he entered Edinburgh University forty-five years ago.

Dr MacGregor reminded his audience that this period had seen the work of Lister complete its triumph, it had seen the birth of bacteriology and biochemistry, the opening out of vast new fields to pharmacology and therapeutics, and, among the more recent developments, the discovery of x-rays and of radium. After giving some account of the progress in general medicine within his own experience and recollection, he described the "suspended animation" of electriology as it was at the beginning of his professional career. His first recollection of any electrical apparatus was the faradic battery, which was used—sometimes, he feared, too vigorously—for Saturday-night "drunks," cases of hysteria, and cases of opium poisoning. It was also used for the treatment of muscles wasted by prolonged application of splints in cases of fracture. He could not remember in those days seeing any galvanic battery at the hospital, and he doubted whether any contemporary of his had more than a hazy recollection of such an apparatus or of its use in the schools.

The President described the familiar landmarks in the progress of electriology, down to the most modern applications of diathermy, and also the development of x-ray work, down to the most recent introduction of high-voltage therapy. He added that in his opinion electriology and radiology would be of still greater value in all branches of medicine and surgery if every properly qualified electriologist and radiologist holding hospital appointments was regarded by the physicians and surgeons as a learned colleague and not merely as a technician. Another reflection which occurred to him, after looking back over almost half a century, was that while some present-day juniors might think that the teachers in those bygone years must have been a very ignorant set of men, this was by no means the case: those teachers not only knew all that was to be known in their time, but they knew how to teach. They did not deserve the gibe, which he thought was coined by Bernard Shaw "Those who know, do, those who don't, teach." Those old teachers, although working under such limited conditions, and unaware of so much that had since been discovered with regard to their subjects, taught their students to use their powers of observation and all the wit with which Nature had endowed them. There had been great advances in technique since they practised and taught, but if the fundamental value of accurate clinical observation and common sense in the interpretation of the results required by technical methods were lost sight of, all those advances would go for nothing. There was, in his opinion, a tendency for the student to give to technique a place too commanding, and thereby to obscure—that those older men with all their limitations clearly saw—that after all it was a human being who was the patient, and that it was necessary to use all their understanding to cure him, or, if that was not possible, to make him as comfortable as they could. The growing habit on the Continent, which showed signs of spreading in this country, was to regard the patient merely as a case—a scientific problem calling for investigation. If the medical man forgot that all the knowledge which had been accumulated, enormous as it had been of recent years, did not suffice to bring him up to the level of any complete understanding of that mass of unstable living material which made up the human being, then he would never, in the real sense of the word, be a master of the art as well as the craft of medicine. The mere collection of disjointed scientific facts, however important, did not confer the divine gift of healing.

MEDICINE AND INDUSTRY

At a meeting of the Brighton and Sussex Medical-Chirurgical Society on October 1st, Mr H. J. WALKER delivered his presidential address on the medical aspect of industry.

Mr Walker said that his subject was almost inexhaustible, but it was of great importance and likely to receive much attention in the present Parliament. Though a great deal had been done already to alleviate the conditions of the industrial worker, further work was necessary. Factory legislation was yet young, the first real Factory Act being only introduced by Sir Robert Peel in 1802, although in Elizabeth's reign there had been a Statute of Apprentices, this had been intended to prevent idleness rather than overwork. Sir Robert Peel, Robert Owen, Lord Shaftesbury, and other philanthropists of that time found the conditions of child labour terrible. Working hours were from 6 a.m. until late at night, and very often women and children worked during the night. On inquiring from well-known doctors as to how long and at what age a child should be allowed to work, one stated that children might work twelve hours a day in factories at the age of 10, another that children might be employed at 7 years, while yet another thought that it was quite salutary for children under 10 to work for five or six hours a day. Children had no fresh air, exercise, or free meal time, as food was snatched away during the machine cleaning, and was eaten in unsanitary conditions, often with dust and cotton fluff filling the air. Until the Act of 1844, machinery had not been properly safeguarded and many accidents happened. In a report on a cotton mill in 1838 it was stated that the place was full of young women, many of them expectant mothers and obliged to stand for twelve hours a day. The heat was excessive, the stench pestiferous. Public opinion became aroused, and in 1847 a ten hours day bill was passed, factory inspectors had been appointed shortly before this. These inspectors had to see that no child under 9 worked in factories, and as it was not until 1837 that births were registered, the inspectors had to rely upon certificates from doctors that a child was of the ordinary strength and appearance of 9 years. It was at this point that Mr. Richards decided to appoint a number of surgeons to be exclusively authorized to give certificates. His example was followed by other inspectors, permission being given by the then Home Secretary, Lord Melbourne, and thus the factory surgeon came into being. The post was held directly from the Home Office with no interference from local authorities. Mr Walker then gave an outline of the duties of a factory surgeon.

In March of this year thirty-seven cases of lead poisoning and six of anthrax were reported to the Home Office, in addition, seven cases of lead poisoning were reported amongst house painters and plumbers. Although this number was far below that of previous years, there should be no cases at all. A disease which medical skill could prevent should be eliminated altogether. Industrial lead poisoning was chronic and very insidious in its onset, consequently in its very early stages action could be taken and serious symptoms of poisoning prevented, acute poisoning was hardly known among industrial workers. Lead poisoning might be considered as a chronic form of poisoning by lead carbonate, and was chiefly found among the workers in the vitreous enamelling of metal and glass, the tinning of metal hollow-ware, the manufacture of electric accumulators, paints, colours, and pottery, it also occurred amongst plumbers and men engaged in handling lead in any form. The lead entered the system almost always by inhalation and absorption from either the pulmonary or alimentary tract or from both, it was very doubtful if any lead was absorbed by the skin. It had been stated that most of the cases occurred during the first eighteen months of employment, but Mr Walker had seen cases develop for the first time after fifteen or twenty years, and in all cases the teeth had been exceptionally bad, which rather suggested that the teeth had been the cause of infection. Since the notification of all cases of lead poisoning and the medical inspection of employees in the factories and workshops, not only had the severity of the symptoms decreased, but also the number of cases. It was rare to see the

complete paralysis of the extensor muscles of the arm and hand, the severe cerebral symptoms such as hemiplegia, hemianesthesia, convulsions and coma, optic neuritis, interstitial nephritis, and gout. Most of the cases of lead poisoning that had come under his notice were in men not employed in factories and workshops, but engaged in outside work, such as house decorating and painting. He thought the chief explanation was the strict regulations laid down in the factories with regard to the provision of washing materials, wearing of overalls, and eating meals. These were not applicable to the man who carried on his work some distance from his workshop or home. Food in these cases was eaten with dirty hands, and clothes were not changed. In house decoration also dust was chiefly inhaled through the scraping away of the old paint, and as this paint had lost most of its oil, and sandpaper was used, inhalation of lead under these conditions was a very easy matter. A wet sandpaper was on the market, but did not appear to be very popular with the employees. That lead could be handled with more or less impunity, if due precautions were taken, was shown by the fact that men handling and cutting up lead sheets for several hours during the day continued their work for years with no detriment to their health. Painters, to the speaker's knowledge, had suffered no ill effects although their hands and arms had been covered duly with paint. Lead acetate did not seem to be so poisonous as the carbonate, large doses of the former having been taken with little deleterious effect.

Industrial mercurial poisoning was chronic and insidious, and was caused by want of care in general cleanliness and hygiene. It occurred among those who worked in factories where mercury was used for making such articles as barometers, thermometers, incandescent electric lamps, electric meters, and in furriers' workshops. The danger arose, not only from the handling, but also from the volatilization of the mercury, the latter point was a very important one. Mercury volatilized at the ordinary temperature, and small particles could be inhaled very easily, so a well ventilated factory was one of the first considerations for the health of the workers. Since the men who worked in mercury had been periodically examined no cases of poisoning had occurred, and the general health of the men had been good. The men were very keen on taking all precautions, especially as regards their teeth, and the teeth seemed to be the most likely point of infection in both lead and mercurial poisoning, in all the cases Mr Walker had seen the teeth had always been eroded and unhealthy.

In one large Brighton factory a room was set aside for first-aid treatment with a trained sister in charge. All employees suffering from the slightest injury reported to the sister, who dressed any wounds and referred patients to their own doctor if necessary. No one was allowed to resume work unless he produced a certificate of fitness from his medical attendant. All working in dangerous trades, such as lead, mercury, and glass-blowing, were given advice as regards treatment, and suspended from their work if necessary. Industrial medicine could effect a saving of many millions a year if properly applied. The Factory Bill now before Parliament suggested that young persons up to the age of 18 should be medically examined before starting work. After that age they were supposed to be capable of looking after themselves, but the exigencies of work, under the present economic system, prevented proper attention being given to health. In all factories and workshops young persons up to the age of 18 should be examined every six months, as unsuitable work at such an age might be the foundation of serious trouble in after life. A health register should be kept with full particulars concerning the employee, the work on which he was engaged, and whether it was suitable or not. All employees should be compelled to seek medical advice for all injuries and diseases of more than a week's duration, and should not be allowed to return to work without a medical certificate of fitness. Examinations should be compulsory every six months in trades in which there was a tendency to undermine the employees' health. There would be hardships in some cases, but the gain to the community at large would far exceed any hardship to the individual. Members of the Navy, Army, Air Force, Post

Office, police, and most of the large railways submitted to medical examination before employment, consequently only a few were chosen out of many applicants. The remainder returned to the factories and workshops, where they were allowed to develop their diseases without interference. Slight hernias became uncontrollable by truss, necessitating an operation and financial loss to all concerned. Varicose veins produced ulceration and eczema, especially among laundrywomen and others who stood at their work. Enteroptosis in women, with all its consequent evils, caused misery and incompetence to thousands. These, together with boiler-maker's deafness and glassworker's catarrh, were a few of the evils which might be avoided. Medical inspection of employees threw light on industrial fatigue, which was a great handicap to the financial success of business, as it was useless to employ even skilled men for too many hours at a stretch if fatigue stepped in and Nature conquered man. The years 1914 to 1918, when almost all men were examined for various kinds of national work, showed the enormous amount of ill health that existed in the nation, and much discussion followed as to how a C3 population could become A1. In Mr Walker's opinion medical control was the only solution of the problem, it was doubtful if the expense incurred would not be more than compensated for by factories and workshops being filled with strong, healthy, and willing workers. More unrest, he believed, was caused in the industrial world by poor health and uncongenial surroundings than by low wages and all other reasons combined.

MODERNISM IN MEDICINE

THE first meeting of the new session of the Newcastle-upon-Tyne and Northern Counties Medical Society was held in the Royal Victoria Infirmary, Newcastle, on October 8th with Dr. NEIL MACLAY in the chair.

Dr. Maclay delivered his inaugural presidential address on modernism in medicine. As an observer of medical life for thirty years he had been able to view it from two different standpoints, first, as a general practitioner, and later from the somewhat narrower sphere of a specialist. This had been a period of great changes and advances in medicine, but nevertheless there were disquieting signs of retrogression. On all sides there was a steady growth of superstition, both in religion and medicine, and an inclination on the part of the public towards quackery. Dr. Maclay went on to deal with the part which medical men might play in combating these influences. The crowded curriculum of the student intensified the difficulties. As a result newly qualified men seemed to be now less able to judge what was commercial quackery and what scientific truth. It was required that throughout their careers there should be a desire for thoroughness in their work if they were to withstand the tendency towards shoddiness and flimsiness. In conclusion, the effect of the National Insurance Act was touched upon. The address was eagerly followed and appreciated by the audience.

Clinical Demonstration

There followed a demonstration of clinical cases. Mr J. S. ARKLE showed various ophthalmic cases, the chief of which were (1) a woman of 24 seven months pregnant, with a recent extensive haemorrhage into the vitreous, (2) ruptured choroid following concussion, (3) a severe neuroretinitis, with well marked "star" figure at the macula, in a patient without any obvious cause. Mr JOHN CLAY showed a man, aged 36, from whom he had removed an anastigmas sixteen years earlier after an injury, since then the man had been able to serve as an infantryman in the army and pursue heavy work regularly. Dr HORSLEY DRUMMOND showed a case of rotic aneurysm with dislocation of the inner end of the clavicle, also cases of mediastinal tumour and subacute combined degeneration of the cord. Dr GAVLEY demonstrated various radiological films. Dr W. E. HUME showed a case of erythraemia in a man of 48, in whom the symptoms had started six months earlier with haemoptysis, also cases of crossed paralysis from pontine softening and aneurysal fibrillation treated with quinine sulphate. Mr C. G. JAWYER showed a case of extensive syphilitic osteitis of the skull which appeared

the section dealing with innocent conditions (in the latter Lockyer's views are misquoted). In the section dealing with malignant growths the main feature is the treatment of carcinoma of the cervix with special reference to irradiation, and much food for reflection is provided by the statistics quoted. The toxæmia of pregnancy receives a whole chapter to itself. It is a discussion of theories rather than of concrete knowledge. The author hopes that the long-awaited discovery of the cause will be made in the next decade, by extended research into the neglected field of the endocrines. After this preliminary *faux pas* the author recovers himself and proceeds to deal with the incidence of the disease, quoting the report of the British Congress of Obstetricians and Gynecologists of 1922, with Edens's comments thereon. Stroganoff's report of his methods is given in full. The complications of pregnancy, with which this subject might have been combined, are dealt with in a separate chapter which incidentally is quite one of the best in the book. The metabolism of pregnancy and the chemical test supposed to indicate abnormalities of metabolism, with special reference to the onset of eclampsia, as presented by Berkeley and his associates, receive two or three pages which contain full information. The author unfortunately refrains from any criticism of his own on this subject. The views of Cook, as set forth in the Hunterian Lecture, are then stated, and the author says the greater part of the available evidence does not support his contentions. Most of the other complications of pregnancy are briefly reviewed and the information thereon brought up to date. The chapter concludes with a summary of FitzGibbon's lectures on pelvic contraction and its treatment. The volume closes with a chapter by Rubin on transuterine insufflation to determine patency of the Fallopian tubes. One would have expected to find this in the chapter on sterility, rather than in one entitled "Symptoms in Gynecology." In a composite work of this kind the lack of an editor is perhaps bound to be evident, and that is the chief complaint against an otherwise excellent volume, which can be heartily recommended to all who wish to bring their knowledge up to date. The reviewer closed the book wishing there had been more.

DENTAL INFECTIONS, ORAL AND SYSTEMIC

The purpose of the two volumes published under the title *Dental Infections, Oral and Systemic* is, the author, Mr. Weston A. Price, tells us, to present new data and important new interpretations suggested by them. It is, he says, the result of twenty-eight years' work on the part of himself and a staff numbering seldom fewer than five, and latterly as many as sixteen; the research work has, he adds, cost over 250,000 dollars, and he expresses deep regret that "so much of his energy had to be expended in the business side of dentistry in order that means might be available for conducting investigations, that time and strength were wanting to perfect these volumes to a greater degree." Mr. Price acknowledges himself an iconoclast, and he tilts vigorously at all forms of dental sepsis. Especially he condemns the indiscriminate preservation of "dead" teeth without reference to the patient's powers of resistance.

Mr. Price accepts the view that a streptococcus is responsible for practically all the evil results of dental sepsis, but attaches more importance to the "soil" than to the strain of streptococcus present. Thus he would classify humanity according to their susceptibility to the "rheumatic group of affections" into "insusceptibles," "susceptibles" (by inheritance), and "acquired susceptibles" (through "overload" of illness, worry, etc.), he thinks these classes can be differentiated, not only clinically, but by differences in the tonic calcium and the alkali reserve of the blood. He claims to show that people who suffer from dental caries are susceptible to the "rheumatic group of affections," while those who suffer from "pyorrhoæa" are insusceptible, he supports his conclusion by reference to the supposed incompatibility of

dental caries and pyorrhoæa—an incompatibility which by no means everyone acknowledges. Perhaps the most striking of Mr. Price's new interpretations is in connexion with bone reaction as shown by x-ray pictures. An area of rarifying osteitis is to be taken as an indication of vigorous reaction, even of safety, in areas of sclerosing osteitis is to be taken as an indication of poor local reaction and of the possibility of remote infection. We may remark that after reading the author's very capable presentation of the pitfalls of x-rays we are a little surprised at the extensive use he makes of x-ray pictures to support his case. But the author is fully aware that his ideas will be met by opposition, and we will leave it to the reader to form his judgement.

What will meet with more approval than he anticipates is his insistence of the danger of dead or infected teeth. He has devoted a large amount of experimental work to demonstrating these dangers. Using rabbits, he shows how potent for evil a single, apparently harmless, dead tooth may be, or even the cement from under an ill fitting gold cap. Not only cultures were used in the experiments, whole teeth were crushed and injected, or teeth were buried entire subcutaneously or in the peritoneal cavity, and from large numbers of these experiments the author draws valuable conclusions as to the dangers of dental sepsis. He finds in them some support for the idea of selective localization by a particular strain of streptococcus, but thinks this property was impressed on the germ by the previous host, and soon dies out.

In Volume I the author propounds some forty odd problems connected with dental infections. These problems range from the particular (for example, What are the dominant etiological factors in dental caries?) to the general (for example, Do dental infections produce sensitizations of an anaphylactic character?), and both questions and answers give evidence of a wide outlook and an acutely inquiring mind. Perhaps with the lapse of years some of the problems and some of the answers are no longer new, but there is always a refreshing disbelief in the old mechanical view that the whole duty of the dentist is to provide teeth to eat with.

Volume II is devoted to a review of the results of applying the new principles to everyday work, and contains an account of many interesting clinical cases and observations. From about two thousand cases the author has selected the most opposite and remarkable, with the inevitable result that some of them are almost startling in their sequence of cause and effect. Perhaps the most startling is that recorded in Volume I (p. 437), in which expanding the maxillary arch, with undoubted separation of the maxillary bones, was accompanied in twelve weeks, in a boy of 16, by all the phenomena of growth and adolescence which normally take years to develop, and were lost again with the loss of the apparatus used in the course of a few days. We cannot agree that hemophilia is in any sense a result of dental infection, and we think the author has made his observations on suppurating dental cysts, and so has been led to incriminate dental cysts as potent factors in dental infection.

The illustrations are numerous and well produced, but, especially in the case of the dissections showing lesions of rabbits' spines, would benefit by more extensive legends. The great fault we have to find with the book lies in the intricacy of the author's diction, which often leaves the reader in doubt, and now and then seems to be meaningless.

The author's whole heart is in his work, and his last chapter is an able exposition of the need for dental research institutes, and we most heartily echo his plea for endowments which will enable investigators to live for and by their work alone.

MEDICAL OPHTHALMOLOGY

It is not surprising that within the short space of three years a new edition of Mr. Foster Moore's *Medical Ophthalmology* should be required. As a connecting link between the specialized science of ophthalmology and the wider scope of general medicine it is unsurpassed in our

* *Dental Infection, Oral and Systemic*. By Weston A. Price. D.D.S. MS. F.A.C.D. Vol. I. *Factors on Fundamentals of Oral and Systemic Infection of Dental Infections*. Vol. II. *Researches on Clinical Infection of Dental Infections*. Cleveland Ohio. The Fenton Publishing Company. 1924. (Imp. 8vo. Vol. I pp xxvii + 675. 252 figures. Vol. II xxv + 411. 239 figures.)

* *Medical Ophthalmology*. By R. Foster Moore. O.B.E. M.A. B.Ch. Cantab. F.R.C.S. Second edition. London. J. and A. Churchill. 1925. (Demy. 8vo. pp. x + 34. 92 figures. 8 plates. 18 net.)

literature for its conciseness and clarity and its wealth of detail.

The subject-matter has been largely rearranged, several inconsequent articles have been deleted, and much new material has been incorporated. The whole of the text has been brought up to date, and new articles added on intracranial aneurysms and subarachnoid haemorrhages, on encephalitis periauricularis, tumours of the optic chiasm, retinoblastoma, jaundice, juvenile and adolescent forms of haemorrhagic degeneration, and the mechanism of the cerebri-maculal degeneration, the sections dealing with the normal pupillary reactions, the sections dealing with the defects of the visual fields have been much amplified, and are especially worthy of note.

While the references to the literature are full, a large number of the opinions expressed and of the observations recorded are drawn from the author's own experience, and these are given always in a shrewd and critical spirit. Thus the subject of ocular headaches, which encourages discursiveness, and the somewhat vague factors of focal infection and intestinal toxæmia, so often and popularly ascribed to as of greater or less importance in the etiology of ocular disease, are dismissed as being incapable of consideration with scientific and critical exactitude. This same spirit of discrimination is maintained throughout.

The book is well got up and well indexed. The numerous illustrations are of high standard, and have been increased in number, the additions including eight coloured plates.

AN INDEX OF TREATMENT

THE *Index of Treatment*, by Dr ROBERT HUTCHINSON and Mr SHERRER of the London Hospital, continues its triumphal march, for it has in eighteen years reached its ninth edition, and in the process has, like a snowball, increased mightily in size and in scope. As it is arranged in alphabetical order and well provided with cross references, the busy practitioner can at once put his hand on the information he seeks. The only disadvantages—and they are necessarily due to its success—are its very considerable weight, which makes it difficult to read in an easy chair, and its price. The senior editor, who has been responsible from the start of this popular work, contributes a wise introduction on some general principles of therapeutics, and quotes Clough's "Latest Decalogue" to the effect that while "Thou shalt not kill," we need "not strive officiously to keep alive." At this stage in the life of the population no criticism of details is necessary. In addition to a number of articles on the digestive system, he has a few words to say on nose (redness of), finger cracks, and prænæsthesia. Mr James Sherran, among other duties, provides the surgical treatments of the gastric disorders dealt with by his co-editor. Dr Luff writes fully on gout, and from Professor Hugh Macleod we welcome an infective endo-arteritis on nephritis. In a new article on immunized arthritis Dr Thomas Horder cautiously recommends a new article on arthritis sensitized by the serum of an article on poison. Sir Henry Gray contributes a new account of the surgical treatment of tuberculosis, with an account of hydrotherapy and artificial light treatment, spinal analgesia appears for the first time in a clear and well illustrated article by Dr F S Rood.

LIVING ORGANISMS

PROFESSOR EDWIN GOODRICH's little book, *Living Organisms*, is an excellent introduction to the doctrines of organic evolution. Professors of zoology are not always easily understood when they address themselves to a public not trained in biology, but Professor Goodrich has proved that the scientific point of view on life can be described in language everybody can follow. The interesting story he has to tell is not encumbered with technicalities and yet omits nothing that is necessary to the thread of the argument.

An Index of Treatment By Various Writers. Edited by Robert Hutchinson M.D. FRCP and James Sherran CBE FRCS Ninth Edition revised and enlarged. Pp (xii + 1035) 42 illustrations. 42s. (Rev. 8s 0d pp xvii + 1035 42s net) 1925 (Living) Organisms By Edwin Goodrich FRCS Oxford The Clarendon Press 1924 (Cr 8vo pp 200 60 figures 6s net)

We must begin, as in all similar books, with a chapter on the nature and origin of life, and close this chapter (as always) by clearing a patch of ground without building anything very substantial thereon. Before passing on to Darwinism and heredity, the main theme of the book, a good deal has to be said about the cellular structure of living organisms, their methods of reproduction, and the significance of death, and this is said clearly and simply. Once the main theme of the book has been expounded what follows is like the orderly working out of a plot—consecutive, logical, and inevitable. Thus we are led from a discussion of variation and the factors of inheritance to the struggle for existence and natural selection. The three final chapters are well placed, for they answer a good many questions raised by earlier pages. These deal with phylogeny and classification, the geological record of success and failure, and, finally, the evolution of intelligence. And so we come to the end, concluding with a thought which is likely to be present in the mind of the faithful reader (not, it is to be hoped, for the first time)—"Some knowledge of the chief results of the scientific study of evolution is indeed essential for the guidance of those who wish to promote the welfare of the human race on rational principles."

ANIMAL SOCIETIES

Des Sociétés Animales was written by ALFRED ESPINAS at a time when the minds of thinkers were largely occupied with sociological subjects, owing, to a great extent, to the writings of Auguste Comte. The book was a thesis for the doctorate in the Paris Faculté des Lettres in 1877, but a large part of the work was omitted from the first edition on account of certain apparently harmless references to Comte, which were regarded as obnoxious to the authorities. The second edition comprised the complete work, and the present, the third, was only very partially revised at the time of the author's death, so that the work practically retains its original form.

The object which Espinas set before him was to trace the connexion between sociology on the one hand and biology and politics on the other, to determine what is the binding force that unites separate individuals into societies, and to ascertain what general laws of social life may be deduced from the study of societies. As a basis of argument he has furnished the reader with analytical descriptions of the numerous and varied forms of social life that are met with in the animal kingdom, from the highest to the lowest, represented by the compound infusorians to the lowest, represented by the compound infusorians. These descriptions form a large, and perhaps the most interesting, part of the book. The conclusion at which he arrives as regards the binding force of social aggregation is that it varies as we pass from the lower to the higher types. He conceives that in the former, as exemplified in Volvox and the compound mechanical way, by failure of separation of the individuals resulting from the division of a single ovum. Certain advantages, difficult to detect, may be presumed to have resulted, which tended to perpetuate the connexion. In the next group, the compound Coelentera, the advantages are more distinct. In these, the group which, as in the former case, is derived from a single ovum, is formed of individuals organically united by means of intercommunicating channels between the body cavities subserving the function of nutrition. Here nutrition forms the bond of society, and Espinas calls such forms "societies of nutrition."

The second essential necessity of existence, reproduction, appears as a bond of union in those subdivisions of the animal kingdom in which the sexes are in separate individuals, but in this case the individuals are based on mutual attraction and choice, that is to say, a psychological element is introduced as an important factor in cementing the association. It is in the conjugal and domestic societies, according to Espinas, that there become developed the qualities of sympathy, domination, and subordination, which form an essential foundation for the highest social forms.

Des Sociétés Animales Par Alfred Espinas 1924 (Demy 8vo pp 454 25 fr) Paris F Alcan

Tenth edition.

form, the "peuplade," or people. The author holds that a highly organized domestic society is unfavourable, or even antagonistic, to the formation of a people, and cites instances where the latter arises only on the temporary dissolution of the families, disappearing when the families are reformed. It follows almost as a corollary from this that the formation of a people rests largely with the younger and unmarried individuals of a society, and Espirou solves the problem of defining the bond which unites a number of independent persons into a definite social entity by supposing that the conditions of environment come largely into play in these higher forms, and that by developing under like conditions the individuals develop like sentiments and inclinations. The bond will therefore be to a great extent purely psychical, but at the same time the habits of subordination and domination, as in the frequent instances met with of a tendency to act under a leader, and the sentiment of sympathy developed in the stage of domestic society, will also exercise a powerful influence. The political and moral deductions to be derived from the studies of animal societies would dwell with in, perhaps, a less interesting manner, but an interesting historical account is given of the theories of sociology from those of ancient Greece to more modern times.

NOTES ON BOOKS

ROGET'S *Thesaurus of English Words and Phrases* is, we imagine, too well known to need description, for it has been a valued reference book to generations of writers and translators and the vogue of cross word puzzles seems to have introduced it this year to large numbers of people, young and old, whose interest in literary craftsmanship is far from professional. The author, PETER MARK ROGET, M.D., F.R.S., physician and savant (1779-1869), after he retired from professional practice in 1840, devoted much thought and labour to compiling this work, which he had projected many years before it appeared first in 1852, and during his lifetime 25,000 copies were printed. An edition of 1879, embodying the author's latest corrections, was edited by his son, John Lewis Roget, who continued to revise periodical reprints until his death in 1908. In 1910 a grandson, Mr SAMUEL ROMILLY ROGET revised and added to the work, and a further edition has now been issued under the same editorship. This contains some 2,000 additional words and expressions, and the type has been reset throughout. The novelty of Peter Mark Roget's method of classification lay in his arrangement of words and idiomatic combinations, not in alphabetical order as in a dictionary, but according to the ideas they express, and this plan, so helpful to the literary workman bothered for the right phrase, has been preserved by the author's son and grandson through successive editions. The copious alphabetical index, without which the *Thesaurus* would lose much of its usefulness, appears to have been revised and amplified with the same care that has been spent upon the body of the work.

In his brief but brilliant book *Idiot Man*¹⁰ Professor RICHET, the physiologist, who has just resigned his chair in Paris, finds no difficulty in collecting a thousand follies of mankind and proving that this world is an ill regulated affair and capable of vast improvement in every business that concerns human beings. On all sides he finds evidences of their stupidity, their inability to learn, their lack of power to foresee the consequences of their actions and policies. He would have us believe, on the strength of scores of examples he has collected, that animals show much better reasoning faculties than man, to have reason, and he as unreasonable as mankind so often is, is much worse, he argues, than it is to lack the faculty of reason. Every page of the volume is filled with paradoxes of the first water, the whole makes excellent reading, and the book, for all its multitudinous extraneousness, may be commended to the attention of all readers in search of a rousing

Dr H. LAUBER has edited a rather big book¹¹ of medical advice on the choice of a profession, consisting of eleven

articles written by Vienna specialists. The editor himself contributes the chapter on the choice of a profession from the ophthalmological standpoint. The first three chapters, which attack the mental aspects of the problem from the standpoints of the psychologist, alienist, and specialist in mental defects, are written by Dr Rudolf Allers, Professor Erwin Stransky, and Dr Irwin Lager. Professor E. Jähle, who discusses the question from the pediatric standpoint as well as from that of internal medicine, emphasizes the importance of taking into consideration chronic disorders and intercurrent diseases as well as the constitution and disposition of the subject. Dr Gustav Alexander, who deals with otological aspects, lays stress on the value of medical inspection in schools not only for the individual, but also for the community. His article contains alphabetical lists of various professions with the amount of auditory function required in each, and of occupations suitable for persons with different grades of defective hearing. The remaining articles in the volume deal with laryngology and rhinology (Dr Hermann Marschik), surgery and orthopaedics (Dr Hans Spitzly), and neurology (Dr Ludwig Dimitz). An alphabetical list of professions is appended, with the ophthalmological and otological requirements pointed in italics and the contraindications for each profession in roman type.

Koby's *Slit lamp Microscopy of the Living Eye* has lately been reviewed in our columns (May 23rd, 1925, p. 971), the high standard it attains and its value as the only simple and compact textbook on the subject suitable for a beginner was then pointed out. It is now accessible in English,¹² the task of translation having been undertaken by Mr C. GOULDEN and Mrs C. L. HARRIS. Every language has its own genius—an individualistic quality nearly if not quite impossible to reproduce with any degree of success in any other language. In the endeavour to retain faithfully the exact shade of the author's meaning, it is easy for the translator to sacrifice the spirit of his own language by forcing upon it the mould of another. By a literal word for word translation the crispness and idiom of French composition becomes in English stilted, and, when sustained, forms somewhat trying and difficult reading. Although the translators have not avoided these faults they have certainly filled a serious blank in our ophthalmic literature.

HEINZ LINNEKEGEL has devised a method of treating tuberculosis with inhalations of a mixture of calcium sulphate and silica,¹³ which he calls "casi." He starts from the fact that gypsum workers and others exposed to chalk dust are believed to have a distinct immunity to tuberculosis. He claims that his inhalation method has shown itself successful in tests extending over three years. The use of silica in the inhalation is strange, since most of the evidence available indicates that the presence of silica in tissues facilitates the growth of the tubercle bacillus.

¹² *Slit lamp Microscopy of the Living Eye*. By Dr F. Ed. Koby. Translated by Charles Goulden O.B.E. F.R.C.S. and Clara Lomas Harris M.B. London: J. and A. Churchill, 1925. (Demy 8vo pp. xiv + 221. 45 figures. 2s. 6d. net.)

¹³ *Die Behandlung der Tuberkulose mit Calcium Sulfat*. By Heinz Linnekegel. Munich: J. F. Lehmanns Verlag, 1925. (Med 8vo pp. 103. 2 figures. Paper covers. M 4 bound, M 5.)

SOCIETY OF MEDICAL OFFICERS OF HEALTH

PRESIDENT'S ADDRESS. METHODS OF PREVENTION IN DIPHTHERIA AND SCARLET FEVER

The annual general meeting of the Society of Medical Officers of Health was held on October 16th, when Dr G. F. BUCHAN, medical officer of health for Willesden, was installed as president.

Dr Buchan took for the subject of his presidential address "Methods of prevention in diphtheria and scarlet fever." He exhibited a table showing that the total number of deaths and the death rates from diphtheria in England and Wales had not materially changed during the last half-century. The death rate per 100,000 persons living was 10.8 in 1873 and 10.7 in 1922 (though the years 1923 and 1924 showed a rather striking reduction). The total number of deaths and the death rates from scarlet fever had gradually and progressively diminished (the death rate, which was 85.1 in 1875, was 2.3 in 1924). Unfortunately, it was not possible to give the number of notifications of these diseases over the same period, but since 1911 it was evident from the records available that there had been no

¹⁰ *The Idiot of Man*. By Professor RICHET. Translated by Charles F. Taylor. London: Longmans Green and Co., 1925. (Extra post 8vo pp. xiv + 691. 7s. 6d. net.)

¹¹ *Idiot Man and the Follies of Man* (and *The Idiot's Struggle*). By Charles F. Taylor. Translated by Charles F. Taylor and Lloyd Harvey. London: T. Werner Laurie Ltd., 1925. (Demy 8vo pp. 172. 7s. 6d. net.)

¹² *Handbuch der Augenheilkunde*. By Dr H. Linnekegel. Berlin: Springer, 1925. (Imp. 8vo pp. x + 250. 22.50 Swiss fr.)

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real duration in the number of cases of diphtheria or scarlet fever. The number of diphtheria notifications per 1,000 of the population was in 1911 1.33, and in 1924 1.08. The corresponding figures for scarlet fever were 2.90 and 2.18.

These notification returns suggested that the methods in vogue for the prevention of diphtheria and scarlet fever had not met with success. These methods were hospital isolation, disinfection, quarantine of contacts, and general improvement in sanitation. Hospital isolation and treatment had been effective in reducing the number of deaths from both diseases, but not in preventing spread. Cases were not as a rule seen by the doctor until at least twelve hours after onset, by which time other poisons had been exposed to infection, therefore it was not to be expected that removal of the case to the hospital could act as an effective barrier against the spread of the disease. Dr Buchan also gave reasons for believing that the methods of disinfection in general use—spraying of rooms with formalin and removal and steam disinfection of bed and clothing—were without influence in preventing the spread of diphtheria and scarlet fever. He judged the value of disinfection by the proportion of secondary cases which occurred afterwards. From some Willemsen experience of the varying relative values of these methods of disinfection under conditions as strictly comparable as it was possible to obtain in practice, and especially from the fact that the addition of steam disinfection to spraying by formalin, and vice versa, appeared to increase the infectiousness of rooms and bedding in scarlet fever as judged by the percentage of secondary cases, he concluded that disinfection, as commonly carried out, was without influence in prevention. Quarantine of contacts, again, could never be satisfactory, because it was practically impossible to isolate children while they remained well. As for general improvement in sanitation, this measure was not specific against infectious diseases, though in so far as it improved the general health it was a preventive measure against all diseases, infectious or otherwise. He examined the common explanation that "missed" cases explained in only a small part the continued prevalence of "Carrier" cases greatly increased the difficulties of control in both diseases, and might indeed be a source of their regeneration and continuity.

The daily supervision of contacts and continuity with immediate administration of antitoxin on the first appearance of symptoms, was likely to prove an effective means of prevention, but it would be impracticable in many cases, and routine prophylactic injection of antitoxin for diphtheria contacts could not be recommended. The Schick test offered itself as a means of separating the susceptible from the immune. This test, followed by immunization, had been demonstrated by reliable scientific observers and clinical workers as a means by which the prevalence of diphtheria could be reduced by 75 per cent. The test had been used in over 125,000 cases of school children in New York with no ill results, and experience in Edinburgh, Birmingham, and Bristol had also shown the value of the test. He urged that this method, at present offered to the public by certain health departments, should be available everywhere.

With regard to scarlet fever, the conditions were somewhat different. Here the organism had not been isolated in the same way, but there was a consensus of medical opinion that streptococci had a definite relationship to the condition, and that a type of streptococcus giving specific agglutination and immunity reactions could be isolated from the throats of nearly all early cases. The Dick test of immunization for scarlet fever had not been so extensively applied as the Schick test for diphtheria and it was impossible to speak with the same conviction of its merits. But investigations showed that it was possible to immunize effectively against scarlet fever, with a large reduction of cases amongst the persons so immunized. It might therefore be urged that the Dick test, with immunization of some modification thereof, should also be made available in this country for those who would secure protection for their children against scarlet fever.

In conclusion, Dr Buchan said that of the annual expenditure on hospitals for infectious diseases (about

£3,640,000) at least £3,000,000 represented expenditure on diphtheria and scarlet fever, and that the general use of the Schick test and the Dick test, followed by immunization would reduce this expenditure by 50 per cent. To carry out this work effectively there should be in each area having a population of 100,000 or more an epidemiologist whose primary duty would be the application of the tests and immunization in the case of all children for whom the parents desired immunity. This officer would also be charged with the duty of intensive study of the occurrence of infectious diseases in the area with a view to the reduction of their prevalence by the application of laboratory findings in the field.

Annual Dinner of the Society

The annual dinner was held at the Piccadilly Hotel on the same evening, when Dr G. F. BUCHAN presided over a gathering of 180 members and guests.

Sir H. KINGSLEY WOOD, M.P. (Parliamentary Secretary to the Ministry of Health), in proposing the health of the society, said that its relationship with the Ministry was most cordial. The Ministry wished in particular to thank it for the work it had done in connection with the international interchanges of health officers and the demonstration to officers from abroad of British public health methods. He emphasized the need for further medical research in connection with public health—without, however, pledging any financial assistance—and also said that one of the most desirable things at the moment was the linking up of miscellaneous health agencies in each locality. At present in each administrative area there were about nine medical officers or units with different functions, and co-ordination was badly needed.

Dr BUCHAN, in responding to the toast, said that the society had now nearly seventy years of history. During the period of its existence it had seen all the gross cruises of ill health removed, and now, in order to increase longevity, it was necessary to work intensively on the causes that remained. This implied study and research and the application of the findings of research in the areas of local authorities. If progress in public health was to continue and be accelerated it would be necessary for local authorities to take an interest in preventive medicine. The elucidation of the problems of the future must be based on the conception of prevention rather than cure of disease. The speaker was of opinion that an undergraduate medical student should not be able to receive his medical degree unless he had had some opportunity of inspecting and reporting on the medical work which was done by his local authority, so that he might understand the trend of modern public health in relation to his future practice.

Dr W. J. HOWARTH proposed the toast of "The Guests," and mentioned the names of several well known people present. He regretted the absence of Dr Bolam, Chairman of Council of the British Medical Association, but he was glad to see present Dr Brackenbury, Chairman of the Representative Body, and Dr Cox, Medical Secretary. When Dr Bolam and Dr Brackenbury ceased to run in double harness it would be a bad thing for the British Medical Association, and perhaps for the Society of Medical Officers of Health also.

Sir ALFRED MOY, M.P., in responding, said that recently he had had some acquaintance with the public health work on the Continent, and he came back all the more appreciative of British methods, especially in regard to maternity and child welfare. One curious impediment in the way of the public health reformer, as illustrated recently in the East End of London, was the resistance of the people to whom it was desired to provide something better than the slum dwellings. He also referred to the new School of Hygiene and Tropical Medicine, which was now being put into a practicable scheme, and he hoped soon to see the commencement of the building. He believed that its influence upon public health would be very far-reaching. Sir ARTHUR CHURCH, chairman of the County Councils Association, also responded to the toast, and a further response was made by Sir ST. CLARE THOMSON, President of the Royal Society of Medicine, who, as usual, had a budget of excellent after dinner stories.

British Medical Journal.

SATURDAY, OCTOBER 24TH, 1925

HEREDITY AND MENTAL DISEASE

THE subject chosen by Sir Frederick Mott for his Harvard Oration, which is published this week (p. 727), is of fundamental psychiatric importance. The influence of heredity in the development of many psychotic conditions is one that cannot be set aside, but at the same time the existence of this factor should not be made the excuse for a despondent and fatalistic attitude in regard to the possibilities of prevention, amelioration, and cure of the variety of illnesses included under the term 'mental disease'. On the contrary, the recognition of an inherent causal factor in certain forms of psychic abnormality should act as a stimulus for research—first, into the kind of parental defects of character, infections, or disease which may be responsible for the production of psychopathic offspring, and secondly, into the exact biological nature of the deficiency which is inherited in the predisposed subject. Sir Frederick Mott's work on dementia praecox, of which he gave a summary account, may, indeed, be described as a contribution of peculiar importance to psychiatry from the fact that it takes us beyond vague references to the constitutional character of this disease, and enlightens us as to the actual nature of the organic deficiencies responsible for its occurrence.

The conception of dementia praecox as the outcome of a vital defect of the reproductive organs, of the brain, and probably of the whole organism, raises a number of questions of importance. The regressive physical changes described are such as might be anticipated in view of the alterations in behaviour which the subjects of mental disorder exhibit. Kriepelin, indeed, did favour the view that there was some connexion between the functions of the sex glands and dementia praecox, having in mind, no doubt, the inadequacy of the sexual life of the subjects of this disorder, though he was unable to discover convincing proof in favour of this view. It is clear that the discovery of so clear a correlation between demonstrable changes in the organism and behaviour changes necessitates a widening of our concepts as to the nature of mental disease. Except for descriptive purposes it is obviously unprofitable to regard mind as an entity in itself and detached from the organism, and we must not indeed, expect to discover the secrets of mental disorder by confining researches to the brain on the assumption that the brain is the organ of mind. The mind is not merely a function of the brain; it is a function of the whole organism, having its roots in the viscera, the endocrine glands, the vegetative nervous system and the musculature. Such a point of view is essential for our understanding of human behaviour, whether normal or abnormal, and a recognition of this fact is evident in general psychology, in which there is an increasing tendency to emphasize the significance of the instinctive or organic life as the basis of conduct.

That temperament is independent of conscious experience is evident from Galton's inquiry into the

history of dissimilar and similar twins, to which Sir Frederick Mott referred. This inquiry showed that temperament and the raw material of character are inherited for it was found that identical twins brought up in different environments remained temperamentally the same and of the same disposition, whereas dissimilar twins brought up in the same environment remained temperamentally different. Our increased psychiatric knowledge should now enable us to carry such observations further than Galton was able to do. Thus, as the outcome of Kraepelin's formulation of the biogenetic psychoses into two main types—the manic depressives with a general tendency to exhibit emotional fluctuations in the direction of depression or excitement, and the precox types with a general tendency towards a progressive deterioration tilting the form of a regression into fantasy and a withdrawal from contact with real life—it became possible to recognize similar reacting tendencies in normal people and to divide humanity generally, as Jung has done, into extroverts and introverts respectively. This important psychological work has been independently carried a stage further by Kretschmer, who has correlated the extroverted (cyclothymic) temperament with a robust body build which he describes as pyknic, and the introverted (schizothymic) temperament with an athletic or asthenic body-build, together with certain dysplastic types such as are often observed in dementia praecox. An interesting confirmation of such views is to be found from observations on dissimilar twins, one of whom may exhibit the typical pyknic physique with a strongly extroverted temperament, and the other a typical asthenic body-build with a typically introverted temperament.

Thus there would seem to be a close connexion between physique and temperament in normal people, and possibly, if the whole organism is taken into consideration, between the functioning of the endocrine glands and temperament. That this is so in abucinal types is shown by Sir Frederick Mott's researches, and the problem arises as to how far the development of an actual psychosis is avoidable in subjects predisposed to dementia praecox owing to inherent weakness such as he describes. This problem permits of no decisive answer, but there would seem to be certain grounds for supposing that many severe breakdowns of the dementia praecox type might have been avoided had the significance and dangers of the schizophrenic personality been more generally appreciated and more care taken to avoid external stress. The shut-in type of child tends to react very unfavourably to an environment where it is not understood and its sensitiveness not realized. A nervous subject of this type will very quickly regress into a mild psychotic state in what to him constitutes an unfriendly and traumatic environment, and will readily regain his equilibrium upon his removal to a more favourable milieu. Many psychiatrists believe that the continual association of a child from birth with exacting psychopathic parents is in itself responsible for psychotic reactions later in life, but no doubt the inborn predisposition of body and mind is an essential element in such a case. Jung discusses a similar temporary reaction in the normal introvert, and points out that, given a thoroughly congenial and harmonious milieu, he relaxes and expands towards complete extroversion, until the observer begins to wonder whether he may not be dealing with an extrovert. In many cases the exciting cause of a breakdown is found in intense application and overstudy during adolescence,

causing overstrain of unstable cortical neurones. Again, as Sir Frederick Mott points out, through an inherent defect many persons are apt to fail to function at the critical periods of life—namely, adolescence, the climacterium, and senescence, in women the physiological conditions of stress—gestation, parturition, and lactation—are often exciting factors. Other traumatic factors are emotional stress, repression, and frustration of the sex instinct, causing endocrine disturbances and insomnia.

There would seem, therefore, to be certain directions in which precautions might be taken to prevent the onset of dementia praecox in predisposed subjects, and greater facilities for the treatment of mental disorder in its early stages may reasonably be expected to be of value in this way. That the degree to which the vitality is impaired in potential cases of dementia praecox varies very greatly is evident from the fact that many patients do not actually exhibit the characteristic symptoms of this disorder until the involutional period or even senescence sets in. Just as dementia praecox may occur at all ages, so it may also occur in various mild forms, and, as Bolton has pointed out, included in this category must be those individuals who overstrain their mental capacities in youth—both the brilliant student and the one of inferior capacity who obtains a degree by dint of exceptional perseverance—and who in after life fail to fulfil their early promise, and eventually lead an ordinary narrow and stereotyped existence.

In the actual treatment of cases of dementia praecox the question of heredity must obviously be purely academic. No quantitative estimation is possible of the extent to which a psychotic episode is due to inborn causes and to environmental conditions respectively. Many cases are the result of stresses such as have been indicated, or are due to the influence of general or focal infections, and treatment must obviously be directed to the removal of the conditions responsible for the outbreak of morbid dementia praecox by symptoms. The prevention of dementia praecox by preventing predisposed subjects from propagation is extremely difficult, and not enough is known of the laws of heredity to predict the likelihood of abnormal offspring. Many cases of dementia praecox result from the union of parents a psychiatrist would certainly have hesitated to advise not to marry. The eugenic aspect of this subject must always be borne in mind, however, when the advice of the physician is asked in regard to marriage. Strong reasons are obviously necessary to advise against taking this step, but the teaching of all psychiatrists, and in particular the researches which are outlined in this article, make it clear that an unfavourable family history should cause no couple to hesitate to take the responsibility of parenthood. It is much to be desired that a knowledge of the principles of mental hygiene may eventually become more disseminated, and that potential parents may realize the serious responsibility they undertake in bringing children into the world who are likely to be psychopathic in tendencies.

In concluding these few comments on the researches briefly outlined in the Harvard Oration, it would seem appropriate to refer generally to the value of Sir Frederick Mott's work and to the great influence he has exerted upon the development of psychiatry in this country. As a teacher original investigator, organizer of research and as a source of inspiration to younger psychiatrists he is fully deserving of the high regard in which he is held in the medical world.

PITUITARY ADENOMATA

"It is highly profitable at times for a chief of service to play the part of bystander and to see what interpretations younger and fresher minds may put upon matters on which he perhaps has somewhat fixed ideas." Such is the note with which Professor Harvey Cushing introduces a long paper by Drs. Dott and Bailey in the current issue of the *British Journal of Surgery* (No 50, October, 1925), founded on a study of numerous cases of pituitary disease. They have confined their attention to the adenomata, and from the wonderful material at the Bingham Hospital, Boston, placed at their disposal by Cushing, they were able to collect no fewer than 162 examples of this type of tumour, all but one removed at operation. As the result of careful clinical and pathological investigation they claim that they have been able to differentiate certain clear cut types of adenomata, and to link with each of them a distinct clinical syndrome.

The basis of classification employed was the presence or absence of those cells of the normal pars distalis which are so noticeable in properly stained sections by virtue of their avidity for dyes—then cytoplasm being filled with deeply staining granules. These are the chromophil or, more familiarly, the eosinophil cells, and 35 of the tumours examined appeared to be composed largely of these cells. Of the remainder 107 contained no granule bearing cells, and it is suggested that they take origin from the chromophobes—the non-staining cells of the pars distalis. The few remaining tumours were found to have a constitution which represented a mixture of the two cell types.

From an analysis of the clinical histories of the cases from which these tumours were derived the following types emerged: (1) Cases with no constitutional disturbance beyond local pressure signs, and these we may dismiss from further consideration, (2) those with the hypopituitary syndrome, (3) those with the hyperpituitary syndrome, (4) a mixed type. When the attempt was made to correlate the clinical syndromes with the pathological findings, it was found that a striking parallelism exists between the predominant cell type in the tumour and the constitutional symptoms.

Gigantism and acromegaly are both diseases about the diagnosis of which there can be no doubt, and in no fewer than 35 out of 39 cases of this type in which the diagnosis was identified. Hypopituitarism in cosmophil adenomata was manifested, particularly in its less dramatic manifestations, but in 107 cases the lesser degrees of the disease, but in 107 cases which showed some or all of such symptoms as adiposity, hypotrichosis, lowered basal metabolism, and sterility, in addition to the local signs occasioned by the tumour, there was a complete absence of the chromophobe or non-staining type. In 13 patients the symptoms were of mixed and varied type, slight signs of acromegaly appearing to develop concurrently with hypopituitary manifestations, and in these cases the histological character of the tumour reflected the clinical signs of the disease. In 13 types of cells were mixed in varying proportions.

If these histological and clinical relationships are as close as the authors suggest (and although we cannot review the evidence in detail here it seems probable they put forward a very strong case) it seems probable that their work forms a useful contribution towards the elucidation of the function of the hypophysis in relation to the physiology of growth. We know from Evans's experimental work on rats that gigantism may

b. induced and the dwarfism of post operative hypopituitarism relieved by the intraperitoneal injection of pars distalis. Where does the active principle controlling growth reside? The evidence afforded by demonstrating the presence in 35 out of 39 cases of acromegaly or gigantism of an adenoma composed almost entirely of eosinophil cells, indistinguishable in microscopic structure and staining reaction from the eosinophil cells of the normal pars distalis, does seem strongly to suggest that it is in these cells that the secrets of growth must be sought.

THE HARVEIAN FESTIVAL IN LONDON

THE HARVEIAN Festival of the Royal College of Physicians of London was celebrated this year on Monday, October 19th, because St Luke's day, on which it is usually held, fell on the previous Sunday. The first event was the attendance of the President of the College, Sir Humphry Rolleston, and the consorts at the service at St Mary-le-Bow, Chancery Lane, at noon. This is something of an innovation. Dr William Croone, a Fellow of the College, at his death in 1684, left a plan for two lectureships, and for a sermon at St Mary-le-Bow. Dr Croone, however, failed to make any provision for the endowment of these lectures, and his widow, who married Sir Edwin Sadler, Bt., carried out his intention by bequeathing in 1706 the King's Head Tavern in Lambeth Hill, after the decease of her second husband, in trust as to four parts out of five to the College of Physicians and the fifth part to the Royal Society. Hence the Croonian Lectures delivered to these learned bodies yearly, and hence also the visit to St Mary-le-Bow. The rector (the Rev. Gordon Penson, formerly chaplain of Trinity College, Cambridge) read the 44th chapter of Ecclesiastes—the chapter beginning "Let us now praise famous men"—and then delivered a sermon based on the life of Sir Thomas Browne, author of the *Religio Medici*. He reminded the congregation that Sir Thomas Browne was born, within sight of the steeple of St Mary-le-Bow, on that very day, October 19th, in 1605, and he died in 1682, also on October 19th, shortly after the present church had been completed by Wren. After quoting several passages from Thomas Browne's works in illustration of his wisdom, piety, and abundant humanity, the preacher went on to say that it was a matter for thankfulness that the supply of such men to English medicine and letters had never failed. The Royal College of Physicians itself had been remarkable for the number of men among its Fellows who had enriched other fields besides medicine, in particular the fields of classical scholarship and philosophy. During the present year the College had to mourn the loss of two men who in a special degree had carried on the tradition of Sir Thomas Browne. One of these was Sir Clifford Allbutt, with whom the preacher had had personal acquaintance. Clifford Allbutt was a man who had added greatly to the knowledge of medicine, but he was above all things a friend, a wise counsellor and an upright and kindly gentleman. The other was the late registrar of the College, Dr J. A. Osmered, a classical scholar of no small attainments, a man versed in the traditions of the College, one who was strong but without self-assertion, and who was held in high esteem as a considerate and unselfish colleague. Both these men were "sons of the mouse." But while he had singled out only these figures, the hall of the College was hung with the portraits of many such men. Truly it might be said of them, in the words of the ancient writer, "Their seed shall remain for ever, and their glory shall not be blotted out. Their bodies are buried in peace, but their name liveth for evermore. The people will tell

of their wisdom, and the congregation will show forth their praise." The next event was a meeting in the afternoon at the College to hear the Harveian Oration (published at page 727) delivered by Sir Frederick Mott. Afterwards the Baly medal was presented to Professor Rudolf Magnus of the University of Utrecht. The medal was founded by Dr F. D. Dister in 1866 in memory of William Baly, and is awarded every alternate year to the person deemed to have most distinguished himself in the science of physiology, especially during the two years immediately preceding the award. The work done by Professor Magnus and his fellow workers at Utrecht may be looked upon as parallel or supplementary to the work of Sir Charles Sherrington at Oxford. Speaking very generally, the researches have been concerned with the parts played in movements and posture by consciousness and the reflexes which do not rise into consciousness but act and control posture and certain movements which at first sight present all the qualities of conscious purpose. The point is illustrated by the case of a cat watching a mouse. The head of the cat is turned towards its prey and one forefoot is extended and carries the weight of the body, while the other is relaxed and ready to make the sudden movement. The decision to jump is determined by the animal's consciousness, but it acts through a set of mechanisms of which it would appear the animal is not conscious. The posture is due to a balance of tone between the muscles concerned, this tone in the standing or flexor muscles varies in harmony the one with the other. The maintenance of posture and its modifications is brought about by reflexes, each of which is parallel. An animal in which the whole brain has been severed from the spinal cord cannot balance itself, but many reflexes remain, and there will be a response to stimulation by appropriate movements. If, on the other hand, the posterior part of the medulla is left connected with the spinal cord the animal can maintain the upright posture through the action of receptors in the muscles themselves. If the separation of the brain is made higher up the standing posture becomes more natural. Thus, it appears, is due to the added action of receptors in the muscles of the neck and of the larynx, but these actions of these receptors, while they can control the lower reflexes, are automatic. Finally, in monkeys and man other receptors from the environment come into play, the chief of these come through the eyes, and have their seat in the cortex. Professor Magnus gave an account of his researches in his Croonian Lecture to the Royal Society last summer. The last part of the festival was the dinner in the evening, given in accordance with the instructions of Harvey when he handed over to the College his paternal estate of Bunnbury in Kent in 1656. The dinner was held in the College, and the President, Sir Humphry Rolleston, was in the chair. Among the guests were the Presidents of the Royal College of Surgeons, of the Royal Academy, and of the Royal Society of Medicine, the Master of the Society of Apothecaries (Dr Vincent Dickinson), the Hon. Sir Peter C. Lukin (High Commissioner for Canada), Professor R. Magnus, the Vice-Chancellor of Cambridge (Dr A. C. Seward, F.R.S.), and Sir Gilbert Buling, Vice-Chancellor of the University of Birmingham, where Sir Frederick Mott is lecturer on psychology. The President, in giving the toast of "The Guests," referred to the improvement the College had been stimulated to make in the appearance of its building by the great house-clearing next door, carried out under the supervision of the High Commissioner for Canada. The toast was acknowledged by Lord Lawrence of Kingsgate and the Master of the Rolls (Sir Finest Pollard). The toast of "The Harveian Oration" was given by Sir John Rose Bradford, senior censor, and acknowledged by Sir Frederick Mott in a general speech.

THE NATIONAL COLLECTION OF TYPE CULTURES

WE are glad to see that a second edition of the catalogue of the National Collection of Type Cultures has been issued.¹ The museum of cultures of bacteria, yeasts, and moulds has grown very considerably since it was founded five years ago, and in the three years which have elapsed since the last edition of the catalogue appeared many additions have been made to the collection. The number of living strains of bacteria, yeasts, and moulds now being maintained in cultivation exceeds 2,000. The National Collection of Type Cultures is particularly useful for two reasons. In the first place, it assures continuity in bacteriological research by preserving historic strains with which new cultures may be compared. Secondly, it serves as a storehouse from which any pathologist can, for a small fee, obtain any particular culture he wishes to study. This service satisfies a real need, as shown by the fact that over 4,000 cultures were distributed to workers throughout the world in 1924. The arrangement of the second edition of this catalogue is more convenient than that of the first. The first part gives a list of the cultures in alphabetical order. The second part gives a list of subjects and their related micro organisms. Thus, if we turn to food poisoning in man we find the names of seven different species of bacteria which are preserved in the collection, and the full name and a certain amount of detail about the origin of each culture can be found by turning to the alphabetical index in Part I. The fungi are always troublesome to label, and we notice that the nomenclature used for these is that which has been adopted by the British Mycological Society. It would add to the value of this catalogue if a little more information were given about the origin of some of the less familiar cultures, and in every case references given to publications in which the rarer cultures have been described. Such references are given for many of the cultures, but, oddly enough, references seem scantiest among types with least pronounceable names. To harvest this collection of germs must have necessitated an enormous amount of work. It is a most useful asset to science.

SCIENTIFIC AND INDUSTRIAL RESEARCH

THE report of the Committee of the Privy Council for Scientific and Industrial Research for 1924-25, to which brief reference was made in our last issue (p. 725), shows that its annual expenditure is increasing, in 1923-24 the estimates amounted to £276,863, last year to £328,281, and for the coming year to £380,263, all these figures including administrative expenses. They are evidence of a growing appreciation of the importance of scientific research to industry. This is exemplified also by the founding of a research association by the colliery owners in accordance with a scheme recommended by the Department of Scientific and Industrial Research, it is financed by a levy of approximately 1/100 of a penny on each ton of coal raised, no grant being required from the department. Proposals are being considered for the establishment of a Food Research Association, which it is anticipated will receive the aid of a grant. During the year the Glass Research Association and the British Portland Cement Association have concluded their operations. For the former association insufficient funds were forthcoming from the industry, but the Privy Council Committee has decided that the progress of the research work on the viscosity of glass at high temperatures should not be interrupted, nor the x-ray and electrical investigations of the constitution of glass which form part of the ordinary programme of the National Physical Laboratory. We referred on August 30th, 1924 (p. 374), to the work carried on by Sir William Bragg in connexion with the x-ray analysis of

crystals, and it is interesting to note that more than thirty papers have been published on this subject by Sir William and his collaborators during the year under review. The investigations undertaken by the National Physical Laboratory cover a very wide field, as we indicated last April (p. 750) when discussing its annual report for 1924. It may be added here that the work of the laboratory, which is under the supervision of the Privy Council Committee, includes test work in radiology and the inspection of hospital x-ray apparatus and departments. It is announced that there has been marked improvement both in this apparatus and in the protection afforded to operators. We have on several occasions referred previously to the work of the Food Investigation Board, of which Sir W. B. Hardy is chairman. Attention has been centred mainly upon the problems associated with the freezing of beef, the preservation of eggs, and the use of cold and carbon dioxide in the preservation of fruit. The freezing of tissues has been found to involve displacement of the water in them, which may result in a permanent alteration of their microscopic structure, and also in destruction of their finer molecular structure. The relative efficiency of "gas" and "cold" storage of fruit and the development of the fungi concerned in the rotting of fruit are also being carefully studied. A survey of the conditions of fish transport in this country and in France is published in a special report. Work is also proceeding in the laboratory on silver-tin amalgams for dental work, and at Guy's Hospital on substitutes for the materials now used in the preparation of dentures. In this latter respect synthetic products are being studied, and there is some promise of a satisfactory outcome.

DISABLED MEN AS MOTORISTS

IN the course of a recent correspondence in the *Times* on safe driving, there was published a letter from Mr. B. H. Austin, chairman of the Disabled Drivers' Motor Club. In it he pointed out the difficulty of having a definition of physical disability such as would debar a person from the right to drive a car. He said that some years ago he had undergone amputation of both his legs, but that nevertheless he covered an average of 20,000 miles a year in his car, and offered to drive a magistrate, who appeared to believe in physical tests for motorists, either through the City at muddy or at top speed he led at Brooklands. Mr. Austin drives his car in the ordinary way by means of his artificial limbs. The members of his Disabled Drivers' Motor Club are mostly deficient in one or two limbs. It is rather unlikely that the authorities will attempt to exact tests of physical fitness before issuing licences to drive, although one newspaper stated lately that tests for physical fitness would be instituted for applicants desiring to drive public vehicles. It is extremely doubtful whether in this or any other case the procedure will be of any real value. Blindness is probably the only defect which can be said certainly to be a bar to motor driving. Deafness need not incapacitate, since the deaf can train their eyes to greater perfection than the ordinary man attains. Defect in limbs, either from amputation or paralysis, does not necessarily disqualify, as Mr. Austin has shown. There remain for consideration certain diseases or conditions, such as heart disease, epilepsy, apoplexy, alcoholism, neurasthenia (which in police courts appears to have some affinity to alcohol), insanity, and old age. None of these conditions seems to be sufficiently amenable both to diagnosis and prognosis to make systematic examination of motor drivers justifiable. It may be agreed that a man with aortic disease or angina pectoris, an epileptic, an insane person, and perhaps a man who has had a stroke, ought not to drive motor cars. But the number of such persons who attempt to do so must be small, and the number of such

¹ Medical Research Council Special Report No. 6. Price 2s.
² Cmd. 2431. London: H.M. Stationery Office 1925. 3s. net.

persons who become involved in accidents still smaller. And though serious heart disease or the paralysis following a stroke are detectable, how is the epileptic or the madman who wishes to drive a car to be made to give himself up? As for the alcoholic, the neurasthenic, and the aged, few medical men would care to fix limits in these conditions within which driving might be considered safe. If a man of 80 is to be barred because of his age from jogging into the neighbouring village in his light car, why not make searching inquiries about the man who may have happened on some occasion to go to sleep at the wheel? It would probably be useful if the medical profession told the public authoritatively that in certain circumstances a man should refrain altogether from driving motor cars. Such circumstances might include liability to angina pectoris, to epilepsy, and a previous attack of apoplexy. With such information sufficiently disseminated, any sufficient from one of these conditions who caused an accident could be properly dealt with. As for the alcoholic and the neurasthenic, the medical profession may prefer to leave the fate of these persons to the wisdom of individual police-court magistrates. If a man cannot recognize that he is too drunk or too "nervy" to drive, he has himself to blame for his lack of judgement. The problem of disabled or defective motor drivers is interesting, and it is one in which the medical profession may be able to give guidance to the public.

BRIGHTON WORTHIES

BRIGHTON last week paid a tribute to some of the worthies of the past who have shown their appreciation of its health giving breezes by having their or giving it frequent visits. A tablet to the memory of Herbert Spencer, attached to a house in which he lived for some years, was unveiled by Sir John Ottewill. The second worthy to be honoured was Dr. Richard Russell, a memorial plaque to him has been put up on the site now occupied by the Royal Albion Hotel, on which in 1754 he built a house which became known as "Russell House".

Sir Frederick Mott, who unveiled this tablet, observed that, though Thackeray had said that the Prince Regent intended Brighton, it would be truer to assert that Dr. Russell discovered Brighton and made it famous. He wrote a dissertation on the use of sea water in the treatment of glandular disease, a copy of this book, written in Latin, was in the library of the Royal Society, and Dr. Russell might have got his idea from the line of Lauroides he quoted: "The sea washes away all the ills of man." In another book, which he gave to his friends, Dr. Russell had expressed his ideas of what a sea-bathing place should be and what Brighton was. "It should be clean and neat and some distance from the opening of a river, that the water may be rich with sea salt and the other riches of the sea. It should be bounded by lovely cliffs and downs to add to the cheerfulness of the place." Dr. Russell did not know at that time what science had now taught us to the value of sunshine for the cure of tuberculous diseases of the joints and glands. It was the invisible ultra violet rays of the sun that were helpful, and people when they basked in the sea got all the benefit of the sunshine and during their visit to Brighton spent much time in the open air. Pure sea air and sunshine helped Dr. Russell in the treatment of disease, made him successful, and Brighton fashionable. The third tablet, to Mrs. Fitzherbert, has been erected on Stone House, where she lived from 1804 till her death in 1837. It was unveiled by Alderman C. Thomas-Stanford. The fourth tablet has been placed on the Bedford Hotel, where Charles Dickens was a frequent guest. Afterwards a luncheon was given by the directors of the Bedford Hotel, the chair was taken by the chairman of the directors, and Dr. A. H. Copeman occupied the vice-chair. A toast was drunk to those who had unveiled the several tablets. Sir Frederick Mott, in his reply,

said that Dr. Russell must have been a very far-seeing man, and added that he had always looked upon Dickens as the greatest sanitary reformer the country had ever had. The menu was illustrated by a portrait of Dickens and by a facsimile letter written from Travestock House on November 30th, 1852, ordering a dinner at the hotel for himself and John Leech, which was to be ready for them at half-past four, when they would arrive after a walk on the Downs that morning.

IMMUNIZATION AGAINST DIPHTHERIA IN AUSTRIA

WE have previously (March 8th, 1924, p. 454, and December 6th, 1924, p. 1064) referred to the danger that may attend the use of toxin-antitoxin as a preventive of diphtheria, and further evidence of this is now supplied by Helmreich.¹ He reports that in a home for infants and young children at Baden, near Vienna, active immunization against diphtheria by toxin-antitoxin was carried out on forty children owing to an outbreak of the disease. Six of those inoculated died with local and general symptoms of diphtherial intoxication, and a number of other children showed skin necroses of various sizes at the site of injection. The 20 per cent. ovenacitized preparation of toxin-antitoxin which had been employed for immunization had been tested before use on guinea-pigs and found non-toxic. The fatalities could only be attributed to a dissociation of the toxin-antitoxin mixture, but the causes of this dissociation could not be determined. In the circumstances the Austrian Ministry of Health referred the matter to Professor Pirquet, who came to the conclusion that, in view of the mild form of diphtheria prevalent in Austria, active immunization was unnecessary, and that the following method, which had been employed in his clinic during the last few years, should be continued. Groups of children, including those in hospitals, infant homes, and schools, among whom there had been a case of diphtheria should be carefully examined clinically. Those with symptoms suggestive of diphtheria should at once be injected with antitoxin, while the Schick test should be performed on the others. Those with a negative reaction would require no further treatment, but those in whom the reaction was positive should receive a prophylactic injection of antitoxin. If the epidemic assumed a severe form, or if new facts were brought to light showing that an absolutely harmless vaccine could be prepared, the matter could be brought up for discussion again. In the meantime he recommended that active immunization should be discontinued. The Austrian Ministry of Health adopted Professor Pirquet's recommendation, so that active immunization of children against diphtheria has now been forbidden in Austria.

DE NOVO

ON October 9th (as recorded in our Scottish news this week) Professor John Fraser delivered at Edinburgh his inaugural lecture as Regius Professor of Clinical Surgery in the University, which he entitled "De novo." In it he imagined himself a student again, and outlined the education he would wish to be arranged for him as a future practitioner of medicine, in the light of his present experience. He viewed with regret the tendency of medicine to become every year more of a science and less of an art. Medicine is, perhaps, the most rapidly developing of all sciences, and in some respects is a mirror reflecting the progress of every branch of study, art, and profession. Fraser, the student pressing from his secondary school to the university, instead of appreciating the glorious freedom of the university method of education, finds himself in a close barred prison. The radical change in the method of instruction means a ship without a rudder. The cause of this defect, according to Professor Fraser, is to be found in

¹ *Elton Week*, August 27th 1925, p. 1697.

DR ANDREW BOORDE

the system of school education the student has never been taught how to work. The remedy suggested is that at a certain stage in his career, preferably before beginning the study of the basic sciences, every scholar should be given a short course in elementary logic, so that he may learn the logical process upon which the acquisition of knowledge is based. Then the science of induction—observation, elimination of the irrelevant, and inference—will no longer be a closed book. Beyond this Professor Fraser would have greater elasticity in the school curriculum, a reduction in the amount of set tasks and routine exercises, encouragement of nature classes, and simple studies in observation and deduction. The most productive course for later school years would be a liberal general education, including a sufficient knowledge of Latin and Greek to enable the student to understand the etymology of his profession, and as perfect a knowledge as possible of French and German, together with progressively intensified instruction in physics, chemistry, and biology. Were he once more at the stage of beginning *de novo*, Professor Fraser would be prepared to make great sacrifices to take an arts course before commencing the study of medicine. He is thus a strong advocate of general culture in the education of the future medical student. In his advocacy of a short course in logic he follows the late Mr C B Lockwood, who was in the habit of advising his dressers to read Jevons's little book on elementary logic. Though the volume was perhaps not very palatable, the advice was sound. Perhaps Professor Fraser, like Huxley, would prefer that the student should have obtained his acquaintance with logic by example rather than by precept.

DR ANDREW BOORDE 1490-1549

At the first meeting of the eighti-seventh session of the Liverpool Medical Institution, on October 15th, the President, Mr R C Dun, delivered an inaugural address on the life and writings of Andrew Boorde (1490-1549), his travels abroad, and his quaint observations set forth in his *Bolc of the Introduction of Knowledge*. Andrew Boorde, who latinized his name into Andreas Perforatus, was brought up as a Carthusian. He relinquished the order, and studied medicine at Orleans, Toulouse, Montpellier, secret Wittenberg. He was a friend of Thomas Cromwell, secretary to Cardinal Wolsey, and, it would appear, carried out confidential missions to France and Spain. In spite of his diatribe against the Scots—the devilish disposition of a Scotchman not to love or favour an Englishman—his wit is said to have been given birth to the word “merryandrew,” and the story of Tom Thumb has been attributed to his pen. His *Itinerary of Europe* has perished, it is said he lent it to Thomas Cromwell, who lost it. His *Itinerary of England* is still preserved, and gives a good account of England, its highways and castles, and contains quaint and at times scathing observations on Englishmen and their manners. There was, he said, in all the world no region nor country that doth use more swearing than is used in England. The *Bolc of Berdes* (beards) contains Boorde's denunciation of this male adornment interspersed in his prose are doggerel rhymes, of which Mr Dun gave an amusing sample. Boorde's purely medical works, the *Dietary* and the *Breviary of Health*, are full of sound common sense, more or less interwoven with alphabetical order and among articles of dress children's shoes are discussed. Idleness of youth is severely reprimanded, and overdrinking condemned at all periods of life, water, on the other hand, is strongly recommended. A house, Boorde insisted, should have a gravel foundation, pleasing views and plenty of air space if it had a moat the water should be supplied by a spring. Mirth and outdoor

exercise should be assiduously pursued, and dumb-bell exercise should be enjoyed when the weather is wet. On the other hand, he extolled shut windows at night, a scarlet nightcap, and a feather bed! Lastly, Boorde has given us the earliest known specimen of the gipsy language. He died in prison, probably for some political offence, and left his property to his fellow prisoners. Boorde was a versatile man, insatiable fond of travel, physician, humorist, a great believer in cultivating mirth, and honest in his piety. The members thoroughly appreciated the address and their thanks were proposed by Dr Abram and seconded by Dr Henry Harvey in graceful terms. Afterwards the President entertained the members to refreshments and music.

HEALTH WORK OF THE LEAGUE OF NATIONS

The Health Committee of the League of Nations met at Geneva for its fifth session on October 8th. Its business was to consider the several proposals made recently by the different Governments for the extension of its work, which had been referred to it by the Assembly. The Committee enumerated in our Geneva correspondent's article of September 26th (p 578) One matter of particular interest to the British Empire is a request from the High Commissioner for the Union of South Africa that the Health Committee should undertake an investigation into the prevalence of tuberculosis amongst native tribes in South Africa, and especially amongst the natives employed in the mines. The League Council has approved the recommendations of the International Conference on Sleeping Sickness, held in London last May, and arrangements have now been made for the dispatch of the international commission of investigation which is to spend next year at Entebbe, Uganda, studying this disease with the aid of the Government laboratories placed at its disposal by the British authorities. It was also decided that medical officers from Great Britain and eight other countries are to make a collective study of health organizations in all the principal Mediterranean ports, and another interchange in which medical officers from Australia and New Zealand and a number of Asiatic countries are participating is being held this month in Japan.

ELIZABETHAN MEDICINE

As announced, the first social evening of the Royal Society of Medicine this session will be held on Tuesday next, October 27th, at 8.30 p.m. The President, Sir St Clair Thomson, after receiving the guests, will give a short address on “Shakespeare as a guide in the art and practice of medicine.” The exhibition arranged by Mr C J S Thompson of the Wellcome Historical Medical Museum will embrace portraits of the leading physicians of the Elizabethan period, as well as books, engravings, medals, and specimens (with appropriate quotations) of all the drugs and medicinal plants mentioned in the plays. It has been arranged for the exhibits to be on view at 2 p.m. on Tuesday, and to remain available until Wednesday at 5 p.m.

The autumn lectures at the Royal College of Physicians of London will be given as follows: the Bradshaw Lecture by Dr Edwin Bramwell, on the myopathies, on Thursday, November 5th, the FitzPatrick Lectures by Dr Arthur Shadwell, on medicine in ancient Egypt, Assyria, and Palestine, on Tuesday, November 10th and Thursday, November 12th. These lectures will be given at the College at 5 p.m. As already announced, the Lord Roberts Lecture by Sir Arthur Keith, on man's structural defects, will be delivered at the house of the Royal Society of Medicine (1 Wimpole Street W.) at 5.30 p.m. on Monday, November 16th.

Nova et Vetera.

VISUAL HALLUCINATIONS

MR ARTHUR OMOND has raised a very interesting question in the paper which he read before the Section of Ophthalmology at Bath on "Visual hallucinations in sane people" (*BRITISH MEDICAL JOURNAL*, August 29th, 1925, p 376). Some of those which he described were doubtless, as he suggests, manifestations of migraine of an unusual type, others, again, seem to be merely visual memories of things seen, of which the mental memories have faded away. Mr Omond remarks that this subject seems to have attracted more attention at the beginning of the last than in the present century. This is doubtless true, and so much has interest in the subject declined that even Mr Omond makes no allusion to the remarkable facts recorded by Sir David Brewster, and published in his *Letters on Natural Magic*, addressed to Sir Walter Scott, whose interest in tales of demonology and witchcraft was well known. The celebrated case of "Miss A," which was recorded in that book, presented some remarkable features, in that the hallucinations were not only visual but also auditory, and that some of the former could not be memories of things actually seen and forgotten, seeing that they represented appearances which could not have at any time been presented to her external visual organs.

Some of the illusions of sight and sound to which Mrs. A. was subject were such as are familiar to readers of well authenticated and of fictitious ghost stories. The well known voice which called to her as if for help, the appearances of her (living) husband and of deceased friends, and particularly the form of an absent friend, which, clad in grave-clothes, was seen in a mirror, were, however, unconnected with any tragic circumstances at the time or afterwards. The husband whose plaintive voice appeared again and again to her to come to him was at the time in no difficulty or distress, and was then and long after in good health. Those who think that appearances of deceased persons are supernatural will consider that Miss A.'s experiences in this connection were of grave psychical importance. Miss A. herself did not attach any such meaning to them. The lady who appeared in such gruesome garments in the mirror while Miss A. was dressing her hair was at the time alive and well, and neither she nor Miss A. was one penny the worse for the experience. One rather persistent apparition of a deceased friend, which seemed to be seated in a chair and showed no disposition to fade away, was got rid of by Miss A. sitting down in the chair herself and feeling no resistance in so doing. She owed the hint on which she thus relied to Sir Walter's book on demonology.

Although the mind of Miss A. was in no way deranged she was in a weak state of health at the time when she was subject to these illusions, and there can be little doubt that this circumstance was closely connected with the appearances. Dr Samuel Hibbert,² who wrote on apparitions a hundred years ago, laid much stress on the influence of bodily health in the production of spectres and hallucinations and brought forward much evidence in the support of his theories. At that time the inhalation of nitrous oxide gas was a novelty, and it is interesting to note the very extraordinary effects on the mind which its inhalation seems to have produced. It is, of course, to be remembered that a rather free dilution with air accounted for the excitement caused by "laughing gas." But just as the first experimenters with the electric shock from a Leyden jar declared that they felt results far beyond the every day experiences of modern schoolboys, so the new gas in the glow of its recent discovery caused visions and dreams of surpassing beauty or wellnigh unspeakable horror.

Dr Hibbert described appearances which, like those seen by Mrs. A., ought, according to all orthodox ghostlore, to have been followed by disaster, but which, like hers, had no notable sequel. Seers have been men and women of

various grades of intellect. A coler, the Berlin bookseller, who was so persistently "haunted," was a very intelligent man. Martin Luther is certainly no fool, but he had many dealings with the visible and the invisible, who, among other announcements, disturbed the reformer by creaking nuts against his bedpost.

"Dr Johnson said that one day at Oxford as he was turning the key of his chamber he heard his mother distinctly calling, 'Sam.' She was then at Lichfield, but nothing ensued."

The believers in the prophetic or spiritual significance of wraiths may retort on such instances that there is a vast majority of recorded cases which are connected with death or disaster, and the sceptic may answer that very few of the cases without sequel are recorded. How much the mental attitude of cultivated persons has changed may be judged from Dr Hibbert's notes on Dr Johnson's experience, that—

"This casual admission which in the course of conversation, transpired from a man, himself strongly tainted with superstition, precludes many further remarks on the prophetic nature of these impressions, which would now indeed be highly superfluous."

Dr Hibbert could hardly be expected to foresee Sir Oliver Lodge and Sir Arthur Conan Doyle and all the twentieth century seers of furies and heretics of spooks, any more than he could foretell such scientific developments as wireless telegraphy and the internal combustion engine. For our part, we confess to a preference for the merry if mischievous devils of Martin Luther and Reginald Scot, whose *Discoverie of Witchcraft and Discourse on Devils and Spirits* will repay its reader, as much for its racy English as for its unintentional as well as its intentional humour.

HEALTH ORGANIZATION IN SOUTH-EASTERN EUROPE

THE Health Section of the League of Nations has added two new monographs to its series descriptive of the organization of public health services in the countries belonging to the League. One is for Czecho-Slovakia and the other for Serbia and its new provinces.

Czecho-Slovakia

Czecho-Slovakia is a republic under an elected president, and was carved out of the Austro-Hungarian Empire. Three of its provinces (Bohemia, Moravia, and Silesia) were formerly under the crown of Bohemia, and two (Slovakia and Ruthenia) belonged to Hungary. Each province had its own administrative government and when the State of Czecho-Slovakia came into existence each province retained its own administrative powers, inherited from the old system. From the outset endeavours were made to establish uniformity, but nevertheless Dr Hynek J. Pele, D.P.H., whose essay on the organization of the public health services in Czecho-Slovakia is now two years old, had an extremely difficult task. Czecho-Slovakia has an area of fully 54,000 square miles and a population of more than 13½ million. The plan formed was to divide the country into counties and county districts, with district committees and district offices, and county councils and county committees, charged with financial, sanitary, and social responsibilities, with roads, and with educational establishments. An exception was made for Ruthenia, which, with its local Diet, remained independent, though attached to the republic. For want of funds, however, the plan has not so far been carried out, excepting in Slovakia, and though it is being considered for Moravia years will probably elapse before it is generally adopted throughout the country.

It is not our purpose to follow Dr Pele through his interesting and detailed account of all that is being done for public health in Czecho-Slovakia. With the aid of the Rockefeller Foundation and State Institute of Hygiene is being established, it will consist of several sections devoted to the Pasteur treatment, the production of small-pox vaccine, the analysis of foodstuffs and drugs, experimentation in water purification and sewage disposal, and so forth. Attached to it will be a school for training medical officers of health. Other subjects dealt with by Dr Pele are the

¹ Reprinted by T. H. Huxley as an appendix to his *Lessons in Elementary Physiology*.

² Sketches of the M.D. FR.S.E. (The

etc. By Samuel Hibbert Edinburgh, 1823.)

England and Wales.

Sir WILLIAM HAMER's Successors
 On October 20th the London County Council appointed Dr F N Kny Menzies to be county medical officer of health and school medical officer in succession to Sir William Hamer, whose forthcoming retirement was announced in our last issue. The Council, in July last, decided to invite from its medical staff, permanent or temporary, whole time or part-time, applications for the appointment which was to become vacant at the end of the year. Nine applications were received, and a special sub-committee was set up to interview all the candidates and to advise as to the appointment. As a result of this preliminary sifting out, two candidates appeared before the General Purposes Committee, and after interviewing them the committee unanimously decided to recommend to the Council the appointment of Dr Menzies. The appointment will date from January 1st, 1926, and the salary will be £2,000 a year. Dr Kny Menzies graduated in medicine at the University of Edinburgh in 1899 and proceeded M.D. (with distinction) in 1903. He obtained the D.P.H. of the London Conjoint Board in 1905, and was elected I.R.C.P.E.d in the following year. After graduation he studied abroad for a year, and held resident hospital posts in London, Edinburgh, and Dublin. From 1907 to 1911 he was lecturer and demonstrator in the public health laboratory of University College, London, and deputy medical officer of health for Stoke Newington. He then became a whole-time assistant medical officer under the London County Council, and in 1914 was appointed principal assistant medical officer in the public health department. In this capacity he was responsible for the organization which built up the London County Council schemes for the diagnosis and treatment of tuberculous and venereal diseases. In April, 1924, the Council appointed him consulting medical officer for these diseases, on his election as director of the hospital and medical services department of the Joint Council of the Order of St John and the British Red Cross Society. Dr Menzies' other recent activities have included membership of the Voluntary Hospitals Commission and of the Trevelyan Committee of inquiry into the means of preventing venereal diseases, and he has represented Great Britain at international medical conferences held in Cannes, Geneva, and Copenhagen. His latest annual report on the voluntary hospitals of Great Britain was summarized in our last issue (p. 717).

called for, but without a specialist medical practitioner is not able to obtain medical aid at all."

Malaria—A very important section of Dr Stampar's report is devoted to malaria. The kingdom "is one of the most malaria-infected countries in Europe. At the present moment more than a million of its inhabitants are suffering from this disease, it is impossible, on account of the lack of doctors in certain parts of the country and of transport difficulties, to ascertain the exact figures, but we know that the whole of Dalmatia, the islands off the south coast, the southern part of the former Montenegro-Herzegovina, the southern reaches of the rivers Save, Theiss, and Danube, and the whole of Macedonia, are infected. The great number of cases and the material loss entailed thereby have made malaria one of the most anxious problems with which the kingdom has to cope." In 1921, in certain districts in Dalmatia with 32 548 inhabitants, 10,315 were examined, and it was found that 7,503 of them were suffering from malaria and that 73 per cent had enlargement of the spleen. Following these impressive statements an interesting account is given of research during, and since the war. It is clear, however, that control of malaria is the most tremendous problem with which the new kingdom has to deal. Indeed it may be said that its whole prosperity, even its national survival, depends on the success of its antimalarial policy and work. Malaria in South-Eastern Europe was further referred to in our article on the epidemiology of 1924, published on September 12th (p. 483).

WORKSHOPS FOR TUBERCULOUS PERSONS

In connexion with "Health Week" in the Borough of Holborn, a conference was held at the town hall on October 7th for a discussion on the provision of workshops suitable for tuberculous men and women. The Mayor of Holborn (Mr H Warren Coleman, J P) said that in the borough at Hatton Garden, such a workshop for men had been in existence for some time, and had proved in many respects successful. He hoped that, following upon the suggestions made at the conference, it might be possible to start a workshop on a larger scale, and one which would employ women as well as men. Mr G H Walmisley (chairman of the Public Health Committee of the London County Council) described some of the difficulties which faced any local authority in tackling tuberculosis. One great source of difficulty was that the benefit received by the tuberculous person under national health insurance was provided for only a limited time, and for this reason the persons often discharged themselves from sanatoriums earlier than the authorities considered desirable. The London County Council had suggested to the Royal Commission on National Health Insurance that surplus insurance funds should be devoted in part to subsidizing work shops in such a way that a living wage could be afforded for those who were unable to do a full day's work. The alternative was, indeed, which was had economically and from the point of view of the patient's own chances of recovery. Dr Otto May (read at

office to the Prudential Assurance Company) said that insurance companies realized very clearly the importance of this subject in view of the heavy claims which tuberculosis made upon them. But it was obvious that such workshops could not be self-supporting. The large insurance companies had considerable reserves, and although this money was not for the purpose of experiment he thought that assistance might be forthcoming from other quarters. Dr. Irden Guest, M.P., wished to see the establishment of workshops where persons could work while still under medical treatment. At present some medical men failed to notify tuberculosis from their desire not to deprive a man of his work. One method of dealing with the matter would be to pay, through national health insurance, a special sickness rate for tuberculosis in its early stages. He agreed that value and he was glad to hear the doctrine enumerated that a subsidy in this particular respect was really excellent. He suggested that the organizers of the Holborn workshop should get into touch with local trade unions and ask their co-operation in propagandists among their own members, both with regard to the need for early notification and the detrimental nature of the disease to society as a whole. Dr. Harry Campbell spoke of the number of tuberculous patients who were capable of performing light work and yet looked about, leading aimless lives. It would be of great advantage if they could be collected together and given work in workshops constituted under the most hygienic conditions, and workshops of this kind would be a boon both to the patients and to the community. Dr. Noel Birdswell, representing the Central Fund for the Industrial Welfare of Tuberculous Persons, said that the Hutton Garden factory was the first of its kind in London, and complemented the factory was twenty-four persons, at present twenty three were employed there the youngest, at 16 years of age. They worked from 8.30 a.m. to 5.30 p.m., with certain intermissions, and every year had a holiday on full pay. Medically speaking there was no question that these workshops had been an enormous success. There had been quite a small amount of sickness, and a surprising improvement in general health. Dr. Lennane (M.O.H. Battersea) also welcomed the experiment, and mentioned that his own borough was a pioneer in dispensary treatment. Various suggestions were made for the more suitable and extensive employment of tuberculous persons. It was urged that the problem was a national and not a local one and called for the formulation of some national scheme. One speaker suggested that attention should be turned to forestry as a suitable employment for tuberculous persons, especially in view of the report of the Commission on Forestry that there were 21 million acres of ground available for this purpose.

THE ANNUAL MEDICAL SERVICE IN LIVERPOOL

The annual medical service in Liverpool was held on St. Luke's day (Sunday, October 18th) at the Cathedral. There was a large attendance of medical men and women, of whom some wore academic dress. The Lord Mayor, Raven D.D., and the Cathedral was full. Canon for his text preached the sermon, taking Acts vii, 9, 10, and it was only through the combined efforts of medicine and religion that permanent improvement could be secured. He looked forward to the future with hope, realizing how important this was in medical practice. There was in the priest and physician much in common, and God's gifts well known of mankind. The Bishop of the diocese gave the benediction. The musical part of the service was beautifully rendered and the anthem "Ho, every one that fully rendered and the anthem "Ho, every one that thou. Mr. H. Gosse Custard, Mus. Bac. Oxon, the

Cathedral organist, was at the organ. The offertory, on behalf of the Royal Medical Benevolent Fund, amounted to £111. Dr. J. Ernest Nevins, 32, Princes Avenue, is the local honorary treasurer, and he will be pleased to receive donations from those who were unable to be present. The arrangements and marshalling of the medical men and women in the stately procession from the chapter house along the ambulatory to their places were carried out most efficiently. A word of thanks should be given to Dr. Nevins for his untiring efforts, which made this service a memorable occasion in the medical life of the city.

TREATMENT OF MENTAL DEFECTIVES IN SOMERSET

On September 23rd a residential special school and home for mentally defective girls in Somerset was opened at Sandhill Park, Bishop's Lydeard, by Dame Monica Wills, the widow of the late Mr. Henry H. Wills, who had been a very prominent supporter of this scheme. About forty patients are at present residing on the premises, which will accommodate 119. The estate will be developed later into a farm and industrial colony for the feeble-minded. The necessary alterations of the house were planned by Sir George Ortleigh, who designed the buildings of Bristol University. Mr. J. Cooke Huile, chairman of the Somerset County Council, referred to the opening during last summer of a county hospital for consumptives, and emphasized the value of the work of the Somerset branch of the Voluntary Association for the Care of the Feeble-minded. After paying for the equipping of the building presented to them by Mr. H. H. Wills, there still remained more than £10,000 for the cost of further extensions. The chairman added that about 1,000 mentally defective patients in the county, who did not require institutional treatment, were being kept under supervision by voluntary helpers, in this way considerable expenditure was being obviated.

PREVENTION OF DIPHTHERIA AMONG LONDON SCHOOL CHILDREN

Following upon a resolution of the London County Council last year, referring it to the Public Health and Education Committees to consider and report whether or not the treatment carried out by the department of health in New York City for rendering children immune from diphtheria should be adopted in London schools, the two committees reported to the Council on October 13th that they had had before them a review by the medical officer of the work which had been carried out in connexion with diphtheria immunization for the control of diphtheria, both at home and abroad, and that it was understood that the Ministry of Health was conducting inquiries with regard to immunization of the staffs of fever hospitals and in connexion with maternity and child welfare work. The committees had been advised that these lines of investigation should be thoroughly explored before further consideration was given to the question of immunization of children of school age, and therefore they were of opinion that it was not advisable at the present time that toxin antitoxin treatment in connexion with the prevention of diphtheria should be adopted as part of the Council's scheme of medical treatment of school children.

LEICESTER PERSONAL HEALTH ASSOCIATION

The Leicester Personal Health Association has recently been inaugurated with a view to developing further health propaganda in the city of Leicester and to act as a medium for disseminating sound information on public health and general health, in order to educate the public in preventive measures. It is proposed to hold short lectures fortnightly from October to April of each year, at which medical authorities and others will speak on health subjects. The objects of the association have been approved by the Leicester and Rutland Division of the British Medical Association. The president is Dr. R. Wallace Henry, and among the vice-presidents are Mr. C. J. Bond, I.R.C.S., Dr. C. Killick Millard, the local members of Parliament, and other prominent citizens of Leicester.

SCOTLAND

Scotland.

CHAIR OF CLINICAL SURGERY AT EDINBURGH
PROFESSOR JOHN L. FRISER, M.D., Ch.M., who was appointed last summer to be professor of clinical surgery in the University of Edinburgh in succession to Sir Hugh Stiles, delivered his inaugural address under the title "De novo" on October 9th.

After references to some of his predecessors in the chair, Professor Friser discussed some points in the medical education of students. Medicine, he said, must be regarded as a science which was concerned with the balancing, scrutiny, and investigation of facts the result being achieved by the employment of mechanical devices, combined with the aid of mechanical devices. He believed it to be true, although he acknowledged it with regret, that with every very medicine became more of a science and less of an art. In some respects it was the mirror in which was reflected the progress of practically every study pursued by the physicist, the chemist, the artist, and the inquirer. Medicine adopted and adapted all these, for its aims were very ethereal and its interests very wide. The student who passed from a secondary school into a university had a terrible first experience. He appeared to have attained a glorious freedom, and yet the lecturer who had been rather like a prison with the closest bars, because others had found the change in the method of instruction so far as he had never been taught at school how to work. The science of induction—observation, elimination of the irrelevant, and inference—was a closed book to him. Between man and man there was concerned, it was the case where mental machinery was concerned, and many a student came to the university with a vital deficiency which he had never been taught at school how to work. The science of induction—observation, elimination of the irrelevant, and inference—was a closed book to him. Between man and man there was concerned, it was the case where mental machinery was concerned, and many a student came to the university with a vital deficiency which he had never been taught at school how to work. The science of induction—observation, elimination of the irrelevant, and inference—was a closed book to him. Between man and man there was concerned, it was the case where mental machinery was concerned, and many a student came to the university with a vital deficiency which he had never been taught at school how to work.

THE SHOULDER BLADE AS AN INDEX TO HUMAN TYPES

Professor William W. Graves, M.D., Professor and Director of the Department of Medicine, St. Louis University, U.S.A., delivered a lecture on October 16th in the anatomy classroom of Edinburgh University, dealing with the "Relation of shoulder-blade types to problems of mental and physical adaptability." The lecture was given under the auspices of the Henderson Trust, and Lord Salvesen occupied the chair. The lecturer recalled that no structures in the organism of man had been more carefully studied than his bones, which expressed his individuality, and determined other bodily form. Notwithstanding the processes of growth, they largely preserved their individual characters from birth to the grave. In 1806, Professor Graves continued, he became impressed with the fact that shoulder-blade differed in type, though no one previously had noted any particular differences in them. Most textbooks of anatomy described the vertebral border of the shoulder blade as convex, but shoulder-blades could be classified into convex, straight, and concave types, and he found that this classification ran through all accepted racial and modern human stocks, and also through the human species. By the tenth week of foetal life the shoulder blade had attained the essential form to which it ever afterwards conformed. The type of shoulder blade was handed down from parent to progeny. In America 80 per cent of the population presented straight or concave types in the first ten years of life, whereas in the age period between 70 and 80 years only 20 per cent possessed these types. The three possible explanations. Either that one type changed into another by the natural process of senescence, or that environmental influences, such as occupation, disease, etc., changed one type into another, or that on type of scapula was found in potentially longer-lived individuals. There could be no biological reason why human beings should have the same type of shoulder blade any more than why they should all have the same type of skull or other morphological feature, but he would hesitate to say that environmental influences could give one chimpanzee a convex, another a straight, and another a concave type of scapula. The fact that scapular type were usually constant in transmission from one generation to another, and that the type was marked in early life, remained more or less fixed after their earliest formation. The inference was that mortality was greater among the possessors of the straight and concave, especially the concave, than among the possessors of the convex scapula. He believed, therefore, that the application of scapular classification would lead to the recognition of factors underlying individual health and disease.

ROYAL MEDICAL SOCIETY OF EDINBURGH

The 189th session of the Royal Medical Society of Edinburgh was opened in the Society's Hall on October 16th with an address by Sir James Purves Stewart, K.C.M.G., M.D. The chair was occupied by the senior president of the society, Dr. Drummond Shiels, M.P., who said that the Royal Medical Society was the oldest society of its kind in the world. It occupied a unique position in the affection of its members and in the enthusiasm with which its active student members took part in its weekly meetings. Sir James Purves Stewart entitled his address "Comradeship in science." He said that the biological importance of the herd instinct could hardly be overestimated, and independent individuals became more efficient when combined into families, nations, and races. The lowest type of herd, said the lecturer, giving examples from the animal kingdom was that of the communists, where all were equal workers and fighters. There were also types where one individual was entrusted with a kind of monarchy as in the case of the queen bee. Similarly, man could only

reach his highest development by following this instinct, and in civilized communities the herd instinct was the dominating instinct, and had imposed restraining influences upon the other instincts. Socialism of a constructive type, he said, had prevailed in a small but important part of the community, and men of science had formed a habit of pooling their knowledge for the general advancement of science. Advances in science were rendered more possible by team work. Men of science did more than share their knowledge with one another, for they let the whole world profit in their discoveries. As an example, he pointed out that the working man rode every day for 2d in an electric tram although he might know nothing of electricity. He reached his destination, was taken to the surface by a moving staircase, of the mechanism of which he was ignorant, if he stepped off with the wrong foot first and was hurt, he was taken to hospital, where medical science, of which again he knew nothing, did all that science could do for him, and did it for nothing. (Laughter.) That was the socialism of science, and what did it receive from those who profited by it? They all knew the answer. The hospitals were chronically in debt, and research was half stunted, for practically no return was made by the great body of laymen in any way commensurate with the advantages they so eagerly accepted.

DR. COMRIE'S ADDRESS ON OLD TENDENCIES IN MEDICINE

At the opening of St. Mungo's College, Glasgow, for the session 1925-26, on October 13th, Dr. John D. Comrie, lecturer on the history of medicine and on clinical medicine in the University of Edinburgh, delivered an inaugural address dealing with "Some Old Tendencies in Medicine." The lecturer said that it was interesting on an occasion such as the opening of a medical school to refer to what had been said in an address by Erasmus about the year 1500 to the students of Louvain University. He had stressed the usefulness of the physicians in his day, referred to the high esteem in which they were held, and pleaded that those who practised medicine should be adequately paid. He had also usefully declared that "In our days mortals think that it is not their business if poisons are sold for wine, or if diseased corn or rotten fish spreads disease among the people." At the beginning of the sixteenth century there had been no Public Health Department and very little sanitary law, which was the main reason for the devastating character of epidemics in the Middle Ages compared with their limitation at the present time. A great tendency in every generation was to regard its own medical knowledge as supreme, it not final, and this attitude had been expressed with naive complacency by Ambroise Paré in the conclusion of his book on surgery, which had been a great and novel work at the time of its publication in 1579. Paré concluded "I have so certainly touched the mark at which I aimed that antiquity may seem to have nothing wherein it may exceed us, beside the glory of invention, nor posterity anything left but a certain small hope to add some things, since it is easy to add to former inventions." This was a remarkable statement in view of the experience which they now had of the great additions to surgery since his time. Continuing, Dr. Comrie said that they possessed a very complete picture of medical theory and practice as it existed at the time when Greek intellectual activity reached its zenith, about four centuries before the Christian era. Some alteration of the "humours" or body fluids was held responsible for the changes that produced disease. The humours were supposed to be four in number—blood, phlegm, yellow bile and a hypothetical humour, black bile. Harvey's great discovery regarding the circulation of the blood in the seventeenth century had drawn away men's thoughts from the humours. It had stimulated Boyle, Hook and others to investigate the manner of respiration, and they had shown that air was necessary for life as well as for combustion. An unfortunate theory, which had slain its tens of thousands, had developed upon this discovery in the phlogiston theory advanced by Stahl at the end of the seventeenth century. He had supposed that when a substance wasted away in burning it gave off an imaginary substance, phlogiston. This supposition led him to suggest

that in fever it was a good plan to get rid of phlogiston quickly by bleeding the patient. Hence the antiphlogistic process of blood-letting, which had had a moderate vogue in ancient and mediæval times, increased in the eighteenth century to alarming dimensions, and continued to into medical practice until well on into the last century. The middle of the nineteenth century was a most important time in medicine: the use of anaesthetics became general, antiseptic surgery was introduced, a new conception was given to biology by the publication of Darwin's *Origin of Species*, and Virchow showed the importance of the cells in the body, which he regarded as "a cell state in which every cell is a citizen." The omnipotence of the cell dominated medical thought during the latter part of the nineteenth century, but in the twentieth century a revision to the importance of the body fluids (humours) took place, and many diseases were now known to be due to diminution or excess of secretions prepared by various glands, so that the humours were found again to be of importance undiminished even by the ancient physicians.

Dr. Comrie said that another broad avenue with numerous by paths, through which, during the ages, the healing art had been excited, was the influence of mind. In ancient Greece the priests of Asklepios had been regarded by the public as of equal importance with the practitioners trained in medicine, and with the philosophers who investigated scientific problems. People betook themselves in great numbers to the shrines of Asklepios for treatment by suggestion and charms. The practice had been humorously satirized by the dramatist Aristophanes in the comedy of *Pluto*, in which the god of wealth was supposed to betake himself to one of these shrines as a patient to be cured of blindness. In the Middle Ages this method of healing had been assumed in prayer and invocation by the Church, and among the ultra-spiritual, like St. Gregory of Tours, it had been accounted as sin to have recourse to earthly means of treatment even for so obviously physical a disorder as tooth-ache. The element of mystery played an important part in all these systems of faith healing. One of the most surprising developments in this line of treatment had been the modern success of Christian Science, which, beginning in 1866, now numbered the adherents of some 700 congregations in America and Britain.

So far, the lecturer said, he had considered the tendency to look for the origin of disease within the body or mind, but mankind, from the earliest stages, thought diseases also came from outside. The primitive man had believed that demons and spirits beset him from the desert or the woods. In the Middle Ages the heavenly bodies had been supposed to exert a great influence upon health, the macrocosm of the universe having an occult influence on the microcosm of the individual. A most useful discovery was made by Leeuwenhoek during the seventeenth century soon after the invention of the microscope, in those minute forms of plant life which we called bacteria. Methods of studying these, which originated from the genius of Pasteur and Koch some fifty years ago, had led to the identification of about forty bacteria as causes of definite diseases, and had founded the great science of bacteriology. Continuing, Dr. Comrie said that, although the tendencies in medicine of the past still lived at the present day, new problems constantly arose as diseases changed in relative importance. In the immediate future the tendency would be to combat those diseases which were of social importance. Legislation would attempt to supply purer food, obtain healthier dwellings, and restrict communicable diseases. The old principle of charitable hospitals established by wealthy members of the community for the poorer classes, which had originated with the Arabs and had been introduced into Europe by Louis IX and Pope Innocent III in the thirteenth century, was being displaced by the conviction that provision of hospital services was a matter for insurance just as much as provision against loss by fire. The encouraging fact had been pointed out by Sir George Newman that every child now born in Great Britain had an expectation of life approximately twelve years longer than that of its grandfather, although it was obvious that much remained to be done, since 40 per cent. of all deaths still took place under 50 years of age. In 1924 the sickness among insured persons had entailed more than 23 million weeks of lost work, or the equivalent of 447,000 persons off

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work for the whole year, and this meant a great loss of wealth and happiness to the general community. The great tendency of the immediate future would be for the collected forces of preventive medicine to attack these problems. This would lie mainly with the general practitioners of the country, and the chief aim of medical schools should be to turn out good general practitioners. The tendency in some countries to seek the easy path of specialism and avoid the labour of general practice was reminiscent of the old Greek proverb, "There are too many drivers of oxen, and too few tillers of the soil."

ANDERSON COLLEGE OF MEDICINE

The formal opening of the Anderson College of Medicine, Glasgow, for the winter session took place on October 13th, when an address was delivered to the students by Mr Alexander Miles, F.R.C.S., LL.D., of Edinburgh. Mr J. B. Kidston, president of the governors, occupied the chair. Mr Miles took as his subject "The co-ordination of medical study," and pointed out that the medical curriculum was so framed as to turn out a well equipped and properly instructed family practitioner. The young student should at the beginning of his course try to each that his studies bore some logical relationship to each other. Professional study fell into four groups. In the first of these the student, in the subjects of chemistry, physics, and biology, learned the importance and far-reaching effects of great natural laws, and was so trained in observation and experiment as to be able to prove the truth of these laws for himself to a certain definite extent. In this way the scientific frame of mind was developed. Then followed the second group, embracing anatomy and physiology, or the study of physiology and anatomy gone wrong so to speak, and pharmacology, or a consideration of the means by which disordered action might be put right again. The student was thus made fit to deal with the living human being in sickness, and so proceeded to medicine, surgery, and the special groups, and if he had co-ordinated his studies might be able to attack the problem of the sick person in a scientific fashion resting on great broad principles. Lastly, in the subjects of forensic medicine and public health he learned of the application of medical science to the community as a whole, in the one case in the interests of medicine and the other in the direction of preventive medicine. The address was provision of a healthy environment. The address was listened to with great attention by a large audience of students and staff, and at the close a hearty vote of thanks was recorded to Mr Miles on the motion of the Dean, Professor Christies Douglas.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH,
ST ANDREW'S

On October 13th Dr Douglas Guthrie (Edinburgh) introduced a discussion on prognosis in middle-ear suppuration. Though this was known to be a common condition, Dr Guthrie expressed the belief that it was often overlooked. Pus did not flow from the ear in all cases, and might be small in quantity, the common type of deafness, oto-sclerosis, was held by some authorities to be the result of previous inflammation in the middle ear which had escaped notice. Dr Guthrie was convinced that a proportion of deaths attributed to "meningitis," etc., over their persistent middle-ear disease, and that in many cases persistent otitis media resulted in chronic ill health, while secondary pulmonary, and digestive diseases were common. He alluded to the unsatisfactory terminology in use in regard to otitis media, commenting on the vagueness of meaning of such terms as acute and chronic and catarrhal otitis media, all of which merely represented degrees of the same process. He directed the notice to several anatomical features which affected the nature and progress of the condition—for example, the short, wide, straight Eustachian tube of infants, etc. In this connection he emphasized the danger of unexplained otitis in children and referred to cases of unexplained otitis in children

in which, in spite of a normal appearance of the drum, pus was proved to be present on paracentesis (so called latent otitis media). The bulk of his paper dealt with the results of an investigation of the subsequent history of 345 cases of otorrhoea over a period of years, which was undertaken at the instigation of Sir James Mackenzie, it had proved most illuminating. The ultimate results of various operative procedures as regards life and deafness were illustrated, and is a result of comparison of these it became clear that the more radical forms of surgical procedure should be discarded. It was also evident that deafness was more commonly the result of previous middle-ear inflammation than was supposed. A discussion followed and Dr Guthrie was warmly congratulated on his account of his investigation.

Ireland.

BELFAST MEDICAL SCHOOL OPENING OF THE
WINTER SESSION

The opening address of the winter session of the Belfast medical school was delivered by Professor C. G. Lowry, in the King Edward VII Memorial Hall of the Royal Victoria Hospital, on October 15th, Mr A. B. Mitchell, chairman of the medical staff, presiding. Professor Lowry, welcoming the students, recalled his own entrance to the school twenty-six years previously, when he had listened to the inaugural address of Mr Karl, in the old Royal Hospital in Frederick Street. At that time they had one operating theatre, an inadequate outpatient department, no laboratories and only 200 beds in a dingy building nearly a hundred years old. At the present time they had 400 beds, eight theatres, magnificent laboratories, a modern x-ray department, and a dental department. The membership of the staff had increased from fifteen to thirty-five, and the deepest gratitude was felt to all who had co-operated in this work of extension, particularly to the late Viscount Pirrie and to his widow, Lady Pirrie, their president. The importance of the clinical education of the medical students, especially in not-taking, could not be overestimated. Hospital work was the best training for the general practitioner, the specialist, the hygienic and tropical medicine. The medical student must not attempt to do in the services, as also for practice in hygiene and tropical medicine. The amount of work that was intended to occupy a session. He was at first liable to get behindhand in his work and to be discouraged by its magnitude. The second hindrance was the habit of procrastination, and the third the familiar practice of sitting up late at night over work, with the almost inevitable sequel of late rising in the morning. In their dealings with patients they should always remember that they were the trustees of the good name of the hospital. Professor Lowry then advised the students to make a habit of reading up each evening one case examined that day in the wards, it was surprising how knowledge grew from such a regular performance. Medical biography was both a relaxation and a help, in the first place came the biographies of Pasteur and Jamieson, which every medical student should read, since they gave a medical and scientific history of the greatest period of progress in the history of mankind. In spite of the great advances that had been made, much remained to be done, and the present students might look forward to seeing the conquest of malignant disease, the eradication of the problems of maternal mortality in childbirth, the reduction of maternal mortality in childbearing.

Professor J. A. Lindsay, chairman of the board of management, proposing a hearty vote of thanks to the lecturer referred to the valuable advice and pleasant glimpses of humour that had been forthcoming. He also mentioned the enlargement and improvements of the hospital. The vote of thanks to Professor Lowry was seconded by Sir Robert Band, D.L., supported by Professor Thomas Sinclair M.P., and passed with acclamation.

HEALTH OF BELFAST

The annual reports of the medical officer of health and of the chief tuberculosis officer for 1924 have lately been presented to the respective committees. The estimated population of the city is 434,000, an increase of 5,000 over last year, the birth rate is 23.9 per 1,000 of the population, a decrease of 1.1, and the death rate 14.3 per 1,000, this is an increase of 0.5, but is 2.8 below the average of the last decennium. The estimated figures at the end of a census period are always unreliable, and, as it is fifteen years since a census was held, those now in use are probably more unreliable than usual. Every factor, however, points to a greatly increased population, to a falling birth rate, and to a greatly improved death rate. This satisfies the man in the street. Of the total deaths registered 1,948, or 30.78 per cent, were due to chest affections. The number of deaths due to phthisis was 605. Deaths due to zymotic disease numbered 421, only 3 were from typhoid, a disease formerly rampant in Belfast. The number of deaths attributed to cancer was 424. There was an increase of 943 in the total number of notifications of infectious disease, of which 1,818 were due to scarlatina, and 221 to encephalitis lethargica, a considerable increase over the figures of 1923. It would be instructive to have a review of the scarlatina epidemics since the opening of the city infectious hospital, the large number of cases of epidemic encephalitis, with all its distressing sequelae, also demands full investigation. A special report from Dr Gaidner Robb, the medical officer of the hospital, with his long experience and intimate knowledge of the town, would be much appreciated by the profession and of great value for future reference. Dr Baile, the medical officer of health, returns to the subject of the serious condition of the milk supply. It is probably not worse than in other towns, but he reiterates his complaint that there is no control over the dairies outside the borough. Of the 358 samples examined from farms outside the boundary, 49.4 per cent conformed to the standard of Grade A of the English Ministry of Health, and 67.4 per cent out of 92 samples produced in the city. Inspection of town dairies has been followed by an improvement in the bacterial content of milk and in the hygiene of the dairy. Why should not inspection of outside dairies be obligatory? Dr Baile urges a uniform system of inspection for Northern Ireland.

The annual report of Dr Trimble, chief tuberculosis officer for Belfast, contains further information about this scourge, 2,023 new patients were examined during the year, 825 were found not tuberculous, but a third of them were living in contact with tuberculous patients. There were 31,596 reattendances on old cases, and at the end of the year 2,047 were receiving treatment at the Tuberculosis Institute, and 2,373 at their own homes. Dr Trimble says that of 1,237 cases of pulmonary tuberculosis examined during the year, over 40 per cent were probably infected by personal contact, 235 gave a history of the disease in either father or mother. He lays emphasis on the danger of infection being carried by food and table utensils. Only 228 had separate sleeping accommodation. The incidence of the disease in the different wards of the city differs much and follows the law found in other large cities, the more closely populated and poorer the district the larger the incidence, it varies from only 34 in the Windsor district to 219 in Pottinger. Excellent work was done at the Municipal Sanatorium and at Graymount Open-Air Hospital School. Attention is drawn to the encouraging figures which show that in Belfast consumption has been reduced by 30 per cent in 10 years, by 55 per cent in 20 years, by 62 per cent in 30 years, and by 68 per cent in 40 years.

MEDICINE IN ANCIENT IRELAND

An article in the Dublin *Evening Herald* on the science of healing in ancient Ireland mentions that the physician of those days ranked with the higher craftsmen and the workers in the precious metals. The book of Glendalough states that, in that famed locality, a separate seat was assigned him at the royal banqueting table. Under the

Brehon laws the haigh (leech) was entitled to his food and that of four of his pupils at the house of his patient while the latter was being healed. If the patient, however, was suffering from wounds caused maliciously, then the transgressor bore the cost. But should the wounds break open within a certain time the leech was obliged to refund his fees, these to be given to a better physician, who was able to keep the wound healed beyond the time prescribed by the test. This test was a year for a wound of the hand or arm, a year and a quarter for one on the leg, and three years for the perfect cure of a wound on the head. After this period neither the man who inflicted the wounds, nor the doctor who cured them, was held responsible for any after consequences. It was by no means uncommon for the tribe to make a grant of land to the physician, so that—in the words of the Brehon Code—he might be preserved from being disturbed by the cares and anxieties of life, and enabled to devote himself to the study and work of his profession. In the Brehon laws a distinction was drawn between the lawful and unlawful physician. If an unlawful physician removed a joint or sinew without obtaining an indemnity against liability to damages, and with a notice that he was not a regular physician, he should be subject to a penalty with compensation to the patient. The laws against quacks were very drastic. The value of cleanliness, pure water, and free ventilation seems to have been fully appreciated by the medical men of ancient Erin. Under the provision of the Brehon laws the doctor's house was the appointed place where the sick were to be treated. These houses were ordered to be built either on the bank of a running stream or with such a stream passing through the precincts. The building was to be provided with four doors, with the object of allowing all that took place within it to be open to inspection, and, further, to permit one door being left open whichever way the wind blew.

India.

THE HAFKINE INSTITUTE

On the suggestion of Lieut-Colonel F. P. Mackie, director of the Bombay Bacteriological Laboratory, it was decided on July 21st by the Government of Bombay that this laboratory shall henceforth be known as the Hafkine Institute. In proposing this change, Lieut-Colonel Mackie pointed out that the laboratory was started in 1896 by Professor Hafkine, C.I.E., for the preparation of his plague prophylactic, it was then housed in a small building in Bveulla. The work rapidly increased, and in 1899 the laboratory was moved to the position it occupies now in Old Government House, it was renamed the "Plague Research Laboratory." Later, in 1905, the work of a provincial laboratory was added to that of plague research, and in the following year it received the title the "Bombay Bacteriological Laboratory" to cover its wider function, which includes plague research and diagnosis, an antirabic unit, a biochemical unit, and a pharmacological unit for the study of indigenous drugs. Since its establishment over twenty-five million doses of plague prophylactic have been issued.

RABIES IN SOUTHERN INDIA

Lieut Colonel J. W. Cornwall, director of the Pasteur Institute of Southern India, Coonoor, deals in the annual report of the institute with the antirabic work performed from March 1st, 1924, to February 28th, 1925. Treatment was given during the year to 489 patients—a decrease of 865 on the number for the previous year. This decrease was due to the area served by the institute having come under the operation of the new system, whereby antirabic vaccine is issued to numerous centres for local use. At these local centres during the year the number of persons who were treated was 4,402. Until nearly three years ago all those who desired antirabic treatment in Southern India had to travel to Coonoor to obtain it. Continuing the research work of the last twelve years, the director reports

that about 33 per cent of untreated persons died from hydrophobia who had been bitten by dogs proved to have been infective at the time of biting. Additional evidence was obtained that not all rabid dogs are infective at the time of biting, and that the risk of death from hydrophobia following the bite of an infected dog is not more than 33 to 100 even without treatment. In the period 1907 to 1924 30 253 persons were treated at the institute of whom 45 died during the treatment, either having received in beginning it or having been the victims of unusually brief incubation periods. Apart from these 45 a full course of treatment was given to 30,208 patients of whom 295 died subsequently from hydrophobia, the case mortality being thus 0.97 per cent.

MALARIA AND AGRICULTURE IN BENGAL

In a report published by the Public Health Department of the Government of Bengal Dr Charles A Bentley, director of public health in Bengal, adduces a considerable weight of evidence in favour of his contention that malaria in Bengal may be diminished by irrigation, and that the agricultural conditions will simultaneously be much improved. He finds that the delta areas are relatively healthy and very prosperous so long as they remain subject to normal inundations by the rivers. He believes that the network of embankments which have grown up in the country in connexion with roads and railways has interfered with the normal irrigation to a serious extent, and has been an important factor in causing epidemic malaria during the last and agricultural decline in lower Bengal during the last sixty years. The antimalarial projects he suggests are based upon the principles which underlie the Italian "Boniferaione." Agricultural drainage schemes in many cases seem to have done more harm than good in Bengal, and it is claimed that irrigation, rather than drainage, is the immediate need. Although the Eden canal project, and the Midnapore project—appear to have failed in this respect, an increase of malaria having followed, yet Dr Bentley shows that in both cases these systems do not allow of a large supply of water for flushing the fields during the flood season irrigation being restricted to the early and late parts of the season. The October irrigation which is provided cannot be effective in reducing mosquitos in the time the majority of malarial conditions which permit them to develop to the best advantage, the breeding places have already been produced under conditions. Flush irrigation not being exposed to effective water flushings. Flush irrigation is practised in the Madras deltas has not been found to increase the malaria incidence, but on the contrary, to render the areas using it less liable to the disease. Dr Bentley concludes that the irrigation required in Bengal for the total purpose of improving agriculture and reducing malaria must be of this flushing type, utilizing the largest possible amount of water that can be withdrawn from rivers during, and not after, the flood season, the aim must be to raise the subsoil water level, keeping it as high as possible during the wet season so as to benefit the crops and reduce malaria. He recommends that every possible encouragement should be given to public bodies, voluntary institutions, and private individuals to push forward irrigation projects, including the construction and restoration of lands of watercourses, and the protection of river channels generally. He pleads for the appointment of an irrigation commission for Bengal empowered to obtain the views of irrigation experts familiar with all types of irrigation practised in India, Egypt, Syria, and elsewhere. There is, he says, cultivable land in the Burdwan and Presidency divisions equal in extent to the whole of the cultivable land in Egypt, but which is now lying waste for lack of the necessary irrigation water. Yet the very flood water needed for the growth of the country is actually passing to the sea unused being confined by embankments to river channels such as the Padma the Ganges, the Damodar and smaller streams. Rectification of this condition would increase the alluvial storage of Bengal, and restore the flow during dry weather in old watercourses, thus reducing malaria and benefiting cultivation.

Correspondence.

PROPOSED MEMORIAL TO THE LATE HAMILTON DRUMMOND

SIR,—The tragic death of Mr Hamilton Drummond is so fresh in the minds of his friends that it is unnecessary to detail the circumstances of that calamity. He was so well known and so greatly beloved by those in all walks of life that it is felt that some memorial should be promoted.

A committee of his colleagues on the staff of the Newcastle Royal Infirmary, together with some non medical friends, has been formed for the purpose of carrying out this object. It is proposed that the memorial should be connected with the Newcastle upon Tyne Infirmary and the Medical School which he served so faithfully, and in which he was so much interested. The exact form of the memorial must be decided at a later date and will largely depend upon the amount subscribed.

The committee has decided to appeal for subscriptions up to a limit of five guineas, but it is hoped that all who cherish his memory will subscribe, irrespective of the amount.

Professor R P Raulen Lyle and Mr E Philip Noble have been appointed joint treasurers. Subscriptions may be sent to the former at 11, Osborne Terrace, or to Mrs Lloyds Bank, Ltd, Grey Street, both in Newcastle upon Tyne, or to any of the undersigned.—We are, etc,

H B ANGUS

THOMAS BLATTIR

ALEXANDER LEITH

A M MARTIN

Newcastle on Tyne Oct 19th

Philipp E Noble
Thomas Oliver
Herbert B Speke
G GREY TURNER
(Convener of Committee)

preliminary list of Subscribers for Amounts totalling £50 12s

already Received or promised	already Received or promised
Dr Adams	Dr M Glas
Dr Allison	Sir C Gordon Watson
Mr J Anderson	Mr H A Graves
Mr H B Angus	Dr Hall
Mr Arlie	Dr Hindmarch
Dr Arnison	Mr Hod, on
Dr A Aikin on	Mr L Hume
Dr Edgar Babst	Dr Hunter
Dr E Badoock	Mr Irwin
Dr Barclay	Mr M Johnston
Dr S Barling	Miss Kirkhouse
Dr Beattie	Sir A Leith Bt
Dr Bishop	Mr J W Leech
Dr R A Bolam	Dr Lloyd
Mrs J I Boyd	Dr R I R Lyle
Dr A Brumell	Dr A M Martin
Mr A H Buigg	Mr S McDonald
Dr J Campbell	Dr Mona McNaughton
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Mr W T Cochrane	Mr John Moyle
Mr W T Cochrane	Dr R E Moyle
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Dr Ernest Finch	Dr Ogden
Dr Gamlen	
Mr Gilmour	

THE SOCIETY OF RADIOGRAPHERS AND THE INSTITUTION OF ELECTRICAL ENGINEERS

SIR,—With reference to the withdrawal of the representatives of the Society of Radiographers, which was mentioned in your columns on August 1st, 1925 (p 239), I think that a rather fuller explanation of the position of the society is desirable than was there given. At a meeting of the council of the society in June, 1924, it was unanimously agreed that the proposed new rules preventing any report or diagnosis on any radiogram or screen examination should be interpreted to allow a radiographer (in the absence of a medical radiologist) to describe to a medical practitioner the appearances seen in an x-ray examination, so as to assist him in making a diagnosis. Later on at the same meeting the representatives of the Institution of Electrical Engineers, moved that the resolution so amended should not be applicable to any

members of the society, who, on January 1st, 1924, had been engaged in a ray work for not less than fifteen years. Such members would thus be allowed to interpret radiograms, make screen examinations, diagnoses, and treat patients. On July 28th, 1924, objection was taken to this radiation by the General Medical Council, who pointed out that if such a clause was inserted in the rules the medical members of the society would find themselves in the untenable position of associating with unqualified persons who were performing medical functions without medical training or without immediate personal supervision. This decision of the General Medical Council the medical members on the council of the society could not, of course, dispute, but the representatives of the Institution of Electrical Engineers maintained their support of the clause in question. A very large proportion of the radiographers, however, expressed agreement with the suggested new clause. The Institution of Electrical Engineers thereupon withdrew their members from the council of the Society of Radiographers. The reason assigned for this withdrawal in the announcement in the *BRITISH MEDICAL JOURNAL*—namely, that the status of the non-medically qualified radiographers would be materially lowered by the new rule—hardly seems to be justifiable, especially as radiographers have requested almost unanimously in it, despite the omission of the clause proposed by the institution—I am, etc.,

London W 1 Oct 17th.

STANLEY MELVILLE

OSTEOPATHY AND CHIROPRACTIC

SIR,—When a new sect in medicine arises the attitude of the profession toward it is important if it seems to have any germ of truth its pretensions should be examined, as happened in a recent case. If it seems destitute of truth and reason it should be ignored, for opposition only acts as a stimulus. In the present case I see no reason for an examination, for the movement seems not only to be "beneath notice but beneath contempt" (a phrase used by the late Dr. Gec on a different occasion), and surely it is destined to die by its own inanity—I am, etc.,

Wind or Oct 18th

W F LLOYD

SIR—I have read with much interest Sir Holburt Waring's paper (*BRITISH MEDICAL JOURNAL*, October 17th, p. 679) in which he points out the fallacies in the theory of osteopathy and chiropractic.

It is true that, although on paper the osteopathic course is as strenuous as that of medical students in the United States of America in practice some of the schools are very lax in the conferring of their degrees. On the other hand, there are some schools in which the work is done with thoroughness. Moreover, a fair proportion of the osteopaths practising in this country have a medical degree in addition to their osteopathic qualification. It is a pity that some distinction cannot be made.

There is one matter which should carry weight before the medical profession: namely, osteopathy and chiropractic entirely, and that is that if a patient is sick he does not mind what theory there is at the back of the treatment he receives, but he wants to be made well. If, after the general practitioner and the specialists have failed to relieve him, he drifts out of the fold, and is promptly cured by an osteopath or other unqualified man, this is a blow to the confidence he has had in the medical profession.

As a matter of fact, I can affirm that I have seen some scores of cases—and not merely "functional" cases, but of the sort with definite physical signs—which have been relieved by osteopathic manipulations when other treatment had failed, with the disappearance of these physical signs. Needless to say, these were cases of a mechanical nature, and not infective.

Of course, it is nonsense to claim, as do some, that the cure of all and every disorder lies in the ten fingers. But by a careful investigation into the practice (and not merely into the theory) of osteopathy, we should certainly find that there is some grain among the chaff, and that that grain might well be incorporated in our therapeutic

armamentarium. Certainly, some serious mistakes have been made, but osteopaths are not the only ones who have been known to treat appendicitis, abscesses of tuberculous joints in the wrong manner. We all of us make mistakes at times, and this alone should not be the cause of the discrediting of any system which can claim such successes as osteopathy has at times achieved—I am, etc.,

Leeds, Oct 18th

L J BENDIT, M A, M R C S

SIR,—In your leading article on osteopathy and chiropractic (October 17th, p. 708) you state "We feel sure that the medical profession at large will endorse the opinion expressed by Sir Holburt Waring that 'instead of the Legislature making possible the licensing of osteopaths in a very limited form of practice, the Medical Acts ought to be so strengthened that it would not be possible for the community to be treated by them or any other unqualified charlatan or quack.'"

Sir Holburt's opinion is practically the substance of the motion by St. Helens and Warrington, which was brought before the Representative Body at Bath in July, yet in the issue of August 1st (p. 222) you write "Of the more important motions from Divisions, that from St. Helens and Warrington on unqualified practice was dealt with on sound lines on Dr. Hawthorne's lead." The "sound lines" were the relegation of the motion to the safe deposit of the waste-paper basket, that being in essence the meaning of Dr. Hawthorne's motion to pass to the next business. Why this rapid change in the editorial attitude?—I am, etc.,

Warrington Oct 16th

J S MARSON

** Our attitude has not changed. The Warrington motion, as we understood it, sought to secure by the action of the medical profession an amendment of the Medical Acts so that "no unregistered person be allowed to practise medicine or surgery." Dr. Hawthorne argued that this motion was unsuitable to be put forward in a meeting of medical practitioners, on the ground that such amendment of the law should be pressed upon the Government by the citizens of the country rather than by medical practitioners. The passage quoted from Sir Holburt Waring's address referred to the contention by osteopaths and chiropractors that they should receive a partial licence to practise—a demand shown by us, in a leading article on April 11th, 1925 (p. 706), to be inadmissible. We agree with Sir Holburt Waring that the law against quackery ought to be strengthened, but, in agreement with Dr. Hawthorne, we think that this strengthening is more likely to be brought about by the pressure of an enlightened public opinion than by direct action on the part of the medical profession. It is a question of the best means to the end in view.

HAEMOGLOBINURIA DUE TO COLD

SIR,—I am very much obliged to you for the review of my work *Studien über die Kältemoglobinurie*. Allow me at the same time to make the following explanations.

1 My view that haemoglobinuria due to cold is, in all probability, invariably a sequel to syphilis is based on special studies on this subject, which have only just been published. In my above mentioned work this view was advanced with reference to my then forthcoming paper.

2 It is stated in the review that there is a certain ambiguity in my classification of haemoglobinuric patients, and that the classification on page 657 is not the same as that on page 623. The four different modes of reaction summarized on pages 623-624 are those which were observed during the experimental period in Case L there discussed. It should be noted that, as is clearly shown, the first and second modes of reaction are merely gradational variants of the same mode of reaction. In the general classification which follows on page 657, both these variants have therefore been combined into a unified group "first mode of reaction." In both classifications modes 3 and 4 are identical in that order. In addition to the modes of reaction described on pages 623-624, I have, however, added in the general classification (p. 657) yet another mode—namely, that given as No. 2 "Intravasale Sensibilisierung und

Hämolyse, kein Schock" In the following paragraph (p 657) I point out, however, that "Keine Reaktion nach Modus 2 ist nicht sichergestellt, vielleicht kommt dabei immer eine leichte hämolytische Krise vor" In regard to the existence of this form of reaction, my views, as I had previously pointed out, are based not on my own observations but on data furnished in the literature of the subject.

3 It is further stated in the review "Patients with manifest haemoglobinuria fall into the two first classes, the latent into the last two."

This is a misinterpretation, for, as is made clear in the last paragraph on page 657, the statement should read "Patients with manifest haemoglobinuria fall into Classes 1-3, the latent into Class 4."

Trusting that you will not take it amiss that I have made these observations, I beg to thank you for the friendly interest which you have shown in my work.—I am, etc.,

Stockholm Oct 10th

FRIEST SATIN

INFECTED MYOMA COMPLICATING PREGNANCY

SIR,—In the report of his case under the above heading (BRITISH MEDICAL JOURNAL, October 10th, p 647) Dr H R Spencer does not give the reasons, either clinical before operation, or any evidence noted at the time of the operation, which decided him to perform hysterectomy instead of myomectomy with preservation of the uterus. If this information can be added to his report it would be extremely valuable to those who may at any time be in charge of a similar case but without the advantage of so large an experience as Dr Spencer's.

One is encouraged to ask for this further evidence, as the statement is made in the paper that "it is well known many necrobiotic fibroids are sterile and can be removed with safety", and Dr Spencer goes on to point out that a rapid bacteriological examination during the operation is desirable, but perhaps would not be obtainable.

In this aspect of the matter—that is, hysterectomy as against conservative myomectomy—the case where total removal of the uterus is forbidden in advance by either the patient or her husband, unless there is *acute infection*, for reasons of important family succession, for instance, must be remembered, and renders all possible information on the differentiation of infected fibroids from sterile before removal most desirable.—I am, etc.,

Notwich Oct 12th

ARTHUR CROOK

MYXOEDEMA

SIR,—In your issue of October 10th (p 657) you publish an annotation under the heading "Myxoedema." In it you state, "George Murray was able, in 1891, to cure such a case by injecting a glycerinated extract of the gland—a method soon to be abandoned when it was shown by Howitz in Denmark that results were equally good and infinitely easier to obtain by oral administration of the gland."

In your issue of October 29th, 1892, you published an annotation, under the heading "The treatment of myxoedema." There you stated, "It would seem not only that there is no doubt of the efficient action of the gland when taken by the mouth, but even that some care must be taken not to let the patient swallow too much of it." You based this information on the account of two cases published in the same issue—one by Dr Hector Mackenzie and one by myself.

To credit the fact that oral administration of thyroid gland is to-day universal and due to work done in Denmark, seems to me to belittle the utility of your own journal, and to endow a foreigner with what might more justly have been given to Englishmen.—I am, etc.,

11mouth Oct 16th

L L FOX

THE SURGEON AND THE PUBLIC

SIR,—While many of the points put forward by Mr E R Flint in your issue of September 19th (p 540) will receive the support of all medical men, some are open to controversy.

Educating the public by broadcasting, etc., on the methods of attaining and maintaining health may do good,

though people will probably pay as little attention as they do to other forms of teaching. Bringing before them the early signs and symptoms of disease is another matter, the main objections to this were put forward in my letter published in the JOURNAL of June 13th. The neurotic will ponder over such advice with the assiduity they now do such works as "Medicine for the Million," and with their inexperience will find good ground for all their morbid fears. Our race is losing much of its old stolidity, and the chronic infections and viscerophtosis are on the increase. It is difficult enough now to convince sufferers from the latter that the removal of an appendix or the fixing of a mobile kidney will not cure their complaint. Were they to be acquainted with the symptoms of gastric and intestinal cancer, they will be unable to distinguish between these and their own functional symptoms, and nothing short of a laparotomy will suffice. Otherwise they will proceed to the quack, who will not fail to profit by curing such "definite" cases of the disease. This is only one of the dangers, others are equally obvious.

Much might be done by impressing upon the public the necessity of calling in a doctor immediately they feel ill, rather than in first trying household remedies. But many of our most serious diseases are very insidious in their onset. The only possibility of diagnosing these in the earliest stages is by inducing the public to undergo a medical examination at least once a year. For this to be of value we must have a profession that is not only conversant with the earliest signs of disease, but is also aware of methods of diagnosis which are valuable when suspicious symptoms are present.

The holding of a resident appointment and post-graduate instruction are essential for the practitioner. But the root of our present trouble lies further back—namely, with our system of examinations. One of the primary aims of medical education should be that the newly qualified man is not in agglomeration of embryonic consultants, but is well instructed in the fundamentals of general practice. It is our rule in the surgical unit here when demonstrating a case to point out, not only the physical signs, but to go back over the history and lay stress on the earliest symptoms with the signs that might have been found and the methods of diagnosis that should have been carried out. It is our impression that, when the students leave the wards they have been instilled with that which should be common to all medical men—the necessity for and means of early diagnosis. Later these same students have to be prepared for their examinations. And it is a sad sight to see men, who at one time viewed their work with a practical outlook, becoming converted into automata of classifications, biochemical facts, bacterial strains, obsolete splints, etc. When I have discussed this aspect with examiners, they have generally been sympathetic, but have pointed out that such a course is necessary for a good scientific training. This being the case, one surely should not blame these students for failing to diagnose when later they go into practice. Some alternative should be possible. I would put forward the suggestion that an examination similar to the present final should be held at the end of the fifth year, the passing of which would merely allow the student to enter on work under the supervision of a fully qualified man, the first two months could be spent attached to a general practitioner, the last four as an assistant to a hospital resident. At the end of this time the examination for the diploma could be taken, this being essentially practical and dealing with such problems as the early signs of disease, methods of diagnosis, treatment, etc. Such a course would mean that the last six months, instead of being wasted in the coaching classes, would be spent at the bedside dealing with points of practical value. It would have the added value that, should general practice be the aim, the student would have some idea of the work in view, and would be able to think accordingly during his last months in hospital.

It is obvious to all that things are not right with medicine. If, however, any reform is needed, it is better that it should come from within the profession rather than be forced upon us from outside.—I am, etc.,

T L HARRISON

Cardiff Sept 28th

A FRENCH VIEW OF FREUDISM

SIR,—May I claim a little space in which to reply to your two correspondents, Dr Arthur Lynch and Dr Charles Buttar, both of whom leave me entirely unrepentant. To my mind the doctrine of a dynamic unconscious provides the only scientific explanation of the origin and symptoms of a neurosis, and my contention is that students should be taught to recognize a neurosis is the outcome of repression and conflict. Once it is realized that a neurotic patient is an interesting problem and not simply a nuisance, we shall have many more investigators in the field, and much which now stands in need of elucidation may be made clear. Individual workers will tend to stress some one factor and some another, but all will have their successes, if they approach each case with unprejudiced minds.

I have my own opinion as to whether the stool of Freud will rise or fall in the market eventually, but I have little patience with those who refuse to give any measure of credence to psychology because they cannot agree with him. I have never been able to ascertain what treatment a functional case receives from those who scorn psychology. True they can, and do, order the patient a rest and a change of air, but *coelum non animum mutant*. We claim to change the "animum" in no inconsiderable proportion of cases. Dr Buttar must have been singularly unfortunate in his experiences. As his "terror" is acknowledged and not repressed, I trust he is feeling no further ill effects from the perusal of my former letter.—I am, etc.,

Birmingham Oct 12th

R MACD LADLE

THE TEACHING OF PHYSICAL TRAINING

SIR,—In the JOURNAL of October 3rd (p 608) is an original contribution by Surgeon Commander H B Hill on common mistakes in the teaching of physical training. The points he raises are of considerable importance to everyone interested in the physical development of the growing generation, either from the point of view of training the normal individual, or, like myself, more from the point of view of preventing and correcting faulty development.

I fail to see the reason for the author's sweeping statement that no breathing exercise should be done simultaneously with any movements of the arms or other part of the body. It is certainly true that exercises involving strong contraction of the abdominal muscles interfere with the action of the diaphragm and thus impede the respiration. Such exercise ought therefore to be followed by some breathing exercise to counteract this effect. On the other hand, I have failed to notice "the severe restriction to breathing which takes place when the arms are moved and the head pulled back," which, the author says, "can be watched by anyone." To me it seems that head bending backwards and arm liftings which bring the auxiliary respiratory muscles into work, and thus raise the ribs and enlarge the thorax in the upward and antero-posterior direction, facilitate deep inspirations, whereas the raising of the head again and the lowering of the arms by relaxation of the muscles favour expiration. I see, therefore, no reason why these movements adapted to the rate of normal respiration should not be used as breathing exercises.

Surgeon Commander Hill's remarks on the straight spine are much more in accordance with my own views. His definition of the medically straight spine—"one which gives an erect carriage to the body, has all its natural curves in correct proportion to one another, and is quite free from any lateral curve"—seems to me an admirable one. To achieve such an ideal in the way of carriage, the individual should be taught to aim at cultivating "a long neck" as the old slogan says. Therefrom follows in a marked manner a correct poise of head, shoulders, and chest.

I quite agree with the author about the deplorable result on the figure from an undue protrusion of the chest at the expense of a lordosis in the lower part of the spine.

I am less in agreement with regard to the author's opinions on leg exercises. The only fact that seems to me amply confirmed by his remarks is that great confusion exists on this subject. I still believe in the efficacy of such exercises at the right time and of the right type in

"deflecting the blood" to the lower extremities, and thus relieving congestion to the head and thorax after powerful trunk exercises, especially if involving stooping, and that they have a calming effect upon the heart and respiration, but no sensible poison, I should have thought, would be likely to advocate further leg exercises as an antidote after a cross-country run. The choosing of such an example as an argument against the judicious employment of leg exercises in order to relieve congestion and quieten the heart, illustrates best the state of confusion referred to.—I am, etc.,

London W 1, Oct 6th

RICHARD TIMBERG

"THE STRAIGHT SPINE"

SIR,—May I, as one who is in his 60th year, and is to day physically and mentally a much fitter man than he was some twenty years ago, be allowed to make some remarks on the interesting article by Surgeon Commander Hill, R N, "Common mistakes in the teaching of physical training."

Surgeon Commander Hill says, "The medically straight spine is the one which gives an erect carriage to the body, has all its natural curves in correct proportion to one another, and is quite free from any lateral curve." The italics are mine.

This is certainly the spine usually seen in the average so-called healthy human being, but it is not the spine we see in a runner who is going strong with his "second wind." It is true his body is slightly inclined forward from the hips, but the chin is in line with the body and the spine is kept fully extended. There is no curve in the lumbar region or elsewhere: the back is quite flat. The same is true of the properly trained walker. And, as we all know, rowing men are taught to "keep a straight back."

I do not know whether my vertebrae are piled evenly on top of one another like a child's single column of twenty-four bricks, as shown in diagrams illustrating what Surgeon Commander Hill terms "a faulty spine." But I do know that my spine can be held apparently straight without any strain, by making proper use of the muscles governing the erect posture.

When I am sitting on the floor, or on a stool, with my back against the edge of an open door, the small of my back, spine, and back of my head are against the door. When standing up against a straight edge with the heels touching the edge—say of an open door—my spine and back of the head are still pressed against it. The same is true when I am lying on the floor at full length: the heels and the whole of the spine from the sacrum to the back of the head are on the ground. Any man, woman, or child who has muscles of normal average length, flexibility, and strength, and knows how to control them, can do the same easily when sitting, standing, walking, or running. The trouble with most of us is that we do not possess the much to be desired quality of muscle, nor the knowledge necessary to make proper use of them, so the spine settles down into curves.

Some twenty years ago my attention was drawn to the influence on health of a straight spine through reading Dr Latson's book *Common Disorders*, and *A Natural Method of Physical Training*, by Edwin Checkley. The result of the daily practice of the exercises described and illustrated in the above works, as well as some others based on the principles advocated by these two writers, has been most beneficial to me, as well as to many of my patients.

In my own case, not only was my spine straightened out as fully as possible, enabling me to make the most of my height, but the flexibility of my body, breathing powers, and general health were also vastly improved thereby. When I first took myself in hand my vital capacity, as measured by the spirometer, was only 200 cubic inches. In due course it went up to 340 cubic inches (a gain of 140 cubic inches), which is only 10 cubic inches less than it was when I was a young man of 25, well over a quarter of a century ago. My vital capacity, taken six months ago, still registered 340 cubic inches, and I am remarkably fit and well to-day.

So it seems to me that human beings who have cultivated

OBITUARY

London W 1 Oct 17th

Montreal Oct 9th

[COPY OF LETTERS]
Royal Victoria Hospital
Montreal,
September 25th 1925

Henry Gray K.B.E.
Surgeon in Chief,
Royal Victoria Hospital Montreal

Yours truly
(Signed) H E WEBSTER
Secretary

622, Sherbrooke Street West
Montreal,
September 29th 1925

DEAR SM -
In reply to your letter of the 11th inst. I am sorry to hear that you are unable to use the instruments etc which I provided for use in the hospital returned to me in request of the executive of my connexion with the Victoria Hospital I prefer to sever my connexion with the completely now
I am sorry to trouble you further but should like to have the
Yours truly
(Signed) HENRY M W GRAE

Yours truly
(Signed) HENRY M W GRAY

Obituary.

URBAN PRITCHARD, F.R.C.S. Ed., F.R.C.S. L.S.A., F.R.C.S. L.R.C.P., L.S.A. in 1868 and 1869, he then went to Edinburgh, and graduated there M.B., C.M. in 1869 and M.D. in 1871, being Little's Scholar, and winning the gold medal. In 1872 he obtained the F.R.C.S. diploma on return to London in 1870 he was, what was then the "Assistant" to Sir George Johnson at King's College Hospital, and afterwards to Sir George Johnson at the Royal Ear Hospital.

URBAN PRITCHARD, F.R.C.S. Ed., F.R.C.S. Eng.
Emeritus Professor of Aural Surgery, King's College Hospital
Consulting Aural Surgeon, the Royal Ear Hospital

In his 81st year Professor Urban Pritchard, the doyen of otology, has passed away. He was the fifth son of Andrew Pritchard, F.R.S. Ed. He received his medical education at King's College Hospital, and obtained the qualifications M.R.C.S., L.R.C.P., L.S.A. in 1868 and 1869, he then went to Edinburgh, and graduated there M.B., C.M. in 1869 and M.D. in 1871, being Little's Scholar, and winning the gold medal. In 1872 he obtained the F.R.C.S. Eng. diploma.

On his return to London in 1870 he was, what was the "assistant" to Sir George Johnson at King's College Hospital, and later on, he became a consultant in ear, nose and throat.

On his return to London in 1870 he was, what was the 1
called, "physicians' assistant" to Sir George Johnson,
Dr. Lionel Beale, and Sir Alfred Garrod at King's College
Hospital, later becoming surgical registrar and lecturer
of the museum. Being keenly interested in physiology,
he was appointed demonstrator of physiology and lecturer
on physiology for the evening classes at King's College
All this time he was making researches into the auditory
labyrinth especially in connexion with the organ of Corti
He then turned his attention to diseases of the ear, and
was appointed surgeon to the Royal Ear Hospital in 1874,
then the only institution of its kind, a position which he
held until 1900, when he retired from it being made
consulting surgeon. In 1876 he became the first aural
surgeon to King's College Hospital and professor of aural
surgery in King's College in 1886. On his retirement in
1910 he was made consulting aural surgeon to the hospital

Between 1876 and 1881 Urban Pritchard published four papers as a result of his original researches into the origin of Corti, based on his own microscopic sections, which, considering the method of preparing them which then obtained, were of great beauty, and bear examination to this day. This work became well known. The first paper is entitled "The organ of Corti in mammals," and a paper in the Royal Society, and it is interesting to note that the then secretary, Professor

and eminent professor of anatomy. He had been in London as a matter of fact, he was a singer in Great Britain. Urban Pritchard published four papers as a result of his original researches into the origin of Corti, based on his own microscopic sections, which, considering the method of preparing them which then obtained, were of great beauty, and bear examination to this day. This work became world famous. The first paper was entitled "The organ of Corti in mammals," and was read before the Royal Society, and it is interesting to note that he was introduced by the then secretary, Professor Huxley. It was published in the *Proceedings* (1876) and it has made many original observations on the structure of Corti. He made many original observations on the structure of Corti. He supported Helmholtz's theory, with the modification, development, and function of the modification that the rods are concerned only indirectly, and that their vibrations affect the hair cells connected with the nerve filaments to the brain, and he considered it highly probable that the graduation in length of the variation in account for the appreciation of the variation considerable extent, and "he could not believe for instant the rods and rest of the organ were so beautifully graduated for no special purpose." To show the amount of work done, he states that he had examined the organs of man, monkey, sheep, dog, cat, rat, guinea-pig, porpoise, and langur. The other three papers were "Termination of nerves in the vestibule and semicircular canals," "Quarterly Journal of the origin of Corti," "Development of the organ of Corti," "The cochlea," "Physiology, 1878," "The cochlea compared with mammal," and "The cochlea compared with the Royal Society."

Termination of nerves in the
cords," *Quarterly Journal of the*
1876, "Development of the organ of Corti,"
Anatomy and Physiology, 1878, "The cochlea and
Omnithorhynchus platypus compared with mammals and
birds," *Philosophical Transactions of the Royal Society*,
1881 In the last paper he described the presence of the
lagena in the *Omnithorhynchus platypus*, which is also present
in birds and not in the ordinary mammals, the lagena
is an enlarged interior extremity of the cochlea tube, with
a modified lining and a large patch of nerve epithelium,
quite distinct in structure and separate from the organ of
Corti, this nerve epithelium being made up of cells exactly
like those found in the macula acustica of the vestibule
of mammals and birds, and he notes it is another of the
many links between the bird and mammal in this mono-
treme He also points out that the birds' cochlea is similar
to that of reptiles and amphibians, and therefore the lagena
is really a link between the cochlea of the higher and
lower vertebrates, and not merely between that of the
mammal and bird
From that time his purely scientific work came to
an end, and his life being taken up by clinical work
with his very large private practice, and his patients, a

M IV GRAY

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From that time his purely scientific work came to an
end, the rest of his life being taken up by clinical work
in the hospitals and by a very large private practice, in
which he was trusted and loved by his patients, and in
which he was trusted and loved by his object, and in
rightly so, for their good was clearly visible to them His work
perfect uprightness was clearly visible to them His work
and personality were well known and appreciated throughout
the civilized world For many years—from 1884 to 1892—
he was the chief British representative on the Committee
of Organization of the International Congress of Otolaryngology,
which meets periodically in different countries, and when
it became Great Britain's turn, in 1899, he was elected
president It met in London, and it may be said that,
owing to his scientific work under his presidency, a re-
naissance of British otitis surgery took place He
attended and took part in the business of the Congresses,
held in Paris, as late as 1922 As a direct result of the
London Congress, the Otological Section of the United
Kingdom, now the Otological Society of the Royal Socie-
ty of Medicine, was formed, he was its second president, and
never ceased to take part in the meetings He never lost
his mental elasticity, and was always ready to appreciate
and foster advances and to act upon them From 1890
to 1908 he was co-editor of time to write a Handbook of
Otology, and also found time to write three editions
Diseases of the Ear which ran through three editions
Urban and Schwarzenberg deserved well of the profession and his
country His domestic life was a particularly happy one
In 1872 he married Miss Blanche Pallister, and they celebrated

his mental elasticity, and to act and foster advances, and to act to 1908 he was co-editor of the *International Otology*, and also found time to write a *Handbook of the Ear* which ran through three editions. Dr. Urban Pritelard deserved well of the profession and his country. His domestic life was a particularly happy one. In 1872 he married Miss Blaine Pallister, and they celebrated

their golden wedding in 1922. His wife, one daughter, and two sons (one of whom is in the medical profession) survive him, to whom we offer our profound sympathy.

ARTHUR H. CREATIE

P. R. COOPER, M.D., F.R.C.S.,
Consulting Surgeon, Altrincham General Hospital

A CLOUD of sorrow has been cast over Altrincham and the district of North Cheshire by the news of the death of Dr Percy Cooper, who passed away on October 10th in a Manchester nursing home, where he had been lying ill for eight days suffering from blood poisoning.

Percy Robert Cooper was the elder son of P. B. Shelley Cooper of Lymm, Hyle. He won a scholarship at the Manchester Grammar School in 1882, but two years later his uncle wished him to go into the cotton trade with him, and he left school to do so. While he was in business he used to attend science lectures at Owens College, Manchester, in the evening, and this gave him the desire to enter the medical profession. Upon leaving business he studied medicine at Owens College, taking first-class honours in his B.Sc. examination in 1890. He graduated M.B., Ch.B. in 1893, and in the same year took the diplomas M.R.C.S. Eng., L.R.C.P. Lond. He later joined St. Bartholomew's Hospital, London, obtained the F.R.C.S. Eng. in 1895, graduated M.B. with first-class honours in the following year, and proceeded M.D. in 1901. After holding a resident post at the Royal Infirmary, Manchester, he gained some experience of family practice in Halmesley, and undertook research work in cancer at Owens College. Not long afterwards he began practice in Altrincham. For some time he was a consultant in Manchester, but he relinquished this work after the war. He gave great assistance to the local Red Cross hospitals, and the hard work he did in this direction undoubtedly tried his health. He was a past-chairman of the Mid Cheshire Division of the British Medical Association and of the Altrincham Medical Society. He had been chairman of the Clinical Society of Manchester, he served on the committee of the Manchester Medical and Pathological Society, and was chairman of its library committee.

In his early life Dr. Cooper played Rugby football for the Victoria University for three years. He also took an active interest in golf, winning the gold medal and cup of the Manchester Medical Golfers' Society, he was the winner of the captain's cup of Timpersley Golf Club, and secured many other prizes. As a member of the honorary surgical staff of Altrincham General Hospital he took keen interest in the x-ray department, and presented to it an artificial sunlight lamp. He was also widely known as chairman of the executive of the local branch of the League of Nations Union. He was an active member of the Local Medical and Panel Committee of Cheshire on which he was co-opted to represent the non-panel practitioners. He will be well remembered for his advocacy of "payment for work done" before the passing of the Insurance Acts, being a frequent contributor to the columns of the *BRITISH MEDICAL JOURNAL* and other professional journals.

A large number of medical men and other friends assembled at the Manchester Crematorium to mark their respect for a life so rich in scientific knowledge, so full of achievement, and so untimely ended.

A Manchester colleague writes: "It is impossible to express in words the vastness of the loss to our profession in general, and to those of us who have had the honour of his friendship in particular, which results from the tragic death of Dr. Cooper. Within my memory, at any rate, there has never been in this area a medical man more universally admired and respected by his fellow practitioners or more sincerely trusted and beloved by his patients. His wonderful enthusiasm in his work, his intense interest in the welfare and progress of medical science, and the efficient way in which he ever kept himself abreast of its very latest developments, made us all appreciate as a very great honour the occasions when he sought our help in consultation."

News has been received of the sudden death, on September 16th at Townsville, North Queensland, of Dr. Ernest Humphry, honorary surgeon to the Townsville Hospital. For the following note of his career we are indebted to Mr. R. F. Jowers, F.R.C.S., of Hove. Ernest Humphry, eldest son of the late F. A. Humphry of Brighton, was one of those deservedly popular men who, by their loyalty and comradeship, endear themselves to their friends. He was educated at Birdfield College, and on leaving there went to the Royal Sussex County Hospital as a pupil. In October, 1881, he entered St. Bartholomew's Hospital, where he rapidly became popular with both students and staff. Always keen on his work, he found time to enjoy his recreation, and played football regularly. At the end of his first year he took the anatomy prize, and eventually became house-surgeon to the late Sir Thomas Smith. Shortly after leaving the hospital he went to Australia, and settled at Townsville, Queensland, where he became honorary surgeon to the hospital. He soon gained a reputation as a surgeon, and up to the time of his death was doing a large surgical practice. He married an Australian lady, by whom he had two children, a son and a daughter, both of whom he married. After he had left England he had only once paid a brief visit to this country, about twenty-five years ago. There are still many who will recall his cheery ways and regret his death.

Dr. ADAM ROBERT HAMILTON OAKLEY, who died on September 26th, at the age of 69, received his medical training at St. Bartholomew's Hospital, and obtained the diplomas L.R.C.P., L.R.C.S. Edin. in 1882. After some experience as medical officer in the P. and O. Steamship Line, Dr. Oakley was engaged in medical practice at Hounchurich, Essex, and subsequently for many years at Hampstead. His post appointments included those of house-surgeon to Hertford Infirmary, and honorary anaesthetist to the London Throat Hospital. In 1914 he retired from practice, but during the war he held a temporary commission as captain in the R.A.M.C. In 1918 he was appointed medical inspector of schools under the Middlesex County Council, which position he retained until he finally retired in January, 1924. He leaves a widow and one daughter.

Dr. FREDERICK LANGLEY HUNT, C.M.G., superintending medical officer of Jamaica, who died on September 30th, while on leave in London, was born in 1856, the second son of the late Mr. L. Langley Hunt of Co. Limerick. He was educated at Cranichel College and the Royal College of Surgeons in Dublin, and took the diplomas L.R.C.P. and L.R.C.S.I. in 1884. He served as a civil surgeon with the South African Field Force 1899 to 1902, part of which time he was on the personal staff of the Commander-in-Chief, was twice mentioned in dispatches, received two medals and six clasps, and was awarded the C.M.G. in 1902. He was subsequently employed in the Anglo-German Boundary Commission to Lake Chad, and for his services received the thanks of the German Government and the Royal Order of the Crown of Prussia (third class). In February, 1905, he was appointed to the West African Medical Staff, and received the thanks of the Secretary of State for his services in connexion with the outbreak of plague at Aden in 1908. He was appointed inspecting medical officer and assistant principal civil medical officer at Ceylon in 1912 and 1915 respectively. He was transferred on promotion to Jamaica as superintending medical officer in 1919, which appointment he held at the time of his death. Dr. Langley Hunt leaves a widow and three sons. The funeral took place at Golders Green Crematorium on October 3rd.

Dr. LAWRENCE RYAN of Crumlin, who died recently, was born in county Limerick in 1866, and was educated at University College, Liverpool. He obtained the diplomas of the Conjoint Board in Scotland in 1887, and took up his residence at Crumlin some twenty-five years ago. He was a member, and at one time honorary secretary, of the Monmouthshire Division of the British Medical Association. In 1912 he was appointed a magistrate, and was elected

DPH—T D M Wallace M J Miller Violet Oswald C Melville
Elizabeth W Miller Marjorie H Mitchell G A Pollock W R
Logan Joanne M Strathie Jane T Gilmore Elsie B Dickinson
W B Watson Part I G B Walker D Robertson J H D
Lawrie D W C Tough R S Begbie D S Malone J J de Waa
K S Shah Part II Jessie G Service

NAVAL MEDICAL COMPASSIONATE FUND

the directors of the Naval Medical
on October 6th when Surgeon Vice
B, C M G, Medical Director General
the sum of £124 was distributed

THE Court of the University of Wales, at its last meeting, adopted by 71 votes to 41 a resolution in favour of applying to the Privy Council for a charter incorporating the Welsh National School of Medicine as an independent school of the University on the lines of the draft scheme which had been before the University for the last year or more. It was, however, decided that before the petition was forwarded a conference should be held between the councils of the University of Wales and of the University College of South Wales and Monmouthshire.

The Nottingham Medico Chirurgical Society (founded in the year 1828) is one of the oldest medical societies in the country. The newly elected president is Mr. H. Bell Travers, who will take the chair at the first meeting on October 30th, when Sir St. Clair Thomson will give an address on "Dysphagia and some diseases of the oesophagus."

SHEFFIELD has obtained for its future hospital site Norton Park, which is 120 acres in extent, and is within twelve minutes' ambulance service of the centre of the city. Thanks to the generous gift of Councillor and Mrs J G Graves of Shoffield, an additional 154 acres of the adjacent estate has also been received, thus safeguarding the future voluntary hospitals of Sheffield from any industrial or residential building in their vicinity.

building in their vicinity

THE Fellowship of Medicine announces that on October 26th, at 5 30 p m, Dr Marcus Paterson will give the second lecture for the Fellowship of Medicine on the treatment of pulmonary tuberculosis, in the lecture hall of the Medical Society of London, 11, Chandos Street, W 1, all members of the medical profession will be welcome. During November the London Lock Hospital will hold a course in venereal disease, consisting of instruction in the out patients' department and lectures. At the Chelsea Hospital for Women there will be a three weeks' course in gynaecology, from November 2nd to 21st, and from November 3rd to 28th Dr Porter Phillips and Dr Thomas Beaton will give lecture demonstrations twice weekly on psychological medicine at the Bethlehem Royal Hospital. There will be a course in diseases of the chest, heart, and lungs at the Victoria Park Hospital from November 9th to 21st. The Royal Waterloo Hospital will hold a course from November 23rd to December 12th, covering all sides of the diseases of women and children. A late afternoon course (4 30 to 6) will be held by the London Temperance Hospital from November 23rd to December 4th for the benefit of general practitioners. Copies of each syllabus and of the general programme may be obtained from the Secretary, 1, Wimpole Street, W 1.

from the Secretary, 1, Wimpole Street, W 1

At the meeting of the Royal Microscopical Society on Wednesday last, among the papers communicated was one by Dr Helen Ingleby, formerly demonstrator of pathology in St George's Hospital, now acting professor of pathology in the Women's Medical College of Pennsylvania, on "the termination of the podic (perivascular foot) of fibrous neuroglia cells". A meeting of the section of industrial applications of the microscope is to be held at 20, Hanover Square, W 1, on Wednesday next, October 28th, at 7.30 p.m., when a contribution will be made by Mr J. I. Strachan on the microscopical structure of paper making fabric in relation to their manufacturing properties.

DR BABINSKI, the well known Parisian neurologist, has been nominated honorary professor of the University of Vilna. The diploma was recently conferred upon him in Paris by Professor Wladyslaw of Vilna.

The following degrees were conferred on October 19th

conferred upon the
whose names were

* With high commendation

Janet S F Niven, who graduated on October 19th gains the Branton Memorial Prize, awarded to the most distinguished graduate in medicine of the year 1925 This is the first occasion that the prize has been won

Morton Ambrose Foulis ins the West of Scotland R A M C candi date with the highest aggregate marks in medicine surgery and midwifery in the Final Examinations for the M B and Ch B degrees held during the year

The annual meeting of Fellows and Members will be held at the College in Lincoln's Inn fields on Thursday, November 19th, at 3 p.m. when a report from the Council will be laid before the meeting. Fellows and Members can obtain copies of the report on the day of the meeting. Motions to be brought forward at the meeting should be submitted to the mover or by the mover and must be received by the secretary not later than November 5th. A copy of the agenda will be issued to any Fellow or Member who applies for one.

The following candidates have been approved at the examination indicated

FINAL EXAMINATION — *Medicine* J K Steel R H McKinnon
Surgery R V Schuch W McLean
 Marian L O'Wen Morris el C H Wickremesinghe
 J M McKim J B Stroumle
 J W A C Bagchi C I Millen
 Cathie il Jurisprudence J J Gil
 christ A G Young A A Razzak
 L A Malik Mansour I G Sutherland B Day R A Ppton
 G Wenth T B Dobson M Maxton A S Spicer Mad Houten
 V B Anderson J T W Galo J Williams Gwondolue R Andrews
 J Hendry W Read W W McGlashan

The following 33 out of 107 candidates entered having passed the final examination, were admitted L R C P E, L R C S E L R F P and S G

A C Crankshank K Skulberg I F Dirckze W A F Hirst J Green
slein C J R Morrison J Knoesen W A N Chanraugam
A C Tong
C D W Madappara I Abulgh D D Lumsden J H Wee
Law J W Melicher J Hasson Constance C Reid Irma D
Me senker J S Whiteside T W Chapman C Ismail I R
Hetherington A C B Doray J Cohen Mary A McGill T G S
Hessess L G Blaze A E Williamson G R Mitchell A W
RASHALL

THE King has appointed Dr Henry A. A. Nicholls, O.M.G., to be an unofficial member of the executive council of the Presidency of Dominica.

THE Minister of Health, the Right Hon. Neville Chamberlain, M.P., has appointed Mr P. N. R. Butcher to be his assistant private secretary.

A MEMORIAL tablet erected outside the main entrance of the Ladywell Sanatorium to the memory of the late Dr J. W. Mullen, for forty-two years superintendent of the institution, was unveiled by the Mayor of Salford on October 14th.

THE July issue of the *Kenya Medical Journal* contains the third and last part of a contribution on the biology of sleeping sickness by Dr G. D. Hale Carpenter, senior medical officer in charge of sleeping sickness, Uganda, and a full review of the report of the East Africa Commission. The journal is published monthly for the proprietors by the "East African Standard," Ltd., at 2s. This is No. 4 of volume II of the new series.

A BUST of Professor Poncet, well known for his work on tuberculosis, has recently been unveiled at the University of Lyons.

AN international children's exhibition will be held at Antwerp from October 27th to November 22nd.

THE Leeuwenhoek medal was presented to Professor d'Herelle, the discoverer of the bacteriophage, at a special meeting of the Dutch Royal Academy of Sciences on September 26th.

THE first Rumanian Congress of Obstetrics, Gynecology, and Urology will be held at Bucharest, under the presidency of Professor N. Gheorghiu, from October 25th to 27th, when the following subjects will be discussed: genital cancer, prophylaxis of puerperal infection, sterility following venereal diseases, clinical forms and treatment of extragenital tumours, Ambrud's constant, and the pyelonephritis of pregnancy. Further information can be obtained from Institutul Maternitatei, Spitalul Filantropia, B. Dn. Mihail Ghica 4, Bucarest.

THE American Medical Association has decided to publish a further periodical journal entitled *Archives of Pathology and Laboratory Medicine*. The first number will appear in January.

THE fund for extending the Stockton-on-Tees Hospital has received gifts of £10,000 from Sir John Roper, Bt., and £1,000 each from Sir Frank Brown, Sir John Harrison, and Mr T. Mellanby.

Earned Income and Annuity

"E. H." states that the relief in respect of earned income on his partner's share of the firm's assessment has been restricted because he pays an annuity to his mother out of that share.

* * This is apparently correct assuming that the annuity is not a voluntary one and that the partner is not possessed of "investment income" available for payment of the annuity. The statutory provision is Section 17 of the Finance Act, 1918, which states that "the claimant shall not be entitled to relief in respect of any income the tax on which he is entitled to deduct out of any payment he is liable to make."

The equity of the matter is that there are really two incomes—one which is earned and retained and another which is earned but handed over by legal obligation as an annuity. The payer is entitled to deduct tax from the annuity and therefore should be left in the position of having ultimately paid tax only on the retained portion of his earnings and on that portion he receives the allowance. To the annuitant the annuity represents "investment income" and she is not entitled to the earned income allowance in respect thereof. It may be added that if the annuitant's total income does not exceed £500 and she was 65 years of age on April 5th 1925 she can claim repayment in respect of an allowance under Section 15 of the Finance Act, 1925 equivalent to the earned income allowance.

LETTERS, NOTES, ETC.

PICTIC ACID COUNTS IN STAIN FOR TUBERCLE BACILLI

DR J. BARCROFT AND P. F. SOY (London) writes: In recording the results of the work of K. A. Jensen, and of Bender, in counterstaining preparations of tubercle bacilli with picric acid (*BRITISH MEDICAL JOURNAL*, October 10th, *Epitome*, para. 337), it is suggested that Bender's method in this method in 1921. I have used this method since November, 1920. It was first published by Carl Spengler in the *Deutsche medizinische Wochenschrift* No. 9 of 1907. It now appears on page 380 of his *Tuberkulose und Syphilis*, published at Dares Platz in 1911 and sold by Heintz and Roussel of that town. This method should really be much more efficient than even Jensen's represents it to be provided it is used in conjunction with a microscope having great depth of focus such as Davidson's 'saphia microscope' because sputum specimens so stained show the bacilli with clearness when the layer of sputum is about six times as thick as would be desirable with the Ziehl-Neelsen stain and consequently where the bacilli are few, it should be possible to find one in about a sixth of the time occupied in searching over the same area of a preparation counterstained blue.

HOMOEOPATHY BY A HOMOEOPATHIST

DR T. MILLER NEATBY (London S.W.) writes: I cannot complain of the tone of cheerful banter in which you deal with my booklet, especially as I should probably in your place have adopted the same tone, but I think I have a right to complain of the following sentence taken from your notice: "Arsenic cures syphilis because one of the most marked features of arsenical poisoning is a chronic skin eruption." If you will take the trouble to look through my booklet you will nowhere find that statement either overt or implicit.

* * The reviewer writes: Dr Neatby says that nowhere in his book is it implicit that arsenic cures syphilis because one of the most marked features of arsenical poisoning is a chronic skin eruption. Surely this is implicit in the doctrine of homoeopathy. In his book Dr Neatby observes that 'arsenic is very valuable for certain chronic skin diseases' and goes on to state that in an epidemic of beer poisoning 'one of the most marked features of that arsenical poisoning was a chronic skin eruption.' Later on Dr Neatby asserts that arsenic is undoubtedly homoeopathic to many severe cases of syphilis. From what had gone before it seemed natural to suppose that the author had in mind the chronic skin affections which form one of the most marked features of syphilis.

REFRIGATOID ARTHRITIS: ITS SEPTIC ORIGIN

MAJOR GENERAL SIR PATRICK HEHR, I.M.S. (ret.) K.C.I.E. C.B., C.M.G. writes: May I be allowed to add a note to the exceedingly interesting paper that was read and discussed on it that took place on the treatment of rheumatoid arthritis at this year's Annual Meeting of the Association published in the *JOURNAL* of October 10th. It was unanimously considered that the infective or microbic factor is the predominating agency through which rheumatoid arthritis is brought about. I have for over a quarter of a century been convinced that this is so. One of the commonest infective foci is that of the gums either in the form of pyorrhoea alveolaris or gingivitis, septic teeth being another. Pyorrhoea alveolaris was mentioned at the meeting, no harm is done in reiterating that it plays a part in a large number of cases of the disease under reference, it is very chronic and very difficult to eradicate. Often the pyorrhoea only ceases when all the patient's teeth have fallen out or been extracted. The shedding of the teeth may take many years, during the whole of which time the victim is absorbing toxins from the infective focus. When I was in practice, for all conditions

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *BRITISH MEDICAL JOURNAL* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *BRITISH MEDICAL JOURNAL* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the *JOURNAL* should be addressed to the Financial Secretary and Business Manager.

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FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc.), Astology Westcott, London.

MEDICAL SECRETARY, Midcorm Westcott, London. The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams: *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Drumshough Gardens, Edinburgh (telegrams: *Associate Edinburgh* telephone 4361 Central).

QUERIES AND ANSWERS

Income Tax

"F. L. A." was acting as an assistant in a general practice up to March 30th 1925, since then he has been doing locum tenent work at intervals. He asks how he should deal with an application for an income tax declaration.

* His best course is to explain the change in the nature of his earnings and to say that as soon as possible after April 5th, 1925, he will complete the return declaring his earnings for the year ending as at that date.

LYSOL POISONING
(Salterton), s

ent, in February, at the home of the A M D at the time, and they were thus never together.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 33, 39, 42 and 43 of our advertisement columns and advertisements as to partnerships, assistantships, and locumtenencies at pages 40 and 41.

A short summary of vacant posts notified in the advertisement columns appears in the Supplement at pages 139 and 140.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL
MEETING, BATH, 1925SECTION OF
NEUROLOGY AND PSYCHOLOGICAL
MEDICINE

SIR MAURICE CRAIG, C.B.E., M.D., F.R.C.P., President

DISCUSSION ON TREATMENT OF INSOMNIA

OPENING PAPER

BY

ROBERT HUTCHISON, M.D. EDIN., F.R.C.P.,
Physician, London Hospital and Hospital for Sick Children,
Great Ormond Street

For purposes of treatment cases of insomnia may be divided into two groups (1) the secondary, (2) the primary.

In the secondary group the insomnia is the result of some physical discomfort, such as pain, fever, dyspnoea, cough, flatulence, toxæmia, and so forth. The primary or intrinsic cases, on the other hand, either arise from some psychical discomfort (worry, anxiety states, etc.), or they are originally secondary cases in which the physical cause having disappeared, the insomnia has persisted largely as the result of auto-suggestion. The secondary cases are of most interest to the general physician, the primary to the psycho-neurologist and the alienist.

SECONDARY INSOMNIA

The treatment of the secondary cases is primarily that of the associated disease. One tries to relieve pain by local applications, fever by hydrotherapeutic measures and antipyretics, cough by expectorants, and so on. In many cases, however, these measures fail to give sleep, and the question of a suitable hypnotic will arise. It will be generally agreed, I think, that there is no objection to the use of hypnotics in these cases from the fear of establishing a habit, seeing that we are usually dealing with a disease of short duration in which the promotion of sleep, if necessary by artificial means, is essential for the maintenance of the patient's strength and powers of resistance. The choice of a suitable hypnotic, however, is not always easy, and is a matter which we may profitably discuss.

When the insomnia is due to pain I think we shall all agree that, unless the disease is likely to be of short duration, we should try analgesic drugs first before having recourse to morphine. Aspirin or pyramidon may serve the purpose or we may use one of the newer drugs such as dialyretin or veramon. I have had very little experience of the former and almost none of the latter, but I believe them to be very useful in many cases of insomnia due to pain and discomfort, and it will be interesting to hear the opinions of any who have used them more extensively. In many cases, however, we are compelled to fall back upon morphine as the only effective agent for abolishing the pain, and I would suggest for purposes of discussion that substitutes for morphine, such as heroin or one of the preparations of the "total alkaloids" (omnopon, alopon, etc.) have no real advantages.

When dyspnoea produces insomnia the hypnotic selected will depend on the cause of the dyspnoea. In cardiac cases there is no drug to equal morphine, which often exerts an almost magical influence, but in dyspnoea of pulmonary origin associated with much emphysema—as in bronchitis, for example—it is usually contraindicated. In such circumstances opium may sometimes be safely given by the mouth as in the form of Dover's powder, strychnine and oxygen inhalations are useful adjuncts. When these measures fail the choice of another hypnotic is often a difficult one, but paraldehyde, either by the mouth or the rectum, is perhaps the most suitable. I would suggest, however, that there are cases of this kind in which the induction of

deep sleep by any means is unsafe, as it causes the retention of secretion in the air passages. Pneumonia is a disease in which insomnia often results from a combination of several physical factors—pain, fever, cough, dyspnoea, and toxæmia—all playing a part in it—and the problem of how to promote sleep often taxes the resources of the physician to the utmost. In the early stages—say before the fifth day—morphine is much the most effective agent for the purpose, and I think it wise to use it unhesitatingly at this period in order that the patient may have some sleep "in hand." After the fifth day it is rarely safe to use morphine, and some other hypnotic must be chosen. Opinions differ as to which is the most suitable. Chloral, which is one of the most effective, is often said to be dangerous because of its depressing effect upon the circulation, but I would suggest that this danger is exaggerated. Paraldehyde is the safest, but is apt to be uncertain in its action. I believe that it is commonly given in too small doses, and that 2 drachms at least are required to ensure an effect. If the taste is objected to, it may be given in larger doses by the rectum. I have been disappointed with the action of the veronal group in pneumonia. For the allaying of cough which is causing insomnia codeine is probably the best remedy.

In the sleeplessness of uræmia, whether associated with dyspnoea or not, I am of opinion that morphine is most effective, and that the common prejudice against its use in renal cases is unjustified. If there is much restlessness and delirium as well as insomnia in uræmia I have sometimes had very good results from the hypodermic injection of hyoscyne (gr. 1/100).

PRIMARY INSOMNIA

It is well at the outset to make sure that the case is really one of primary or intrinsic insomnia, and not one of secondary insomnia in which some physical discomfort has been overlooked. Dyspepsia and constipation may cause sleeplessness although the patient is hardly aware of their existence. Flatulence, either in the stomach or colon, seems specially prone to act in this way, probably by interfering with the heart and so disturbing the cerebral circulation. It may therefore be worth while, when no psychical cause for the insomnia is evident, to try the effect of an alkaline carminative draught at bedtime. I believe that senile insomnia is often due in part to flatulence, and that a glass of hot grog as a "night-cap," which is admittedly successful in combating it, exercises its effects by expelling wind as much as by improving the circulation.

If the patient's insomnia is really of the primary variety our first duty must be to inquire into causes of mental discomfort, which will usually take the form of some anxiety state. The elucidation of this, however, and still more its removal, may take time, and meanwhile the patient clamours for sleep. In these circumstances I believe that our first task should be to try to get the patient to adopt the right mental attitude to the symptom. There is no use in telling him that it does not matter whether he sleeps or not. He knows better than that. He has probably, however, been exaggerating in his own mind the results of not sleeping, and one may certainly explain to him that there is no fear of his either dying of insomnia or of going mad as a result of it—both of which ideas have probably been preying on his mind. One may also point out that health can be maintained on a much smaller allowance of sleep than most people habitually take, and that complete rest and muscular relaxation are to a large extent a substitute for it. If the patient can only be got to take up this mental attitude to his trouble it is a big step towards curing the insomnia, for the latter is often being kept up through auto-suggestion, the patient does not sleep because he goes to bed dreading that he will not. If he can be got to snap his fingers at the insomnia it will often disappear.

At an early stage in the management of all severe cases the question of the relative advantages of homo or institutional treatment will arise, and this is a point which we may profitably discuss. Unless the insomnia has resulted from mental overwork (and I believe this, in the absence of coexisting worry, to be a rare cause), in which case going

off for a holiday may effect a rapid cure, I believe it to be best to cure the insomnia, if possible, in the environment in which it arose, though I am aware of the advantages of institutional treatment in cases requiring prolonged psychotherapeutic treatment, and, of course, in all the psychoses.

Meanwhile, if the patient is to be treated at home, and especially without drugs, he must be taught to manage his insomnia pending its cure. He should have a bedroom to himself, and should be provided with food to take during the night, and some not too exciting mental pabulum as well (the novels of Anthony Trollope are very suitable), while the puzzles and patience may also help to fill up the wakeful hours. By day he must cut down his activities, both mental and physical, to the minimum, he must keep warm and feed well, but eschew cerebral excitants such as tea, coffee, and tobacco in excess.

Last we come to the use of drugs. I believe it to be prudent to say that hypnotics should only be used in insomnia as a last resort. I would suggest that the fear of establishing a "habit" is a bugbear, and that the possibility of the insomnia becoming a habit is a much more real danger. I believe, in short, that there are few cases of bad insomnia in which the prescription of a hypnotic is not required at some stage or other. The removal of an anxiety state or the resolution of a conflict may be the aim, and meanwhile, especially if the insomnia is becoming absolute, and in most of the psychoses, artificial sleep must be induced. We have now a large choice of drugs for this purpose, ranging in potency from the bromides to luminal, but as we cannot afford to fail without making the patient worse than ever it is wise to begin with a hypnotic, or a dose of it, which is probably rather more powerful than is really necessary. The bromides are therefore only indicated in the mildest cases, but the urea-bromine compounds (bromural and adalin) are better. I have used them with success in many of the less severe cases, and they have the merit of being safe and of producing no unpleasant after-effects. Of the more potent drugs the veronal group is on the whole, the best, and medinal (sodium-veronal) in 7½-grain doses will meet most indications. Paraldehyde has the disadvantage that it advertises itself too openly, but chloral has probably fallen too much into disuse. It has the drawback of irritating the stomach, but that can be overcome by suitable methods of administration, and in a cardinal degeneration I believe it is otherwise quite safe although it is perhaps wise to avoid it in cases of myocardial degeneration. I believe it is otherwise quite safe. It has been used, of course, for suicidal purposes, and in a few cases a "chloral habit" has been set up, but these are risks which we must take. Chloralamide I regard as too uncertain in its time of action to be relied upon. Of the other hypnotics, trional, from its somewhat delayed action, is specially indicated in those cases in which the patient is awake only in the latter part of the night (so-called inter-nocturnal insomnia). Sulphonal, though largely used in asylums, is, I consider, inferior to trional. Luminal is unnecessarily powerful for use unless in exceptional circumstances, and morphine should never be administered in primary insomnia outside a mental hospital. The question of how best to wean a patient from his hypnotic once it has done its work is a difficult one, and part of the discussion might properly be directed to it.

GENERAL DISCUSSION

Dr HARRY CAMPBELL (London) defined insomnia as "the inability, given favourable external conditions, to enjoy a sufficiency of normal sleep." Sleeplessness arising from unfavourable external conditions was not insomnia. By a sufficiency of sleep he meant an amount which was normal for the individual, and thus depended upon age, sex, and individual constitution. Normal or physiological sleep was to be distinguished from morbid sleep, (b) was undisturbed by harassing dreams, and (c) from which the sleeper awoke refreshed. Insomnia, according to the above definition implied, not merely the inability to enjoy normal, physiological sleep, but the conditions were often combined with those who did not sleep long enough generally slept only when they did sleep. Others who slept long enough, perhaps

too long, did not enjoy sound refreshing sleep, and such might be said to suffer from a species of insomnia.

The object of the physician was to secure for his patient a sufficiency of normal sleep. All persons in the enjoyment of sound physical and mental health slept well under moderately favourable conditions, from which it followed that the supreme aim of the physician in treating sufferers from insomnia should be to raise the patient's health to the highest possible level. It was more particularly in chronic insomnia that this injunction should be kept in mind. In these cases there was a temptation to treat the patient in a "finicking" way, forgetful of the grand truth that a healthy person was a good sleeper.

Correction of Intrinsic Factors

In treating insomnia it was necessary to institute a minute search for causes, intrinsic and extrinsic. That physician would be most successful in treating the condition who was prepared to devote infinite care to matters of detail. Disturbing intrinsic factors might be either mental or physical. As regards the intrinsic mental factors, a careful search must be made for sources of psychic irritation, such as mental conflicts, apprehensions, worry. The patient, if present, called for psychological treatment. The patient should retire to rest in a tranquil state of mind, with the belief that he was really going to sleep, the contrary belief was a potent cause of insomnia. He should also endeavour to harbour pleasant thoughts. It was useless for the sleepless patient to try to go to sleep, the attempt tended to irritate rather than to soothe, an attitude of indifference was more likely to be followed by sleep. Belief operated by suggestion, whether it was spontaneous or had been implanted by the physician. Dr Campbell had known a lady to take a placebo pill every night, with rare exceptions, for years, under the impression that it contained a hypnotic, she declared that she could not sleep without one. The patient should avoid close mental work in the evening. If that was not possible he should go for half an hour's stroll before going to bed, so long as it did not exert, companion. Reading in bed, and there were those who habitually often promoted sleep, and there were those who habitually read on getting into bed until drowsiness compelled them to put out the light. A spell of wakefulness during the night might often be relieved by turning on the light and indulging in reading for a short time. Fear of the dark was a not infrequent cause of sleeplessness in children. On the physical side, the chief aim should be to raise the patient's health to the highest possible level. If only he could be rendered well both mentally and bodily, in insomnia, in the absence of environmental disturbance, would certainly disappear. It was all the more necessary to keep this truth in mind when, as so often happened, in sufferers from inveterate insomnia there were obvious signs of disease. Any disturbance of function that might be present should, as far as possible, be corrected and an endeavour be made to promote health. Unfortunately the of life calculated to get the sufferer to accept a mode of life was not always able to arrange his life entirely. One would wish, but it was seldom that he could not be given sound practicable advice. A careful inquiry should be made into his past history and present conditions, his daily routine, the arrangement of his meals, the hours and conditions of his work. When the blood pressure was high steps should be taken to reduce it by means of the diet, or even salines, and, if necessary, by curtailing the diet, or even by recourse to bleeding. In these cases a tabloid of nitrates, allowed to dissolve in the mouth the last thing at night, might be of service. Sources of intrinsic peripheral irritation—pain, cough, nasal obstruction, dyspepsia, frequent micturition, pruritus, cold feet, gastro-intestinal disturbance—should be sought for and treated on general principles. Cold feet might be followed by the hot mustard foot-bath, by the use of night socks, by vigorous friction, and by the removal of such disturbing factors as flatulence and hunger-pain. Patients liable to the latter should take some food, such as warm milk or soup, just before going to bed, or on waking up in the

Dr. H. Deane (Portsmouth) said that Dr. Hutchinson had pointed out that cases of insomnia might be divided for therapeutic purposes into two groups: (1) secondary, where the insomnia was a reaction to physical pain, illness, or discomfort; (2) primary, where the insomnia was an inherent symptom of a disease, in the same way (for instance) as was a cough in bronchitis. He had pointed out, furthermore, that it was the primary form of insomnia which was the more interesting to the psychiatrist, and it was to this form that Dr. Deane's remarks would be directed, and more particularly to the insomnia associated with severe psychotic conditions. Sleeplessness accompanied by psychomotor unrest, was a common symptom in most of the acute psychoses—manic depressive insanity, confusional and exhaustion psychoses, alcoholic delirium, general paralysis, dementia praecox etc. and treatment had naturally to be directed to this condition or collapse was liable to be due to this condition or collapse stupefied the patients, and which had been described as "chemical restraint," was steadily growing into disfavor. With increased knowledge of the possibilities of treatment, it had been found that recovery was favoured when the symptoms manifested in the acute psychoses were regarded as the outward expression of a morbid state of the organism. Endeavours were therefore made to assist nature to bring about a cure by careful nursing and medical treatment similar in kind to that given in acute medical illnesses, and aiming of course with the biological changes present. It was frequently found that the organism in these cases was unable to cope with itself, it did not digest food properly, metabolic processes were disordered so that waste products were not eliminated, a sufficient rate and wasting rapidly occurred. Frequent feeding with liquid diet on account of its ease of administration and also its value in diminishing the burden on the alimentary system was prescribed. The body was bathed frequently to promote skin elimination, attention was given to the bowels and alkalis administered with a view to neutralizing acidity. Direct attempts were made to promote sleep by means of sponging hot-packs or, if the condition permitted prolonged baths. Such measures did not always suffice to produce sufficient sleep and naturally hypnotics were often necessary. These were used as sparingly as possible however and in conjunction with such methods as had been described they undoubtedly had considerable therapeutic value. It should be mentioned that Klasi and other psychiatrists had utilized a drug, called somnifen to produce a prolonged "twilight sleep" for therapeutic purposes in the psychoses. The sleep which had been maintained for six or seven days resembled lethargic encephalitis—the patients could be aroused to take nourishment or pass excreta and dropped off again when quiet. Favourable results were reported, but the treatment seemed rather drastic and was not free from danger. One could

Correction of Extrinsic Factors

The bedroom should be dark, quiet, and well ventilated. A spring bed was best, and it should be placed away from the wall. The mattress should not be uncomfortable and hard, one who was accustomed to a soft mattress often found it difficult to sleep on a hard one. The bedclothes should be no more than sufficient to keep the body comfortably warm. The height of the pillow deserved consideration. I wish what height was most conducive to sleep was mainly a matter of habit. When the blood pressure was not normal and the patient was otherwise healthy a low pillow was best, but in cases of high blood pressure the pillow should be high. One was apt to forget that the influence of the horizontal posture in augmenting intracranial pressure was considerable and might play a small part in determining cerebral haemorrhage. The mattress and bedding should be thorough and clean. This was especially necessary in the case of those who were liable to cold feet and attacks of shivering such as might occur in women at the climacteric. It was much easier to keep warm in a well aired than in a damp bed, and it should not be forgotten that in damp weather the bedding was capable of absorbing much moisture. It might then be advisable to give the entire bedding an occasional airing by the fire. In the case of cold subjects the bed in cold weather should be well warmed in means of a hot water bottle. There was no advantage in getting into a cold bed, a warm bed was a luxury which might always be safely indulged in when the weather was cold. Patients usually preferred to sleep on the right side, doubtless because the ponderous liver was situated on this side but it was well to be able to sleep on either side indifferently and not become too great a slave to habit. Some were so wedded to habit that they could not sleep in a strange bed or bedroom. The more one emancipated oneself from bondage of this kind the better. The bad sleeper should sleep in a bed by himself. The bad sleeper sleep with the mother, but in a separate cot, and should not be fed during the night. The nursing should not be a prospect of an undisturbed night's rest. Children over 2 years should not sleep in a room occupied by adults and should occupy separate beds. Exercise in the open air such as was provided by golf, was conducive to sleep. In cases of intractable sleeplessness it was sometimes a good plan for the sufferer to get up early and occupy himself out of doors. The green grocer who had to go to market in the small hours of the morning and was busily occupied all day in his own shop was little likely to suffer from sleeplessness, and the same was true of the peasant who rose with the sun and worked in the fields most of the day. A warm bath at bedtime sometimes, promoted sleep. The addition of a little mustard might enhance its effect. A hot mustard foot-bath was sometimes helpful, especially in cases with a tendency to cold feet. The Turkish bath might also be of use. In moderate cases the wet pack might be tried. This method was formerly much used in hospitals until it was injudiciously prohibited as unnecessarily severe. The plan of sleeping in a wet nightgown had been advocated. One of Campbell's patients adopted this plan for several years. A bout of wakefulness at night might sometimes be terminated by getting out of bed and dousing the face and neck with cold water, vigorously brushing the hair and arms, than the ordinary night gear. As regards climate, it was well known that some resorts were much more conducive to sleep than others. High altitudes were generally unsuitable for bad sleepers. For most patients the lower altitudes and a warm climate were preferable. In the home of a climate for a sleepless patient the latter's personal experience was however the best, indeed the only safe guide. The factor of suggestion had also to be reckoned with. If a person got it into his head that he was not going to sleep well in a certain place his expectation was likely to be realized. Some patients lay awake until towards the morning, when they fell into a sound

not but feel that such treatment was analogous to the treatment of a fever by forcing the temperature to normal with powerful antipyretics. A treatment must be judged by its results, however, and Klags had evidently found his methods of value where all else had failed. Dr Devine did not propose to discuss further the means of combating insomnia in severe psychotic cases. It would appear more profitable to suggest some directions in which the treatment of insomnia in the psychoses enabled them to understand and treat this condition in the milder cases found in general practice. In the first place it would be observed that they did not in the psychoses aim chiefly at treating the insomnia itself, but rather the morbid processes in the organism responsible for its occurrence. The point Dr Devine wished to emphasize was that the insomnia was essentially a secondary insomnia in the sense that it was a reaction to a morbid and sensitive state of the organism. The insomnia, it was true, was not here due to the pain or discomfort associated with a clear cut physical disease, rather was it due to a vague, ill defined, and imperfectly understood state of the organism as a whole, which was registered in consciousness as excitement, depression, confusion, and the uprush of morbid ideas and images, and it was the excessive preoccupation with these experiences which prevented the patient from sleeping. He would therefore make the following generalization, that in treating a case of insomnia they should always seek for the underlying and persistent stimulus which was responsible for keeping the organism awake. This stimulus might be an easily localized pain or discomfort, or an intangible alteration in the organism which was felt, not as a localized pain, but as an alteration in the emotional or affective state (depression, elation, anxiety or fear, etc.), but in either case they aimed at relieving the hidden cause of the sleeplessness. Dr Devine was anxious that this formulation should not be regarded as an instance of academic theorizing in which psychiatrists were perhaps prone to indulge. He thought there was a definite practical value in regarding all cases of insomnia as the outward expression of a malfunctioning or pain-stricken organism, it certainly ensured their searching for objective evidence of biological changes in the organism. They might regard changes in the emotional life as an exquisitely delicate register of the state of the organism, and for this it would seem to be essential in all cases of primary insomnia to make careful observations on the emotional life of its subjects. This suggestion was made because he felt it to be highly probable that many such cases were minor forms of psychosis such as were met with in severe form in mental hospitals. Insomnia was a frequent prodromal symptom of the psychoses, and it was obvious that if they recognized the condition as being due to the depressed or excited stage of cyclothymia, a mild exhaustion psychosis or presenile depression, or possibly an early case of general paralysis, their treatment could be applied with much greater confidence and skill, as they felt that they understood what was wrong and the probable outcome of the case. Probably many of the cases of suicide recorded in the papers, in which sleeplessness was so often described as the symptom which was most noticeable to the relatives, were really instances of depressive psychoses which would have yielded to treatment in a clinic or hospital. Unfortunately, however, there was practically no hospital provision for the treatment of these milder psychotic cases. Dr Devine did not wish to suggest that the majority of cases of insomnia were due to psychotic conditions. Many were due to anxiety states which indicated the existence of what Kemp had well named "autonomic cravings" which were inhibited from free expression. Such cases yielded to psychotherapy, which relieved the tension of the organism and enabled the individual to adjust with confidence and freedom to the life he was called upon to live. In such cases, of course, a full exploration of the patient's domestic, business, social, and sexual life was essential, and they certainly could not ignore the last because a great deal of anxiety and insomnia must be due to inadequate functioning in the sexual sphere in view of the unbiological modes of living which modern life imposed on so many members of the community.

Dr C P Symonds (London) stated that, as they knew so little of the physiology of sleep, any explanation of insomnia upon a physiological basis must needs be somewhat speculative. Nevertheless, he hoped a brief physiological digression as an introduction to some remarks upon the practical treatment of insomnia would be excused. The essential feature of sleep was loss of consciousness, consciousness was presumably a function of the cerebral cortex, sleep therefore implied temporary cessation of function in these cells. The activity of these cortical cells depended upon stimuli which were constantly reaching them from other points of the nervous system. When they were refreshed after a period of rest these cells needed comparatively little stimulation to excite them to activity, when they were normally fatigued after a day's work the stimulus required was greater. Somewhere at the base of the brain he assumed that there was a mechanism which could inhibit the flow of impulses towards the cortex, as it were a lock gate partially obstructing the stream. In the ordinary way this sleep centre came into action at a regular interval once every twenty-four hours. Thus was a reflex process, and might therefore be facilitated or inhibited by a great variety of conditions which might differ in different individuals and were subject to alteration. Such were the ordinary bedtime habits. This schema provided at any rate a simple classification of the insomnias. Sleeplessness might be due to (1) An abnormal increase in the flow of stimuli so that the stream overflowed or forced open the lock gate, and the cortical cells, in spite of their fatigued state, were subject to a degree of stimulation which was sufficient to maintain them in a state of activity. Such increase in the stream of stimuli might be due to pain, discomfort, or anxiety. (2) The sleep centre itself might be out of order so that the lock gate did not close, and for this reason the cortical cells, though normally fatigued, were still subject to a stream of stimuli sufficient to keep them in a state of activity. These were the cases in which the habit of sleep was lost, often as a secondary result of prolonged insomnia from pain or anxiety. (3) The excitability of the cortical cells might be exalted as the result of imperfect oxygenation, toxæmia, or excessive fatigue, so that the normal minimal stream which always flowed beneath the lock gate after it was closed was sufficient to keep them in a state of activity.

The causes of insomnia due to an increase in the flow of stimuli to the cortex had, as regards its physical side, been ably dealt with by the opener of the discussion. On the psychological side it was the unpleasant emotions—*anxiety and fear*—which most readily prevented sleep. With Dr Hutchison's opinion as to the justifiable use of hypnotics in such cases pending the results of psychotherapy Dr Symonds was entirely in agreement. It should merely be borne in mind that all the hypnotic drugs were poisons and should therefore be used with judgement and common sense, and that every hypnotic—including paraldehyde—if used continuously was apt to create a habit. The principles guiding the use of hypnotics in cases of neurosis should be, first, not to continue with drugs for more than a week or so without openly or covertly reducing the dose and observing the result, secondly, never to exhibit the same hypnotic for more than three nights in succession. An alternation of medinal, chloral plus bromide, and paraldehyde allowed plenty of scope. Reference had already been made to the anxiety about sleep which was such a common development in anxiety neuroses. It was clear that so long as a man was worrying over the question whether he would get to sleep or not, and, if so, whether he would get a sufficient sleep, he was not likely to attain his object. Dr Symonds had found it a good plan in such cases to give a dose of paraldehyde (53 to 54). This resulted as a rule in a sound sleep. The patient was instructed to take a holiday next day which should include an and exercise. He was further instructed on the three succeeding nights to have the same dose of paraldehyde poured out by his bedside, and to take it without hesitation if he could not sleep without. Being thus assured in any case of a good night, he would often need no further dose of hypnotic, but might be allowed to have a single dose in his possession to take at need. The little bottle thus

acted as a charm which kept the spectre of insomnia away from an ease in which insomnia had persisted longer than a week or two the sleep reflex itself was apt to be disturbed. The conditions which in the past had favoured the closing of the lock gate lost their effect, and might even from continued association with insomnia inhibit rather than facilitate the onset of sleep. Quiet and darkness, the ordinary bedtime ritual of undressing and washing, even the accustomed bedroom itself, instead of inviting sleep repelled it. Hence the value in any case of long standing insomnia of a change in the surroundings. At the outset of treatment it was often a good thing to move the patient into a new bedroom, and to prescribe a new routine in which physical and psychological factors might be combined to facilitate new habits of sleepiness. A habit which was valuable in some cases was that of muscular relaxation. It was possible by an effort of will to relax the muscles of a limb so that it lay inert, it was possible, but not easy, as anyone might prove by trying for himself to allow his arm to remain passive while it was moved by another. With training the ability to relax might be developed so that a patient might learn to relax all his limbs in turn and finally together. This exercise in relaxation was especially valuable in people who were kept awake by the "fidgets." Fidgeting which had originated from pain or worry might be perpetuated as a habit—in the same way as a tie. In such cases muscular relaxation, which might be practised at other times during the day, should be included in the bedtime ritual.

As to allowing patients who were suffering from insomnia to read or play patience in order to pass the time, Dr Symonds was not convinced of the wisdom of this plan. One would rather suspect that it would tend towards a habit of wakefulness, for the patient who woke during the night should, he considered, be discouraged even from turning on the light to see the time. He should be encouraged to think of relaxation and sleep, to repeat familiar verses to himself, or even to count the classical sheep as they passed through the imaginary gate. Some persons had a happy knack of day-dreaming which stood them in good stead on these occasions and would drift off to sleep happy the while they landed prodigious trout, hit tremendous dives, or sailed easily up gradients of 1 in 5 at the wheel of a Rolls-Royce. As aids to sleep such habits should be encouraged.

Whether or not patients suffering from insomnia should be treated at home was a question upon which no general rule could be laid down. In the cases of emotional origin it was often necessary to have the patient at first away from his own home for the sake of the emotional rest which such a change provided. This applied especially to women, who found it difficult to rest in their own homes.

Finally, there were the cases of insomnia in which the excitability of the cortical cells was exalted as the result of anaemia or intoxication. Dr Symonds would suggest that the sleeplessness of pneumonia and other conditions in which there was cyanosis was partly due to this cause. At one time during the war, when he had under his care a number of men suffering from gas poisoning, he was impressed by the hypnotic effect of oxygen administered continuously through the nasal catheter. Subsequently he used the same plan in the treatment of the influenzal pneumonias with cyanosis. In certain cases the continuous oxygen would bring sleep even when morphine failed. Included in this group was also the insomnia which might result from excessive mental fatigue. Here, no doubt, as the result of over-exhaustion, some biochemical change occurred in the cortical cells which increased their excitability. When the worker sought repose he found himself kept awake by the tumult of his own thoughts, and was at the same time susceptible to the least external stimulus. This was a common form of occasional sleeplessness in intellectual workers. It might easily lead to a disturbance of the sleep habit. Therefore, as an occasional symptom it should be promptly treated. A whisky and soda or 5j of bromidia was usually a sufficient remedy, followed by a holiday week end if practicable. In this group of cases in which the insomnia was due to over-excitability of the cortex drugs were in essential part of the treatment, and as a rule large doses were needed.

Dr Symonds agreed with the opening of the discussion as to the value of paraldehyde, but believed that there was some truth in the tradition prevalent among nurses that paraldehyde might cause an increase of restlessness and excitability. When this occurred it meant, as a rule, that the dose given was too small. If an hour after a 2-drachm dose of paraldehyde the patient appeared to be more restless than before, a further dose of 1 drachm would sometimes induce sleep within a quarter of an hour.

Dr E. I. SERRICES (Ruthin Castle) considered that in the case of the overworked business man suffering from insomnia the best remedy was for him to get out of doors for one or two hours every day. This procedure was more important even than rest, and was far better than the taking of hypnotics. In any case he was not in favour of giving a continuous hypnotic. Nervous and excitable patients should take a short rest after the midday meal, this was often helpful, and did not in the least interfere with the night's sleep. An important factor was the patient's mental attitude towards wakefulness. Reading in bed might often assist the coming of sleep, but the literature had to be chosen with care, and the period of reading should be limited to ten to fifteen minutes. Novels were useless owing to the tendency to peruse them to a finish, the book of Job, Evelyn's *Diary*, and Carlyle's works were more suitable.

Dr D. STONE (Northampton) said that the posture adopted by patients in bed was worthy of consideration. They should lie on the right side, as in this position it was easier for the stomach to empty. The actual amount of sleep necessary varied with the individual, some required more than others. With advancing years less sleep was usually needed. He was not in favour of going to bed on an empty stomach, and considered a moderate meal advisable. From thirty years' experience in general practice he had found that paraldehyde was the best hypnotic for ordinary use, he preferred doses of 1 drachm, as 2 drachms rendered the patient's breath offensive for thirty-six hours. Bromium and veramon also were often successful. For patients with hyperacidity he advised 20 to 30 grains of sodium bicarbonate with a carminative. For those who were assisted to sleep by reading he recommended Young's *Half-hours with the Best Authors* as the most suitable book.

Dr JOHNSON SMYTH (Bournemouth) stated that of his last hundred patients ninety were over 50 years of age, and 70 per cent of these had insomnia—hence his interest in the symptom. He classified cases of insomnia into three groups. Group 1, the cases met with chiefly in asylums, in which the cerebral cortex was in process of destruction owing to advanced brain disease. Such cases were hopeless. Group 2, those occurring in the earlier periods of life, where more often than not the cause was a solitary one—pain or a psychic disturbance—a love affair, a debt, etc. With the removal of the pain or the settlement of the debt the case recovered. Group 3, cases in the later periods of life, in which, more often than not, the factors behind the symptoms were multiple. Pain was frequently present in association with psychic factors, and irregularities of blood pressure were also nearly always found. Cases now and then might reveal neither pain nor psychic disturbance, and to all intents and purposes the patient was in good bodily condition. The solution of the problem in such cases was surely to be found in a cerebral disturbance brought about by the afferent fibres of the vegetative nervous system—it might be from some obscure pelvic, abdominal, or chest ailment not discovered—and which had not revealed its presence by actual pain, yet the messages proceeded upwards unknown to the individual, but resulted in sleeplessness. Dr Johnson Smyth advocated change of air and scene for cases of severe insomnia. He recommended bromine or bromides only where great restlessness was present, but massage given in silence at 9 p.m., followed by medical at 10.30, combined with the cultivation of a contented mind, gave the best results. He recommended light literature at bedtime—such as *Robinson Crusoe*, *Aesop's Fables*, or a good translation of Iliad. The

greatest contribution of all to a contented mind was, he considered, to be found in the consolations of religion.

Dr W. A. Potts (Birmingham) drew attention, in the cases in which drug treatment was necessary, to the value of combining morphine and hyoscyne. The combination enabled a smaller and safer dose of each drug to be used. If there was any fear of harm resulting from the by-products of hyoscyne, this was diminished by giving at the same time a tumbler of water, preferably hot, which was in itself sometimes an effective hypnotic. In certain selected cases alcohol, in a sufficient dose, was valuable, but due regard must be paid to the possible dangers. Among simple drugs a dose of "blue pill" was often valuable, as might be expected from what they had heard of alimentary toxemia. As regards predisposing habits, tea, coffee, and tobacco were to be considered, they might be taken in too large quantities or too late in the day. Finally, Dr Potts desired to emphasize what Dr Devere had said, that on the psychological side it was ineffective work more often than overwork that caused the trouble. In many cases a few hints to the patient as to how he could be more effective were valuable.

Dr C. Montlock-Brown (Biauton) pleaded for further research into the physiology of sleep. She had found that outdoor exercise prior to retiring for the night was often helpful. Hypnotics should be given only as a last resort, and prescriptions for these drugs should, she considered, be invariably endorsed "Not to be repeated." Much might be done from the preventive standpoint by the correct upbringing of children and the avoidance of tea and alcohol.

Dr R. Mackenzie Wallis (London) referred to certain investigations he had carried out regarding the relative toxicity of hypnotics. In many cases of mental disorder it was necessary to administer hypnotics, and in some such cases he had investigated the effects of the drug on metabolism. The functional methods of diagnosis of hepatic and renal insufficiency were used for this purpose. The drugs used were sulphonal, veronal, and medinal (sodium-veronal). In practically all cases no evidence of a toxic action on the liver or kidneys could be found in spite of the administration of the hypnotic over several months. They were also rapidly excreted and there was no evidence of cumulative action. It was also possible for a normal individual to take these drugs during the day without the induction of sleep. In view of these observations, it was inadvisable to withhold hypnotics when other conditions warranted their administration.

Dr T. A. Ross (Penshurst) dealt with the influence of suggestion. The patient was often helped by anything the doctor himself believed in, and many drugs (for example, aspirin) might act purely by suggestion. All the so-called primary insomnias were really secondary, but the cause was less obvious than in the cases termed "secondary." It was necessary to ascertain what was at the bottom of the apparent primary cases. Dr Ross agreed that at times it was necessary to give hypnotics, although their administration certainly tended to inhibit the process of psychological investigation.

Dr Woods Hutchinson (California, U.S.A.) said that the great handicap in treating insomnia was that they had no idea of the physiological mechanism of sleep. Further, the symptom of insomnia depended upon the testimony of the patient, and as no individual could assert how long he slept the patient's statements were usually erroneous. On careful watching by a nurse, the patient being unaware, in many cases of alleged insomnia it had been shown that sleep was really quite good and sufficient. The best mental attitude to persuade the patient to adopt was an endeavour to forget his sleeplessness.

Dr R. Whittington (Hove) considered that the individual temperament of each patient was of great importance and had carefully to be studied, the same remedies that suited one person did not meet with success in another.

He would have liked to hear more of the treatment of insomnia by suggestion or hypnosis.

Dr H. Clouston Murray (London) said that he agreed in the main with Dr. Hutchinson's "robust realism." The bogey of habit formation dominated unduly then use of hypnotic drugs. He wished to emphasize the point that many cases of apparently "primary" insomnia were in reality secondary. The commonest group was that in which patients woke in the early morning for no apparent reason. On close investigation it was often found that they were, in fact, suffering from gastric fermentation of a degree which was not sufficient to cause acute discomfort, yet sufficient to determine pressure on the abdominal aorta and so interfere with that degree of cerebral ischaemia which they knew to be an essential condition of sleep. In this connexion he disapproved strongly of the usual procedure adopted by nurses—namely, the glass of hot milk. As a warm beverage it did its work and generally sent the patient to sleep, but as few adult patients could digest, when recumbent, half a pint of milk, fermentation followed, which in course of time woke the patient. If, on the other hand, a warm drink of a non-fermentable character were administered the results were likely to be more satisfactory. Dr Campbell had referred to cold feet as an "instigator" that militated against sleep. In point of fact this condition was more than an instigator, it revealed a state of circulatory disequilibrium involving inter-arterial vasculature to a degree that rendered sleep well-nigh impossible. The question of circulation was most important to bear in mind in studying insomnia. Dr Whittington had rightly emphasized the necessity for studying individual cases. Many of their disappointments were due to ignoring the vascular state of the patient. It was useless to expect the same remedies to produce the same results in patients with high and low blood pressures.

The President (Sir Maurice Craig) said that they were much indebted to Dr. Robert Hutchinson for the able way in which he had opened the discussion and for placing the subject before them in so general and yet so clear a way. This discussion had brought out very clearly how varied were the methods of treating insomnia. He agreed in the main with much that had been said. Like many others, he had been brought up to fear the use of hypnotics lest perchance by prescribing such he might set up a habit of drug-taking in his patient. Thirty years' experience had taught him the folly of such an attitude. He had learnt to fear the dangers of insomnia, which were real, and to appreciate that the danger of starting a habit was to a very large extent chimerical. As a profession they were apt to think in bromide, a drug infinitely more harmful than most hypnotics. Bromide in large doses was very damaging to the stomach, and it rapidly confused the mind without giving sleep. It was far safer to use diol or medinal or any other drug which was found effective. Sir Maurice had listened to Dr. Mackenzie Wallis's remarks with more than usual interest, and his findings bore out his clinical experience. He (Sir Maurice) had used sodium veronal very freely for a great number of years and had never seen any bad results. He found that the patient improved both mentally and physically and that the danger of habit was infinitesimal. Sleeplessness should be treated seriously from its earliest onset, and with some types of patient not to do this was to endanger his mental equilibrium. A further point of importance was, once a drug and the dose required to give good sleep were found, never to stop or change until the patient's health had been fully re-established for some time. To stop it for a night or two meant, in the majority of cases, that the effect was lost, and thus produced a psychological effect in a belief that sleep would never be restored. The early relief of sleeplessness was the safest course to avoid any drug habit, as the patient never lost his confidence in his own power to obtain sleep. The duty of the physician was to preserve the intelligence and the mental and physical activity of his patient, and this end could be attained if drugs were properly given, but if they were withheld a general deterioration might, and in certain persons would, result.

DISCUSSION ON PROPHYLAXIS OF MENTAL DISORDER

OPENING PAPER

BY

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The widespread activities now in being to improve national health, the appointment of a Royal Commission on Lunacy Law and the recent movement in favour of mental hygiene make this an appropriate opportunity for a full discussion of the prevention of mental disorder. In the first place it is a matter not only of general professional interest and intimately connected with measures calculated to prevent all forms of disease, but is wrapped up also with child welfare, education, training, and even housing conditions. It is a branch of public health, and both of these two fields of activity will benefit from closer co-operation. A discussion such as this, though in a special section, should be on very broad lines, for it deals with the highest reactions of the human organism, in fact with its reactions as a whole, whereas in other branches of medicine one organ or system of organs chiefly, though by no means entirely, attracts our attention. The practical recommendations as to the desirable steps to be taken must be largely determined by the relative importance attached by experts in mental disease to the etiological factors, which still demand much more patient research. It is therefore perhaps right that the opening paper should be presented on general grounds, and it is certainly essential that the special knowledge of members of this Section should be brought to bear on a subject of national importance. The discussion will have an educational value for those of us who are interested rather in general medicine than in this special and rapidly progressive branch personally, I would express my debt to our President, Sir Frederick Mott, Dr Hubert Bond, and others.

It must be remembered that probably the bulk of patients in ordinary practice present some disorder, however slight, of mind, conduct, or feeling, spoken of as "nerves," neurasthenia, night terrors, and that in this early stage of conditions responsible for such an enormous amount of distress proper treatment is most successful. Failure to deal efficiently and sympathetically with these minor disorders, which no doubt depends on the very scanty instruction available in the medical schools on this subject, may well, as Dr J. A. Ellis Butler (1925) has pointed out, account for some of the vagueness of Christian Science and other forms of irregular practice. The public, as well as ourselves, require education as to the way in which mental abnormalities should be treated, and should be impressed with the similarity of mental and bodily disorders, and with the commonplace fact prevention is better and cheaper than cure, so that the earliest departures from the normal should at once be communicated to the doctor and remedial measures started without delay, this step eventually becoming as much a matter of course as a visit to the dentist. The enormous economic benefit to the country of such preventive treatment needs no insistence.

ETIOLOGY

The measures appropriate for the prevention of mental disorder are necessarily determined by the numerous forms of mental unsoundness. The multiplicity of the causes and of their divisions—hereditary, environmental, physical or bodily, and purely mental or psychological—complicates the problem of prevention which naturally appears in different aspects to the biologist, the physiologist, and the psychologist. The biologist regards heredity as specially important; the physician changes in the nervous system, and the psychologist independent alterations in the mental process. The influence of environment has a bearing on all three views—the hereditary, the neurogenic, and the psychogenic. Heredity and environment are closely interwoven in the causation of mental disorder, as predisposing and exciting factors respectively, the disease being the morbid reaction resulting from a complex

set of external agents stimulating "in inborn low margin of physiological resistance," and the abnormal response being determined either by the nature of the external stimuli or by the condition of the nervous and mental mechanisms. The special form of nervous disorder is not inherited as such, but there is a low state of vitality in which a tendency to hypersensitiveness is handed down, so that one of several manifestations, such as asthma, may occur, though different forms may appear in parent and child. The position is well met by G. Darpe's definition of the word "constitution," so vaguely and variously used in the past, as "the aggregate of hereditary characters, influenced more or less by environment, which determines the individual's reaction, successful or unsuccessful, to the stress of environment." Although, generally speaking, more can be done in the way of modifying the environmental conditions—namely, by all that is included under the term "mental hygiene"—measures to counteract gross hereditary disease such as syphilis and cretinism, must not be neglected. Abnormal mentality may obviously be due to change transient or permanent, in the nervous system, just as a hindage over the eye or a plug of wax in the ear will obscure sight or hearing, but this does not exclude the purely psychical factor of mental disorder in other cases, however unsatisfying this may be from the standpoint of the materialistic microscopist.

The influence of heredity in genius, crime, and insanity is fully recognized, and terrible examples, such as the Jules family in which the 540 legitimate and 169 illegitimate descendants of the original Max Jukes (born 1730) provide the most striking proof of the heredity of crime and of its relation to prostitution and mental disease. Half the cases of mental disorder have been ascribed to hereditary factors. This factor necessarily carries with it as means of prevention the difficult subjects of eugenics, sterilization of the defective, and birth control. Without being reactionary we may wisely hesitate before advocating strict eugenic measures of breeding which, if carried to their logical conclusions, might seriously impair the future progress of the race, for if the inborn tendency to variation, which is responsible both for mental weakness and for intellectual ability, were thus removed, a dead level of standardized men, like Rabbits' might conceivably result. Until, therefore, further research into this subject with its difficulties, especially the limitation of available material for the investigation of Mendelian factors in mental disorders, has thrown more light on a question which obviously conceals very great liberty of the subject, delay would be desirable. In the meanwhile the segregation of mental defectives provided in the Mental Deficiency Act (1914) has diminished the propagation of the handicapped child, and has to a limited extent met the question of sterilization of the mentally defective. Birth control, though a eugenic method, inasmuch as it tends to improve environmental conditions of the offspring, is less drastic and difficult than standardized propagation of the human race, and is, of course, widely practised though far more often among those whose offspring would be of value to the race than among the very poor, and thus has a dysgenic influence. But the Society for the Provision of Birth Control Clinics has established centres in Waltham and North Kensington, where poor married women are given advice on the safest methods of birth control by lady doctors. The arguments against this practice on the risk of a falling population and the moral one that promiscuity will be favoured the latter is the same as that which has made many sincere and well meaning people strenuous opponents of the prevention of venereal disease by "pickets."

While fully recognizing the indubitable influence of hereditary *dementia* it is not only natural but advisable to avoid exaggeration of such a fatalistic attitude by critical consideration of the limitations of this conception. Indeed, from the standpoint of preventive medicine it would be wise to minimize the view that heredity is so all-powerful that in the face of such a history all that can be done is to fold our hands in resignation. For a firm belief in the influence of heredity has much to answer for in stifling research in opposition to the belief that from his birth man is

in opposition to the belief that from his birth man is

endowed with instincts which rigidly limit and control his conduct throughout life there is the more or less mechanistic conception that man's actions are determined by his response and adaptation to environmental stimuli and that thus his instincts of self-preservation, sex, and the herd, are modified in either a good or an evil direction. What is often assumed to be hereditary may be really acquired in early youth as a result of the family environment and irresistible imitation which Dr C H Bond compares with an infection. An hereditary tendency may remain latent unless and until some stress is brought to bear on the individual, who then manifests symptoms of mental disorder, which in absolutely normal person would escape. The stress which is the exciting factor acts in virtue of the psychopathic predisposition, and may be (1) physical—trauma, infection, toxic factors, unhealthy environment, unsuitable diet, or (2) psychical—worry, emotional strain, overwork. As mental disorder may occur in its absence, hereditary tendency is not an essential factor in the etiology of insanity, though no attempt to minimize its importance as a disposing influence will be made. As would be expected, hereditary taint appears to manifest itself earlier in life than do mental disorders due solely to stresses—toxic infective, or physical. Carswell estimated that while 43 per cent of all cases have a constitutional basis, 67 per cent of cases arising between the ages of 15 and 45 years are thus explained.

Chronic infective foci, and the resulting toxæmia, by diminishing the resistance of the body and by producing degenerative changes in the nervous and endocrine systems, constitute an important factor both disposing to and even determining mental disturbance. Auto-intoxication due to oral, tonsillar, and intestinal infection is sometimes—for obvious factor, though often the local conditions—example, intestinal stasis or oral sepsis—are present without the appearance of general or mental symptoms, but this is probably because the resistance of the soil or the constitution as a whole, and especially of the nervous system, is sufficiently good to prevent any degenerative effects. This resistance may be broken down by chronic toxæmia, or the other hand, responsible focal infections, especially disease of the accessory nasal sinuses (P Watson-Williams), may remain latent and escape detection. Cotton (1923) believes that the so-called functional psychoses are due to a combination of many factors, the most constant of which, and from the therapeutic point of view the most important, is cellular disturbance in the cortex due to the toxins of focal infections, as evidence bearing on this he (1915) has found fatty degeneration in the cerebral cortex in the toxic-infective psychoses. He stated in 1919 that without infection the chances of psychosis developing is very slight. Local infections—the gall bladder and appendix—and of the genito-urinary organs are now recognized as important in causing mental disorders. At the New Jersey State Hospital, Trenton, the number of discharges increased from 37 to 85 per cent after removal of oral and tonsillar infections (H A Cotton, 1923). Watson-Williams has argued that systemic symptoms, including mental disorder, such as melancholia, may depend on infection of the accessory nasal sinuses, which being slight and not shown by profuse production of pus are unaccompanied by a protective polymorphonuclear leucocytosis.

The effects of alcoholism and syphilis and the means of obviating these factors, though not always carried out, are well recognized, and therefore need not be further discussed. It is very different with regard to epidemic encephalitis, for since its widespread prevalence, dating from 1918, it has been responsible for an amount of mental disorder the permanency and seriousness of which, though difficult at present accurately to estimate, are extremely menacing. It is probably due to a filter-passing microorganism, more information is needed as to the prevalence of carriers and their detection on the lines adopted by the Rockefeller Institute in regard to acute poliomyelitis, and as to the problems of immunization and of specific curative treatment. But the questions composing the "herpetico-encephalitic" group (Levaditi, Nicolau, and Poineloux)

require elucidation before further work can be done, Flexner and Amoss are investigating these preliminaries. Possibly in the future a test for the detection of susceptibility on the lines of the Schick test in diphtheria and of the Dick test in scarlet fever may be elaborated, so that prophylactic treatment, when such is available, can be utilized for the susceptible. At present no remedy of value is known, and the need for further research is therefore urgent.

An interesting question is the possible responsibility of primary deficiency of the endocrine elements of the gonads for mental disorder. Sir Frederick Mott has shown that changes in the sex glands occur in dementia præcox and other forms of mental disease, but it is difficult to disprove the view that the endocrine maldevelopment is concurrent, and, indeed, part of the general bodily arrest of development or precocious degeneration. Endocrine deficiency of congenital origin—for example, cretinism—may to some extent be prevented by ante-natal treatment and environmental precautions. Endocrine inadequacy arising later in life, in so far as it depends on focal infectious and toxæmia, should become less frequent with improvement in the general health of the nation as the result of school clinics and dental benefit in connexion with national health insurance.

The claims of physical and psychical factors as responsible for the causation of mental disorder have been much discussed, and no attempt to balance them will be attempted, for, indeed, they are too intimately related. The psychopathic element may be inborn as in hereditary disposition, or may be acquired during early childhood, and in either event may remain latent until and unless activated by physical or psychical causes. On the other hand, mental disorder may arise without any discoverable physical cause and be cured solely by psychotherapy, so while admitting to the fall that a physical cause may elude the most exhaustive clinical and laboratory investigation, the case for purely psychogenic origin in such cases is a strong one.

Educational Dangers at Schools

Overpressure in schools on clever boys likely to grind kudos for their teachers by winning scholarships is a widely recognized but somewhat neglected danger, and not infrequently leads to mental sterility in later life if—as is not uncommon in brilliant boys—there is an hereditary taint to some kind, usually mild in character, but in disorder. Precociously able boys will, of course, be in forms with boys considerably older, and therefore will be likely to share the same hours of sleep, whereas they require more, not only on account of their more tender years, but because of their mental activity. This should always be borne in mind by masters, who should see that such boys receive the quota of hours in bed corresponding to their age and not to their place in the school list. The importance of sufficient sleep and rest in the prevention of mental strain and breakdown is a point towards which the men attached to public schools are, I believe, fully alive, and their help should be invaluable. The need of an ample allowance of sleep for growing boys is often overlooked, and should be insisted on, as Dr T D Acland did so vigorously twenty years ago, the early school (from 7 to 8 a.m.), especially in the winter, may be of value from a disciplinary point of view, but hygienically it is open to serious question. At one school the question when early school should be stopped is wisely determined by the hours of sunrise. About puberty, especially in rapidly growing boys, and their for physical rest and a generous allowance of sleep is shown by the way they lounge about in easy chairs, and their apparent "laziness" in getting up in the morning in such a boy is "inattentive," "fidgety," "could do better if he chose," generally has the benefit of a hard to indifferent report, and "goes off his game," is not unnatural, and the wise parent should possess his soul in patience. Schoolmasters must recognize this and pay more attention to the personality of the human boy and not concentrate on his mental products. Boys are not sent to school to win testimonials to the transient success of a

forcing system. The senseless and harmful punishments of writing out hundreds of lines and keeping boys in after school hours should be regarded as relics of barbarism.

Great benefit both in the character of the work done and in the boys' health may result from providing or prolonging rest phases between classes, and, good though physical exercise is, a watch for stiffness due to overfatigue in rapidly developing boys should always be kept. To prevent breakdown and future mental disorder the master and the psychologically wise school doctor should consult and consent to work in unison rather than, as is not infrequently the case, arrive at a compromise while looking in the divergent directions of intellectual triumph, short-lived though it may be, and of *Mens sana in corpore sano*. Unfortunately, in the great public schools the assistant masters usually begin their career more or less as amateurs, and have to pick up wisdom while the pupils wait, whereas they should obviously receive as much training in their profession as do the teachers in the elementary and in some secondary schools. The desirability of taking a degree in the history and theory of education, or of obtaining a diploma or certificate in the principles and practice of teaching from the Board of Education, might well be considered. The pamphlet *The Practice of Health*, drawn up by medical experts in accordance with the resolution of the Headmasters' Conference in December, 1923, that every boy during his time at school should receive instruction in hygiene, is a valuable guide, and should help schoolmasters to do much for the physical welfare of their pupils.

Parents deputate much of their responsibility to schoolmasters, who therefore have considerable influence in making or marring character and future life though the contact is not so close as in the home. Bullies are not always confined to the boy's companions, and he who, with a thoughtless devotion to maintaining discipline, incidentally destroys a boy's self-respect should have a millstone hung about his neck and be cast into the sea. At private schools boys naturally get more individual attention but much care should be exercised in deciding on the age and stage of development at which a boy should be transferred to a public school where the strain for a highly strung boy of 13 years may exert a deleterious influence.

TREATMENT

Mental Hygiene—Although organized machinery for public health in this country dates from the middle of last century, and Sir John Simon's efforts at the Local Government Board, psychiatric prophylaxis, or mental hygiene has lagged far behind, and instead of this country leading the way, as it formerly did in the prevention of ordinary disease America has set us an example, largely by the enthusiasm of Mr. Clifford W. Beers. Our National Council for Mental Hygiene was founded in 1922, and has various subcommittees quietly at work, especially that on the prevention and early treatment of mental disorders. The possibilities included in mental hygiene are extremely numerous and concern the home conditions and influences bearing on young children and the education in this respect of the parents for the impress made by environment on the young mind is of the utmost importance, and as Henry Head has truly said, the mental hygiene of infants should be as carefully regulated as the ventilation of their nurseries. Family environment in the home even such potential incompatibilities, can often be tactfully set right by social service, and it cannot be too emphatically stated how much mental hygiene hopes to owe to non-professional help in this matter. Mental hygiene especially in the developmental period of life, is the first line of defence in the prevention of mental disorder and its want of failure is shown by the need for early treatment in psychiatric clinics which in their turn should preserve many patients from the necessity of having to enter mental hospital. The potential influence of heredity may be prevented from becoming active by wise adjustment of the environment. Further the treatment of early and recoverable cases afford the greatest hope of diminishing the incidence of confirmed insanity. The patients suitable for

mental hygiene include those who do not require certification, such as neurasthenics, the subjects of anxiety neuroses, and phobias, and also those who might be certified, but need not because they are willing to submit to treatment or are "non-volitional." As the National Council for Mental Hygiene pointed out in evidence before the Royal Commission, information as to the number of patients needing early treatment can be obtained from the reports of the Board of Control, the Prison Commissioners, the Registrar-General's return of attempted suicides, and the returns of the Principal Medical Officer of Health to the Ministry of Health as to the mental sequelae of encephalitis epidemica. The social adjustment of children suffering from the after-effects or epidemic encephalitis is a problem of growing importance for the workers in mental hygiene.

Early treatment in psychiatric clinics attached to general hospitals has many advantages: the education of the public to the recognition that mental disorder is intimately connected with bodily disease and not a distinct and mysterious condition, such as possession by devils, from the patient's point of view the avoidance of the stigma attaching in the public mind to residence in a mental hospital and especially to certification, the cure of acute cases without certification, the great facilities of complete pathological, surgical, and biochemical investigation of all problems presented by the individual patients, such as focal infections and disorders of metabolism, the advantage to the progress of medicine as a whole, and particularly with regard to the prevention of mental disease, for which object association with psychiatric clinics and social service is of special value, by bringing psychiatrists and general physicians into close and constant touch and here incidentally it may be mentioned that comparatively few lecturers on mental disorders in the medical schools are yet members of the clinical staff of the attached hospitals, though this is a logical sequence of the desired closer union of psychiatry with clinical medicine. Lastly, and not least, the treatment of mental cases in general hospitals will provide a much more satisfactory means of educating students, not only in mental disorders, but also in the understanding of the psychological aspects of everyday practice. In this respect the Anglo-Saxon race has seriously lagged behind the Continental countries. From a report of an investigation made by the National Council for Mental Hygiene it appears that out of 237 hospitals in England, Scotland, and Wales there are arrangements of any kind for early mental treatment in 24 only. A psychiatric clinic is incomplete unless it has attached to it beds for the more satisfactory treatment of the patients, and should be on the same footing as other special departments.

The main objection to the treatment of early cases in the wards of a general hospital is the inconvenience caused by noise, delirious, and violent patients in a general hospital. That these difficulties can be surmounted has been shown by Dr. J. D. Cornie's analysis of 500 cases of early mental disease treated in the Royal Infirmary, Edinburgh, where, however, the conditions are not those of the ideal psychiatric clinic. Of course discretion must be exercised as to the class of case admitted, and after some two weeks or so it becomes clear whether improvement from such treatment is probable or whether the case should be transferred to a mental hospital. It is an obvious advantage to have the wards for the mental patients in an annex and not actually in the same building and under the same roof as the general wards, they should be surrounded with gardens so as to make provision for open-air treatment, and connected by a covered corridor with the main hospital. In hospitals in the centre of London and large cities it may be impossible to provide grounds of sufficient size around a psychiatric block. As in the Henry Phipps Psychiatric Clinic attached in this manner to the Johns Hopkins Hospital and under the directorship of Professor Adolf Meyer the wards should be generally so arranged as to allow classification and separation of incompatible types of patients, to accomplish this and to watch the patients adequately so as to prevent accidents and suicidal attempts, a higher nursing staff than in the ordinary hospital ward is necessary. Other examples of successful psychiatric clinics are the Psychopathic Hospital, Boston, Mass., Professor C. Winkler's Neuro-Psychiatric Institute at Utrecht,

and the Maudsley Hospital in close contact with King's College Hospital.

The psychiatric clinic, which in order to disarm popular prejudice should be labelled "Nervous and Psychiatric Department," of a general hospital, should be closely connected up with a university, so as to provide facilities for research and for teaching medical students, and it would appear that in addition students interested in the experimental and other aspects of psychology would benefit from the opportunities thus provided. While a central laboratory in connexion with a psychiatric department attached to a general hospital and a university is the ideal arrangement, psychiatric or mental clinics situated at a distance from university centres should of course have clinical laboratories for routine work.

The prevailing note in the care of early and recoverable patients should be sympathetic conciliation rather than the forbidding coercion—cheerfulness and helpfulness instead of severity and repression.

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GENERAL DISCUSSION

Dr HELEN BOYLE (Hove) considered that Sir Humphry Rolleston's opening paper was characteristic. It was on broad, fine lines, and ignored no side of the subject, which was wide as human nature itself. It was, however, lacking in one respect—it was so full and so true that in wishing to find something to dispute one was at a woeful disadvantage, and no discussion could thrive on complete agreement. Dr Boyle was in hearty sympathy with everything Sir Humphry Rolleston said (with one possible exception, which she would allude to later), but there were four points she wished to comment upon.

1. With regard to heredity, she agreed with his view as to the danger of eliminating all those who showed mental and nervous instability. Such heredity was feared too much. But they should address themselves to finding out if possible, as Dr Tredgold had said, what kind of instability indicated a degenerating stock and what a good and possibly evolving stock. With the exception of mental defect, all types of mind were valuable, even essential, if well adjusted to life. Quick reaction, a tendency to temper, and pugnacity might all be useful. Placidity and caution only would make life dull. The mean and selfish when adjusted, might be thrifty and pertinacious. Any virtue in excess was a vice. Any vice controlled might become a virtue. Moreover, no one yet had seen the perfect man. They did not know in what direction they ought to evolve. To aim at physical perfection in the hope of securing also good brains and character would be futile, for outstanding brain and character might be linked to an imperfect body. Even a Hercules indefinitely repeated would become boring! No breeder would attempt to breed without knowing what he wanted to produce. The most desirable qualities and powers might even yet be hidden, to be revealed later by what the opener had called "the unborn tendency to variation." In reference to birth control no one so far had shown how to avoid the danger that the thrifty, the thoughtful, the idealistic in every class would be the ones who would carry it out efficiently, and as had been said, "the limitation of a family often proved that that family should not be limited." Certainly there should be a strong public opinion against limitation

for selfish or class reasons, and the serious risk to only children must be borne in mind. It was doubtful if limitation for the sake of educational opportunity was of any value to the race.

2. The influence of the endocrine glands on mental and nervous conditions needed much investigation, not only as to the effect of disturbance of the glands on the mentality, but also as to the effect of disturbance of the mentality on the development and functioning of the glands. It was possible that "a primary deficiency of the endocrine elements of the glands" might be responsible for dementia praecox. It was also conceivably possible that a seclusive mental attitude might so shut off a developing personality from the external stimuli necessary to some glands, such as those concerned with sex, that they did not develop or function efficiently. It was known that other parts of the organism needed proper exercise and stimuli to develop and function. The effect of mental stimuli on glands, such as those concerned with the digestive tract was well illustrated by the dryness of the mouth which attacked those who feared public speaking. The view that "the endocrine condition was part of the general bodily arrest of development or precocious degeneration" was rendered doubtful by the fact that in some cases of dementia praecox the bodily development was good and showed the normal secondary sex characteristics. In manic depressive insanity was it not probable that irregular action of the endocrine glands was at least partly responsible for the alternating appearance of the symptoms?

3. As regards children and their education in adaptability, Sir Humphry Rolleston took and that mental hygiene in the developmental period of life was the first line of defence in the prevention of mental disorder. This mental hygiene might be briefly summed up in the quotation, "Nothing too much." In this country, who appreciating the worth of discipline and habit, the value of training in adaptability was perhaps less realized. Adaptability in its essence meant power and readiness to free life and extract from it and oneself the best possible results. A failure to adapt was the chief and earliest sign of nervous and mental difficulty. Especially with regard to sleep was this quality of adaptability desirable, and Dr Boyle would urge that from the cradle children should be accustomed to sleep, notwithstanding noise, light, talking, on any kind of bed, floor, sofa, as was convenient. This capacity was a priceless asset throughout life. The cult of the bedroom and its quasi sacred state was particularly noticeable in England. An Irish family of good social position recently came to stay with Dr Boyle, and, instead of cumbering themselves with a cot, they simply hauled out a bottom drawer, in which the baby slept peacefully. Adaptability as to meals was also good. A slavish adherence to time and quality in youth might be a nuisance later. Coeducation would seem to be a good way of teaching adaptability to sex problems. Time might be troublesome. Hypertrophied sense of time and punctuality was a curse in some families. Time should be given to children to use so that they might learn to handle it with sense. Observation was the most powerful assistant to adaptability. Without ready observation of external things and events it was impossible to adjust well to life. No one could adapt to what he did not see. An evil in the path of many children was the large size of the classes in the council schools. The egocentric, seclusive, quiet little boy who did not fidget or rrg was perforce allowed to sink into himself while the teacher controlled the noisy elements, who were really in less need of attention. This might be an element in the causation or encouragement of dementia praecox.

4. General measures. There was no subject which needed greater mutual understanding and the co-operation of all classes in the community. This could probably be best attained by a body such as the National Council for Mental Hygiene, mentioned by the opener, in which the medical profession, educationists, criminologists, psychologists, social reformers, employers of labour, and labourers could all co-operate and meet on common ground. The necessity for psychiatric clinics was assented to by all. It was with a remark of Sir Humphry Rolleston's in this connexion that Dr Boyle felt she might not be in accord

He spoke of "the cure of acute cases without certification." If by this he approved of the admission of acute manias to psychiatric clinics she felt very sorry. To her mind it was essential to keep the clinics free from such cases, or the same stigma would shortly attach itself to the clinic that he feared in connection with the mental hospital. Mental hospitals were in some cases, and should be in all which admitted acute cases, so guarded and have such clinical facilities that they would not be surpassed by a clinic. Such was the Holmoro Mental Hospital, which Dr. Boyle recently had the opportunity of seeing. In relation to the clinics, extended and trained social service was necessary.

In conclusion, Dr. Boyle suggested that their aims should be

- 1 The establishment of psychiatric clinics at all general hospitals for willing nervous and mental patients
- 2 Efficient and well equipped mental hospitals for patients whose liberty had to be curtailed
- 3 A trained social service
- 4 Improvement of educational methods and of environment
- 5 A strong and representative National Council for Mental Hygiene

Dr. BERNARD HART (London) said that Sir Humphry Rolleston had emphasized the principle that rational prevention was necessarily dependent upon a knowledge of etiology. This principle held as rigidly in mental disorder as in any other sphere, but unfortunately in the etiology of mental disorder their knowledge was uncertain, and it constituted a battle-ground for innumerable disputes. Not only were there two great camps—the physiogenic and the psychogenic—in which an almost exclusive weight was given to causal factors of a physical and psychological order respectively, but each of these camps was subdivided into smaller camps. On the one hand were the adherents of toxic, endocrinological, hereditary, and other physiogenic theories of causation, while the psychogenic schools were similarly subdivided into many groups of varying size and degree of incompatibility. The analytical schools alone included such radically different etiological theories as those of Freud, Adler, and Jung. In all this welter of opposing views it would be difficult to find a single factor concerning whose significance general agreement could be obtained. In these circumstances the conclusion would seem to follow that the problem of prevention would present a corresponding uncertainty, that the different schools of thought would advocate different and more or less incompatible procedures, and the devising of practical measures of prevention thus become a hopeless task. There was certainly a measure of truth in this conclusion, and it counselled a curie in the devising of any drastic procedures. Particularly, as Sir Humphry Rolleston had pointed out, did this apply in the sphere of eugenics, but a similar caution might be advocated in other spheres. Nevertheless, the conclusion that all effective prophylaxis was impossible, because of their etiological ignorance, went too far. Although their knowledge was inadequate and fragmentary they had in many cases indisputable evidence of certain factors playing a causal part, and it was significant that those factors were in one place of a physical, in another of a psychological, in a third of an hereditary order. It was certain that a toxic agent like alcohol could directly produce temporary or permanent mental disorder, that psychological factors could produce morbid pictures of the type they saw in the psychoneuroses, that if they married two imbeciles they would produce mental defect in the offspring. They had in these instances paradigms, as it were, of different types of causation, and they had overwhelming evidence that no one-sided interpretation of the etiology of mental disorder, no interpretation which failed to take into account these patent facts, could possibly be sound. The error of all these one-sided interpretations—of the pathologists who talked of psychology as an *ignis fatuus* of the psychologists who sneered at the naive materialism of the pathologist—seemed to Dr. Hart to lie in the failure to appreciate that mental disorder was something essentially different from the disease entities of general medicine. In mental disorder there were no disease

entities, there were only types of reaction—the reaction of the entire psycho-physical organism to its internal and external stresses—and these types of reaction formed a continuous series, ranging from the ideal normal to the major psychoses, with no sharp lines of demarcation, and no possibility of exact classification into discrete entities. Here and there throughout this continuous series they had paradigms of causation of the kind he had mentioned—conclusive pieces of evidence that physical, psychological, and hereditary factors might all play a part in producing the clinical picture before them. So long as they clung to the notion of discrete entities these apparently disparate factors could not be combined in a unitary conception, and they were lost in a welter of futile controversy as to whether mental disorder was essentially of physical or mental origin. But if they kept in mind that it was a final reaction of the whole psycho-physical organism to its internal and external stresses, they had no difficulty in conceiving that all kinds of factors, physical and mental, might co-operate, and that the final result might be altered and possibly abolished by attacking any one of these co-operating factors. Hence there was room for the pathologist, the psychologist, and the biologist, and the first great need for the attainment of an adequate knowledge of etiology, and therefore of prevention, was mutual tolerance and understanding.

Moreover, such fragments of knowledge as they already possessed in any of these spheres could be applied to the devising of prophylactic measures. But as their knowledge was as yet so fragmentary, not much could be done along these lines at the present time, and the development of efficient prophylaxis must be looked for as an ultimate and natural result of progress along other lines. These other lines were research and provisions for early treatment. The need for the former required no emphasizing, and that for the latter but little more to those who were aware of the facts. The two needs were, indeed, intimately bound together, because research would only grow in the conditions which favoured it, and of these conditions the material for study, and clinical observation which accompanied provisions for early treatment was an indispensable part. Yet the actual state of affairs with regard to these matters was in this country little short of a scandal. Research struggled in a few centres, mostly divorced from the medical schools, with which it should be intimately allied. Expensive homes for the treatment of the early psychoses and the psychoneuroses existed for the wealthy but, except for a few scattered institutions like the Maudsley Hospital, and here and there out-patient departments which must be inadequate because they had no beds or equipment, there was nothing for the poor. It was in these directions that effort and organization must first be directed if they were to advance their science, and the supreme need for the development of efficient prophylaxis was to establish conditions in which knowledge of etiology and of the effects of treatment could grow—something really comparable to the conditions which the medical schools had provided for general medicine.

Dr. E. MAROTTER (London) proposed to indulge in some general doubts, and to enter a plea for scepticism. He had expected there would be a vacancy for the post of devil's advocate, but Dr. Hart to some extent anticipated him. He wished to ask whether strictly between themselves they might not admit that they had no definite information on the prevention of mental disorder. The very contrary of his view was so widely upheld that it seemed worth while to consider, first, whether it was true, and, secondly, whether, if true, it was expedient. To begin with, one should be clear as to the difference between prophylaxis and early treatment between measures taken after appearance of the earliest symptoms and designed to arrest or modify their progress, and, on the other hand, measures designed to prevent occurrence of even first symptoms. True prophylaxis must depend on reducing internal susceptibility or exposure to external causes of a disease. The distinction between true prophylaxis and early treatment in regard to mental disorder was not a quibble, it was just as real if not as obvious as in a case of cancer or syphilis. It was practically important because their demands for public help

towards early treatment could reasonably be based on moderate claims regarding their powers, while appeals in aid of prevention should be founded on their almost total ignorance and impotence as in the case of cancer. Dr Mapother desired to emphasize that they were not yet even in a position to collect indisputable evidence satisfying scientific requirements regarding any method of prevention or early treatment. As Sir Humphry Rolleston had said, they badly needed in psychiatry something analogous to the Schick test for susceptibility to diphtheria. In fact, Dr Mapother thought a prodromal or prognostic test of that kind was the necessary foundation of any real scientific progress in psychological medicine, and it was certain that neither psychology nor material pathology yet provided such a test. If ever they got one it was certain to be quantitative. But so long as they lacked a definite criterion of the psychopathic constitution (existing before symptoms and, if untreated, constantly followed by them), so long would the effect of any alleged prophylactic measures be quite uncertain. Even in respect of early treatment, so long as no test told them whether a mental syndrome, if untreated, was destined to progress or arrest, so long would the *post hoc ergo propter hoc* fallacy enjoy its accustomed vogue and opinion more or less disinterested do duty for evidence. One of the most useful functions of the clinic of the future would be the effort to establish a basis for determining the value of treatment by following the ordinary clinical course in patients attending it from the start of symptoms and correlating this course with the earliest psychological or pathological tests in the laboratory. The foundations of such an inquiry were being laid at the Maudsley Hospital. Three-monthly inquiries were sent to ex-patients or their relatives, and, failing an answer, to the doctor who had recommended the case. Answers as to progress were obtained in the great majority of cases.

The workers in the laboratory under Dr Goll's direction had found certain anomalies in the reactions of the autonomic system to experimental stimuli (such as the taking of food and posture) which were practically constant in well marked cases of mental disorder belonging to the so-called functional group. Among these reactions one might specially mention changes in the absolute and relative leucocyte count. The anomalies were independent of the exact form of symptoms and particularly of the conduct. So far this was a real advance. Many of the persistent physical changes described in such cases were in no way fundamental but rather parallel to the conduct. Such pathology amounted to an elaborate confirmation in the laboratory of what was obvious to the man in the street. Unfortunately, these anomalies, while constant in advanced cases, were not so in doubtful ones—for example, a test which was constantly positive in advanced cases of dementia praecox was tried in doubtful cases of the same kind where guidance was needed. Subsequent inquiries about the progress of this doubtful group to date showed that neither a positive nor a negative reaction had any clear prognostic usefulness as yet in those cases where it was needed.

Admitting the lack of any prognostic laboratory test, how far did personal experience or the collective expressed in statistics enable one at a really early stage of neurosis or psychosis to forecast the outcome? How far did consideration of the causes or clinical symptoms enable one to prophesy the course, if untreated, in individual cases of the functional group with such certainty as to establish the value of any treatment? Dr Mapother could not discuss prognosis at length, but the chief lesson of experience, he considered was caution. Personally, he thought the longer, and especially the wider one's clinical experience the less one's conviction that it was possible to give forecasts before or even very soon after the start of symptoms that might be the beginning of a neurosis. Abstraction, apparent stupidity, moodiness, wariness, preoccupation with fantasy might represent the beginning of dementia praecox, but a phase of such symptoms was almost normal in the adolescence of anyone with sufficient imagination to be much use later. What real evidence was there that the symptoms described, for example, in Dr Hector Cameron's excellent book on the nervous child, were often the precursors of serious neurosis or psychosis later? Some permanent cases of dementia praecox developed abruptly,

others, with apparently identical onset and symptoms, entirely cleared up. The facts indicated that claims to success in prevention or even early treatment based on results in a few cases were unproven—to put it charitably, they were merely the opinion of a biased optimist. Comparison of results in two long unselected series of cases with and without some very definite treatment, if subjected to rigid criticism, might prove something. So far as he knew, no such statistical comparison existed.

So far Dr Mapother had merely tried to show that a doubtful opinion was all anyone could possibly express at present regarding prevention. His own opinion, for what it was worth, was that their powers were extremely limited. Prevention directed to endogenous factors was almost impracticable. As Sir Humphry Rolleston had said, eugenics were not practical politics at present. Practically all measures of philanthropy were dysgenic, though their effect in lessening external stress on the individual might more than counterbalance this. So far as he knew they had no power to modify deviations of the normal changes accompanying adolescence, childbirth, or the climacteric or the occurrence of premature senility. Considering external factors, the mental results of well defined bodily disease and of such symptoms as pain and sleeplessness could be largely controlled. But it was clear that, as regards alcohol and syphilis, true prophylaxis (that is, reduction of their influence on the hitherto normal) was a problem of national policy rather than of psychological medicine, and, after all, though such causes produced some of the worst cases of mental disorder, they were relatively few in the whole mass of neurosis or psychosis. As to reduction of mental stress before symptoms appeared, he confessed to doubts. Some of the more obvious and wholly vicious strains might be avoided. They were past the days when children were terrified with tales of ghosts and hell, and perhaps they might hope to pass those in which they were frightened with fables about masturbation. But in any large war psychosis prophylaxis was impracticable. Life would always provide the match for an explosion where the charge of predestination was high enough. The provision of circumstances and conventions to which the neuropath could adapt must be the business of the community, and fortunately there seemed little fear of the community framing its requirements to suit the neuropath. Competition would always involve the risk of a breaking strain, and the price of safety for the neuropath would be acceptance of the secondary and remuneration of what made life worth while. Was it justifiable to advise such a course in the absence of very definite symptoms? Dr Mapother had every sympathy with Sir Humphry Rolleston's jaded schoolboy, but one met more difficult cases—for example, one recently of an under-graduate holding a scholarship at a university working for the Indian Civil Service, with no prospect of a comparable career if he gave up. He thought the advocates of the policy of passiveness should not forget that the world owed some of its best achievements to the work and overwork of people with neuropathic ancestry and constitution facing the risk of breakdown.

Dr T. A. Ross (Penshurst) considered that the most important thing was to get medical students interested in the psychoneuroses, which were really minor mental disorders. At present the students were interested in physical illness only, because their teachers were. There were too few psychiatric clinics in connexion with the large teaching hospitals, and even where such clinics existed they were in obscure parts of the hospital and students did not attend. In consequence, when these students became practitioners they did not know what to do with psychoneuroses, and were inclined either to pass over or neglect these patients. There were many cases of this kind who needed care for years much in the same way as did cardiac cases—not continuously but at times—at periods of extra stress when there was the slightest threat of breakdown. It was not possible that this matter should be undertaken by specialists or institutions; the cases were too numerous and the duration of the disorder too lengthy. The patients needed support for a long time, and therefore the bulk of this support must be given by the general body of practitioners.

Dr W A POTTS (Birmingham) said that he could not accept the somewhat pessimistic attitudes of Dr Bernard Hart and Dr Mapother. Certainly much more detailed investigation and knowledge was necessary, but Dr Hart had himself given a complete conception of the etiology when he said that the factors in mental disorder were (1) physical, (2) psychogenic, and (3) biological. There was universal agreement that infections, often of a slight nature, were exciting factors, and must be dealt with first. The success of treatment along these lines depended on the thoroughness of the preliminary investigation and the adequacy of the subsequent treatment. After dealing with this side, which sometimes was all that was required, some form of psychotherapy must be employed if necessary. Here again, Dr Potts believed, in spite of the obvious divergence of various schools, there was general agreement that the abnormality dated from very early life. Dr Potts wished to dissociate himself from the idea expressed by Dr Mapother that alcohol and syphilis, important factors in producing mental disorder, were really questions of national policy, such as was the business of the medical profession to inform and direct national policy on such matters. He thanked Dr Helen Boyle for drawing attention to the importance of training in early life in adaptability and observation, his idea was that the places for the prevention of mental disorder were the ante-natal clinic and the nursery.

Dr P WATSON-WILLIAMS (Bristol) stated that, however strong the conviction that infection and resulting toxæmia was the determining cause of a large percentage of insanity, infection obviously played no part in the larger proportion of mental aberrations. But it was the former and highly important group to which he wished to refer, because if, by the detection and elimination of focal or other infection, the occurrence of mental unsoundness could be prevented, relieved, or absolutely cured, they should leave no stone unturned to utilize the means they had at their command in treating such cases. Forty years ago, when a medical officer in an asylum, the toxæmic factor as the sometimes essential cause of insanity became evident to him, later the effect of sepsis in the nose, throat, or ear in causing mental depression, neurasthenia, suicidal impulse, or definite insanity, was also obvious, because the psychosis was almost consistently overcome by the successful removal of the exciting sepsis, and some of the crises of marked insanity with delusions were among the most successful. Dr Watson-Williams maintained that there was no line of demarcation between the slightest mental deteriorations of neurasthenia and well marked and certifiable insanity from sepsis, every gradation was to be met with, and many could be prevented in the early stages from becoming mentally unsound by proper treatment. He could not agree with Dr Mapother that because, as he said, they had no "definite information as to prevention" they should hesitate until they could elaborate some test as a criterion of susceptibility corresponding to the Selick test for diphtheritic susceptibility. This was unnecessary, and if such a criterion was available it would be of little service, because the child susceptible to septic infection, and therefore suitable for inoculations, might, and often did in time become auto-immunized by existing infection while those found non-susceptible might become so at any later period—as for instance, by an influenza attack. He wished to stress the importance of thoroughness in the search for a suspected focal infection, most scrupulous care was needed, because it was latent or cryptogenic foci particularly that were prone to cause chronic toxæmic conditions. When there was a copious purulent, and therefore obvious, discharge there was much local reaction and little tendency to toxæmia, but when the infection was associated with but little discharge, and that non-purulent or only opalescent and difficult to observe toxæmic symptoms were more prone to arise. This difference he attributed many years ago to the inhibitory effect of the profuse outpouring of polymorphonuclear cells in copious purulent discharge, whereas with similar infection the absence of polymorphonuclears allowed the toxins to be absorbed. Hence a well marked protheca alveolaris was more distressing locally

and more obvious than the much more dangerous apical granuloma of latent dental sepsis, similarly a post-mortem wound which suppurated was much less dangerous than the local infection which crept up the lymphatics and was so prone to cause general blood poisoning.

The examination of the nose, throat, ear, or teeth must therefore be carried out with meticulous care so that they could feel assured either that in these regions there was, or on the other hand, definitely was not, a source of infection. Moreover, it was necessary when a possible source of infection had been found to avoid jumping to the conclusion that no other and perhaps more potent source of infection lay in other regions. One had but to realize how far-reaching the results of such infective causes of mental deterioration might be, and too often were, to grasp the immense import of the detection and treatment of these conditions. It was not only the actually insane that were concerned, but the immense numbers who were mentally abnormal. If such conditions were capable of effective treatment they could imagine the enormous loss to society and to the State incurred by failure to treat them—the loss of initiative in the business man, the unhappiness and distress in many a home, the loss of working days to the labourer, the blighting of the mental development and educational chances of the child—and thus the importance of the subject of the discussion which had been introduced so ably in this Section became all too manifest. Most mental institutions required reorganizing so as to place them on a footing with modern hospitals, and the medical superintendents should be relieved of too great a burden in administration while the collaboration of physicians and surgeons in various departments should be more actively ensured than hitherto had been possible.

Dr H CRICHTON MILLER (London) said that he had listened with interest to the references made by several speakers to the role of infection in causing mental disorder. The views held by Cotton on this subject tended perhaps to give a one-sided outlook, and to regard focal sepsis as the cause of most functional disorders. It would be more correct to think of toxic absorption as a very prevalent condition in mental disorder. The trouble was that only a minority of practitioners seemed to recognize the importance of cryptogenic infection to which Dr Watson-Williams had referred. The speaker went on to give the results of certain investigations among functional cases. Last of all, temperature readings had been relied on as an indication of latent sepsis. This method might be reliable with ordinary patients, but in neuropaths was misleading. Then the sedimentation test was used for a period with wholly unsatisfactory results. Now the blood picture was relied on as the chief evidence of toxicity. Of a consecutive series of 133 admissions to his nursing home 62 per cent showed a leucocytosis, while a relative lymphocytosis was found in 66 per cent. The average readings for this group were as follows: Red blood corpuscles 5,010,828; white blood corpuscles 9,940; haemoglobin 82 per cent; colour index 0.82; polymorphonuclears 57.7 per cent; lymphocytes 34.8 per cent; hyaline, etc., 4.1 per cent. There were good grounds, therefore, for regarding bacterial infection as a definite causal factor in a majority of such cases, and as such it should be dealt with thoroughly without in any way prejudicing other therapeutic measures.

Dr C MORTLOCK-BROWN (Barnston) insisted upon the importance of fresh air, freedom from noise, and the avoidance of alcohol in the prevention of mental disorder. Greater care should be bestowed upon the education and upbringing of children. As regarded birth control, self-control was better. Finally, she entered a plea for the appointment of medical women to the Board of Control.

Dr R M CRAIG (Torquay) gave particulars of two psychiatric clinics—attached to general hospitals—with which he was associated. There had been great difficulty in starting the clinics owing to local medical opposition, some saying that there was no need for such clinics and others that patients would never go to them. The success of the clinics had entirely disproved both these statements.

Dr M L C Mingshon (London), in dealing with the educational factors in the prevention of mental disorder, was strongly of the opinion that children should not be pushed intellectually beyond their powers. The amount of their work should be strictly limited and long hours avoided. An overstudious child often ended in mental breakdown.

The PRESIDENT (Sir Maurice Craig) expressed on behalf of the Section their indebtedness to Sir Humphry Rolleston for being present and their appreciation of the extraordinarily able way in which he had opened the discussion. In this Section this year they had endeavoured to keep free from pure specialism, and to this end Sir Humphry Rolleston had helped in no small degree. What he had said was full of important matter, and with his general outlook on the subject all should agree. The discussion had been kept at such a high level and the ground covered had been so wide that any attempt to sum up would be taking up time for little purpose. For himself, Sir Maurice Craig took an optimistic outlook as regards the prevention of mental disorder. He felt that even with the somewhat fragmentary knowledge that they had, if they used it to the full there would be an appreciable lessening of nervous and mental disturbances. He had long felt that to do the most good they must get back to understanding and protecting the earliest years of life of the child. To him hypersensitivity, with its quickness of response, was the factor of most moment. Hypersensitivity meant hypersensitivity to everything—environment, certain foods, drugs, and exogenous or endogenous toxins, and, further, he believed that fatigue rendered the exhausted tissue cells or the organism as a whole more liable to these stresses, more especially to the poisons. By overwork they really meant overstimulation, and it was this that was so harmful. There was one matter that had not been referred to, and yet it was one upon which Sir Maurice ventured to think that all agreed, and that was the preparation work that children had to do at night. With the day scholar it led to disturbed emotion when ordered to bed by a parent, and with the boarder to the taking of books to bed in order to start work as soon as it was light. Sir Maurice regarded evening preparation as one of the main causes of fatigue symptoms in many children, for, apart from the actual stress, it led to defective quality in the sleep and all the concomitant disturbances that followed.

SECTIONS OF DISEASES OF CHILDREN AND OF PUBLIC MEDICINE

ROBERT HUTCHISON, M D, F R C P, in the Chair

DISCUSSION ON RHEUMATIC INFECTION IN CHILDHOOD

EARLY DIAGNOSIS AND PREVENTIVE TREATMENT

OPENING PAPERS

I—E J POINTON, M D, F R C P JOND,

Physician University College Hospital and the Hospital for Sick Children Great Ormond Street

I must first thank you for the dangerous honour you have done me in asking me to assist in introducing this discussion. Dangerous it is, because Bladud, who discovered your mineral water springs, was a great necromancer, and to speak on the prevention of acute rheumatism here may lead me to a mysterious fate. Fortunately, I remember that Bladud was also the first British aviator, and a man who is sufficiently enthusiastic as a pioneer to break his own neck on the Temple of Apollo will, I believe, be kindly disposed to an introducer of a discussion on what I believe to be a progressive movement. Nevertheless my task is no easy one for so late as 1923 a very similar discussion was admirably introduced at Portsmouth by one of your Vice-Presidents Dr R Miller. I am, too, in the position of one who has already overthrown himself upon the subject, and we know that knowledge advances much more slowly than the writing of papers.

This, however, may truthfully be said, that there is

probably at the moment no issue in practical medicine more important and more full of possibilities than the prevention of the acute rheumatism of childhood. Instance only the heart disease, and let us examine our position. Is there a doctor here to-day who is practising in the large towns of this country who will not agree that it is a frequent event under 12 years of age, and a great cause of suffering and early death? Is there a doctor here who has not been impressed by the great recuperative power of the heart in the young, if it is only rested and protected? Are there not many people with organic rheumatic heart disease living quiet, useful lives, and often doing more for the community than many a headstrong hile citizen who squanders his life in riotous living? Again, who is clearer so frequent among school children in our large towns? Surely there must be some discoverable factor that is stimulating their nervous system, and in any case the problem is one deserving of the closest attention by all interested in the young.

But when I think of the prevention of acute rheumatism I am not so sanguine as to imagine that in the near future we are going to eradicate this disease. How much may be relieved in years to come I do not presume to foretell, but at the moment only see this, first—that by more careful organization, greater supervision, and by more widespread study, we shall prevent much of the harm that this disease is doing, and if we do not advance along these lines there will continue to be the present wastage, not only of life, but of useful citizenship.

Now my part is not concerned with the aspect of the problem that confronts the medical officer of health, and I am delighted to find that this subject is placed in the rightful and skilled hands of Dr Aslins. I have to open this discussion with a consideration of the early symptoms, and to give such indications as I can to further the clinical side of prevention.

It also appears to me that there is a certain distinction to be made between dealing with our subject as a physician in charge of a hospital ward and discussing it on the broad lines that we are concerned with to-day. In a hospital we aim at fine distinctions, in the hope of throwing new light upon disputed points. But for our purpose I think the first essential step is to come to a more or less clear decision upon the symptoms we consider good evidence of acute rheumatism. It is far better, I think, when working on a large scale, to deal with clear cases of acute rheumatism than clog a new machine with a mass of indefinite illnesses which may, or may not, be rheumatic. There is a great amount of organization and inquiry to be expended upon obvious rheumatic heart disease, chorea, recurrent arthritis, the difficult question of the tonsils and other sites of infection, and upon the factors which govern renewed attacks of rheumatism. When the machinery is in better working order the more intricate problem concerned with borderline cases will then naturally come into the field and can be dealt with more easily.

So also with prevention it seems wiser to me to deal first with cases which promise a good chance of useful recovery than with those which are very seriously damaged, for we may hope to diminish in the future the number of severe cases, if we can do good to the mild ones. Let us suppose, for example, a county hospital established for prolonged rest, supervision, and education—such a hospital must of necessity be limited in capacity. It would be better to use this for children recovering from first attacks of rheumatic heart disease or from slight damage rather than to fill it with chronic cases of severe valvular disease. It is useless to shut our eyes to the difficulty of expense, and such being the case we must make the very best use of the opportunities we possess, and if we undertake some new step we must be able to produce clear data that we have done practical good to the children. Then, in course of time the public will appreciate the fact and more money will be forthcoming for the difficult cases.

In the Bradshaw Lecture last year I endeavoured to show how much machinery we have already in steel, waiting to be more accurately fitted together: the general supervision by the practitioner and hospital, the useful danger signals of the school medical officers and other official examiners, and so on. Since that lecture was given I have had an

opportunity of collecting some facts upon the rheumatic children in a country hospital in which an arrangement was made with the London County Council for their education.

The Invalid Children's Aid Association has for a long time been making pioneer efforts on these lines, and last year opened a hospital at Hailfield in Sussex for girls up to 15 years of age and small boys. As one of the honorary staff, and with the kind permission of the council and my colleagues, I am enabled to make a brief allusion to the year's work. There were 123 cases admitted in the year, and though they were all rheumatic children it was not until the first week in March, just at the end of the twelve months, that two of them, after a period of much cold rain, developed fever and rheumatic pains. In London meantime, from October, 1924, onwards I was having many cases of active rheumatism, some with general pericarditis, admitted to my wards. J. W. G. Prince, the medical officer to the hospital, writes:

"Despite the bad weather conditions and the stringency and exposure in their new lives the children did wonderfully well. Taking the cases as a whole, one might say all have benefited greatly and many remarkably. The length of stay of the children varied from one to twelve months and the average was five months. Many expressions of appreciation were given or sent by the parents as to the improvement in their children."

Now we can be sure that, in any but the most severe cases of cardiac disease in childhood if these children show no signs of active rheumatism and are improving in their well-being, the compensation and reserve power of the heart are increasing, and so we can justly state that these children derived much benefit from their stay.

None of us consider that this home is perfect for its purpose, for it is of the nature of an open-air hospital, though open in its essential the damp inclement nature of our climate necessitates special precautions in dealing with the rheumatic.

No worse ven for a strait, so far as cold damp was concerned, could have thought us, but I consider the results have been most encouraging. It has convinced me still further that the prolonged cure of rheumatic heart disease, in its early stages, after the acute phase is over, should be carried on in the country. These children will then gain remarkably in health and strength and their cardiac condition will also greatly improve. Further, it proves that suitable educational measures will add much to their happiness.

I am often asked, Will these measures prevent relapses in the future? The answer seems to me plain, until we have a specific remedy the most we can expect is that by giving the children time to consolidate the recovery of their hearts, and by assisting Nature to build up the resistance of their body tissues, we certainly help them to repel future attacks. After puberty the tendency to cardiac rheumatism diminishes, and thus we have the right to believe, until it is proved to the contrary, that a number of these cases will escape further attacks. If, however, their home surroundings are unsuitable we cannot hope at present wholly to succeed, and it is not a reasonable expectation. But it is reasonable to expect that further study in other directions will teach us what surroundings are particularly detrimental to these children, and to find methods for modifying them. Fresh air, rest, and education will not themselves arrest further rheumatism, but they are sure steps in its prevention.

In an ideal hospital we should be able to protect them more effectually from exposure, also to learn much of the recovery power of the heart and to devise methods to favour such, but this means funds for the necessary investigation and for the planning of buildings and grounds most suitable for such children and these inquiries, further, we are not going to achieve more complete success until experience, time, and money have been laid out in many directions, for we are faced by the difficult problem of a recurrent disease is yet imperfectly understood. This is, however, clear—that if the policy of graduated rest, fresh air, and education in country surroundings is a step forward in prevention, the only problem confronting us upon this particular aspect of the subject is whether the public is justified in spending the money required. That problem I do not pretend to

settle, for it turns, on the one hand, upon what value the public attaches to the relief of suffering, and to giving children, victims of rheumatic disease, a better chance to become useful citizens, and on the other hand the extent of the conviction of the medical profession that such a step is a sound one, this latter point is, I take it, one of the reasons for this discussion.

Now it is clear that an essential part of the general problem must be a knowledge of the more usual ways in which acute rheumatism develops in the child, and though I have no hesitation in stating that at present there is no specific test, and that many cases at first cannot be diagnosed with certainty, I am also convinced that a great number follow along well known lines. The chief manifestations of the acute rheumatism in childhood are well known—they are (1) carditis, (2) chorea and other nervous disturbances, (3) arthritis and fibrositis, (4) tonsillitis, (5) nodules, (6) skin eruptions, (7) pleurisy, (8) anaemia, (9) hyperpyrexia. There are others, which I accept, but are disputed, and with them I will not delay.

But it is not sufficient for our purpose merely to know these manifestations, we also want to know their relative frequency and their more usual combinations—in other words, the modes of onset of this disease. I have records of 1,108 cases of acute rheumatism in children under 12 years of age in whom, as far as general inquiry could ascertain, the attacks were first attacks. These cases showed carditis in 673, arthritis in 626, chorea in 617, sore throat in 344, nodules in 94. I do not suppose that every case was a first attack, in spite of my efforts to ascertain this fact, but such a large number is sufficient to give us a definite idea of the relative importance of some of the most serious manifestations.

I have found that a great number of these cases of acute rheumatism developed along these lines: (1) those beginning with sore throat, arthritis, and morbus coelis, and (2) those beginning with chorea, and often with morbus coelis also.

There is another group, fortunately a small one, which commences with great severity, and within the period of a few weeks develops all the worst manifestations. Such are most frequent in the younger children and in those with a strong family tendency. These may commence with fever, vomiting, diarrhoea, and sore throat, then there develop arthritis, carditis, nodules, rapid anaemia, and even chorea. Death may occur in this first attack from carditis, or recovery leave the child mortally injured. For us, to day, this group is of secondary importance for from the first they are gravely ill.

There is a third group, not so acute, in which the symptoms are definite, but subside, though not completely, fleeting pains may remain here and there, and if the child is allowed to get up shortness of breath develops, step by step the disease unfolds, and we find ourselves faced by a relapsing type of illness which ends in what is termed "the rheumatic state." We are met with a very real difficulty in this group, for we may not be able at first to foresee the evil tendency of the disease. May I give one word of warning? It is very easy to overlook in such cases the first early dilatation of the heart, and yet this may be the key to the situation.

Next we come to those cases in which one manifestation is predominant—I do not say absolutely solitary, but attracting all the attention. The most frequent type of this group is chorea. When we are painting the picture of rheumatism with the brush of the scenic artist it is advisable, I think, to consider all cases of chorea as of that origin. There are exceptions, but they are not sufficient to alter this attitude. In support of this, I analysed a series of 217 of my cases of chorea, 122 had clear evidence of heart disease and other rheumatic manifestations, 28 more had arthritis and muscular pains, 22 dilatation of the heart, and 10 followed a sore throat. 20 gave no history, but later 2 developed active rheumatism, 15 were attributed to fright and shock, but 2 afterwards were certainly rheumatic.

In another series of 104 cases chorea was the solitary manifestation in 37, but 12 of these subsequently developed active rheumatism. I have had a child under treatment for chorea five times die eventually in the sixth illness from rheumatic carditis. The view that fright is an outstanding

cause of chorea was for ever laid at rest by the fact that it was less frequent in London during the year of severe raids than in a subsequent year when there was an outbreak of rheumatism.

From the aspect of prevention I attach great importance to chorea, for this manifestation gives us the best clinical evidence of the behaviour of rheumatism in the human tissues. It is also frequently associated with the most important of all cardiac lesions—mitral stenosis. Lastly, it suggests nerve overstrain as a factor predisposing to acute rheumatism. I need hardly remind the doctors who practise in this city how frequently evidence of nervous exhaustion is discovered in the allied disorder rheumatoid arthritis. I am convinced that a widespread inquiry, by school medical officers, into the subject of chorea would supply us with valuable information.

Heart disease is a predominant or solitary manifestation of even more vital importance than chorea. Coming now as we do to what I believe will prove in the future one of the greatest difficulties in the problem of prevention, I venture to introduce this section with three dogmatic statements: (1) rheumatic dilatation of the heart always accompanies pericarditis, (2) rheumatic dilatation of the heart always accompanies endocarditis, (3) rheumatic dilatation of the heart can also occur without pericarditis or endocarditis. It follows that the most frequent early rheumatic cardiac lesion is dilatation of the heart, thus it comes about that this form of dilatation becomes one of the most important events in the history of heart disease. The signs of this dilatation are: (1) slight increase in the rate of the pulse and fall in its tension, (2) feebleness of the cardiac impulse, (3) an increase in the relative cardiac dullness to the left, (4) shortness of the first sound over the impulse, accentuation of the pulmonary second sound at the base, and sometimes a soft systolic murmur at first audible internal to the left fifth space in the nipple line.

I may add in passing that I am a convinced believer that percussion of the deep cardiac dullness in childhood is a remarkably accurate method of investigation. Many students have now passed through my hands, and I have found that they only require some careful instruction to acquire accuracy. I have also learnt that unless they are taught, they think nothing at all of being two inches astray in the transverse size of the heart. Now the bearing of this short digression upon our subject is this—that there is another group of rheumatic cases which commences with a sore throat, possibly enlargement of the cervical glands, fleeting rums, and dilatation of the heart. Some of these cases develop along the lines of the so-called mitral or soldier's heart, the action is tumultuous and irregular, the area of cardiac dullness enlarged, and there are breathlessness, nervousness, and dyspepsia, others develop mitral endocarditis. This group is easily overlooked or not appreciated.

In recent years much has been written upon the danger of undue stress being laid upon cardiac murmurs, and with this teaching I agree and disagree. I agree that when a heart is not functionally affected the mere sound of a murmur need not disturb us, but I disagree if there is a departure from the attitude that a cardiac murmur in a child's heart always requires careful consideration. This murmur may not mean grave trouble, but it is one of our most important signs in rheumatic heart disease, though its presence may only be transient.

There are two obvious difficulties in the supervision of rheumatic heart disease: the first, that when the cardiac infection is the predominant feature, and is not severe, the patient may not come under the doctor's care until there is cardiac disability; the second, that there is a wide difference of opinion as to what constitutes a damaged heart. For this latter difficulty patience and time are essential. We must be prepared to learn from practical experience, from special studies, and from discussions even though these be tinged with intolerance. Eventually steady investigation, no doubt, will determine for us the proper weight we ought to place upon the early signs and symptoms that are associated with the dawn of rheumatic heart disease. But the early stage of heart disease in the young is not an easy subject.

To recapitulate and arrange in a somewhat different order my personal observations upon the onsets of acute rheumatism in the child, these are:

- 1 Fulminating cases, readily recognized as gravely ill
- 2 A large group commencing with sore throat, arthritis, and morbus cordis
- 3 Another large group commencing with chorea and morbus cordis
- 4 A group commencing with chorea only
- 5 A group commencing with heart disease alone, which may take the form of dilatation following sore throat
- 6 A group commencing insidiously, usually with multiple symptoms that remit and exacerbate, thus producing the 'rheumatic state'

I do not presume to think that the experience of one individual can do more than stimulate discussion on this important subject.

I will now briefly touch upon drugs and the prevention of acute rheumatism, and upon the local focus. Some may be horrified to hear that I look upon the routine use of salicylates as an obstacle to our progress. Their value in adult arthritis and for pain I do not dispute, but for years now I have struggled with the worst forms of children's carditis without these drugs. As an example, the x-ray photographs I pass round are from a case of rheumatic carditis with great dilatation and effusion. This child made an excellent recovery and is now thriving, save for a mitral lesion well compensated. No salicylates were given.

I prefer the ethical ester of para-methyl-phenyl anticholinic acid to the salicylates, and have now used it in a good many very severe cases. For myself, I would, in this problem of prevention, rule the salicylates out of the field as a factor, except for the relief of pain.

Next, as to the local focus. I suppose Dr Prime and I were originally responsible for establishing the doctrine of the local focus in rheumatic disease by experiments on tonsillitis, which in turn was suggested to us by the clinical observations of the last generation of physicians. From the first we foresaw its possibilities, and the red-letter day, in more senses than one, that it would prove to be to the throat specialist. It was mortifying to find year after year, the cold acceptance of our theory of infection, but the warm welcome to enucleation of the tonsils in the rheumatic—an operation obviously based for its rationale on that theory.

The subject is a difficult one, going to the very basis of disease, and I must content myself with a series of brief statements:

- 1 I believe the tonsils to be an important site of infection
- 2 I know that skilled enucleation will not prevent a first attack of rheumatism and acute carditis of extreme severity occurring some years later
- 3 I know also that an acute and crippling attack of carditis may directly follow removal of the tonsils in the rheumatic
- 4 I hold that the successful removal of unhealthy tonsils is a valuable prophylactic step if undeterred by exceptions, we view the problem on broad lines
- 5 I believe every case must be considered as an entity, and do not favour routine action
- 6 As to the teeth. I hold that the teeth and gums of the children should be kept as healthy as possible but can trace no clear connexion between acute rheumatism and dental disease in childhood.

In conclusion, our problem to day, as I see it at present, is this: Can we by concerted efforts protect our rheumatic children efficiently, and are we justified in pressing upon the public the great need of their assistance?—for it must be remembered it is, if a rational step, one wholly in their interests. If we do not take an important and serious step of this kind, does this meeting believe that our present methods and remedies are adequate, and can it see at the present any other more promising line of approach? It is, and has been for many years, my belief that such a step, if undertaken earnestly and doggedly, will in due time, but not rapidly, revolutionize the entire subject of the treatment of organic heart disease.

Finally, I must ask you to pardon my dogmatism, for it is the outcome of time limitation and not of character. It was my duty to touch on the salient points of this subject, you, in the discussion, will file down the rough edges and round off this short summary.

II—ROBERT A. ASKINS, M.D. DUB., D.P.H. CAMB., Deputy Medical Officer of Health, Bristol

I do not propose to touch at all upon the many and interesting clinical problems presented by the subject under discussion. Rheumatic infection is, however, a question of urgent concern from the administrative point of view to the public health officer of every large town, and, further, I am convinced that it is one that can be successfully handled only by joint action between the clinician and the medical officers of the State. Fortunately for the community, the day has passed—or nearly passed—when these two branches of our profession looked upon each other with mutual distrust.

For some years we have been paying attention to this problem in the School Medical Department of the City of Bristol, and endeavouring—usually without success—to secure adequate treatment for children suffering from chorea and rheumatic carditis. I believe we are now approaching the day when the term “without success” will no longer apply. In this work we are indebted to the enthusiasm inspired by Dr. Carey Coombs of the Bristol General Hospital, and to the untiring energy shown by him and by Dr. Herapath of the Bristol Royal Infirmary, in investigating the clinical condition of large numbers of cases. Without them this work would not have been possible. We have now reached the time when I feel I am justified in submitting certain conceptions I have formed on the subject.

THE EXTENT OF THE EVIL

I know of no statistics as to this, in either the English or the American literature, which can be regarded as accurate and reliable—chiefly because I believe that many cases included under the heading “organic heart disease” are not correctly so labelled. It is possible, however, to arrive at a rough calculation which will enable us to form an idea of the size of the problem. In 1923, 56,886 people were registered as having died of heart disease—not including diseases of the vessels—in England and Wales. This was one eighth of the total mortality for the year. The fact that a small number of these deaths should in all probability be transferred to other diseases is immaterial so far as our present purpose is concerned. It is estimated by observers of great experience that one-half of the cases of heart disease are of the rheumatic type, the remainder being accounted for by other infections or by the degenerative changes of later life. This is, of course, only a guess, but there is every reason to regard it as a good guess. Further, Dr. Carey Coombs found, in a very careful and prolonged investigation of rheumatic heart disease in Bristol, that two-thirds of the cases commenced between the ages of 5 and 15. If the above data are correct, it means that we are losing 18,962 lives per annum from an infection occurring at the period of school age—a figure far exceeding the total number of deaths contributed by all the commoner zymotic diseases.

Even if we assume that it is an overestimate to credit half the mortality from heart disease to the rheumatic type, and we reduce this figure to one-third, we arrive at 12,640 deaths per annum resulting from an illness commencing during school age. To this we have to add the long periods of illness, the misery of repeated breakdowns, and the immense industrial loss involved during the years which elapse between the time when the patient develops the disease and when he is ultimately killed by it. Surely these are facts of vast importance to those engaged in the administration of preventive medicine in this country.

PREVENTION

At present our knowledge of the etiology of acute rheumatic disease is so limited that we are practically powerless to suggest measures to prevent the infection of the subject by the organism responsible for polyarthritis, chorea, and rheumatic carditis. I would like, however, to submit one or two considerations from the epidemiological point of view.

In the first place, the disease is indisputably due to an organism, whether this be a streptococcus or not.

Secondly, this organism is one of low infectivity, and some special condition is necessary for its successful invasion

—possibly prolonged or massive dosage, as is the case with many other diseases with which we are familiar to-day. Great importance has been attached to various secondary causal factors, such as climatic conditions, damp, poverty, inherited predisposition, etc., while the question of infection, and the prevention of infection, has received less attention. I do not wish to suggest that secondary factors may not be of great importance—for example, only some intrinsic and personal difference will explain the sex incidence of chorea. Also, we know that in other diseases of low infectivity—for example, tubercle—secondary factors are of great importance. I cannot help feeling, however, that ultimate success in preventing the disease may lie in preventing infection, and that prolonged and intimate exposure to infection may possibly be the explanation of the frequency with which acute rheumatic ailments are found in one family, or under conditions of poverty and overcrowding, rather than that this should be accounted for by hereditary predisposition on the one hand, or a mere lowering of resistance due to environment on the other. This side of the problem is, however, at present in the region of romance, and much investigation is necessary before we can tackle the question of infection on scientific lines. Especially must we look to the bacteriologist to disentangle the streptococcal group of organisms, different members of which appear to be associated with such diverse conditions of illness and also of normal health.

REMEDIAL MEASURES

If, however, the limitation of our knowledge prohibits us from adopting measures for preventing invasion of the human body by the causal germ, we can at any rate take steps which are of the greatest value and importance for the early discovery of cases, for curative treatment, for the prevention of recrudescence and of further advance of the disease, and, finally, for rendering those patients who must become cardiac cripples capable of earning their livelihood under conditions most suited to their disability. These steps are not being taken at present, and with a probable loss of some 12,000 to 18,000 lives annually from rheumatic heart disease there is an urgent call for immediate action. Further, in view of the present trend of medicine in this country, there should be no great difficulty in taking what steps are necessary, nor need they be very costly, as I hope to show.

These measures may be grouped under three headings, which I propose to discuss briefly: (1) early ascertainment and diagnosis, (2) treatment, (3) after care, and training of cases permanently crippled.

Early Ascertainment

(a) *The School Medical Service* has splendid opportunities for this purpose. Every elementary school child is medically examined at least three times during its school life. In addition, there are usually arrangements—in towns at any rate—whereby a child can be examined practically at any time at the instance of the parent or school teacher. This latter arrangement is most important for our purpose, but in order that it may be of value in regard to rheumatic disease it is necessary to educate teachers and parents and the public generally in regard to a matter of which they have at present little knowledge. Experience in the case of tuberculosis and infant welfare has already proved the immense good which can be effected by measures of education and propaganda, if wisely and persistently applied. In Bristol we have drawn up a circular couched in simple terms, on the lines suggested by Dr. Poynton. This has been issued to teachers in schools, infant welfare centres, etc., and has been widely circulated, several editions having been exhausted. I can strongly recommend it to anyone wishing to use something of the kind.

In any scheme for ascertainment great attention must be paid to the important class of case which shows no manifestation of rheumatic infection other than a slight carditis that may be producing no outward sign beyond a little vague ill health. By the above means a very large number of cases are brought up for examination. Many of these can be discarded immediately as negative. Those who on a first brief examination show signs indicating a

rheumatic infection must be transferred to our next agency for detailed examination and disposal.

(b) *The Cardiac Clinic*—One must frankly admit that while many cases of cardiac abnormality are perfectly easy to diagnose, there are a very large number of instances in which an accurate opinion as to the presence or absence of organic disease can only be formed after careful and detailed examination at the hands of some specially skilled person. Anyone who goes into the matter will find that many cases have been labelled heart disease which in reality have no organic lesion, and the converse will also be found, though less frequently. In regard to cardiac clinics America is far in advance of us. There are forty-three such clinics in New York alone, and a large number throughout the States generally. The enormous attendance at these clinics proves their utility. Such a clinic may be carried on at an ordinary hospital, in a school clinic, or in some special building. An electro-cardiograph is very valuable, though perhaps not essential. In Bristol we may be said to have at present two such clinics—one at the Bristol General Hospital and one at the Bristol Royal Infirmary, thanks to the zeal of the two honorary members of the staffs of these institutions to whom I have referred above.

Treatment

The next problem is to obtain beds in an open air country hospital school where cases can be sent for prolonged treatment, and where rest is properly balanced by recreation therapy and occupation therapy. Here again America is ahead of us. New York has 392 beds for prolonged treatment of cardiac cases. These patients require great skill in handling, and should be under the eye of a doctor who takes a special interest in cardiology. How can such provision be obtained? At the present day this should not be very difficult. For various reasons, including financial ones, the State is finding it necessary to take over to a considerable extent the treatment of the more chronic diseases among the poorer classes of the community. Local authorities are now making provision for the prolonged treatment under open air conditions in country hospital schools for children suffering from crippling diseases, especially surgical tuberculosis and infantile paralysis. Cardiac disease is essentially a crippling disease. Annexes for the treatment of cardiac cases could very conveniently and economically be added to the open air hospital schools already in existence or being designed. In this connexion it must be borne in mind that by the Education Act of 1921 Parliament has laid upon local authorities the absolute duty of making provision where necessary for the treatment of children attending public elementary schools. We hope shortly to have provision for cardiac cases, on the lines suggested, in Bristol.

After care Vocational Training and Suitable Employment

When the patient has returned from hospital he again comes under the wing of the cardiac clinic, which he should attend for observation and advice as long as necessary. With regard to vocational training, we have for years in our cripple school in Bristol taught suitable trades to a number of cardiac cripples. This could be extended if necessary. Provision could unquestionably be made by voluntary agencies such as the Crippled Children's Society in Bristol, for the extension of such training after 16 years, which is the age limit of a cripple school maintained by a local authority. In conjunction with the Juvenile Branch of the Employment Exchange, such a society could organize the placing of cardiac cripples in suitable employment. The Bristol Branch of the Employment Exchange has already been in correspondence with us on the subject. Schemes on the above lines have been at work in America for a considerable time, and have proved what valuable results can thereby be obtained.

In conclusion, I would like to express my conviction that without setting up a lot of new and elaborate machinery, but by extending at comparatively little cost the means that already exist it would be possible to provide satisfactorily for this devastating disease which is at present so neglected, and I believe that this work should be carried

out by joint action between the clinician and the department of the medical officer of health, and should be closely linked up with the voluntary hospitals, and also with the work of the private practitioner. One fact I think has weighed against the cardiac patient in the past—he is undramatic and suffers in silence, he does not hobble about on crutches, or beg at street corners with paralysed limbs doubled under him. And it is the business of those who work in the wards of hospitals, and those who have to handle death rates, to awaken the public conscience as to the urgency of his needs.

GENERAL DISCUSSION

Dr CURRY COOKE (Bristol) welcomed the evidence afforded by the discussion of a growing collaboration between the administrator and the clinician. The present stage in the campaign against rheumatic heart disease was similar to that which had been reached in the course of the struggle against tuberculosis, at which such collaboration had become absolutely essential to any further progress. This stage was clearly indicated in the title of the present discussion. The possibility of adequate treatment, it was recognized, depended on early diagnosis, and much ingenuity and time were being expended in the search for means of such diagnosis. There might be found in physical signs (physical evidences) or in some biochemical test (chemical evidence) of the body's reaction against rheumatic invasion. But, even if such phenomena were available, it must be recognized that these were evidence that invasion was a *fait accompli*, by which irreparable damage had already been done. Such being the conditions under which they must be content to work for the present, what could be hoped from preventive treatment? He thought it would still be well worth while to make full provision for prolonged hospital treatment of patients with early cardiac rheumatism, so that arrest of the disease might be achieved, even though cure were impossible. A new conception of hospital construction and administration was needed, not only for the treatment of cardiac rheumatism, but also for that of all crippling diseases. Hospitals must provide for long terms of treatment, and such treatment must include open air and occupation. To secure this provision the help of the State medical services would prove indispensable. But the ultimate goal must be prevention, and to this end the clinician needed above all things the help of the administrator, that they might together get to know more of the conditions that predispose to rheumatic infection. Without this further knowledge—which could only be acquired by such a collaboration—any effective campaign of prevention was impossible.

Dr R. H. MILLER (London) said that Dr Poynton had made kind allusion to his opening address on rheumatism given before the Section of Medicine at the Annual Meeting two years ago. Those now present might be interested to hear that the Council of the Association later appointed a subcommittee to study the various rheumatic problems. Its duty was to report on what had been ascertained and done in England and elsewhere, on what of this appeared worthy and acceptable, and on what lines further work was needed. These reports would, he hoped, be available in the next few months. Turning first to the early diagnosis of rheumatism, he would like to emphasize two types of children who were rheumatic though not always recognized as such. The first type was that with symptoms of the "functional" nervous sort—headache, nightmares, sleep walking, recurrent enuresis, and tics. When rheumatism hit the nervous system had chorea followed, but long before that it might produce a condition of nervous instability which might show itself by the symptoms he had enumerated ("latent chorea"). The second type was that often mistaken for early pulmonary tuberculosis. The symptoms were pallor, fatigue, loss of appetite, wasting, and perhaps some shortness of breath, add to these cough due to enlarged tonsils, and the picture of incipient tuberculosis as it occurred in adults was complete. In a child, however, it was frequently due to rheumatism in an early stage. When they turned to the question of the prevention of rheumatism

they saw the importance and significance of the present meeting. For the first time the public health workers were present with the clinicians in their discussion. Two years ago he appealed strongly for help from public health authorities, and to-day they were here. To these workers mainly they looked for an answer to the question of the association between rheumatism and poverty, why it was so common in hospital and so rare in private practice. What was the influence of the environment, the condition of the house, the soil, the locality, the school regime, all these questions were the most important outstanding problems in rheumatism, and it was the part of public health workers to solve them. When trying to trace the influence of the predisposing factors in rheumatism, they should not expect to find them as clearly in cases of chorea as in the non-choreic rheumatic cases, to include cases of chorea would dilute their results. For instance, in considering the influence of diseased tonsils in rheumatic infection, he found that in the last hundred in-patients for rheumatism under his care, 66 per cent showed diseased tonsils, but taking chorea cases only the figure dropped to 56 per cent and in the non-choreic rheumatics rose to 76 per cent. Again, out of 13 cases of rheumatic infection in tonsillectomized children no fewer than 9 were admitted for chorea. He thought, therefore, that they should specially study the non-choreic rheumatic cases so as not to get their results vitiated by the effects of an unknown nervous factor. He was sure that Dr Poynton would expect him to say once more that he was grieved at his view about salicylate therapy. To his mind nothing could be more useless than that the discussion should descend into a pro- and anti-salicylate debate, and so he would merely pass round a temperature chart of a case of acute pericarditis without severe myocarditis which showed, he thought, very clearly the good effects of salicylate treatment.

Dr J A GORRIN (Ministry of Health), dealing with the preventive aspect of the question, advocated proper town planning, the connecting of the whole area of the foundations of houses when built on anything other than a dry soil, avoidance of damp in the house, and of overcrowding both in the home and the school, with proper nutrition, exercise, and sunlight. The school medical service must, he thought, be of immense service in preventing rheumatic infection, and the fully developed school dental service was of equal importance. What additional lines of attack were desirable? First, more knowledge was wanted as to the causal organism. It was still, he said, uncertain whether the streptococcus was the real causal organism. If another organism such as a filter-priser was responsible, it was necessary to know at what stage the streptococcus entered the picture as the important secondary infection. More information was needed as to the route and focus of infection, and a sharper identification of the actual strain of the streptococcus. They wanted observations of the heart by radiological methods right through from the acute stage to perfect restoration, and much more fully detailed study of the etiology of cases and the contacts and circumstances of patients. He would personally like to see acute rheumatism made a compulsorily notifiable disease for five years in three or four counties which showed a high incidence, coupled with the establishment in each area of a complete unit for investigation and research working in conjunction with a suitable home of recovery. He believed that even a considerable expenditure on these lines would be justified when the immense importance of acute rheumatism as a cause of chronic invalidity and death was taken into account.

Dr VINCENT COATES (Bath) said he proposed to deal with the early diagnosis of subacute rheumatic infection in children prior to cardiac involvement, rather than with the fully established conditions of carditis and chorea. If the Section would allow that a combination of the following subjective symptoms went towards the completion of the rheumatic mosaic—namely, headache, stiff neck, sore throat, stitch in the side, stomachache, growing pains, pain behind the knee, nervousness, and irritability, in the absence of other conditions producing a toxic state (and there was no less an authority for this than Dr Still)—then they would

allow that the group of cases to which he was alluding could be regarded as rheumatic, he referred to a large series of children investigated by Dr Thomas, the deputy school medical officer of Bath, and himself, and to a still larger series seen by himself alone. Moreover, that these children were rheumatic was borne out by the results of anti-rheumatic treatment in alleviation of the aforesaid symptoms in the majority and subsequent cardiac or central nervous system lesions in the minority. In considering the rheumatic complex of childhood it was obvious that there were two composite elements, the soil, including heredity, physical make-up of the individual, and environment, and the infection. It was with the latter that he was concerned. Rheumatic infection in childhood was essentially a silent smoulder, and this might never flare into the acute condition of rheumatic fever, but might nevertheless produce irreparable damage to the heart. It was common, however, for acute exacerbations to occur, and one must conceive these exacerbations, be they these affecting the central nervous system, the heart, or the joints, singly or in combination, as following directly upon traumatic causes such as physical fatigue or mental stress, or else upon superimposed infections such as influenza. Was there then any objective physical sign as opposed to subjective symptoms, which distinguished the condition from such diagnoses as "a nervous," "toxic," "difficult," "delicate," "C 3," or "pretuberculous child"? The subcutaneous fibroid nodule, whose presence had been proved by removal and microscopic section, would do this. He did not refer to the larger and often visible subcutaneous node originally described by Sir Thomas Barlow, as occurring in acute rheumatic fever and being indicative of gross cardiac disorder, but to smaller and in some instances almost imperceptible nodules. These could be found in nearly every child who was brought to an out-patient department complaining of rheumatic symptoms, and these children made up about 20 to 25 per cent of medical out-patients in Bath and Bristol under his care. A good deal of practice was required before a definite opinion as to their presence could be confidently ventured. They were most easily palpated over the spinous processes of the vertebral column and along the subcutaneous border of the ulna. If they would allow that the large subcutaneous node of acute disease was the homologue of a cardiac vegetation, and they had the considered opinion of Dr Poynton and Dr Still to this effect if they would allow that the submillimetric nodule occurring in the cardiac muscle was a rheumatic lesion, and they had the work of Aschoff and Carey Coombs to establish this, then they must allow that the subcutaneous fibroid nodule under discussion was not only essentially the same lesion but the homologue of the submillimetric nodule of Aschoff. Moreover, it was a growing conviction on the part of pathologists that this type of reaction—namely, proliferation of the lining endothelium of arterioles and perivascular collections of histiocytes—was a typical response to organisms of the streptococcal group. In view of the almost invariable finding of subcutaneous fibroid nodules in children with a rheumatic history, of the very infrequent finding of these in children without a rheumatic history, in view of the results—namely, disappearance of symptoms and in some cases of the nodules—produced by antirheumatic treatment such as salicylates, alkalis, arsenic, and, in one group, thyroid extract, in view of the fact that a percentage of these children developed carditis or chorea subsequent to the finding of nodules, it was asserted that the presence of these nodules (a) indicated a diagnosis of rheumatic infection, (b) distinguished the rheumatic child from among a large and hitherto undiagnosed group of mildly ill children, (c) indicated the necessity for continuance of treatment in spite of temporary cessation of symptoms. Thus as an early physical sign of rheumatic infection the subcutaneous fibroid nodule gave the opportunity to anticipate cardiac disability to an extent hitherto impossible.*

Dr R E THOMAS (Bath) said that, following on what Dr Coates had said about nodules, he would bring to their notice his clinical experience of their value to the school

* Dr Coates demonstrated a child with these rheumatic nodules after the meeting and microscopical sections of the nodules were shown in the Pathological Museum.

medical officer. In spite of the fact that the existence of the nodules had been proved by excision and examination under the microscope, it took him two or three months' work on selected and unselected, ill and normal children before he was satisfied that the nodules presented a typical clinical, ascertainable variation from the normal. He felt confidence first in palpating the nodules occurring over the spine, especially when they were associated with a feeling of creaking, and it was these that he still considered the easiest to find and the most convincing. When once he had acquired the faculty of using this to him, new physical sign, it proved of astonishing value, for it afforded the clue to the diagnosis of fleeting and suspicious heart bruits indicating those of serious or rheumatic origin. It gave a definite diagnosis in the case of many sleep talkers, sleep walkers, and unstable and nervous children, and it was at present enabling him gradually to label, and he believed label correctly, many of the children included in the large group called 'delicate children' (the anæmic malnourished, plethoric, etc.). The reasons for his confidence were first, the sections of the nodules, and secondly, the results of treatment, which had secured for the children a sufficiently good return to health to gain the marked gratitude of their parents. That Dr Cortes found it necessary for some cases to include in the treatment the giving of thyroid extract or iodine appeared to him to indicate the action of the infection in thyroid insufficiency, and to suggest that one line of prevention might be that of prolonged iodine treatment, especially in early cases selected by the presence of nodules. He had gradually come to regard acute rheumatic fever, chorea, and definite rheumatic illness as a flare-up during the course of a subacute rheumatic infection, and believed that this flare-up was kindled, was determined by some added factor, such as influenza, scarlet fever, a cold, fight, anxiety, or overwork. The subacute infection itself seemed to find dwellers at a low altitude and on a river bed—sub-oil easy victims, but in their cases it was important to note that this disease was not associated with poverty; rather its incidence was chiefly among the bright and intelligent children of skilled and able parents, who were in constant employment, in receipt of good or fair wages, and who were striving, straining, and succeeding in their work and in their social life. The outstanding feature of the subacute infection was its frequency. He quite agreed with Dr Cortes that about 25 out of 100 unselected Bath school children between the ages of 5 and 10 had nodules, and that 20 of these had a definite history of rheumatic symptoms. These figures were as minimal as he could make them, as he felt, and had been warned, that he would not be believed. In partial support of them he would remind the meeting that out of approximately 3,000 children called up for special examination in London during 1922, on account of prolonged absence from school, 23.5 per cent were found to have been absent on account of rheumatic diseases. The reference for this was Sir George Newman's annual report on the Health of the School Child for 1922, which was published in 1923. He pleaded for the finding and treatment of the children threatened by this catastrophe, but not yet permanently damaged, and he knew of no physical sign—no method—except the nodules, which gave a sure enough diagnosis of these early cases as to render practicable the selection and saving of them. He wished to remind the meeting that the full value of this early physical sign would only be available for the public elementary school child when there was the closest co-operation between the school medical officer who discovered and the physician who treated.

Dr A. P. THOMSON (Birmingham) did not go into the question of early diagnosis at any length as that had already been fully considered by previous speakers. He desired, however, to emphasize the fact that frequently the earliest symptom of chorea was a sudden deterioration in a child's school work, and this, he found, was often associated with very marked changes in handwriting. If elementary school teachers could be trained to appreciate these early signs and to refer such children either to the school clinic or to their family doctors the diagnosis of the rheumatic condition would be made sooner in a number of

cases. He had had no experience of the nodules described by Dr Cortes, which occurred with such startling frequency in Bath, but he would certainly examine children in future in the way Dr Cortes suggested. Nodules of the recognized type were very rare in Birmingham. It was clear that the time preventive treatment of rheumatism depended on knowledge of its etiology, and he had recently completed a review of what might be termed the accessory factors favouring infection in a series of nearly a hundred rheumatic children. The family histories showed the incidence of rheumatism in 25 per cent of the cases; this was certainly no greater than the incidence of tuberculosis in the same series, and he consequently did not attach great importance to this factor. A study of the distribution of rheumatism in children in the city of Birmingham showed that the great majority of the cases occurred along the southern banks of the two streams which flowed through the town. Sir John Robertson had kindly arranged for the systematic inspection of the houses of rheumatic children, and from the health visitors' reports it appeared that 45 per cent of them were obviously damp. The orientation, number of windows, and the type of ventilation of the houses did not seem to have the importance of dampness, and in practically all the cases they were said to be clean, and the children concerned were well cared for. This investigation supported the conception that rheumatism was a disease of poor children, but that on the whole it tended to be more frequent among the children of the decent poor than among the squab. It had seemed likely that overcrowding might be a factor of importance in the etiology of chorea, but inquiry showed that there was no more overcrowding in the families of choreic children than there was among those with the other manifestations of rheumatism. Dr Thomson believed that the protection of houses from damp, either by careful selection of the sites or by the provision of better damp courses, and the provision of means for drying children's clothes at elementary schools were important points in prevention. What else could be done? Once the rheumatic infection had occurred, and particularly if the heart were early affected, he quite agreed that provision of accommodation for long convalescence was essential; the most satisfactory type of accommodation would, he thought, he found to be a special hospital school of the type of Baskerville at Birmingham, or like the one to which Dr Paxton had already referred. These school should have close connexion with the existing children's hospitals and with the school medical service. He saw no necessity for the establishment of special cardiac clinics and there was no ground for believing that cardiologists even with the assistance of elaborate electrical appliances were more competent in the care of these cases than ordinary physicians, he hoped very much that the suggestion of specialist clinics would not receive support, for there was in it a very real danger of the isolation of the problem of rheumatism. The results of treatment at a place like Baskerville were encouraging. Of 44 children who had left the school more than a year ago 29 had led the ordinary life of elementary school children, and on examination of these it was found that the physical signs of the heart were either normal or were unchanged since their discharge, all of these cases had signs of definite cardiac on admission. The rather large proportion of unsatisfactory cases was due to the fact that at first a considerable proportion of hopeless cases had been admitted. Finally he wished to say that his investigations showed that the removal of the tonsil from the rheumatic child in some way protected it from cardiac, and he now had tonsillectomy performed when ever it was possible. Of the value of sodium salicylate he was not convinced apart, of course from the treatment of the acute stage of rheumatic infection.

Dr EUSTACE HILL (Durham, President of the Section of Public Medicine) said he welcomed this joint conference between clinicians on the one hand and administrators and others associated with the public health service on the other. He hoped that such arrangements would be extended in other directions, and believed they would make for the mutual co-operation which was so necessary and tend to remove many difficulties and misunderstandings and widen the outlook of both parties. He feared that Dr Thomson,

in criticizing the proposed clinics, did not fully realize the difficulties that existed in county districts and scattered areas. In a large city like Birmingham the children's hospital might well be the centre for examination and treatment, but in a county area he would welcome the association of a cardiac clinic with their orthopaedic scheme. He was afraid that Dr Askins's anticipations were somewhat optimistic, as up to the present few authorities had made provision for cripples of any sort. The Board of Education was, however, pressing this matter, and it was probable that there would be an early increase in such accommodation. He saw no difficulty in the provision of an annex to an institution for cripples for the purpose of cardiac cases. If such provision were made it was essential that the private practitioners should interest themselves in the scheme in order that their patients should benefit by it, and he believed that such a joint conference as the present was valuable, inasmuch as it promoted such co-operation. He considered that Dr Glover's suggestion as to notification was worthy of most serious and careful consideration.

Dr L. A. PARRY (Hove) asked whether "growing pains" were in themselves to be regarded as manifestations of rheumatic infection in all cases.

Dr S. NOY SCOTT (Devon), speaking as a practitioner who was also a medical officer of health, said he thought one of the principal causes of rheumatism in children, at all events in country districts, was to be found in compulsory school attendance. In many such districts children had to walk from one to three miles to reach school, and bad weather was not accepted as an excuse for absence. The result was that children often had to remain in wet clothes and wet boots until they returned home late in the afternoon. The enthusiasm for regularity of attendance on the part of the school authorities was, in his opinion, not due so much to zeal for education as to a desire to obtain the grant which was based on attendance. There was no loss of grant in connection with absence if a medical certificate of unfitness were obtained, but parents were not always willing to pay for such certificates, and he thought the education authority should be empowered to pay for them. This would be one means of preventing many cases of catarrh, tonsillitis, and rheumatism. It was impossible in a scattered population for the school medical officers to do this work. Another probable cause was damp in the houses, and he thought there should be powers to specify the nature of damp-courses so as to ensure adequacy, and to prevent the erection of houses on sites that were damp or otherwise unsuitable. The question of clothing was one which required further investigation. He was not satisfied, for instance, that children whose underclothes were of wool were more immune than others to these infections.

Professor F. L. WYNN (Sheffield), in welcoming the evidence of co-operation between the clinical and administration branches of the profession provided by the discussion, mentioned that, largely through the good offices of the local Division of the Association, a "Medical Advisory Committee" had now been formed in Sheffield, which was representative of every section of the profession—consultants, teachers, research workers, general practitioners, and medical officials. Subcommittees were already investigating questions relating to epidemic encephalitis and cancer, and he hoped this question of rheumatic infection as it affected the city would be taken up at an early date. With regard to the relation of the disease to poverty, he had recently been able to show that certain diseases, such as scarlet fever and diphtheria, were less closely correlated with overcrowding than one would expect, and the correlation was considerably less than that which obtained forty years ago. This was due to the intervention of other factors, especially improved nutrition, and he thought the same would be found to be true of rheumatic infections. He thought a good deal of the time now spent in fulfilling the demands of the Board of Education for routine inspection would be more profitably employed in the careful examination of children reported by teachers, nurses, and others as showing some departure from the normal.

Dr LEONARD LEES (Bristol) agreed that rheumatism was not a poverty disease, but had no doubt of its connexion with enlarged tonsils, defective teeth, and dampness. He had seen comparatively few cases associated with "nodes," and thought the relationship of scarlet fever to rheumatism was a subject that required further elucidation. He was still of opinion that salicylates gave the best results in treatment.

Dr H. SCURFIELD (Sheffield) asked Dr Poynton if his records showed that arthritis was generally absent in cases of rheumatism occurring in children under 5 years of age. He would also like to know what were Dr Poynton's objections to the employment of salicylates and whether he had had any experience in the treatment of cases with the serum of convalescents.

The President (Dr ROBERT HUTCHISON), in summing up the discussion said that there was unanimity as to the seriousness of the rheumatic problem. As a further illustration of it, he would only mention that no fewer than fifty beds in the London Hospital were constantly occupied by cases of acute rheumatism or cardiac disease resulting from it. There was also general agreement as to the necessity for early diagnosis and for the prolonged treatment and supervision of children in whom cardiac disease had developed or was suspected. They were still, however, without much information, though some had been supplied from Birmingham, as to the permanent value of such treatment, and in view of the expense necessarily involved it was desirable that more of such information should be obtained before the profession pressed for the general adoption of such measures. Meanwhile, he was in agreement with those who deprecated the establishment of special cardiac clinics. The discussion had shown that they still had much to learn about the bacteriology of the disease—for all seemed to agree that it was infective—and about the secondary or environmental factors which favoured its development. Dr Reginald Miller had described it as a disease of "poverty." That, however, was a relative term, and perhaps best avoided. Rheumatism was certainly not specially a disease of the slum child, but he entirely agreed with Dr Miller that it was a disease of hospital and not of consulting practice, and he (the speaker) could count on the fingers of one hand the cases of acute rheumatic carditis that he had seen in consultation in the course of twenty-five years. He was inclined to describe rheumatism as a disease of the "elementary school child," but what the factors in the environment of such children which tended to produce it were he was not prepared to say. Dr Noy Scott had enumerated some which might be of importance. He was of opinion, however, that overstrain at school had something to do with the production of chorea in girls. He was certainly convinced that progress in their control of the disease was most likely to come from a careful inquiry into those factors in the environment which appeared to favour infection. Perhaps the committee to which Dr Reginald Miller had referred might be able to furnish valuable information in this respect.

Dr POYNTON, in reply, thanked the Section for the valuable discussion which had followed the reading of his and Dr Askins's papers. This was, he felt so valuable because it was upon broad humanitarian lines. The President, in his wise and careful remarks, came to the heart of the question when he dwelt upon the occurrence of the disease among children of the less well-to-do. Poverty was a complex problem, and he himself was in agreement with those speakers who dwelt upon the tendency of the disease to attack the highly strung, rather fragile children of parents who were striving to better their position in life rather than the more casual and often more needy. Dr Parry's question was one which must inevitably arise, and the answer, he thought, was a study of the individual cases by doctors with a broad outlook—namely, by those in family practice. Pain behind the knees might develop into a severe rheumatism, or pass away rapidly and for ever, the cautious doctor, bearing in mind these alternatives, would go carefully until he saw the turn of events. His reason for not using

salicylates when there was severe arthritis was this. If the drug was specific it needed pushing, and he had found then his results with these delicate children not good and the specificity doubtful. For arthritis prisms all knew its value. He hoped some of them would try tolism, because he thought it more satisfactory in these cases, and it was worth investigating. Many old friends had joined in this discussion, and he thought that there were few points in a short reply which he need dwell upon. A problem which drew into its meshes hospital and general physicians, school medical officers, and medical officers of health, must necessarily lead to differences in outlook, a point he had dwelt upon in the Biddishaw Lecture last year. When these arose the guiding signal was a very clear one, and this was the memory of young and charming children crippled, before 12 years of age, by this grave disease.

Dr ASKINS, replying, remarked that there appeared to be some fear that the institution of cradice clinics would

be taking work away from other agencies. Thus, however, could scarcely be the case, because so far as elementary school children were concerned, practically nothing was being done at present for those suffering from early and acute disease except in a few cases, and under present conditions there was little more that could be done. An essential factor in dealing with this disease was some organized scheme whereby cases would be followed up and kept under skilled observation. Experience had proved that many such children were carrying on an ordinary life during a stage of their illness at which this was of great harm to them. On the other hand, the need for skilled observation was further shown by numerous instances of children who presented a murmur which was not due to heart disease, and who had been wrongly placed under restrictions on the latter supposition. As already stated, cradice clinics could be established at any hospital or school clinic, or wherever was most convenient, provided the above essentials were available.

THE DIAGNOSIS OF LUNG CONDITIONS*

BY

THOMAS M. ALLISON, M.D.,

MAJOR R.A.M.C., T.F. (RET.),

LATE VISITING PHYSICIAN TO THE SANATORIUM FOR TUBERCULOUS CHILDREN STANNINGTON.

I NEED not stress the importance of lung diseases. The deaths, disabament, and debility which follow on lung conditions speak for themselves, and render their diagnosis and treatment of great importance.

THE BREATH SOUNDS

The breath sounds of the child are, in my opinion, the bed-rock of pulmonary diagnosis. The books describe them as puerile—a definition which conveys little—or they say that they are a form of vesicular breathing. In my opinion the normal breath sounds of the child are not vesicular but lingual, and they are therefore harsh in character. They consist of a long harsh inspiration, and a short harsh expiratory murmur. The vesicles are not developed until puberty or for some years afterwards, and vesicular breathing does not appear until that time.

My first point, therefore, is that the normal breath sounds of the child are twofold, are harsh in quality, and are formed in the trachea. At puberty or later they are overlain or hidden by the vesicular element of the adult lung.

The vesicular breathing of the adult (resembling the rustling of leaves in a breeze) is heard normally over the lungs except at the right apex, where the inspiratory and expiratory murmurs of the child may still be heard. The vesicular element is the first to be affected by disease, when the breath sounds of the child again come out. Thus, in emphysema, where the vesicles are destroyed, the condition is characterized by the harsh breathing of the child, but with ratio reversed, the inspiration being short and the expiration prolonged.

The gradations are harsh (normal) in a child, vesicular (normal) in an adult, harsh-vesicular and harsh (abnormal) in an adult, bronchial, tubular, cavernous, and amphoric (abnormal) in both.

ADVENTITIOUS SOUNDS

There is perplexity about adventitious sounds. The rhonchus is the large musical sound heard in bronchitis, while the word "râle," indicating a moist sound, is used indiscriminately. The crepitation is a fine dry sound. The râle, however, may be moist at one time, and in the process of healing may become dry, thus becoming a crepitation. And I would suggest in the place of the râle the term "small sound." This might be contracted to "s-s" and could be described as bubbling, moist, or dry, as the case might be.

There would then be the rhonchus, indicative of bronchitis, small sounds indicative of tuberculous and pus infections, and the crepitation would characterize pneumonia

(and only occasionally pleurisy). The other sounds would be the pleural rub and pleural creaking. To these I would like to add the squeak, a sound which I have observed in the consolidation of tubercle. It is a small rhonchus, and almost as characteristic of tuberculosis as the post-tussive sounds at the apex.

PATHOLOGY OF THE LUNGS

If we consider the morbid conditions affecting (1) the air passages, (2) the lung substance, and (3) the pleural coverings, we obtain the following classification of disease, and I propose as a guide to differential diagnosis to give the characteristic symptom and sign of each condition.

CONDITIONS AFFECTING AIR PASSAGES

Asthma

Symptom Sitting up in bed.
Sign A prolonged wheezy expiration.

Bronchitis

Symptom Cough.

Sign Rhonchus. Wherever there is a rhonchus there is bronchitis. It may be wheezy as in asthma, or sonorous as in chronic bronchitis, but the presence of a rhonchus means an acute, chronic, or superadded bronchitis.

Bronchiectasis

Symptom Postural and profuse expectoration, occasional fever, and occasional haemoptysis.

Sign A creaking rhonchus—indicating a mixture of pleurisy and bronchitis. A dusky face, a barrel-shaped chest, and clubbed fingers complete the picture. Clubbing of fingers, apart from heart disease, is almost typical of bronchiectasis, and is seldom met with in tubercle.

Bronchopneumonia

Acute distress is present. The child is obviously ill, with working ribs, rapid breathing, and some cyanosis.

Signs A mixture of rhonchi and râles—that is, of large musical and small moist sounds. In other words, of bronchitis in the upper, and lobular pneumonia in the lower, lobes.

Broncho-infiltration

I venture to describe this condition as new. It follows measles, whooping cough, pneumonia, and pleurisy, and is present in children and elderly people for years. The chest is kyphotic in type, with apical and suprasternal retraction, moderate expansion, and raised percussion note. The lower lobes are infiltrated by pus organisms, the pneumococcus, etc. These show their presence by post-tussive small sounds in one or both lower lobes. The sounds may be merely marginal or marked râles or crepitations may be present throughout the whole or greater part of the lower lobes. The percussion note over the infiltration is little altered, this distinguishes the condition from tuberculous consolidation. From time to time the infiltration lights up, and rhonchi are present in the upper lobes—hence the name broncho-infiltration.

* From an address on the diagnosis and treatment of lung conditions delivered to the Leeds Branch of the British Medical Association.

Osler characterizes the condition as "marginal crepitations" or as "crepitant rales common at the bases," placing it under chronic bronchitis. But bronchio-infiltration appears to be a distinct condition, and I think its description should be as definite as that of emphysema, infiltrated bases being a constant source of danger.

CONDITIONS AFFECTING THE LUNG SUBSTANCE

Emphysema

Symptom Shortness of breath on exertion

Sign A prolonged harsh expiration. The ratio of expiration to inspiration is often 2 to 1, and thus, together with the barrel-shaped chest and the hyper-resonant percussion note, is distinctive.

Gassing

The effects of gassing are apparently to destroy the vesicles and set up peribronchial fibrosis.

Symptom Shortness of breath on exertion

Signs Here the breath sounds of the child are heard in the adult, with loss of vesicular element, harsh inspiration, and feeble, but not prolonged, expiration. A raised percussion note, not hyper-resonant, and good chest expansion, not diminished as in emphysema, are present. Adventitious sounds are usually absent. The presence of coarse, toneless, interrupted rhonchi is a bad sign.

Fibrosis

Symptom Shortness of breath on exertion, with one-sided chest wall retraction.

Sign Impaired percussion note, feeble breath sounds, and increased vocal fremitus.

Pneumonia

Symptom Rapid breathing ending in a grunt.

Sign Harsh inspiration with fine crepitations, and prolonged bronchial expiration. The picture of pneumonia is one of flushed face, dilated pupils, working ribs, and rapid breathing, whilst the impaired percussion note and the increased vocal fremitus and vocal resonance of consolidated lung are unmistakable.

Tuberculosis

Symptoms Slight haemoptysis, distressing cough, loss of flesh and energy, and evening rise of temperature.

Early Signs (1) Some impairment of the percussion note. (2) Loss of vesicular element, and the tendency of the expiration to become bronchial. Later, the signs of impaired dullness, post-tussive small sounds at the apex, increased vocal resonance and vocal fremitus are easily detected while still later come cavitation and surrounding consolidation which set up cavernous breath sounds, increased vocal resonance and whispering pectoriloquy.

In tuberculous consolidation, especially when healing, the *si si* rhonchus which I would term a *squeal* is often present. It seems almost diagnostic.

Regarding tuberculosis, I think its frequency is sometimes overestimated, and I would place the cases of pleurisy which eventually become tuberculous at 50 to 60 per cent. With regard to tuberculous cervical glands, usually secondary, the percentage is probably not more than 30, the rest being cases of chronic sepsis from oral infection.

In pleuritic or glandular involvement organisms other than those of tubercle should be remembered. And when sending sputum for examination for tubercle bacilli the presence of these other organisms should be asked for. Some authorities rely upon x-ray diagnosis at the hilus. But that these glands may be enlarged by organisms other than the tubercle bacillus should not be forgotten. It is possible that at the hilus the percentage of tuberculosis is overestimated.

CONDITIONS AFFECTING THE PLEURA

If we regard the lung as encased in two paper bags one within the other we gain a rough idea of the pleuritic coverings the opposing sides of which work in harmony in the normal movements of the lung. If they become roughened by inflammation we have pain and discomfort. If they are separated by effusion, pus, or air we have replacement of lung, and, naturally, absence of lung signs and sounds.

Pleurisy

Symptom Pain in the side on coughing.

Signs Occasionally fine crepitations also heard resembling those of pneumonia, but these seem nearer to the ear through the stethoscope. More generally a friction sound is heard, whilst in chronic pleurisy the sound is creaking.

Pleurisy with Effusion—When the pleuritic coverings are separated by a serous (watery) effusion, the fluid gives a flat resisting percussion note, and the lung being absent there is absence of breath sounds, of vocal fremitus, and vocal resonance.

Empyema—Empyema being a purulent effusion, practically the same conditions prevail as in serous effusion.

Pneumothorax—Here the pleura is torn and air replaces the lung, and there is a tympanitic percussion note, with absence of breath sounds, marked collapse of the patient, and marked pain in the affected side. In some cases the breath sounds may be amphoric.

Chronic Pneumothorax—In two cases recently seen of chronic pneumothorax, following tubercle and empyema, both of some years' standing, and in which the diagnosis was confirmed by x-ray pictures, the characteristic sign was a distinctly musical inspiration and expiration. In one case the coin sound was very marked.

New Growths—This is a group apart, and is of rare occurrence, usually secondary to growths in other parts of the body, and need not be dealt with in detail at the present time.

SUMMARY

- 1 The bed-rock of pulmonary diagnosis is the normal breathing of the child.
- 2 The normal breath sounds of the child are harsh, of the adult vesicular.
- 3 The vesicles are not fully developed till puberty or some years afterwards.
- 4 There is more mischief at the base of the lung than at the apex.
- 5 Lung examinations should always include the lower lobes.
- 6 Post-tussive small sounds at the apex indicate tubercle, at the base pus infiltration.
- 7 A doctor should put a bright needle into a dull base, as an unresolved pleurisy may be a missed effusion, and an unresolved pneumonia a missed empyema.

PUERPERAL INSANITY

NOTES OF

CASES TREATED BY INJECTIONS OF OVARIAN EXTRACT (WHOLE GLAND), FROM THE DUFFEE MENTAL HOSPITAL, WESTGREEN.

BY

E. A. WILSON, M.D., AND T. CHRISTIE, M.B., CH.B.,
LATE ASSISTANT MEDICAL OFFICER ASSISTANT MEDICAL OFFICER

I.—By DR. WILSON.

The following cases are recorded to illustrate the value of the hypodermic injection of ovarian extract in puerperal insanity and possibly in other forms of acute confusional insanity. It probably acts by bringing about the re-establishment of menstruation.

CASE I.

Mrs. A, aged 25, was delivered of her first child in January 1922 and within a week developed acute confusional insanity. This continued until she was admitted to Westgreen Mental Hospital six months later in an emaciated state. She remained in a condition of acute mania for the next twelve months, during which time she had calmer periods and gained weight but only to lose ground again. There was no menstruation. At the end of the nineteenth month a hypodermic injection of extract of ovary corresponding to 30 grains of fresh gland was given, and at intervals of from four to nine days successive injections amounting to eight in all. From the first injection improvement was seen, and within six weeks she was up and going about, rational, interested in her surroundings, sleeping well and eating well. Menstruation began again, and in the twenty-third month since her breakdown she was discharged home as cured. She has since undertaken her regular household duties with success, and has undergone another pregnancy with no trouble.

CASE II.

Miss B, aged 22, gave birth to a child in June 1922 and ten days later she broke down. She was admitted immediately as a typical case of acute puerperal insanity. During the first three months of her illness her mental state was unchanged and there was no menstruation. The extract of the ovary was given

hypodermically and then replaced by corpus luteum given by the mouth, it was continued for two months. She menstruated for the first time within a month of the administration of ovarian extract, and this coincided with improvement mentally. She was discharged home cured in the seventh month after she broke down.

CASE III

Mrs C. aged 24 was admitted in October, 1923 with five months' history of mental breakdown following on the birth of a first child in May. She was in a stuporose condition, confused, and took no interest in her surroundings. She was observed for a week and there was no change. Eight injections were given at intervals of up to seven days, and at the end of that time she was up and going about sociable, and able to tell us about herself. She was discharged as recovered on January 12th 1924. I have no notes regarding her menstruation as I was not then fully alive to the importance of that function in this connexion.

CASE IV

Mrs D. aged 40 admitted in June, 1923 was restless, agitated, almost violent, and incoherent. There was history of ten months' mental hospital treatment in 1919. The child which was not her first, was born in the summer of 1921, since then she had never been well but no actual mental breakdown occurred until five months afterwards, when she lost control, but was not sent to hospital. She got better, but broke down again in the summer, 1923. It was noted that on admission the mammae were lactating, and a vaginal discharge was present, which cleared up on douching. In September and October a course of thirteen injections was given. Improvement was marked, she put on weight and was discharged in January, 1924. Menstruation had begun again before she left.

CASE V

Miss E. aged 32 was admitted in December, 1922, in a state of chronic mania. There was no history of pregnancy and no stricture gravidarum. She had to be fed by tube for a time. She would hurdle over beds, tables, and chairs and was very strong for her small physique. There was no change during eight months. The first injection of ovarian extract made her sleep like a log for thirty hours during which time she hardly moved nor had she any nutriment. This was in contrast to her usual extreme restlessness and insomnia, which even hyosine failed to control. Twelve injections were given in nine weeks. She menstruated within a week of the first injection the first since she was admitted. In three months she gained 21 lb in weight. Improvement was marked and she became a useful member of the hospital laundry staff. She was discharged to the care of a relative in February, 1924. For over a year now she has been in service and keeps well.

I include this last case with the others because it is similar to puerperal insanity, and, I think, must be considered along with it. Criticism of the above cases will be directed to the fact that puerperal insanity often spontaneously clears up within nine months of its onset. Many authorities stress the point that sanity returns with the return of menstruation. The first case gives an uninterrupted period of nineteen months' mania, which cleared up with the return of menstruation. The rationale of giving ovarian extract (I write now with the advantage of two years' theorizing subsequent to the experiment) depends on its undoubted action as a promoter of menstruation. Granted that the administration of the injections may have coincided with a spontaneous recovery, especially in those cases with a short history, I would yet maintain, especially from Cases I and V, that the ovarian extract was the deciding factor. From a general survey of these cases and of others I would advance the following suggestions:

1 If the patient can be got to menstruate her difficulties are over.

2 This can be done by giving ovarian extract in sufficient quantity straight into the blood, as nature gives it.

3 The mental breakdown is due to a temporary deficiency in ovarian secretion, a deficiency which can be made up.

In conclusion, I should like to ask a question. The extract was given to other patients of different types experimentally. It had the effect of stimulating obesity. Are there any data available giving in figures the effect of ovarian extract on basal metabolism, in contradistinction to the action of thyroid?

II—By DR T. CHRISTIE

I heartily concur with the observations made by Dr Wilson on the treatment with ovarian extract of patients suffering from acute confusional insanity where pregnancy is the exciting factor. In my experience, however, I have found that these patients stand very well more intensive treatment than he advises. My method is as follows: For the first week a dose corresponding to 30 grains of fresh gland is given three daily, for the second week twice daily, for the third week once daily, and thereafter every

third day until the onset of menstruation, then once weekly till the next menstrual period.

I have also found ovarian extract useful in cases of confusional insanity coming on at the climacteric period. In these cases I have found the above dose every second day of great benefit—I record an example below. In two cases I have noticed signs of a toxic effect. The outstanding symptoms were a macular rash, chiefly over the chest, abdomen, and arms, inclination to become comatose, obstinate constipation, and in one case vomiting. Free purgation and cessation of administration saw both patients well in a week, and resumption of treatment saw no recurrence of toxic signs.

Case of Acute Confusional Insanity with Pregnancy the
Exciting Factor

Mrs W., aged 28. Mental symptoms had begun four days after the birth of her child, she was admitted to the poorhouse, and stayed there one month. After a fortnight at home she was readmitted there, she came eventually under my care in the tenth week of her illness. She was moderately well nourished. Mentally she was confused, lacked cerebral control, was shouting and singing, and unable to sustain a simple conversation. She had no memory, she refused food, and slept poorly. Intensive ovarian treatment was begun on the fourth day after admission and within four days she was sleeping well. Three days later the restlessness diminished and soon she was taking her food herself. During the month that followed her mental condition varied: sometimes she was noisy and confused at other times quiet and rational. The spells of confusion became less and occurred at greater intervals, she gained weight and slept naturally. After two months' treatment she began to menstruate, and a remarkable change was noticed within four days from its onset. She became quiet and behaved in a rational manner and her memory returned. She was discharged cured.

Onset of Menopause the Exciting Factor

Mrs F., aged 56. From the history received it was gathered that the menopause began about three and a half years before admission. She was stated to be light-headed, extremely talkative, asking senseless questions, and being sometimes delirious, at others stuporose. On admission she was depressed and stuporose and incoherent, and was treated on general principles. It was noticed after a time that she had spells of confusion at regular intervals. She would be acutely confused for about a week then apparently recover and act in every way as a rational woman, taking an interest in everything and working well. Her spells of mental confusion occurred regularly every three weeks and inquiry elicited the fact that her menstrual periods had been at intervals of twenty-one days. One week before the next attack was due I gave her an injection every second day. She never had another attack, as I anticipated when each spell was due. And so for three spells. Then I omitted injection for two spells and she was discharged. No further attacks have been recorded.

We are indebted to Dr William Turch-Mackenzie, the superintendent of Dundee Mental Hospital, for permission to publish these notes.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

POISONING BY COPPER SALTS IN BREAD

I was recently called to see a boy who had had a severe attack of vomiting followed by pyrexia. His mother showed me portions of a loaf of bread, in the centre of which was an irregular area of a light green colour about an inch in diameter. This, at first sight, I took to be "mould," but on further examination small fine metallic particles could be seen.

The loaf was bought from a high-class bakery where the bread is made by machinery, and delivered wrapped in damp-proof paper. It was bought on Saturday and cut on Sunday, the green colour being immediately noticed. As it was the only white bread in the house, it was cut down until no further green colour (which was thought to be "mould") could be seen, and the remaining portion was then partaken of by all the members of the family.

The boy, aged 5 years, the youngest member of the family, became violently sick two hours afterwards when in bed and asleep. He vomited twice during the night complained of discomfort in the stomach but had no severe abdominal pain. He suffers from habitual constipation, and had no diarrhoea. He was very sick again the next day and became feverish, his temperature rising to 103° on the following day. When seen by me he was pale and had a furred tongue but his temperature had fallen to 97°, and he had no signs of any severe abdominal condition. He was well in a few days.

The boy's father stated that after eating the bread at tea time he did not feel any ill effects immediately, but did not want any supper. He had no vomiting but diarrhoea began about noon on the following day, continued the next day, became very severe

(about twenty times) on the third day, subsiding under treatment the following day. He had no acute abdominal pain but complained of a dead feeling in the stomach. He had pruritus in his joints, particularly in the knees and ankles, elbows and wrists. He also was well in a few days.

The mother had diarrhoea but no vomiting. She ate very little of the bread and the ill effects were less pronounced.

A son aged 9 years came home from school at noon on the following day, crying with pain in the abdomen, which was relieved after an action of the bowels. He had no vomiting but frequent motions for two days.

Another boy, aged 12 years, who came to tea with his cousin on the Sunday, had similar symptoms.

Finally the dog, which had some of the bread mixed with his food, was evidently in pain, and had diarrhoea for two days.

At my request samples of the bread were submitted by the father to the research chemist and metallurgist at the works where he is employed. The report sent to me states that the given colouring matter was undoubtedly due to copper salts, resulting from the action of the products of fermentation, during the baking of the bread, on the particles of the metal seen in the loaf. During the process of fermentation carbonic acid and acetic acid are produced, and these, acting on the particles of copper, form (1) basic copper carbonate, and (2) basic copper acetate (verdigris).

A visit was then made to the bakery to determine how the copper particles got into the bread. It was found that the flour was carried from one building to another by a "conveyor" which, owing to the distance, was in two sections. At the junction of these two sections was a "bronze bearing," and it is highly probable that when this bearing became hot from lack of grease at any time, the grinding of the dry metallic surfaces produced fine particles of bronze, which became mixed with the flour, and were carried on to the mixing machine.

Considering the small amount of bread eaten, the symptoms produced were sufficiently alarming. There was evidently more copper in the loaf than it first met the eye, for after being kept for a few days, and dry, the greater part of one slice became light green in colour.

It is obviously of importance that if a bearing is necessary in a machine used in the baking of bread, it should be made of some metal not acted on by the products of fermentation during baking.

Streatham Hill S.W.

T. H. GARDNER, M.B. Lond.

PREGNANCY AFTER THREADING BOTH FALLOPIAN TUBES WITH CATGUT

The following notes may be of interest to those who have not yet performed this operation.

A woman, aged 24, married in November, 1920, aborted early in 1921 and was attended by a "handy woman" after that she complained of constant backache and dysmenorrhoea.

To cure this condition I opened her abdomen in February 1924, at Hopefield Cottage Hospital, Portluth. The uterus was retroverted and adherent; both tubes were twisted and were held by adhesions in Douglas's cul-de-sac. The uterus and tubes were liberated, and an effort was made to force air through the latter by means of a syringe placed in their fibrinated extremities. This manipulation showed that both tubes were occluded. A long fine piano wire probe, fixed at one end and passed down one tube until its further progress was arrested within a couple of inches of the uterus. At this point the tube was divided and a portion of the uterine end resected. This procedure enabled me to pass the probe through the remaining portion of the tube and into the cavity of the uterus. The probe was now threaded with chromicized catgut; its point was forced through the anterior wall of the uterus and withdrawn, bringing the catgut out with it. The needle was removed and a knot placed on the catgut to prevent it slipping back. The portion which protruded through the Fallopian opening was again threaded, and by means of the needle was made to pierce the ovary. After the latter had been brought into proximity with the tube, a further knot was placed on the catgut where it emerged. The divided ends of the tube were now stitched together round the central catgut core. The Fallopian probe was made to pass with some difficulty through the other tube. The probe was brought through the wall of the uterus, and the catgut which it carried was knotted in two places as before. The uterus was then fastened to the lower peritoneum by two fine silk sutures; the vermiform appendix was removed, and the abdomen closed in the old way.

The patient made an uninterrupted recovery, has been cured of all pain, and was safely delivered by me of a normal and living female child on July 22nd 1925.

In performing this operation I closely followed Professor Trendelenburg's technique, which I had observed while acting as his resident in Dr. Steevens's Hospital, Dublin. It is sometimes very difficult or impossible to pass the probe through the interstitial portion of the tube. To do so it may be

necessary to cut the tube flush with the cornu of the uterus, and then gradually dilate it by employing fine wire (as used for clearing rectylene lamp burners) in the first instance, the calibre is gradually increased by the employment of ordinary sewing needles of different sizes.

Portluth.

J. C. MONT MARTIN, L.R.C.P. and S.I.

Reports of Societies.

BRITISH ORTHOPAEDIC ASSOCIATION

The meeting of the British Orthopaedic Association held at the University Medical School, Manchester, at the end of last week (October 23rd and 24th) was well attended, and in every respect most successful. Mr. Fairbank was elected President and Sir Robert Jones was elected to the newly created position of Emeritus President. The following is an abstract of his valedictory address at the termination of his tenure of office as president.

THE TRAINING AND ACTIVITIES OF THE ORTHOPAEDIC SURGEON

SIR ROBERT JONES began by thanking the association for the honour it had done him in asking him to preside over it for the last six years. The branch of surgery the members practised had, he said, made very encouraging progress since the war. It was now generally recognized that no single man was sufficiently experienced to deal safely with every department of general surgery. Speaking in general terms, they devoted their energies as a body to the surgery of the spine and extremities, and also to certain specialties affecting the arms and limbs. This of necessity comprised a very large section of general surgery, and if their work was to be progressive it demanded that they should undergo a thorough training in the other branches of general surgery. The problems met with in the war could only be solved by those whose training embraced a sound knowledge of the fundamental principles of general surgery. Orthopaedic surgery of the future would demand a no less efficient standard, and for this reason attention should be directed to the adequate training and equipment of their successors. When he looked back upon his own life he sometimes reflected what he would do if his surgical career were beginning afresh. Of one thing he was quite sure—he would select the surgery of joints and bones as his future field of activities. He would therefore endeavour to make his education sufficiently comprehensive to enable him to appreciate the scientific basis of any new advance, and he would pay a specialized attention to anatomy and physiology. With this end in view he would try to obtain a post in the anatomy rooms. He would also make a point of striving for the highest surgical qualification. Nothing, he said, had served him so well as his experience as a general surgeon. A very close relationship existed between neurology and their own work, and he strongly urged all young surgeons, about to take up orthopaedic work, to acquire familiar knowledge with the chief types of neurological disease. His advice was not to specialize too early. Facility in operative technique was best attained in youth.

If a surgeon could obtain an orthopaedic post after a few years in general surgery he was fortunate. If there was no orthopaedic department he could become full surgeon and work chiefly on the spine and extremities. As soon as possible after qualification he should endeavour to travel, not necessarily abroad. A surgeon, whether young or old, who ceased to imbibe information should be put aside to rest; his activities would never be missed. When the time arrived to specialize, Sir Robert said, he would endeavour to become attached to a county open-air hospital in a visiting capacity. To keep abreast of modern surgical literature should be almost an obsession. And the writings of the ancients should not be neglected. If he had been well acquainted with the works of Hippocrates he would have known that the treatment of club-foot two thousand years ago differed very little from his own, and that open air wards—very much on the lines of the Heswall Hospital—were attached to the Temple of Aesculapius. Such knowledge was a useful check to the arrogant spirit.

Another and perhaps even more important aspect than the equipment of the orthopaedic surgeon was the training of the student. This was rendered much easier because during the last few years many of the medical schools had realized the need for giving more attention to this important field of surgery. They should fully realize that orthopaedics was a considerable branch of general surgery. It was as distinctive a branch as that of the abdomen. The abdominal surgeon, the neurologist, and the orthopaedic surgeon were all branches of the general surgical trunk. If, at a low estimate, the surgery of the spine and extremities occupied a third of the whole field of surgery, it followed that there should be a proportionate bed accommodation for cases requiring ward treatment. Whether the cases or the surgeons were called orthopaedic or not it made no difference. The surgeon at the head of such a department of general surgery should obviously have adequate staff rank, and be allowed his share in the executive control of the student's time. If the general hospital to which he was attached had already a recognized orthopaedic unit in charge of a full surgeon, the young surgeon should act as assistant surgeon both to the special unit and to a general surgical unit. The next period should be one of pure specialization, and the surgeon's activities should be devoted to orthopaedic surgery. In this case the assistant surgeon would take the title of orthopaedic surgeon to the hospital, and be awarded the status of a full general surgeon.

Once an orthopaedic unit was established it must take its share in teaching. As representing a department of general surgery this unit must be responsible for teaching students the surgery of the spine and limbs. The lectures and demonstrations of the orthopaedic surgeon should not be looked upon as a special course any more than the lectures on the thorax, brain, or abdomen. The less the subject was made a separate specialty from the student's point of view the better. He should come to know that on certain days in the out-patient department he was better and more clearly instructed on the prevention and cure of deformity. If the teaching was good it would become sought after. There seemed but little opportunity offered to the post-graduate who desired a course of systematic training and yet what need there was for it! The Royal National Orthopaedic Hospital, with its wealth of material and representative staff, should be able to supply this need in London and the southern counties, and Oxford, Shropshire, and Birmingham should be available for other districts.

Progress during recent years was well illustrated both in the creation of new orthopaedic departments in many general hospitals, and the opening of open air hospitals or annexes in various parts of the country. Under the guidance of the surgeon physiotherapy was placed in a proper perspective, and was not allowed to run rampant along blind alleys. Interest in the preventive side of the cripple problem had resulted in a strong public desire to help in a campaign which bade fair to become truly national. The time was not very far distant when every crippled child would have the advantage of education and skilled treatment in fresh air and sunlight. For many years most of them had known of the close relationship between fresh air, sunshine, food, and rickets, but now, owing to the researches of Mellanby, Chick, Leonard Hill, and others, this relationship was explained and placed on a scientific basis. The State was supplied already with sufficient data to eradicate the disease, and they should take every opportunity of impressing upon local authorities their grave responsibilities, so that the out-patient departments should be freed from rachitic deformities.

The pathetic plight of the adult cripple should not be forgotten. If a cripple had passed the age of 14 it was next to impossible to offer him adequate help. As surgeons they had the desire and the knowledge, but they lacked the opportunity. It was true that certain hospitals, such as the National Orthopaedic, the Shropshire Orthopaedic, and the Wingfield Hospitals, undertook the treatment of the adult, but there were vast districts in the country which offered no facilities of any kind. The adult cripple of to-day must seek admission in the wards of a general hospital, and they knew that, without questioning the

capacity of any surgical staff to handle far advanced orthopaedic cases, as in the case of a child, there was no accommodation there for patients requiring several months of continuous treatment—nor was there any provision for after care. He was evacuated from hospital before he was cured in order to accommodate an urgent case, and apart from an occasional visit from the district nurse he was completely cut off from medical supervision. As an association of surgeons they should do their utmost to mitigate the tragedy of the adult cripple by securing for him adequate treatment, educative facilities, and help to employment. In the dismantling of Poor Law infirmaries, which was under immediate contemplation, there was a gleam of hope. Many of these could be equipped to deal with this problem in proportion to its urgency and gravity.

One great advantage of the campaign which was being waged on behalf of the cripple was the dissemination of a knowledge of the laws of health amongst the poor and partially educated. Ignorance of the laws of health, however, was surprisingly apparent amongst the rich and educated. We are all, said Sir Robert, proud of our public schools. In many respects they are unequalled in any other country. In early days schools like castles were erected on water, often in damp, marshy places. They were confined in space, ill lighted, ill ventilated, with small insanitary studies, low ceilings, and the inmates fed on rough, unvaried food. These were the practical relations of invention to necessity. All schools should be in dry and sunny places, facing south, with access to air and sunlight. He looked forward to the time when public school boys would sleep in the open air, and, when possible, be taught in the open air. It should be imperative that the supply of milk be of guided purity and free from tubercle. His criticism was happily by no means universally applicable, but the spirit of age hung tragically over certain of the schools, and the fact must be grasped that the laws of health were unconsciously opposed to the medieval tradition.

In conclusion Sir Robert Jones said: "These are only a few of many kindred subjects which I hope will continue to engage the activities of the orthopaedic surgeon. Let us realize our part in modern civilization and the future of our race. Recovery from disease has no longer become our sole ambition and object. That middle distance of our calling is receding on the horizon, and the prevention of grave disorders and impoverished vitality is the new and supreme ideal of natural happiness and well-being."

SCARLET FEVER IN BOARDING-SCHOOLS

At a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine held on October 23rd, the President, Dr. JOHN McVAIL, in the chair, Dr. T. STICER WILSON read a paper on the management of scarlatinal epidemics in boarding schools.

Dr. Wilson, having commented on the extreme difficulty of diagnosis in mild cases, expressed the opinion that, in institutions, a careful search for and isolation of desquamating children was an important measure. He described, illustrating his remarks with a series of excellent photographs, various types of desquamation. In his opinion the appearance of circular areas of desquamation, increasing in size and number from day to day, and then location at lines of juncture of thick and thinner epidermis, were important points. He remarked that the soddenness consequent on frequent washing of the feet when periodic examinations were made sometimes led to difficulties in diagnosis.

Dr. E. W. GOODALL, in opening the discussion, expressed himself as somewhat sceptical of the value of desquamation for diagnostic purposes. In his opinion there was no reason to believe that infection was conveyed by desquamated particles.

In the subsequent discussion, which was carried on by Drs. F. M. TURNER, J. G. FORBES, Sir JOHN BROADBENT, Drs. R. A. O'BRIEN, S. MONCKTON COPEMAN, Major GREENWOOD, T. CARNWATH, and the President, it was generally agreed that the most hopeful prospect of controlling epidemics of scarlet fever in institutions was afforded by developments along the lines of the Dicks' work. Dr. Wilson replied.

Reviews.

PATHOLOGY OF THE EYE

IN English ophthalmic literature there are two standard books on pathology—the one, the four-volume, classical, and uniquely comprehensive work of Sir John Parsons, and the other the smaller textbook of Mr. TRAUFER COLLINS and Mr. MAYOU. The former, published from 1904 to 1908, has never been re-edited, and is now, we believe, out of print, the latter, originally produced thirteen years ago is one of a series of volumes constituting, under American auspices, an international system of ophthalmic practice, has now appeared in its second edition as a separate and independent work, under the title of *Pathology and Bacteriology of the Eye*.¹ With the growth of knowledge and the revision of opinions that have taken place since its first appearance—in which progress the authors have taken no small part—the new edition is to all intents and purposes a new book, far outdistancing its predecessor in size and in value.

Holding that pathology is disordered physiology, the authors have discarded the time-honoured classification of diseases on an anatomical basis, and, as in the first edition, have adopted a physiological classification, tiering of the various morbid conditions by dividing them into generalized functional categories, each embracing the entire eye. Any system of classification must savour of artificiality on occasion, and the authors themselves have compared the process to the working out of a jigsaw puzzle, the construction of whose general framework is easy, but in which the chief difficulty arises in fitting in the central pieces to make a complete picture. The difficulty may be exemplified in that, under the same subsection entitled "Disturbances of the circulation and constitution of the blood," we have grouped together conditions so far apart as diabetic retinitis and exophthalmic goitre, xerosis of the conjunctiva, and tobacco amblyopia, while this can be logically justified, it leaves the reader at times with a certain sense of topsyturvydom. The great disadvantage of the customary system is the amount of overlapping it necessarily entails, that of the one here introduced is the difficulty the reader sometimes finds in laying his finger quickly on what he wants and of following out the various dyscrasias of a tissue without searching through every chapter of the volume. This arrangement is novel, and, like all others, has its disadvantages, but it is interesting. In its general co-ordination, and in its acknowledgement of the precedence of function over structure, of physiology over anatomy, it is scientifically sound, in its application to particulars the authors have shown no little ingenuity, although everyone would not care to accept all the details.

The first chapter deals with the various aberrations that occur in the development of the eye, arranged systematically on an embryological basis, the second with aberrations of growth that occur as neoplasms after the state of maturity has been reached. These form excellent and concise treatises on classical and orthodox lines. The third chapter, which considers disturbances in the circulation and constitution of the blood, embraces a great variety of conditions, all presented in an interesting manner. Reference should especially be made to the treatment of the disturbances in the circulation of lymph, and to the hitherto somewhat neglected subject of decreased intraocular tension. There follows a chapter on injuries—mechanical, chemical, thermal, electrical, and radiant. The fifth chapter deals with inflammation, the general reaction of the process and the general reaction to it, the modifications of these general principles as they reveal themselves in the several structures of the eye, and the methods of infection and of dissemination of infection in ocular disease, it is followed by a very detailed, and yet concise, account of the bacteriology and parasitology. The concluding chapter is on degenerations, and there is appended a useful practical guide to laboratory methods.

¹ *Pathology and Bacteriology of the Eye*. By E. Trauffer Collins F.R.C.S. and M. S. Mayou F.R.C.S. Second edition. London: Williams Heinemann 1925. (Med 8vo pp xxviii + 731. 366 figures 4 coloured plates 42. net.)

As has been said, the work is to-day the standard textbook on its subject. It is well worthy to occupy that position, but this fact entails no little responsibility on the authors and some also on the reviewer. A book holding such a position must be able to withstand criticism, and the authors should not, we feel sure they will not, resent suggestions for its improvement. Its main fault is that it is rather more personal than representative. Two examples may be mentioned. Retinitis pigmentosa is described as a typical idiopathy of the neural elements of the retina, and no mention is made of any other theory of its pathogenesis. We are not at all sure that this view is universally accepted as final among ophthalmologists either at home or abroad. In a monograph this section would be rightly considered an able exposition of the authors' views, which may well be correct, but this book is more than that. With its wider scope and greater responsibility, with its potential public primarily the student of ophthalmology and the practitioner taking up this branch of medicine as a specialty, its value from these points of view would have been enhanced had mention been made, no matter how critically, of the other views that are held on this question. Again, the authors state with certainty that the aqueous is a secretion, that is accepted and dismissed as an unconditioned and unquestionable fact. Here too, we think, the same observations hold good, and that for the benefit of the student, at any rate, who is starting from the beginning of things, the other side of the question was deserving at least of mention.

References to literature are purposely curtailed, and while English authorities are largely quoted foreign literature is rarely mentioned. The findings of slit-lamp microscopy are referred to on a few occasions, but the authors have probably been wise to refrain from a systematic appeal to a method of investigation still in its infancy, whose results still require much correlation with the histological characters of diseased conditions before they can be incorporated usefully or safely in a work of the character of the present.

The book is large and well finished, but unnecessarily heavy, perhaps, owing to the nature of the paper. The illustrations throughout are of high standard, and are lavishly provided, and there are few printer's errors.

OSLER AND McCRAE'S "MEDICINE"

THE famous *Principles and Practice of Medicine*, first written in 1892 by the late Sir WILLIAM OSLER, is now in its tenth edition, and is the second solely revised by Professor THOMAS McCRAE. In the preface light is thrown on the original author's almost conservative error in making additions, and his dictum in this connexion, "a textbook is not a yearbook," is aptly quoted to show that before new matter is admitted it should be well established. While many judicious additions have as usual been made, the volume is very little bigger than the last edition, and Professor McCRAE, than whom no one is better fitted to do so, has retained the personal and historical touches, and as far as possible the *ipsissima verba* of the beloved teacher.

Besides the thirty-one subjects mentioned in the preface as new or altered, many changes have been made in the account of angina pectoris the late Sir Clifford Allbutt's explanation, that the pain is in a large proportion of the cases (about 90 per cent.) due to disease of the first part of the aorta, the coronary arteries and myocardium having little or nothing to do with it, though highly responsible for the mortality, is now regarded as the most satisfactory, the surgical treatment is advocated by Jounesco and Wenckebach is described. New tests, such as the Dick test for immunity in scarlet fever and the Hymans van den Bergh reaction, receive due notice, and the section on jaundice is now based on Dr. J. W. McVee's classification. The lapse of five years has necessitated some modifications in the arrangement of the diseases, thus scarlet fever and rat-bite fever have been transferred from infectious diseases of

The Principles and Practice of Medicine. Designed for the use of Practitioners and Students of Medicine, originally written by the late Sir William Osler Bt MD FRS (tenth edition thoroughly revised by Thomas McCrae MD London and New York D Appleton and Co 1925 (Med 8vo, pp xxviii + 1233 23 figures 16 charts 30s net.)

of the air and its small cooling and evaporative power, and is not due to any chemical contamination. In order to estimate the cooling and evaporative powers of the air the kata-thermometer, which is described in considerable detail, was invented, and has been found to be useful in determining the velocity of the movement of air in rooms, factories, schools, shops, and mines.

The influence of surrounding conditions, such as those of town and country, and of tropical climates is considered and illustrated by statistical tables of mortality rates. Special chapters are devoted to clothes, colds, light, food, and metabolism, in connexion with vitamins it is suggested that white flour should be treated so as to induce a proper use of finely ground wholemeal or natural flour in bread. This clearly written monograph is full of valuable information and contains much wise advice for personal hygiene.

THE UNCONSCIOUS

Dr A HESNARD, a well known French psychiatrist, has contributed to the *Encyclopédie Scientifique* a valuable little volume entitled *L'Inconscient*.¹ It has been his aim to show that consciousness is not the essence of life and mind, and that the behaviour of individuals is determined by psychic or living processes of which the subject is unaware and which are not discoverable by introspection. The term "unconscious" is here used in the widest sense to include all psychic phenomena, both inherent and acquired, which lie outside the field of awareness, it is not, as the author holds, an "entity," but the primary quality of a vast number of psychic activities collected together by objective methods of investigation.

The subject is considered from the standpoint of both general and abnormal psychology, and in a condensed form the author has succeeded in conveying a great deal of information. Included in this volume is a critical discussion of the theories of the unconscious which have been formulated by philosophers, psychologists, and clinicians. With admirable restraint, however, the author himself adheres strictly to facts, and refrains from proposing a new theory. Though this modest essay, as Dr Hesnard describes it, only deals with the subject on broad lines, the psychopathologist will find it most informing and useful. Especially valuable is the section dealing with the psychology of the psychoses, where the connexion between organic disturbances (toxic conditions, etc.) and their conscious expression in symbolic delusional states is clearly traced. The volume contains a lengthy bibliography, and is well indexed.

MALE INFIBULATION

The word "infibulation," according to the *Concise Oxford Dictionary*, means "fastening of sexual organs with clasp to prevent copulation." The unabridged dictionary adds little of importance to this definition. The practice of male infibulation is described by Celsus. It consisted in passing the pin of a brooch or safety-pin or else a ring through the prepuce in front of the glans penis and thus producing an artificial phimosis. It was thought by the Romans and others that by preventing sexual intercourse at and after the onset of puberty, in boys, their voices could be prevented from breaking. Hence this practice. In the eighteenth and nineteenth centuries it seems to have been revived or at least recommended as a preventive of masturbation. All this may be learnt from Mr ERIC DINGWALL's book on *Male Infibulation*,² in which he sets forth the fruits of an inquiry into this subject, on which he has expended a great amount of erudition and industry. In the later part of the book he deals with what he calls the Greek form of infibulation, which is wrongly so called, as it consisted in tying up the prepuce and slinging the organ, it was practised by athletes and others. He also devotes a chapter to phallus curvatus, illustrated by drawings from Greek vases, in which he puts forward the view that curvature of the

penis is a sign of excessive venery. His knowledge of medicine apparently does not include the condition known as chordee. There is also in this book an account of the methods in vogue among savages of covering the penis by a case or sheath in lieu of a loin-cloth. Such a sheath was described by Lionel Wafer as used by the Darien Indians (see "Buccaneer surgeons," *BRITISH MEDICAL JOURNAL*, August 26th, 1922, p. 397). Mr Dingwall tells us in his preface that this volume is to be the first of a series of similar studies connected with the sexual life of man. We hope that the subjects of these future volumes will be better worth the exercise of that knowledge and patience which the author evidently possesses.

ANNALS OF MEDICAL HISTORY

THE centenary of J M Charcot's birth on November 29th, 1825, is celebrated in the September number—the third of the seventh volume—of *The Annals of Medical History*³ by an editorial and reproductions on the cover and frontispiece of portraits of the famous physician of the Salpêtrière. Of the eight articles two deal with the black death—first by Dr H B Allen, on its social and economic results, paying a just tribute to Dr Raymond Crawford's monograph on *Plague and Pestilence in Literature and Art*, Dr Stephen D'Isray presents the official medical opinion of the Universities of Paris and Montpellier on the black death in the fourteenth century. Dr W G Aitchison Robertson gives an interesting sketch of the versatile Sir Kenelm Digby's *Choice and Experimental Receipts in Physic and Chirurgery*, the receipts deal with all manner of diseases, and are mostly examples of polypharmacy. Malpighi's descriptive essay *De Renibus* (1666) is for the first time translated into English by Dr J M Hayman, jun., of Philadelphia, who provides an introduction and illustrations from Vesalius and Bellini for comparison with those of Malpighi. In an article entitled "The ether tragedies," Dr J Moores Ball describes how Dr Charles J Jackson in 1842, having inhaled chlorine, got relief from inhaling ether, and thus accidentally discovered ether anaesthesia, he communicated it to W T G Morton, who, like Horace Wells, tried to claim priority for it, Morton patented it as "letheon", he died of acute mania, and Wells, after anaesthetizing himself with ether, committed suicide. But Dr Crawford Williamson Long had, in 1842, removed a small cystic tumour of the jaw under ether, though he did not lay claim to priority until 1854, when Dr Jackson at once admitted it. This is followed by a fully documented account of Dr Long by Dr Francis Long Taylor of Athens, Georgia. Sir Humphry Rolleston outlines the life and activities of Caleb Hillier Parry of Bath, where a memorial plaque on his house was unveiled during the recent meeting of the British Medical Association. The career of Thomas Dent Mutter, one of the leading surgeons of Jefferson College, Philadelphia, is dutifully described by Dr J H Gibson.

NOTES ON BOOKS

WE welcome a new edition of Sir HUMPHRY ROLLESTON'S essay, *On Writing Theses for M B and M D Degrees*,⁴ for it is one of the best, as it is one of the shortest, of medico literary first aid manuals. It originally appeared in the *St George's Hospital Gazette* in 1911, and when republished in pamphlet form was made the subject of a leading article in our issue of March 9th, 1912 (p. 565). In a prefatory note the author says that "it has now been reprinted with a few alterations and additions." This is an understatement: the changes are perhaps not many, but they are clearly the result of very close and careful revision. As we said of the first edition, this little work should prove of great value to those who have to write theses, and we might add that many others would derive profit from reading it. Its twenty-eight short pages form an excellent and practical supplement to the *Notes on the Composition of Scientific Papers*, by Sir Humphry Rolleston's great predecessor in the Regius Chair of Physic,

¹ *L'Inconscient*. Par le Dr A Hesnard, Professeur à l'École de Santé Navale. Encyclopédie Scientifique publiée sous la direction du Dr Toulouse. Paris: Octave Doin, 1923. (Cr. 8vo pp. viii + 287, 9 figures, 12 fr. post fr. 13.20 fr.)
² *Male Infibulation*. By Eric John Dingwall. M.A. London: John Bale Sons and Daniel Ltd, 1925. (Cr. 8vo pp. vi + 145, 7 figures, 1 plate, 10.6d net.)
³ *Annals of Medical History*. Vol. vii, No. 3. By Francis R. Packard, M.D. New York: Paul E. Baillière, Tindall and Cox, 1925. (8½ x 12½. Sub.cription in Great Britain £2.2s. per volume of four numbers.)
⁴ *On Writing Theses for M B and M D Degrees*. By Sir Humphry Rolleston, Bt, K.C.B., F.R.C.P. Regius Professor of Physic in the University of Cambridge. Second edition, revised. London: John Bale Sons and Daniel Ltd, 1925. (6 x 4½ pp. 28, 1 net.)

with which, as he justly says, every candidate for a Cambridge degree should be familiar. For the benefit of those who have not yet made its acquaintance, we may say that Sir Humphry Rolleston's pamphlet begins with a brief historical and bibliographical introduction, this is followed by notes on how to find a subject for a thesis, and on how to frame a satisfactory title which explains clearly but in the fewest possible words its scope, a brief definition of what a thesis should be, hints on how to work up a subject and arrange the material, guidance on the collection, arrangement, and verification of references, and a concluding note on the composition and revision of the essay. It is almost unnecessary to add that in all respects the author follows his own advice.

Dr WEBB and RIDER, both of them medical officers of tuberculosis sanatoriums in Colorado, have issued a second edition of their little book, *Recovery Record*.¹¹ It contains instructions for the sufferers from pulmonary tuberculosis, and deals with such matters as personal hygiene, the methods of rest to be employed, the best means of employing the mind during physical rest, amusements that may be engaged in, warnings as to accidents and obstacles that may be met during the rest treatment, it owes its title to a series of charts on which is to be entered a diurnal record of temperature, pulse, weight, and any particular point to which the attention of the physician is directed. The patient is expected to make and record these observations for himself. On the charts are printed pithy sayings from many authors directed towards maintaining the moral of the patient. The authors state that in their experience "if such a record is to be kept the patients are usually the ones who must keep it, and because nearly all of them can be trusted to do so." The effect of the daily observations and the comparisons of these records by the patient upon his mentality has to be taken into consideration, but most tuberculous patients are of such a hopeful disposition that there may be little risk of their being injuriously affected by too much knowledge of their own condition.

Dr JEAN BROADHURST'S book *Bacteria in Relation to Man*¹² is a laboratory manual for students of bacteriology, and especially for science students. Medical students would not find sufficient information about pathogenic bacteria, nor would they perhaps have the patience to plod on through the earlier chapters on yeasts and moulds. In fact, we think but few students in this country are likely to find this book helpful to them. Not that in substance it is otherwise than wholesome—we find it crammed full of most reliable information and excellently illustrated. The only fault we find with the book is in its design. A great deal of it is in the form of notes, arranged presumably to supplement a course of lectures given by Dr Broadhurst. It might be possible for some singularly industrious student to fill up the gaps from other books recommended in the text, but such a student is a rarity and could be better employed otherwise. We have no doubt, however, that the book will be useful to teachers of bacteriology because of the well planned exercises it proposes, and it will be useful also as a work of reference, especially in those sections dealing with non pathogenic germs.

The fifth edition of *Infections of the Hand*,¹³ by Dr ALLEN B. KANAVEL has been issued. In the review of the fourth edition (November 18th, 1922, p. 982) we indicated the importance of the work from the point of view of industrial diseases, in the new edition greater emphasis is laid upon the preservation of function. The various procedures suggested in this respect and the pictures showing methods of splinting increase the value of the book considerably. The illustrations generally are a valuable feature, but the many records of cases introduced render the book rather difficult to read as a whole, though valuable for reference. The other good features of the volume to which we referred in our previous review are all retained.

We read in the Introduction to a small book on *Ophthalmic Nursing*¹⁴ by the matron of the Western Ophthalmic Hospital, London, that "nurses without much ophthalmic experience are often heard to remark that of all surgeons, ophthalmic surgeons are the most exacting and needlessly fidgety about

their cases." If they are not exacting they ought to be, for there is no branch of surgery so delicately specialized, nor one in which good results are so likely to be sacrificed through inexperienced nursing. The book, which embodies the author's experience in the Western Ophthalmic Hospital, London, treats in considerable detail, and with the lucidity the public addressed requires, of all aspects of ophthalmic nursing, the routine of medical treatment in the wards, and of surgical technique in the theatre. Its careful perusal should go a very long way to enable a nurse to meet the requirements of the most exacting surgeon.

The primary object of Dr LOUIS L. BISCH'S book entitled *Clinical Psychology*,¹⁵ is to give teachers a working method by which to recognize an atypical child in the classroom and to know how best to handle the situation. It is, of course, most desirable that the school teacher should have some knowledge of mental deficiency, but much of the detailed information given in this book would seem to exceed the knowledge required by the readers for whom it is intended. Thus the volume commences with a comprehensive schema, covering twenty pages, for taking case histories and carrying out physical and mental examinations. To put this schema into practice requires, as the author states, six separate workers—the teacher, a secretary, a psychologist, a social worker, a general physician, and a mental expert to estimate the value of their observations. The rest of the book, which deals in an elementary way with the various types of abnormality in children and provides an excellent account of mental testing, will be found useful by teachers and all who come in contact with the problem of the defective. The detailed methods of examination described by the author will be of value to a psychiatrist entrusted with the organization of a mental clinic. They will give him some idea of the assistance required if the clinic is to be developed along ideal lines, for no such clinic can be complete nor its work effectively carried out by the psychiatrist unless he has the collaboration of the social worker, the school teacher, and assistants trained in routine methods of psychological examination.

¹¹ *Clinical Psychology*. By Louis E. Bisch, M.D., Ph.D. Baltimore: Williams and Wilkins Co. London: Baillière Tindall and Cox. 1925. (Med. 8vo pp. xiv + 346. 17 plates. 15s. net.)

PREPARATIONS AND APPLIANCES

Caprokol (Hexyl Resorcinate)

We have received from the British Drug Houses, Ltd., samples of their new preparation caprokol. Hexyl resorcinate was introduced to Leonard of Johns Hopkins. He claimed that it was a more powerful substance hitherto employed for this purpose. During the past year the drug has been used extensively in therapeutics with very favourable results. The drug is characterized by powerful antiseptic action and low toxicity. In particular it seems to have been proved that prolonged administration of full doses produces no ill effects on the urinary tract. Its special value lies in the fact that it has a powerful bactericidal action in alkaline urine as well as in acid urine. For adults the dose of caprokol (hexyl resorcinate B.D.H.) is 0.3 to 0.6 gram three times a day. The production of this substance appears to represent an important advance in urinary therapeutics. The drug is issued in capsules containing 0.15 gram caprokol in a 25 per cent solution in olive oil. The price of twenty five capsules is 7s. of fifty 13s., and of a hundred 25s. It can also be obtained in bottles containing 4 fluid oz. of a 2 per cent solution in olive oil. Each teaspoonful of this contains about 0.1 gram caprokol. The price of a bottle is 5s.

Opioidine

We have received from Messrs Macfarlan and Co. specimens of their preparation opioidine and also other specimens intended for use in the production of "twilight sleep" in which it is combined with scopolamine. During recent years evidence has accumulated that the administration of the mixed alkaloids of opium has advantages over the administration of pure morphine and opioidine is a preparation containing the mixed alkaloids. One part of it is equivalent to five parts of opium and therefore consists of about equal quantities of morphine and other opium alkaloids. Opioidine is issued by the manufacturers (109 Abbey Hill, Edinburgh and 32, Bethnal Green Road, London E1) in tablets for oral administration (twenty five for 1s. 3d. or a hundred for 3s. 6d.) and for hypodermic administration (twenty five for 2s. or a hundred for 5s. 6d.). Sterile opioidine solution is issued also in ampoules each representing half a grain of opioidine (1s. 9d. for six ampoules and 2s. 9d. for twelve). The drug can be obtained in powder—in tubes (1 gram is 3d. or 10 grams 9s.). The mixture of opioidine and scopolamine is contained in ampoules each containing 1/3 grain opioidine and 1/150 grain scopolamine (2s. for six or twelve for 3s.). The advantage claimed for the preparation is that by using the mixture of opium alkaloids the full therapeutic effects of morphine can be obtained with the use of smaller quantities than when this alkaloid is given alone and hence that there is less danger of producing toxic effects.

¹¹ *Recovery Record for Use in Tuberculosis*. By Gerald B. Webb, M.D., and Charles T. Rider, M.D. Second edition revised. New York: Paul H. Hoeber, Inc. 1925. (Fol. 8vo pp. 79. 2 dollars net.)
¹² *Bacteria in Relation to Man*. By Jean Broadhurst, Ph.D. Lippincott & Co. London. J. B. Lippincott Co. 1925. (8½ x 8½ pp. xvi + 124 figures. 12s. 6d. net.)
¹³ *Infections of the Hand*. By Allen B. Kanavel, M.D. Fifth edition, thoroughly revised. Philadelphia and New York: Lea and Febiger. 1925. (Fol. 8vo pp. 141. 1 plate. 5s. 5d. net.)
¹⁴ *Ophthalmic Nursing*. By Mary Va. on Springgray. London: Methuen and Co. Ltd. 1925. (Cr. 8vo pp. x + 133. 67 figures. 5s. net.)

British Medical Journal.

SATURDAY, OCTOBER 31st, 1925

THE TREATMENT OF INSOMNIA

On modern therapeutics it is justly demanded that the treatment of symptoms shall be based upon physiological principles. The nature of sleep, however, is obscure. The phenomenon is of a mental order, a natural state of unconsciousness, and of the physiological processes underlying this we know as little as of those belonging to consciousness. The latter state may be assumed upon far evidence to depend upon the activity of nerve cells in the brain, probably the cells of the cerebral cortex, and the natural inference is that unconsciousness and sleep are the result of cessation of function in these cells.

Starting from this assumption many theories have been put forward from time to time to explain the periodic recurrence of sleep as a part of the twenty-four hour cycle. Of these the theory of cerebral anæmia has been widely accepted, and has so far gained credence that plans for the treatment of insomnia are sometimes based upon it. Actually, though the theory is at first sight attractive in its simplicity, the evidence in support is uncertain. Dating from the original observations of Arthur Durham upon dogs whose brains were open to view through trephine holes, it has been maintained that the volume of the brain is diminished during sleep, and its surface paler. Experimental observations with the plethysmograph upon human beings have shown that in sleep there is, as judged by this method, a dilatation of the vessels of the limbs. It has also frequently been observed that during ordinary nocturnal sleep the blood pressure is subnormal. Upon such evidence it has been assumed that sleep is due to a diminution of blood supply to the cortical cells below the level necessary to maintain their activity, and that this state of relative anæmia is brought about through fatigue of the vasomotor centre allowing the systemic arteries to dilate and so deplete the cerebral circulation.

Reference to subsequent observations shows that the foundations of this theory are insecure. Durham's experiments have often been repeated, but with discordant results. The great Italian physiologist Mosso, whose work at one time strongly supported the theory of cerebral anæmia, was forced eventually to admit that the appearances of the brain during sleep were so variable that no definite conclusions could be drawn from them. Shepard, an American physiologist, published observations upon a man with a trephine hole, which led him to the conclusion that the volume of the brain as well as of the limbs is increased during sleep. Other observers have shown that the fall of blood pressure, which normally occurs in nocturnal sleep, is not a necessary accompaniment of the sleeping state, but an expression of the nocturnal ebb of bodily activities which occurs in one accustomed to sleep at night. This ebb can be neither the direct cause nor the result of sleep, for it is still demonstrable at night time when the subject is kept awake. Thus,

other conditions being equal, a man's blood pressure will be higher when he is asleep during the daytime than when he is awake at night.

In the light of such observations Piéron, in his comprehensive monograph of 1913, concluded that the hypothesis that sleep was due to cerebral anæmia was no longer tenable. He himself made some observations upon animals which led him to believe that the prime cause of sleep is the accumulation of toxic bodies in the blood, but postulated that these must act upon some nervous centre with a specific sensibility. It is indeed difficult to explain the phenomena of sleep, especially the acts of going to sleep and waking, without assuming some reflex mechanism to be the final step. Dr C. P. Symonds, in an address to the Oxford Medical Society, recently published in this JOURNAL,¹ put forward his case for the belief that such a reflex centre exists in the mid-brain, and acts—possibly in response to accumulated toxins—by cutting off from the cortical cells the flow of afferent stimuli upon which their normal activity depends. The existence of such a centre is hypothetical, but is supported by clinical observations upon cases of tumour of the third ventricle in which pathological diosmness has long been recognized as a prominent symptom. Further evidence may be found in encephalitis lethargica, in which there is a noteworthy association of sleep disturbance with lesions of the upper mid-brain.

The discussion in the Section of Neurology and Psychological Medicine at the Annual Meeting of the British Medical Association this year, with the full report of which this issue opens, contains abundant evidence of the interest shown by practitioners in the treatment of insomnia, and of the wealth of practical experience available. As a symptom sleeplessness may be the main issue of the illness or an incident only in the campaign, but is a symptom it demands immediate and effective treatment. The reader of the discussion cannot fail to be impressed by the variety of methods which in different hands have proved efficacious. Such an observation suggests that an important factor in the treatment is the belief of the physician in its efficacy and the communication of this belief to the patient. This point is well illustrated by Dr. Harry Campbell's story of a lady who invariably obtained sleep with the aid of a placebo pill. Sleeplessness, however, is not always so amenable to suggestion, and the question must often arise whether, if other methods fail, we should allow the insomnia to continue or should have recourse to drugs.

When sleeplessness is due to physical discomfort or pain, as Dr. Robert Hutchison pointed out in his opening remarks, there can be no objection to drug treatment, seeing that we are usually dealing with a disease of short duration in which the promotion of sleep, if necessary by artificial means, is essential for the maintenance of the patient's strength. In those cases, however, in which the insomnia is of psychogenic origin, or has persisted as a habit after some physical disease the use of hypnotics is more questionable. There are two main objections: first, the possible toxic effect of hypnotic drugs given over a long period; secondly, the danger of promoting a habit. As regards the first objection, there can be no doubt that every hypnotic, if effective, must have some toxic action. As Claude Bernard once said, there is only one difference between a drug and a poison—a difference of dosage. The patient who has

taken a sleeping draught is usually aware of a certain heaviness and sense of intoxication next morning. The chief danger, however, is that the drug, if given continuously, may damage the organs of excretion and so lead to cumulative poisoning. Upon this point Dr Mackenzie Wallis quoted some observations which he has made upon the hepatic and renal efficiency of patients who had been taking medicinal continuously for several months. In no case could he find evidence that the functions of liver or kidney had been impaired. As to the form of establishing a habit, Dr Hutchison suggests that this is a bugbear, and that the possibility of the insomnia becoming a habit is a much more real danger. The drug habit peril is doubtless fostered in the public mind by newspaper reports of suicide in persons who are stated to have been suffering from insomnia. But, as Dr Henry Devine suggested in his contribution to the debate, the insomnia of such persons has probably been but one symptom of a mild psychosis of the melancholic type, and the suicide another. His plea for the early recognition and proper care of such cases deserves wide appreciation.

Against the possible disadvantages of hypnotics in the group of cases under consideration must be balanced the harmful effects of the insomnia itself. Upon this question some recent investigations in America have thrown an interesting light. In human beings who have been kept awake continuously for periods as long as 115 hours, Kleitman and his fellow workers have been unable to observe any effects upon the bodily or nervous systems. Even such tests as involve naming of opposites, cancellation, colour naming, mental arithmetic, and reaction time, were performed as correctly at the end of the experiment as at the beginning. The sole result of the prolonged sleeplessness appears to have been an increasing sense of extreme weariness and discomfort. Yet it is well known that insomnia, if extended not far beyond these limits, may lead to death. Such observations serve again to remind us that the physiologists are still far from the solution of these problems. To supplement a course of side the ill effects of insomnia, it is suggested by Sir M. J. B. Broadhurst. On the clinical side the singularly industrious and undoubted other books of sleeplessness are undoubtedly a rare treat. Crig, speaking with the weight of long experience, considers insomnia as an important cause of mental disorder, and for this reason strongly advocates the early use of hypnotics.

The general opinion appears to be that in symptomatic insomnia treatment by hypnotic drugs is justifiable. It is not, however, to be regarded as a desirable end, and should be anticipated if possible, or if necessary should be supplemented by other methods. Of these other methods it must be admitted that, in the present state of our knowledge, their basis is empirical, and that in all of them the element of suggestion is an important part.

RHEUMATIC INFECTION IN CHILDHOOD

When the Sections of Diseases of Children and of Public Medicine met jointly, at the Annual Meeting of the British Medical Association in Bath, to consider the early diagnosis and preventive treatment of rheumatic infection in childhood, a distinct advance was made in the attitude adopted towards the consideration of this serious crippling malady of early life.

Since Dr F. J. Poynton publicly addressed himself to the question of the prevention of heart disease, in a lecture which we published in the *BRITISH MEDICAL*

¹ Mary A. M. Lee and Nathaniel Kleitman. Studies on the Physiology of Sleep. *Am. Jour. of Hygiene* 67: 141, 1922, 24.

JOURNAL on June 2nd, 1923, the subject has received attention from various quarters. In the same year, at the Portsmouth Annual Meeting, it was discussed in the Section of Medicine. As a result of that debate the Council of the Association appointed a subcommittee to study the rheumatic problem, and it is hoped that the reports of that committee will be available to the medical profession within the next few months. The Medical Research Council also has been promoting investigations into acute rheumatism along several lines, notably with regard to the environmental and the bacteriological factors. The collaboration of the Sections of Public Medicine and Diseases of Children at the last Annual Meeting for joint discussion of rheumatic infection in childhood marks a further step in the right direction. It is interesting to note that during the same week the subject was discussed at the Child Welfare Section of the annual congress of the Royal Sanitary Institute. May we hope that the recent announcement by Lord Knutsford of an anonymous gift of £50,000 to the London Hospital for research with special reference to rheumatic disease is an earnest of the interest the public will take in the attempt to lessen the ravages of rheumatism in the community when their attention is properly directed thereto?

The discussion last July at Bath centred round early diagnosis and preventive treatment. These two aspects of the subject are closely connected, as it is well recognized that only in the early stages of the infection is it possible to ward off the more serious manifestations of acute rheumatism, though it must at the same time be recognized that in some patients the first effect of the disease is indicated by hopeless crippling of the heart.

Early diagnosis implies a knowledge of all the possible first manifestations of the disease, and the early recognition of those cases in which there is no complaint of joint pains and in which the heart is not yet obviously implicated. Preventive treatment, including the introduction of the use of prophylactic penicillin, is the prevention of relapses, and the possession of ability to make an early diagnosis and of a knowledge of etiological factors at present only imperfectly understood.

The contribution by Dr Askins to the discussion was noteworthy in showing what can be done when the medical officer of health is in sympathy with the ideals of the local profession. By collaboration with Dr Carey Coombs and Dr Herapath the rheumatic cardiac problem in Bristol has, for some time past, been pursued on well accredited lines. Dr Poynton's reference to the hospital at Hartfield in Sussex for girls and small boys gives an indication of what benefit may be expected from prolonged residence in the country under suitable conditions. It is striking testimony to the methods adopted at this institution that, out of the 123 cases admitted during the year, only two developed fever and rheumatic pain. Similar results have been reported from the few institutions in the country, such as the Baskeville Hospital School at Birmingham, which make a special point of looking after rheumatic children in the early stages of the disease.

Before prevention of the rheumatic infection can be placed on a sound basis, more definite information is needed as to the environmental causes of the disease. But even without that knowledge active treatment in the earliest stages, and prolonged convalescence in country hospital schools, are calculated to do much to limit the extent of rheumatic heart disease, which is at present a reproach to twentieth century medicine.

THE PANEL CONFERENCE

The annual Conference of Local Medical and Panel Committees was held last week in the Great Hall of the British Medical Association's new House in London. A full report will be found in the SUPPLEMENT (pp 149-157). This was the first of such Conferences to be held at the Association's new headquarters, and the first general meeting of any kind to take place in the Great Hall since the Royal opening ceremony on July 13th. For the first time too, Dr Le Fleming occupied the chair, and Dr Dun presented the report of the Insurance Acts Committee as its chairman. The latter said that he "could not recall a conference agenda so free from controversial matters." Nevertheless, some of the subjects dealt with were of much importance, and the two chairmen are to be congratulated on a useful and successful meeting.

An unexpected item was a motion, brought forward by Dr Fothergill of Brighton as a matter of urgency, and seconded by Dr P. Macdonald of York, declaring confidence in the Insurance Acts Committee as 'the one and only medical body authorized to defend the honour and interests of insurance practitioners and to voice their wishes,' and calling on all Local Medical and Panel Committees to give it their loyal support. During the last year or two another medical body has taken upon itself to call a conference, not merely of its own members but one to which Panel Committees, as such, are asked to send representatives, on the day before that on which the recognized annual Conference of such committees is to be held. Such action must tend to produce disunion and create difficulty, and the position is aggravated when, as has happened this year, in another conference proceeds to appoint its own deputation to make representations to the Ministry of Health on behalf of insurance practitioners and of some Panel Committees. The dangers of the position are quite obvious, and though these may seem hard words there are times when plain speaking however distasteful, is necessary. All the more, therefore, is it a matter for surprise that one member of the Insurance Acts Committee should have allowed himself to be appointed a member of the proposed deputation. In view of such action it is satisfactory that the resolution calling for loyalty to the Insurance Acts Committee alone, through the Conference which it alone is authorized to call, was carried by an overwhelmingly large majority. It may be hoped that all Panel Committees will now realize that anything short of this complete loyalty must be dangerous to the interests for which they stand and to those of the medical profession as a whole.

Two other subjects considered by the Conference deserve notice as matters of general interest: the disciplinary action of the Ministry of Health, and the so-called ophthalmic benefit. There has of late been great dissatisfaction and anxiety with regard to the former. The anxiety has been somewhat allayed by the statement of the Minister that he was in agreement with certain general principles placed before him by the Insurance Acts Committee as those in accordance with which such action should be taken. Cases had occurred in which it seemed at least doubtful whether the Minister's decision had been in accord with these principles, and future cases and decisions will no doubt be very carefully watched, because points absolutely vital to the liberties and traditions of the profession may be involved. Meanwhile proposals have been submitted to the Royal Commission

on National Health Insurance for improving the quasi-judicial machinery and procedure set up by the Insurance Acts and Regulations and for removing altogether from this procedure a large number of cases which can more appropriately be dealt with, as they are in private practice, by individual action on the part of doctor and patient. In these circumstances the Panel Conference wisely decided that it would wait the result of these representations to the Ministry and to the Royal Commission before pronouncing any opinion on alternative proposals.

The Insurance Acts Committee, on behalf of insurance practitioners, has recently made, through the Ministry of Health, arrangements with some approved societies whereby the help which these societies give their members towards obtaining special attention for their eyes is placed on a less unsatisfactory footing. A list of ophthalmic surgeons willing to advise insured persons for a modified fee has been drawn up by the British Medical Association. Insurance practitioners have undertaken to give an appropriate certificate in cases requiring this special attention, and the approved societies have agreed to utilize the services of ophthalmic specialists on the list as far as possible. The Conference approved these arrangements in general and considered some proposals for modification in detail. It should always be remembered, in this connexion, that these arrangements are of an experimental nature, that they are very limited in extent, certain large societies not yet participating in them, that they are recognized only owing to the existing state of the law with regard to 'additional benefits', and that the medical profession still holds strongly to its opinion that this benefit, along with all others which are of the nature of medical advice and treatment, should be removed altogether from the administration and control of approved societies.

THE HANDLING AND TRANSPORT OF FISH

THE Food Investigation Board has done good service in instituting an inquiry into the fishing industry, and in publishing, in a special report on the handling and transport of fish,¹ two illuminating surveys of the conditions in which the industry is carried on. In the one Mr Edgar Griffiths describes the conditions in Great Britain, and in the other Mr Crawford Heron those in France. These two reports, when read together, disclose a startling—we might say a scandalous—state of affairs in this country as compared with France. As Mr Griffiths clearly shows, there is a serious lack of co-operative effort on the part of the British interests concerned to ensure the best treatment of the fish from the time it is caught until it reaches the consumer. When it is landed from the trawlers the fish is left for hours on the quay, liable to be trampled on and without ice, although tons of ice are dumped into the sea when the trawlers unload. During transit by rail ice is carried out in a haphazard manner, with resulting injurious variations in temperature. Cooling of the railway vans is no concern of the railway companies. On the contrary, they add to the difficulties by charging full freight rates for the ice employed by the merchants in sending fish by rapid passenger trains. The cost of ice and its freight amounts in consequence to 25s a ton of fish, or about £5 a barrel. The plentiful use of ice is thus discouraged. The boxes in which the fish are packed for transit are used repeatedly until they can no longer hold together. Definite washing and sterilizing are often

¹ Food Investigation Board Special Report No. 25. *The Handling and Transport of Fish*. By Edgar Griffiths and Crawford Heron. London: H.M. Stationery Office, 1955. (8vo pp vi + 25, 12 figures. Price 9d.)

neglected, and it is no unusual sight to see piles of boxes lying in the sun with swarms of flies infesting the pieces of putrefied fish left in them. Conditions at the central market for distribution to retail dealers are not much better. The fish are exposed for sale in the market or outside in the street, it may be for hours, and during that time no ice is added. Ice, which may have accompanied fish in goods vans, is thrown away on arrival. The effect of all this lack of co-ordinated hygienic handling and transport is that from a bacteriological point of view the temperature curve of the fish during the time on quay, in transit, and in central market is open to every objection. In France the conditions are wholly different. The fish are sorted out, on being unloaded from the trawlers, into baskets that are kept scrupulously clean. They are then taken by the buyers to a special packing house, where they are again sorted out, well washed, and packed for conveyance by rail in special boxes, also kept scrupulously clean, with the greatest care and by a method which prevents the fish being bruised and melted ice coming into contact with them. For transport by rail specially constructed vans are used with the object of keeping the interior at a constantly low temperature throughout the journey. On arrival in Paris there is no delay in transferring the fish to the central market and effecting its sale to the dealers. From beginning to end effort, hygienic and economical, is co-ordinated, although the industry in France is comparatively much smaller than in the United Kingdom. It is surprising that, with the knowledge of what can be and is done in France, no action has yet been taken by the railway companies, producers, and merchants to co-operate in this country and effect a radical change in the present antiquated and harmful methods of handling and transporting fish. It is hoped that Mr Griffiths's and Mr Heion's reports will force them to realize how discreditably the industry is carried on in Great Britain, and that public opinion will insist on the removal of the stigma that we are less sanitary than other nations in the method by which one of our chief sources of food is being supplied to the people. Nor can the medical profession remain silent. It should be the first to demand reform in a matter of so much importance to the public health.

VOLTAIRE AND MEDICINE

At the meeting last week of the Section of the History of Medicine of the Royal Society of Medicine, the President, Dr J. D. Rolleston, read the first part of a paper on Voltaire and medicine. In this he discussed Voltaire's relations to individual doctors and the medical profession as a whole, and gave some account of Voltaire's illnesses. Apart from small-pox, influenza, and pneumonia, he does not appear to have had any acute infectious diseases. He was subject to chronic dyspepsia from an early age, and suffered from catarrhal bronchitis, often associated with deafness and aphonia. He frequently complained of febrile attacks, which may have been malarial in origin. His death at the age of 84 was probably due to uraemia following cystitis secondary to enlargement of the prostate. During his long and eventful life Voltaire was brought into contact with medical men on numerous occasions, both professionally and socially. Moreover, his works, particularly his correspondence, the *Dictionnaire Philosophique*, his tales, and to a less extent his historical works and miscellaneous essays and pamphlets, abound with references to the medical profession. In striking contrast, however, with Moher's works, in none of Voltaire's numerous plays which for the countrymen of Shakespeare are the least readable part of his writings, does a doctor figure as one of the *dramatis personae*, nor are there more than one or two vague references to medical matters in any of them. Among the numerous doctors whom Voltaire con-

sulted the best known were Silva, physician to Louis XIV, Boerhaave, whose name occurs often in Voltaire's works, especially in connexion with chemistry, and Tronchin, whom he described as the greatest physician in Europe, and the only one who understood nature. Voltaire was far from being an ideal patient. Like Herbert Spencer a hundred years later, he was too fond of arguing with his doctors and too little inclined to carry out their instructions. He told one of his medical correspondents that he had read more works on medicine than Don Quixote had on chivalry. Throughout his writings many references are to be found to some of the masters of medicine, such as Hippocrates, Rhazes, Serapion, Harvey, and Sydenham, as well as to celebrated anatomists such as Vesalius, Ruysch, Bartholin, and Viennensis, but the medical work with which he was probably most familiar was that of Astruc on the venereal disease. The passages in which Voltaire indulges his satirical humour at the expense of the medical profession are few in comparison with those in which he expresses his admiration and gratitude, and, apart from the stories, are chiefly to be found in his correspondence, where (Dr Rolleston remarked) they are not to be taken too seriously. On the other hand, Voltaire was scathing in his denunciation of quacks, of whom the most notorious was the Swiss aromantist Schuppach, and vented his ridicule on many superstitious and erroneous doctrines connected with normal and morbid processes. Dr Rolleston's paper was accompanied by an exhibition of Voltaireana, mainly arranged by the well known antiquary Mr A. Forbes Sieveking. These objects included an unpublished portrait by Woolidge, the first English edition of the *Lettres sur les Anglais*, which contains a celebrated letter on inoculation, of which Voltaire was an ardent propagandist throughout his life, and the original manuscript of a long English letter by Voltaire, lent for the occasion by Mr Francis Edwards.

ALCOHOLISM AS AN INTERNATIONAL PROBLEM

THE various respects in which alcoholism may be viewed as an international problem were discussed by Dr R. Heed, director of the International Bureau against Alcoholism established at Lausanne, in the Norman Keir Memorial Lecture before the Society for the Study of Inebriety on October 15th. Dr Heed said that in most of the wine-growing countries at the present day the annual production of wine exceeded the capacity of the home population to consume it, and much the same was true of countries which manufacture spirits. The result was that conflicts had arisen of late years between alcohol-exporting countries and small States, such as those of Scandinavia, which have prohibitive or restrictive measures against alcohol. Iceland, for instance, had been obliged to except the importation of Spanish wines from her prohibition law, because the Spanish Government had the power to starve Iceland by refusing to admit her export of fish, the greater part of which went to the Spanish market. The smuggling of liquors, again, had assumed a disquieting character in Northern Europe, and the only effective action must be international. Another result of excessive alcohol production in some countries was to make new highways for the liquor traffic in parts of the world which had hitherto been free from alcoholism. Africa, before European influence began to be felt, was comparatively sober, but now it was suffering from the alcoholic scourge. The same observation applied to some Moslem countries in which the Christian—or, rather, the Western—example has overborne the precepts of the Koran. Another sphere for international co-operation was the investigation of the physiological action of alcohol, on which, in several respects, there was a diversity of opinion. Findings which had been accepted as authentic had not been verified by subsequent experiments. On the question of alcohol and intellectual

labour the experiments of the late Dr Rivers of Cambridge seemed to contradict some of the results reached by Kriepelm and his disciples. Dr Herod suggested that there should be a kind of international competition in scientific research on alcoholism. With regard to the social effects of alcohol, he held it to be important that each country should know something of what had been achieved or attempted by others. In legislation against alcoholism every country had very much the same problems to solve and here again much could be gained from the international study of various fiscal measures, partial or complete prohibition, schemes of disinterested management, and so forth. It was, he thought, a pity that the authorities in the United States, engaged as they were upon a great social experiment, had not organized a systematic and continuous investigation of the effects of prohibition. With the help of specially trained investigators, and at an expenditure of a few hundred thousand dollars, a useful survey might have been made, to the advantage of the world at large. International legislation against alcohol had been partly realized in Africa, where in the colonies formerly belonging to Germany, and now administered by several of the allied powers under mandate, certain stipulations with regard to alcohol had been made. Finally, Dr Herod touched upon the need for making the facts about alcohol widely known to the public. Some nations, he said, had much to learn from the methods of inculcating temperance in other lands, and he mentioned particularly the example of Sweden, where this branch of education had been developed to such a degree as to make it a model. To appeal to the adult population was a more difficult matter than to instruct youth, but here Dr Herod thought that a good deal of general educational work could be carried on through the press. It seems, therefore, that he shares the faith of so many reformers in the availability of the press for all good propaganda. Even with regard to alcohol alone it would be a difficult task enough, without embarking on positive propaganda, to track down and correct the constant errors, some due to negligence and some to invention, which find currency through the news papers. Difficult as it may be to elucidate the truth of a question scientific or other, it may be still more difficult to publish it when elucidated.

SIR HENRY GRAY

In a paragraph on the resignation of Sir Henry Gray published on October 3rd (p. 621) it was stated that he had "found it necessary to resign his position as surgeon-in-chief of the Royal Victoria Hospital, Montreal, and also as lecturer on clinical surgery in McGill University, to which he was appointed about two years ago." In our last issue (p. 770) we published a short letter from Sir Henry Gray, with copies of letters which had passed between him and the secretary of the Royal Victoria Hospital. On October 22nd (too late to take any steps to insert anything in the last issue of the Journal) a cable gram was received from Dr A. T. Brown of Montreal, asking that it should be stated (1) "that McGill University had no part in inviting Sir Henry Gray to come to Montreal, and that at no time did he occupy any position whatsoever on its staff", and (2) "that the Medical Board of the Royal Victoria Hospital had no part either in Sir Henry Gray's appointment or in his resignation." We are not in a position to comment upon the situation, but we may state as a matter of record that it would appear from letters published in the *Montreal Gazette* of September 29th last that on September 24th Sir Arthur Currie, Principal and Vice-Chancellor of McGill University, addressed to Sir Henry Gray a letter putting into writing views he had expressed at a conference with Sir Henry Gray on the previous day. The letter suggested "that the relations which have existed should

terminate," and that in making the suggestion he (Sir Arthur Currie) was not influenced by any personal feeling, but solely by what he regarded as being the best interests of the medical school of McGill University. Sir Arthur Currie said that three things had influenced him. The first was that when he agreed to Sir Henry Gray's request in 1923 to be allowed to give clinical lectures without being on the staff of McGill and without receiving any pay he did so with hesitation, but was influenced at the time by a desire to ease, if possible, a difficult situation. After two years' trial Sir Arthur Currie had become convinced, he wrote, that the arrangement had not worked well and should be terminated. The second was that the difficulties which arose in medical circles, following upon Sir Henry Gray's appointment as surgeon-in-chief of the Royal Victoria Hospital, had created a distasteful atmosphere from which he wished to remove the university. The third was that many members of Sir Henry Gray's staff at the hospital were members of the university staff, and that there was a division of opinion among them, as also among the students of McGill and its medical graduates in various parts of Canada. Sir Henry Gray replied to this letter on September 28th at considerable length. In the course of this reply he said that the condition proposed to him by the Dean of the Medical Faculty on September 12th, 1923, would have pleased him so far as concerned the teaching part of the work of the Royal Victoria Hospital, in a position of subordination to one of his own staff. He had proposed a solution which was unanimously accepted at a meeting of the Faculty of Medicine in September, 1923. The proposal was that in his capacity as surgeon-in-chief to the Royal Victoria Hospital he should teach McGill students but without academic title. Sir Henry Gray agreed that teaching staff, students, and graduates were divided in opinion about the situation, but added that after his arrival in Montreal he was assured by several medical men, members of both staffs, that they had no unfriendly feeling towards him personally, but resented the way in which his appointment had been made.

OLD SCHOOLS AND NEW SITES

We seem as little likely ever to know whether the Duke of Wellington really said that the battle of Waterloo was won on the playing fields of Eton as we are to conjecture what were the songs the snuvs sang which Sir Thomas Browne fondly imagined to be possible. Nor do we know precisely the import of the saying. As a matter of sober fact, however, it is demonstrable that only a very small percentage of the commissioned officers in Wellington's army had received a public school education. Eton and Westminster no doubt supplied a large proportion of the higher ranks and the staff, which however, the humble officers of the line regiments had small hope of entering. Therefore a century ago the number of persons was small whose health and well-being might be affected by the conditions prevailing in the great public schools. Nowadays a very different state of things is evident. It would be a difficult and delicate task to define what constitutes a public school in the popular acceptance of the term but the list of secondary schools for boys in *Whitaker's Almanac* contains the names of nearly 900 in England alone. In his presidential address to the British Orthopaedic Association at its meeting last week in Manchester, one of which in abstract appears in this issue at page 799, Sir Robert Jones commented rather severely on the hygienic conditions which he thinks still exist at our more ancient public schools. We do not know how many of the 900 schools referred to above are boarding-schools but it is certain that many of them are as much modernizations and expansions of ancient grammar schools as for instance Harrow which is a development of the grammar school founded by John Iton in the sixteenth

century Harrow is notoriously "on the Hill," but there are no doubt many other schools which, like Eton and Westminster, are situated on low or even swampy ground on a river's bank, and occupy in part ancient buildings which may not provide the modern advantages of spaciousness, good lighting, ventilation, and present-day comfort. If we understand him correctly Sir Robert Jones would move Eton from its low and often damp site to the southern slope of some neighbouring hill—say, for example, in Berkshire or Surrey, or some bold spur of the Chilterns, but before he could hope to achieve such a result it would be necessary to show that the health of Etonians in general was inferior to that, for example, of the Carthusians, whose school was removed from the close neighbourhood of Smithfield to an ideal site on a hill in Surrey. Yet it is not recorded that Charterhouse has a better health record than Westminster, which still remains to a considerable extent a boarding-school, in the swampy island of Thorney. Perhaps we are pushing Sir Robert's contention to undue extremes, but it is certain that he is right in urging that in our great public schools hygienic surroundings should be as much attended to as in the primary schools of the London County Council and other educational authorities, and it would certainly be a change altogether for the better if medical buildings could be to a large extent abandoned, in favour of the open air, for purposes of study and of sleep as well as of recreation.

SOCIAL EVENING AT THE ROYAL SOCIETY OF MEDICINE

The first social evening of the session at the Royal Society of Medicine took place on October 27th, when Sir StClair Thomson, the President, after receiving the members and guests, gave a short lecture on the medical allusions in Shakespeare. In the library an interesting exhibition (noticed in more detail below), including specimens of plants, herbs and roots mentioned in the plays, medals and portraits of Shakespeare, and portraits of physicians and surgeons of his time, had been arranged by Mr C J S Thompson. Among the distinguished company present were many representatives of the drama, art, and literature, including Sir Sidney Lee, Sir John Martin Harver, Mr Granville Barker, Sir Israel Gollancz, Mr Guy Dawber (President of the Royal Institute of British Architects), and Sir Frank Dicksee (President of the Royal Academy). In the course of his address Sir StClair Thomson remarked that when Sydenham was asked by Sir Richard Blackmore what books on medicine he should study he gave the unexpected reply, "Read *Don Quixote*." The great Sydenham thereby taught that physicians would be incomplete practitioners of their art if they limited their studies to the science of their calling. From Shakespeare there was very much for the physician to learn, and some of the references to medicine were "modern instances." Indeed even in those Elizabethan days of superstition and wholesale drug-taking Shakespeare recognized the *vis medicatrix naturae*, and gave quite a modern idea of curing the patient. He had some common-sense regulations for dealing with digestive trouble: "Unquiet meals make ill digestion." For the treatment of fainting attacks he set out the very first principle upon which the public was still slow to act: "Stand from him, give him air." Three centuries before the profession had thought of open-air treatment here was Shakespeare advising, in *Love's Labour's Lost*, "the most wholesome physick of the health-giving air," and in *King John*, "being brought into the open air would allay the burning quality of that fell poison which a salety him." The advantages of travel and change of scene particularly in cases of neurasthenia, were brought out by the King of Denmark when speaking of the projected trip to England of his young stepson: "And that seas and countries different" might "exel"

this something-settled matter in his heart." Mirth and merriment appeared as part of the doctor's prescription in *The Taming of the Shrew*, and "sweet recreation" in *The Comedy of Errors*. With regard to alcohol, Shakespeare painted in vivid colours the loathsomeness and degradation of alcoholic excess, but, on the other hand, he praised wine taken with discretion. He also made it plain that over-eating and starvation were equally unhealthy. Nerissa, in *The Merchant of Venice*, exclaimed, "For aught I see they are as sick that surfeit with too much as they that starve with nothing." He insisted also on the importance of sound, sufficient, and regular sleep—"sleep that knits up the ravell'd sleaze of care." The practice of suggestion he appreciated, and from *Is You Will It* seemed to think that this remarkable power might be used to resist even the onset of death. Shakespeare regarded sympathy and the art of inspiring encouragement as essential to the doctor.

Our remedies oft in ourselves do lie
Which we ascribe to heaven

In the difficult task of pronouncing a gloomy prognosis some help was to be gleaned from these wise pages. Shakespeare even suggested that the physician might be spared the actual telling of bad news and the patient the shock of hearing it.

'He that but fears the thing he would not know
Hath by instinct knowledge from others eyes
That what he fears is eluded'

The justification for *crasmodis* was to be found in the wise note-taking of the Scottish doctor who attended Lady Maebeth. The fears of sick folk were illustrated by Lady Constance in *King John*, and Lear excused the behaviour of his son-in-law by attributing it to a physical condition, and even sought a pathological explanation of his daughter's ingratitude. Sir StClair Thomson concluded by saying that Shakespeare must remain one of the greatest masters of medicine for his astonishing acuteness of observation, his familiarity with the ways and thoughts of frail humanity, his discrimination of human disorders according to age, sex, and circumstance, his sweet reasonableness and deep human sympathy, and his profound knowledge of those conditions of physiology and pathology which might be studied in the dark life of the street, the market, the tavern, the court, and the camp, which were not subject to errors in investigation and were eternally true. Shakespeare's plays would be read by physicians when most of the books in the library of the Royal Society of Medicine were lying on the dust-heaps of literature. Mr Granville Barker, in proposing a vote of thanks, remarked that Sir StClair Thomson had omitted to say that Shakespeare married his daughter to a practising physician, Dr John Hall, who had a very good practice at Stratford-on-Avon. It was also to be remembered that Shakespeare made a quack doctor the heroine of one of his plays, though he would not suggest that she represented his ultimate opinion of the medical profession. Sir Ernest Pollock, Master of the Rolls, seconded the vote of thanks and had something to say about Shakespeare's connexion with the law and (if rumour spoke truth) his disappointments as a litigant.

SHAKESPERIANA MEDICA

To illustrate the address which was given by Sir StClair Thomson at the social evening of the Royal Society of Medicine last Tuesday, the curator of the Wellcome Historical Medical Museum, Mr C J S Thompson, brought together a remarkable collection of objects associated with the history of the dramatist or referred to in his works. These consisted of portraits of English physicians and surgeons who were contemporaries of Shakespeare, specimens of herbs, roots and other drugs mentioned in the works, pictures representing imaginary characters and old books dealing with the subjects referred to in the

lecture The oil painting of Dr Caius represents a grave and thoughtful personage such as that well known physician and benefactor to the University of Cambridge is likely to have been The fiery and somewhat ridiculous Frenchman of *The Merry Wives of Windsor* only in name resembled the English physician, whose services to scholarship and learning deserved a better record in the book of fame There is no trace visible in this portrait of the effects of the long and fierce controversies which embittered the latter days of the second founder of Gonville and Caius College The portraits of Butts and Chambray call for little notice There also were the engravings of William Harvey, of William Gilbert, the author of *De Magnete*, of whom Dryden prophesied "Gilbert shall live till lordstones cease to draw", of the great clinicians and surgeons Sydenham, Glisson, Woodall, Clowes, and Bannister Specimens of thirty-six drugs were displayed These included ratbane or white arsenic, also bebenon, which has with great plausibility been identified with yew, of which both the berries and the leaves contain a very deadly poison, and according to Taylor yew-ter has been a vulgar and dangerous abortifacient, but it is doubtful if a liquid extract dropped into the auditory meatus could have killed the King of Denmark, as suggested by his ghost The Wellcome Museum is peculiarly rich in specimens and drawings and paintings illustrative of the mandrake, going back as far as 4,000 years B.C., which date is assigned to a record on a Babylonian clay tablet of the mandrake The habit of this plant of growing with a double root—very often with rootlets which a little imagination may easily interpret as sexual appendages—has no doubt had much to do with its sinister reputation, especially when its poisonous nature is remembered But as a drowsy syrup it must have been very much inferior to preparations of opium The picture of *The Apothecary*, by Strey Marks, R.A., does duty well for the vendor of poison to Romeo, although he appears to be a man of too good intellectual development to be fitly represented on the boards, even of Mr Crummles's theatre, by Smike Another picture, *The Water Caster*, by Holman, illustrates Falstaff's reference to diagnosis by inspection of urine A most extensive collection of engravings purporting to represent Shakespeare, some of which have been made to enforce arguments in the discussions as to the authentic likeness of the poet, was lent by Mr M. H. Spielman and exhibited on screens Mr Spielman also lent his collection of medals of Shakespeare, among which are to be seen a bronze and a silver one which were awarded in the years 1851 and 1852 respectively to the former editor of this Journal, Mr Ernest Hart, when he was a pupil at the City of London School Touching for the king's evil is mentioned in *Macbeth*, hence there were exhibited a number of gold angels and other "touch-pieces," which were given to the subjects of the royal treatment and hung round the neck It will be remembered that the great Samuel Johnson was "touched" for scrofula by Queen Anne Among the books were the English translation of the Latin work by Dr Hall of Stratford, who married Shakespeare's daughter This was entitled in the translation by Dr James Cook, or Cooke, *Observations on English Bodies* Cook was himself the author of *The Marrow of Churgery* The title-page bears the following announcement "In the Close is added, Directions for Drinking of the Bath-Water and Ais Cosmetica or Beautifying Ait by H. Stubbs, Physician at Warwick, 1683" This is one of the very earliest English treatises on the use of mineral water There were also shown herbals and P. Jeriard's *Flowers Mentioned in Shakespeare's Plays and Poems*, and a book, lent by Sir D'Arcy Power, in the cover of which is inlaid a piece of the ciabtree at Badford-on-Avon under which the poet is

scandalously reported to have slept off a drinking bout Facsimiles of the will and of the conveyance and mortgage of Shakespeare's house in Blackfriars complete this most interesting exhibition

THE TRANSMISSION OF FOOT AND MOUTH DISEASE

Foot-and-mouth disease is still present in this country, and although at the moment only local outbreaks have been recorded, it shows signs of spreading It has recently broken out again in America also Emphasis must once more be given to the fact that our knowledge of the disease is still in a very uncertain condition, especially with regard to the methods of transmission The recent report of the Foot-and-Mouth Disease Committee indicates that although small mammals, such as mice, rats, and fieldmice, may be experimentally infected, natural cases of contagion do not occur, and that birds can apparently be excluded as carriers of the virus The larger mammals, such as dogs and their allies, are not yet, however, free from suspicion, and we understand that the police in certain areas have instructions to treat all dogs not on leads as strays, and to arrest them, and, if they think proper, destroy them While it is true that the Americans claim that at least one of their outbreaks was due to a wandering dog, it seems a rather futile proceeding to arrest dogs when so many obvious carriers, such as man, are allowed to come and go as they please It is now almost a commonplace to find that in a chain of farms owned by a single person, the disease breaks out first in one, then in another, while the intervening farms go free The evidence that man is the principal mechanical carrier—on epidemiological evidence alone—is striking, and steps should be taken to explore the possibilities in this direction When this has been done the minor transmitters may be tackled, it seems, however, useless to eliminate these while the major are allowed to continue to spread the infection unchecked In the meantime, while this is being done, we would suggest that the Committee should tackle the dog as a carrier, not only in the laboratory, but in the field

STANDARDIZATION OF THERAPEUTIC SUBSTANCES

The Pharmaceutical Society of Great Britain has appointed Dr J. H. Burn director of the new laboratories to be established by the society to provide facilities for biological tests such as are imposed under the Therapeutic Substances Act, which became law on August 7th, 1925 The Act comes into force on a date to be fixed by Order in Council This date must not be earlier than one year nor later than two years after the passing of the Act The laboratory will be used also for carrying out researches in pharmacology, including the methods of biological assay Dr Burn graduated in medicine at Cambridge in 1920, he is a member of the staff of the Medical Research Council, and holds the post of pharmacologist in the National Institute for Medical Research at Hampstead He was Michael Foster student in the University of Cambridge and assistant demonstrator in physiology at Guy's Hospital Medical School He is joint secretary of the Section of Therapeutics of the Royal Society of Medicine, and has been secretary of the Physiological Section of the British Association

The Bradshaw Lecture before the Royal College of Surgeons will be delivered by Mr James Sherren, C.B.D., F.R.C.S., on Wednesday, November 11th, at 5 p.m. His subject is gastro-jejunostomy The Thomas Vicary Lecture will be given by Professor William Wright, D.Sc., F.R.C.S., on Wednesday, November 18th, at the same hour His subject is the mediaeval conception of the anatomy and physiology of the central nervous system Fellows and Members of the College are invited to attend, and others will be admitted on presenting their private visiting cards

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

THE second meeting of the Court of Governors of the London School of Hygiene and Tropical Medicine was held on October 22nd at the University Club, 21, Gower Street. The Chairman, Sir HOLBURN WARRING, presided, and the other members of the Court present were Sir Frederick Andrewes, Colonel H. P. W. BULLOW, Dr R. A. BOLIM, Sir Walter Fletcher, Dr F. E. FLEMANTLE, M.P., Sir HARRY GOSCHEN, Sir WILLIAM HODGSON, Sir W. LESLIE MACKENZIE, Dr J. C. McVAIL, Air-Marshal David MUNRO, Sir George NEWMAN, Sir ARTHUR ROBINSON, Sir WILLIAM SIMPSON, and Sir WILLIAM SMITH, with Dr Andrew Balfour (Director) and Mr R. W. HARRIS (Secretary).

The Board of Management in its annual report, presented to the meeting, records that on August 1st, 1924, the London School of Tropical Medicine became merged in the London School of Hygiene and Tropical Medicine, under Clause 3 of the Charter. The Board and its several committees have held forty-four meetings in all up to the present time. A year ago it decided, on the recommendation of the Building Committee, to hold a limited competition among certain architects chosen for their experience in laboratory construction. Sir FRANK BARNES, Director of Government Works and Buildings, acted as assessor, and on his advice Mr P. MORLEY HORDER, R.I.B.A., was appointed architect on June 25th. Since that date Mr Horder has been engaged, in consultation with the Building Committee, in modifying his design in detail to meet the wishes of the Board. Meanwhile it has been decided to invite tenders for the foundations, which can be proceeded with while the working out by the architect of the final structure is in progress. Although the Board expresses the hope that speedy progress may now be made, it is advised that for a work of this magnitude at the normal rate of construction the building can hardly be expected to be ready for occupation until some time in 1928.

Whether the architect's design can be carried out in its entirety within the limit of the funds available cannot be known until tenders for the whole of the work have been received. The financial position has, however, been improved by the generous action of the Trustees of the Rockefeller Foundation, referred to in our issue of June 27th (p. 1187). Their original undertaking of February, 1922, to provide a sum of two million dollars has been amended by a promise to pay £460,830, being the value of the gift in sterling as at the time of the original undertaking. In this way the Rockefeller Foundation Trustees have cancelled the loss due to the gradual rise in sterling which threatened the school with a decline in the value of the gift of more than £50,000, if conversion had been made at the rate of exchange then established. Of the total sum available £52,610 was spent in 1923 on the purchase of the site for the new building, near the British Museum; this site has frontages on Keppel Street, Gower Street, and Milet Street.

The Board of Management states that concurrently with the task of preparing for the permanent home of the new school, the Education Committee and the Director have given much thought to the general educational organization. In this they have had the advantage of a provisional scheme of studies drafted by a committee set up by the Minister of Health prior to the constitution of the school. The scheme will be finally amended in consultation with the prospective heads of the several divisions of work. The University Grants Committee in compliance with representations made by the Board has made provision for a grant of £5,000 for the academic year ending July 31st, 1926, in part of the sum the Government undertook to provide for the maintenance of the new school. This will be supplemental to the grant of £2,200 made in the past to the London School of Tropical Medicine and now continued for the Division of Tropical Medicine and Hygiene. The total grant of £7,200 is in fact available for the work as a whole. It is additional to the £4,000 per annum provided by the Rockefeller Trustees for the general work of administration, and to the income of the Tropical Division from fees, endowments, and other sources. Application will be

made to the Senate of the University of London to set up Boards of Advisors for the appointment of professors who will be in charge of certain divisions of the School.

The report of the Board of Management was accompanied by the Director's report on the work of the Tropical Division for the year ending July 31st, 1925. The Board noted with satisfaction that the work of the Tropical Division in its first year under Dr Andrew Balfour's direction has made good progress, both in teaching and research, while the accounts show an improved financial position. The session 1925-26, it is stated, should witness the laying of the foundations of the new building, which the Board of Management believe will be a worthy embodiment of the high purposes for which the school has been established. "It should also see some progress with the actual realization of that broad programme of public health teaching for which the School has been brought into existence, and of which the courses of study in the Tropical Division—which necessarily learn largely in the present account of the work of the School—form but one though an integral part."

Both reports were approved by the Court. In the course of discussion stress was laid on the importance of applying the research funds of the School, both capital and interest, to the development of further held stations like that lately established in Southern Rhodesia, and it was agreed that representations to the Board of Management should be made accordingly.

France.

[FROM OUR OWN CORRESPONDENT.]

French Congress of Surgery

WITH the coming of October the life of the medical world begins again. The first symptom of this revival is the meeting of the national Congress of Surgery, an annual event which attracts to Paris the great majority of French surgeons. Patients with symptoms of acute appendicitis which might require an urgent operation would therefore have been wise to defer the crisis, for during the week of the congress they would have run a great risk of not being able to obtain the services of their usual surgeon, nor of any surgeon in a neighbouring town. Thus, the thirtieth surgical congress was opened by M. BOREL, Ministre de la Marine, accompanied by the dean of the faculty, and the number of French and foreign delegates and members present was unusually large. Professor BERARD of Lyon, president of the congress, in his inaugural address, recounted the investigations of the Lyon school into the surgery of bones and joints during the last hundred years, and recalled the great names of BONAULT, OLIER, PONSSET, and JABOUILLY. In concluding he paid a glowing tribute to some of those who had died during the year mentioning in particular the names and the work of DEPAGE, SCHWARTZ, POTHELET, and BERGONIÉ. A subject set down for discussion was the remote results of extirpation of cancer of the rectum. Once again indeed therapy had very few warm supporters.

In connexion with the large concourse of surgeons present at the congress it is not without interest to note how greatly the number of surgeons has increased since the war. Every medical man mobilized was called upon at one time or another to do surgical work, and consequently they went through an apprenticeship from which they sought to draw some advantage. It does not seem that as a rule their hopes have been justified. An attraction towards surgery has also been felt by the young men in the schools, and even first-year students appear to think that he is called upon to be a surgical vedette. Many of them seem to think that surgery is the portal which will enable them to escape from the demands of social medicine, that it will be a refuge for them against the *capitalisation* with which the State now menaces them. Also it may be said, perhaps that the large fees surgeons receive exercise a powerful influence in making them believe that they have a real vocation. *Qui vivra verra.*

Military Medical Liaison

In the campaign against the Riffs which is dragging out its slow course in Morocco aviation is playing a leading part

in the evacuation of the wounded. Down to the time when the present war began more than 1,200 wounded had been evacuated by the air route. At the present time the service is being carried on with great success. The aeroplanes used are old-fashioned fighting machines, repaired and slightly transformed for the new service in which they are now being employed—a service in which great rapidity of flight is not necessary. It seems probable that the experience now being gained will establish the aeroplane as part of the equipment of every ambulance service. It is unnecessary to comment on the advantage the aeroplane presents for the prompt transport of seriously wounded men. It renders them independent of the bad roads which alone are available in certain districts.

Académie de Médecine

A commission of the Académie de Médecine on the safety of travellers is now investigating the possible improvement of methods of medical supervision of persons employed on the railways and in particular of the drivers and point-men. It is ascertained that important posts involving great responsibility may be occupied by general paralytics! This fact naturally gave the members of the Académie a great shock.

A rather striking illustration of the present-day poverty of France is that the grant received by the Académie is insufficient to enable it to warm its own house, and that it will without doubt have to appeal to the generosity of its members. Meanwhile, it has sought to warm itself up by discussing the merits of candidates who will shortly come up for election. Among them is a novel writer who has found morbid and fashionable psychology a mine which has yielded very abundant material.

An Epidemic of Devotion

M. de Massary recently told the Société des Hôpitaux a curious story showing how far the influence of the cinema may go in affecting weak minds. During one week several persons went to a hospital in Paris asking that the whole of their blood should be taken in order that a patient seriously ill should be transfused. The authorities of the hospital were astonished by the repetition of an offer so unusual and instituted an inquiry, which revealed that a cinema popular in the quarter had recently been showing a film in which the heroine was in fact saved by transfusion. No complaint is made of the motives of these persons, who had little to give, but the alienists Maigne and de Fuisac have recently presented to the same society a harvest of medico-legal observations showing that the cinema more often inspires such zealous folk to take the blood of somebody else rather than give their own for transfusion.

G. MORON

Scotland.

PROFESSOR HARVEY CUSHING

PROFESSOR HARVEY CUSHING, M.A., M.D., D.Sc., LL.D., Mosley professor of surgery, Harvard University, and surgeon to the Peter Bent Brigham Hospital, Boston, Mass., to whom the Cameron Prize of 1924 was awarded, delivered three lectures in the anatomy classroom of Edinburgh University on October 19th, 20th, and 22nd. Professor Sir L. Shapley-Schreier, F.R.S., presided at the first lecture, in which Professor Cushing dealt with the circulation of the cerebro-spinal fluid, a subject which had engaged his attention and that of his fellow workers in Boston for a number of years. In the course of his address he pointed out the importance of the cerebro-spinal fluid in relation to diseases of the membranes of the brain, and to tumours in certain localities. He summarized his research on this matter, tracing the course of the fluid from the blood, out of the choroid plexus and by way of the ventricles and subarachnoid spaces to its exit from the cranium. He also dealt with the relation of this circulation to hydrocephalus and outlined the treatment which was now possible for certain cases of the latter condition.

At the second lecture, when Principal Sir Alfred Ewing presided, the lecturer dealt with the pituitary gland, outlining by means of lantern slides his own researches

in relation to this structure. He said that a knowledge of the function of this organ practically began in 1907, when Paulsco, a Rumanian investigator, had found that surprising results followed experimental extirpation of the gland, thus Professor Cushing and his pupils had confirmed in the years 1908 and 1909. The lecturer demonstrated the important bearing which the gland possessed on growth and sexual development, and the relation of its secretion to the elimination of large quantities of fluid. Almost all the pathological symptoms arising in connection with the gland, he said, had reference to defects in the posterior lobe. He also described the result of his operations upon this gland by the intracranial route, the mortality of the operation had been only 2 per cent. He believed that in time to come disorders of the gland might be treated by administration of various endocrine substances and operation might become unnecessary.

The third lecture dealt with brain tumours, and Emeritus Professor Sir Harold Stiles occupied the chair. The lecturer dealt principally with the necessity for using every possible means in the diagnosis of such cases, and indicated the progress that had been made in this field of medicine as the result of labours by many workers in different parts of the world. The chairman, in proposing a vote of thanks to the lecturer, paid tribute to the part he had played in this difficult field of medicine, and declared that no surgeon's education could be regarded as complete unless he had paid a visit to the hospital where Professor Cushing worked, and had seen the spirit in which team work was organized and carried out by him.

On October 23rd Professor Cushing visited the James Mackenzie Institute for Clinical Research at St. Andrews, and in an informal address compared research work carried on in hospital and in general practice. The stimulus to research, he said, was the same—the desire to find satisfactory answers to problems of difficulty. The worker who saw all his patients in an institution (as he did in America) had better opportunities for obtaining records of his special cases and more time and facilities for investigation than the general practitioner. He himself was directly descended from three generations of general practitioners, who had practised in the same district, and one of his most cherished possessions was a collection of the case-books of these ancestors. Not only were they records of illness in individuals, but they provided, by their continuity, material for the study of familial tendencies, and demonstrated the extreme value of accurate and continuous records in medicine. To enhance the value of records, he advocated the employment, wherever possible, of instruments of precision, though they must never overbalance the general judgement of a case. In connection with his special study he warned practitioners that, in cases of cerebral tumour, any of the cardinal symptoms (headache, vomiting, choked disc) might be absent, and, indeed, that cerebral tumours of slow growth might attain considerable size with no symptoms whatever. The intracranial cavity was, in his experience, the commonest site of tumour growth in the body. He spoke of the importance of detailed recording of such a symptom as headache (site, time of occurrence, character, etc.) on Mackenzie's lines. If any symptom was carefully studied in this way important leads were sure to emerge. He commented upon our ignorance of the mechanism of production of headache. In conscious patients direct manipulation of the cerebral substance produced no sensation, but acute pain was experienced if the membranes were pulled upon or an artery clipped or ligatured. Clinical research, whether by specialists or by general practitioners, was carried out by similar means and with the same object. The inquiring mind, that would not rest till it got an explanation, was what mattered.

OPENING OF THE ROYAL (DICK) VETERINARY COLLEGE, EDINBURGH

The Secretary for Scotland (Sir John Gilmour, M.P.) opened the completed buildings of the Royal (Dick) Veterinary College at Edinburgh on October 19th. Professor T. Hudson Berrie, chairman of the board of management of the college, who presided, stated that the buildings had been commenced a few years before the outbreak of the war, and the Government had instructed the board to continue

the work of building, so that the college was partially completed and the work transferred to it from the old college in Chdo Street by 1916. Only within the present year had funds become available for completing the laboratory equipment. The cost of the site and buildings had been over £58,000, and the laboratory equipment had required a further £16,000, making a total of about £75,000. Since the end of the war the number of students matriculated annually had fluctuated between 138 and 173, this year it was 144. The number of post-graduate students had steadily grown year by year, and last session 25 had attended, chiefly for the purpose of taking the Diploma in Veterinary State Medicine. A considerable amount of research was being carried out in the college, and as a memorial of the centenary of its foundation a post-graduate fellowship fund had been established. The Advisory Committee of the Animal Diseases Research Association was also allotted accommodation for research investigations in the college, and an honorary research professor for animal pathology had been appointed. Sir John Gilmour said that the good relations which existed between the board of management and the college and the Board of Agriculture were a matter for great satisfaction. Although the sum spent in building and equipping the college might seem large, it was very small when compared with the value of the work which could be done and of the enormous saving to the country which would result from the improvement of veterinary science. Very close and friendly co-operation was very desirable between veterinary science and medical science, which could learn much the one from the other. Medical science could give great help in locating some of the microbes and parasites from which stock suffered, and veterinary science could solve many of the difficulties which at present baffled health administrators—for example, in giving better milk cattle, clean from tuberculosis.

The Lord Provost, Sir William Sleigh, spoke of the close and friendly relation which had always existed between the Veterinary College and Edinburgh Corporation and said that the college had a world-wide reputation. Sir Harold Stiles pointed out the extreme importance the study of animal pathology had for medical men. He hoped to see in future a school of animal pathology in connexion with human pathology and both subjects taught under the same roof. He knew that hearty co-operation always existed between the Veterinary School and the Medical School of Edinburgh University, and he congratulated the Veterinary College on the work it had done during the last century for preventive medicine and humanity at large.

PREVENTION OF INDUSTRIAL SICKNESS

A meeting of the Council of Industrial Health Education was held in Edinburgh on October 18th, to consider the extension of the work to England, Wales, and the North of Ireland. Sir William S. Haldane, W.S., presided, and the secretary reported that for the first part of the year thirty engagements had been made for health talks to workers' organizations and that for the period from October to December 1925 fifty engagements had been made all over Scotland for similar talks. It was further reported that eight medical men had already agreed to associate themselves with the proposed extension. Sir Thomas Oliver, M.D., spoke on the desirability of the Council's programme being taken up south of the border, and referred to the wide field of work which lay among the industrial population there. The Council decided to deal first with the area covered by Cumberland, Northumberland, Durham and York, limiting the lectures to information which would enable workers to lessen and possibly prevent, diseases and ailments associated with their occupations.

CONVALESCENT BENEFIT

Alderston Convalescent Home, near Haddington, was formally opened on October 10th. This mansion house was acquired last spring by the Scottish National Benevolent Association to be used for the purpose of providing convalescent home treatment for members of the Scottish Rural Workers' Approved Society as an additional benefit under the National Health Insurance Act. The purchase and equipment were provided out of the surplus funds of the

society. The home is situated in the centre of well wooded policies extending to about forty acres, with a fine view over the Lammermoor Hills. It contains four public rooms, twenty-one bedrooms, and three bathrooms, is fitted with electric light, central heating, and other modern conveniences, and has a walled garden, two acres in extent, bowling green, and putting green. Recreation is provided in the form of billiards and musical instruments and wireless installation, and some thirty patients can be accommodated at one time. Mr James Falconer, President of the Scottish National Benevolent Association, in declaring the home open, said that there was a great deal for the benefit of the rural workers to be covered by the surplus funds, and that there were many other ways besides this home in which all the money available could be profitably expended.

CLINICAL MEDICINE MEDICAL EDUCATION

At a meeting of the University Court of the University of Edinburgh on October 19th it was intimated that a legacy had been received from the estate of the late Dr J. Murdoch Brown of £150 for the presentation annually of a silver medal to be awarded to the best graduate in clinical medicine in each year. The legacy was gratefully received by the Court. At the same meeting Dr J. Haig Ferguson, senior lecturer in clinical gynaecology, and Mr J. W. Stuthers, senior lecturer in clinical surgery, were appointed members of the faculty of medicine in the university.

England and Wales.

POST GRADUATE WORK IN NEWCASTLE

The general post-graduate course which began at the Royal Victoria Infirmary, Newcastle-on-Tyne, on October 1st is being attended by fifty-one practitioners. To facilitate clinical teaching the class has been divided into two sections. The meetings are held on Thursday afternoons, and instruction is given each day in clinical medicine, clinical surgery, and pathology, including post-mortem demonstrations. Three special lectures have been arranged as part of the general course, the first of which, on the post-operative treatment of tonsils and adenoids, was delivered by Dr J. Dunlop Lickley on October 1st. Dr R. A. Bolam will lecture on November 5th on the present day treatment of syphilis, and Professor David Burns will give the third lecture on December 3rd on insulin. A special course in midwifery and gynaecology is being conducted at the Princess Mary Maternity Hospital by Professor Ranken Lyle and Dr T. F. Fingland Murray.

In addition to these courses, which form part of the routine post-graduate instruction of the University of Durham, an intensive course of a fortnight's duration commenced on October 12th. It was arranged in conjunction with the Ministry of Health and the Northumberland Panel Committee for the benefit of panel practitioners in the rural areas of Northumberland, and was limited to twelve members, who were selected from the applicants by the Northumberland Panel Committee. The Panel Committee after careful consideration, elected to expend in this way part of its share of the special £10,000 fund which was also applied to the provision of locumtenents for the members of the class. A very comprehensive syllabus, comprising some sixty lectures and demonstrations, was arranged, occupying each morning and afternoon. The first hour of each day was devoted to a course of clinical pathology designed to meet the requirements of general practitioners. The remaining hours were occupied by classes in medicine, surgery, midwifery, gynaecology, eye diseases, and diseases of infancy, the individual subjects being selected with the object of enabling the members to understand the significance and practical application of recent advances in knowledge. The instruction was essentially clinical, and the limited size of the class facilitated the examination of a large number of cases by each member.

MANCHESTER BABIES' HOSPITAL

The new Manchester Babies' Hospital in Burnage Lane, Levenshulme, Manchester, was opened on October 19th by Lord Derby in the presence of a large gathering. The

hospital was founded in 1914 with only twelve cots, as this number proved inadequate for the amount of work that had to be dealt with, the present building has been erected, providing accommodation for eighty children. The cost of the extensions, including the nurses' hostel, amounts to £16,000, of which £12,000 has already been raised. The new hospital is built on one floor, there is a central corridor on one side of which are the wards and on the opposite side bathrooms and the milk preparation room. The building faces south, and the windows are arranged to slide to one side so that the whole space can be thrown open for light and air, while cots can be wheeled out on to the adjoining terrace. The hospital receives grants from both the Ministry of Health and the Manchester Corporation and the latter body reserves a number of the cots for use in connexion with its maternity and infant welfare work. The hospital claims, perhaps correctly, to be second to none, both in the character of the work it carries on and in the nature of its equipment. There is a room fitted out with the most modern type of lamp for "artificial sunlight" treatment, and it is interesting to recall that this method of treatment was adopted by the hospital at a very early period, with excellent results.

TUBERCULOSIS IN LONDON

The annual report of the Metropolitan Asylums Board for 1924 was noticed in our issue of September 26th (p. 579). An additional fasciculus, dealing with tuberculosis, has now been issued. For that disease the Board has 2,265 beds. Both adults and children (either sex) are admitted, and the cases are classified into sanatorium, advanced, pulmonary, and non-pulmonary.

The report contains a series of valuable articles by members of the staff. Dr. James Watt, chief medical officer of the tuberculosis service, notes that at Colindale Hospital the average duration of stay of advanced male adult cases has been shortened in three years from 159 to 117 days, there is much pressure on the accommodation in the three sanatoriums—for men, women, and children respectively—20 to 30 per cent of the cases admitted are not likely to benefit materially, and would be sent elsewhere if adequate accommodation for advanced cases were available. As regards early diagnosis, it is held that little further advance can be made unless by routine examination of the general population, as is now done for school children, and even by treating more cases on strong presumptive evidence without actual proof of tuberculosis. As to methods of treatment, "ultra-violet radiation and heliotherapy have not in general experience proved of any definite help in treating pulmonary tuberculosis and have in some cases increased the activity of the disease. In two of the Board's institutions a test of the value of light radiations is now being undertaken." General health is regarded as playing a larger part in recovery than the amount of lung involved, but the extent of lung damaged, and the presence or absence of tubercle bacilli in the sputum, have much to do with the permanence, or otherwise, of recovery. "There is no improvement to report in the proportion of patients who are admitted to the hospitals for advanced cases only which they are within sight of death. Over 25 per cent of all deaths occur within four weeks of admission."

Dr. Fowler of Pinewood Sanatorium contributes "a non-statistical review of the results of sanatorium treatment," in which he makes shrewd and pungent comments on various matters, holding that incomplete rest may sometimes produce a useful citizen, while another individual, under complete rest, may become "a numskull he'llth fiddist." He says "a sanatorium full of consumptive patients who are well trained is a safer place than the average railway carriage or cinema house" with promiscuous expectation. Much may be done in educating patients against undue alarm from hæmoptysis, and in the control of desire to cough until the ciliated epithelium has accumulated sputum for easy expectoration. Dr. Agriss of Highwood Hospital for Children says that it is now becoming known that tuberculous children can be taught to expectorate. Also, in early cases, huskiness of voice in the majority may be the only symptom. Dr. Douglas Potter of the King George V Sanatorium discusses the value of "angiolymphic" ad-

vised by Rous of Paris, and concludes that the claims made for it are not borne out by experience. Dr. Whitby of Highwood Hospital for Children has found that some cases of prolonged albuminuria in children were associated with amyloid disease, and gives particulars of four such cases. Mr. W. G. Sutcliffe, F.R.C.S., of Princess Mary's Hospital for Children, Margate, writes on the treatment of tuberculous glands of the neck, he holds that in presence of caserative abscess, sinuses, etc., "radical operative treatment is not only more rapid in effecting a cure but safer, and often less disfiguring than the alternative methods recently advocated." Dr. H. O. West, medical superintendent of the same hospital, gives an account, accompanied by photographs, of the facilities there provided for "sky shine" therapy.

It will be seen from these notes that this supplementary fasciculus contains much that is of interest and importance, both to specialists and to general practitioners.

Correspondence.

REGISTRATION OF OSTEOPATHS

SIR,—I am as anxious as any of my colleagues can be to curtail the influence of unqualified practitioners, as osteopaths and chiropractors at present are, but I do not think the attitude of mere derision assumed by some medical men is best suited to achieve that purpose.

It is precisely because the osteopaths in their practice, as distinct from their theory, have stumbled upon a real therapeutic truth that they have in some instances achieved success where orthodox medicine may have failed. Let me explain my meaning.

The methods actually practised by osteopaths are manipulation and pressure of the tissues, chiefly about the spinal column. Those who have lived in the East know what marvels the native masseurs sometimes accomplish, the picture drawn by Kipling of the restoration of him who moribund from fatigue is recognized as a true reflection of facts by all who know the East, and although the technique of these wretchedly educated American masseurs is compared with the technique evolved by the immemorial cult of Eastern massage "as is moonlight unto sunlight," there still remains a modicum of value in it. And there is, as it happens, increasing scientific evidence to show that certain disordered conditions (of which very little is known) of the tissues produce symptoms seldom ascribed to their proper cause, and capable of being advantageously modified by pressure and massage. The observer who has advanced the farthest in this field is Dr. Hubert Higgins, who founded his research on long anatomical study—he was for thirteen years demonstrator of anatomy in the Medical School of Cambridge University. His paper published in the *Medical Press and Circular*, May 11th, 1921, contained the first sketch of this new theory, but it was completely ignored by the medical profession in this country.

Briefly the theory is this. The cell under certain noxious influences (such as poison, fatigue, etc.) takes up water with a force which is very remarkable. The researches of Fischer and his beautiful experiments prove this property of the cell very conclusively. The swollen cells produce a condition which Fischer calls cellular oedema, which Higgins has named "localized lymphatic stasis." Tissues made up of swollen cells present to the palpating finger sensations of resistance, which may vary in degree from a gelatinous softness to an indurated-like hardness. These changes take place especially likely to take place in parts of the body (1) where movement is restricted, or (2) space is confined. As an example of the first condition the lower part of the spine may be given, and of the second condition the space between the atlas and the skull. The states of tissue may be modified by skilled application of pressure and manipulation, and unfortunately a very high degree of anatomical knowledge is postulated for the best application of such therapeutic measures, especially about the atlas.

The presence of foci of bacterial infection and the consequent toxæmia would explain very many cases of these changes in the tissues. The osteopaths, who know nothing

of bacteriology and therefore affect to condemn it, have thus missed the very first principle of their pretended craft. The bacterial cause should obviously be eliminated first, but the manipulative measures are also exceedingly valuable, and it is my firm conviction that it is because osteopaths occasionally, and without knowledge of what they are doing, actually perform these therapeutic exercises that they achieve their successes, the reality of which it is merely foolish to doubt.

More recently some important observations have been carried out in Paris under the inspiration of Professor Jean Sicard. It has been conclusively proved that in these cases of stasis, when there is resulting pressure upon important nervous tissues—as, for example, when the peritoneal fat is impeded—the operation of luminectomy has been successful in relieving symptoms. In some cases these scars have given definite shadow in ray photographs, and Professor Sicard has discovered a preparation known as lipiodol which exerts an influence in cellular restoration when injected into affected tissues.

My own attention was drawn by the work of Higgins to the possibilities of alopecia being caused by these lymphatic stases, and I contributed a short paper at the last meeting of the British Association of Dermatologists in which I recorded my observations during the past four years upon such cases of alopecia associated with focal sepsis. It is impossible in a letter to elaborate this argument further, but I wish to say very emphatically that in my opinion a case has been made out for further investigation of the remedial effects of manipulative movements, dictated by skilled anatomical knowledge, about the spine and neck.

The sterility of the osteopathic theory cannot better be exemplified than by the reflection that since the origin of the cult in 1873 its disciples have not added a halfpenny's worth of investigation or knowledge to the subject. Their methods are confined to the meiest "rule of thumb" practice from which no advance can be expected.

It is surely time that the profession began to clean up problems which undoubtedly await solution in this department of practice, and should avoid the reproach of remaining ignorant of measures which undoubtedly may be valuable. There is no person who registered practitioners should not very speedily acquire a technique in advance of that practised by the osteopaths and should obtain even better results.

Now I would add some comments on the actual position of the burning question of registration of unqualified osteopaths. They have secured a very considerable following in the House of Commons itself, and it must not be forgotten that causes are lost and won in the House of Commons by the counting of votes. Unless it bestirs itself the profession may wake up any morning to find that it is encumbered with strange and unwelcome bedfellows on the *Medical Register*. Unhappily there is considerable distrust of the opposition of the medical profession to this registration—opposition which is supposed to be dictated by self-interest. For the profession is an unorganized corporate body to enter the lists I think would be undesirable, but the exercise of personal influence on their local members of Parliament by doctors throughout the country would be a very valuable method of attack. I hope that the profession will realize that danger is imminent, and that it will not cherish any foolish hope which I see expressed in a letter from one of your correspondents this week, that the movement will die of its own inertia.—I am, etc.,

London W. Oct 26th

F. GRAY LITTLE

and only seven, colleges of osteopathy in America which have been officially described by the Board of Regents of the State of New York in accredited institutions.

The British Osteopathic Association is trying to obtain some sort of official register of qualified osteopaths in order that the public may be protected from unqualified osteopathic impostors. You are right when you say, "Doubtless a large number of osteopaths differ very little from the chiropractors", on the other hand, there are registered medical men practising chiropractic in London. The establishment of a register of osteopaths would help to clean up the mess.

It is significant in itself that many inquiries from medical friends as to the nature of osteopathy have been addressed to Sir H. J. Waring. He is, as his address indicates, well qualified to point out the disadvantages and dangers of osteopathy. He is not qualified to tell them of the advantages and results to be gained from its employment. From what source, may I ask, did he obtain his osteopathic knowledge?

We stand on the fact that "the impairment of the circulation which prevents the so-called elements or vital materials being properly supplied to the different parts and organs" is an important cause of disease, not, as stated, the cause of disease. Therefore, of course, we osteopaths differ from the chiropractors. Our manual manipulations are not of "the supposed diseased parts," but of the structural abnormalities of the body.

Sir H. J. Waring states that "in a narrower terminology osteopathy assumes that all diseases are due to an osteopathic lesion, these lesions being in connexion with the ligaments or joints of the spinal column." This is quite a fair remark. That narrower terminology is chiropractic, which he confuses with osteopathy—with an obvious purpose.

I admit that the term "subluxation" has been used very extensively by practitioners of osteopathy to express a slight irregularity in position in the spinal column. It should not be used, and is not used, by modern and educated osteopaths.

It is stated in the address that "osteopathic lesions may or may not be shown by palpation, inspection, or ray investigation." I submit that osteopathic lesions are *always* shown by palpation and are corroborated generally by inspection and frequently by a ray examination. Osteopathic lesions, in the widest sense of the term (that is, soft tissue framework abnormalities included with the bony lesion) are found in all diseases. If they have not pre-existed the disease and caused or helped to cause it they are reflexly produced through the intervention of the related spinal cord segment when an organ is attacked by an efficient organism or if an organ is directly functionally abused. If Sir H. J. Waring will read *Symptoms and their Interpretation*, by the late Sir James Mackenzie, he will the more readily understand the above. He will find, in *Symptoms of Visceral Disease* (Pottenger) "the distribution of visceral nerve offers a path through which stimuli from the peripheral nervous system may influence the viscera and through which visceral stimuli may influence peripheral structures."

The site of the osteopathic lesion naturally varies according to the locality of the disease, the vasomotor and other nerves mostly but not entirely, belonging to the autonomic nervous system largely determining this. The nature of the affection naturally has little or no influence on the exact site of the lesion. Hence it follows that the would-be scathing remarks about "osteopathic pathology" rather miss the mark. No educated osteopath maintains that all disease is the result of pressure upon nerves as they emerge from the spinal canal. This theory is absurd, but it must be admitted that it was taught in the very early osteopathic schools and is taught in all the chiropractic schools to-day.

Diseased conditions of the eye and the ear are successfully treated by osteopaths. This surprises Sir H. J. Waring as he states that "the nerves of these organs are not given off from the spinal cord." The somatic nerves and the nerves of special sense to those organs are not given off from the spinal cord. But the all-important vasomotor nerves to the eye and the ear do pass through

Sir—Your leading article (BRITISH MEDICAL JOURNAL, October 17th p. 708) on osteopathy, chiropractic and medicine is so much fuller and so much more knowledgeable than the address on that subject delivered before the Medical Society of London by Sir H. J. Waring that perhaps you will allow me to reply to the latter.

You point out that "osteopathy is progressive" and that "there are two distinct cults" whereas Sir H. J. Waring mixes up qualified osteopaths with what he would call, other falls. There is a British Osteopathic Association which admits to its membership only qualified osteopaths. A qualified osteopath is a person holding a D.O. degree from an approved college of osteopathy. There are seven,

the spinal canal and its foramina in some part of their course from their origin in the preganglionic cell in the central nervous system to their destination in the muscle wall of the blood vessels of the eye and ear. This explains how osteopathy has cured many a case of deafness and many a case of blindness and will cure many more. Has he forgotten that the sympathetic fibres going to the blood vessels of the eye come from Budge's centre in the spinal cord (C7 to D3), and has he forgotten that the superior cervical ganglion, which he in close anatomical relationship to the transverse processes of the second, third, and fourth cervical vertebrae, innervate the blood vessels of the head?

The reason that it is difficult to get evidence of osteopathic lesions from trained x-ray medical experts are three

1 Osteopathic lesions are so commonly found that the trained x-ray expert regards them as being within the realms of normality or, at any rate the average condition.

2 The average osteopathic lesion is not so gross as a subluxation in the medical sense of the term. In the usual osteopathic vertebral bony lesion two bones are more or less fixed at the extreme of a normal relationship. An osteopathic lesion is more of a joint fixation than a subluxation.

3 Even trained x-ray experts are prone to pronounce a spinal column normal unless they can find a definite subluxation, a dislocation, a fracture, a tubercular or some such gross structural abnormality. Individual fixed vertebral deviations are normal.

I agree with all that Sir H. J. Waring has to say about the many other cults that have sprung from osteopathy, but the way he mixes up osteopathy with narpapathy is clever but definitely misleading, to say the least of it. He is not only misleading but is inaccurate in what he has to say about osteopathic colleges in America. It is sufficient in answer to him to state that the Board of Regents of the State of New York made an official investigation of all the colleges in the United States, and, as a result, in the official reports of the State of New York on Higher Education in Medicine for the past twelve years they have placed the seven colleges of osteopathy, which are members of the Associated Colleges of Osteopathy, as duly accredited institutions. No student can obtain a D.O. degree at any of these osteopathic colleges in less time than four years, not eighteen months as erroneously stated by Sir H. J. Waring. If he were to pay a visit to the American School of Osteopathy at Kirksville he would find there up to date osteopathic hospitals, good dissecting rooms, elaborate laboratories, and an adequate staff of whole-time teachers and everything that is required to turn the 800 enthusiastic students there into well educated modern osteopathic practitioners.

I am sure it is true that cases are on record where an appendicæ abscess has ruptured while the patient has been under the care of an osteopathic physician, and I am equally sure that there have been many cases where an eminent surgeon, such as Sir Holburt Waring, has been called in consultation to a case of acute abdominal pain, has with the experienced hand, and has found the abdomen full of pus on his next urgent examination, on the best of us are liable to make mistakes in the diagnosis of malignant disease and tuberculosis.

One reason why the average general medical practitioner is afraid to do what the osteopath does in a case where it is obvious that adhesions should be broken down, is that he is so concerned with organs and drugs and germs and the knife that he has not time to study the framework of the human body as it deserves to be studied.

Dr E. Graham Little, M.P., said in the discussion that "there were cases in which osteopaths, quite unwittingly had done a considerable amount of good to the patient under their treatment." I resent the words "quite unwittingly." Since I have spent two years in America, and have also returned later for post-graduate instruction which I found most up to date and valuable and since I have devoted all my professional thoughts and studies since 1910 to the problems under discussion, I repeat I resent the words "quite unwittingly" when I, by spinal adjustment alone, cure a case of bilateral neuritis which has baffled many more experienced and learned medical men than I am.

You say that "Whether he [the qualified osteopath] believes in his doctrine is a matter for his own conscience." I have consulted my conscience, and can honestly and sincerely say that I believe in our doctrine. I retain the name of osteopathy. I do so out of loyalty to my osteopathic teachers. I really do not think, with all due deference to you, Sir, that it is the name that draws it. The work that counts. Lastly, I do not think that Dr Morris Fishbein, author of *The Medical Follies* is an impartial judge. For years he has been after the blood of the osteopaths. It is part of his official work to do so.

You rightly advise medical practitioners, in their own interests, to make themselves acquainted with the details of osteopathy. I will guarantee to find in London, Birmingham, Manchester, Liverpool, Newcastle, Edinburgh, Glasgow, and Belfast, members of the British Osteopathic Association who will acquaint any medical man who is sincerely interested with the details of osteopathy. Personally I am ready and willing to treat any reasonable number of test cases, provided they are not all what might be called "medical-snags," and provided the medical investigators are not too hopelessly biased against osteopathy. I am sure that most, if not all, of the members of the British Osteopathic Association are equally willing to submit to the same test in order to show the efficacy of osteopathy and in order to justify the belief that is in them. I doubt if you will find a member of the British Osteopathic Association accepting for treatment an operable case of cancer, or if you will find him or her manipulating a tuberculous joint in its acute stages, or if you will find him promising to cure an advanced organic nervous disease.

The members of the British Osteopathic Association are not asking for the privilege of signing death or birth certificates, they do not have to sue for fees, they do not want to prescribe dangerous drugs, and they have never been prosecuted for malpraxis—I am, etc.,

W. KELMAN MACDONALD,

Edinburgh, Oct 26th

MD Edin DO

SIR,—While admiring the robust attitude of Sir H. J. Waring in exposing osteopaths and their kind, and agreeing with his suggestions in so far as they make for either the educational elevation or, preferably, the extermination of such cults (*BRITISH MEDICAL JOURNAL*, October 17th, p 679), he but tapped tentatively an important nail on the head in implying that the medical profession is itself to blame considerably for the success of quacks. He says, "The public is always dissatisfied with a doubtful diagnosis given by a physician or surgeon, and of his inability to explain the nature of a disease in a few words, and also with a definite remedy." Whence such "doubt," "inability," and lack of "definite remedy"? Their source must account for so many patients drifting to quacks. I have never known anyone consult a quack who had not previously sampled orthodox doctors, usually many. It is my firm belief that the success of the quack is largely contributed to by the general lack of scientific knowledge of human psychology, psychopathology, and psychotherapy in our own profession. Were every doctor to give to these fascinating subjects a modicum of the interest and energy he bestows upon the study of organic disease, the quack would be deprived of his main asset—the psychoneurotic patient. It needs but superficial observation to see that the majority of those who eventually resort to quackery of all descriptions are, to some degree, of abnormal mentality, often mental sufferers deserving of our keen attention and sympathy. Were doctors to resort to the following routine with every patient, and thereby include the quack-drifting type, they would hear of fewer wanderings from their fold.

1 While listening attentively to the complete list of complaints endeavour to form an idea of the patient's conception of the nature and origin of his condition, he often suppresses it.

2 Employ a thorough systemic, organic examination, paying particular attention to the system the patient conceives to be at fault.

3 Then definitely tell the patient whether organic disease sufficient to account for the symptoms has been

found or not, ordering definite and appropriate treatment if found

4 In the event of no considerable organic disease being discovered it is most desirable that the doctor should then be equally capable of (a) eliciting psychoneurotic symptoms, which experience will show to be the rule in the seekers of advice for supposititious organic disease (b) convincing the patient that such symptoms are abnormal and that they and the apparently organic symptoms both rest upon a common basis—a mental one, (c) prescribing and administering psychotherapy as definitely as he would other treatment in the case of organic disease

This routine is not idealistic if the public learns to expect it and learns that there are none of us who may not need special help at one or more of its stages, or extensions of time for its completion. It may seem uneconomical, but in reality would cost the public less money than at present pours into the coffers of quacks and is paid for quick remedies. When we do justice to the fullness and diversity of our own combined professional knowledge the quack will perish from inanition, he is no more vulnerable to it than to legal enactments. Let us remember that all potential quack-drifters feel ill, and are so mentally or bodily. It is intolerable to them to be told "there is nothing the matter," and insult added in a bottle of medicine. Like flies they flit from doctor to doctor, let us see to our own inducements to keeping them out of the parlours of conning spiders—I am, etc.,

R TRAVERS SMITH, M D, F R C P I

London W 1 Oct. 19th

THE SURGICAL TREATMENT OF MITRAL STENOSIS

SIR—I have read with the greatest interest Mr. Souttar's description (October 3rd, p. 603) of his operation for the relief of mitral stenosis. It shows triumphantly the necessity of the interior of the left auricle, and of its passage of communication with the ventricle, to surgical measures.

My object in writing is to draw attention to a danger which must attend an operation such as that described, but to which no reference is made either by Mr. Souttar or your correspondents Messrs. Strickland Goodall and L. C. Rogers and Dr. Martin O. Raven (October 17th, p. 722). The danger arises from the fact that these cases of pronounced mitral stenosis are so often the seat of recurrent attacks of acute endocarditis (Mr. Souttar's case was admitted with pain in the limbs, though the temperature is not recorded). In such cases fresh vegetations are a common pathological feature, and the risk of the detachment of these in passing the finger through the auriculo-ventricular orifice, with embolism as a necessary consequence is plain. I need not dilate upon this peril, which even very delicate manipulation might involve. Was the finger guarded by the rubber glove (I do not find mention of this detail)? I ask because it seems to me that it should be unguarded since the most delicate tactile sensibility is needed.

Mr. Souttar seems very wisely to have refrained from a large section in this case, but when he decided to "limit intervention to such dilatation as could be carried out with the finger," it will, I think, strike most observers that the mere pressing of the finger, even if some force were used, could never leave any appreciable effect in the minor degrees of mitral stenosis, and that nothing but section could serve in every case of "button-hole" mitral—I am, etc.,

London W 1 Oct 19th

HARRINGTON STANSBURY

SIR—The interest taken in Mr. Souttar's account of his operation on a case of rheumatic carditis, when he stretched the stenosed mitral orifice with his finger (BRITISH MEDICAL JOURNAL October 3rd p. 603) is not surprising. What is remarkable is that it has taken such a number of years before "mitralotomy" has been seriously attempted. The old method of treatment in a paper published in the *Lancet* of April 2nd 1893 (p. 927), entitled "Cardiac pericarditis: its nature and effects," I there pointed out that the distance of the stenosed and incompetent mitral orifice (until cardiac breakdown) is partly

valvular, and partly due to the auricular systole overlapping the ventricular. I concluded the article with these words

"I am thankful to have been led to believe that the aortic and mitral valves have acquired their positions of rest before the support, in the one case of the ventricle, and in the other of the auricle is withdrawn from them. I can understand also how a stenosed and incompetent mitral valve may be present and regurgitation with its accompanying systolic murmur be absent as is so frequently found, since the auricle itself by its prolonged contraction in these cases defends the orifice and I anticipate that with the progress of cardiac surgery some of the severest cases of mitral stenosis will be relieved by slightly notching the mitral orifice, and trusting to the auricle to continue its defence."

The progress of cardiac surgery has been slower than I then anticipated, but if the present attempts to surgically enlarge a stenosed mitral orifice be not too severe or applied too late (that is, when the auricle is already exhausted and commencing to dilate, and unable when contracting to become small), the incompetence of the mitral valve would not entail the regurgitation one might expect, for the left auricle is the great defender against regurgitation in these cases—I am, etc.,

D W. SAWYERS, M D, D Sc

Knowle Top ham Devon Oct 22nd

INFECTED MYOMA COMPLICATING PREGNANCY

SIR,—The letter from Mr. Arthur Crook (October 24th, p. 768) emphasizes the point I raised in my *Tumours complicating Pregnancy*, etc.—namely, the desirability of diagnosing the presence and nature of infection before performing conservative operations on the pregnant uterus containing myoma.

According to my information bacteriological examination is as yet unreliable for a rapid diagnosis. In the case of obstructing myoma reported (as also in the case infected with *Bacillus Welchii*) there were no clinical indications of infection. The decision to remove the uterus instead of performing myomectomy was made for the following reasons:

(1) The frequency with which degeneration occurs in these cases—in my experience 5 out of 6. Degenerated tumours are especially liable to infection.

(2) The frequency with which infection is found on bacteriological examination—in at least 2 out of 6 cases.

(3) The greater safety of total abdominal hysterectomy, especially in the case of obstructing fibroids—in 26 collected cases 2 deaths, of which one was due to the attempted myomectomy by an exceptionally skilful operator, the late Dr. Haultain—I am, etc.,

HERBERT R. SPENCER

London W 1 Oct 24th

LEFT-HANDEDNESS

SIR,—I have read with much pleasure and interest your annotation on left-handedness (October 3rd, p. 620), but I have not yet seen any comments on it in spite of your request that "my new light on its cause or significance is very welcome." I am induced to offer an observation made by me and which has been confirmed by a long association with child-life. It is that all normal children up to the fourth year of life use the left hand by preference. In testing this rule must be taken by the observer that no suggestion is made to the child that the right hand should come into use. Granting that the observation referred to above is correct—and I hold that it is—Plato, to whom you refer was not far from the truth when he gave to us as his belief that preference is determined by "nursing and education."

The acquisition of two handedness is of great value, both in sport and work. In my opinion it can be achieved by anyone if there is the requisite determination, and if a suitable method is chosen for acquiring it. I found billiards played with the left hand to handicap myself one of the best means to commence the training.

In reference to your remarks on the use of the eye in shooting, may I say that men who have shot for most of their lives are quite aware of the fact that they do not close one eye in alignment of the gun, but always shoot with both eyes open. In partridge driving, with a crossing shot, which is rapid work, I take it that the

gun is aligned by the master eye, which is usually the right, the bird being selected by the left eye, and the "swing forward" by the right or left, in accordance with the direction taken. This is by the way, and has no bearing, I think, on the main question at issue—I am, etc.,
Cheltenham Oct 26th
LEWIS W MARSHALL

MEDICAL WOMEN IN MEDIAEVAL TIMES

SIR,—There will be general agreement with Dr Singer when he writes (BRITISH MEDICAL JOURNAL, October 17th, p 722) that "the time has arrived when wild and undocumented statements concerning medieval medicine should cease to be bandied about." In the efforts made to attain this most desirable consummation Dr Singer has himself played a distinguished part. It is all the more singular, therefore, that some of the statements in his letter are undocumented. No doubt the brevity of his communication, and the feeling which apparently prompted it, may account for this.

I am not referring here to his remarks in regard to the *School of Salerno*, for his views in this respect are already familiar through the writings of Huber, H Haeser, and others. There are, however, some points in his reference to St Hildegard upon which he might usefully shed fuller light.

There can be no doubt that the date of her death is generally set down as 1179. Dr Singer, on the other hand, says that she "was alive and in fairly vigorous health at that date." Passing over the question of her health and the adjective that may best describe it, one would be glad to learn what is the true date and the grounds upon which it is substantiated.

In the next paragraph Dr Singer writes as follows: "It would perhaps be needlessly harsh to recall the fact that the life of *Saint Hildegard* was not altogether saintly, were it not that the Roman Catholic Church, to which she adhered with greater vehemence than orthodoxy, has itself promulgated this conclusion." To me, at least, the logic of this statement is somewhat at fault. The lives of historical personages are matters of history, and it would be a perversion of history to present a picture in which the virtues only and none of the failings are depicted. But if it is harshness to mention vices it is not very clear why that harshness is removed if someone else appears to act in accordance with that view. This, however, by the way. One thing is quite certain—namely, that the contemporaries of St Hildegard had a higher regard for her character than Dr Singer has. She was looked upon as a saint, and her feast is still observed in the diocese of Mainz and perhaps elsewhere in Germany. She even finds a place in the Roman Breviary. All this, however, does not necessarily mean that she has been proclaimed a saint by the Roman Catholic Church.

This is not the place to enter into the history of canonization. It is enough to say that in early times local opinion was often the only basis for a cultus. During the lifetime of St Hildegard the indiscretions of local favour led the Popes to decree that the virtues of persons proposed for public veneration must be examined by councils under their presidency. And such has been the practice since. The Venerable Bede was known by that title from the end of the eighth century, but as a matter of fact the formal canonization only took place in 1899. Dr Singer holds that something similar has happened in the case of St Hildegard. His use of the technical term "promulgated" permits of no other interpretation. Now although on several occasions the preliminary investigations have been initiated in her regard, I was not aware that they ever bore definite fruit. I am sure that other students will share my desire that Dr Singer should give us the date on which the decree of her canonization was promulgated—I am, etc.,
Edinburgh Oct. 20th
G MATHESON CULLEN

"PREVENTION OF RHEUMATISM" AND INFLUENZA

SIR,—Dr E H Wilkins, in your issue of September 19th (p 542), remarks that English writers' recommendations to the avoidance of cold and wet amount to very little. My personal experience of influenza and rheumatism may throw some light on the discussion.

I have had over twenty attacks of influenza two a year generally about December and February—the wet months. I tried all kinds of vaccines from stock to autogenous and found them useless. For several years I had fibrositis with effusion in both knees, easy in summer bad in winter. Misfortune at last stimulated my dull wits and having failed to find any make of leather boot capable of ensuring a dry foot I took to goloshes wearing them even when the pavements were slightly damp from fog. My attacks of influenza ceased. Immunity began to grow, and on a bright day, accompanied by muddy pavements I left my heavy goloshes at home. When I had finished my visits I put on fresh stockings and boots and hoped nothing would happen. Five days later I had to go to bed with a temperature. I have never trusted leather since. My pulse has recovered its strength and regularity, my rheumatism has disappeared, my health is restored, and I require less clothing. Neither drugs nor vaccines accomplished what an absolutely dry foot did.

The prosperous days during the late war induced the Lancashire people to discard their wooden clogs in favour of leather boots, the predicted epidemics of pneumonia and influenza followed. Pasteur failed to infect the domestic fowl with anthrax until he chilled its feet, surely the analogy holds with regard to influenza germs and chilled feet in human beings.

Rubber boots and shoes, exactly like ordinary laced boots and shoes, are now procurable, they are comfortable and easy to walk in, and no heavier than an ordinary boot or shoe—I am, etc.,

London, S W 6 Sept 20th

J FLETCHER

VENEREAL DISEASE IN THE NAVY

SIR,—The letter in your issue of October 3rd (p 629) from a "civilian clinical officer" condemning unhealed naval medical officers is to be regretted.

Having been condemned in general terms "on the obvious failure of the naval medical authorities to enforce observance of prophylactic precautions against venereal diseases," I will now make my defence without dwelling on the obvious retort that they have no power of enforcing it.

Many years ago Sir James Porter introduced sound methods for the prevention of venereal disease. A silver preparation was used for the prevention of gonorrhoea and calomel for the prevention of syphilis.

In recent years the issue of the silver preparation has been discontinued. Various excuses have been given for this, but during my efforts to get it reintroduced I came to the conclusion that an unfavourable report on the silver salt then in use had been welcomed by economists at the Admiralty. Departmental economy appears to be the real reason for its abandonment, with the resulting increase of gonorrhoea on such stations where alternative methods are difficult of application.

Both calomel and silver appear to act on the tubes supplied to the Admiralty. It was in order to avoid this that Messrs Ferris and Co kindly supplied me with samples put up, at my suggestion, in gelatine "oucles." Some of these were forwarded to the Admiralty, but did not meet with an enthusiastic reception, and then I was placed on the retired list, so the matter dropped.

The real solution would appear to be for the Admiralty to give the Medical Department sanction to issue efficient outfits at cost price to the canteens, where they could be purchased by the men—I am, etc.,

Southsea Oct 9th

F C B GITTINGS, M D Lond

OPPORTUNITY IN THE SERVICES FOR RESEARCH

SIR,—I was much interested in the report in the JOURNAL of October 17th (p 711) of the admirable presidential address by Sir William Lishman to the War Section of the Royal Society of Medicine on October 12th. With the subject-matter of the address all officers, past and present, of the R A M C will cordially agree. That such opportunities exist there can be no doubt, a proof of which statement is to be found in the brilliant work of Sir William Lishman himself in the realms of original research. But what of the conditions? Sir William does well to draw attention to the fact that, in these days of "diminished personnel," the present time does not seem quite appropriate for suggesting to overworked officers that they should voluntarily add to their already heavy duties. I agree

At the present time the average officer has no time for research, not only on account of overwork, but because he has a sword of Damocles constantly hanging over his head in the form of the eternal uncertainty of his stay in any one station in which he may happen to be. The lot of the present-day officer is 'here to-day and gone to-morrow'.

There is the added uncertainty of his future as regards promotion, pay, and pension. He has seen regulations, expressly framed to accelerate promotion, flagrantly violated. His pay and pension are still unstabilized, and are liable to reduction at fixed intervals.

These are not the conditions, nor is this the atmosphere, best suited for the encouragement of private study or original research. The above facts may be, in the words of Sir William Lushman, only "a temporary phase of depression," but the sooner steps are taken to remove the depression the better. If we are honest with ourselves we must realize that, so long as the "depression" lasts the "further outlook" for original research in the R.A.M.C. is, in the words of the weather forecast, extremely "uncertain" to say the least of it—I am, etc.,

October 21st

SCRUTATOR

Obituary

DR A G JENNER, medical officer of health for Stockport, died suddenly on October 5th, aged 40. He received his medical education at the University of Liverpool, and took the diplomas of M.R.C.S. Eng. and L.R.C.P. Lond. in 1907 and the D.P.H. Liverp. in 1911. After serving as house-surgeon and senior house-physician to the Royal Southern Hospital, Liverpool, he became resident medical officer to the West Derby Union Infirmary, and for two years subsequently served as resident medical officer to the Park Hill Fever Hospital of the Liverpool Corporation. In 1912 he became assistant medical officer, assistant tuberculosis officer, and assistant school medical officer for Burton-on-Trent, where he remained till his appointment in 1913 to be district tuberculosis officer to the Harrogate area. In July, in August, 1914, he proceeded to Stockport to take up the duties of tuberculosis officer, and was appointed deputy medical officer of health in 1915. On the departure of Dr Smeeth, the then chairman of the health committee, and Dr Corbin, medical officer of health, for active service with the forces Dr Jenner had charge of the health of Stockport under the health committee. In 1917 Dr Jenner joined the R.A.M.C. with a temporary commission, and for two years served on the administrative staff of the Salonica Army and had charge of the 98th and 131st Sanitary Sections with the rank of captain. On his return to Stockport in May 1919, he was appointed special disease officer, and in February, 1922, succeeded the late Dr Corbin as medical officer of health for the borough. He was a member of the Stockport, Macclesfield and East Cheshire Division of the British Medical Association.

We regret to record the death of Dr THOMAS CUNNINGHAM of Kilbarchan, as the result of a street accident in Paisley on October 20th. Dr Cunningham received his medical education in Glasgow, London, and Dublin, obtaining the M.B. Ch.B. degrees of Glasgow University in 1900. After holding appointments in the fever hospitals in Glasgow and the Maternity Hospital, Dublin, he began general practice in Kilbarchan in 1906, he was appointed medical officer to the parish council three years ago. Dr Cunningham took an active interest in National Health Insurance and was a member of the Renfrewshire Panel Committee from its origin. In 1921 he became medical secretary to the Committee which appointment he held until his death. On several occasions he represented the Committee at panel conferences in London. In 1920 he was appointed by the Scottish Board of Health as a member of the County Insurance Committee. He was a member of the British Medical Association.

Dr AUGUSTE LUTAUD who founded the *Journal de Médecine de Paris* in 1880 has recently died at the age of 76, as the result of an automobile accident.

Universities and Colleges

VICTORIA UNIVERSITY OF MANCHESTER

Mr C. J. POLSON M.B., Ch.B. Birm., has been appointed demonstrator in pathology.

Entrance scholarships in medicine have been awarded to G. L. Brown and L. Loulds.

Travelling Fellowship in Psychological Medicine

Through the generosity of Mr Ernest A. Knight, honorary treasurer of the University of Manchester a selected medical graduate will be enabled this winter to visit the United States. His mission will be to study and eventually to report upon the methods used in approved institutions to investigate the part played by mental factors in the development, treatment and cure of mental disorders. Should the University so desire, he will be required on his return to deliver an address on the subject of his investigation. The competition was open to those who had obtained or had entered upon a course for the diploma in psychological medicine of the University. It is hoped to announce the award at an early date. The purpose of the fellowship is that of the Knight Prize which is offered annually in the University to encourage the study of psychological factors in the causation and cure of mental disturbances.

NATIONAL UNIVERSITY OF IRELAND

The Senate at its meeting on October 23rd made the following decisions:—
Studentships (Pathology):
E. McDermott, 1st; J. J. O'Connell, 2nd; J. J. O'Connell, 3rd.
Dr Henry Hutchinson, 1st; J. J. O'Connell, 2nd; J. J. O'Connell, 3rd.
(2) Physiology: Patrick Keane, 1st; Dr and Mrs W. J. Browne, 2nd; Gold Medal and Prize: Gold medal Ellen Power, prize not awarded.

Dr Robert P. Larnan was appointed to the professorship of midwifery and gynaecology at University College Dublin.

The Senate decided that a special final medical examination should be held in January 1926 in the University Colleges of Dublin, Cork and Galway, provided that not fewer than seventy-five candidates enter and pay the special entry fee of £5 on or before November 12th, 1925.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

At the meeting of the Royal College of Surgeons of Edinburgh held on October 21st Dr Arthur Logan Turner was elected president for the ensuing year. Sir David Wallace C.M.G. vice-president and Mr Alexander Miles, LL.D., F.R.C.S. Ed. secretary and treasurer.

Mr David Middleton Gray, F.R.C.S. Ed. Edinburgh, was awarded the Lister Victoria Jubilee Prize of £100 in recognition of his contributions to practical surgery and surgical pathology.

The following 28 successful candidates, out of 61 entered at the Fellowship examination between July 6th and 13th, were admitted Fellows:

J. C. Anderson, J. R. S. G. Beard, J. M. Black, C. R. Childs, B. M. Dicl, C. S. L. Hall, R. L. Galloway, J. Goldberg, R. Grant, J. D. Grierson, Dorothy W. Hall, F. J. S. Hall, O. M. Irwin, H. W. Johnston, Valda Loun, J. C. L. Lumsden, W. J. Macdonald, H. J. Malkin, S. M. M. J. Moore, C. H. M. M. A. R. Richards, J. H. Robert, R. C. Shackleton, J. H. Shaw, V. Sourasky, D. B. Whitlock, A. C. H. Yates.

The diploma of licentiate was granted to E. W. Johnson.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

At the annual meeting of the President and Fellows of the Royal College of Physicians of Ireland held on October 19th the following officers were elected:—President, Dr Thomas Henry Wilson; Vice-President, Dr W. A. Winter; Treasurer, Dr Bewley; Registrar, Dr T. P. C. Kirkpatrick; Censors (medicine) Drs Nesbitt and Rowlette (medical jurisprudence and hygiene) Dr Winter (midwifery) Dr Fitzgibbon.

Dr Jane Elizabeth Waterston was elected a Fellow of the College.

Sir John Moore was re-elected the representative of the College on the General Medical Council.

The Services

DEATHS IN THE SERVICES

Brigade Surgeon Lieutenant-Colonel Selim Myer Salaman Bombay Medical Service (ret.) died in London on September 19th, aged 81. He was born on October 7th 1843, the son of Morris Salaman of Dublin and educated at Trinity College Dublin where he graduated as B.A. in 1865 as M.B. and Ch.B. in 1866 and as M.D. in 1869. Entering the Indian Medical Service as assistant surgeon on April 1st 1869, he became brigade surgeon lieutenant-colonel on April 16th 1895, and retired on March 31st 1895.

Brigade Surgeon Richard Hamilton Batty Bombay Medical Service (ret.) died at Newham on September 1st, aged 84. He was born in July 1841 at Leeds the son of the late Arthur H. Batty of Rogerstown House, Ardee, Ireland. After taking the L.R.C.S.I. in 1863 and the L.S.A. in 1866, he entered the Indian Medical Service as assistant surgeon on April 1st 1867 and became surgeon-major after twelve years' service retiring with a step of honorary rank on June 24th 1887. He served in the Abyssinian war in 1867-68 (medal) in Afghanistan in 1878-80 (medal) and in Burma in 1886-87 (medal with clasp).

Medical News.

THE Schorstein Memorial Lecture will be delivered in the Anatomical Theatre of the London Hospital by Sir Humphry Rolleston, Bart., F.R.C.P., on Friday, December 4th, at 4.15 p.m., the subject selected is lymphadenoma. Members of the medical profession are cordially invited.

PROFESSOR L. P. CANNICATT will deliver Chadwick Public Lectures at Reading on October 30th and 31st, his subject being the nature and composition of food and its relation to the energy needs of the body. Dr. William J. Howarth will lecture for the Chadwick Trust in London on October 30th and November 6th on the control of the food supply. The remaining Chadwick Lectures in London deal with insects in relation to public health, by Sir Wilfred Beveridge, at the Royal Society of Medicine on November 18th; sanitary provisions of the new Public Health Act, 1925, by Mr. Alexander Macdonald, K.C., at the Royal Institute of British Architects, on November 26th, and encephalitis lethargica in England, by Dr. A. S. McNalty, at the Royal Society of Medicine, on December 9th.

At the meeting of the Medical Officers of Schools Association to be held at 11 Chandos Street, London, W.1, on Friday, November 6th, at 4.45 p.m., Dr. A. I. Simey will read a paper on the prophylaxis of the common cold and febrile catarrhs.

As already announced, the annual dinner of Fellows and Members of Sections of the Royal Society of Medicine will be held on Thursday, November 19th, at 8 p.m., at the Hotel Victoria, Northumberland Avenue. The Right Hon. Neville Chamberlain, Minister of Health, will be present, and during the evening the Jenner medal will be presented to Dr. S. Monckton Copeman, F.R.S.

THE annual dinner of the Cambridge Graduates' Club of St. Bartholomew's Hospital will take place on Tuesday, November 24th, at 7.30 p.m., in the King Edward VII Rooms, Hotel Victoria, with Mr. L. B. Rawling (Cams) in the chair. The price of the dinner is 12s. 6d., the honorary secretaries are Dr. H. N. Burroughes and Mr. Reginald M. Vick.

THE West Riding Association of Graduates of the Edinburgh University will hold its annual dinner at the Great Northern Hotel, Leeds, on Wednesday, November 18th, at 7.15 p.m. Mr. Alexander Miles will be the guest of the association. The dinner will be preceded by a general meeting at 6.30. Any graduate desiring information is asked to apply to the Honorary Secretary, 35, Manor Row, Bradford.

Two post graduate courses were arranged during September by the Joint Tuberculosis Council in consultation with the Ministry of Health. A course of two weeks in the pathology and bacteriology of tuberculosis was held by Dr. Roodbousio Glyone, at the City of London Hospital for Diseases of the Heart and Lungs, and another course in non-pulmonary tuberculosis, lasting one week, included demonstrations at various hospitals. The courses were well attended, and the council intends to arrange post graduate courses in 1926, the syllabus of which will be issued in January.

THE programme of lectures and discussions to be held during the coming session of the Child Study Society of London has now been received. Among the papers to be read are one by Mr. Maudslayi Yearsley, F.R.C.S., on "The development of speech in the normal child," on November 12th, and another on "The teaching of shorthand as part of a general education," by Dr. R. Langdon Down, on December 10th. Ordinary meetings are held at the Royal Sanitary Institute, 90 Buckingham Palace Road, S.W., at 6 p.m. On January 4th, 1926, a conference of educational associations will be held at University College Gower Street, at 5 p.m.

THE Fellowship of Medicine announces that Dr. Campbell McClure will lecture for it on November 2nd, at 5.30 p.m., in the lecture hall of the Medical Society of London, on the climatic treatment of tuberculosis, all members of the medical profession will be welcome. Throughout November the London Local Hospital will hold a course in venereal disease if there is a sufficient entry. There will be a three weeks course in gynaecology at the Chelsea Hospital for Women from November 2nd to 21st, and from November 3rd to 23rd Dr. Porter Phillips and Dr. T. Beaton will give twice weekly lecture demonstrations on psychological medicine at the Bethlem Hospital. At the Victoria Park Hospital a course will be held in diseases of the chest from November 9th to 21st. From November 23rd to December 12th the Royal Waterloo Hospital will hold a course in the diseases of women and children. A late afternoon course (4.30 to 6) will be held at the London Temperance Hospital from November 23rd to December 4th for the benefit of general practitioners. Copies of each syllabus of these courses and of the general programme may be obtained from the Secretary, 1, Wimpole Street, W.1.

THE Royal Society of Arts begins its 172nd session on Wednesday, November 4th, at 8.30 p.m., when Sir Thomas H. Holland, K.C.S.I., K.C.I.E., F.R.S., chairman of the council, will give an inaugural address on the organization of scientific research throughout the Empire.

THE Chelsea Clinical Society held its annual dinner on October 20th, when the president, Dr. Seymour Price, who was in the chair, was supported by the presidents of the Medical Society of London, the Hygienic Society, the West London Medical-Chirurgical Society, and the Master of the Society of Apothecaries, Sir Holburt Waring, president of the Medical Society of London proposing the toast of "The Chelsea Clinical Society," referred briefly to its long history and its great present value. He urged the necessity of medical practitioners taking more interest in municipal affairs as well as in legislation. More medical members of the House of Commons were required because health should receive greater attention in the future than had been the case previously. Dr. Seymour Price, in reply, announced that future meetings of the society would be held in the board room of St. George's Hospital and two of the meetings would each be preceded by a dinner. The subjects to be dealt with during the coming year included treatment by insulin, deep x-ray and radium, heliotherapy, spas, endocrine extracts, and the treatment of late syphilis. Mr. Ivor Back proposed the health of "The Visitors in a witty speech, and Dr. T. Vincent Dickinson, Master of the Society of Apothecaries, in his reply alluded to the quarrels at the end of the seventeenth century between his society and the Royal College of Physicians with regard to the dispensing of prescriptions, which were brought to an end by the Apothecaries Act of 1815. The toast of "The President" was proposed by the treasurer, Dr. K. L. Eckenstein.

DR. FRANCIS HARE has resigned the office of medical superintendent of the Beckenham branch of the Norwood Sanatorium for the Treatment of Inebriety and Drug Addiction owing to ill health. His place at the Mansion, Beckenham Park will be taken by Dr. A. W. George, who has been acting as assistant at Roudlesham Hall, the Suffolk branch of the sanatorium, patients receive similar treatment, and have the advantages of a park of 450 acres.

THE library of the Royal Society of Medicine will, on and after November 3rd, be open on two evenings of the week (Tuesdays and Fridays) until 10 p.m.

A CONFERENCE on social insurance in its national and international aspects is to be held under the auspices of the League of Nations Union from November 23rd to 26th at the London School of Economics. The following aspects of the problem will be discussed: the Government pensions scheme, the unification of social insurance, health insurance, workmen's compensation and accident prevention, unemployment insurance, family insurance, and the international aspects of social insurance. Further particulars can be obtained from the Secretary, League of Nations Union, 15, Grosvenor Crescent, S.W.1.

A CONGRESS of odontology will be held from November 24th to 30th in Moscow, and both medical practitioners and dentists are invited. Further particulars may be obtained from the organizing bureau, Narkomsdrav, Zubchist, Moscow.

A COURSE in pulmonary radiology with practical demonstrations will be held at Leysin from November 3rd to 7th, under the direction of Dr. Jaquerod and M. Lauffenburger, radiologist to the climatic station of Leysin. Further information can be obtained from M. Lucien Emery, Grand Hotel, Leysin.

A STUDENTSHIP in cancer research, on either the physiological or the chemical side, has been founded at the University of London by Miss L. S. Gibbs in memory of her mother. It will be called the Laura de Schiceto Studentship and will be of the annual value of £150.

THE recent Esperanto Congress at Geneva included a medical section which was well attended by medical practitioners from various countries. It was decided to found an international medical journal under the editorship of Professor Vanverts of Lille.

DR. PIERRE NOLF, professor at the University of Liège, has succeeded the late Dr. Depage as president of the Belgian Red Cross.

A CHAIR of otorhinolaryngology has been founded at the Toulouse Faculty of Medicine, with Dr. Escart as its first occupant.

THE nineteenth international post graduate course at Vienna, from November 23rd to December 6th, will deal with syphilis and dermatology, with special reference to treatment. It will be followed by a practical course in internal medicine, lasting for twelve days, from December 7th. Tickets for the course may be obtained from Professor Richard Wasicky, Bureau der Wiener Aerztekurse, Schlüsselgasse 22, Wien VIII.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

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QUERIES AND ANSWERS

COCKROACHES

THE medical superintendent of a country hospital asks how to rid the building of cockroaches by which it is at present overrun.

MUCOUS STOOLS

"L G" (London) asks for suggestions for treatment of the following case. For many years the stools have been moist and semi solid but are sometimes fluid. They usually contain much mucus and are very sticky, there is no putrefactive smell. The patient is receiving a mixed diet including both brown and white bread. Previous treatments include enemas both simple and containing a bismuth suspension, intestinal disinfectants, bismuth and tannic acid preparations by the month, also paraffin and agar preparations and tincture of opium. The opium given in 5 minim doses by the month, is effective, but leads to constipation.

INCOME TAX

Cash Basis

"T H A" has been told that he is liable not merely on the cash receipt basis, but on his profits calculated from cash receipts plus increase in book debts during the year plus one tenth of the total debts outstanding at the commencement of the year.

As we have agreed before, the cash basis is not strictly correct year by year though it works out satisfactorily in the long run and in view of its obvious convenience inspectors seldom raise any objection to it unless there are abnormal circumstances in the practice which render it inequitable. Assuming that it must be discarded in the present case we have two comments to make on the inspector's basis. (1) The ascertainment of the value of book debts is often a difficult matter, and for the purpose regard should be had to the proportion of debts recovered in previous years. (2) We do not agree that past debts should be brought into assessment, tax was paid as for the years in which those debts became due on the assessments made on the usual basis and there appears to be no reason to think that those assessments were incorrect. The inspector cannot have it both ways if the correct basis of receipt be the value of book debts for the year he cannot claim to include therein receipts for earlier years.

Depreciation of Car Basis of Allowance

"W M H" bought a car in 1921 and is claiming a depreciation allowance for the year 1925-26. The inspector of taxes informs him that the allowance must be calculated on the value of the car as written down by the application of the percentage—which in fact was not allowed—for the period to December 31st 1924.

This is strictly correct but "W M H" should bear in mind that when the cost of renewing the car is incurred the expense of replacement—excluding any element for improvement—less the allowances actually made, can be claimed as a professional expense.

Cost of Is:tant

"C G R" last April took an assistant to live in and is informed that no claim to deduct that expense can yet be made. He asks whether this is correct.

Yes. The expense differs only in degree from any other expense of conducting a practice and is deductible not from the average profits of the past three years but in arriving at the

respective profits of those years. As "C G R" says it may work out unfairly sometimes, but of course that observation applies generally to the system of the three years' average though sometimes it works the other way—as, for instance, when receipts are expanding.

LETTERS NOTES ETC

THE Editor of the *Medical Who's Who* asks us to request all practitioners who have not done so to return their forms with particulars immediately to 8, Stone Buildings, Lincoln's Inn.

A BATH CHAIR is needed for the epileptic daughter of a medical man. Offers should be addressed to the Secretary of the Royal Medical Benevolent Fund, 11 Chandos Street, Cavendish Square, W 1 who states that the case is deserving.

BLACK TONGUE

"T G" (London) writes in answer to Dr Morrison's inquiry about black tongue (October 10th p 678) referring him to a note in the *JOURNAL* of May 3rd 1924 (p 833) where attention was drawn to a section in *Diseases of the Tongue* by Butler and Spence (1900 p 145). The treatment there recommended was to assure the patient that this condition was a mere curiosity and that if active measures were deemed necessary, then painting the tongue with a 2 per cent solution of salicylic acid might be tried, or rubbing in a solution of carbolic acid diluted 1 in 67 with a soft piece of rag, three or four times a day. Lactic acid is also said to be useful.

RAW PANCREAS IN DIABETES

DR BIRKMORE (Chesh) p HAY, Staffordshire writes with reference to the therapeutic value of raw pancreas by the mouth in diabetes mellitus to warn prescribers that some, or most butchers supply the thymus if asked for sweetbread. On consulting *Catell's Dictionary* Dr Birkmore found that the sweetbread was defined as thymus gland or pancreas.

"We are under the impression that this possible source of error has been mentioned before and there is we think, evidence in the letters and notes published that those practitioners who prescribed raw pancreas took care that this gland was supplied and not the thymus."

A LARGE RENAL CALCULUS

DR W A YOUNG, Director, Gold Coast Medical Research Institute (Accra) writes. A native patient was brought into the Gold Coast Hospital, Accra, in a comatose condition, and died shortly after admission.

Post mortem examination revealed that both kidneys were enlarged and lobulated. Incision showed a thin layer of lumen tissue, varying from a quarter to half an inch in thickness, surrounding pus. The ureters were on an average half to three quarters of an inch in diameter and their wall very thin. The bladder was contracted over a hard mass a mixed phosphatic calculus. The bladder wall was just under half an inch in thickness. The weight and dimensions of the calculus were as follows:

Weight	4 oz 265 grains or 131 grams
Length	6.3 cm or 2.45 inches
Breadth	5.6 cm or 2.2 inches
Thickness	4.4 cm or 1.75 inches
Volume	73.9 cc
Circumference	18.9 cm or 7.4 inches

This is certainly a large calculus and it is doubtful if one so large has been reported from the West Coast of Africa before. Jeffrey and Maxwell in *Diseases of China* report one case where the calculus weighed just over 5 ounces (151 grams). The amazing thing, however, was that the man survived so long on such a small amount of renal tissue. It is difficult to say what the origin of the calculus was. There were no signs of schistosomiasis.

In the Museum of the Royal College of Surgeons of England three of the largest calculi are:

(1) A calculus composed of mixed phosphates, weighing 44 ounces (tray weight) which was removed after the death of the patient Sir James Dule published an account of it in the *Transactions of the Royal Society* 1809 p 303.

(2) A calculus of similar composition weighing 34½ ounces removed during life by Mr H M N Milton at the Kasr el Aini Hospital, Cairo from an Egyptian, aged 60. This was described in the *Lancet* 1893, vol 11, p 687.

(3) A calculus weighing 31½ ounces and composed of urates with a phosphatic encrustation. This was also removed during life from an Egyptian at the Kasr el Aini Hospital, and was presented by Dr Owen Richards in 1909.

Among large calculi reported in the literature is one of 22 ounces described by Captain H Smith, I M S, *Indian Medical Gazette* January 1901, p 15.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 35, 36, 37, 40 and 41 of our advertisement columns and advertisements as to partnerships, assistantships and locumtenencies at pages 38 and 39.

A short summary of vacant posts notified in the advertisement columns appears in the Supplement at pages 149 and 160.

ON FAITH IN LIGATURES

THE WILLIAM MITCHELL BANKS MEMORIAL LECTURE,
DELIVERED AT LIVERPOOL ON NOVEMBER 5THBY
SIR JOHN BLAND-SUTTON, Bt.,
PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

A WONDERFUL thing in a wonderful world is the healing of wounds. For centuries men troubled themselves very little about what seemed a simple and natural process. The spontaneous healing of simple incised wounds is so common that surgeons were not much concerned with the means by which wounds healed, but were grievously disturbed when wounds they made designedly took more time to heal than those made accidentally. This sort of thing perplexed them.

A mower fell upon a scythe and laid his knee joint freely open. He went to a surgery for treatment. In three weeks the wound healed and he was able to move again. On the same day that the mower cut his knee a swineherd received a punctured wound of the knee joint from the tusk of a boar. He was treated by the same surgeon and in the same time. He died in a few days from acute pyaemia.

Thoughtful surgeons devoted much time and study to discover the manner in which wounds healed. The arrest of bleeding was a source of anxiety. Festerings, the usual sequence of an operation, was not only expected, but its occurrence was promoted by the application of poultices. In England and many parts of the world, civilized as well as uncivilized, a particular virtue attached to cow-dung. I have seen festerings in a woman's breast, a whitlow in a man's finger, and an abscess in a horse's foot, treated with cow-dung poultices. The Mahratta then cattle after the operation a woman smears the back of the breast with cow-dung for luck! In India cow-dung is as much valued for poultices as for fuel, with the additional advantage that the sanctity of the cow adds prestige to the cataplasm. Until the middle of the nineteenth century the surgical treatment of mankind was little better than that in vogue for horses, cattle, cats, and dogs.

Threads of Fate. Ligatures and Sutures

The prime occupation of a surgeon is the treatment of wounds made by accident, or by the surgeon himself in the course of his occupation. The most obvious sign of a wound is bleeding. Surgeons are concerned with the arrest of bleeding and closure of wounds with sutures. The strict apposition of divided tissues promotes healing. The first aim in the treatment of a wound is to stop bleeding. Then to free the wound from foreign bodies. The oozing of blood may be checked by the application of pressure, moderate heat, or styptics. When Machaon, a famous surgeon in the Trojan war, was wounded in the shoulder by an arrow shot by Paris there was much consternation among the Grecian commanders,

And great Machaon wounded in his tent
Now waits that succour which so oft he lent
Patroclus went to his assistance, he removed the arrow-head, washed the wound, infused a styptic, and closed the wound to stop the bleeding. No modern surgeon could do more. In consequence,
The closing flesh that instant ceased to glow,
The wound to torture and the blood to flow.

When blood vessels above the dimensions of capillaries are divided, partially or completely, pressure and styptics are not reliable methods. It is necessary to tie the ends of the divided vessels. The material used for such a purpose is called a ligature. It is a foreign body, and unless properly cleaned is inimical to the union of the wound. The material employed to close a wound is called a stitch, or suture.

In the surgical treatment of incised wounds the methods and material used by surgeons are those of cobblers and tailors—sewing with thread and needle. Tailors and cobblers cut cloth and pelts into suitable shapes and rejoin them with thread and needle to make clothes. Surgeons cut or torn by accident or design. There is no material used by tailor or cobbler which has not been of service to surgeons for stitching wounds.

Plants, insects, and animals have been ransacked for suture material. The long tendons of the limbs and tails of mammals and legs of birds have been used from time immemorial for sewing pelts to be worn as clothes and for stitching wounds. Sewing is an ancient art. The tailor-bird with its bill spins a thread and sews the edges of adjacent leaves together and makes a recess for its nest (Fig 1). This little bird may have taught Adam and Eve the art of sewing "bird smooth leaves together" in order to hide their nakedness. Spiders may have taught our first parents the art of spinning. Indeed, the tribes in West Africa attribute the discovery of weaving to a great hunter who watched a spider making a web for catching flies. They regard the white man as a great spider because he supplies spinnings of cotton (Major Kingsley).

Primitive man makes holes for his threads with a thorn or a sharp fish-bone. When he obtained metal he fashioned an awl, and by making a link near the tip of the awl he invented a needle. Papuans make awl needles out of sharp fish bones, and with strands of fibre they continue to sew pieces of bark cloth very neatly together. It is by no means improbable that tendon was the first sewing material used by primitive man for closing wounds.

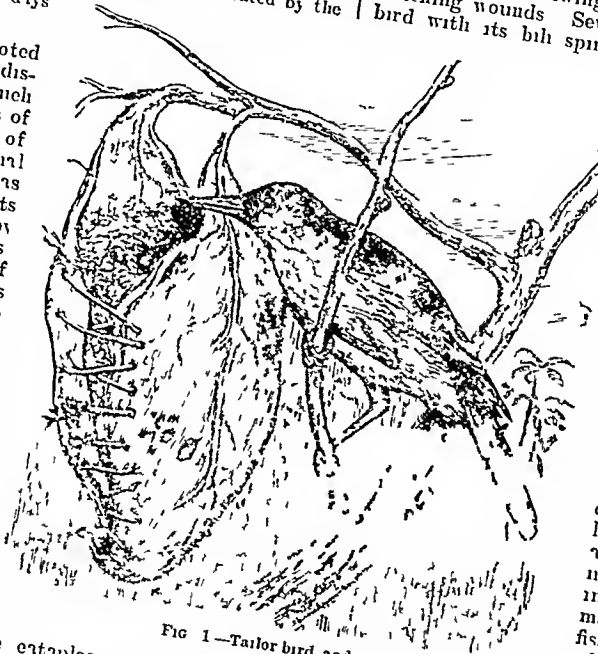


Fig 1—Tailor bird and nest

improbable that tendon was the first sewing material used by primitive man for closing wounds.

The Mandibles of Ants as Clips for Wounds

In regions of the world as far apart as India, Brazil and Asia Minor the mandibles of ants have been used from remote times as clips for securing the edges of wounds. Middleton describes the method of using them in Smyrna. The edges of the wound are pressed together and the ant applied by means of forceps. The ant separates its mandibles widely for defence and as the insect is brought to the wound it seizes the edges and remains fixed. The body of the ant is divided with scissors leaving the mandibles grasping the edges of the wound. In a week the wound is healed and the heads of the ants are removed. A wound rather more than an inch in length requires ten of these insects. The mandibles are antiseptic in virtue of formic acid normally present in ants.

Martin Duncan was collecting near Para in 1900. One of the Indians cut himself. Duncan went to the camp for thread and needle to stitch the wound, on returning he found that the Indian had closed the wound neatly and securely with the mandibles of worker-ants (Fig 2).

In Brazil ants are common and more easily obtained than thread and needles. Gudgeon, in a recent article on the subject, shows that this method of fastening wounds

of the skin and intestine was prevalent on the southern and eastern shores of the Mediterranean Sea in 1896. The practice can be traced back three thousand years. A modern modification of this device for holding the skin edges of a wound together is known as Michel's clips.

For many years surgeons have been seeking a reliable material for stitching wounds. Great difficulty besets this apparently trivial matter. In 1804 surgeons in Europe had evolved fifty methods for closing an incision of the abdominal wall. The variations consisted in the number of layers separately united, and the variety of material used for sutures—catgut, tendon, silk, silkworm gut, horsehair, and linen thread, wire—iron, copper, silver, gold, and aluminium. Some ninety and-nine chemical enforcements were recommended to sterilize the suture material. Experience teaches that surgeons have not yet found a perfect material for ligatures and sutures.

No material should be employed that cannot be sterilized by heat without destroying its efficiency.

Catgut prepared from the small intestine of sheep is, with many surgeons, a favourite material for ligatures and sutures. Its popularity is mainly due to the advocacy of Lord Lister. Catgut is a treacherous material, difficult to sterilize, and if thoroughly tanned to ensure freedom from micro-organisms it is as resistant as string. For closing the muscular and fascial layers of an abdominal incision it is especially dangerous. Many cases of wound-burst, post-operative peritonitis, tetanus, and gas gangrene have been reported from its use. The most reliable material for surgical use is silk. It can be obtained of any desirable fineness, even for sewing up wounds of blood vessels. Above all things it can be sterilized by boiling without diminishing its strength. The latest addition to the list of suture material, for special use, is human fascia cut in strips from the patient's own body. We owe this ingenious measure to the skill of W. E. Gallie.

The Fate of Ligatures

The fate of ligatures introduced into the human body in the course of a surgical operation is a matter of great importance to patients and surgeons. In pre-antiseptic days surgeons attributed the sloughing of ligatures to intolerance of living tissues for foreign bodies. In pre-Listerian days it was the practice, in applying a ligature to the end of a divided blood vessel to leave the ends of the thread hanging freely from the wound. Some days after amputation, if the thread failed to separate, we tugged it gently, this interference was often followed by bleeding which not infrequently led to the death of the patient. The standstill of surgery for many centuries was due to the inability of surgeons to appreciate the cause of this difficulty. Lister gave early attention to ligature material, and soon proved that clean ligatures were tolerated by living tissues, but he was much exercised in the choice of material and chose catgut. In a sterile wound a sterile ligature is tolerated indefinitely, it may be encysted by tissues, or disintegrated by leucocytes or wandering cells, and disappear. If septic organisms obtain access to it, local sepsis follows, an abscess is the consequence. The ligature separates and may swim in pus.

The fate of a ligature depends on its situation. Like for example ligatures applied to the pedicle of an ovarian cyst. The thread which embraces the stump of the tube slowly erodes the wall, enters the lumen of the stump, and, being impelled into the uterine cavity, is finally expelled, leaving the free end of the tube neatly sealed and rounded (Fig. 3). It is not uncommon after a simple ovariectomy

for the patient to complain, sometimes for many weeks, of vague pains in the neighbourhood of the pedicle. Careful study of these stumps in recurrent operations teaches that the piece of silk on the arteries and veins of the pedicle may become encysted, and in the course of years disintegrated. Frequently the pedicle adheres to the intestine—ileum, colon, rectum, caecum, or appendix. When the patient escapes intestinal obstruction the loops of thread

are discharged into the bowel and escape. I have witnessed a ligature of this kind travelling along the vermiform appendix to the caecum. Ligatures of many kinds used in operations on the pelvic viscera erode their way into the bladder. A thread of any kind may form the nucleus of a calculus. Urologists tell us that festoons formed by ligatures of this kind are attractive features in cystoscopic demonstrations. I have recovered a loop of silk, unchanged under the serious covering of the caecum, nineteen years after removal of the appendix. Tedious convalescence attended with obscure pains after pelvic operations is due to the discomforts set up by ligatures sealing the nucleus of escape through the walls of hollow viscera. After nephrectomy a ligature on a ureter will erode this duct, be propelled into the bladder, and produce the clinical signs of a migratory renal calculus. The fate of ligatures and sutures used in operations on the

intestines is instructive. When two segments of intestine are rejoined, the divided ends are sutured in layers—mucous membrane and muscle to mucous membrane and muscle. The serous coats are also carefully sutured to each other. An exudation of lymph solder the serous coats with amazing quickness, and the lymph organizes into reparative tissue—if the opposed parts and the ligatures are sterile. The mucous and muscular coats do not unite so quickly, and the sutures slowly slough into the lumen of the gut, where they sometimes hang as loops for many weeks or months.

If it were not for the rapid union of the serous surfaces of the gut, intestinal junctions made by surgeons would rarely be successful, because septic infection from the interior of the bowel prevents immediate union of the mucous and muscular coats. Leakage of the bowel contents into the peritoneal cavity leads to failure and often to fatal peritonitis.

Some of the routes used by ligatures are almost fabulous. One of the most remarkable I found in an American journal. A patient had the spleen removed, and the operation was followed by a left-sided empyema. Some weeks later blood and pus escaped through the trachea. Finally the patient spat up a complicated ligature. This was followed by recovery.

The common route of escape for ligatures is through the operation wound.

The importance of reliable ligatures, reliable in tenacity and in cleanliness, may be expressed in this way:

The hangman's frame — it hangs on a strong rope.
The surgeon's frame — it hangs on a thin thread,
A rotten rope — it is the culprit's hope,
A slipping thread — it is the surgeon's dread.
Py loose knots and ligatures which are soiled
Surgical operations are oft foiled.

Nature's Method

Already I have said the healing of wounds is a wonderful process. To day surgery deals with injured and diseased organs, even the heart and main blood vessels, with astonishing results. The coarseness of surgical methods is obvious when compared with the exquisite union seen in the natural fusions of tissues which occur in natural life.

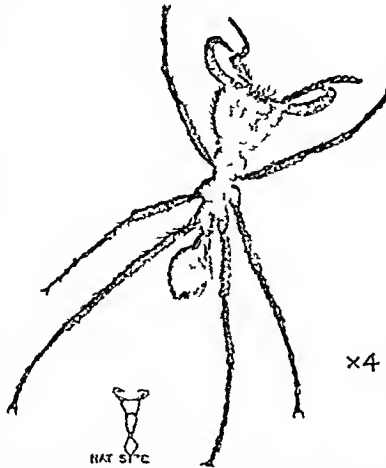


Fig. 2—Worker ant showing the mandible widely open (from a photograph by Martin Duncan)

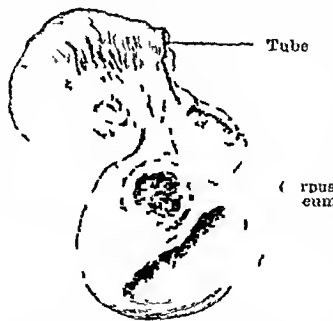


Fig. 3—Stump of a Fallopiian tube

In a healthy mother the foetus is developed under perfect aseptic conditions

How wonderful are the exquisite mouldings, fusions, and unions, partial or complete, of the various tubular organs which make up the circulatory system and the alimentary canal. Embryology resembles plastic art; organs are moulded, formed, and re-formed with the same facility as the potter moulds plastic clay. The union of wounds is only an extension of the same process. Nature, in making an animal, does not always succeed in obtaining complete union of the nose, eyelids, cheeks, lips, or abdominal wall. Noses are occasionally double (Fig 4) and bifid (Fig 5) in boys and girls as well as dogs, and oftener. The potter casts aside his pieces in disdain if faulty in outline, crooked in spout, or asymmetrical. Unlike the potter, Nature does not always cast aside the pots she makes in making. Few human beings are as strictly symmetrical as cups and jugs. Surgeons take pride in mending hare-lips, cleft palates, or trimming redundant pieces, removing supernumerary digits and limbs. Even with extreme care in technical detail union of wounds promoted by art is never so neat as pre-natal union of parts, and always leaves a detectable scar at the site of the union. The cleverest tailor or furrier cannot join cloth to cloth or pelt to pelt without leaving a seam. A deft surgeon cannot sew up a wound in the skin without leaving a tell-tale scar. Nature cannot completely close the abdomen after birth without leaving a seam; the omphalos serves as a sign of her incompetency in this matter.

Why, in pre-natal life does union of parts take place so perfectly, and after birth the union of a wound is permanently indicated by a tell-tale scar? It is due to sepsis and disrespect for tissue. The first wound is caused by the sloughing of the stump of the umbilical cord, the navel is the most conspicuous scar in the human body, and the degree of its conspicuousness depends on the degree of sepsis. Before the importance of strict cleanliness was appreciated by doctors and midwives, the simple and universal operation of applying a thread tightly round the navel-string was followed by an appalling mortality. This simple ligature is truly a thread of fate.

Gloves

The wearing of sterilized rubber gloves when operating is the greatest improvement in surgery since Lister discovered the cause of sepsis. It is not only an insurance against infection, but promotes careful handling of living tissues, which are delicate and resentful, especially viscera. Gloves also protect the surgeon against infection from the patient. The human element predominates in



FIG 5—Bifid nose

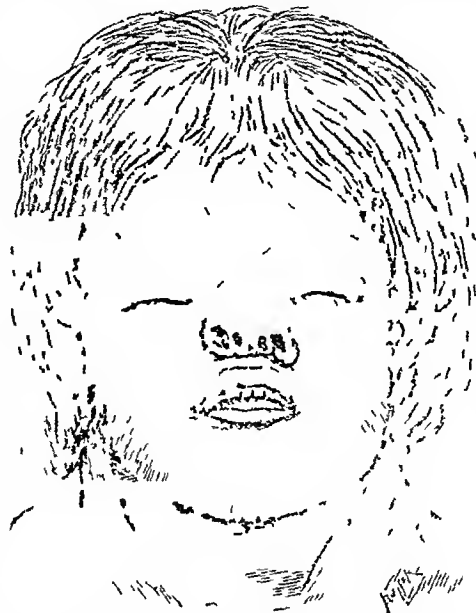


FIG 4—Girl, aged 3, with a double nose (Souttar)

energy—sharp clean needles of sizes to suit the job, thread of proper fineness and strength, knots tied accurately and neatly. Intestinal, uterine, and cardiac sutures—the latest additions to our craft made possible by Listerian principles—require delicacy, skill, and accuracy for success. The junctions must not only be water tight, but gas tight, immediate union, the essential for success, can only be ensured by a strict aseptic technique.

A simple method of tying the uterine arteries, instead of constructing the neck of the uterus with ligatures, was introduced by Briet of Philadelphia in 1892. This simple method transformed hysterectomy for fibroids from one of the most dangerous operations in surgery to one of the safest.

In surgery, clumsiness with aseptic precautions often ends in success, leaving dexterity associated with laxity in the application of Lister's principles grievously disappointed. Dexterity associated with asepsis invariably wins. The great advance in abdominal surgery since 1880 is a consequence of the improvements in the preparation and choice of ligature and suture material. The method of tying divided blood vessels was introduced by Paire in the sixteenth century, but the dangers of dirty ligatures were not realized until the middle of the nineteenth century. Knowledge of the fate of ligatures was much advanced when Metchnikoff discovered the defensive mechanism of the cell elements of the blood. Surgeons still require a reliable ligature.

Manual dexterity in any trade can only be acquired by much practice. Skill is necessary even in the application of a ligature or a suture, but especially the ligature.

Knots and Digital Clumsiness

In surgery, as in all arts and crafts, the human element has to be taken into account. To watch a woman sewing neatly, quickly threading the needle, tying knots securely and surely, has a fascination all its own. The same is true of tailors, cobblers, and sailors: needles and awls suited to the job, the needles passed in and out at regular intervals, apparently without effort, makes sewing seem simple. A surgeon rarely sews with the same simplicity as a sewing-maid. He does not tie knots with the same certainty as sailors. Many surgeons fumble over knots, yet it is a matter of importance. A slipping ligature or a slack suture has on many occasions led to death. To insert sutures regularly and tie them sufficiently tight to prevent them slipping, and not so tight as to strangle the included tissue, requires much practice. I have watched surgeons critically for many years, and have seen some who rarely tie a knot satisfactorily.

Digital clumsiness is as much a defect as colour blindness, but more obvious.

The evil consequences of loose knots are outdone by the malevolent influence of dirty ligatures and sutures. It is common observation to watch children on their way to school stopping and stooping to fasten a loose shoe-string. Post-operative haemorrhage due to a loose knot is a common



FIG 6—A loose shoe string

surgery as in all affairs of life. The tolerance of animal bodies to physical insults is remarkable. If it were otherwise surgery could not be successful. One man will sew up a wound with coarse thread and needle as if he were sewing sailcloth or sackcloth. It is delightful to watch a dexterous surgeon sew together the edges of an incised wound with a minimum of

event familiar to every house-surgeon, hence the surgeon's lament

My fingers ache with tying many knots
On exting tendon, silk and linen threads,
And examining patients in their coats
Or stitching wounds in faces, limbs and heads
A shipping ligature might disgrace me
Filling a recent wound with ugly clot
And filling my mind with anything but glee,
By bringing the patient to a state of shock
Perchance I might commit felo de se,
Even be drawn into a court of law
And rather than count failure don't you see
It would be wise to close the surgery door
For many patients in these busy days
Though glad to be healed are too shy to praise

Faith in Dressings

The last appanage of an operation which surgeons will discard is dressings. It is a curious tradition that wounds require dressings and bandages. In civilized life it has become a cult to supply, roll, and apply bandages to wounded friends or foes. In uncivilized countries bandages are ill understood. Papuan surgeons, when assisting explorers, cut themselves with European axes and knives before they learnt the sharpness of such tools. Their wounds healed quickly with ordinary clean methods, although the Papuans took off the bandages and used them for personal adornment (Wollaston).

In our domestic life it is usual to apply a linen rag, the softer the better, to a cut, its cleanliness was secondary to its softness. The carpenter, when he cuts himself at work, takes a thin shaving of wood, dips it in warm glue, and seals the wound. The carver and gilder in similar circumstances applies a strip of gold-beater's skin, this is made from the caecum of the ox. The farm labourer applies a plug of chewed tobacco to check bleeding, sometimes a cobweb. Primitive man binds up his wounds with leaves, blades of grass, or bast. Surgeons formerly used adhesive plaster. When bacteriology entered the swarms of disease-provoking germs in the surrounding human habitations surgeons turned then with to devise means for excluding them from wounds. This idea loomed in their minds. Motes dancing in the air are dear to poets but inimical to successful surgery. Lister endeavoured to render air in the vicinity of the operating area germ-free by impregnating it with chemical vapour. The skin area concerned in the operation was treated with an antiseptic to make it germ-free. After the operation it was swathed in expensive, clumsy, and uncomfortable dressings and bandages. Antiseptics are powerless to destroy bacteria in living tissues. Realizing the discomforts of surgical dressings for wounds, and the inability of excluding air from operation wounds, I have for the last ten years abandoned dressings for dry wounds. By this I mean wounds where there is no leakage of blood, serum, saliva, cerebro spinal fluid, bile, urine, pus, or faeces.

Where drainage is unnecessary, dressings are unnecessary. Once daily the line of incision and the sutures are smeared lightly with tincture of iodine, or a similar antiseptic, and left exposed to air, or merely in contact with clean underclothes. The results are excellent—the wound heals rapidly, safely, and soundly with minimum discomfort and minimum expense.

It is important to keep bacteria out of a wound. Surgeons know that the methods employed in bacteriological rooms for sterilizing apparatus are ideal for the operating room—the application of heat by boiling or baking, all instruments, dabs, sutures, and ligatures are sterilized by heat. The hardest lesson came last. The most dangerous agents in the performance of an operation were the unseen hands of the surgeon and his assistants. An uncontrollable factor in an operation is the pre-existing sepsis in the patient. Pasteur's influence is not limited by the recognition of the microscopic agents of disease. His laboratory methods revolutionized surgical technique as well as those of the winepress, distillery, dairy, and sewage farm. In spite of all advances operative surgery remains a simple craft. It is impossible to estimate how much greater would have been the sum of human happiness if surgeons had appreciated the value of simple cleanliness in their operative work and in the simple matter of keeping clean their hands.

A lecture on modern surgical technique appropriately ends with a Listerian doxology. It is undeniable that the edifice of aseptic surgery rests on a solid foundation, it is a glorious inheritance and Lister's greatest monument.

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THE CHEMOTHERAPY OF LOCAL SUPPURATION ACRIFLAVINE AND BORIC ACID COMPARED

BY

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ATTEMPTS to assess the therapeutic value of an antiseptic in individual cases of pyogenic infections in the human subject seem seldom to yield conclusive results. There are, of course, two main reasons for this—first, the complication introduced by operative procedures, and secondly, the absence of an adequate control. As regards operative procedures, the treatment frequently involves incisions and excisions—that is, measures which are calculated usually to expedite the onset of the stage of healing, and which, therefore, obscure the effect to be ascribed to the antiseptic. Again, the fact that the same patient does not as a rule present simultaneously separate, but similar, lesions which are suited for treatment with different agents, robs the experiment of a necessary control. When such a control is lacking we are deprived of essential information as to how the individual is behaving at the time when exposed to pyogenic organisms, and therefore cannot exclude the possibility that the case would have followed a similar course under other treatment. It is the want of such controls which necessitates recourse to general comparisons, based on the experience gained from several large series of cases treated by different agents, when attempting to determine the value of a new therapeutic procedure. But satisfactory statistical evidence of this kind appears to be difficult to acquire, as may be judged from the conflicting conclusions which are reached by different observers. Accordingly, even in a single case, such as the following, which supplies this element of controlled observation, seems to be worth recording.

A woman aged 35, received an extensive burn from boiling fat on the back of the right hand and forearm. At three areas the burning was severe the whole depth of the epithelium being destroyed. Two of these areas were on the forearm, and measured respectively slightly over and under 1½ inches in diameter, the third was on the hand and had a slightly greater extent (1½ inches in diameter), but was the least severe as it was distinctly shallower than the other two. The whole burned part was to begin with, treated with moist dressings soaked in 1 in 1000 acriflavine solution applied first of all within about an hour after the injury had been received. This treatment was continued for two days, after this granulation tissue was present in the base of all three deep areas, there was no suppuration and the patient felt little discomfort. At this stage the treatment of the hand was changed, wet boric lint being employed the forearm continued to be treated with watery acriflavine solution but the strength was reduced to 1 in 5000. The dressings were renewed once daily. Two days later the lesions on the forearm showed healing in progress with ingrowth of epithelium at the margins and a small amount of serous exudate from the granulating surfaces*. In contrast to these the area on the back of the hand was painful epithelial ingrowth was wanting, and there was seropurulent discharge from the surface. Four days later at the parts treated with acriflavine healing was advancing and there was complete absence of sepsis now the area on the hand was extremely painful and was actively suppurating. Thereafter in the interest of the patient the use of boric acid was given up and the hand was like the arm treated with wet dressings of acriflavine 1 in 5000. Three days later the burned area on the hand had ceased to suppurate pain was gone and healing was in progress. After a further period of five days healing was complete in all the areas.

* Bennett, Blacklock and Browning have dealt with the process of healing under acriflavine treatment (BRITISH MEDICAL JOURNAL August 19th 1922)

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BATH, 1925

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Lady BARRITT, CBE, MD, MS, President

DISCUSSION ON
THE TREATMENT OF INOPERABLE CANCER OF
THE FEMALE PELVIC ORGANS

OPENING PAPERS

I—JAMES HEYMAN, MD,
Radium Hemmet, Stockholm

ONLY about ten years ago the treatment of an inoperable cancer of the female pelvic organs was a very unsatisfactory undertaking, and we had very limited possibilities of relieving the great sufferings of our patients by palliative means. Curetting and thermo cauterization, cauterization with zinc chloride, sulphuric acid, formalin, and so on, treatment by means of acetone, and the ligaturing of the vessels of the uterus, were the methods used in different combinations. It is not to be denied that some considerable palliative results were achieved by these methods, but the improvement of the symptoms was of short duration and a lasting benefit was very rare. Nor did these methods arouse any great interest, and most surgeons would seem to have taken up a purely negative attitude as regards the treatment of an inoperable uterine cancer. "Inoperable" in those days was synonymous with "incurable."

The radiological treatment of cancer has from its very first appearance attracted keen interest. Even if the very great expectations which this treatment at first aroused have not been realized, yet radiological treatment as a palliative method has so thoroughly taken the place of all others, that nowadays treatment of inoperable cancer of the female pelvic organs practically means radiological treatment. It seems to me probable that the Gynaecological Section of the British Medical Association has inserted in its programme for this congress the question of the treatment of inoperable cancer of the female pelvic organs with a view to its radiological treatment. I have accepted the invitation of your distinguished society to open this discussion in the belief that what would be likely to interest you is our actual experience at the Radium-Hemmet at Stockholm.

A thorough treatment of this subject ought, in my opinion, to include the different forms of uterine cancer, of cancer of the vagina, the urethra, the vulva, and the ovaries, and also cancer of the bladder and the rectum. The last two mentioned diseases are in Sweden more often treated by the general surgeon than by the gynaecologist. Partly owing to this fact, and also on account of my own insufficient experience of these two maladies, I have decided to leave them out. My description of the treatment of inoperable cancer of the uterus, the ovaries, the vagina, the urethra, and the vulva, is founded on the experience of patients suffering from these diseases which we have treated at the Radium Hemmet at Stockholm during the fifteen years of its existence. Before I give an account of our results I want to say a few words about the Radium-Hemmet and the work done there.

The Radium-Hemmet is a hospital especially established for radiological treatment. It was founded by the Swedish Cancer Research Society, and is partly supported by Government grants. It is conducted by Gösta Foissell, who introduced radiological treatment into Sweden, and who has been the leading spirit of the institution since its foundation. The Radium Hemmet receives all cases suitable for radiological treatment. There is a special department for gynaecological cases, and it is only about the work of this

department that I am going to speak. The gynaecological cases are almost without exception referred to us by surgeons or gynaecologists attached to other hospitals or gynaecological clinics.

Foissell has on repeated occasions stated that we should first of all obtain sufficient experience of radiological treatment in the inoperable cases and those localized cases in which an operation is contraindicated. The radiological treatment was to be extended to the operable cases only when the results justified such a procedure. Consequently, it is almost exclusively inoperable cases that are referred to the gynaecological department. Cancer of the cervix is an exception. When, about 1919-20, we presented our first report on five years' results of the radium treatment of carcinoma of the cervix, these results were considered such a strong argument in favour of radium treatment that the leading gynaecologists and surgeons of Sweden ceased operating for carcinoma of the cervix. Since that time we have to a great extent treated even operable carcinomas of the cervix. Thus, with the exception of the cases of cancer of the cervix admitted later than 1920, nearly all the cases referred to us had been considered inoperable by the surgeon who sent in the case.

When a case is received for treatment at the Radium-Hemmet it is at once registered and referred either to the inoperable or to the operable group of cases. Since the different cases are thus doubly controlled by their own medical attendant and by the surgeon in charge at the Radium-Hemmet, different opinions regarding the grouping of the cases are to a certain extent removed. A thorough and minutely organized control of the patients has made it possible for us not to lose sight of a single patient during all these years, thus we can report on 100 per cent of the cases treated. To a great extent this is due to the fact that the Swedish Government pays the travelling expenses of poor patients to and from the Radium Hemmet. In the following notes only those cases are described which have been primarily treated radiologically, recurrences after operation are not included.

I now pass to our results, and will begin with the biggest and without doubt most important group.

Cancer of the Cervix of the Uterus

When we speak of inoperable cases of cancer of the cervix we mean cases in which the glands, the bladder or the rectum will also be involved, or cases in which the tumour is fixed by involvement of the parametrium. Such inoperable cases, in which operation, though technically possible, is contraindicated by complications in other organs, are not included here. Altogether during the years 1914-22 inclusive we have treated 440 cases of inoperable cancer of the cervix, 234 of these cases, during the years 1914-19, have been under observation during at least five years. Here, in accordance with common practice, we can speak of a permanent cure in those cases which have been free from symptoms for at least five years.

Sometimes we notice the most wonderful results in the way of cure by means of the radiological treatment, even in inoperable and apparently hopeless cases of uterine cancer. But we must keep in our mind that in most cases we are only able to produce a palliative result by means of the radiological treatment—that is, the cessation of bleeding, of the discharge from the vagina, and of the pain, together with the recovery of the patient and her ability to work. This striking and important primary result has been often and thoroughly described in radiological literature. I shall not weary you with the repetition of known facts, instead of that I shall try, with the aid of figures, to give you some idea of the degree and the duration of the improvement of symptoms, based on 375 cases of inoperable cancer of the cervix, which have been treated at the Radium Hemmet during the years 1916-22 inclusive. In most of these cases we have detailed records of the improvement of the symptoms. In cases where for some reasons or other our records are incomplete with regard to the last months of the patient's life, I have taken for granted that the improvement of the symptoms had ceased when we last examined the patient. On account of this the numbers indicating the improvement of the symptoms are most probably to be considered too low.

The four following tables show the effect of the radium treatment on bleeding, on the vaginal discharge, on pains, and on the capacity to work, in 375 cases of inoperable cancer of the cervix, primarily treated with radium at the Radium-Hemmet, 1916-1922 inclusive

TABLE I—*Effect of the Radium Treatment on Bleeding*

	Cases	Per cent
Suffered from bleeding at commencement of treatment	342	
Became symptom free	308	90.1
For more than six months		61.7
For more than one year		35.4
For more than two years		23.4
Showed improvement	10	2.9
No improvement	24	7.0

TABLE II—*Effect of Radium Treatment on Vaginal Discharge*

	Cases	Per cent
Suffered from discharge at commencement of treatment	336	
Became symptom free	203	60.4
For more than six months		66.0
For more than one year		46.8
For more than two years		32.0
Showed improvement	82	24.4
For more than six months		20.7
No improvement	51	15.2

TABLE III—*Effect of Radium Treatment on Pains*

	Cases	Per cent
Suffered from pain at commencement of treatment	234	
Became symptom free	125	53.4
For more than six months		53.6
For more than one year		40.0
For more than two years		28.0
Showed improvement	44	18.8
For more than six months		25.0
No improvement	65	27.8

TABLE IV—*Effect of Radium Treatment on the Capacity to Work*

	Cases	Per cent
Became able to work	231	61.6
For more than six months		62.2
For more than one year		45.5
For more than two years		30.3
Remained unable to work	144	38.4

Thus in nearly all the cases bleeding has been stopped for longer or shorter periods. In nearly two-thirds of the cases the vaginal discharge has ceased, and in over 50 per cent the pain has disappeared. The freedom from symptoms has in more than one third of the cases lasted more than one year. The recovery of ability to work is perhaps the best indicator of the palliative results. Table IV shows that two thirds have regained strength to resume work, nearly one-half of these have remained able to work for more than one year, and one-third even for more than two years. It seems to be worth mentioning that only 38.4 per cent of 375 patients with inoperable cancer of the cervix have not temporarily regained strength to resume work, and among these a great number were from the beginning considered hopeless cases.

In certain cases freedom from symptoms has been gained both as regards the subjective and the objective symptoms. These cases are collected in Table V. The figures found

TABLE V—*Inoperable cases of carcinoma of the uterine cervix primarily treated with radium at the Radium Hemmet, 1914-1922 inclusive*

Of	Free from Symptoms after the Lapse of—									
	3 cent	Per cent	1 year	Per cent	2 Years	Per cent	3 Years	Per cent	4 Years	Per cent
440 cases 1914-22	190	43.2	118	26.8	89	20.2				
358 cases 1914-21						64	17.9			
291 cases 1914-20							47	16.5		
244 cases 1914-19								9	3.7	15.7

here indicating cases free from symptoms six months after the commencement of the treatment must be accepted with great reservation. At that time it is often impossible to decide whether small palpable changes depend on cancer or "reaction," and many of them must be considered uncertain. One year after treatment the conclusions are more

certain. We find that one-fourth of our 440 cases from 1914 to 1922 are free from symptoms after the lapse of one year, and one-fifth after the lapse of two years from the commencement of the treatment. In order to judge the result after three years, the cases from 1922 must be left out. This being done, 358 cases remain treated in 1914 to 1921 inclusive, of which 17.9 per cent are free from symptoms after three years.

We find that out of 234 cases from the years 1914 to 1919 39 cases have remained healed for five years or more—that is, 16.7 per cent of permanent cures in these inoperable cases. It is not a very high percentage of cases in which a permanent cure has been obtained, but we must remember that these cases would have been left as hopeless had not the radiological treatment been adopted. These cases of long-standing cure inspire us to fresh exertions in spite of all disappointment. Of our inoperable cases some have been cured for several years, as may be seen from the following list:

- 1 patient has been cured for 11 years and is still alive
- 4 have remained cured for 10 years, and are still alive
- 5 remained cured for 9 years. 3 are still alive, 1 died from diabetes and 1 from an unknown disease
- 4 remained cured for 8 years, and are still alive
- 5 remained cured for 7 years, 4 still live, 1 died from cancer
- 9 remained cured for 6 years. 7 still live, 2 died from cancer

Cancer of the Corpus Uteri

As mentioned above, I did not include in my report on carcinoma of the cervix those clinically inoperable but technically operable cases where it was not the extension of the growth itself which made the case inoperable but complications in other organs. In proportion to the great total number of cases of carcinoma of the cervix these cases are very few and may be left out of account. Regarding cancer of the corpus, we have another state of things. Among the comparatively few inoperable cases of carcinoma of the body these technically operable cases, which, on account of old age and pronounced adiposity, are clinically inoperable or not suitable for operation, form a rather considerable group. For this reason they ought to be dealt with.

At the Radium-Hemmet during the years 1915 to 1922 there have been treated 54 cases of inoperable and technically operable cases of cancer of the body of the uterus. Until 1915 no such cases came under treatment. Of these cases 29 were inoperable. Metastases were present in 10 of these—in 5 cases in the vagina only and in the other 5 in more distant parts. In the remaining 19 cases the surrounding tissues were infiltrated and the uterus fixed, 25 cases were technically operable. Contraindications to an operation were affections of the heart and the lungs, diabetes, old age, and a bad general condition (in 14 of the 25 cases), pronounced adiposity with or without other complications in 11 cases. The results of the treatment are given in Table VI.

TABLE VI—*Technically operable and inoperable cases of cancer of the body of the uterus primarily treated with radium at the Radium Hemmet 1915-1922 inclusive*

Of	Free from Symptoms after the Lapse of—									
	1 Year	Per cent	2 Years	Per cent	3 Years	Per cent	4 Years	Per cent	5 Years	Per cent
54 cases 1915-1922	75	64.8	70	55.6						
37 cases 1915-1921				22	59.5					
27 cases 1915-1920						16	59.3			
17 cases 1915-1919								10	58.7	

The table shows us that of the 17 cases which have been under observation for five years or more (58.7 per cent) remain free from symptoms after five years. But when it becomes possible to judge the five-year results of all the 54 cases, the percentage will be somewhat less. This is already evident for the two-year result for all the 54 cases, which shows 55.6 per cent of all the cases to be free from symptoms after two years.

TABLE VII—Inoperable cases of carcinoma of the body of the uterus primarily treated with radium at the Radium Hemmet, 1916-1922 inclusive

Of	Free from Symptoms after the Lapse of—						
	2 years	Per cent	3 years	Per cent	4 years	Per cent	5 years
29 cases 1916-1922	11	37.9					
21 cases 1916-1921			8	38.0			
11 cases 1916-1920					5	35.7	
9 cases 1916-1919							4

Of the inoperable cases of cancer of the corpus after five years 44.4 per cent were cured. Here, too, when it becomes possible to form a judgement on a larger material, our five-year results will most probably be nearer 30 per cent than 40 per cent.

TABLE VIII—Technically operable cases of carcinoma of the body of the uterus primarily treated with radium at the Radium Hemmet, 1916-1922 inclusive

Of	Free from Symptoms after the Lapse of—						
	2 years	Per cent	3 years	Per cent	4 years	Per cent	5 years
25 cases 1915-1922	19	76.0					
16 cases 1915-1921			14	87.5			
13 cases 1915-1920					11	84.6	
8 cases 1915-1919							6

Of the 8 technically operable cases which have been under observation for five years, 6 patients are still living, which would be 75 per cent. To judge by the two-year figure for all the 25 cases and by the intermediate figures, it seems that the five-year results will only be slightly worse. The worst result has been in the inoperable cases, where there were evident metastases at the very beginning of the treatment. Of these 10 cases only one was alive after four years. In view of the fact that in cases of cancer of the body of the uterus metastases do not occur until after a long period, and that consequently the cases that come in with metastases are far advanced, nothing else, of course, is to be expected.

Of our cases of cancer of the body 1 inoperable case is alive and has been free from symptoms for nine years, 3 technically operable cases are alive and have been free from symptoms for seven years, 1 inoperable case is alive and has been free from symptoms for six years. One patient with a technically operable cancer of the body died some time ago from bronchopneumonia after being free from symptoms for seven years. At the necropsy, which was very carefully performed by our pathologist Dr. Reuterwall, all suspected glands and tissues were microscopically examined, but no trace of cancer could be found anywhere.

Cancer of the Ovaries

The inoperable cases of cancer of the ovaries may, as regards the prognosis with radiological treatment, be divided into two groups. One group contains those cases which I have called the inoperable ones—cases in which operation either has not been tried or has been restricted to an exploratory laparotomy, the other group contains those cases which I have called incompletely operated cases, in which most of the ovarian tumours themselves have been removed, but where it has been necessary to leave the metastases in many cases very extensive ones, in the omentum, the peritoneum, and the abdominal wall.

The results of the treatment of the inoperable cases, as shown in Table IX, are not good. After a lapse of only one year only one-fourth of the cases can be considered free

TABLE IX—Inoperable cases of carcinoma of the ovaries radiologically treated at the Radium Hemmet, 1916-1922 inclusive

Of	Free from Symptoms after the Lapse of—							
	1 Year	Per cent	2 years	Per cent	3 years	Per cent	4 years	Per cent
15 cases 1913-1923	4	26.7						
14 cases 1913-1922			1	7.1				
12 cases 1913-1921					1	8.3		
10 cases 1913-1920							0	0.0

from symptoms. After two years there remains only one case, and after four years no patient survived. Considerably more favourable is the result of the second group (Table X). After the lapse of four years one-fourth of the

TABLE X—Incompletely operated cases of carcinoma of the ovaries radiologically treated at the Radium Hemmet, 1913-1923 inclusive

Of	Free from Symptoms after the Lapse of—							
	1 Year	Per cent	2 years	Per cent	3 years	Per cent	4 years	Per cent
23 cases 1913-1923	10	43.5						
22 cases 1913-1922			8	36.4				
16 cases 1913-1921					5	31.2		
15 cases 1913-1920							4	26.7
14 cases 1913-1919								3

cases are free from symptoms, and after five years 21.4 per cent. The difference in the prognosis induced us some years ago to urge an exploratory laparotomy in every case of inoperable cancer of the ovaries, combined, if possible, with the removal of the ovarian tumour. The radiological treatment should be given as soon as possible after the operation. Of the incompletely operated cases of cancer of the ovaries one has been free from symptoms for ten years and two for nine years.

Cancer of the Vagina

In my account of this disease I include all the 16 cases of primary cancer of the vagina treated during the years 1911 to 1922 inclusive. All have been regarded as inoperable because, even if operation in some cases was technically possible, the prognosis after operation is as a rule considered to be very unfavourable in all cases of vaginal cancer. As regards diagnosis, I have considered as vaginal cancer those cases in which no other primary focus in the genital organs has been found and in which the vaginal portion of the cervix has been macroscopically normal.

Of our 16 patients, 1 has been alive and free from symptoms for three years, another for four years, and 2 cases for more than five years. In the two last mentioned cases the local tumours were the size of a hen's egg.

Cancer of the Urethra

A rare form of tumour is the carcinoma which is limited to the urethra and its nearest surroundings. We have treated 6 such cases at the Radium-Hemmet. Both by means of Roentgen rays only (one case) and radium salt applied direct to the tumour (two cases) only a subjective improvement of short duration has been noted. The treatment seems to have induced an increased tendency to sloughing. A very noticeable decrease of the tumour has occurred in two cases treated with emanation "seeds" (1 mc per square centimetre of the tumour surface). Particularly in one of these cases, where an artificial suprapubic fistula was made before the radium treatment, the result has been very satisfactory. This may be a coincidence. Still, it seems as if the diminished tendency

to sloughing, which we have noticed in this case, has been due to the fact that the urine has been diverted from the tumour, and it seems to me as if it was in consequence of this that the general condition of the patient has improved so quickly. Our experience encourages further attempts in this direction.

Cancer of the Vulva

There are two circumstances that make inoperable cancer of the vulva the most difficult of access for radiological treatment. In the first place, this kind of cancer—a high grade cancer, is often badly infected, and is exposed to constant irritation—as biologically very slightly susceptible to radium. In the second place, the surrounding tissue, owing to its anatomical structure, is extremely sensitive to treatment.

At the Radium-Hemmet during the years 1910 to 1924 inclusive there have been treated altogether 64 cases of cancer of the vulva. All these cases have been far advanced, with great local tumours and palpable glands. Probably in a considerable percentage of the cases where a lasting cure has been obtained the condition was one of septic lymphadenitis, and not of cancer metastases.

With regard to the technique of treatment, our cases may be divided into three groups. The first group comprises 8 cases, treated by Forssell in 1910-1913. The technique consisted at this time in a direct application of radium tubes to the surface of the tumour, to which the tubes were fastened by means of adhesive plasters. In none of these cases was freedom from symptoms attained. Forssell has stated in one of his papers that the cause of the bad results was largely defective technique. Owing to these unfortunate experiences we did not admit during the following three years any cases of cancer of the vulva for radiological treatment at the Radium-Hemmet.

In the year 1916 the technique of application underwent an important improvement. Use was made of dental compound mass for the application and fixation of radium preparations. This technique has been worked out at the Radium Hemmet by my colleague Dr. Berren, who during the following years has treated all cases of cancer of the vulva, to which he has devoted special attention.

During the years 1916-1922 Berren treated 30 cases. Of these, 21 were improved for a short time or remained entirely unaffected, 3 were substantially improved for about three years, and in 6 cases freedom from symptoms was obtained. In one case freedom from symptoms has lasted for seven years, in one case six years, in one case five years (the patient later died of heart disease), in one case four years, in one case three years, and one was free of symptoms for two years, when she died of heart disease. Thus freedom from symptoms for two years or more has been obtained in 20 per cent. of the cases.

However, it was found that this form of radium treatment sometimes involved severe subjective troubles, and in a number of cases severe secondary necroses. In order to avoid at least the primary reaction or the sloughing of the tumour and the issue, Berren has since about 1923

the tumour and then immediately applied radium treatment to the cleansed surface of the sore with considerably weaker doses of radium. With this technique Berren has treated altogether 26 cases, of which one has remained free from symptoms for three years, 4 for two years, and 3 for one year. More important than this primary result with regard to a lasting cure is

the palliative result that has been gained by this technique in contrast with the preceding one. In more than half of these cases, in fact, local freedom from symptoms has been obtained, and the patients have been free from their very severe local troubles until their death in consequence of metastases. In all cases the regional glands have been treated with Roentgen rays.

Method of Treatment

I have recently described in detail the method of treatment of cancer of the cervix at the Radium-Hemmet, which was worked out in principle by Forssell in 1913, and which in the main we have followed ever since (*Journal of Obstetrics and Gynaecology of the British Empire*, 1924, vol. 31, No. 1). Time allows me here only to describe its main points. We treat with radium salt and employ, as a rule, Dommer tubes.

- 1 As a rule only three applications of radium are made.
- 2 The second application is made one week after the first, and the third application three weeks after the second.
- 3 If possible, radium is applied at each of these treatments both in the vagina and in the uterus.
- 4 The duration of each application of the radium is about twenty-two hours.
- 5 A dose of 337 or 401 mg. element is used in the uterus three times, making a total dosage of about 2,220 to 2,640 mg. element hours.
- 6 A dose of 70 mg. element is used in the vagina three times, making a total dosage of about 4,500 mg. element hours.
- 7 The radium is always filtered through 3 to 4 mm. of lead.

Since 1919 a more concentrated treatment has been tried, the number of applications being reduced to two—thirty-two and twenty-four hours respectively. In such cases the total vaginal dose has been limited to 4,000 mg. radium element. All operative interference at the commencement of the treatment, such as cauterization and excoriation, we regard as absolutely contraindicated. The treatment is never repeated within the first six months.

If, six months after the three applications already mentioned, the growth has not disappeared, or if there is a recurrence, the treatment may be repeated, though we prefer not to repeat it until a year after the first treatment. Only one application is then made. Clinically cured patients, as well as patients with a suspected "reactive" inflammatory swelling, are not treated again until a recurrence has been definitely proved. If there is a local recurrence and the growth is operable, hysterectomy is performed. No difficulties in operating caused by the radiation have been noticed in these cases.

Roentgen-ray treatment we use on rare occasions only. We have abandoned the combined radium-Roentgen ray treatment, since we have found that the results were not better, but rather worse, than with radium treatment alone. Nowadays we resort to Roentgen-ray treatment in conjunction with the first series of radium treatments in those cases only in which there are extensive glandular metastases from the very beginning. It is also used if severe pain persists after the radium treatment and if there is a recurrence in the praemetrium. In our Roentgen-ray treatment we do not employ the massive doses. On each field we make two or three exposures, each of one third of an erythema skin dose, one exposure a day or every second day. The exposure is generally distributed on two anterior fields and one posterior field. We use a filter of 0.5 mm. of copper and 1 mm. of aluminium.

The above described method is our routine treatment of cases of cancer of the cervix. The variation of the dose is very limited in different cases. We try to cover if possible the whole surface of the tumour with radium, and the size of the vaginal pack is for this reason varied according to the shape and size of the surface of the tumour. In cancer of the body of the uterus the same intrauterine dose is given as in cancer of the cervix. Since cancer of the body often produces metastases in the vagina, all cases of cancer of the body are also treated with application of radium in the vagina, the dose being only two-thirds of that used in the vagina for cancer of the cervix. We have had no occasion to increase the vaginal dose in cancer of the body. The recurrences which we have observed have nearly all appeared in the body of the uterus or its surroundings. Vaginal cancer is dealt with in the same way as cancer of the cervix—that is, by intrauterine treatment if possible.

TABLE XI—Cancer of the vulva primarily treated with radium and Roentgen rays at the Radium Hemmet 1910 to 1924 inclusive

Group I—1910-1913	
Number of cases	8
Free from symptoms	0
Group II—1916-1922	
Number of cases	30
Unimproved	21
Substantially improved	3
Free from symptoms (1 for seven years 1 for six years 1 for five years 1 for four years 1 for three years 1 for two years)	6
Group III—1922-1924	
Number of cases	26
Free from symptoms (1 for three years 4 for two years, 3 for one year)	8

In ovarian cancer we give an intravenous treatment, with about 40 mg radium element for thirty hours, which is 1,200 mg radium element hours, and this is directly followed by a series of careful Roentgen-ray treatments in small doses ($3 \times 1/4 - 1/3$ S.E.D.), from a number of small fields. If the tumour does not disappear or show a tendency to decrease, the Roentgen-ray treatment is repeated at intervals of six weeks or more.

There is scarcely ever a contraindication to the radium treatment of cancer of the organs of the female pelvis. With careful dosing even a far advanced cancer in a very cachectic individual may be treated without injury to the patient.

I am not aware of any signs that enable us to form a sure prognosis. Only in cases where there is a perforation of the rectum or the bladder one might with fair certainty predict that, as a rule, not even a palliative result can be obtained.

For wellnigh twelve years we have acted mainly according to those principles which Forssell formulated in 1913. Already at that time Forssell insisted that, in order to obtain a good result with radium treatment, it is necessary, not only to damage the tumour cells, but also to maintain the normal reaction of the surrounding tissues. The careful experiments we have made in increasing the doses still further and in concentrating the treatment have not encouraged us to make any considerable changes in this respect. The results which we gained during the first years, 1914 and 1915, have not been surpassed by those gained later. On the contrary, these last results, taken as a whole, are somewhat less favourable. From this fact I am inclined to draw the conclusion that the more careful dosing which characterized the treatment during these first years is more in accord with the pronouncement of Forssell cited above, and that a further concentration of the treatment, and treatment with more massive doses, is not advisable.

Finally, the fact must be emphasized that with radium treatment, just as with surgical treatment, good results can be obtained only by a close study of the patient, a proper knowledge of the limitations of the form of treatment, a carefully planned technique, and experience. In the hands of the inexperienced the method involves great risks without any possibility of results comparable with those obtained by operation.

II—PERCIVAL P. COLE, F.R.C.S.,

Surgeon to the Cancer Hospital, London

My own contribution to this discussion will be confined to the general position and treatment of inoperable cancer of the uterus. Although primary cancer of rectum and bladder is outside the scope of this discussion, these viscera are frequently invaded. Leiten in a series of 915 post-mortem examinations found recto-vaginal fistulae in 16.5 per cent, and vesico-vaginal fistulae in 44.2 per cent of cases. Operability or otherwise of any particular case is generally decided by the extent of local invasion, for distant metastases are rare, being estimated by Leitch at less than 7 per cent.

The numerical importance of the subject before us is emphasized by the inoperability rate. In a previous estimate I placed at one end of the scale Bonney's estimate of 36 per cent inoperable, and at the other end the Cancer Hospital figure of 93 per cent estimated over a period of three years. A further and later investigation of the Cancer Hospital figures, comprising 222 cases over a period of five years, gives a slightly more favourable result at 88 per cent. I suggested then, and suggest again, that the general inoperability rate would be arrived at approximately by fusing these figures, which gives a percentage of 62. Other estimates are even higher. Thus Thomas Wilson finds 68 per cent and Fletcher Shaw 73 per cent inoperable. Heyman of Stockholm reports that the inoperability rate over a series of years, and comprising 505 cases, varied from 97.5 to 63.5 per cent, the lowest rate indicated being reached in 1921, when 115 cases were treated. Janeway assesses inoperability of cancer of the uterus as a whole—that is, including fundus cases—at 62.4 per cent.

What constitutes an operable case? That is a question difficult to answer, for published statements make it obvious that opinions vary considerably. Howard Kelly divides cases into three groups as follows:

- I With extensive lateral involvement and fixation
- II Where the lateral infiltration is moderate and where neither side is fixed
- III Where the disease appears limited to the cervix and mobility is not interfered with

In his opinion the third group only should be classed as operable. This view is supported by Clark, Janeway, and Stone. Smith¹ suggests the possible routine adoption of the Byne extirpation operation and radium at the same time, while Recasens has abandoned operation in all cases.

What are the untoward results that have combined to render the surgical attitude so conservative towards the radical abdominal hysterectomy? Janeway estimates the mortality in 1,997 cases operated on at just over 18 per cent. Bonney estimated his mortality in 1921 at 20 per cent, and although he has considerably reduced it since then it may reasonably be assumed that the general incidence is not less than this figure. Janeway estimates 35 per cent of cures of five years' standing. Bonney claims 40 per cent. The more extensive the disease, particularly if regional glands be involved, the greater is the mortality, and the less chance of cure. In this case mortality rises to 25 per cent, and five-year cures fall to the same figure. Although glandular invasion will be discussed at a later stage its incidence may be stated in passing. Weibel says that 25 per cent of all cases on which he operated had cancerous glands. Forssell estimates the incidence at 30 per cent and Leitch at 38 per cent. My own figures, previously estimated on post-mortem records, give a somewhat lower percentage of 24. Bonney found the glands invaded in from 35 to 38 per cent of his cases.

Other metastases, as already mentioned, are uncommon, and it may be estimated that approximately 60 per cent of cases of cancer of the cervix that run their course without surgical intervention die as a result of effects determined by what remains to the last a local lesion.

As an introduction to the treatment of inoperable cases by radiation the question of the use of radium to render border-line inoperable cases operable may be briefly considered. Fletcher Shaw, working with Burows, is strongly in favour of this procedure. This attitude is, to some extent, supported by Pinel, Monod and Gosset report 30 cases of hysterectomy when radium radiation preceded the operation by four to six weeks. That the operation is rendered more difficult in many cases is not denied, but the fibrosis encountered is not altogether disadvantageous, for it determines a clean operation field and makes for diminished oozing in the perivaginal and pericervical tissues. Other workers—Clark, Schmitz, and Keene, for example—are entirely opposed to this plan. They maintain that results obtained do not justify surgical intervention. Certain it is that whatever may be the surgeon's views on this particular subject, operation should not be delayed for longer than one month. Of this method I, and my colleagues at the Cancer Hospital, have no experience. Operable cases, as already noted, constitute only 12 per cent of cases admitted, and border-line cases are practically unknown. The existence of two wards set aside for the admission of chronic inoperable cases determines the constant influx of patients in whom the disease is far advanced.

I propose to treat, therefore, of the means that have been employed to deal with cases such as these, diverging from time to time to comment on the methods of other workers in the same field. The material consists of 263 cases of cancer of the uterus admitted between, and including, the years 1919 and 1925 (see Table I). A certain number of cancer cases are included in this total, but the whole series is dealt with separately later. It will be noted that 106 of these admitted cases, or 40 per cent, were untreated. This implies that examination revealed conditions—such as a large abdominal tumour, metastatic deposits, etc.—which rendered any form of treatment unavailable. The total number of cases treated by radium

¹ *Surgery, Gynecology and Obstetrics*, May, 1925.

TABLE I—Summary of Carcinoma of Cervix Cases, 1919 to 1925

Year	Total Cases	Radium	Cold Cautery	Untreated Cases					Dead	Not Traced
				Number	Had no Previous Operation	Total Length of Life	Alive			
1919	44	12	7	21	20	Months 16 25	—	20	1	
1920	40	8	3	18	15	14 3	—	18	—	
1921	33	5	6	22	18	12 4	—	21	1	
1922	29	14	1	12	11	15 8	—	11	1	
1923	50	28	4	14	14	15 8	—	14	—	
1924	57	33	5	16	11	15 4	—	16	—	
1925	10	3	1	3	2	14 0	21	2	—	
Total	263	103 39 2%	27 10 3%	105 40 3%	91	Av 14 8	21	102	3	

Total number of cases admitted without previous radical operation 222
Number operable 27 giving an operability rate of 12.1 per cent

in some form or other is 103, or 39 per cent of the total. These cases have been treated by various members of the staff, myself included.

The radium has been made up in tubes containing 100 mg and 50 mg radium bromide enclosed in 0.3 mm platinum. This has been reinforced as occasion demanded by filters of 1 mm or 2 mm silver. There have also been at our disposal needles of varying length—12 containing 8 mg radium bromide, 2 containing 10 mg, and 6 containing 6 mg. All radium used in this way has been encased merely in 1/2 mm platinum.

Contraindications

Violent infection and cachexia would appear to be outstanding contraindications to the use of radium. Fordsike, Taussig, and Pinch stress the importance of infection, and the last named emphasizes the adverse influence of cachexia and anaemia. Briley and Healey maintain that very advanced cases are unsuitable, using, as they do, a heavy dosage. Strahan regards pyometra as a contraindication until drained. It is clear that these contraindications can be to a great extent obviated by preliminary treatment or by the use of relatively small amounts of well filtered radium. This raises the question as to whether small doses of radium are capable of exerting a stimulating effect upon the growth. Pinch on this question adopts a cautious attitude. Other observers—Fordsike, Knox, Clark, Morgan, and Asnis—are emphatic that such an untoward effect need not be feared.

No attempt has been made to differentiate cancer of the fundus or cancer of the cervix in these inoperable cases. At the Radium Institute the total incidence of cancer of the body has not exceeded 3 per cent of all the cases of uterine cancer treated, and in many instances microscopic sections show so much metaplasia of the malignant cells that it is impossible to say from which class of epithelium the growth originated.

Radium Sequelae Dosage and Method of Application

Most important of the radium sequelae is burning on the method of application are proctitis, cystitis, and fistula formation. The rectum is much more prone to inflammatory reaction than the bladder, and many measures have been adopted to protect these viscera, such, for instance, as the so-called "bomb" technique of Kelly and Bunnim. Dental composition has been advocated as a vehicle, particularly in cases characterized by a diffuse shallow ulceration. We have found that the use of needles and gauze packing obviates the necessity of employing more complicated measures. Fistula formation does occur, but only occasionally in our practice, as opposed, for instance, to that of Taussig, who, in a group of 86 cases, reports the development of recto-vaginal fistulae in 9, with concomitant vesico-vaginal fistulae in 2.

Intense local fibrosis may occur, and may, as Lewis points out, mask the incidence of malignant disease in the parametrial tissues. These untoward events are becoming much more rare since heroic doses have been abandoned, and since the importance of adopting filtration suitable to the case has been recognized. In view of the anatomical disposition of the parts involved it would appear that unfiltered glass capsules of radium emanation (Quick) are unsuited for general use. They produce an intense reaction in the tissues accompanied by a devitalizing effect, which, as Clark, Morgan, and Asnis maintain, "we in fact are learning to recognize as being what we must avoid."

General Results

The results at the Cancer Hospital (see Table II) coincide with those reported by other observers in that the local and symptomatic benefit which follows immediately is frequently most striking. This applies to the lessened degree or disappearance of ulceration, reduction in amount of parametrial infiltration, and the arrest of discharge and haemorrhage. Haemorrhage is not always checked, however, but on the contrary is sometimes caused, by radium treatment.

TABLE II—Summary of Cases Treated by Radium, 1919 to 1925

Year	No of Cases	No with Haemorrhage following Radium Treatment	No with Infection of Internal Iliac Arteries	Intra-abdominal Radium Applications	Average Length of Life after Treatment of Cases Traced and Died	Alive	Dead	Not Traced
1919	12	1	1	—	Months 10 6	1	11	0
1920	8	1	1	—	12 4	—	8	—
1921	5	—	—	—	15 0	1	4	—
1922	14	1 (died)	2	—	9 5	1	10	3
1923	28	1	2	2	7 0	11	15	2
1924	33	1	6	3	3 7	15	14	4
1925	3	—	—	—	—	3	—	—
Total	103	5	12	5	8 35	32	62	9

N.B.—Each patient is only mentioned once in these tables and is entered in the year in which she was first treated; therefore there were actually more radium treatments in each year than the numbers show. The total number of radium applications was 169.

Fordsike instances 7 cases, and Taussig had 8 cases, of severe haemorrhage as a result of radium necrosis affecting a branch of the uterine artery.

Haemorrhage after radium occurred in 5 of our cases. Knowledge of this possible contingency led me to tie the iliac arteries in two or three cases in whom, before admission, violent haemorrhage had occurred. Radium insertion via the vagina was carried out at the same time. With my hand in the abdomen I was able to check the movements and manipulations of my assistant who was inserting the radium. The uterine sound presumed to have passed through the cervix into the uterine cavity presented under the peritoneum of the utero-vesical pouch, and the points of two needles supposed to be embedded in growth perforated the peritoneum on the postero-lateral aspect of the cervix. Whatever may be the merit of internal ligature in association with radium application, the advantage of opening the abdomen cannot be denied, in that the disposition of the radium can be accurately determined. The method has been employed only in the worst type of case—the type in which deep ulceration and infection has seemed to render consequent haemorrhage a likely happening and in which anatomical landmarks have disappeared. Twelve cases have been dealt with in this way. One died ten days after the operation, and at necropsy no definite cause was found. Three are alive—one, after twelve months, quite well and with no sign of growth; two after ten months, one with and the other without signs of recurrence. The average duration of life after operation of those dead is 12.5 months. Two of these deserve brief further mention.

Mrs H.E. aged 40 was admitted on April 6th 1923 with advanced carcinoma of the cervix. There had been constant haemorrhage on the voyage from Aden. Her condition was deplorable—anaemic, cachectic and with offensive blood stained vaginal

discharge. The cervix was extensively destroyed and bladder and rectum were infiltrated. On April 13th portions of the growth were scraped away and the vagina packed with gauze soaked in acetone. On April 28th the internal iliac arteries, ovarian arteries, and round ligaments were ligated, 50 mg radium with 2 mm silver filter were placed in the cervical canal for twenty-four hours. Radium treatment was carried out at intervals of two to three months on five occasions but after the fifth application she complained of pain in the back and thighs. A year after her first admission she developed cerebral symptoms and died. *Post mortem* examination was not allowed and the suggested cause of death was cerebral thrombosis. Locally there was no sign of growth.

Improvement in the local and general condition of this patient was astounding, but the outstanding feature was the suppression of pain which resisted all endeavours to allay it. This is a possible, and most distressing consequence of multiple applications of radium. It would, perhaps, have been better had the patient been left alone after the second, or at any rate after the third, application.

Mrs A. W., aged 49, was admitted on May 24th 1924. Violent haemorrhage having occurred three weeks previously the vagina had been packed at the Royal Free Hospital. The patient was very anæmic and weak. The cervix was small, hard and fixed to the surrounding tissues. On June 13th the internal iliac arteries, ovarian vessels and round ligaments were ligated. Six radium needles (48 mg) were inserted for twenty-four hours. Two other radium applications followed.

In April of this year the patient was in good health clinically there was no evidence of growth.

Besides simplifying the disposition of radium introduced by the vagina, opening the abdomen has the advantage of allowing the insertion of radium into growth which otherwise would be inaccessible. The treatment of pelvic extensions and glandular invasion is a matter that has attracted considerable attention. Ingenious methods have been devised for the application of radium in such positions. Chief among these is the "cross fire extraperitoneal pelvic irradiation method" described by Driels and de Backer. These authors have been induced to elaborate their extraperitoneal technique in this "now it may be looked upon as a classical rule that radium puncture of cancerous glands ought to be condemned and that external 'Curie' therapy is to be preferred by a long way to Roentgen therapy for the treatment of these cancerous glands." Of this method neither my colleagues nor I have any experience. Donaldson employed it in 14 cases, but objects to it on various grounds. I suggest that it is far too blind a method to appeal to the modern surgeon. The intraperitoneal insertion of radium needles has been employed in a few cases, but present data do not permit of the formulation of any definite conclusions.

Systematic radiation of the pelvis by x-rays after local radium application by the vagina has been attended by encouraging results. This sequence has been commented on recently by Lynham. The method adopted has been interrupted dosage by multiple points of entry. Brief notes are appended of three outstanding cases.

Mrs J. P., aged 54. On admission (October 3rd 1922) the patient was thin and worn. The whole anterior aspect of the cervix was occupied by an epitheliomatous growth, the left broad ligament was invaded and was adherent to the pelvic wall, the right broad and utero-sacral ligaments were also involved. On October 11th a radium tube containing 100 mg with 1 mm silver filter, and 5 radium needles (each 8 mg) were inserted for twenty-four hours. On December 2nd 50 mg radium with 1 mm silver filter and 4 needles (each 8 mg) were inserted for twenty-four hours. X-ray treatment was given in November and December 1922, in January and March 1923 and in January 1924. On June 2nd 1925 the patient was clinically free from growth. Palpation suggests that panhysterectomy has been performed.

Mrs J. C., aged 54, was admitted on May 22nd 1923. Panhysterectomy had been performed at Leeds in February 1922. Recurrence was noticed in December 1922. On admission there was recurrence in the vaginal vault with secondary deposit in the liver. On June 11th 1923 radium 100 mg and 1 mm silver filter were inserted for twenty-four hours. X-ray treatment was given in December, 1923, in July and November 1924 and in April, 1925. At the last date the patient was well. The mass in the liver had practically disappeared. Locally there was no evidence of growth.

Mrs A. J., aged 54, was admitted on June 12th 1923. In March, 1922, she had undergone panhysterectomy at the Royal Free Hospital. In February 1923 there was recurrence in the vaginal vault. On June 13th 1923, radium 50 mg and 2 mm silver filter were inserted for thirty-six hours. On June 14th 1924 she had slight discharge and occasional haemorrhage, a small nodule

filter were inserted for sixteen hours. X-ray treatment was given was seen in the vaginal vault. Radium 50 mg and 2 mm silver in May, June, September and November 1923, in April, 1924 and in March and April, 1925. In May 1925, she was alive and well and clinically there were no signs of growth.

Recessens also supplements radium by x-ray treatment. He also comments favourably on the combination with this treatment of intravenous injections of colloidal metals—copper, platinum, and electro-selenium. He states that in all cases in which radium was employed after treatment with colloidal copper the symptoms of cervical cancer disappeared more rapidly than when radium alone was used. We have tried these colloidal preparations, but have nothing favourable to report in this class of case.

Our experience of recurrence is in accord with that of Finch, who finds that these do better than primary inoperable cases.

Of 18 cases dealt with in this series 4 have been untraced and 8 have died with an average length of life after radium treatment of 10.5 months. Six are alive, one fourteen months after, labelled "fairly well", the other five are well and free from subjective and objective signs of growth at intervals of four years, two years, five months, two years, two years, and five months. In four cases carcinoma has originated in the residual cervix after a supravaginal hysterectomy for fibroids. Two lived six and sixteen months respectively. The other two are alive and well six months and one year after treatment.

It will be seen that the average length of life in those who died after radium treatment has been little greater than might reasonably be expected in untreated cases. Results are, however, undoubtedly improving. As opposed to those who have died, 17 cases are living and clinically free from growth at various intervals after operation (see Table III), and fifteen others are still living at various intervals up to fifty-nine months, but in these obvious signs of growth are present.

Dosage and periodicity have varied, the largest used being 210 mg for twenty-four hours, and 200 mg for forty-eight hours. In the latter case the patient died from haemorrhage seven months later. A brief summary of the dosage used and time exposure in successful cases indicates that the number of treatments varies from a single dose up to multiple doses at intervals of three to six months. The dosage employed has been, comparatively speaking, small, the tendency being to determine an increased milligram hour exposure by lengthening the time and not by increasing the amount of radium. No untoward results have attended the use of needles. On the contrary, they have proved an efficient and convenient vehicle.

Results Compared with those of other Workers

Comparison in this matter is difficult, for investigation clearly shows that the greater the number of relatively early cases that are included the better are the results obtained. Existing figures, based on the treatment of a large number of cases, are published by Chail, Bailey and Healer, Schmitz, and Taylor. Further figures will be found in the recent papers of Donaldson and Strachan.

TABLE III.—Radium Cases. Duration of Life (Cases Living and Well)

Lived less than 6 months	3
6–12 months	3
12–18	3
1½–2 years	4
2–2½	2
2½–3	1
3–3½	0
3½–4	0
4–4½	1
4½–5	0
5–5½	0
Total	17

Fifteen cases are still living but with obvious signs of growth.

These figures culminate in the truly amazing figures submitted by Heyman of Stockholm, who admittedly includes in his radium-treated cases many which would be considered operable. Thirty-six cases were treated in the years 1914 to 1918, and of these 14 are symptom free, or

clinically cured after five years. This gives a percentage of 40.5, and compares favourably with the best figures submitted as a result of the major abdominal hysterectomy.

Certain outstanding effects are noticed in the reaction associated with the radiation of carcinomatous tissues.

- (1) That various degrees of degeneration and destruction may be determined, the effect produced being dependent upon dosage and filtration.
- (2) That cells vary in radio-sensibility.
- (3) That various histological changes in the invading cancer cells and in the invaded tissue occur according to the dosage and the time elapsing after radiation.
- (4) That cancer cells are more vulnerable when in a state of active division.

These phenomena are of vital importance in the consideration of the changes that have occurred in the conception of radiotherapy since its introduction and have a pertinent bearing on the question of dosage. The transition in the conception of radium treatment since its inception is ably summarized by Lazarus Birlow. In the beginning regarded as a species of specialized caustic, through the stage of endeavouring to determine a directly selective destruction of cancer cells, there has, last of all, arrived in the minds of some authorities the conception of irradiations as an agent whereby the resistant factor of the normal tissues is stimulated and reinforced—in other words, the envisagement of a biological factor.

The radiological department of the Cancer Hospital, under the charge of Dr Robert Knox, has always been opposed to the conception of the "lethal dose" of Seitz and Wintz, and to the view of these authors that the destruction of cancer cells is a physico-technical task, and that the biological incidents are confined to the removal of the destroyed cancer epithelia.

Tumour growth occurs in cycles, and, because cancer cells in active division are more vulnerable, Knox maintains that interrupted dosage, or well filtered dosage over long periods, has definite claims to consideration. Other prominent exponents of the biological, as opposed to the purely physico-technical, view are Living, Pinch, Opitz, and Colwell and Russ. Histological studies bearing upon the present discussion have been published by numerous investigators, among whom may be mentioned Alter, Colwell and Puse, Donaldson and Cunti, Kehrer and Lahn, Martzloff, Pinch, and Schmitz. Particular stress is laid by Donaldson and Cunti on histological examination of tissue removed from irradiated cases of cancer of the cervix. They make the interesting observation that degenerative changes in the cancer cells precede fibrosis, and confirm similar observations made by Foidsike at an earlier date. It follows that fibrosis cannot be the cause of growth regression in irradiated tissues, and it is possible that in the so-called "natural" cure of cancer the same sequence obtains. Fibrosis follows cancer cell degeneration but does not determine it.

It is to be regretted that histological data in the present series of cases are so incomplete as to be practically useless. Histological facts, unless accurately coordinated with clinical manifestation of success as determined by freedom from growth and length of life, will not, however, help to solve the problem. For just as we have no idea how or why changes arise in tissues subjected to radiation, so also we have no idea as to the particular histological changes associated with the greatest material and lasting benefit to the patient. In the case of the hardest gamma rays it is not even definitely decided whether growth recession is due to a direct action on the cancer cell. Thus Colwell and Russ state:

That a destruction of the malignant cells occurs as a result of the irradiation is no doubt true in some cases, but Dominici submits considerable evidence to show that this is by no means always the case or indeed necessary for the ultimate resolution of such cells.

The radical change in views as to mode and cause of action in the case of radium is clearly indicated by reference to excerpts from modern writers on the subject.

Opitz emphasizes the biological view in a recent paper and delivers himself as follows:

"If the view here set forth of the effect of the rays is correct then the specific effects observed in the case of galvanization, light treatment, heat action, diathermy, etc. must be brought into relation with those of Roentgen and radium radiation."

Is it not possible that our views as to the effect of heat will have to undergo similar changes to those which have obtained in the case of radium and x-rays? The long-wave radiation, usually called "radiant heat," is essentially a radiation the energy of which becomes transformed into heat by absorption in passing through solid or liquid.

The exact biological action of varying degrees of heat upon the tissues is no more understood than the action of the gamma and x-rays. There is some evidence, however, to show that the tissue reaction in the two cases is somewhat similar. In 1920 W. J. Mayo, in an article on "Cancer and the prolongation of human life," stated that "Radioactive substances give great promise for the future. I would include with radium and the x-rays the radiant energy of heat." Ishii and Loeb, studying the effects of heat upon the growth of mouse carcinoma, found that the longer the exposure to heat (44°C) the less interaction between connective tissue and tumour, the more dense fibrous tissue is found (longest heat exposure thirty-five minutes *in vitro*). They conclude, among other findings—

"that in the heated pieces especially those heated 30-35 minutes, the tumour growth is retarded. Within the first week after transplantation and as a result of this inhibition the connective tissue has an opportunity to form a fibrous capsule surrounding the necrotic material and including much of the living tumour material. This formation of a fibrous capsule is a second effect, inhibiting the growth of the heated tumour. It represents a mechanical impediment to the tumour growth and it diminishes the nourishment carried to the tumour tissue through the blood vessels."

Loeb, studying the effect of Roentgen rays and radioactive substances on living cells, finds that the effect of radiation on tumours is in many respects similar to the effect of heat on tumours. It may be urged that such findings cannot be regarded as convincing, in that they apply to conditions not comparable with those that obtain in human malignant disease. They are, at any rate, suggestive, and their suggestiveness is emphasized by the fact that cases successfully dealt with by the application of heat present the same clinical features as successful cases treated by radiation. In both cases there is slow regression of tumour growth, absorption of surrounding infiltration, and steady increase in plasticity and mobility, until the final condition is comparable in typical cases with that which obtains after hysterectomy. The use of heat in the treatment of carcinoma of the cervix particularly, was practised and urged by Byrne in the eighties of last century. At the time of his death he is alleged to have had 400 cases to his credit, without an operation death, and with a permanent recovery rate of 19 per cent. Byrne dealt with the earliest cases by cautery excision.

Since then many changes have occurred in the adaptation and mode of employment of heat. For many years it was employed as Byrne employed it, to produce local destruction. This was followed by the long exposure to low-grade heat advocated and practised by Percy. What is the nature of the connective tissue response, or how it is produced, is not known, but the existence of such a factor seems to be the only way to account for the amazing results that have at times followed this type of treatment in apparently hopeless cases. The biological factor is one that may reasonably be postulated in the case of the long-wave radiations of heat as in the short-wave radiations of x-rays and radium. The cautious operation of Percy has not found favour in this country, but it has been more or less freely employed in America, and the results obtained have determined divergent views as to its utility.

Schmitz, Taylor, and Bailey and Quimby, in discussing the merits of cauterization either by the orthodox Percy method or by some modification thereof, are of opinion that the results obtained do not justify the use of such

methods, particularly in view of the added physical and material sacrifices. A consideration of their criticisms further indicates that their arguments are un- soundly grounded. The technique employed has often been at fault and the post-operative use of radium described by Bailey and Quimby is such as would not be countenanced by any modern surgeon conversant with its effects.

As against these unfavourable opinions may be cited one of an important and commendatory nature. In a discussion on Skell's paper read at the thirty-fourth annual meeting of the American Association of Obstetrics, Gynecology, and Abdominal Surgery, Dr. Ambel Brown quoted a letter from W. Mayo, stating that results from the Percy cautery operation had been entirely satisfactory in the Mayo Clinic, but as it was no more cumbersome than radium the latter was now more often employed because of its convenience.

In previous papers reference has been made to the literature of the Percy operation, together with a description of the technique now adopted. The total number dealt with to date is 61. The results are indicated in Table IV. The

TABLE IV.—*Cautery Cases. Duration of Life. Cases Traced and Died*

Lived less than 6 months	11
Lived 6–12 months	16
12–18	12
1½–2 years	3
2–2½	3
2½–3	2
3–3½	2
3½–4	0
4–4½	0
4½–5	1
5–5½	1
Total	51

Three cases were not traced: seven are alive and well at periods after operation of 7 years 11 months, 7 years 3 months, 20 months, 16 months, 6 months, 4 months, and 4 months.

Average life duration of those who have died has been 13.9 months after operation, which compares with 8.9 months in the radium cases after treatment, and a total duration of life of 14.8 months in untreated inoperable cases. The primary mortality—that is, cases dying within one month of the operation—has been 10 per cent., and these cases have been included in assessing the average duration of life. Viscero-vaginal fistula occurred as a direct result of the operation in 7 cases in the first series of 43. In the following 18 cases it has only occurred once. The advantages of opening the abdomen in these cases are manifold. In many cases it has been clearly demonstrated that any considerable prolongation of life cannot be expected, the main object being alleviation of distressing, and frequently disgusting, symptoms. Dilated ureters on one or both sides, adherent inflamed tubes, in some cases suppurating, adhesion of omentum, or small or large bowel, to the pelvic viscera matted together by growth or inflammation, the existence of dense indurated tissue spreading along the sheaths of the large vessels, and finally, the presence in a few cases of large masses of malignant glands, have complicated the intrapelvic condition.

At times the ligation of the internal iliac arteries has been very difficult, occasionally it has been impossible. Pionetria has been present in the majority of cases. The statements previously made as to post-operative progress and absence of shock hold good in respect of the added cases. Radium is inserted by the vagina some six to eight weeks after operation, provided local conditions seem to demand or warrant its use. In any case the amount employed is small, and needles are almost invariably used. The relief of symptoms is striking, a phenomenon seen in the radium cases. Douching is resorted to soon after operation to get rid of the discharge, which is very thick, and to prevent fusion of the vaginal walls by a process of adhesive vaginitis. A more detailed account of two of the patients who died will indicate the scope of benefit in very advanced cases.

Mrs. M. G. aged 46 was admitted in January 1920 with advanced carcinoma of the cervix with secondary mass at the vaginal inlet. Cautery operation in January was followed at a later date by excision of the secondary mass with knife and diathermy. This patient led a normal active life free from all symptoms until five months before her death. She developed intestinal obstruction was short-circuited but died in February, 1925 five years and one month after the first operation.

Mrs. E. S. aged 58 was admitted in September 1921 with profuse vaginal discharge and intermittent haemorrhages. The patient was a refined well educated woman and was very sensitive as to her condition. A growth of the intra-canalicular type invaded the anterior and posterior vaginal walls. At cautery operation a large mass of glands was found on the right side extending to the bifurcation of the aorta and the right internal iliac artery could not be tied. In March 1922 50 mg. radium and 2 mm. silver filter were inserted into a small aperture in the vaginal vault. It was then noted that discharge had entirely ceased and that the condition was almost incredibly improved. This patient led a normal active life until a week or so before her death which was due to uraemia and occurred fourteen months after her operation.

As representative of living cases I append two short histories.

Mrs. Maud D. aged 32 had been examined in the gynaecological department of the Bedford General Hospital and St. Bartholomew's Hospital. She was admitted to the Cancer Hospital on the score that nothing further of value could be done for her. Cold cautery operation was performed and since her discharge she has led a vigorous and useful life. Indeed she has been the main bread winner for the family for her husband has been unable to work and she has two small children. She came for examination on June 4th of this year and her sole complaint was headache recurrent attacks of which have worried her for years. Otherwise she was in perfect health with no evidence of growth and no symptoms bespeaking it. In other words she is alive and perfectly well seven years and three months after her operation.

Mrs. Eliza B. aged 57 was admitted on September 22nd 1923. The cervix was occupied by an excavated ulcerating mass the base was ragged and hard there was infiltration of the mucous membrane and hard nodules about the size of a pea in the anterior and posterior vaginal fornices which had involved the overlying mucous membrane. On October 5th cold cautery operation was performed. No glands enlarged were seen but there was a mass of growth lying lateral to the cervix in each broad ligament. On November 19th two radium needles (16 mg.) were inserted for twenty-four hours. The vagina and fornices were clean and healed the external os admitted a finger tip. Since discharge this patient has lived a perfectly normal life. She has stayed with relatives in France for some months and reported at the Cancer Hospital at the end of May. There was nothing to indicate the presence of growth and the condition of the vaginal vault and fornices suggested that a hysterectomy might have been done. She is perfectly well twenty months after her operation.

Considering results as a whole it will be noted that the number of cases which are not benefited to any material extent is large. This might well be expected in view of the type of case dealt with, and it is perhaps questionable whether more conservative selection should not be exercised. Certainly if the end in view were the compilation of favourable statistics a large number of the cases in the present series would have been rejected. The patient's point of view has been the main consideration, based on the very germane knowledge that results cannot be assessed or predicted in terms of the local condition. Comparable conditions, apparently hopeless, will, in one patient, be followed by early death and vindication of all that pessimism could apprehend, in another a veritable resurrection occurs, it may be for only two or three years, but at any rate the benefit obtained has made it worth while. Is there no means of determining the probable result in cases similarly situated—any method of prognosis that can help in the selection of favourable cases to the elimination, for the patient, of useless interference and to the conservation of energy for ourselves? There is certainly a chemical classification which roughly grades cases in order of malignancy and is of some value, as far as radium goes, in determining dosage and filtration. The proliferative fungating type is regarded as of least malignancy, and the endocervical medullary excavating type is most malignant, while the flattened ulcerative type occupies a position between the two. In some ways this classification subserves a useful purpose, but it certainly does not suffice to tell us what we want to know.

From the histological standpoint it has been demonstrated that the differentiated squamous-cell carcinoma, the adenocarcinoma, and the basal-cell carcinoma, exhibit

resistance to the direct action of radium in the order named. The possible classification of the squamous cell types has been the subject of an interesting investigation by Martzloff.

His conclusions are based on data relating to 387 cases having complete clinical and histological records. He distinguishes three types of epidermoid cancer of the cervix: (1) Spinal cell type, found in 15.5 per cent of cases; (2) Transitional cell type, found in 66.8 per cent of cases; (3) Fat spindle cell type, called by many observers "basal cell," found in 12 per cent of cases. The clinical history of each case reported on was noted and correlated with the histological nature of the growth. Of 290 cases operated on, 38.8 per cent belonged to the spinal type, 15.1 per cent to the transitional, 4.76 per cent to the fat spindle, and 21.4 to the adenocarcinoma. Of traced five-year cures the spinal type claimed 47 per cent, the transitional 24.2 per cent, and the fat spindle 9.5 per cent.

These results confirm the author in the view that "the findings are strongly indicative that the histological character of the predominant type of cancer cells in cervical epidermoid cancer is a good indication as to the relative malignancy of the neoplastic process." Attention is called to the similarity of the conclusions arrived at to those promulgated by Broders in the case of epithelioma of the lip. This observer, from statistical data compiled from a series of 537 cases, concluded that clinical malignancy and gland invasion was in inverse ratio to cell differentiation. Thus his Grade I (least malignant) group, in which the epithelial cells showed the greatest differentiation, corresponds to the spinal cell type of Martzloff. In the cervix, whether the malignancy in a particular case is constantly related to the histological nature of the growth is surely to be doubted, but it is at least suggestive that the best results from radium are obtained in the case of so-called basal cell cancers, not because they are less malignant apparently, but because they are more susceptible to its action. On the other hand, the highly differentiated epithelial type is, as previously noted, very resistant, and may demand for its eradication with radium a dosage and filtration which may devitalize normal tissues and so interfere with their reaction as to render abortive a well meant but ill calculated attempt to cure.

It may be that in this type cauterizing methods will subserve their most useful purpose. In the treatment of pelvic extensions and invaded glands coeliotomy as a means of direct attack would appear to merit a wider application, and it is along this line, I suggest, that endeavour should be concentrated with a fair promise of gratifying success. Alternatively attention should be directed to determining the best method of pelvic irradiation to be used in conjunction with local measures. The results and experience at the Cancer Hospital of radiations generally in the treatment of inoperable cancer of the uterus do not warrant us in adapting them to operable cases.

William S. Stone, Clinical Director of the Memorial Hospital, New York, maintains that—

"in uterine cancer radium has achieved its most brilliant success as a curative agent, especially in cancer of the cervix, in which surgery has now a very limited field if any of applicability."

We cannot endorse this dictum, but rather echo the words of Clark and Keene, who say

"as matters now stand irradiation has unquestionably won its right to a place along with surgical means for it has stepped into the inoperable breach with hopeful assurance of a large alleviation of suffering and a minimum probability of cure."

I wish to express my very hearty thanks to my colleagues for permission to use their cases and records to the Statistical Department of the Cancer Hospital and to Miss Geraldine Barry my house surgeon for able and welcome co-operation.

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UNTIL recent years attention, quite rightly, has been concentrated on the treatment of early cases of malignant disease, and the position of the inoperable patient has been considered so hopeless that no real attempt has been made to deal with it. Lately, however, with the greater knowledge of radiological treatment, hope has once more been revived. It is of some interest and importance to notice how the general opinion of the profession on the radiological method of treatment has undergone changes. When it was first discovered that malignant tumours rapidly diminished in size or even disappeared under the influence of irradiation, either from x-rays or radium, the cry went up that the cure of cancer had been found. Following this, many people who had no knowledge whatever of the treatment hired radium or bought an x-ray set, and found to their dismay that they did not get the expected results. This caused a wave of depression and scepticism, which is now only just beginning to subside. In my opinion, the right attitude to adopt is neither optimism nor pessimism, but merely to hang on to the fundamental fact that malignant growths do disappear under irradiation. That fact in itself is sufficient reason to make it imperative for the whole profession to combine in working out to the utmost this line of treatment. It is at present the one and only real hope we have for the solution of this problem.

I propose to discuss the treatment of inoperable cancer of the pelvic organs under the following headings:

- 1 Statistics
- 2 Early diagnosis
- 3 Treatment of inoperable cancer of the cervix
- 4 Treatment of inoperable cancer of the body of the uterus
- 5 Treatment of inoperable cancer of the vulva
- 6 Treatment of inoperable cancer of the ovaries
- 7 Organization of further facilities for research
- 8 Possible organization of treatment centres

Statistics

If we look at the statistics for 1922 we find that the total number of deaths registered in England and Wales was 466,780, and of this number no fewer than 46,903 died of cancer, that is to say, rather less than one-tenth of the deaths were due to this dreadful scourge. Of this 46,000, 5,354 were due to malignant disease of the female genital

organs. I have not the least doubt in my own mind that the figures are even worse than here indicated, because some people only put the terminal events on the death certificate and leave out the main contributory cause. Even so, the figures are terrible, especially when one considers that so many of these patients are only middle aged.

Early Diagnosis

Although the importance of early diagnosis of the disease is well known to everybody, yet I feel that it is essential to dwell for a moment on this aspect of the problem, and in the discussion to follow I would like members of this Section, especially those of you who are in general practice, to suggest methods by which the present dreadful state of affairs can be remedied. All gynaecologists must be struck by the fact that the patients in the majority of cases only come to them when the disease is very far advanced. The reason for this I have often tried to discover, and unhesitatingly apportion the blame, first, to the public itself, and secondly, in a minor degree, to past generations of medical practitioners, but certainly not to the present-day practitioners, as in the vast majority of cases you will find that the patients in question only consulted their doctor for the first time a few days before they were referred to the hospital. I have not a shadow of doubt that the reason why, in a number of cases, they postpone seeking advice is that they fear lest they should be told that they are suffering from malignant disease and that a big operation is necessary. In the case of inoperable carcinoma of the uterus there is yet another reason—namely, that the first symptom is menorrhage. This symptom is so common among women and so difficult for them to distinguish from a slight irregularity of their menstrual period that they come to regard it as insignificant. This is particularly true of women passing through the menopause, and when one patient is told, quite rightly, after careful examination, including diagnostic curettage, that she need not worry about haemorrhage, her neighbours who appear to be suffering from the same symptom diagnose their own cases as being identical. Another fallacy that the public still cling to is that cancer is never present without pain, because by the time they realize that their relative is dying of cancer the patient in question is suffering agonies.

You may be surprised that I should apportion the blame to past generations of doctors, but it must be remembered that years ago the successful treatment of even early cases of malignant disease was so problematical that I am convinced that medical men did not try to diagnose cancer, but preferred to keep the patient and themselves in the dark. How, then, are we to remedy these defects?

First by educating the public and getting them to talk about cancer. If one advocates this, the objection is sometimes raised that it will create a panic and increase the number of cancer phobias. I entirely disagree with this idea. On the contrary, it is likely to diminish these cases. An apt comparison is the case of tuberculosis. Many years ago the dread of consumption, as all tuberculosis was called, was very great in the minds of the public. It is true that the percentage of arrested cases improved enormously, nevertheless, if we look at statistics for 1922 we find that the actual number of people in England and Wales who died of tuberculosis of all sorts is greater than the number who died of cancer, and yet the number of cases of tuberculosis phobia is comparatively insignificant because the public are sufficiently educated to realize that they are not suffering from the disease. If we can persuade the public to visit their doctors and openly say to them, "I have come because I want to know whether I am showing any signs of cancer," the problem would be more than half solved. In these days there are comparatively few medical men who are not well grounded in the early diagnosis of cancer, but it cannot be expected that a busy practitioner can go completely over a patient who comes to him complaining of some slight mythical ache or pain in the chest or abdomen, when what she really wants him to do is to see whether she has got cancer of the uterus. That is no exaggeration, it has happened

to me times without number, but being a gynaecologist I know from the outset that they have not come about the pain complained of in their big toe.

Treatment of Inoperable Cancer of the Cervix

Of all types of inoperable cancer of the pelvic organs carcinoma of the cervix is by far the most common. It is a subject to which I have given a good deal of attention in the last four years, and I should therefore like to speak rather more fully on this type of growth than any of the others. Although very malignant, in the sense that in the majority of cases it is of rapid growth, yet metastases outside the true pelvis are not very common, even in cases dying of the disease, death being more often due to general infection, toxic poisoning, and general cachexia, all of which are greatly aggravated by the frequent haemorrhages. In addition to the fact that the disease remains local for a considerable time, the effects of treatment are readily ascertained, because a large proportion is visible in the vagina, and sections can be taken before and after treatment without harm to the patient, and even without her knowledge. The above considerations show that carcinoma of the cervix is extremely suitable for treatment under research conditions.

Description of Technique.—Naturally, during these years of research, we at St Bartholomew's have modified the technique from time to time, but we have kept to the one general principle of burying the radium in and around the growth. There are authorities who criticize this principle, on the grounds, first, that burying the needles may produce sepsis under conditions very suitable for the growth of organisms, secondly, that the injured normal tissues may be affected by the radium to an undue extent, as it is well known that radium affects cells which are about to go into mitosis, and thirdly, that any incision, even the introduction of needles, may disseminate the growth. On the other hand, the drawback of superficial applications is the very localized effect of radium, the irradiations from which obey the inverse square law. The following concrete example will make this more clear. If a tube made of 0.5 mm platinum and containing 100 mg radium element be placed in the cervical canal for twenty-four hours there is a very definite effect on the immediately surrounding tissues. However, histological examination of the glands 5 cm away will show them to be entirely unaffected by the radium. This is not surprising, as in view of the above-mentioned law it would be necessary to keep the tube in position for twenty-eight years if the glands are to receive the same amount of energy as that received by the tissues adjacent to the tube in the first twenty-four hours.

Vaginal Treatment by Superficial Application.—As stated above, some authorities only place the radium in the cervix and in the vagina on the surface of the growth, and with these people the usual routine is as follows:

The vagina is prepared by means of douches but the growth is not cauterized or in any way interfered with. One or more tubes are placed in the cervical canal containing in all approximately 50 mg of radium element with a filter of 0.5 mm of platinum. In the vagina there are more tubes heavily filtered with 0.5 or 1 mm of platinum and sometimes these have additional filters of cork or aluminium and rubber to stop the secondary rays coming from the platinum filters and to act as distractors. The amount of radium contained in these vaginal tubes is 25 to 30 mg of radium element, making 75 to 80 mg in all. The exact details of the filters vary in different clinics. The duration of application also is a matter of opinion, some authorities advocating twenty-four hours, others as much as a week or even more. On the whole the tendency seems to be to lengthen the duration of exposure.

Vaginal Treatment by Burying Radium Needles.—At St Bartholomew's Hospital we are adopting at the present time the following technique:

The patient is douched for two or three days before the operation with weak lysol. At the time of operation she is placed under an anaesthetic in the lithotomy position and the vulva and vagina cleaned with pierce acid 3 per cent in spirit. A microscopic section of the growth is then taken in every case in which the radium is applied for the first time. The needles are placed in and around the growth, keeping as far as possible about half a centimetre of tissue between each needle. The longer needles are pushed outwards as well as upwards into the base of the broad ligaments. The whole vagina is then packed with gauze soaked in firmine

(2) The striking difference is that the ulcer takes very much longer to close down and heal—twelve to fourteen weeks, in contrast with the six weeks of the divided dose.

It may become callous and never completely heal, the walls being composed of hard fibrous tissue which is incompletely covered with epithelium, and in this condition there remains a thin irritating discharge, when the ulcer gets into this condition further exposures to radium are dangerous and a burn is quickly produced followed by a secondary haemorrhage. Twenty per cent of these patients complained subsequently of rectal or vesical tenesmus which required treatment for some time, although precisely the same cure was taken in packing the vagina. In the divided dose I never had a patient complain of rectal trouble, and only transient symptoms of the bladder. I have consequently retained to the method of the divided dose, provided the patient can be induced to have an anaesthetic on three occasions. The remote results I hope to record in due time.

Type of Case

For convenience the cases should be divided into three classes: (1) Early cases—those clinically limited to the cervix, (2) border-line cases—those which clinically exceed the limit of the cervix, involving the parametria, vaginal walls, or utero sacral ligaments, and in which the uterus is tethered but not fixed, (3) advanced cases, which are admitted to be beyond the aid of surgery. The early cases do not come within this discussion.

Border-line Cases

It is admittedly difficult and sometimes impossible to determine whether the outlying induration is due to growth or inflammatory oedema, but rest in bed, disinfection of the cervix, and drainage of the vagina will frequently dispel the doubt and either confirm the classification or restore it to the early class. The morbid histology of these cases must be investigated to clarify our ideas of operability, it is recognized that the microscopic edge of the tumour lies well beyond the clinical edge and can frequently be demonstrated on microscopic section 1 to $1\frac{1}{2}$ and even 2 inches beyond.

It is instructive not only to examine the organ removed with the naked eye, but to take microscopic sections from various parts of the periphery of the cervix, in more than half the cases the knife will be found to have passed through the microscopic tumour. Furthermore, a snip of tissue should be taken from the pelvic side of the wound, and again in more than half the cases healthy cancer cells will be found on microscopic section. I investigate my cases in this way, and I recommend all surgeons to do the same thing, for it will enable them to estimate how soon recurrence will manifest itself clinically. Of my 20 Wertheim cases after radium 11 showed that division had taken place through the microscopic tumour, although to the naked eye it was well beyond the growth. There was this comfort, however, the cancer cells were not healthy, but showed all the degenerative changes of malignant cells which had been exposed to radium, changes which I have described fully in my Jacksonian essay. The changes noted in the cells are followed by an enormous increase in fibrous tissue which eventually surrounds them, and the malignant cells are strangled and disappear.

In my Hunterian Lecture last year I recorded the results of 50 border-line cases which survived the Wertheim operation, of that series three only are alive to day, six, five, and four and a half years after the respective operations, 29 (58 per cent) occurred within a year, 9 (18 per cent) recurred between one and two years, 9 (18 per cent) survived for varying periods of time up to three and a half years.

Martozloff (Johns Hopkins Hospital) reported that of 120 border-line patients submitted to the Wertheim operation less than 10 per cent were alive at the end of a year, and that the mortality rate varied between 25 and 70 per cent, depending upon the extent of the growth.

Operation in this class of case results in a high mortality, a number of abandoned operations, many incomplete operations, and a few cases which remain well over a variable period of time. It is time that we faced the situation

frankly, and realized that the Wertheim operation is over-extended. I have no doubt that these cases should be treated by radium, as a result of which a certain number will become operable, a certain number cured, and the remainder will survive for varying periods of time—one to five years—in a condition of comfort and ease and able to pursue their home duties to within a few weeks of the end.

In arguing that border-line cases should be treated by radium, I am too well aware of a real difficulty. What about secondary deposits in the pelvic glands? Is radium going to deal with them? We know that 30 per cent have glandular deposits, and unless we can offer some rational mode of dealing with them we are simply transferring that 30 per cent to the third group and treating them palliatively.

I think we may dismiss the methods of Driels and Donaldson without much consideration, for the former is a blind operation of uncertainty, and the latter's plan of packing the pelvis with gauze for several days is fraught with danger.

The direct plan of opening the abdomen and implanting the radium in the growth, which I have now tried three times, has strict limitations and cannot be carried to a conclusion. There remains but one method, and that is the combination of x rays for the pelvic deposits with radium for the local lesion. This method has now been tried for a considerable time by Kelly, Doderlein, Reensens, and Zweifel, and they give a good account of the results. Reensens treats all cases of cancer of the cervix by radium and x rays, and claims 25 per cent five-year cures from it. It is difficult to assess the value of this result without knowing more detail of the cases. Zweifel (Munich), using the same method, claims 43 per cent of cures in operable cases, and 7 per cent of cures in inoperable cases. It would be desirable to have the reports from a larger number of clinics, where the cases were divided into three classes: (1) early, (2) border line, (3) late.

Advanced Cases

These cases, which all agree are inoperable, form a large majority of those sent for treatment. What are the results in these cases? Ninety per cent of them are eligible for treatment, the remainder being debaired owing to one of the conditions referred to under contraindications. Those who are not beyond the aid of radium receive a very large measure of benefit: in 85 per cent haemorrhage ceases, the discharge loses its offensive character, becomes thin, and disappears entirely with the healing of the local lesion in four to six weeks, pain is frequently relieved, and the general condition is so much improved that the patient is able to resume charge of her home, and continues to do so until a week or two of the end. A few of these cases are cured clinically and remain well over periods of two, three, and four years, life is prolonged for a majority of them from six to eighteen months, and all of them enjoy a degree of comfort which no other form of treatment offers them.

The surgeon who treats these cases with radium, seeing so many of them, is apt to be discouraged by the end results and forgets the benefits conferred by it. Little or no improvement upon present results is possible in this class of case, and it is a type of case which should never be seen did our methods of diagnosis enable us to get them at an early stage of the disease. It would be truer to say that there is no method in diagnosis where a disease is only realized or recognized when a patient is moribund from it.

GENERAL DISCUSSION

Mr G. I. STRICHAN (Cardiff) said that in carcinoma of the cervix they usually inserted a tube of 100 mg of radium bromide into the cervical canal and six tubes of 10 mg each into the periphery of the growth. Often another 25 mg tube was inserted well up into whichever lateral fornix appeared to be infiltrated, and all the tubes were left in position for twenty-four hours. Lately forty-eight hour applications had been used, and evidently with benefit. Preparatory douching was the rule in every case, and the

patient was sent home in a few days, to return in six weeks. It was most essential that the uterine cavity should be explored with a sound lest an unsuspected prometrya be present, also a careful examination of the fornices was necessary to find out whether inflamed appendages were present. Both these conditions contraindicated irradiation. In carcinoma of the body of the uterus, after dilatation of the cervix, two tubes of 50 mg each were inserted into the uterine cavity for forty-eight hours or one tube of 100-120 mg. In vaginal and vulval carcinoma first applications were found to be the best. In the vagina they could be held in position only by firm packing, but on the vulva fixation by adhesive stripping was satisfactory. A twenty-four hour application was necessary, but in some cases of vulval epithelioma it was painful and had to be removed after a few hours. In all these cases a douche should be ordered night and morning for three weeks in order to prevent adhesive vaginitis. In Cardiff they had treated seventy-five cases of inoperable pelvic disease with radium, but as some of these were recent the number considered was much smaller. Of this total, 40 cases were carcinoma of the cervix, of these 5 were known to have died, and 11 failed to report. Vesico-vaginal fistula had developed in 2, and in 7 no appreciable benefit had been observed. In the other 15 cases considerable improvement with cessation of symptoms had followed, constituting clinical cure. Six cases of inoperable carcinoma of the body of the uterus were treated. In each of these cases the symptoms had cleared up, and so far, after eighteen months in the last case treated, had not recurred. One case of sarcoma of the uterus was irradiated four years ago and had had no symptoms since, while she had put on considerable weight. Two cases of epithelioma of the vagina and three cases of epithelioma of the vulva were irradiated, and it had to be confessed that the results had not been satisfactory. Improvement followed by relapse occurred in each case, and of the five, three patients were now dead. Radium treatment was only in its early stages, and sweeping condemnation and undue praise were equally to be deprecated. There was much to be learnt before they could accurately assess the exact position that irradiation should occupy in the treatment of inoperable malignant pelvic disease, and they were now working to define that position.

Miss FRANCES IRENS (Liverpool) described her experience in the use of radium emanation tubes obtained from the Radium Institute, London. Her rule was to make a thorough examination under an anaesthetic, enquire away all diseased tissue, and then insert the emanation tube in accordance with the instructions sent down from the Institute. No patient had been cured, but she could testify to the enormous amount of relief given by the treatment. It had enabled women who otherwise would have been a source of misery to themselves and of offence to other people to return home and carry on their household duties to the end.

Dr HERMAN (Stockholm), in reply, said that Mr Cole had referred to the number of untreated cases. They also in Stockholm had untreated cases—about 12 per cent of all their cases. He was astonished to hear that they had found cases of recurrence after radical operation the most satisfactory cases for irradiation. In Stockholm they were of an entirely different opinion. He would like to hear more details of the method of treatment. Scar tissue was much less resistant to infections, and the risk of fistula formation in operated cases was much greater. The number of their permanent cures in operable cases (40 per cent) was about the same as the cures following radical operation. Dr Herman did not agree that sections could be taken before and after treatment with complete safety to the patient. He thought that the practice was exceedingly dangerous. He agreed as to the contraindications to radium treatment. He only gave an anaesthetic for the insertion of the radium in the case of vagus or highly nervous patients. He agreed with all that had been said about the risks of prometrya.

Mr COLE in reply to Dr Herman's remarks about the treatment applied to patients who had previously been operated on, stated that his results agreed with those of

Mr HAYWARD PINCH of the London Radium Institute. A possible explanation might be that they always used buried needles. The abdomen in these cases was now opened as a routine and the iliac vessels secured. In 60 per cent of cases when the abdomen was opened prometrya was found to be present and would probably not have been identified but for the laparotomy. The same remark would apply to prostatic disease.

AN INVESTIGATION OF CERTAIN CARDIO VASCULAR CONDITIONS IN THE PREGNANCY OF NORMAL WOMEN, INCLUDING THE RESPONSE TO EFFICIENCY TESTS

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THE object of this investigation is to discover if by the methods of clinical examination evidence can be obtained of changes occurring in the circulation or in the response to efficiency tests during the course of normal pregnancy, and to relate such changes as may be found to the period of pregnancy in which they occur. In order to establish the occurrence of changes a series of observations is made on individual women during the course of their pregnancy and after its termination. The patients are examined at four-weekly intervals while pregnant, and after confinement when they have returned to their usual life and activity. The patients are drawn from the ante-natal clinic of the Royal Free Hospital, by the kind permission of Professor Mellroy, and the expenses of the work of the last twelve months have been in part met by a research grant from the British Medical Association.

The conditions of examination have been kept as uniform as possible. The patients are seen in the morning between 10 and 12. A note is made of the time of breakfast and of any special exertion or disturbing factor. On arrival patients are put to rest a full twenty minutes on a couch before the taking of records is begun. Each patient included in this group of serial cases has been seen at least three times, many of them five or six times. Forty patients are included in this series, and the total number of records used is about 160. The records are not equally complete on all points. Forty-two single observations have been made, and the records of these cases have been grouped with the others according to the month of pregnancy. Fifty women medical students have been examined by the same routine tests as controls. It is hoped to make a more extended group of controls, more strictly comparable in age and work with the pregnant cases. Many cardiac patients have been examined on exactly the same lines, and these records will be made use of later.

Tests of physical efficiency have long been in use, but during and after the war many workers have attempted to standardize tests on a scientific basis. An excellent summary of the various methods employed is set out in a report by Lucy D Cripps published by the Medical Research Council last year on "The application of the Air Force physical efficiency tests to men and women." The results contained in this report of the application of tests to groups of women are referred to later in this paper, and are of great interest and value. Only certain efficiency tests have been applied to the pregnant patients. It was necessary to select easy tests to which the women would submit willingly throughout.

There are many others in the same field of investigation to whose work I would refer if time allowed. More especially I would remind you of Iellner of Vienna, Pardee in America, Robert Weiss in Prague, and Sir James Mackenzie.

The tests employed were as follows. Pulse rates lying, sitting and standing, also after an easy standard exercise, when the rates noted are (1) the maximum after exercise, (2) the rate at one and a half minutes as compared with the resting rate, (3) the total number of beats during two minutes after exercise. Blood pressures lying and sitting pressures are recorded.

The results shown in the tables and charts which follow are in general the average figure calculated from the total records obtained in each month of pregnancy. In some months the numbers of cases are as yet too small, and in some tests the range of figures is too great, for the average to be of much value. In a short preliminary paper results cannot usefully be presented in statistical form, but it is hoped to make a final report in greater detail when a larger series of figures shall have been obtained. The results so far as they go are remarkable for the high degree of "normality" and "efficiency" shown, which in more tests appears to be greater in the later than in the earlier months. The number of fine adjustments required to produce this result under the constantly changing physical conditions leaves one amazed.

These tests are calculated to discover only the end results of these adjustments, and nothing of the mechanism of production.

The Pulse Rates

CHART I—The control figures shown are the average figures published by L. D. Cripps, from observations on different groups of women, and also the figures obtained in my own series of control cases. The line shows the mean of the rates obtained in each month in pregnant women. It will be noted that only in the fourth month do these lie outside the

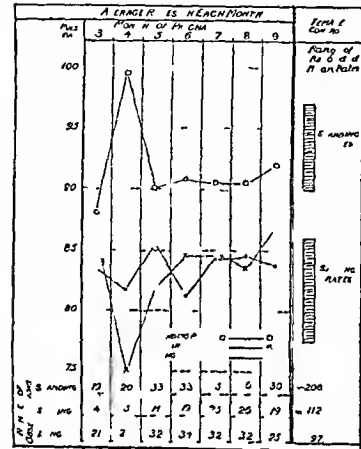


CHART I—Pulse rates during pregnancy

range of the control figures and there is no marked difference in the last months from the earlier figures, though the average in the ninth month for the sitting and standing rates is slightly higher than in the preceding month. The difference between the lying or sitting and the standing rate is one of the efficiency factors noted in my series of tests. It is a test of the capacity to rapid adjustment to position. It is generally held that in a normal individual this rise should not exceed fifteen beats a minute. It will be seen from the chart that the average increase is less than ten beats except in the fourth month. Examination of individual records shows that 88 per cent give a normal response and in the last two months only two individuals gave an abnormal response. The wide variation in rate seen in the fourth month needs to be corroborated by further observations.

CHART II The Individual Variation in the Resting Rate—This chart is drawn up from an examination of individual records for the highest resting pulse rate. The month in which the highest rate is found is then recorded. The chart shows the percentage indicating the highest rate to the total number seen in each month. In the first chart the resting pulse rate shows a slight dip in the fourth month; this dip appears again in the present curve. We may conclude from this chart that the quickest rate may be found in any month of pregnancy but that only 16 per cent give the maximum rate in the last month.

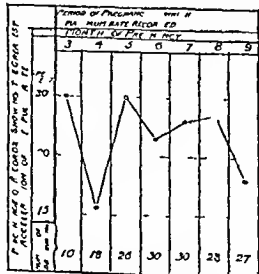


CHART II—Individual variations of resting pulse rate

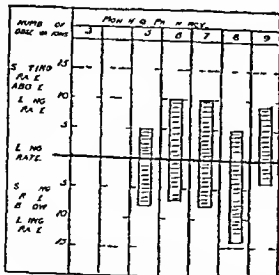


CHART III—Comparison of the pulse rate sitting and lying

CHART III Comparison of the Sitting and Lying Rates—The horizontal line represents the lying pulse rate and the length of the column above or below represents the number of individuals from the lying to the sitting position. The sitting rate was taken after ten minutes rest in that position. Ordinarily this change would cause a slight increase of rate but if the circulation is embarrassed when lying and less so when sitting the pulse would slow down on sitting up. This is seen to occur in the eighth month

in a majority of the patients, whereas in the ninth month the response to the change of position is reversed. These changes may be associated with the increased abdominal pressure and embarrassment of the diaphragm in the eighth month and the relief which follows when the head descends into the pelvis in the last weeks.

Exercise as a Test of Efficiency

Many forms of exercise have been used as efficiency tests, but it has been shown by Pembrey and Hunt that for a routine test a light exercise readily performed is of more value than a severe test. The test here used is thirty steps in sixty seconds up and down on a stool 7 inches high; it is performed to the ticking of a metronome. The normal pregnant woman does this cheerfully, even in the last weeks. The pulse rate is counted immediately after the exercise for two minutes. The pulse rates that are of chief interest are (1) the maximum rate calculated from the first ten seconds count (Chart IV a), (2) the total number of beats in the two minutes (Chart IV b), (3) the rate at one and a half minutes (Chart V).

CHART IV Pulse Rates after Exercise

The maximum rate is shown at (a). The mean rate for all the pregnant cases is 124 and for the control 126. It is interesting to note that the highest rate for the pregnant cases is in the fourth month, but there is no wide departure from the mean in any month. The total number of beats is shown at (b). These records cover so wide a range that the average figure is not of great value. The range is from 240 to 110 in controls, and from 250 to 130 in pregnant cases. When considering the higher average in the ninth month it must be remembered that although the exercise is the same there is an actual increase in the work done owing to the increase in the load carried. The weight of the patients is noted in all cases and results can be examined later from this aspect.

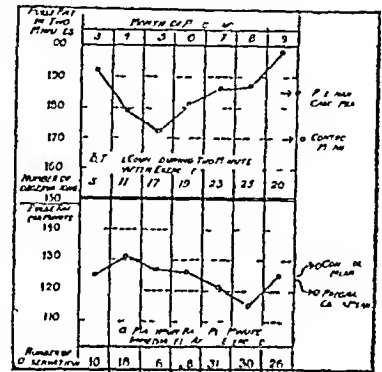


CHART IV—Pulse rate after exercise

CHART V The Pulse Rate One and a Half Minutes after Exercise compared with the Resting Rate—The resting pulse rate is represented by the horizontal line, and the rates after exercise are shown in percentages of the number of records above or below the previous resting rate. The normal response after light exercise may be taken as a return within a minute and a half to or below the resting rate. Pembrey and others have shown that the rate of fall depends however on the severity of the exercise even in a trained individual. It will be seen that in the earlier months the percentage of normal responses is low while in the later months 60 per cent give a normal response. It might be thought that this improvement in efficiency is due to practice in the test, but many individuals are examined for the first time in the sixth and seventh months when the response obtained is normal in a high percentage and this factor does not I think account for the whole change. It will be noted that in the control group there were over 20 per cent of abnormal responses.

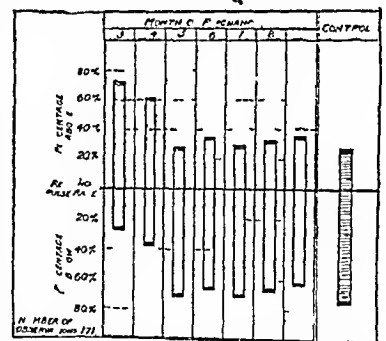


CHART V—Pulse rate at one and a half minutes after exercise compared with resting rate before exercise. Percentage of records above or below resting rate. The normal response is a return to the resting rate or below.

CHART VI Blood Pressures—The readings are made by two observers working simultaneously on the two arms connected to the same manometer. The pressures are read by auscultation. It is found that the pressures both systolic and diastolic, may be highly variable in the same individual at one sitting. Precaution is taken to ensure uniformity of interpretation of the sounds. The first reading is always discarded. Then three consecutive readings are made and recorded making six records in all of which the mean is taken for use in compiling this chart. Both the systolic and diastolic curves in pregnancy show a mean rather below that of the control figures. The group of medical student controls were observed by myself and my usual assistants.

under exactly the same conditions as were used for the pregnant women. The other control figures are from the report of L. D. Cripps. The observations were made on different groups of women of varying ages none, however, are strictly comparable in age

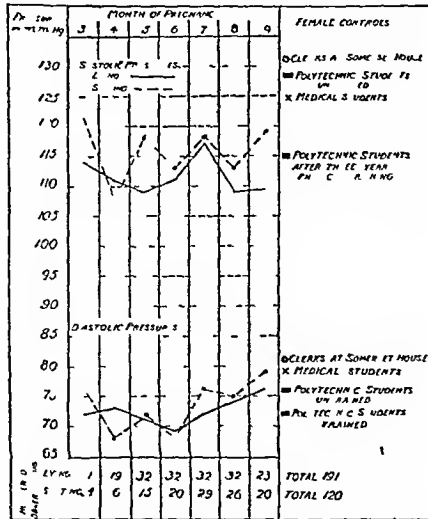


CHART VI—Blood pressures—sitting and lying

and mode of life with the working-class housewife who forms the majority of my cases. The actual range of systolic readings is not shown on the chart but in 191 cases of pregnancy a record above 140 mm of mercury was made only four times, and records above 130 mm only ten times.

The fact that these higher readings are so exceptional reaffirms what has been stated by many observers, that a high systolic pressure in pregnancy calls for very careful investigation to exclude toxæmia. A record of the pressure should be made in the early months as a routine, or a high normal pressure may give rise to anxiety if discovered only in the later months. A patient, aged 29, had a systolic pressure of 150 mm of mercury in the fourth month, and 140 mm in the ninth month. Intervening records were rather lower. She was apparently quite healthy and had a normal confinement. The diastolic pressure curve rises in the ninth month, though not above the limit of normal control figures. A larger series of cases needs to be studied to establish this finding.

Conclusion

I have put before you in a condensed form some results which have been obtained from the examination of a series of normal pregnant women. These results show for the most part a high degree of "normality" in the adjustments of the circulation. One may say that the rate of the pulse, whether lying, sitting, or standing, is normal, and that the response to change of position is normal, though in the eighth month there is a slowing of the pulse rate when sitting as compared with lying, which may be associated with the position of the uterus and pressure on the diaphragm.

The exercise test is well performed throughout, but the return of the pulse to the resting rate after the exercise is slower in the earlier months, this may mean that the efficiency is less, but in other tests it appears that the fourth month is a period when the heart is more easily excited to a rapid rate than later in pregnancy.

Blood pressures show no tendency to rise with the advance of pregnancy and are indeed throughout on the low side of normal.

The application of the knowledge gained by physiological tests is obviously important to the better understanding and treatment of pathological conditions. It is with this goal in view that the present investigation is being carried on and that I have ventured to bring this preliminary report to you to-day.

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- 1 Cripps L. D. Medical Research Council Special Report 84 1924
- 2 Fellner O. O. *Monat. Geb. u. Gyn.* 1913 xxxvii 3
- 3 Pardo H. E. B. *Amer. Journ. Obstet. and Gyn.* 1922 li 670
- 4 Meyer R. *Klin. Woch.* 1924 li 166
- 5 Mackenzie Sir J. *Heart Disease and Pregnancy* (Hunt G. H. and Pembrey, M. S. *Guy's Hosp. Reports* 1921 lxxi 415) Ibid 1922 lxxii 367

DISCUSSION

Mr R. H. PARAMORE (Rugby) said the pulse rate and blood pressure in different periods of pregnancy were determined by many factors. Of these, the volume of the blood and the possibly changing volume of the blood (which might explain in part the low non-protein nitrogen content of the blood in normal pregnancy) was important. The speaker believed the heart hypertrophied in pregnancy. The foetus had its own circulation, and the foetal heart determined (to a large extent) that circulation, but the maternal peripheral resistance was increased by the placenta. It was an error to suppose that the maternal peripheral resistance was caused only by the (maternal) arterioles. In the state of attention (in the non-pregnant) there was an increased blood flow through the brain, this was conditioned by a tightening up of all the muscles of the body. This increased muscular tonicity caused a greater difficulty of the blood flow through the muscles (by constricting the muscular capillaries), and a greater difficulty of blood flow through the capillaries permeating the abdominal visceral mass, which was more compressed by the tightening up of the abdominal wall muscles and thoracic diaphragm. Thus a higher aortic pressure resulted, and a greater blood flow through the brain. The peripheral resistance was caused, not only by the arterioles, but considerably or to a large extent by compression of capillaries. In pregnancy the capillary resistance in the abdomen, in many cases, was increased the superficies of the abdominal wall had become much greater, and the tonicity of the abdominal wall muscles so augmented that separation of the recti occurred. A distinction between the condition of affairs affecting the circulation in primigravidae and in pregnant multiparae had not been made, but it was important. In the brief moments left for discussion it was impossible either to criticize or augment the argument, but the subject was essential to an understanding of the metabolic state of the individual in pregnancy.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

THE NON-LUETIC ARGYLL ROBERTSON PUPIL

I have previously reported seven cases of Argyll Robertson pupil which had distinctive features, and in particular were not associated with syphilis. The characters were

- 1 That they were inactive to light stimulus, whether direct or consensual
- 2 They reacted slowly with convergence
- 3 Five of the seven cases were unioocular
- 4 Accommodation was intact in every case
- 5 They dilated fully with mydriatics
- 6 The knee-jerks were present in every case
- 7 In none was there evidence of parasympathetic or any other general nervous disease even after so long as thirteen, thirty-six, and forty years in three cases

It seemed probable that some at least of these cases were congenital.

Kinnier Wilson, in his excellent articles on the Argyll Robertson pupil points out that the phenomenon is seen apart from syphilis, as in epidemic encephalitis and insular sclerosis, but makes no reference to cases of this group which seem to be quite unassociated with any diseased condition. They are uncommon, and it seems worth while adding the following case to the previous seven.

A married woman aged 37 complained that in general her left pupil did not vary in size she said however that occasionally it became very large so that the eye looked like a glass eye and at other times it became very small and at either such time her sight was misty.

The right eye was normal in every respect. The left pupil was quite inactive to light stimulus whether direct or consensual it reacted slowly with convergence accommodation was intact the acuity was 6/6 the fundus was normal the pupil dilated fully with mydriatics the knee jerks were present and she was perfectly normal and healthy in every way.

- 1 *Trans. Ophth. Soc. U.K.* 1924 xlii 38 and *Medical Ophthalmology* second edition p 175
- 2 *Journ. of Neurol. and Psychopath.* 1921 li 1.

There was no evidence of acquired or congenital syphilis. She knew that the condition of the pupil had been present for six years at least, and was prepared to believe that it had been present longer than this she felt sure however, that it had not been so all her life.

A point of considerable interest was that her sister, two years younger, had a similar pupil, which she knew had been present for a number of years. I have not previously come across a case in which there seemed to be a familial tendency.

London W 1

R FOSTER MOORR, F.R.C.S.

TREATMENT OF SPRUE WITH CALCIUM LACTATE AND PARATHYROID EXTRACT

The results obtained in this case of sprue treated with parathyroid and calcium lactate viz, I think, sufficiently good to be placed on record.

An Englishman born in London went to the East for the first time early in 1920 as purser in a line of ships running between Calcutta Madras Bombay and Dublin. Apart from a few months in England in the spring of 1922, he remained in this part of the world until the end of 1923 when he returned to England. While at home in 1922 he stated that he suffered for nearly two months from chronic diarrhoea for which he was treated without relief. On questioning him about his illness nothing suggestive of sprue was elicited. During his service as purser practically the whole of his time was spent on shipboard except for an occasional day or so he did not live on shore at any time. At the end of November 1924 he came to East Africa and resided first at Mombasa and then at Dar es Salaam.

On April 7th he was admitted to the European Hospital, Dar es Salaam. During the previous four weeks he had been suffering from chronic diarrhoea passing five to seven stools daily. He had been feeling generally unwell for a week and only able to do his work as a clerk in a shipping firm with an effort. The diarrhoea commenced about 3 or 4 a.m. it was unaccompanied by any abdominal pain or discomfort or by any soreness of the mouth or tongue, it had almost ceased by midday. The patient looked ill, sallow and thin. He weighed 7st 12lb, his normal weight being stated as about 9st. The stools were typical of sprue, being loose, pale, copious, sour smelling and frothy. There was no involvement of the tongue or the buccal mucous membrane.

On the next day, after a preliminary purge of castor oil a twelve day course of treatment was commenced, tablets of 1/10 grain parathyroid extract being given each night, and 10 grains of calcium lactate three times a day. The patient during this treatment was kept in bed and put on a milk diet. Improvement in the character and number of the stools was rapid and steadily maintained. From April 13th onwards he never passed more than two stools in the twenty four hours and these began to be formed on April 15th—that is, seven days after starting treatment. On April 19th small amounts of solid food began to be introduced into the dietary. On April 23rd a severe attack of subtertian malaria developed, which, although yielding readily to quinine treatment considerably retarded his convalescence. No return of the diarrhoea occurred. On May 1st soft formed stools containing a little faecal colouring matter, were being passed. On May 25th he was discharged from hospital and sent for a short sea voyage his weight then being 8st 2½lb. On his return his general condition was much improved he looked and felt well and his weight was 8st 7lb. On August 10th he returned to work at Mombasa and was enjoying good health having had no return of diarrhoea although the stools were still purer than normal, his weight was 8st 6½lb. It was unfortunate that I could not obtain any estimation of the calcium content of the blood.

I wish to thank Dr J. O. Shucore, Director of Medical Services, Tanganyika Territory, for permission to report the case.

C. F. SHELTON, M.D., B.S.,
D.T.M. and H.Lond.
European Hospital Dar es Salaam

THE TYPHOID BACILLUS RECOVERED FROM GALL STONES

The following case presents certain features of interest from the pathological and bacteriological points of view.

A woman aged 79 years in whom cachexia and gradually deepening jaundice was followed by death was found *post mortem* to have a large tumour growth occupying the region of the gall bladder with numerous secondary growths throughout the liver substance. Embedded in the substance of the primary growth were about a dozen small faceted gall stones greenish black externally.

Bacteriological Examination

Two of these selected at random were cut with aseptic precautions. The cut surfaces were rubbed with a sterile platinum loop which had previously been charged with a drop of condensation water from a sterile agar slope and a slope culture was made. Numerous colonies were present on the slope after twenty-four hours incubation. These were rubbed off with a platinum loop and successive streaks were made on a plate of MacConkey's medium (lactose taurocholate neutral red agar) after a further period of twenty-four hours incubation numerous

small pale colonies were present on the plate four of the 9 were subcultured in broth, and were found to be Gram negative motile bacilli which ultimately gave the fermentation reactions characteristic of *B. typhosus*. A further subculture tested by Dreyer's technique with standard *B. typhosus* antiserum issued by the Oxford Laboratories, agglutinated up to a serum dilution of 1 in 1,000. The identity of the organism was therefore held to be established.

Cultures from both large and small bowels taken at the *post mortem* examination were negative. There was no definite scarring from ulceration in either bowel. The tumour was an adenocarcinoma.

The only intestinal trouble recorded in this patient's case was an attack of "mild dysentery" in 1911. Apparently no bacteriological investigations were carried out then, but it is significant that she suffered afterwards from transient attacks of jaundice.

The association of gall stones with typhoid fever has long been known, and *B. typhosus* has on several occasions been isolated from the interior of gall stones as in this case.

We are, I think, justified in concluding that the sequence of events in this patient was (a) typhoid fever, (b) gall stones, (c) carcinoma of the gall bladder.

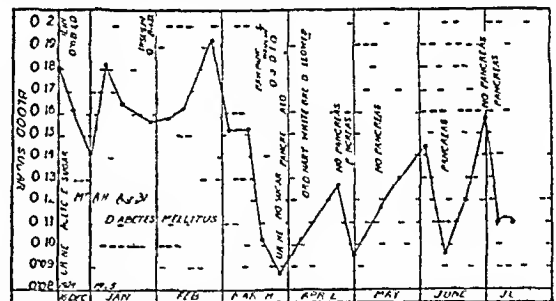
I am indebted to Dr C. I. Bunnidge, deputy medical superintendent, for permission to publish these notes.

JOHN M. HARRISON, M.B., Ch.B. (Cant.),
Pathologist, Devon Mental Hospital Exmouth

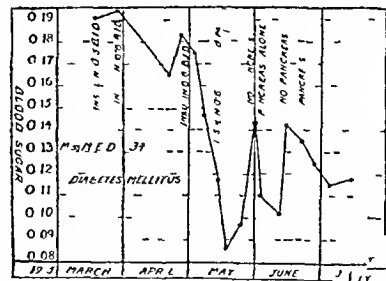
RAW PANCREAS BY MOUTH COMPARED WITH INSULIN

I HAVE noticed the controversy going on between Mr R. D. Lawrence (June 13th, 1925, p. 1108) and others with reference to the efficiency of raw pancreas by mouth, and perhaps the following charts, which I believe are self-explanatory, will help to clear up the matter.

The first patient A. H., aged 31, a felt hat maker was sent into hospital practically comatose; he has now gained 10 lb in weight and returned to work, using no insulin only raw pancreas.



The second patient Miss M. E. D. aged 34 has had pulmonary tuberculosis for at least six years and only recently had symptoms of diabetes mellitus. She has greatly improved—has gained 6 lb and feels well. She is taking pancreas using 0.25 ccm insulin daily when pancreas is not available.



The cases, I believe, are more interesting because of the relative youth of the patients. The pancreas is prepared by first putting it in brine for 24 hours and then mincing with raw green lettuce and then mincing. The patients assure me that they have become, eress, etc. The patients mixture of which they take some quite accustomed to the meal. Neither patient is now a tablespoonful before each meal. I have to thank the pathologist at the Preston and a strict diet. I have to taking the blood sugars.

Preston

J. BERNSTEIN

See among others, Oler Principles and Practice of Medicine p. 560

VACCINATION AND SMALL POX ON THE WITWATERSRAND

THE experience of the Witwatersrand, including Johannesburg, during the 1905-6 small-pox epidemic produced striking and compelling mass evidence of the preventive value of vaccination, the publication of which has hitherto been overlooked. The Europeans, and especially the "coloured" (Malays, Indians, and half-castes), were very indifferently protected by vaccination, which was not then compulsory amongst them; the native workers (but not their women and children) were compulsorily vaccinated.

Chinese miners, who possess no racial immunity against small pox, had been vaccinated at the ports of embarkation, and any unsuccessful or doubtful "takers" were vaccinated again at Durban.

The following are the official figures

	Population	Small pox Cases ¹	Proportion of Cases to Population
Europeans ¹	116 670	149	1 in 783
Coloured ¹	14 357	35	1 in 410
Natives Males 163 000 ² Females 8 612 ²	163 611	28	1 in 6 021
Chinese ³	46 772	Nil	Nil

¹ Census 1904. ² Native Affairs Department return. ³ Chamber of Mines Medical Officer of Health's records.

The fact that not one single case occurred amongst the 46,772 well vaccinated Chinese who worked alongside the Europeans and natives is notably significant.

Again (as shown by the Government mining engineer's return), at the Village Main Reef Mine the white workers numbered some 308 and were mostly indifferently vaccinated; the natives averaged 2,233 and were well vaccinated. Ten cases occurred amongst the 308 white men, but none amongst the 2,233 natives who worked with them.

CHARLES PORTER, M.D., Hon LL.D., D.P.H.,
Medical Officer of Health, Johannesburg

Reports of Societies.

EARLY TREATMENT OF MENTAL DISORDERS

A joint meeting of the Section of Psychiatry of the Royal Society of Medicine and the Medical Section of the British Psychological Society was held on October 28th, under the chairmanship of Dr R. H. Cole, to discuss the early treatment of mental disorders.

Physical Factors

Sir MAURICE CRAIG said that in mental disorder physical factors were as important as psychological factors, if not more important, and at present it was the physical factors which were again being emphasized in psychological medicine. Long experience had taught him the primary importance of disturbed emotion, but he had also learned that there was something which prepared the way for abnormal emotional activity—namely, a general hypersensitivity of the organism. This affected both mental and physical reactions, and brought about fatigue, whereupon the organism became subject to toxic influences. There were cases in which emotional shock seemed to be the only exciting factor in mental disturbance, but in the majority of instances the severity of the symptoms would largely depend upon the preceding sensitivity of the nervous system. With regard to psycho-analysis, it was increasingly evident that the teaching of Freud was more valuable as a factor in education than as a basis for treatment. He was aware that many persons had had their symptoms relieved by psycho-analytical methods of treatment, but the question was whether the majority of these persons would not have derived the same relief from other methods, with less expenditure of time. He had long been in doubt whether repressions and forgotten conflicts were as impor-

tant as the Freudian school supposed, emotional reactions, in his opinion, were much more likely to bring about mental disorder. No one method of psychotherapeutic treatment could be regarded as all-sufficient. He went on to speak of the many conditions on the physical side which called for treatment in relation to mental disturbance. It was a matter of common experience that mental disturbances resulted from toxæmia, but the very striking effects which might follow from what appeared to be quite insignificant toxic causes were only beginning to be appreciated. To employ purely psychotherapeutic methods in a toxic condition was to waste time, and perhaps to endanger the life of the patient. Of recent years there had been overwhelming evidence of the toxic effects on the nervous system of the organism which gave rise to encephalitis lethargica. Again, there were persons who had an idiosyncrasy with regard to certain foodstuffs, he had seen epileptic fits and mental confusion follow the ingestion of eggs, and three cases of delirium supervened upon a meal of mushrooms. The part played by the endocrine glands had also to be kept in mind. Finally, he touched upon sleeplessness. Some persons were much more intolerant of lack of sleep than others, indeed, there were individuals who became definitely insane within a few days if sleep was not obtained. Sleeplessness was not treated in a systematic way. Owing to undue timidity, hypnotics were withheld. The chief objection to hypnotics was the fear of inducing a habit, but experience had taught him to be much more afraid of the effects of sleeplessness than of the almost negligible danger of addiction. It was continually being urged that this or that drug should be added to the Dangerous Drugs list, either because of the danger of addiction, or because the drug might be used for self-destruction. Some medical men thought of sleeplessness only in terms of bromides. Bromides were liable, however, to damage the lining of the stomach, and in large doses often led to great confusion of mind. He had not infrequently been called in to consider the certification of a patient whose most urgent symptoms had resulted from the administration of bromides. Of course, more especially in small doses, these drugs had a role of great value in medicine, but their value in sleeplessness was much more doubtful. The drugs of the barbitone group had come in for a good deal of criticism, but in his practice dril and medinal were the drugs which he had found to give the best results in sleeplessness.

Psychological Factors

Dr WILLIAM BROWN agreed that in all mental disorder there was a physical disturbance, however slight, and in the treatment of such disorder it was obviously necessary as far as possible to deal with that physical disturbance directly. Experience showed that a great deal of mental disturbance which might become permanent followed upon infection. A disturbance of the endocrine glands also had a pronounced reaction on the functions of the nervous system. Infection and toxic absorption seemed to react primarily upon the thyroid gland, and through it influenced the nervous system, and so the mind. Fatigue and physical exhaustion might be factors in mental trouble, and these should be dealt with on the physical side by prescribing rest. At present, however, there seemed to be little danger of these physical factors in mental disorder being underestimated, the danger was on the other side—that medical men should neglect the psychological avenue of approach. In many forms of mental disorder the causal factor was more directly psychological, and in most cases there was an interaction of mental and physical factors. So far as the physical factors could be demonstrated they should be dealt with along the appropriate physical lines, but on the mental side the disturbance should be dealt with on psychological lines, and that was where the real problem of mental disorder came in. The distinction between so-called functional disturbance and organic or structural change was important. It might be assumed that in nervous illness in which there was organic or structural change mere correction of function would be inadequate, but the difficulty of such a view was that a disturbance of function could hardly be conceived without involving some disturbance of structure. All that could be said was that if a disease was predominantly functional it was specially amenable to psychological treatment which had the effect of altering function.

Dr R H CORE (in the chair) said that he had a strong objection to placing physical and mental treatment in antagonism. If there was any physical disease that ought to be treated, and the mind of the patient ought to be treated at the same time. The mental state of the patient was probably a counterpart of his physical state.

Openers' Replies

Dr MAURICE CHASE, in taking up the point raised by Dr Stoddart, said that he did not apply the term "neurologist" to himself, and he objected to "chemist" and other terms, preferring simply the term "physician." These details and separations had done much harm. From the way in which psychology had been referred to that evening it might be supposed that the analytical school was the only school of psychological thought. There were plenty of other schools and methods. One of his objections to the psycho-analytical school was that it always took one view of the patient from the very beginning. He could anticipate the psycho-analyst's findings with regard to any patient who came to him. When the psycho-analytical method first came to this country, he supported it. He was more doubtful now, because it had cut in some respects across his own experience. As soon as psycho-analysts had made their case good he would be with them again, at the moment they had not made it good. They had done a certain amount of good work, but not better than other people. He added that lately he had been following up manic depressive cases very closely, and he believed he had arrived at some useful conclusions as to treatment. These might be the subject of a later paper, but here again he had proceeded along the physical, not the psychological, side.

Dr WILLIAM BROWN claimed for psycho-analysis, quite apart from the extent to which it fulfilled its promise of improvement and cure, that it gave a deeper insight into the nature of mind and the way in which the mind worked. But that was quite a different matter from accepting the findings of many psycho-analysts. The general impression he received, after analysing for some years, was that one was not forced to accept the Freudian doctrine of the sex instinct in its completeness, in the other fundamental instincts there was sufficient to go upon in an exploratory way, though no doubt all instincts came from one root. He defended the use of hypnotism, which, if used carefully, with due regard to the necessity for reassociation, gave definite results.

PLANT POISONING

The first meeting this session of the Section of Comparative Medicine of the Royal Society of Medicine was held on October 28th, the President, Mr F T G HOBBS, in the chair, drew attention to the rapid growth of the section, which was now one of the largest in the society, with a membership of nearly 200.

Dr W H ANDREWS read a paper entitled "Some recent advances in our knowledge of plant poisoning." He pointed out that knowledge of the diseases due to plant poisoning—more especially in this country—was in a far from satisfactory state. Many plants were suspected of being poisonous, and, indeed, it was taught in toxicology that they were poisonous, although no proof of this existed. Others not so regarded were, he was sure, toxic. It was not sufficient merely to suspect a plant, proof was necessary, and he showed that much confusion of thought existed on the subject. Lathyrism, a condition considered due to poisoning by the seeds of *Lathyrus*, was in reality caused by a weed, the seed of which was included with the others as a contamination. Again, it was known that in some cases one or two cereal beans would produce poisoning, while in other places children ate them with impunity. He considered that this was because several different species were in existence under one and the same name. Climate and soil caused plants to have different effects. He reported a case where the same plant on the same farm grew in two fields, one of black earth and the other of red, the plant growing on the red soil contained a much higher proportion of the toxic principle than did the plant on the black. One

of the most interesting features of plant poisoning was the occurrence of "latent" periods, up to three months in some cases. These were not due to cumulative action of the poison, because the animal could be removed from the affected area after feeding and the symptoms would still not be seen until a period afterwards. What made animals eat poisonous plants? In some cases it was undoubtedly due to lack of other herbage, to drought, or to overcrowding. In other cases it was probably inexperience. Native animals had learned to dislike the plants, while imported stock did not know the difference between the good and the bad, and paid the penalty of their ignorance. Dr Andrews in conclusion, suggested that investigations into plant poisoning should proceed in three steps. First of all a biological inquiry should be made to determine whether the plant was really poisonous, and, if so, in what circumstances it was toxic and to what animals. Then the chemist should attempt to isolate the toxic principle, and finally, the pharmacologist should investigate the action.

Professor A J CLARK, opening the discussion, drew attention to parallel cases of latent periods with certain mineral poisons. He believed that people were only now dying from TNT poisoning though it had been contracted during the war. A point of interest also was found in the feeding of goats with thyroid extract. A single large dose would not produce any effect, the same quantity, fed in small portions over a period, produced symptoms. He believed that this was due to the fact that only a certain amount could be absorbed at any one time, and the surplus of the single large dose was eliminated before it could produce any result.

Dr P MASON-BARR pointed out that a form of emphysema of the liver in India was probably due to plant poisoning; the use of alcohol could be ruled out in this case. A similar cause might be the key to the problem of pellagra. Dr Andrews had indicated that a certain plant in Australia after a latent interval, caused a skin sensitization which only had effect when the skin was exposed to the rays of the sun after shearing, etc. This was an interesting parallel with what occurred in pellagra, where the characteristic skin pigmentation was found only on the parts of the skin exposed to the light. Mice and vitamins could almost certainly be ruled out as etiological factors, and he suggested that the cause of the disease might well be a plant poison.

Mr STOW, a veterinary surgeon, reported the infection of himself by swine erysipelas. He explained that he had made a *post-mortem* examination of two pigs of a litter which had died after very indefinite symptoms. The pigs were black, and so the skin lesions characteristic of this disease were not visible. He wounded his hand during the examination, and, although he treated it with iodine, a painful swelling developed which disappeared in a few days, to be succeeded by others in other parts of the hand. This had happened a month ago, and the lesions were still present. He had no doubt now that the disease from which he was suffering was swine erysipelas.

DIATHESIS IN CHILDREN

At a meeting of the Pathological Society of Manchester on October 21st, Professor E D TELFORD in the chair, Dr C P LAPAGE read a paper on diathesis in children.

Dr Lapage said that the diathetic state was not acquired; it was an inherited peculiarity of constitution which could not be eradicated though it might become quiescent. An acquired condition such as rickets was not a diathesis because such a state could be cured and was not a lifelong condition. He defined diathesis as being a state of the human organism in which there was an inherited peculiarity of constitution, so that the individual tended to exhibit either certain reactions in response to irritating factors or a certain weakness of resistance. It was familial rather than racial or national. He dealt chiefly with two diatheses, the exudative and the nervous, and first referred briefly to rheumatism and tuberculosis and the various specific diatheses. He emphasized the fact that individual children developed very much in their reactions to environments and infections. A few children might be regarded as showing

the tuberculous diathesis, but most children who had the tuberculous aspect were examples of no special diathesis, and had developed the appearance because of their infection and their struggle to overcome it. Rheumatism was common in the reddish-haired type and there might be a special liability to rheumatic fever in such families. The exudative diathesis was a very important factor in determining the reaction of children to disease and to faulty metabolism. Asthma, eczema, hay fever, and angio-neurotic oedema were the well known signs of it, but cold dyspepsia, milk intolerance, urticaria, and eczema were common in infants with this diathesis and in later childhood. In addition to eczema and asthmatic or catarrhal signs, there might be cyclical vomiting, mucous colitis, and other conditions much resembling gout in adults. Children of this exudative diathesis were of the pale lymphatic type, and were restless and irritable. The question of nutrients was important in the production of signs of the diathesis. The individual was exudative and might be sensitized. External nutrients were foreign proteins derived from animals, plants, food, or bacteria, metabolic faults associated with mineral salts, acids, fruits, and wholemeal breads, climatic factors related to bracing seaside places and east winds. Internal nutrients arose from infections of the respiratory, digestive, or other systems, and also from infected lymphatic glands. The diathesis of lunacy and of mental deficiency was well known, and the epileptic diathesis was common, there were, however, many cases of acquired epilepsy. In the neurosthenic diathesis the child had a weak spot in the reactions of the nervous system, and, consequently, if there was any lowering agent, such as infection or overstrain, then disturbed nervous reactions, tachycardia, irritability, moodiness, various phobias, night terrors, and even fits might occur. Illustrative cases were described to show the phobias to which children were liable, and, in addition, as illustrating the nervous diathesis, the occurrence of special nervous signs in infancy was cited. Babies with pyloric spasm were of the 'nervy' type, and in some babies the great difficulty in feeding was due to their nervousness. Genuine hysteria might be present in infants. On investigating the family history a nervous element was usually found. There were various other well known specific diatheses, such as haemophilia, and progressive muscular atrophy. The intention of the paper was to bring out the differences in the endowment of different children, and to indicate the importance of taking these into account in the study of disease.

BRITISH ORTHOPAEDIC ASSOCIATION

The annual meeting of the British Orthopaedic Association was held on October 23rd and 24th in Manchester. The first morning session was held in the University Medical School, when Sir ROBERT JONES gave a presidential address which was reported in our last issue (p. 789).

Fractures in the Region of the Ankle-joint

Mr HARRY PLATT introduced a discussion on the above subject, dividing the fractures into two groups (a) fractures of the leg bones, (b) fractures of the astragalus. After reference to the writings of Dupuytren, Astley Cooper, and others, in which incomparable descriptions of these injuries were to be found, he reviewed in full detail the mechanism of production of ankle fractures. The merits of a classification based on mechanism were considered, and as an alternative grouping a simple anatomical scheme was suggested. The statistics of any large series of ankle fractures showed that 50 per cent of the cases were combined injuries of the tibia and fibula. The oblique fracture of the lower end of the fibula produced by external rotation of the foot on the leg was the commonest lesion. In the majority of ankle fractures there was little or no primary deformity. Unmistakable or gross deformity was present in some 25 per cent of the cases. At the same time the importance of the minor degrees of displacement was not sufficiently appreciated. Failure to recognize marked deformity accounted for many of the unfortunate results. In the treatment of recent fractures the speaker was confident that conservative measures of reduction and retention gave functional results of the highest standard, and in his opinion primary operative intervention should be reserved for the occasional fracture in which manipulative

reduction failed to give perfect readjustment. Mr Platt's views were supported by the information obtained from an inquiry into the late results in a personal series of 116 ankle-joint fractures seen during the four-year period 1921-24. Some of the results obtained were illustrated by lantern slides. The treatment appropriate to old fractures was outlined, and the introduction closed with a brief reference to fractures of the astragalus.

In the discussion which followed Mr W. H. TAYNOR demonstrated the results of operative treatment of recent ankle fractures, a method which he advocated is a routine in all fractures with displacement. He stressed the importance of restoring the alignment of the fibula, and the "fit" of the ankle mortise.

Mr H. A. T. FARRAR believed that a more frequent resort to primary operation would give a shorter period of incapacity. He also regarded minor degrees of displacement as important, and in such cases he did not feel that it was always easy to obtain readjustment by manipulative methods.

Mr W. A. COCHRAN quoted a series of 50 cases from the Edinburgh Royal Infirmary which illustrated the satisfactory functional and economic results of conservative methods of treatment. The details of reduction and the application of a plaster of-Paris cast were described.

Mr S. T. INYR had followed up the results of ankle fractures in the Royal Victoria Hospital, Belfast, for the two-year period 1923-24. Out of 77 cases examined 68 were found to be working. In this series open operations were carried out in four cases only, the remainder were treated by manipulative reduction and splinting, following the methods introduced by the late Professor Gordon.

Mr R. OLLIVAN expressed himself as in favour of conservative methods of treatment as a routine, but with a prompt resort to primary operation when a satisfactory position could not be obtained by manipulation. The radiograms of a number of cases with extreme displacement treated by manipulation were shown, the patients having returned to laborious duties.

The afternoon session was held at the Ancoats Hospital, where Mr H. PLATT operated before the members of the association and afterwards gave a demonstration of patients. An exhibition of remedial exercise work was also given in the gymnasium. The association dinner was held at the Midland Hotel, and was attended by seventy-eight members and guests.

The morning session of the second day was held at the University Medical School. The programme consisted of the following short papers: (1) Renal calculi, by Dr G. ASHCROFT (by invitation), (2) Operative measures in drop-foot, by Mr R. OLLIVAN, (3) Injuries of the atlas and axis, by Mr G. JEFFERSON, (4) Much-foot, by Dr MARK JANSSEN, (5) A bone graft for sacro-iliac fixation, by Mr P. J. VERULM, (6) Demonstration on the making of cork supports for metatarsalgia, by Dr J. B. MERRILL. A series of dissections and specimens illustrating the surgical anatomy of the peripheral nerves and sympathetic system from the Department of Anatomy (Professor J. S. B. STOPFORD) were inspected.

The afternoon session was held at the Royal Manchester Children's Hospital, where Mr R. OLLIVAN operated before the members of the association and afterwards gave a demonstration of patients.

GASTRIC FUNCTION IN RELATION TO SYMPTOMS

The first meeting for the session of the Cradiff Medical Society was held at the College Newport Road, on October 13th, when Dr R. CARMON delivered his presidential address on some aspects of gastric function in relation to symptoms.

Taking Rylo's classification of dyspepsia as a basis, he reviewed the functional and organic disorder and emphasized the similarity of subjective symptoms arising from both. He described many of the prevailing views on the motor, secretory, and sensory functions and contrasted them with those which had hitherto prevailed and been taught. The methods of investigation by x-ray examination of a barium meal, and by fractional gastric analysis,

were compared to show how different methods required different interpretations, and how in certain conditions motility might appear delayed by the former and hastened by the latter even allowing for the different time standards. Dr Cameron described particularly how tonus and peristalsis in conjunction with muscular sensibility, might give rise to such normal sensations as resulted from fullness or emptiness of the stomach and other hollow viscera. He reviewed the work of Carlsson on hunger and appetite, and pointed out that the factors producing normal sensations might, when exaggerated, lead to those conscious responses which were recognized as subjective symptoms. Huist's important contributions to this subject, in displaying an sensory response of the gastric mucous membrane to varying stimuli, in demonstrating reflex hyper-tonus in response to local and distal irritation, and in establishing this as a cause of delayed pain, and his theories on conditions supposed to arise from exaggerated or diminished gastric acidity, were described. The researches of Bennett and Ryle on fractional gastric analysis were dealt with to show that extreme variations of acidity occurred without any gastric symptoms being evident, and apparently without any disturbance of metabolism. In a series of mental patients—free from any stomach symptoms—which the speaker had personally examined there was a definite percentage at each end of the scale—namely, with achlorhydria or with hyperchlorhydria. Similar variations of tonicity occurred in any series of healthy stomachs.

Dr Cameron's conclusions, drawn from recent work on gastric function in health and disease, were that normal sensations resulted from tonus and tension of the muscle, and that subjective symptoms were most easily explained on the same basis.

Reviews.

THE MECHANISM AND GRAPHIC REGISTRATION OF THE HEART BEAT

THE unremitting labours of the staff of the department of cardiac pathology in University College Hospital Medical School in elucidating, on a scientific basis, the intricacies of the cardiac action are reflected in the presentation of a new edition of *The Mechanism and Graphic Registration of the Heart Beat*, by Sir THOMAS LEWIS.

It is unnecessary to give in detail the general arrangement of the book, which is already well known and is accepted as the standard work on the subject in the English language. The plan is, in general, that of previous editions, but the text has been subjected to revision and much new material has been incorporated. The present volume is larger than its predecessor by 62 pages of text, and has 51 new illustrations, the bibliography now contains over 1,000 references. Chapters which appeared in the last edition have been reviewed in the light of the most recent research, and several new chapters have been added.

Of the new matter perhaps the most important is that dealing with the nature of auricular flutter and auricular fibrillation. The view of Mines that persistence of fibrillation in the ventricles is associated with "circus movement" was discussed in the previous edition, and only an inset recorded the fact that the author, as the result of experiments then recently completed, had obtained evidence that auricular flutter was due to circus movement, and that auricular fibrillation resulted from depressed conduction. The work upon which this opinion was based, with much additional evidence, is incorporated in the chapters which deal with these two disorders. As an example of scientific accuracy and logical deduction applied to the investigation of pathological problems we feel that the author's work on circus movement should be read by all who are interested in the advance of medical science in any of its various branches. Further new matter will be found in the chapter dealing with the influence of the vagus and of quinidine and digitalis upon flutter and fibrillation. In the short

section on the response of the ventricle to fibrillation of the auricle, the statement that "the theory of circus movement" fully explains the characteristic response of the ventricle" might have been preceded by a more detailed exposition.

The chapter on the refractory period of heart muscle and its relation to conduction affords explanations which will go far to illuminate some otherwise obscure problems. Fresh light is also shed on the mechanism of alternation. In an interesting section the puristolic theory is discussed.

Whether viewed as the latest word to date on the mechanism of the heart beat, as an incentive to further research on cardiac problems, or as a vindication of the value of graphic methods, this book must be accorded a supreme place in medical literature.

In the reproduction of the numerous graphic records the publishers have maintained the high standard of excellence which has characterized this book since its first appearance.

FIBRINOGEN

In his book on *The Action of Antifibrinogen Serum on Red Corpuscles* Dr DAVIDE defines fibrinogen as the albuminous product obtained by the addition of an equal volume of saturated salt solution to oxalated or citrated blood plasma, and argues that it is far from being a single well defined protein or chemical entity. The fibrinogen thus prepared from the plasma of half a dozen different mammals was used, by intravenous injection, for the immunization of various animals, chiefly rabbits. The antifibrinogen serum taken from these rabbits was found to be very destructive to the red corpuscles when injected into other animals. Dr Davide here used guinea-pigs for the most part. The antifibrinogen sera have no erythrocyte-destroying action on animals of a species differing from that which supplied the fibrinogen (that is, on heterologous animals). But *in vitro* the reactions are different, and the author devotes most of his volume to the heterologous haemolysis that occurs when the red corpuscles of the sheep are exposed to the action of the serum of rabbits immunized with the fibrinogen of man, guinea-pigs, or dogs. The immunization of horses, sheep, and goats with rabbit fibrinogen does not generate sheep haemolysins.

In explanation of the fact that specific haemolysins are thus not produced by all kinds of fibrinogen, Dr Davide assumes that the fibrinogens of different animals must have reached different stages in the course of development, and must have diverged from the parent substance to different extents. He finds that the most easily precipitated and thus the least dispersed fibrinogens most easily produce haemolysins, the most dispersed fibrinogens do not produce these antibodies. His book should be of interest to experimental pathologists, it shows that the study of haemolysis that has been in progress for over a quarter of a century is still well worthy of prosecution.

DIATHERMY IN PNEUMONIA

ALTHOUGH Dr H. E. STEWART's *Diathermy and its Application to Pneumonia* is chiefly directed to one disease, it is not without interesting references to others—for example, a chapter is devoted to surgical diathermy, sometimes called endothermy, in the treatment of malignant tumours, and there is an account of general diathermy or autocondensation, which is mainly used to reduce high arterial blood pressure. It is pointed out that when the blood pressure has been brought down to the level appropriate for that individual, although it may still be considerably above that usually calculated as the normal, it can generally be kept within these limits by one or two applications a month.

A notable feature about this book is the modest and open-minded manner in which the data in favour of the

Action of Antifibrinogen Serum on Red Corpuscles. By Hans Davide. Acta Medica Scandinavica Supplementum. A.I.L. Stockholm. P. A. Norstedt and Söner 1925. (Med. 8vo pp. 123.)
Diathermy and its Application to Pneumonia. By Harry Eaton Stewart. W. D. New York. Paul B. Hoeber Inc. 1923. (Cr. 8vo pp. xvi+210. 45 figures. 15 charts. 3 dollars.)

The Mechanism and Graphic Registration of the Heart Beat. By Sir Thomas Lewis, M.D., F.R.S., F.R.C., D.Sc., C.P.E. Third edition. London: Shaw and Son, 1925. (Cr. 4to pp. xiv+529. 400 figures. 42. 10 net.)

value of diathermy in pneumonia is presented. The method is described in minute detail, and the contraindications and precautions, such as attention to subjective tingling or burning sensations, to be taken in order to avoid untoward effects, are set forth in clear language. It is definitely stated that with proper technique no harm can be done to the patient, as diathermy lowers the blood pressure it was at first thought that this might be a contraindication to its employment in pneumonia, but experience has shown that this objection does not hold good.

Diathermic heat is developed more or less centrally in the tissues, and thus differs from methods in which an attempt is made to drive heat through the skin and subcutaneous tissues into the deeper parts of the body. A temperature of 110° F., or more, produced locally in the lung is thought to dilate the blood and lymphatic vessels, perhaps to "melt" the exudation, and to inhibit and to some extent destroy the micro-organisms. About seventy cases of all forms of pneumonia, many of them in the United States Marine Hospital No. 21, New York, were treated by diathermy, and in 97 per cent the temperature began at once to fall by lysis, and the symptomatic relief was almost always so remarkable that this alone would justify its use, provided no contraindications are noted. So far no case in which diathermy was started before the third day of the disease has proved fatal, and the results yielded by diathermy are described as at least as good as those obtained by the use of serum in cases due to infection with pneumococcus Type I. Diathermy has the advantage that it does good in pneumonia due to all types of pneumococci and streptococci. This new form of treatment, so frankly presented by the author, certainly deserves attention and further trial.

MINOR SURGERY

HEATH'S *Minor Surgery and Bandaging* is a classic in its way, and it is so well known, and has been so extensively used by generations of students since its first appearance in 1861, that anything in the way of comment on it appears to be almost superfluous. Those who had the privilege of listening to Christopher Heath will readily recall, not only the vigorous and practical character of his teaching, but more especially the extraordinary colouring that his personality imparted to it. He had the power of impressing his hearers to such a degree that years afterwards the very words, tone of voice, and gesture seemed to recur automatically. The preparation of the eighteenth edition of the work has fallen into good hands, and Mr GWYNNE WILLIAMS has wisely endeavoured to retain the original character of the book, making only such innovations as the progress of surgery rendered necessary. The technique of asepsis has not materially altered since the last edition, and the treatment by surgical methods of infected wounds is much the same as it was left by the war, but the description of the infectious of the fingers and hands has required some alteration, in view of the increased knowledge of their pathological anatomy, as systematized by KAYE. The section on the non-operative management of fractures has required considerable alteration, and an account of Delbet's method of treating fractures of the tibia and fibula has been included. In view of the valuable assistance afforded by skeletal traction in the treatment of fractures of the lower limb, a short description of the simpler methods has been inserted, and somewhat more emphasis is laid on the use of plaster of Paris splints with the suggestion that their employment might advantageously be extended. The value of blood transfusion in certain cases is now recognized and an account of the citrate method has accordingly been included. The chapter on anaesthesia has been extended by the addition of short descriptions of the methods of gas and oxygen anaesthesia and sacral anaesthesia. The editing of this eighteenth edition has doubtless been a labour of love and, as to its efficiency, there can be no question that Christopher Heath would approve the result and thus, after all, is the proper standard to have aimed at.

Mr FIFIELD'S *Minor Surgery*, while excellent in many ways, may be said to lean too much towards the academic aspect of the subject. It forms a well illustrated catalogue of the various instruments employed in minor surgery, with the necessary details as to how to use them, and it provides a good account of the methods and numerous appliances used in the setting of fractures, with illustrations and the names of the different splints. The minor operations have been well chosen and well described. One of the best chapters is that on infection of the hand and its treatment. Bandaging has been adequately dealt with. A chapter at the end of the book discusses anaesthesia—general, local, and regional. One minor criticism of the book is that it is not practical enough. It describes well what ought to be done, but offers insufficient information as to what should not be done. As an illustration the use of Junker's splinter may be cited. Three important points demanding attention are mentioned, and then appreciation will obviate accidents, provided the apparatus is in good working order. The more important detail is to tell the inexperienced how to test the apparatus before use. The first chapter could be profitably enlarged and differently arranged, the alternative method of treating retropharyngeal abscess might have been mentioned, and in the directions for passing a catheter a word might have been said as to how urine should be drawn off in cases of retention. The book contains much useful information, and Mr FIFIELD should feel encouraged to look forward to another edition.

SARCOMA OF BONE

Bone Sarcoma. An Interpretation of the Nomenclature used by the Committee on the Registry of Bone Sarcoma of the American College of Surgeons is a reprint (with corrections) of an article by Dr COOPER in the February number of the *American Journal of Roentgenology and Radium Therapy*, and is produced in the beautiful style characterizing Paul B Hoeber's publications. The aim of the committee mentioned in the title consisting of Dr James Ewing, the author of *Neoplastic Diseases*, Dr J C Bloodgood of the Johns Hopkins Hospital, and the author, is to arrive at a simplified, uniform, and universally adopted nomenclature of sarcomas of bone, and they are therefore open to suggestions for a better one than that tentatively put forward here. For this purpose official nomenclature sheets have been circulated for the registration of tumours of bone with the following list of names: metastatic tumours, periosteal fibrosarcoma, osteogenic tumours, inflammatory formations, benign giant cell tumours, angioma (benign and malignant), Ewing's tumour, and myeloma.

The inclusion of inflammatory swellings and of admittedly innocent growths certainly seems to confuse the issue without any compensating advantages. Inflammatory conditions are inserted in the middle of the list because on the one hand excessively exuberant callus may approach malignant osteogenic sarcomas, and on the other hand because of the borderline conditions, such as osteitis fibrosa and cysts, between inflammatory and neoplastic formations. Benign giant cell tumour is Bloodgood's name for the familiar myeloid growth shown more than twenty years ago by Sir John Bland Sutton to be non-malignant though locally distinctive and therefore not meriting its usual title myeloid "sarcoma." The success of early exposures in producing fibrosis and ossification of these growths is mentioned. The term "Ewing's tumour," introduced in spite of the describer's protest, is applied to a growth which always involves the shaft and its whole thickness, is composed of small round cells gives a characteristic longitudinal, not radiating, striation in radiograms, and yields temporarily to a ray, but has a grave prognosis. Ewing regarded it as an endothelioma, but other members of the Registry are inclined to put it among the undifferentiated sarcomas of the osteogenic group.

The longest account is that of the osteogenic tumours,

Minor Surgery By Lionel R FIFIELD F.R.C.S. Eng. London. H K Lewis and Co. Ltd. 1925. (Cr. 8vo pp. x+431. 275 figures. 12s. 6d. net.)
Bone Sarcoma. Nomenclature used by the Committee on the Registry of Bone Sarcoma of the American College of Surgeons By E. L. COOPER. Paul B Hoeber, Inc. 1925. (Cr. 8vo pp. x. 2 dollars.)

* *Minor Surgery and Bandaging*. Eighteenth edition. By GWYNNE WILLIAMS. M.S. F.R.C.S. London. J and A Churchill. 1924. (Cr. 8vo pp. viii+422. 239 figures. 10s. 6d. net.)

which may be innocent or malignant, they are supposed to be derived from the cellular aneasios of bone, cartilage and fibrous tissue. The malignant forms select the ends of the bones and commonly are both endosteal and periosteal. Dr Codman doubts that these osteogenic sarcomas are ever periosteal only. Other forms of the osteogenic sarcoma are the "undifferentiated," composed of round cells without any tendency to form bone or fibrous tissue, and the telangiectatic, with an unusually bad prognosis. The last group is that commonly called multiple myeloma.

The task undertaken by the committee is of the nature of a collective investigation, and appeals for data from chemists, pathologists, and radiologists. Its aim, therefore, is admirable, but the tentative classification adopted does not seem an improvement on that in common use, varying, as of course it now does, in the hands of different pathologists.

THE YOUNG DELINQUENT

"In 1735 Mary Wotton, a little girl of 9, who had been apprenticed fourteen months before by the parish to the wife of a certain John Easton, broke open her mistress's drawers, took twenty seven guineas, ran away, and was found in Rag Fair. She was sentenced to death." The quotation is taken from the book of Mrs Dorothy George, an *London Life in the XVIIIth Century*, the record of the case is to be found in the London Sessions Papers of July, 1735. It was not exceptional. If there be anyone who is to-day a pessimist on the state of social order of this country, or indulges in a fit of the "blues" at the records in the daily press of strikes, thefts, and crimes of violence, he may be recommended to read this book. By contrasting to-day with these records of the past he will find much to make him an optimist. This book, which is amply documented, gives a picture of the times which is enthralling and terrible. Francis Place, himself one of the people and one who had suffered greatly from the spirit of the times, writes in his autobiography: "The circumstances

I have mentioned relative to the ignorance, the immorality, the grossness, the obscenity, the drunkenness, the dirtiness, and the depravity of the middling and even of a large portion of the better sort of tradesmen, the artisans, the journeyman tradesmen of London in the days of my youth may excite a suspicion that the picture is a caricature." But the truth of his testimony is established. Further, he found much in his times to show that even then a steady improvement had been brought about in manners and outlook upon life, and that this was due to an intense sense of personal freedom in the Londoner and to his share in the heritage of British liberty. And "freedom being primarily a state of mind, we must recognize the undoubted fact that this sense of personal liberty has a real importance in the social life of the time."

The modern outlook upon child offences is instinct with the recognition that the state of the child mind has to be considered. It is the putting into daily practice of the dictum of Francis Bacon: "It is the business of the judge to consider, not only the offence, but also the offender." The practice of to-day is well shown in the book on *The Young Delinquent* by Dr Cyril Burt, the psychologist in the Education Department of the London County Council. Its basis is a course of lectures to London teachers, and the book is primarily addressed to schoolmasters, probation officers, and those particularly interested in the care of children. The aim has been to give an exposition of the methods of psychology as applied to this practical purpose, and to make clear the methods of inquiry and the methods of treatment. It is recognized that the subject is too new and experience too recent to admit of final generalizations. There are chapters on the problem and the methods, on hereditary conditions, on environmental conditions, such as the home, companionship, leisure, and work, on physical conditions, as shown in stages of development, and of illness, on intellectual conditions whether subnormal or supernormal, on temperamental conditions, as shown in the

working out of instincts and emotions, habit and neuroses. In each stage the work is carried forward by illustrative cases, in which the facts as first known are stated, then the steps of the inquiry, the final discovery, and the effects of treatment. The book begins with a case which is a parallel to, but far graver than, that cited at the head of this review. Jeremiah Jones, a child of 7½ years, was a thief and a murderer. An illegitimate child of a chance encounter, brought up in a basement room, mentally shaken by a fractured skull at the age of 6, knowing the stigma of his brutality, he took to tinney, petty theft, and in revenge and for covetousness drowned his playmate. The death was supposed to be accidental, but the psychological inquiry elicited the fact that it was purposeful. Then follows, not a sentence of death as in 1735, but the record of the complete investigation of the child's history and character, and the treatment, with the results so far. This is the manner in which each section is treated, and it is comparable to a series of clinical records well taken, amply discussed, with the reasons for treatment and its results displayed. It is to be hoped that this book will have a wide circulation, for it is most instructive.

THE DIAGNOSIS OF ANOPHELINE MOSQUITOS

PROFESSOR STRICKLAND, who holds the chair of medical entomology in the School of Tropical Medicine, Calcutta, has, in his *Short Key to Anopheline Species of India, Ceylon, and Malaya*, produced a work which cannot fail to be of inestimable benefit to the tropical practitioner, who should be conversant with the characters of the chief parasite vectors of the district in which he happens to be stationed. "Running down" a mosquito with the aid of the ordinary dichotomous key is often far from a simple matter, particularly when the specimen is not quite fresh and has suffered in transit. The author shows how, by careful examination of the wing and hind leg, the "spotting" of an anopheline can in a vast majority of instances be accomplished with certainty. Proceeding on these lines he shows the method by which this is done, and gives also confirmatory points which will be of the greatest service to the beginner, helping him to acquire confidence in his own diagnosis. The diagrams are clear and the plates excellently reproduced.

The labour of correlating the various points must have been arduous, since the whole work, though occupying only nineteen pages, is an outstanding example of simplicity, conciseness, and accuracy. If those placed in a similar position in other parts of the world where malaria prevails could be stimulated to follow Professor Strickland's lead the aggregate results would prove a valuable *vade-mecum* for reference.

NOTES ON BOOKS

Four editions in five years are good evidence of the success of Tidy's *Synopsis of Medicine*. As an aid to rapid revision when preparing for the final examination there is probably no book at the present time so much in demand among students in general, and more particularly among those brought up on Osler's *Principles and Practice of Medicine*, whose arrangement it for the most part follows. In preparing the latest edition¹⁰ Dr LETHBRIDGE TIDY has introduced a good deal of new matter, but by judicious use of the pruning knife he has just managed to avoid overstepping page 1000, and we report the hope that in future revisions he will set that number as his upper limit of size. Considerable changes have been made in the chapters on diabetes and jaundice, and other articles wholly or in part rewritten include those on botulism, viscerotoposis, haematoporphyria, infarction of the lung, primary pyuria, rheumatic jaundice, gall stones, bronchial asthma, and splenic anaemia. New matter comprises articles on blood diseases of childhood, and on thrombosis and embolism. The fourth edition of this useful compendium will without doubt maintain its popularity, not merely with the students for whom it is chiefly intended, but also with practitioners who need a trustworthy and comprehensive outline of internal medicine for quick reference in hurried moments.

¹⁰ *A Short Key to Both Series of the Anopheline Species of India, Ceylon, and Malaya*. By C. Strickland, M.A., B.Sc. Camb. Calcutta and Simla. Thacker, Spink and Co. 1925. (Doubtless 8vo pp. 19 illus. 112 rupees.)

¹¹ *A Synopsis of Medicine*. By Henry Lethbridge Tidy, M.A., M.D., F.R.C.P. Fourth edition. Bristol: John Wright and Sons Ltd. London: Simpkin, Marhall, Hamilton, Kent and Co. Ltd. Toronto: The Macmillan Co. of Canada Ltd. 1925. (Cr. 8vo pp. xv + 1000. 21s net.)

London Life in the XVIIIth Century. By Mrs M. Dorothy George. Late Research Scholar of Girton College, London. Kegan Paul, Trench, Trubner and Co. Ltd. 1925. (Pp. 452. 21s net.)

The Young Delinquent. By Cyril Burt, M.A., D.Sc. Oxon. London: University of London Press Ltd. 1925. (Demy 8vo pp. 643. 24s. 6d. net.)

Dr CHRISTIANSEN'S monograph on the *Organic Derivatives of Antimony*,¹¹ one of the scientific and technological monographs issued under the auspices of the American Chemical Society, gives a full account of the many efforts that have been made to treat parasitic diseases with preparations of antimony. In the main the book is written from the chemical point of view, and there are chapters on the aliphatic antimonial preparations, the aromatic stibines and stibinic acids, the antimony compounds, the organic compounds containing triad and pentad antimony, and so forth. In addition there is a chapter by Dr G C Shattuck on the therapeutic use of antimonials, particularly in trypanosomiasis, the leishmanioses, schistosomiasis, inguinal granuloma, and leprosy, no mention of their employment in yaws seems to be made. The volume is clearly written, and should be widely read because it deals with a subject of great and increasing importance.

Professor Dr HANS CURSCHMANN of Rostock, whose text book of neurology was recently reviewed in our columns, has published in a volume a series of clinical lectures on nervous diseases¹² written for the *Munchener medizinische Hochschulschrift*. The lectures cover a wide range of subjects and are written expressly for the guidance of general practitioners. The author's plea is for early diagnosis, as only this can effectual treatment be attained in such diseases as tabes dorsalis, disseminated sclerosis, and spinal tumour. Considering the small size of the volume it contains a remarkable amount of information of an essentially practical sort. The prominent features of the commonest nervous diseases are outlined and diagnostic pitfalls discussed. In addition there are chapters dealing with the differential diagnosis of such outstanding symptoms as neuralgia, headache, and giddiness.

In their *Physical Diagnosis of Diseases of the Chest*¹³ JOSEPH H PRATT and GEORGE E BUSHNELL have produced a work that should be of considerable value to the advanced student and to the general practitioner who wishes to revise his knowledge and improve his methods. The book consists of two parts—the first devoted to the lungs and mediastinum, and the second to the heart and aorta. Like most teachers, the authors assume a low standard of knowledge and a high standard of intelligence in their students. It is not unusual, therefore, to find that they have terted in considerable detail the fundamental principles on which the methods of diagnosis rest. They have insisted too, on an acquaintance with the normal chest before attempting to interpret the more complicated signs of the pathological chest. Though the book is fairly complete, there are some conditions, such as infective endocarditis, that have been summarily dismissed. Their excuse in this instance appears to be that infective endocarditis, though primarily a disease of the heart, is really a septicæmia. This may be so and the authors may naturally determine for themselves what to omit, but it is strange to find that in a book in which 270 pages are assigned to the heart such an important disease should occupy less than two full pages. Apart from a few similar anomalies, the book may be well recommended.

The French original of the late Dr ETIENNE DESTOT'S radiological study of traumatic lesions of the wrist was noticed in our issue of March 15th, 1924 (p 476). We now welcome under the title *Injuries of the Wrist*,¹⁴ the appearance of an English translation by Dr F R B ATKINSON, which was certainly wanted, for Dr Destot's experience in the diagnosis and treatment of carpal injuries must have been unique and an English edition should be of great value to all those who may be called upon to treat them. The French surgeon unfortunately did not live to bring out the book, and the fact that it was prepared and pressed through the press by others may account for some obscurities of language in the original which have evidently taxed the ingenuity of the translator. We could have wished that Dr Atkinson had given us a less literal version and allowed himself more freedom in rendering the text into English, but we must be grateful to him for making a knowledge of Destot's work generally available in this country. The book is well got up, and the reproductions of x-ray plates to which we took some exception in the original, leave nothing to be desired in the translation. As the title implies Dr Destot relied through-

out largely on the evidence afforded by the x-rays, and the translator has rightly translated the subtitle as "A Radiological Study." The interpretation of radiographs of the carpus is by no means simple for the inexperienced, but with this book to guide him the surgeon should escape all the pitfalls which lie in the path of the unwary.

Mr ST GEORGE LANE FOX PITT'S work, *The Purpose of Education*, was first published in 1913, the second edition was noticed in our columns in 1916 (ii, 872). It has now been enlarged and revised and published in a cheap edition.¹⁵ Its object is to provide a clue to the satisfactory solution of educational problems by their psycho-physical consideration, it is highly psychological and not a little controversial. The author insists that to speak of the subconscious mind or self is very misleading, as there is no definite self entity that remains always subconscious, nor any veritable psychic mass, called by the Indians the subconscious, which is invariably fixed somewhere in the personality out of all consciousness. There is much discussion about the use of the term "complex," which the Freudians always employ in a pathological sense, with this the author does not agree. He uses it in a broader sense, following Professor Rhys Davids, who employed it to translate certain philosophical terms in *The Sacred Books of the Buddhists* more than forty years ago. 'Long before Freudianism was ever heard of' Mr Lane Fox Pitt arrives at the conclusion that the only real remedy, as distinguished from temporary palliatives, for pain is such a systematic education as will effectively subordinate our lower to our higher purpose.

The third volume of the transactions of the Association for Research in Nervous and Mental Disease contains the papers and discussions on *Heredity in Nervous and Mental Disease*,¹⁶ which was the subject selected for consideration at the annual congress in 1923. In the editorial preface it is pointed out that this volume is published, not as in any sense a complete investigation of the problem under discussion, but in order to introduce a little intimacy of vision and clarity of thought into the consideration of the question of morbid inheritance by neurologists and psychiatrists. The usual form of publication has been adhered to in this volume, but as it was not found possible to reach any definite conclusions of value none have been published. In spite of the fact that no clear-cut conclusions emerged from the discussions, the book is very suggestive and serves particularly to indicate the directions in which research might profitably be undertaken. It is certainly clear that long and arduous investigations will have to be pursued before we can pretend to understand the causal factors at work in the production of family diseases.

The second part of the first volume of the *Annals of the Pictet Thomson Research Laboratory*, a publication designed to aid the working bacteriologist by giving him a series of photographs and microphotographs illustrating the growth of pathogenic and other bacteria, contains five papers. These deal with certain nutrient media, *Bacterium pneumonitidis*, of the respiratory tract, the classification by microphotography and the germs and tissues there are photographic and microphoto-

graphic plates.

Mr G E JORGENSEN'S book on *Veterinary Diagnosis and Treatment*¹⁷ may be described as a voluminous case book in which the author has collected some 130 cases of sickness in horses, cows, swine, sheep, dogs, and cats, and set them out in eight chapters in accordance with the system mutually affected. The history, diagnosis and treatment are given in each case, together with an account of the *post mortem* appearances in many instances and a discussion of the completed case as a whole. There is an inadequate index, and the search for information on any particular point in the pages of the book is not easy owing to the way in which it is arranged. Still, its perusal leaves the reader with a good deal of unclassified veterinary knowledge in general, and it may be recommended to the attention of practising veterinary surgeons. It contains many errors in spelling.

¹¹ *Organic Derivatives of Antimony*. By Walter G Christiansen. Chemical Society Monograph Series. New York: Chemical Catalog Co. Inc. 1925. (Med 8vo pp 230 3d dollars.)

¹² *Krankheiten des Menschen*. Von Professor Dr Hans Curschmann. *Munchener medizinische Hochschulschrift*. Band 2. München: J F Lehmann 1924. (Med 8vo pp 230 3d dollars.)

¹³ *Physical Diagnosis of Diseases of the Chest*. By Joseph H Pratt A M and George E Bushnell Ph D M D. Philadelphia and London: W B Saunders Company 1925. (Roy 8vo pp xii + 522 16s 6d.)

¹⁴ *Injuries of the Wrist. A Radiological Study*. By the late Dr Etienne Destot. Translated by F R B Atkinson M D C M Edin. London: Ernest Benn Ltd. 1925. (Dem 8vo pp 176 6s 6d 24 plates 18s net.)

¹⁵ *The Purpose of Education. An Examination in the Light of Recent Scientific Research*. By St George Lane Fox Pitt. New cheap edition revised and enlarged. Press 1924. (Post 8vo pp xiv + 92 4s net.)

¹⁶ *Heredity in Nervous and Mental Disease. An investigation by the Association for Research in Nervous and Mental Disease. Vol. III (1923)*. New York: Paul B Hoeber Inc 1925. (Med 8vo pp xvii + 332 48 figures 37s 6d.)

¹⁷ *Annals of the Pictet Thomson Research Laboratory. Vol. I. Part II*. London: Baillière Tindall and Cox 1925. (Dem 4to pp xi + 217 28s 7 figures in the text 20 plates 17s net.)

¹⁸ *Veterinary Diagnosis and Treatment*. By G E Jorgensen A B M D. New York and London: D Appleton and Co 1925. (Dem 8vo pp 341 17s 6d net.)

THE LONDON SKULL

BY

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It is just a century since Charles Lamb was pensioned and left East India House in Leadenhall Street and the place where the gentle Eli, in the intervals of his clerical labours, conceived his imperishable essays is now occupied by a vast excavation, 50 feet deep in which the new building for Lloyd's is being erected. For 14 feet below the present level of the street remains of the former Roman occupation are visible, lower down 12 feet of undisturbed "dirt" rest upon 14 feet of river gravel below which (that is, 40 feet below the street level) is the blue clay. Last March the ulna of a woolly rhinoceros (*Rh. antiquitatis*) was found in the blue clay, in which a human skull has recently been found. There can therefore be no doubt of the remote antiquity of the original owner of the skull, who was a contemporary of the woolly rhinoceros and the mammoth in what is now the heart of the City of London. But as the Flood Terrace of the Thames, in which it was found, is supposed not to have been deposited until after the disappearance of Neanderthal man from Europe, this is presumptive evidence that the fossil is unlikely to belong to the extinct species (*Neanderthalensis*), and that it cannot be earlier than the Aurignean period. This skull of the Upper Palaeolithic period, however, represents the earliest human remains yet revealed in the City of London.

The fragment (Fig. 1) includes most of the occipital and left parietal bones, and part of the right parietal. The position of the groove for the middle meningeal vein (Fig. 3, B) indicates that the point of bone in front of it reaches to within a millimetre of the coronal suture. The closing of such parts of the sagittal suture as are represented in the fossil and of the lambdoid suture (excepting its lowermost part (Fig. 1) and the endocranial suture in the neighbourhood of the lambda (Fig. 2)) suggests an age of between 40 and 50 years. The exceptional smoothness of the skull and the faintness of the muscular impressions in a person of middle

age indicate the probability that the sex was female. The reasons for claiming that "the lady of Lloyd's" was left-handed are discussed in a later paragraph.

The rough sketch (Fig. 1) indicates the exceptional flatness (compare its height with that of a modern woman M)

and distinctive outline of the cranium in the median line. The profile of the cerebral hemisphere (indicated by the broken line) is identical in size and shape with those of the two women of the Neanderthal species, but the flattening of the cerebellum in the latter (see the lines of the Neanderthal cerebellum and occiput at N) in comparison with its fullness in the London fossil marks the completeness of the resemblance to the Neanderthal type.

But the likeness of the cerebral part of the endocranial cast in the London and Neanderthal women involves not only the contour of the outline but also the modelling of the surface. In the endocranial casts of *Pithecanthropus*, the Piltown skull, and the Neanderthal women (La Quina and Gibraltar crania) there is a prominent boss in the region of the posterior part of the middle temporal convolution, corresponding to the area so intimately concerned in modern man with the acoustic symbolism of speech. In modern man the expansion of the surrounding cortical areas raises them to the level of this pre-cerebrally developed eminence so that the boss is no longer

apparent. In the east of the London skull the temporal eminence (Fig. 3, T) is still present, and the parietal area (P) above it almost as flattened as it is in the Neanderthal crania. In fact, there is a striking resemblance

to the configuration of the La Quina east. The maximal breadth of the intracranial east is intermediate (136 mm.) between the measurements of the La Quina (130) and the Gibraltar crania (140). It is obviously impossible to measure the cranial capacity from this fragment but by comparison with the Gibraltar skull (itself imperfect) one can safely say that the cubic content of the London cranium cannot have exceeded 1,200 c.c. by more than 50 c.c. at the most.

Although most of the crania of Upper Palaeolithic man are flatter than those of the average modern man their height approaches more nearly to the latter (Fig. 1,

M) than to that of the London skull which in this respect agrees with the Neanderthal standard. In other words, the London skull more nearly resembles the Neanderthal type than any other of the Upper Palaeolithic specimens does. The likeness is so real as to raise for serious con-

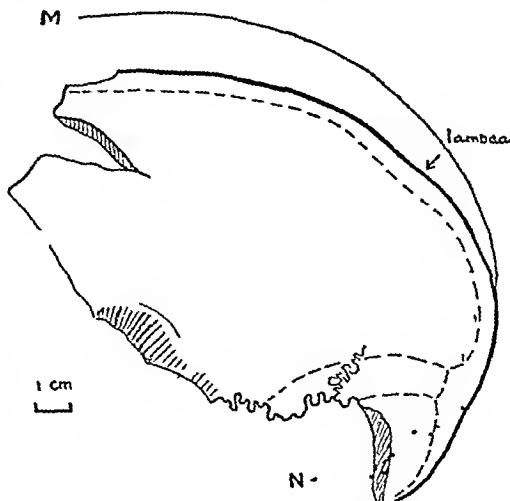


FIG. 1.—Tracing of the median contour of the London skull (thick line) contrasted with the corresponding part of a modern British woman's skull (M). The dotted lines at N reveal the only difference of the contour of a Neanderthal woman's (La Quina) skull, the cerebellum being much flatter and the occiput adapted to the altered form.

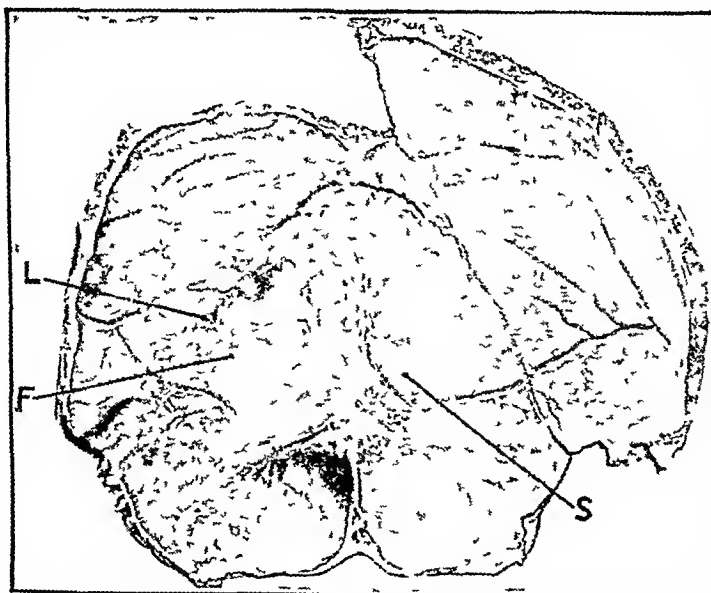


FIG. 2.—Drawing by Mr. A. H. Maxwell of the interior of the London skull viewed from in front. L, cribra lunata; F, foramen ciliare; S, the small foramen ciliare of the left side.

sideration the possibility whether in Britain a stray member of the Neanderthal species may not have survived after the Mousterian phase of culture had been superseded by the Aurignacian.

Apart from the age of the fossil (that is, its deposition in beds later than that associated with Neanderthal man), the form of the cerebellum and its bony receptacle (Fig 1), the thinness of the cranium, and the slightly greater fullness of the parietal area suggest that "the left-handed lady of Lloyd's" was an exceptionally primitive member of the species *sapiens* rather than a belated Neanderthaloid. Though the London cranium is no thinner than the Ta Qina specimen, this is exceptional for a member of the Neanderthal series. Hence it must be given due weight as a reason for excluding the Londoner from the latter species.

Without the front of the cranium or the face it is not possible definitely to exclude the possibility that this skull may belong to the Neanderthal species, but I think the probabilities are against such a conclusion, both on anatomical and geological grounds. This uncertainty does not diminish the interest of the London skull, for the enigma of its affinities emphasises how closely a primitive type of *Homo sapiens* may approach the Neanderthal species.

Reference has already been made to the probability that "the lady of Lloyd's" was left-handed. Some explanation will be demanded in justification of a claim so confidently made.

Twenty years ago, when investigating the occurrence of the so-called Affenspalte (sulcus lunatus) in the human brain, I called attention to the fact that it was often found as a large semilunar furrow on the left hemisphere (Fig 4), but much on the right. Moreover, I recorded the observation that the cortical territory, for which I coined the term "area striata" was often raised into a prominence behind the sulcus lunatus (as in the Egyptian brain shown in Fig 4). Corresponding to this prominence there is often a deep depression on the left side of the occipital bone (fossa corticis striatae) surrounded by a ridge (crista lunata) corresponding to the sulcus lunatus. In the winter of 1907-08 Professor F. Wood

Jones collaborated with me in the attempt to discover the significance of the occasional reversal of the asymmetry usually found in the cerebral hemispheres. In his field notes on the skeletons found in the course of the archaeological survey of Nubia he recorded whether the right

or the left humerus was the longer, and on this basis inferred, in the case of each skeleton, whether the individual was right-handed or left-handed. Using these data I discovered that when the deep fossa striatae and the extensive crista lunata were on the right side, and not on the left, it afforded a reliable criterion of left-handedness. The London skull affords an excellent illustration of this

phenomenon (Fig 2). On the right side (left of the figure) there is a prominent and extensive crista (L) and a deep fossa striata (F), whereas upon the left hemisphere there is only a very diminutive fossa (S). This is a reversal of the customary arrangement (seen in Fig 4), and, I believe, affords definite evidence that the earliest known Londoner was left-handed.

In my earlier memoir on the asymmetry of brain and skull (op cit, 1907) I laid undue emphasis on the arrangement of the venous sinuses, when I suggested that the common deflection of the superior longitudinal sinus into the right lateral sinus was usually related to the slighter backward projection of the right hemisphere. In fact I assumed that this arrangement of the largest venous channel was determined by purely mechanical factors, the asymmetrical condition of the occipital poles allowing more room for the blood to flow freely to the right. This tentative explanation may still have some measure of justification. But it is evident—as the condition revealed in the London fossil indicates—that other factors must play

a part in determining the asymmetry of the cerebral sinuses, and that the reversal of their normal asymmetry is not necessarily in indication of left-handedness. Although the deflection of the superior longitudinal sinus into the left lateral sinus is usually associated with left-handedness the correlation is not invariable. In the London skull, for example, the groove for the superior longitudinal sinus splits at the torcular herophili into two lateral sinuses of almost equal size (Fig 2), as is usual in the apes, but of the two the right is slightly larger than the left. Thus, while the brain conforms to the condition distinctive of left-handedness, the right lateral sinus is larger than the left, as is usual in right-handed persons. When the evidence of

asymmetry is thus conflicting, examination of a series of crania (and the arm bones of the skeletons) reveals that the brain and not the venous sinuses is the real index of right- or left-handedness.

I have to express my gratitude to Mr. Warren R. Dawson for calling my attention to the interesting fossil discussed in these notes and to the Committee of Lloyd's for its generosity in presenting it to University College.

REFERENCE

¹ *Anat. Anzeiger* 1907, Bd xxx, p. 574.

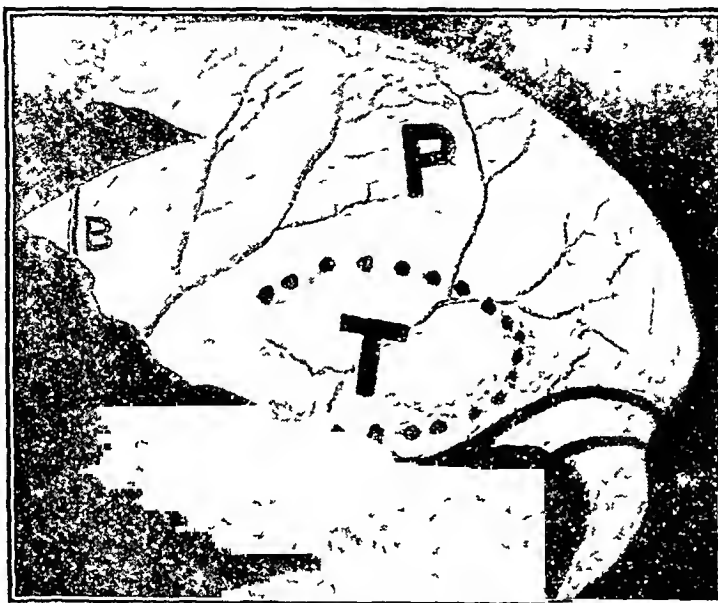


FIG 3—Left side of the London endocranial cast. B, groove for middle meningeal vein; T, temporal boss; P, poorly developed parietal area.



FIG 4—Anterior aspect of an Egyptian brain viewed obliquely from the left side to show on the left hemisphere but not on the right the large sulcus lunatus and prominent button of area striata behind it (compare Fig 2).

The question of the cranial signs of right and left handedness were discussed more fully in a paper read in the Section of Anatomy at the Annual Meeting of the British Medical Association in 1908. An abstract of the paper was published in the *Journal* of August 29th 1908.

British Medical Journal.

SATURDAY, NOVEMBER 7TH, 1925

RADIOLOGY AND RADIOGRAPHY

MEDICAL radiology, speaking broadly, depends on two factors for a diagnosis: production of a radiogram and correct interpretation. To arrive at the latter the clinical side, as a rule, has to be taken into consideration, and consequently medical training is required. Two different kinds of ability are therefore necessary, and the possession of one by no means implies endowment with the other. Even if it is admitted that an expert lay radiographer may occasionally be equal to or even excel a medical radiologist in the matter of skill in the production of a radiogram, the layman cannot possess the knowledge the medical specialist has of the physiological and pathological conditions of the parts displayed. To draw such a distinction is not to cast any reflection on the radiographer, whose skilful technique may be very valuable in assisting a diagnosis. Credit is due to the radiographer, who for many years, at considerable personal risk, has perfected himself in his technique. But though during this time he may have gained useful knowledge of the conditions seen in health and disease, it does not entitle him to usurp the responsibility of the medically trained radiologist in making a diagnosis. Such a distinction is not peculiar to radiology. The preparation for microscopic examination of a fragment of uterine tissue, and the responsibility of diagnosing from its appearance the existence of chorion epithelioma is a parallel case. Again, a layman with the requisite chemical training can detect the presence of sugar in the urine, but the diagnosis of diabetes demands expert medical consideration. A deep knowledge of the pharmacology of digitalis does not entitle a chemist to diagnose and treat auricular fibrillation. Such examples could be multiplied, and careful examination of the diagnostic and also of the therapeutic functions of radiology shows that such a distinction is of vital importance.

The problem presented to the general practitioner is twofold: there is the clinical side and the ethical side. The radiological diagnosis of a fractured bone presents no difficulty as a general rule, and such difficulties as occur can usually be overcome by refinements of technique. Were radiology limited to such simple problems the question of medical as contrasted with radiographical skill would hardly arise. But this is not the case. The chest affords a very large field for both radiography and radiology, and there are few who would dare to claim that the last refinement of skill has been obtained by the most expert technician or diagnostician. For example, using radiography alone, the differential diagnosis between pulmonary tuberculosis, primary malignant disease of the lung, and pulmonary syphilis is still difficult, and depends on clinical considerations of a varied nature. Again, there is more than one possible cause for enlarged bronchial glands, though the appearances presented by the radiograms in each case may be almost indistinguishable. Primary malignant disease of a bronchus is yet another difficult diagnostic problem, while pericardial effusion may easily be overlooked in a radiological examination by one who does not possess

clinical knowledge. The distinction between early periosteal sarcoma and myositis ossificans is slight and very subtle, yet the life of the patient may depend on the right answer being given. In all these difficulties the discoveries of physiological and pathological research must be taken into account, or the diagnosis will be little more than a gamble, with consequent grave risk of faulty treatment and inaccurate prognosis, the welfare of the patient may be endangered and a professional reputation threatened. It has before now proved impossible, even after the most careful radiographic examination, to distinguish between renal calculi and calcareous mesenteric glands, until the application of pathology pointed to a conclusion subsequently confirmed by surgical operation. In such a case the most skilful interpretation of the findings by a radiographer is inadequate until reinforced by the wisdom derived from long study of pathology. Here also is raised the very important point that the medical radiologist must not be a specialist in a narrow groove; he must possess a full knowledge of the anatomy, physiology, and pathology of the regions under examination. He assumes a heavy responsibility in making a diagnosis, and a high degree of preliminary medical training must be his. The responsibility is no lighter in the case of a general practitioner called upon to interpret a radiogram, and it is not too much to say that the progress of radiology has been definitely impeded by the failure of some to recognize the difficulties of such diagnosis. To entrust this responsibility to those who have not had the general and special training the medical student receives in his ordinary education is therefore, indefensible. This is admitted by many lay radiographers, whose status is not thereby lowered. In therapeutics also the use of x-rays entails a heavy medical responsibility, and the treatment of each patient requires the careful supervision of one who has been specially trained to detect the early manifestations of disease and to appreciate the slight, and sometimes conflicting, evidences of improvement. With such dangers to be remembered, both in diagnosis and in treatment, the position of a hospital or infirmary which is content to dispense with a consulting medical radiologist on its staff is most unenviable, and yet, though medically trained pathologists and ophthalmologists are admittedly essential members of a hospital staff, the consulting radiologist is still too often considered an unnecessary luxury. While large sums of money are being devoted to the perfecting of apparatus in medical institutions, yet in some the clinical interpretation is left in unskilled hands, and patients are thus exposed to considerable risks. Such a state of affairs is deeply to be regretted.

The welfare of the patient is the primary ethical consideration. Now it is generally recognized that in the interests of the patient the functions of diagnosis and treatment must be limited to those who have received a medical education and are subject to the jurisdiction of the General Medical Council. Medical practitioners are prohibited from associating with unqualified persons who may assume medical functions, but the General Medical Council has no other power of restraining the unauthorized activities of lay diagnosticians and healers. It is therefore incumbent on medical practitioners, in the interests of their patients as well as for their own professional security, to see that the line between radiographers and radiologists is honourably observed. It is not sufficient to rest upon the admitted fact that the vast majority of radiographers, clearly recognizing their obligations and

interests, are as scrupulous in their behaviour in this respect as they are eminent in the value of their services to the medical profession and to humanity. Exceptions do, unfortunately exist, and are tolerated, not only by individual practitioners, but also by authorities of institutions who might be expected to take wider views. There is no shortage of medically trained radiologists, but there is a sad lack of hospital appointments for them. This is not the case in America and on the Continent where the holding of radiological posts in public institutions by non-medical radiographers is almost unknown. Both radiographers and radiologists have much to gain from the termination of the present confusion between them. The efforts of the Society of Radiographers in this direction, together with the influence of the British Institute of Radiology, need only the co-operation of general practitioners and of hospital authorities to bring about great advances in radiology, which has owed so much in the past to the unselfish co-operation between radiologists and radiographers.

THE MELANOMATA.

THE pigmented tumours, or melanomata, have in recent years commanded much attention from pathologists, the reason being that they afford special facilities for the study of the histological processes of malignant disease. Mr W. G. Spencer took a wide view of melanosis in his Bradshaw Lecture to the Royal College of Surgeons of England two years ago,¹ and now the *Edinburgh Medical Journal* has devoted the whole of its fasciculus for October to an essay on the melanomata by Dr James W. Dawson, histologist at the Royal College of Physicians Laboratory, Edinburgh. The subtitle of Dr Dawson's paper is "A study of cell origins and transformations, with a critical discussion on aspects of tumour growth," and this justifies the statement that the real interest of an investigation into the morphology and histogenesis of the melanomata lies in the light that they can be made to throw on tumour growth in general. The research appears to have been undertaken primarily with the object of throwing light on the variations in form which are not infrequently met with in the cells of malignant growths and at times render diagnosis difficult. For such a study the melanomata are peculiarly suited, owing to the extreme variability of their histological structure. The research has led Dr Dawson into an exhaustive investigation, both clinical and pathological, of the entire group of melanomata, innocent and malignant, and the result is a volume of some two hundred pages which practically constitutes a textbook of these tumours, and will, there can be little doubt, take its place as the standard work on the subject.

To the pathological histologist, who on such a matter as this must be the guide of the practitioner, the centre of interest in a new work on melanotic tumours will be the discussion on the nature of the so-called melanotic sarcomata. There are probably few pathologists who feel on firm ground in making use of that term. It is time honoured and convenient, since there is no mistaking what growth is denoted by it, it may represent the truth, but of this there is no proof. In many cases the growth has the apparently unmistakable histological characters of a sarcoma, but it may take the form of an endothelioma, and, moreover, from several important features in its clinical course and mode of dissemination, it is difficult to avoid the

conviction that it is a carcinoma. The author has fairly faced this complicated problem, and after an exhaustive histological study has reached the definite conclusion that the growths are, in all cases, of epithelial origin—that is to say, are carcinomata. There seems to be a general consensus of opinion among pathologists that these tumours arise from certain pigmented cells occupying the deeper layers of the epithelium, and from the so-called naevus cells of the corium, but with regard to the nature of both of these groups of cells there is a divergence of views. According to the observations of Ribbert there exist in the basal layer of epithelium a number of intercalated cells of connective tissue type which act as melanoblasts or producers of melanin. These are considered to have migrated from the corium, and if this view be correct the tumours arising from them are properly spoken of as sarcomata. In the same way, if naevus cells are regarded as modified mesodermal cells, the name melanotic sarcoma is appropriate. There is, further, the theory of Kromayer, that naevus cells are epithelial cells which have migrated into the corium and have become converted into true connective tissue cells, as evidenced by the existence of an intercellular substance, regarded by him as a product of the cells. Tumours arising from the latter would be rightly classed as sarcomata.

With regard to Ribbert's view, Dr Dawson finds, from an investigation directed especially to this point, that there is no evidence of any migration of cells towards the epithelium, and he considers that naevus cells are derived from the basal epithelium by migration into the corium. He bases this conclusion on a comparison of pigmented moles of gradually increasing complexity. In the simplest form there is found merely a localized pigmentation of the deeper cells of the Malpighian layer, with a few phagocytic and pigmented connective tissue cells in the papillae. In a later stage groups of basal cells become loosened from one another and assume a branched or spindle form, these break away from their epithelial connections and are found lying in the connective tissue of the papillae. In the final stage columns of small polymorphous cells (true naevus cells) are found in the corium, together with branched pigmented phagocytic connective tissue cells. No definite connexion could be traced between the cell columns and the basal epithelium, but the impression received from a study of the sections was that of a process advancing from the surface inwards rather than in the opposite direction. With regard to Kromayer's theory, the author admits that, although it implies a violation of the laws of histogenesis, which hold to the specificity of the germinal layers, it cannot be lightly dismissed. He considers, however, that the intercellular substance which separates the tumour cells and suggests their connective tissue nature consists merely of the disassociated connective tissue fibrils of the corium.

Dr Dawson traces in detail the stages in the formation of the melanotic growths from the basal epithelium, making a distinction regarding their point of origin—whether it be in the interpapillary processes or in the bridge of epithelium uniting these over the summits of the papillae. Tumours of the alveolar type appear to take origin in the latter, while those developing in the interpapillary processes tend to assume the form of sarcoma. In either case the earliest change is similar to that seen in the development of naevus cells, groups of basal cells are found loosened from their neighbours and assuming branched and spindle forms, proliferation then occurs, with

¹ BRITISH MEDICAL JOURNAL, 1923, vol. II, p. 907.

penetration into the corium. In those cases in which the primary change is in the interpapillary process, the proliferation leads to enlargement of the process, so that it is compressed between the adjacent papillae, its cells become flattened and spindle shaped, and in penetrating between the connective tissue fibrils of the corium produce the appearance of a spindle cell sarcoma.

From the many excellent illustrations in Dr Dawson's paper his contention that these tumours are of epithelial origin appears to be fully borne out. It involves, however, the assumption that the basal epithelial cells are true melanoblasts, and, further, calls for some explanation of the change from the epithelial to the branched form of cell in the early stages of the process. The latter point is sufficiently accounted for according to the author, by the increased activity of the cells, and with regard to the pigmentary function of the epithelium he is supported by the researches of Bloch, who has shown that pigment producing cells function by means of a ferment (oxidase) which is specific to them, and that the pigment is formed from a chromogenic substance which the cells absorb from the surrounding tissue fluids. He claims that it is possible to distinguish melanoblasts from other cells by bringing the ferment into action. This is done by supplying the cells with dihydroxyphenylalanine (a term happily abbreviated to "dopa"), a substance which acts as a substitute for the normal chromogen and forms pigment under the action of the ferment. By this test it may be shown that the whole of the basal epithelium is "dopa positive," whereas mesenchymal cells, including the branched pigmented connective tissue cells of the corium—the chromatophores or carriers of pigment—are "dopa negative." It is claimed that the production of pigment is proved by this reaction to be a specific function of the epidermis and its derivatives. With regard to melanomata arising in the eye, the central nervous system, or other internal organs, the author shows that there is good reason to suppose that they are derived from melanoblasts that have migrated from epithelium in a manner analogous to the migration of nevus cells.

MEDICAL RESEARCH IN SOUTH AFRICA

In the annual report for 1924 of the South African Institute for Medical Research, the director, Dr W. Witwaters-Pitchford, describes the rapid increase in the work of the institute, which is now on a very large scale. The financial value of the institute, apart from the land (which was granted by the Government of the Union of South Africa), is now nearly £120,000, including an endowment fund of just under £50,000. Additional income received during the last year from the Union Government and from the Witwaters and Native Labour Association has rendered it possible to organize and staff departments of medical entomology and biochemistry, to extend the bacteriological research department, and to erect additional laboratories and other buildings. Difficulty was experienced in attracting research workers from the large European centres, but the hope is expressed that graduates of the South African universities will come forward in increasing numbers to fill the vacancies that exist. An advisory committee, including medical representatives of the institute, the Union Department of Public Health, and the Witwaters and Native Labour Association, has been formed to co-operate in promoting research and improving public health administration. The research work during the year has included the isolation of suitable strains of the meningococcus and

the pneumococcus for the preparation of antimeningococcal serum and pneumococcal vaccine, and some aberrant types of pneumococci have been detected. Indications have been found that minute foci of infective silicosis are commonly present in the lungs of miners without giving rise to any recognizable signs or symptoms. Undulant fever, schistosomiasis, and the relation of persistent pulmonary lesions to tuberculosis, are other subjects that have received special attention during the year.

PREHISTORIC TREPHINING

Among the various abnormal marks and defects met with in the skulls of prehistoric races the most interesting are those which are unmistakably due to surgical operation, more especially to the operation of trephining. Many fanciful theories have been advanced to account for the origin of this operation among primitive peoples. For instance, it has been suggested "that the custom of trephining wounded captives would almost necessarily grow up, with the idea that a mystical significance attached to the operation as a sort of ordeal." Dr D. J. Wolfel of Vienna, relying less on imagination than on a careful examination of the cultural features of races, has advanced a more probable, if more prosaic, explanation of the practice. He has endeavoured to trace an organic connexion between the practice of trephining and some definite cultural feature of the primitive civilizations in which the operation exists. He points out that the method hitherto adopted in studying this subject, by which observation is confined to a single area, is apt to prove fallacious, since it is impossible by this means to disentangle merely accidental from organic relations. It is only by comparing different civilizations practising trephining that a true organic connexion is likely to be discerned. Since the prehistoric races afford insufficient material for such a comparison, Dr Wolfel has sought a solution of the problem in the primitive and half-civilized races living at the present time. The operation of trephining is known to be employed by the Beibers, the Abyssinians, and until recently by the Albanians and Serbs, passing eastwards there is a wide gap, the operation reappearing extensively in Melanesia and New Guinea and again, to a still greater extent, in America around the sources and banks of the Mississippi, throughout Mexico, and, with a large gap in Central America, southwards as far as Chile. Dr Wolfel has examined the cultural conditions in two of these regions, Melanesia and South America, and has sought for some cultural feature that is constantly associated with the practice of trephining and present in both areas. As regards Melanesia he finds that the operation is intimately related to the use of certain weapons—namely, the sling, the wooden club, and the stone-headed club. Trephining is not found in regions where the sling is not used. The trephine area is not quite co-extensive with the sling area, but this is, in Dr Wolfel's opinion, probably due to variations in the type of sling employed. The areas in which the club is used are in all cases within the trephine area. In totemistic districts on the other hand, where pointed and therefore more immediately deadly weapons are employed, inflicting wounds for which trephining would be useless, the operation has not been introduced. Precisely similar relations are found to exist in South America as in Melanesia, and Dr Wolfel concludes that it is reasonable to suppose that trephining was introduced at the same time as the sling and club, and is to be regarded as belonging to that level of civilization of which these weapons form a feature. He gives a very interesting account of the operation itself, which appears to be frequently employed not only for head injuries, but also for affections in which cerebral symptoms are a prominent feature, such as headache, epilepsy, and diseases

associated with loss of consciousness. In many of these cases the operation takes the form of a linear osteotomy rather than trephining, and, so far as indications are concerned, seems to correspond to our modern operation of decompression. It is also noteworthy that a similar operation is frequently performed on children as a prophylactic against subsequent cerebral disorders. In these cases the operation is performed by the mothers, with an almost negligible immediate mortality.

RECORDS OF TEMPERATURE AND PULSE

In a lecture at the James Mackenzie Institute for Clinical Research, St Andrews, on October 20th, Professor Patrick described some observations on temperature and pulse rate, and showed an interesting series of charts illustrative of most of the common fevers. He strongly advocated greater accuracy in recording temperature, drawing attention to the common practice of nurses of omitting to record temperatures below 97° F. Similar inaccuracy was common in regard to high pulse rates. The physician, wherever possible, should check the records by his own observations. Professor Patrick insisted on the extreme value of graphic records of the pulse rate, a gradual rise in rate being more readily detected where this method is employed. In rheumatic fever, for example, a pulse chart is the best indicator of the onset of endocarditis. He deprecated the use of the word "normal" in relation to a fixed point of temperature such as 98.4° F. This might be regarded as the upper limit of normal temperature, but in nearly all healthy individuals the average morning temperature was considerably lower. As a rule the pulse rate increased about ten beats as the temperature rose one degree, but there were wide differences in this ratio in different diseases. He drew attention to the fact that in many febrile conditions the quickened pulse of fever was succeeded during convalescence by an unusually slow rate. He considered that all these matters required more accurate recording and fuller investigation.

SPIRITUAL HEALING IN BRADFORD

RATHER more than a year ago considerable interest was taken by the newspaper press in a spiritual healing mission held by Mr. J. M. Hickson at Bradford. The mission appears to have had the approval of the Bishop of Bradford. Dr. Perowne, and was held in the Farringham Parish Church, of which the Rev. J. H. Warner is vicar. On October 15th last an anniversary healing service was held at the same church, and Mr. Hickson was present. The Bishop of Bradford had been expected to attend the service, but sent apologies for his absence. On this occasion newspaper representatives were excluded, the explanation given was that the bishops did not wish such services to generate excitement, or (as the Bishop of Bradford told an interviewer) that the service should be made into a "stunt." Mr. Hickson and the vicar both allowed themselves to be interviewed after the service. The vicar thought that most of the bishops were watching the movement with a certain amount of sympathy, while Mr. Hickson remarked that there had been a marked change in the medical world towards the work of spiritual healing. He said that he had received an invitation to address the students of a large medical university "not very far from Bradford," and that he was also going to give the first address on spiritual healing in a London hospital. It does not appear, however, that either Mr. Hickson or Mr. Warner was very illuminating on the results of the year's work. There is a statement that the vicar recently visited a woman who, a year ago, created something of a sensation by discarding one of her crutches at the church door, and that he found her "bubbling over

with thankfulness." On such a case the only suitable comment is the remark of Dr. Morris Fishbein in his book *The Medical Lollies* (to which we lately referred in an article on osteopathy and chiropractic) that "the healing of the crippled, particularly those who cannot walk because of rheumatism, is regularly accomplished and cited to the point of monotony by all of the variegated forms of faith healing." A letter was quoted by the vicar which he had received from a Mrs. Alday, of Tong, Bradford. A year ago she was bedridden, and reported by the doctors to be "a hopeless case." She wrote that since receiving Mr. Hickson's ministrations she had been able to do housework for a family of seven, and was free from pain. Unfortunately the press reports do not give any diagnosis of the condition in either of these patients. Mr. Hickson produced a series of photographs of a New Zealand woman with a deformed leg. The series showed the improvement which had taken place since the woman had attended one of Mr. Hickson's spiritual healing services in New Zealand. As the reporter does not seem to have diagnosed the disease from the photographs, we are left in doubt how far the *post hoc* was *propter hoc*. Further information would be useful also in the case of the man who, with the most powerful glasses, was unable to read large figures on the price tickets in a shop. After the mission he appears to have gone back to the same shop to look at the price tickets, and to have been amazed to find that he could read them without glasses. In such a story it seems almost a pity that the nature of the goods to which the price tickets were attached is not mentioned; this would have added to the interest. But the cure above all cures did not occur, unfortunately, at Bradford. A man who attended one of Mr. Hickson's missions in Canada in 1919 had since developed diabetes. He travelled 6,000 miles to London for the purpose of receiving the "laying-on of hands" for this disease, and he had left for home saying that he "felt all right."

THE MOSQUITO MENACE IN ENGLAND

DURING the late summer the question of bites by mosquitos and other insects assumed in some parts of the country a position of considerable importance. Blood-sucking flies and midges, which the laity class generically under the term "mosquitos," were in some health resorts—not only on the coast but in inland districts also—so persistent as to interfere with the comfort of holiday makers, and, in individual instances, either from inoculation of virus at the time, or from introduction of infection subsequently by scratching, even fatal results were recorded. In short, the menace acquired such proportions that preventive measures were demanded. Prior to 1917, with the exception of the Fens, Haring Island, and a few isolated areas whereague or marsh fever was known to prevail, the majority of persons, medical as well as lay, were inclined to regard malaria and mosquitos as more or less confined to the tropics. The return of infected soldiers from abroad led to the formation of foci of malaria, and the presence of the vectors of the parasite resulted in fresh cases being locally contracted. Although there is no longer any appreciable danger of transmission of malaria, introduced cases being relatively very few, the mosquito menace nevertheless remains, and investigations have shown that there are at least twenty-six different species in England. If the same measures of control would suffice for all this would be no great matter, but the case is far otherwise. Some species are best attacked in the larval stages, others in the adult, some prefer to breed in brackish water, others in fresh, others, again, in refuse, some can be controlled by prompt removal and destruction of garbage, others need careful supervision of areas of stagnant water, paraffining of water-butts, and so forth. A pamphlet written by Mr. F. W. Edwards and Lieut-Colonel S. P. James jointly, and issued recently by the

Trustees of the British Museum (Natural History) is a mine of information on the subject, the authors point out not only which of the various species are noxious and which harmless, but also how they may be distinguished, what parts of the country they frequent, and the ways in which they may be held in check. Since the various species differ greatly in their habits and habitat, their seasons of prevalence, their breeding sites, to name only a few of their characteristics it is essential, in order that measures of control may be undertaken on rational lines with any prospect of success, to identify the species infesting any particular locality, otherwise we shall have learnt nothing from our tropical experiences where expensive schemes for the control of mosquito-borne diseases have been rendered fruitless owing to the failure to recognize the important fact—*auties moustiques, auties mours*. The value of pamphlets written in language readily understood and dealing not with speculations but ascertained facts, and issued thus authoritatively, is inestimable.

FUNCTIONAL DISEASES OF APPLES

Two years ago an interesting inquiry into the functional disease of apples known as "brown heart" was published by the Food Investigation Board. Dr Franklin Kidd and Dr Cyril West, who conducted the inquiry, extended their investigations and published a further report on functional diseases of apples last year in the *International Review of the Science and Practice of Agriculture*. The Food Investigation Board has now brought their report up to date, and has published it for the benefit of readers who are not likely to have access to the international bulletins. The new conditions with which the report deals are the diseases known as "apple scald," "internal breakdown," and "frost injury," in addition to "brown heart". These are all caused by cold storage, and are due generally to causes affecting the apples both before and after storage. They are types of physiological or functional disease (as distinct from fungal rot) which have been recognized concurrently with the adoption of refrigeration, and are causing serious losses. They possess one character in common—namely, premature browning of the whole or part of the tissues of the fruit, but an identical appearance and distribution of the browning may be due to widely different causes. Apple scald, which is a browning of the skin only, is more liable to affect apples placed in storage before they are mature, and is best prevented by storing at a low temperature of 32° to 34° F., and the use of wrappers impregnated with odourless mineral oil, or by the distribution amongst the apples of oiled straw or shredded oiled paper. Internal breakdown, on the other hand, is more liable to affect over-ripe apples or apples grown in cold damp climates, although in rich soils, than those grown in dry warm climates and light sandy soils. In storage the lower temperature of 32° to 34° F. is more likely to cause this breakdown of the tissue than a somewhat higher temperature. Brown heart, as the original report showed, is due to concentration of carbon dioxide above a certain limit, oxygen being present, in the storage atmosphere. Frost injury may be slight, moderate, or severe, and with or without surface disfigurement. It is indicated by meakness in thawing in the slightest cases, and in the severe cases by waterlogging and translucency of the tissue. The condition is caused by the formation of ice in the tissue, and an interesting point is that bruising by blows or pressure after the fruit is frozen results in severe frost injury, whereas little or no injury arises from bruises previous to freezing. The most

disconcerting feature of these functional diseases, so far as the consumer is concerned, is that an apple may appear on the surface perfectly sound, and its diseased condition be discovered only after it is cut.

THE HOWARD KELLY COLLECTION OF THE HIPPOCRATIC CORPUS

THE Johns Hopkins Hospital has, as a result of the late Sir William Osler's stimulating influence, long been enthusiastic in medical history, and his colleague Professor Howard Kelly has fostered this form of culture by the presentation of his collection of the works of Hippocrates and Galen. On this gift Dr John R. Oliver has written a grateful medico-historical note. While mentioning with appreciation the labours of Dr W. H. S. Jones and his recent *The Doctor's Oath*, he agrees that, unlike so many other parts of the domain of classical philology which have been explored inch by inch by countless generations of scholars, the realm of Hippocratic research is almost virgin soil, and that an enormous amount of spadework remains to be done. Dr Oliver touches on some of the outstanding problems which appeal to the Hippocratic student, not the least of these is that this wonderful personality, who dominated medicine from the fourth century before Christ until less than a hundred years ago, is practically unknown to us. Among the works—some sixty or so—making up the Hippocratic Corpus five or six would appear to have the hall-mark of the clear-thinking, broad-visioned mind that we would imagine to have characterized the Father of Medicine, but hardly one of them has not at one time or another been rejected by scholars and editors as unauthentic. The Corpus Hippocraticum is a wonderful collection, for there is hardly any branch of modern medicine that it does not touch at some point or other, and it obviously cannot, any more than our twentieth century "systems," be the work of one man. In another article² Dr Oliver remarks that the book on "the sacred disease" (epilepsy) contains much in the way of acute psycho-pathological observation, which, though forgotten in the Middle Ages, has a strangely modern sound. The first printed Hippocratic work appeared in 1525 in Rome as a Latin translation of inferior quality by Calvus, it is one of the rarest of all the editions, and the Howard Kelly collection is fortunate in possessing a copy. The contents of this collection provide Dr Oliver with an opportunity, which we welcome, of giving an interesting bibliographical summary of the editions down to 1806, he also refers to some later ones, among them to Francis Adams's *Genuine Works of Hippocrates* (1849) in the Sydenham Society's collection. His description of Francis Adams of Banchory as "a London physician" will make Londoners wish that this honour had been metropolitan rather than Aberdonian.

THE PREVENTION OF DIPHTHERIA

In reviewing the annual report for 1924-25 of the Metropolitan Asylums Board (September 26th p. 579) reference was made to certain paragraphs in it calling attention to the increase of diphtheria in London during the past fifteen years. It was pointed out that as the incidence of diphtheria among children under 10 years of age is about two thirds of the total, the likelihood of a child under that age becoming infected with the disease is now approximately twice as great as it was in the period immediately prior to 1911. The Board considered these figures a powerful argument for the adoption of some form of immunization in an attempt to stamp out the disease, and pointed out that the recent statistics for New York City showed a marked decline in the incidence of diphtheria, which it seemed reasonable to conclude was due, in part at

¹ Sold at the British Museum (Natural History), Cromwell Road, N.W., and by B. Quaritch Ltd., Dulau and Co. Ltd., the Oxford University Press, and Wheldon and Weir Ltd., London, and by Oliver and Boyd, Edinburgh. 1925. (Extra pp. 810 pp. 27 4 figures. Price 6d net.)
² *Functional Diseases of Apples in Cold Storage*. By Franklin Kidd and Cyril West. D.S.C. Food Investigation Board Special Report No. 25. London: H.M. Stationery Office, 1925. (810 pp. vi + 15 1 figure in text, 2 tables and 19 figures in 13 plates.)

³ Oliver, J. R. *Bull. Johns Hopkins Hosp.* 1925 xxxviii 189.
⁴ *Ibid.* *Amer. Journ. Hygiene* 1925 lxxviii 107.

least, to the immunization measures adopted there, during the past few years over 500 000 school children had been tested, and about 125,000 of these were found susceptible and had been immunized. Dr J D Rolleston, in a lecture on the prevention and control of diphtheria, delivered at the Royal Institute of Public Health on October 28th, 1924, referred to this subject. At the present time, he said, the prevalence of diphtheria in London was unusually high, as was illustrated by the fact that on October 25th, 1925, there were 433 more cases of this disease in the Metropolitan Asylums Board hospitals than on October 25th, 1924, the figures being 2,413 this year, as compared with 1,980 on the same day of the month last year. The marked decline in New York City might, he thought, in all probability be attributed to the extensive employment of toxin antitoxin. After a short account of the etiology of diphtheria to indicate the chief factors in its spread, Dr Rolleston discussed its prevention under the headings of general measures, such as isolation and disinfection, determination by the Schick test of those who were susceptible, and then immunization, either passively by diphtheria antitoxin or actively by toxin antitoxin or meroxin. The futility of the administration of antitoxin by mouth, to which he had drawn attention many years ago (*BRITISH MEDICAL JOURNAL*, 1906, 1, p. 738), had recently been proved by the Schick test, a positive reaction being in no way affected after administration by mouth, while it was immediately rendered negative by subcutaneous injection. The inefficacy of rectal administration of antitoxin had been established in the same way. Both active and passive immunization involved certain drawbacks, but he had no doubt that more complete and permanent results were to be obtained from the use of active immunization. Valuable as active immunization against diphtheria might be, it ranked lower in the scale of preventive methods than vaccination against small-pox, inasmuch as diphtheria antitoxin was a remedy which infallibly arrested the disease if used within the first twenty-four hours, whereas in small-pox there was no treatment, however early applied, which would modify the course of the disease. The practitioner, therefore, was not under the same moral obligation to recommend active immunization against diphtheria as he was to urge vaccination against small-pox. At the conclusion of the lecture the various reactions of the Schick test were demonstrated in nurses in whom it had been recently applied.

LORD DAWSON

At the autumn convocation of McGill University, Montreal, on October 6th (as briefly announced in our issue of October 10th), the honorary degree of Doctor of Laws was conferred upon Lord Dawson of Penn, G C V O, M D. The ceremony took place in the presence of a great gathering of the faculty, students and of graduates, many of whom had served with the Canadian Army Medical Service overseas. Lord Dawson was presented by Dr Charles F Martin, Dean of the Medical Faculty, who, after reciting the visitor's academic distinctions, referred to his great reputation in the medical world and his services to medical education. Sir Arthur Currie, Principal of the University, then conferred the degree. Lord Dawson, who was enthusiastically received, paid a high tribute to the work of McGill medical graduates at the front. McGill, he said, was the first university to send a fully equipped hospital to the seat of war, and, what was even better, that hospital established a reputation unsurpassed for professional achievement, organization, and public spirit. The hospital was in his zone of work as consulting physician, and he never went there without being inspired and cheered. No part of the success was due to the great leadership of

General Balfour, and there were many dark days which tested faith and courage. Lord Dawson went on to speak of the value of university training. The university, he said, was a factor of increasing importance in national life, for advances in knowledge and discovery demanded from those who wished to succeed in any sphere the educated mind. Not that a university should concern itself too closely or too early with future vocation, rather should it give the undergraduate the trained mind on which technical knowledge could be built. A university was not an emporium of facts, but a place to train mind and character. In the Medical Faculty at McGill he had found, not only an admirable system of instruction to meet the many needs of modern science, but a conception of teaching which aimed at training the mind to think well and wisely. The influence of a university was the more needed at a time when brilliant and rapid advance in invention was apt to obscure the things of the spirit. The *Montreal Star*, in an appreciative leading article, says that Lord Dawson laid his finger with unerring accuracy upon the crux of the whole situation in what he said about the 'varsity spirit, and the need for cultural, not mere commercial, training. During his visit to the United States Lord Dawson has since received—in company with Professor V Putti of Bologna, Sir W Arbuthnot Lane, Professor W Blair Bell, Mr Philip Franklin, Dr William Cornall, and Dr Edward Dennis—the honorary Fellowship of the American College of Surgeons.

THE M R C P LONDON

As noted in the report (p. 871) of the meeting of the Royal College of Physicians of London on October 29th, certain alterations have been made in the regulations relating to the examination for the Membership of that College. It may be remembered that the age for admission was fixed last July at 23 years, one of the changes now made is designed to meet the case of candidates engaged in special branches of medicine. In future a candidate who has attained the age of 30 years and who can produce testimonials as to moral character, conduct, and general and professional attainments, will be permitted to submit published work, and if the Censors Board decide that such work is of sufficient merit they may excuse a candidate the whole or part of the usual examination, or may modify it as they think fit. The rule hitherto in force was that any candidate who was a Licentiate of the College or who had obtained at any university a degree of M D or M B registrable by the General Medical Council, might be admitted to the examination for the M R C P. The Censors Board had power to determine in the case of each candidate the nature and extent of the examination, by a new by-law now adopted the College reserves to itself the right to admit to the examination other candidates on the recommendation of the Censors Board. The number of candidates applying for admission to the examination has for various reasons recently increased, and the President and Censors have now been given power to fix such additional times or other times for the various parts of the examination as may be required for its proper conduct. Hitherto a candidate who failed had to wait for six months, in future a candidate may be admitted to a subsequent examination after the lapse of such a period as the Censors Board may decide. With the exception of the new by-law allowing candidates under certain conditions to submit published work in place of part or all the examination, the general effect of the alterations is to give greater elasticity to the President and Censors in admitting candidates to the examination. The new regulations come into force at once, and copies can be obtained on application to the Registrar, Royal College of Physicians, Pall Mall East, London, S W 1.

MENTAL HYGIENE

ADDRESS BY LORD BIRKENHEAD

A MEETING, which was attended by many distinguished persons, to further the aims of the National Council for Mental Hygiene was held at the house of the Royal Society of Medicine on November 2nd. Sir Courtenay Thomson, who presided, explained that the activities of the Council embraced the improvement of the mental health of the community, the study of the causes underlying congenital and acquired mental defect and disorder, the study of criminality, dependence, vagrancy, and prostitution, in so far as they were failures of adjustment by reason of mental trouble, and the study of the mental hygiene of child life. The Council also sought to secure a more important position for the study of psychiatry in the medical curriculum, and the closer association of psychiatry with general medicine.

The Lord of Birkenhead said that he could offer only a few general observations from the point of view of a layman. The angle from which the lawyers examined mental extravagance or weakness was different from that taken by the physician, and so it happened that in recurring cycles the physician challenged the point of view of the lawyer. The legal test was laid down many years ago in the famous *M'Naghten* judgement, which never received, he thought, the complete support of the contemporary medical profession, and had been even more frequently challenged of recent years. That controversy was one of much interest, and he could, if it were germane to the objects of that meeting, attempt some more detailed defence of the legal view than had recently been put forward in the face of medical criticism. He wished to make it plain that he was not there to usurp the functions of his distinguished and untiring colleague, the Minister of Health, and he was a little anxious lest Mr. Neville Chamberlain should think that he (Lord Birkenhead) was breaking into pastures of which he was the efficient shepherd. Moreover, at the present time a Royal Commission was sitting to consider the whole question of lunacy law and administration, and it would obviously be very improper for him to enter into any discussion of the legal position which might be held to anticipate the findings of that very influential and able Commission. He would only say that he welcomed the opportunity of expressing his view that everything ought to be done to encourage the curative treatment of persons suffering from mental disorder. In this respect the National Council for Mental Hygiene could play an important if not an indispensable part in the education of public opinion.

It was very necessary (Lord Birkenhead continued) to escape from the old idea of an asylum as a place of incarceration, it ought to be regarded as a mental hospital and an institution whose primary function was the treatment of mental diseases of every kind. It had been too long the public habit to regard an asylum, not, as the classical origin of the word would suggest, as a shelter, but as hardly distinguishable, save on the purely moral side, from a prison. Such a conception was barbarous and out of date. When once the importance of curative treatment was realized it would be understood that the desire, which still persisted, to keep the mental patient out of the mental hospital for as long as possible was prejudicial to his recovery. It was, in fact, to deprive him of proper treatment at the stage in his disorder when it was most likely to be availing. Everyone would regard it as a foolish thing to adopt any such method in the case of physical disorder, and he was not aware of any circumstance which differentiated physical from mental ailments in this respect.

In psychiatry, as in other branches of medicine, progress depended upon study and research, and the influence of the Council could not be better employed than in stimulating scientific work in this field. It was surprising how difficult it had been found, both by doctors and lawyers, to analyse those gradations which formed the debatable land between sanity and insanity, between such disturbance of the mind as could properly exclude a man from responsibility for his own affairs or the affairs of others,

and such a degree of eccentricity as involved no real disqualification. The lawyers had quarrelled over this debatable ground for generations, quite recently, by the way, it had become necessary to examine cogitatively though not identically problems in relation to the state of mind produced by drunkenness. The close alliance between quickness of mental parts and insanity had been remarked by the national poet, and he supposed that, despite all modern investigation, it still could not be explained how a slight alteration in an infinitesimal cell could make the difference between the genius and the lunatic. He doubted also—though he knew himself little competent to offer an opinion—whether medical science or nursing technique had made the advance from the preventive point of view in dealing with mental cases that it had made, even within his own lifetime, in almost every variety of physical ill. Yet of all the terrible consequences that were produced by pathological causes those affecting the mind were the most poignant.

He rejoiced to notice the international character of the mental hygiene movement. The National Council in this country was one exhibition of a movement which had extended in the United States and Canada, in France, and he thought also in Italy. It was a hopeful sign that the scientific minds of so many countries were devoting themselves to this common problem. The problem was beset at every stage with complications and anxieties. Take the case of the indiscriminate breeding of weak-minded persons. Just those sections of the community whose children would contribute most, in reasonable expectation, by the excellence alike of their bodies and their minds, to the public well-being had ceased, under the stern pressure of material stringency, to produce children in the numbers in which their ancestors had produced them, and this falling off of the most admirable stock in our population had coincided with the multiplication of stock by fathers and mothers whose children from the nature of the case could be no strength to the social order or the State.

Lord Birkenhead concluded by saying that the National Council seemed from its report to be working on the right lines. The last year had been spent in the difficult task of requiring precise information as to the resources already in possession and the degree in which they could be improved. These reports seemed to suggest that up to the present it had not been realized that pathology, whether concerned with the mental or the physical, was one and indivisible. It was the purpose of the Council to make this elementary truth known. During the last twenty or thirty years there had not been, even among the highly instructed doctors whom the great universities had produced, a complete realization of this scientific truth which, when once it was stated, became self-evident and needed no technical equipment to make clear. If a citizen was disabled so that he could not function if he could not play his part in the social and public life of his country, it mattered not at all whether the cause of his disability was a disordered stomach or a disordered mind. The same human and scientific processes which many decades of wise and prudent research had placed at the disposal of the citizens in the case of physical ailments ought equally to be available in the case of a menaced mind. One would have thought, indeed, that if any distinction was to be drawn at all, the argument in the latter case was almost *a fortiori*.

Sir Maurice Crichton echoed Lord Birkenhead's statement that a more enlightened way of treating mental disorder would not be forthcoming until it was appreciated that there was no fundamental difference between the disorders of the mind and of the body. He believed that the vast amount of mental disorder that filled the mental hospitals was preventable. His experience of fifteen years in mental hospitals in treating the later stages of mind disorder had led him to see that the really effective place in treatment lay in the early stages and in consequence it was to the preventive side that he had directed his energies during the last twenty years. He added that much mental disorder in early life had its beginnings in childhood, and in consequence he looked forward to the day when educationists would take an increasingly active part in the work of the National Council.

Dr W A Potts referred to the great ignorance existing with regard to mental defect yet mental defect was not less important than lunacy, and was interwoven with the whole social problem. The present haphazard treatment or the moral imbecile was lamentable. Possibly the Mental Deficiency Act might be capable of amendment, but far more important was the proper carrying out of that measure. Even the medical profession wanted educating. The facilities available for the study of mental defect were of the slightest. There was practically no instruction at all for the medical student, and for post-graduates there was only the course for the diploma in psychological medicine, which was long and difficult, and was intended only for specialists.

Lord Southborough, treasurer of the Council, made an appeal on behalf of the Council's "empty purse." The subscriptions and donations for last year totalled little more than £400, barely sufficient to meet the everyday expenses of clerical work.

The report for the year, which was distributed at the meeting, included the reports of three subcommittees which had been appointed—one on the question of the prevention and early treatment of mental disorder, the second on the care, after-care, and treatment of the insane, and the third on mental deficiency in relation to crime. The evidence given to the Royal Commission by the Council (of which a report appeared in the *BRITISH MEDICAL JOURNAL*, May 30th, p. 1015) was also set out at length.

ST THOMAS'S HOSPITAL MEDICAL SCHOOL

STUDENTS' WAR MEMORIAL

On Monday, November 2nd, H R H the Duke of York laid the foundation stone of the new College House Extension and Students' Club which is to be erected as a memorial to the students and members of the staff of St Thomas's Hospital who fell in the war. The building will face the main hospital buildings in Lambeth Palace Road. It will contain club rooms and seventy-two bedrooms for students and members of the resident staff.

The Duke of York, on his arrival at noon, was received by the Hon Sir Arthur Stanley, treasurer of the hospital, and Sir George Makins, chairman of the War Memorial Committee. After inspecting the guard of honour of the medical unit of the University of London Officers' Training Corps, he was conducted to the site of the new building, where Princess Helena Victoria was present, together with the Lord Mayor and Sheriffs, the Bishop of Southwark, the Mayor of Lambeth, and the principal members of the hospital and medical school staffs. Sir Arthur Stanley made a number of presentations to the Duke, and delivered a brief speech of welcome, in which he recalled some of the loyal associations with the hospital.

After prayers by the hospitaler and dedication of the work by the Bishop of Southwark, Sir George Makins invited the Duke to lay the foundation stone. He recalled that St Thomas's Hospital and its medical school suffered grievously in the great war. Of those connected with the hospital 1,481 served, including 214 members of the nursing staff. Of the 81 who fell 8 served as combatant officers, 18 medical officers were killed in action, and 10 more died of wounds. It was felt that no monument could be more fitting than this, which would bring their memory constantly before future members of the school during the time they spent working in the hospital and school. The provision of this hostel was, moreover, an indication of the gradual conversion of the University of London, of which the school was a constituent college, from a purely teaching and examining body to a complete university with residential accommodation for its students. In planning and financing these developments they had had the active support of the treasurer and governors of the hospital, who realized the importance of the project to the welfare of the institution as a whole.

The Duke of York then laid the foundation stone in position, and tested it with the level used by Queen Victoria when laying the first stone of the present hospital building in 1868. He said that no better way of honouring the memory of the hospital's gallant dead could have been

chosen than by providing this club and hostel for future generations of students. In conclusion he handed over to the treasurer for the benefit of the hospital patients the wireless installation presented by readers of the *Daily News*.

Old Students' Dinner

The annual old students' dinner was held at the Hotel Victoria on the previous Friday evening, under the chairmanship of Mr Samuel Osborn, F.R.C.S., who was supported by nearly 200 past and present members of the hospital and guests. Among the company, besides those mentioned below, were Lieut-General Sir William Ickburgh, D.G.A.M.S., Air Vice-Marshal David Munro, R.A.F.M.S., Dr T Vincent Dickinson, Master of the Apothecaries' Society, Sir R Havelock Charles, Sir Hector Mackenzie, Lord Riddell, and Sir Harold Downes.

After the King's health had been honoured the chairman, in proposing prosperity to St Thomas's Hospital and Medical School, recalled that it was fifty-seven years since he entered as a student in the old medical school buildings in the Surrey Zoological Gardens, he was the last resident accoucheur in the old hospital buildings and the first house-physician in the new. Sir Arthur Stanley, responding on behalf of the hospital, spoke of the trials of a treasurer in trying to keep up with the many new needs which follow in the wake of new discoveries in medical and surgical science. "In the old days a man who had a bad leg was treated for a bad leg, but now..." In responding for the School the Dean, Sir Cuthbert Wallace, mentioned some old friends who had died during the past eighteen months, in particular, a deeply respected teacher, Professor Shattock, and an old student, Dr Clement Dukes of Rugby, who founded the science of school medical officership. Since the war the average entry of students at St Thomas's had been 87, with an average total of 454. The Government grant he said, was now of the utmost importance to medical schools, which could not carry on without it. Sir George Makins, who also replied, expressed the thanks of the War Memorial Committee to the old students for subscribing so generously towards the building of the students' club and residential hostel—a thing that he and others had dreamt of for many years past, and no expressed the gratitude of the Medical School to Sir Arthur Stanley and his fellow governors for their unwearied help and encouragement. Sir George Makins then passed to his next duty, of proposing the chairman's health, and mentioned Mr Osborn's services to the cause of ambulance and first-aid work in many seats of war.

The custom of having a short toast-list and short informal speeches always contributes greatly to the pleasure of those attending the St Thomas's Hospital annual dinner.

England and Wales.

TUBERCULOSIS IN LANCASHIRE

In the report for 1924 of the central tuberculosis officer for Lancashire (Dr G Lassant Cox) special attention is paid to the value of x-rays in diagnosis and treatment, and sixteen skiagrams are inserted to illustrate various conditions. The number of x-ray examinations made by the tuberculosis medical staff during 1924 was 4,205. The first x-ray apparatus was installed at the Ashton-under-Lyne dispensary in November, 1920, and in the succeeding three years one dispensary in each area was equipped with a set to be used by the tuberculosis officers, who have thus become skilled radiologists. Dr Lassant Cox sets out the following advantages of having an x-ray apparatus in a tuberculosis dispensary. The tuberculosis officer, being the radiographer, is able to make screen examinations and take skiagrams personally as often as required, the patient can be examined radiologically and clinically at the same visit, thus saving unnecessary journeys and expense, and the tuberculosis officer being able to examine the patients frequently can build up a knowledge of x-ray appearances and their clinical significance. The x-ray report is thus combined with the history, symptoms, physical signs, and sputum examination, with great benefit.

to diagnosis. The point is emphasized in the report that such x-ray examination must be used as a routine procedure, if only a few exceptional cases are selected for examination the full value of the method is not realized, since x-rays often reveal the presence of some unsuspected condition when other means of diagnosis have given no assistance. In many early cases, though not in all, a good skiagram will supply definite evidence of the existence of the disease, and Dr Lissart Cox adds that in his experience it is rare for a lesion to be found by the ordinary clinical methods which was not demonstrable by an x-ray examination. There was a decline in 1924 in the deaths recorded as due to tuberculosis and in the new cases notified, in both pulmonary and non-pulmonary tuberculosis the death rates were the lowest hitherto recorded. The general decline in the disease is the more satisfactory in view of the widespread unemployment and the defective housing conditions. Omission to notify cases is now much less frequent. In 1917 18 per cent of the deaths from pulmonary tuberculosis occurred without the statutory notification having been made, in 1924 this figure had been reduced to 5 per cent. This is attributed to the cordial co-operation between general practitioners, medical officers of health, and the tuberculosis medical staff in a comprehensive scheme which includes adequate means for expert diagnosis and sufficient beds for treatment. The tuberculosis department, which has actively co-operated in propaganda work, now possesses its own cinematograph films for exhibition. A special film has been prepared to illustrate the life of patients at the county council sanatorium at High Carley and the children's sanatorium at Ulverston. A number of lantern slides and photographs of county sanatoriums, hospitals, and dispensaries have also been acquired, the majority having been made by a member of the tuberculosis clerical staff. The census of the housing conditions of patients showed that the proportion of infectious patients sharing a bed with one or more persons was 8.8 per cent in 1924, as compared with 10.1 last year, 13.1 in 1922, and 17.1 in 1921. This very considerable improvement was due mainly to the loan of bedsteads and mattresses from the stock purchased by the county council to patients unable to provide these for themselves. In the county eighteen voluntary care committees were at work, covering a population of nearly 800,000. Where these committees have not yet been formed their place is taken by the dispensary staff. The new hospital at Rufford, for about fifty patients, will shortly be ready for occupation, it will include a plaster room and an operating theatre for the treatment of non-pulmonary tuberculosis. Better dispensary premises have been obtained at Chorley and Farnworth, while additional institutional accommodation for advanced pulmonary cases will also be available shortly. Statistical research work and the investigation of new methods of treatment are being carried on by the staff, the inquiries include investigation of the fate of young children of tuberculous households, at the request of the Joint Tuberculosis Council of England and Wales, and the fate of young children of tuberculous families for Professor Calmette of Paris. The distribution of pulmonary tuberculosis in Lancashire is also being studied with particular reference to cotton-weaving, cotton spinning, and coal mining. The cost of the county scheme for tuberculosis, apart from Government grants, has required a county rate of slightly over 1½d in the £ for the current year, 1925-26.

THE MIDDLESEX HOSPITAL

The structure of the Middlesex Hospital was declared a short time ago to be unsafe, and the board of management, after making a forcible appeal to the public, has resolved to prepare for the erection of the new building by demolishing the west wing. It provides for 200 patients male and female, and the hospital authorities have been fortunate enough to make arrangements by which they get temporary possession of the old Sick Infirmary in Cleveland Street near by. When the alterations there are complete it will provide 200 beds, and also operating theatres, an

x-ray room, a staff room, and offices. It is hoped that this building will be ready to receive patients by January next, and that by that time further progress will be made in raising the £500,000 estimated to be required for the new hospital buildings. The amount at present received is £210,000.

CENTENARY OF UNIVERSITY COLLEGE, LONDON

University College, London, will celebrate its centenary in the year after next. The famous letter of Thomas Campbell, the poet, to Mr Henry Brougham (afterwards Lord Brougham) suggesting the creation of a University of London was published in the *Times* of February 9th, 1825, but the foundation stone of the building in Gower Street for the University of London was not laid until April 30th, 1827. With the approval of the University of London, as it now exists and with which the college was incorporated in 1907, a centenary appeal for a sum of half a million has been launched. Of this amount nearly half (£225,000) is needed for the endowment of teaching in the faculties of arts, laws, science, and engineering. A sum of £25,000 is needed for the completion of the Gower Street front in harmony with the design of Wilkins for the main buildings and according to plans approved by the Royal Fine Art Commission, £15,000 is needed to complete the equipment of the chemical laboratories, the erection of which, at a cost of £102,000, was completed in 1914. New buildings are needed also for the departments of zoology and comparative anatomy, and a site is already in view. Considerable expenditure is necessary also for the reconstruction and re-equipment of the engineering departments, for the libraries, and for the erection of a great hall. For the last named a site has been acquired at the east side of the college in Gordon Street, and a design for it has been prepared by Professor A. E. Richardson. The honorary secretary of the Appeal Committee is Mr Walter Seton (University College, Gower Street, W.C.1).

ST LUKE'S DAY SERVICE IN NOTTINGHAM

Under the auspices of the Nottingham Medico-Chirurgical Society a special ceremonial service was held on Sunday, October 18th, St Luke's Day, at St Mary's Church, Nottingham. There was a large congregation, including the President (Mr H. Bell Lawse), the council and members of the Medico-Chirurgical Society, the Mayor and Sheriff, who attended in state, members of the city council and board of guardians, the town clerk, and corporation officials. The sermon was preached by the Bishop of Durham (Dr H. Hensley Henson), who asked what had been the influence of Christianity on the theory and practice of medicine, apart from the phenomenon of faith healing which was not distinctly Christian. How had religion influenced what had been done in the march of physical science? Had they gained or lost by the influence of Christianity in the matter of physical healing? Christianity had its birth in a superstitious age. Religious confusions at that time facilitated the growth of superstition, and superstition had found its most fruitful soil in physical ailments. The first effect of Christianity was to strengthen the non-scientific element in medicine. The assumed connexion between sin and disease led people to seek relief more from religion than science. Christianity always carried with it the promise of better things. The unselfishness and enthusiasm which medical science today had for healing was the gift of Christ's religion. The medical profession might still have a lingering resentment against the ecclesiastical discipline of the past and the subordination of medicine to theology. It was often the rule first to correct the ailments of the soul, and then attend to physical ailments. But the humanity of the physician had triumphed over the discipline of the Church. In view of past history there was nothing surprising in the fact that medical men might have regarded with considerable suspicion the suggestion of recognizing in the clergy friends and even colleagues. The Bishop concluded by saying that, "In the fellowship of pain all are one, and all are one in the charity of the Eternal Father and in the duties of human life."

Scotland.

EDINBURGH UNIVERSITY GENERAL COUNCIL MEETING

The statutory half-yearly meeting of the General Council of the University of Edinburgh was held on October 30th, when Principal Sir J. Alfred Ewing was in the chair. A proposal to institute an honours course in experimental psychology for the degree of B.Sc. was approved. The Principal stated that by the generosity of the late Lord Abercromby the University was about to found a chair of archaeology. Six months ago, on account of heavy expenditure in connexion especially with the building of the new chemical laboratory, the University had been involved in a heavy burden of debt, but the situation had been considerably altered by generous donors. Recently the announcement was made that the Chancellor of the Exchequer had allowed the inclusion in the estimates for the current financial year of a sum to supplement the annual grant to the universities of Great Britain. It was not yet known what the amount would be, but it would undoubtedly do much to prevent the painful necessity which had existed during the last few years of sometimes reducing expenditure below the standard compatible with efficiency. There were, however, inevitable expansions in subjects and in methods which would necessitate annual demands for maintenance, staffing, and equipment, and it was still necessary to impress on the friends of the University the continued need for help. The Business Committee submitted a report in regard to the doctorate in different faculties. The council adopted, among others, the following recommendations of the committee:

That every graduate should have a right to proceed to the degree of Doctor in his own faculty, under appropriate regulations, the degrees of D.D. and LL.D. included.

That a graduate with honours should be permitted to proceed to the degree of Doctor within a shorter period after taking his degree than the holder of an ordinary degree.

That an approximately uniform standard should be aimed at for the degree of Doctor in all faculties.

That degrees of Doctor obtainable by examination might also be given *honoris causa*, but that in the latter case they should be granted only to persons distinguished in the subject of the degree.

That in the case of persons who merited honour from the University but whose distinction was not connected with any branch of learning the honour should take the form of a new degree designated in such a way as to mark eminence in public service.

That the period of two years required to elapse between the degrees of M.B. and M.D. is too short while the period of five years required in the case of D.Litt. is too long, and that a uniform period should be struck in the case of all degrees of Doctor.

Among the changes in the teaching staff intimated were the appointment of Mr. George Buchanan, M.B., to the lectureship in bacteriology, of Dr. W. T. Benson as successor to the late Dr. Claude B. Keir as lecturer on infectious diseases, and of Dr. J. M. Woodburn Morrison as holder of the newly established lectureship of electrical therapeutics and radiology. It was intimated that the number of students during the academic year 1924-25 had been 3,864, as compared with the highest number of 4,886 in 1920-21, and as compared with an average of 3,340 in the five years preceding the war. The number of medical students during these three periods had been respectively 1,252, 1,967, and 1,340.

EDINBURGH CLINIC FOR CRIPPLED CHILDREN

A meeting was held in Edinburgh on October 28th, under the auspices of the Edinburgh Committee of the Chartered Society of Massage and Medical Gymnastics. The object of the meeting was the establishment in Edinburgh of a clinic where massage and allied treatment could be available, more especially for those who could not afford the ordinary fees for private treatment. The intention is especially to deal with crippled children whose treatment should continue throughout the whole period of their growth. Mr. W. A. Cochrane, M.B., F.R.C.S., presided over a large attendance, and said that a well-known authority had recently

asserted that 75 per cent of crippled children could be made well. It had been said that the crippled child was made, not born, and this was true, for he was not so much a cripple as allowed to become a cripple, and early diagnosis and early treatment of the conditions responsible were of vital importance. Demonstrations of remedial exercises and of country dances formed features of the proceedings, and a cinematograph film was shown illustrating the benefit that could be derived from continued treatment in a case of infantile paralysis affecting the arm and leg. The Rev. T. Ritchie Barnett described the operation of a scheme for the treatment of crippled children in England. Two or three counties, he said, were grouped together, and the first thing necessary was a central orthopaedic hospital, where children could be kept without any limit as to time. After discharge they went home and returned at intervals for further treatment, but the child was never lost sight of. Small orthopaedic departments should be established in two or three little hospitals in the area, where local necky clinics could be started. Such a scheme could not be carried out at present in the large general hospitals, because already they had long waiting lists. Even if beds were available children could not, as a rule, be kept in hospital sufficiently long for the prolonged treatment required. Open-air wards were also a necessity in order that sunlight and fresh air might form part of the treatment day and night in all kinds of weather. In such open air wards education could be continued in the case of children who were retained for long periods. The committee desired to appeal to the public, for it was inconceivable that Scotland should be behind any other country in such a good form of work, and it was surprising that Scotland had not yet started this system of linking-up clinics. The Rev. Dr. Harry Miller said that the building of a gymnasium in the Pleasance Settlement would be begun in a few days, and it was hoped that a clinic such as had been described would be opened.

Ireland.

ULSTER MEDICAL SOCIETY

The opening meeting of the Ulster Medical Society for the session 1925-26 was held in the Medical Institute, Belfast, on October 29th. The retiring president, Dr. J. Singleton Darling (Lurgan), thanked the fellows for their active and warm support during the past year, and introduced his successor, Mr. James A. Craig, F.R.C.S. The president proposed a hearty vote of thanks to Dr. Darling for his conduct in the chair, his hospitality, and his great aid to the society, this was seconded by Dr. Caldwell and passed with acclamation. The president referred in feeling terms to the loss the society had sustained during the year by the deaths of three of its fellows, Dr. J. C. Martin of Portrush, Dr. William Monypenny of Belfast, and Dr. John McLiesh of Belfast, and then read his opening address on the retina in constitutional disease. The retactions of the retina, Mr. Craig said, to disordered and bodily conditions showed the close relation between ophthalmology and general medicine. The use of the ophthalmoscope and perimetry in pituitary and brain affections was an illustration of this connexion. The retinal arteries could be used for the study of the circulation, as in Brillant's experiments on the tension of these vessels. The ophthalmoscopic appearances in hyperpiesia and in arterial sclerosis were of great importance. Sclerosis of vessels of the size of the retinal arteries played an important part in the condition of general hypertension, sometimes such patients felt quite well, but observations made with the ophthalmoscope afforded an index of the condition of the arteries throughout the body. Mr. Craig went on to observe that the question how far the arteries of the retina were an index of the condition of the cerebral arteries was also a matter for consideration, and quoted the work of Foster Moore and Adams, there was a parallel between arteriosclerosis and retinal thrombosis on the one hand and temporary aphasia and paresis and cerebral thrombosis on the other. The danger of a sudden fall of blood pressure in a case of arterio-sclerosis in both was mentioned. Mr. Craig then

gave an analysis of fifty consecutive cases of retinal hemorrhage found in persons complaining of eye symptoms and referred to the necessity of a full general examination in all such cases. In reviewing the subject of renal retinitis he referred to the close resemblance between the symptoms of eclampsia and those of acute lead poisoning, the contraction of the retinal vessels and blanching of the fundus were found in both in the acute stage. The existence of diabetic retinitis as a distinct entity was described, and it was suggested that co-ordinated investigation by the oculist, the physician, and the biochemist might be expected to add to our knowledge of the essential nature of the fundus changes associated with glyceremia. The paper was illustrated with lantern slides, showing the various pathological conditions. A hearty vote of thanks to the lecturer for his paper was proposed by Mr W. M. Killen, seconded by Professor Thomson, and passed with acclamation.

CARE OF THE INSANE

Suggestions for improvements in the care of the insane have been made by Dr Donelan, resident medical superintendent of the Grangegorman Mental Hospital, Dublin, in a report submitted to the joint committee of management. The report contains his replies to the questions asked by the Commission for the Relief of Destitute Sick and Poor. Dr Donelan stated that the institution was overcrowded to the extent of 250 patients, and 160 further patients were housed in the old Grangegorman Prison, which was utterly unsuited for insane persons. He suggested that additional accommodation might be obtained in some of the disused buildings of the adjoining North Dublin Union. A modified form of the Scottish boarding-out system, under which the patients would continue under the supervision of the hospital authorities, might be adopted. The insane and mentally deficient he had seen in county homes appeared to be very inadequately provided for. They should be cared for in establishments specially provided for them. He did not think it mattered very much whether the cost of maintaining the insane poor was paid out of the rates or the taxes. He was of opinion that mentally defective children should be cared for under strict supervision in special institutions by teachers trained in the art of eliciting whatever exceptional faculties existed and developing them to the best advantage. He regarded the matter of making provision for mentally defective children as being by far the most urgent question now appertaining to the humane consideration of the authorities. Mental hospitals were utterly unsuited for defective children, and no worse place could be found for a helpless child than amongst a crowd of insane adults. He was in favour of local as against State control of mental hospitals.

WEXFORD COUNTY HEALTH BOARD AND VACCINATION

Wexford County Health Board declined by a vote of four to three to comply with a Local Government Department order to enforce the vaccination laws. In August the board adjourned the question of taking action against defaulters until provision would be made in the law to meet cases of conscientious objectors. The department pointed out that the board had no power to abrogate the existing law and intimated that unless defaulters were compelled to comply with the law the Ministry would take proceedings against the board by way of mandamus, the cost of such proceedings to be charged against the members who, by their action, will have involved the rates in such unnecessary expenditure. At an adjourned meeting of the Health Board a further letter was read from the Department of Local Government and Public Health, stating that, before instituting proceedings to compel the board to enforce the Vaccination Acts, the Minister would draw attention to the remarks of the judge in a former case against a board of guardians in 1915, in which he stated that guardians who persistently refused to enforce the Acts would do so at the peril of being obliged to pay the costs of proceedings to compel them to discharge this duty. On a division the board decided by five votes to four not to enforce the Vaccination Acts.

Correspondence.

RHEUMATIC INFECTION IN CHILDHOOD

SIR,—The report of the discussion which took place at the Annual Meeting at Bath on rheumatic infection in childhood (*BRITISH MEDICAL JOURNAL*, October 31st, p. 788) stimulates me to refer to one or two points in connection with this most important subject.

Two or three of the speakers, especially Dr Vincent Cortes and Dr Thomas, concentrated their remarks more especially upon the pre-rheumatic period of the disease, and I venture to believe that they came very close to the central problem of child rheumatism. Experience gained in dealing with the children attending a large children's out-patient clinic leads me also to believe that the close study of the out-of-health states which precede, in the large majority of rheumatic cases, the first frank attack of rheumatism will go a long way towards a better understanding of the etiology of this crippling disease.

There has been in the past, I think, some loss of time in concentrating too narrowly upon the infecting agent itself, for even if it were finally proved that the disease is the result of an infection by the diplococcus of Poynton and Payne—and there must be few, if any, at the present time who would deny it—yet even then we should be a long way from understanding the reasons why so many children fall victims to the disease, and that, after all, is the urgent question awaiting solution. In a communication to the *Lancet* (August 2nd, 1924) I tried to draw attention to the fact that in a large majority of all cases of child rheumatism the first attack of frank rheumatism is preceded by a period of months or years of impaired health, and I attempted to show that this pre-rheumatic impaired health was due to toxic influences, and that the child was definitely a toxic child. Such children come within the class of debilitated children, and, indeed, form the majority of all such children, and I endeavoured to show, by comparing the pre-rheumatic histories of the frankly rheumatic cases with the states of impaired health of the debilitated toxic child who had never suffered with frank rheumatism, that there was so close a relationship between them that one was driven to believe they were the same, and I am entirely in agreement with Dr Cortes when he says that such children make up about 25 per cent of the cases attending a children's clinic.

It is in this type of child—the debilitated toxic child—that rheumatism arises. I would insist that this state of toxic debility is not related to rheumatism in the same way as the “run down” state of health is related to the “catching” of some infection. The relationship is far more intimate and close than that, and one has only to remember the identity of many manifestations common to both states—namely, the fleeting limb pains, lateral chest pain, tired feelings, abdominal pain, pillow, digestive disturbances, more especially loss of appetite and chronic constipation, and the great frequency of nervous unrest and irritability of temper—to realize how near the relationship is. If it is therefore true that frank rheumatism, with its crises, is a development engrafted upon a preceding toxic state, then it is not unreasonable to believe that the explanation of the toxic state will go a long way towards a solution of the etiology of rheumatism.

I suggested that the toxic state was caused by two main factors—first, a reduction of the tone and resistance of the tissue cells throughout the body, brought about by a long-continued dietetic defect, and secondly, by chronic absorption of toxins through the mucous surfaces into the system due to this loss of tone and resistance, and specially one would emphasize the throat and intestinal tract as important points of entrance. I would, however, venture to suggest that too great importance has been placed upon the throat as the chief anatomical defect. It has not been my experience to find that tonsillitis precedes anything like the majority of rheumatic attacks, nor am I impressed with the suggestion that unhealthy tonsils are more frequently seen in rheumatic cases than in other school children, and

I am not convinced that the early removal of tonsils protects the child from further attacks of rheumatism. I do not deny that the infecting agent may gain entrance by the throat, and accept the statement that the organism of Pointon and Payne has been found in the tonsils, but I cannot help feeling that the problem before us is a much wider one than the decision as to the point of entrance of the diplococcus. In the paper referred to I produced some evidence in favour of the intestinal tract as at any rate a very frequently abnormal part of the body of both the debilitated toxic child and the frankly rheumatic child, and while one has no evidence that the infecting agent gains entrance through the wall of the bowel, yet a close study of these toxic children and the effects of treatment on the basis of chronic digestive disturbance forces one to the conclusion that the intestinal tract is an important factor in the production of the out-of-health condition.

If an explanation on this basis is correct, then I venture to insist that the diet of the young child, from the weaning period onwards, is far and away the most important single factor for our attention, and I am specially stimulated to bring this forward at the present moment, seeing that at the Bath discussion the diet apparently was not mentioned except under the wide term of environment. That other factors play some part, such as damp, bad hygiene, and nervous strain, I doubt not, but it appears to me on reading the report that the dietetic factor is in some danger of being neglected.

Finally, I would suggest that the reason why frank rheumatism much occurs before the age of 5 years is because it takes a considerable time for the toxic debilitated state to be produced, and in a like manner the person who rheumatism becomes increasingly less common after the age of 15 years is because by this age the child has learnt to shift for itself, with the result that a wider selection of food is made.

Possibly, therefore it may finally be found that the eradication of rheumatism of childhood will lie in the direction of a close study of the child between the ages of 1 year and 5 years and a revolutionary change in the diet the infant at present receives, and I would suggest that something will be attained by the provision of a diet containing a much less relative quantity of starch and sugar and a larger quantity of animal fat and animal protein. If this is so, then the problem will require solving by means that are much wider than doctoring and bacteriology—I am, etc.,

Leeds Nov 2nd

C WILFRED VINEY

THE PROPHYLAXIS OF TUBERCULOSIS IN TOWN CHILDREN

The Grancher System

SIR,—At the Tuberculosis Conference in London in 1921 Professor Armand Delille of Paris read a paper on "The protection of children against tuberculosis, with special reference to the Grancher system," the essence of which is the removal of delicate or slightly tuberculous children from homes infected by tuberculosis and placing them with peasant families in the country where they lead an open-air healthy life. He said "2,300 of such children have been sent from Paris alone with the best possible results, and the system is spreading to other large towns in France. An effort is made to keep the child away from home until the source of danger no longer exists. Treated in this way these children almost invariably do well, but if left to themselves it is estimated that 60 per cent of them are of tuberculosis."

The Hastings and St Leonards Tuberculosis Care Committee had thought of the same plan, and was then adopting it, as was mentioned at the 1921 Conference, and since then year by year it has placed some infected children in carefully selected cottages in the surrounding Sussex villages. This was briefly described at the Conference this year. As it gave rise to numerous inquiries at the time and to subsequent letters from different parts of the country asking for further details, it is thought that an account of our work in this direction may be of service to some

of your readers, more especially to those who are members of tuberculosis care committees.

We deal with children from the time when they are just old enough to leave their home, up to about 14 years of age, and, although we send away any child in an early non-infectious stage of tuberculosis whose home conditions are bad, the system is particularly applicable to children living in poor and crowded dwellings, where another member of the family (generally a parent) is dying of the disease, is highly infectious, and cannot, or will not, be moved. As soon as these "contact cases" have been kept under observation for a sufficient time to show that they are definitely failing in health, and not suffering from some temporary ailment, or sickening for an infectious fever, the only safe course appears to be to take it for granted that they have become tubercularized, even in the absence of physical signs, and remove them from the source of danger. Our work is done largely in conjunction with the Guardianship Society of Brighton and the children are visited by its visitors, or by our tuberculosis visitors, according to locality.

Special attention is given to the sleeping accommodation in the cottages, the nature of the food, and care is taken also that the children are not employed in domestic work. They go for picnics and excursions, and thoroughly enjoy themselves, which in itself is conducive to health and they are almost always very loath to return home. They invariably rapidly improve and put on weight. I only remember one exception to this rule, and in this instance the case was complicated by asthma. Their stay is generally from four to five months, or longer if it is considered advisable. If they are obliged to return home too soon they are kept under close observation, and are again removed if they show distinct evidence of relapse.

The cost per child works out at 11s 3d a week on the average. This is the amount payable by agreement to the Guardianship Society for children living in its area. Part of it may be returned to us by parents who contribute to their children's maintenance. The following is an account that came before our Care Committee on October 8th last.

Maintenance of Five Children in the Country

	£	s	d
4 children at 11s 3d	2	5	0
1 child at 5s	0	5	0
	2	10	0

The Grancher system is, of course, only applicable in the spring, summer, and early autumn months. Its more striking advantages seem to be that the home life with people of their own class appeals strongly to the children and then parents in contradistinction to life at a sanatorium, and it is far cheaper, also it leaves more beds for cases for whom sanatorium treatment is essential. Our experience now extending over some years, leads us to consider this method highly satisfactory, and we regard it as one of the most valuable features of our work—I am, etc.,

W BOLTON TOWNSON, M.D.,

Vice President of the Hastings and St Leonards
Tuberculosis Care Committee

October 28th

RECTAL INJECTION OF TARTAR EMETIC FOR BILHARZIASIS

SIR—Dr H F Wilson in Nyasaland published his results of the treatment of bilharzia disease by rectal injections of antimony trihydrate (*BRITISH MEDICAL JOURNAL*, January 28th, 1922, p 137), and Dr J Bancroft Anderson wrote (*BRITISH MEDICAL JOURNAL*, October 17th, 1925, p 700) that since that date he had used exclusively that treatment, and the simplicity, safety, convenience, and efficiency of the rectal administration of tartar emetic appeared to make intravenous injection in bilharziasis no longer a justifiable treatment.

Dr Anderson tried it in two cases. To one he gave 19 grains without unpleasant effect, and to the other, a boy of 17, he gave one injection of 6 grains and the ova disappeared. No doubt Dr Anderson tried it in other cases.

Although all well equipped doctors might not agree that an enemal is simpler, safer, or more convenient than an intravenous injection, rectal injections are undoubtedly more appropriate for nurses and unqualified persons, of Africa, and this method of administration would be preferred by them to intravenous medication, if as efficient I believe that it has been tried by nurses in Nataland, where bilharzia is prevalent, and abandoned.

It was also tried by a doctor in Nataland, and although he did not record his work he concluded that he preferred the intravenous route. The reason why the method is not popular, I think, is that when doses such as 19 grains of antimony trisulphate are given no one has satisfactorily shown what becomes of it, and though apparently efficient at the time examination at a later period has proved that bilharzia disease was still present.

I believe that it would be worth while for a medical man to try rectal injections in a series of cases, recording his results in a manner which would allow of the method being conclusively judged. Wilson showed that the rectum was tolerant of large doses of antimony trisulphate (16 grains), and he suggested rectal injections in bilharzia as an alternative for persons whose veins could not be found either on account of the cold weather or for any other reason, and for children. He gave details of four cases, and his paper was a very notable contribution to bilharzia, and antimony therapy, but he did not record subsequent examinations of the cases, excepting immediately after the treatment was completed. It would be interesting to know how much of 19 grains of antimony is absorbed and how much is returned with the faeces. Antimony is rapidly excreted by the kidney, it would not be too difficult to estimate the excretion by the urine.

Day, in Cairo, showed that bilharzia was so sensitive to antimony that ova already deposited were killed even after the intravenous injections of 1½ grains (100 per cent of the ova were killed after 6 grains). His work proved that the parent worm was considerably upset after a small dose of 1½ grains, but that it required a much larger concentration of antimony trisulphate to kill it, for living ova reappeared after an interval. It does not necessarily follow that because the ova cease for a period to appear in the excreta the parent worms are dead and the disease cured—I am, etc.,

London Oct 27th.

J B CHRISTIANSON, CBE,
MD FRCP

OSTEOPATHY AND CHIROPRACTIC

Sir,—As one who has always claimed freedom of speech, freedom of experimentation, and the freedom of pioneering on new and more or less unorthodox lines, I should like to add my voice as to the way in which the practice of what is called osteopathy should be regarded.

Not a few practisers of this method of treatment have complained to me that the medical profession is too exclusive to allow it to secure light and knowledge from unorthodox sources, that the medical profession is hopelessly behind the times and hitherto in its ideas of treatment, that the whole horizon of the medical profession is bounded by drugs and operations and injections, and that it has no charity towards sensible methods of healing, that there is no hope for the medical profession ever being in line with the natural laws of the universe because there is no profit to be made out of teaching dietary and obedience to the simpler laws of health, that the medical profession is wrong, in that it sets up an exclusive barrier against men who possess power, of healing, and refuses to associate with those who have gifts which are not possessed by the general practitioner.

These and similar complaints have been made to me from time to time. My answer has always been as follows. No man would entrust his life in going down a coal-pit to a wander who had not obtained the recognized skill for his work. No owner of racehorses would entrust his valuable stock to a man simply because he claimed that he had more knowledge of horses than the grooms who had been brought up in orthodox stables. The medical profession is justified in demanding of anyone who wants to set up as a healer that he should prove that, at any rate, he is equal in

general knowledge of diseases and their causes to the least well qualified of medical practitioners.

I have always pointed out that the way is open and a welcome will be offered to any man who wants to teach new methods and to investigate new powers of healing so only that he will first of all prove that he has at any rate that acquaintance with the work of those who have gone before in the pathway of medicine as is possessed by the general medical practitioner, that the medical profession does not object to new methods and new ideas and does not refuse to obtain light from any source whatever, so long as the man who claims to possess it is prepared to offer a full and free explanation of what he claims, and is prepared to allow it to be tested by those who are capable of such investigation.

The medical profession has a sacred lamp to keep right, a sacred trust to guard, and a sacred profession to uphold, and although in not a few cases it has failed in width of mind and charity of outlook, none the less reform must come from within and not from without. Those who wish to enlarge the outlook of the medical profession must be humble willing, first of all, to enter its portals, and then things will be in a different perspective to them and from a wider standpoint and a higher ground of knowledge they will be able to urge their claims.

There can be no State recognition of half qualified men, and there is nothing to prevent any man attaining the knowledge which is required for such qualification—I am, etc.,

London W 2 Oct 27th

JOSEPH OLDFIELD

Sir.—Instead of applying for legal aid to oust the quack, we should see that there is no niche left for him.

The bone setting fraternity has arisen because many medical men do not pay sufficient attention in cases of minor injuries to securing the patient's recovery in the least possible time and with the least possible interference with the patient's normal daily life—that is, with a minimum of rest and fixation. Many doctors no doubt do so, but so long as even a few fail in this respect the stigma remains and is attached to the whole profession. A few neglected cases (by this I mean put to bed and rested unnecessarily) that go to quacks and get cured quickly make much noise. The same results obtained by a medical man are passed over as part of his normal functions—and can do it if he exercises a little common sense and originality and forgets all preconceived notions.

Broadly the treatment is (1) Massage at once. This is most important. (2) Free movement, passive and active, at the earliest possible moment without undue pain. (3) The avoidance of rigid splints and fixation by bandage. A little ingenuity is required for this, but the results are well worth the effort.

Having had numerous injuries for which the usual treatment is rest, and having always managed to continue to play tennis in spite of them, the matter has been impressed upon me, and when I was in general practice I did the same for my patients with highly satisfactory results. If I could do it anyone else can. Let this stigma be removed—I am, etc.,

Reading October 28th

LESLIE POWELL M.B.

Sir,—I recently saw a case of brachial neuritis which had persisted over a year. It had been massaged or shall we say 'manipulated,' very thoroughly for several months without any apparent benefit. We discovered that the patient had glycosuria and hypoglycaemia (blood sugar 0.28 and 0.30 after 50 gr glucose), but curiously enough no other symptoms pointing to diabetes. Under treatment appropriate to the diabetic condition the brachial neuritis elevated up completely in less than a fortnight. Whether this result was *post hoc* or *propter hoc* I prefer that others should judge, as I have not previously had an exactly parallel experience. I suggest, however, that the case points to the necessity for a wide outlook on the part of those who undertake the treatment of disease. If osteopaths claim registration as being competent to treat some

diseases, may I inquire whether birchial neuritis is one of them? If so, does their timing fit them to deal properly with a case like this? If it does, where is the line to be drawn?

Surely, if there is more in manipulative methods than mere of us appreciate, they will receive due recognition and be generally taught to medical students as a matter of course. But to create a new class of partially educated practitioners seems to me fraught with danger to the public. Why should they not all follow Dr. Kelman MacDonald's example and secure a medical qualification?—I am, etc.,

Manchester Nov. 1st

J STALLA DICK

SIR,—The last paragraph of Dr. E. Graham Little's valuable letter (October 31st, p. 815) contains an important warning to the profession on 'the burning question of registration of unqualified osteopaths.' I am not quite clear what he means by the sentence, 'For the profession as an unorganized corporate body to enter the lists I think would be undesirable, but the exercise of personal influence on their local members of Parliament by doctors throughout the country would be a very valuable method of attack.' Does he mean that members of Parliament should be prompted to oppose the movement by individual doctors only, and that corporate bodies like the universities, Royal Colleges, and the British Medical Association should stand aside?

Judging from the reception of the St. Helens and Warrington motion on unqualified practice brought before the Representative Body at Bath in July, I should say that there is very little interest in the topic. The platform on that occasion was quite apathetic, if not actually hostile to the motion and the lead which was then given to the general body of representatives is not likely to induce either the representatives or their constituents to prompt members of Parliament to oppose the registration of unqualified osteopaths.

To me it has always seemed that the British Medical Association is the most suitable body to handle this question. It is a scientific and democratic body, well accustomed to handling medico-political affairs. It also has among its members a large body of insurance practitioners with more or less assured incomes who have no direct financial interest in checking or discouraging unqualified practice and whose judgement on the question of the admission of unqualified osteopaths to the *Register* would be based to some extent on the merits of the question and on the advice given by the leaders of the Association. That advice is not likely to be given, and if Dr. Graham Little is relying on individual effort on the part of the profession to give him support in his opposition to the movement he will be disappointed.

His vision of "strange and unwelcome bedfellows" being thrust upon us may speedily come true—too late for effective action. The breach in the citadel once made, there is no telling who may not claim to enter, and all the elaborate educational and disciplinary scheme of the General Medical Council will become depraved and vitiated.

As a general practitioner I am interested in the last paragraph of Dr. Kelman MacDonald's letter—with the scientific sophistry in the earlier part of his letter. Other pens than mine will no doubt deal. This paragraph states:

'The members of the British Osteopathic Association are not asking for the privilege of signing death or birth certificates, they do not have to sue for fees, they do not want to prescribe dangerous drugs and they have never been prosecuted for malpractice.'

From this I gather that although the osteopath is seeking registration, he is not seeking it so that he may have the privilege of signing a death certificate. The osteopath, after he has done his best for the patient is to leave that task to the general practitioner. Nor does he wish to sign a birth certificate—I presume this means the notification of a birth. This means that the registered osteopath is to leave confinements to the general practitioner. Nor why should the osteopath leave the pregnant uterus out of his sphere of operations? No other organ is more under the control of the autonomic nervous system than the

rhythmically contracting uterus. Has the osteopath no manipulative exercise to mitigate or stop its pains? "They do not have to sue for fees." Like Omar of old, osteopaths "take the cash and let the credit go." They do not want to prescribe dangerous drugs. What does the osteopath do for the raving man in delirium tremens or for the patient writhing in the agony of renal colic? Cases like these are, I suppose, left to the general practitioner. "They have never been prosecuted for malpractice." I do not wonder. They went more or less healthily forth to treat and they do them no harm. But there is a deep and serious side to this question. Is the medical profession as a whole prepared to see the whole basis of modern scientific medicine on which it has been nurtured supplanted by the official recognition of cult based not on a healthy empiricism like that of the old-time bone-setter, but on mystic fancies and intellectual subtleties masked in the terms of modern science? I hope not.

Sir Archibald Garrod, in his admirable Harveian Oration on the debt of science to medicine, said:

"If medicine were to be established upon a scientific basis its structure needed to be firm from the ground upwards and from the sixteenth century onwards the foundation stones and the pillars which form the lower stories, have been cultivated and advanced largely by medical men who saw them to be essential to the progress of their own science and art."

Progress in the sciences will not be arrested by a healthy scepticism and strenuous opposition to these new heresies. State recognition, however, will mean the diversion of money and energy to fitious purposes instead of being utilized for the advancement of science.

The Bishop of Birmingham in his profound and eloquent sermon to the Association at Bath in July, stressed with a sure hand the trend of present-day thought and onlook. Let us be on our guard—I am, etc.,

Warrington Nov. 1st

J. G. MASON

SIR,—I have been very much interested in the recent correspondence on osteopathy in your columns. It seems to me however that too much is being made of osteopathy to the exclusion of a much older movement—namely, Swedish medical gymnastics. Long before the "invention" of osteopathy the Swedish school had commenced to investigate the presence of localized spinal areas of tenderness and muscular contraction, and to treat them with movements. And similarly, to the Swedish school we owe the use of nerve frictions and vibrations (according to the methods of the late Henrik Kellgren), abdominal pectoral and manipulation of the individual abdominal organ, resisted movements for heart cases and paralysis, etc., which the osteopaths either do not use at all or, if they do, apply them with very poor technique in comparison with the Swedish school.

The only part of osteopathic treatment that is original is the technique of replacing minor displacements of bones in the vertebral column. Thus, I frankly admit is a very important discovery, and one that should be brought to the notice of the medical profession as a whole. At the present moment the opinion of the profession may be summed up as (a) minor displacements of vertebrae cannot occur, and (b) even if they could they could not be replaced by the simple methods of manipulations practised by the osteopaths. I have on previous occasions asked for statements in support of these views so far I have never received one. I can assure those who deny the existence of minor displacements in the spine that during the last fifteen years I have replaced several thousands of vertebrae, and that such reposition in a number of cases was a very important factor in the cure of patients—indeed, in some of them a *sine qua non*. I would refer those interested to a number of my contributions in medical journals recently republished in my *Collected Papers on Mechano-therapeutics* (1924).

I cannot understand why there should be the desire to place osteopaths on a level with the medical profession, inasmuch as they have not had the same training. I should like to ask those who advocate this why they limit their sphere to osteopaths. Should not all Swedish gymnast-midwives, electro-therapists, and massagers also get the

same rights? By all means have a register, and legislate so that lack of skill and quackery be actionable, but there I consider the effort should stop—I am, etc.,

London W 1 Nov 2nd.

EDGAR F. CYRIAN, M D Edin

MYXOEDEMA

SIR,—Because of its reference to Howitz of Denmark as having been the first to employ the method of oral administration of thyroid gland in a case of myxoedema, the annotation which appeared in your issue of October 10th (p 657) has called forth from Dr E L Fox a rejoinder in which you are said "to endow a foreigner with what might more justly have been given to Englishmen."

Without any intention of minimizing the excellent achievement of Dr Fox and of Sir Hector Mackenzie in introducing the oral method of thyroid therapy in this country, the separate published records of which appeared in your issue of October 29th, 1892, I desire in the interests of historical accuracy to draw attention to certain facts which appear to qualify Dr Fox's claim. Dr Fox directs your attention to the annotation which appeared in the same issue (p 965) as his and Mackenzie's papers. May I be allowed to call to your notice the letter from Dr Vermeluen which you published in your issue of February 4th, 1893 (p 266)? In this letter Dr Vermeluen stated that Professor Howitz was the first to treat a case of myxoedema by giving thyroid gland by the mouth, and that the results of this experiment were communicated to the Congress of Naturalists at Copenhagen on July 6th, 1892. Particulars of this communication will be found in the *Verhandlungen des 14. Congresses der skandinavischen Naturforscher in Kopenhagen* (p 517). There will also be found a full discussion of Howitz's case, the treatment of which he commenced on March 27th, 1892, and the successful results of which treatment he communicated to the above mentioned congress on July 6th, 1892, in the *Deutsche medizinische Wochenschrift* of March 16th, 1893 (*Ueber die Behandlung des Myxoedems*, p 255), also by the pen of Dr Vermeluen.

Two other extracts from contemporaries of Dr Fox should prove of interest. In a paper on the treatment of myxoedema read before the Edinburgh Medical-Chirurgical Society on February 15th, 1893, Dr R A Lundie spoke as follows:

The first of these cases [treated by the internal administration of thyroid gland] published in this country were those of Dr Mackenzie and Dr Fox, which appeared simultaneously last October. I had independently arrived at the same result but the first to establish the success of this method seems undoubtedly to have been Prof. Howitz of Copenhagen who communicated his result to the Congress of Naturalists at Copenhagen in July last.

The other reference is to a letter by Dr Ehlers which appeared in *La Semaine Médicale*, 1893 (p 59), in which he said "Des le mois de mars 1892 en effet M. Howitz a traité une malade atteinte de myxoedème par l'ingestion de pilules préparées avec des glandes thyroïdiennes de veau, et ce n'est qu'un mois après l'institution du traitement chez cette première malade que plusieurs auteurs anglais, MM Fox, Mackenzie, Baber et Lundie, commencerent leurs expériences."

It would appear, therefore, that the same idea occurred to four different physicians at about the same time. Such coincidences are not uncommon in the history of science. *Percent qui ante nos nostra dixerunt*—I am, etc.,

October 31st

THE WRITER OF THE ANNOTATION

MEDICAL WOMEN IN MEDIEVAL TIMES

SIR,—In your issue of October 31st (p 819) Dr Cullen raises points concerning Hildegard. I have set forth most of what I know of her in a long article on "The Scientific Views and Visions of St Hildegard" in the first series of my *Studies in the History and Method of Science* (Oxford, 1917). The article is based on a study of the manuscripts.

The *leta inquisitionis de virtutibus et miraculis sanctae Hildegardis* are printed in the *leta sanctorum Bollanda-na*, vol 1, p 697, and are conveniently accessible in Migne's *Patrologia Latina*, vol 197, column 131. I have personally formed a higher opinion of her virtues than of her miracles.

The record of Hildegard's life seems to me to reveal her as an erring and human woman, who was very far from being a saint, in any intelligible sense of the word. I cannot here discuss her failings of tongue, temper, and feeling, and I draw the veil over the treatment of the Albigenses (Cathari) for which she was in some part responsible. Yet despite her faults she was a fine and fiery spirit, and an exceedingly able and courageous woman. At her best she was humane, less intolerant, and more broad-minded than many leaders of her day. I am unmoved in my judgement by the cult of her by the good folk of Mainz, to which Dr Cullen refers.

As to her views, it is no charge of mine to determine what is orthodox. Nevertheless, it is my opinion, as an historical student, that doctrines voiced by her, notably her conception of Nature, are opposed to recognized Christian teaching. I would add that it seems to me improbable that Hildegard was conscious of the aberrant character of these views. Perhaps some who have written in her praise would be not a little perturbed if they realized what those views were. But that is another story. To follow it further would lead to a discussion of topics which cannot and should not be admitted to your hospitable columns—I am, etc.,

London, W C Oct 31st

CHARLES SINGER

SIR,—It is difficult within the four corners of a letter to reply fully to Dr C Singer's criticisms (October 17th, p 721) of my brief note in your JOURNAL on the medical school of Salerno and St Hildegard. Foundation for every statement in my letter is to be found in the following works of James Walsh, M D, LL D, Professor of History of Medicine, Fordham University School of Medicine, New York. *Education How Old the New*, 1911, pp 213, 214, 216, 219, *The World's Debt to the Catholic Church*, 1924, pp 149, 150, 152, *The Popes and Science*, 1911, p 226, etc.

Salerno, according to Dr Singer, was not a university in our sense. Sir D'Acié Power, in a foreword to *Magistri Salernitani nondum cogniti* (P. Cappaioni, Research Studies in Medical History, No 2), writes as follows:

"It is never easy to elucidate the early history of a corporate body which has existed for many centuries. What was true of the guilds was equally true of the universities and of the great teaching schools. Many of the most famous, like Salerno, Paris, Oxford and Cambridge began as voluntary assemblies of masters and pupils. The works of De Renzi and Gracchi [the historians of the school of Salerno] show that its origin was far different [from the fable of the meeting of Greek, Arab, Latin, and Jew] that it began in the Benedictine and Basilian Monasteries."

Dr P Cappaioni (*Magistri Salernitani*, already noted, p 17) says "At the end of the twelfth century great changes took place. We remark the establishment of a Guild of Doctors and of a Schola Medicorum, or *Universitas*, with statutes and chiefs of its own." Rashdall (vol 1, p 6 et seq) shows that "in medieval times the word 'university' means only an aggregate of persons, at the end of the twelfth century the words applied to a corporation of masters or of students. The term which most nearly corresponds to the vague and indefinite English notion of a university is not 'universitas' but 'studium generale,'" and on page 21, vol 1, he speaks of Salerno as "one great Studium Generale."

Further, as to the part the Benedictines played in the origin of the Salerno school, U Benigni, Professor of Ecclesiastical History, Pontificio Collegio Urbano di Propaganda, Rome, in the *Catholic Encyclopedia*, says "the origin of the Medical School of Salerno is to be found in a Benedictine monastery of Salerno established 794." Paekard's *History of the School of Salerno* (London, 1922, p 12) states "The monks [that is, the Benedictines] established monasteries in the city, and many authorities consider that the organization of the Medical School of Salerno on a scholastic basis was chiefly attributable to their activities." Dr Max Neuburger (*Hist of Med*, vol 11, Part 1, 1925, p 23), speaking of the foundation of the Salerno school, says "No doubt the Benedictines were indirectly of great assistance to its first rise."

Dr Singer says there were no professors at Salerno. Rashdall (vol 1, p 21), says the "three titles, master, doctor, professor, were in the Middle Ages absolutely identical."

Dr P. Capparoni, in his *Magistri Salernitani nondum cogniti*, adds, as the title of his book indicates, many new names to the list of masters (or professors) of the school of Salerno.

'None of the teachers can be shown to have been women,' and 'There is no evidence that women were 'admitted' to the 'university' in the twelfth century'—so states Dr Singer Rashdall (*Universities of Europe*, vol. 1, p. 86) states "Among the medical practitioners, teachers, and visitors of its primeval days were several women." Dr Capparoni, in his *Magistri Salernitani* (1923, p. 21), in a list of doctors in the twelfth century, mentions 'Beidefolia, Medica,' and says there is 'nothing foolish in supposing she was a lady doctor.' Prekard (op. cit., p. 17) states "There were other women besides who practised medicine and wrote on medical subjects at Salerno in the fifteenth century." Constanza received the degree of Doctor of Medicine. Women were undoubtedly admitted to the medical course at Salerno and received degrees and licence to practise." Also compare Dr Max Neubinger, *Hist. of Med.*, vol. II, p. 1, p. 25, footnote. The "Mulieres Salernitanæ," frequently quoted by Salernitan authors on account of their wide knowledge, particularly in matters of gynecology and cosmetics, were truly genuine women doctors, and it was no unusual thing for wives or daughters of the direction of the "Collegium" to become teachers. Dr Matheson Cullen's letter (October 31st, p. 819) makes further reference to St Hildegard unnecessary for me.

Dr Singer's reference to "ungrounded statements or untenable conclusions on medico-historical topics carelessly thrown off," and "wild and undocumented statements buried about," must be my apology for this lengthy letter. May I suggest that Dr Singer should add to his words "no evidence"—so frequently occurring in his letter—the words "satisfactory to me"? Then we might agree to differ—I am, etc.,

London S.W.1 Oct 30th

REYNOLD ROCHER

** We cannot continue this correspondence

THE TEACHING OF PHYSICAL TRAINING

SIR,—May I be allowed to reply briefly to the two letters in the *BRITISH MEDICAL JOURNAL* of October 24th (p. 769)?

In my article of October 3rd (p. 608) I pointed out the futility of doing a leg exercise after heavy exercise. Dr Timberg agrees that "no sensible person" would advocate such a thing. Yet those connected with the Swedish system of physical training know that leg exercises have been recommended by some of its disciples, "after violent effort such as running 'all out' in long-distance races, and after severe strain in prolonged tugs-of-war," also after running, etc., and that this teaching is widespread. Dr Timberg agrees with me that this is a mistake.

The leg exercise after heavy exercise is now abandoned in the Royal Navy. Movements of the arms during breathing exercises are also abandoned. When I began the work of physical training, seventeen years ago, these exercises were in vogue, being part of a Swedish system. Since then my own observations and the rapid advances in physiology have necessitated these changes. The effect of the leg exercises which have been retained and their proper application, also the physiology of both leg and breathing exercises, are fully discussed in my papers, which are being published in the *Journal of the R.N. Medical Services* in January next (obtainable from the Admiralty).

The other points raised by Dr Timberg, and also those by Major Austin, are already fully dealt with in the above-mentioned papers. I regret that I am unable to answer here more fully owing to the length of reply which would be required.

As regards the spine, excess of zeal, especially on the part of non-medical instructors in attempting to "straighten out the curves" leads to exaggeration of description and diagrams, even to the extent of showing a spine as straight as a ramrod and devoid of every vestige of curve. This exaggeration leads to exaggeration in exercises.

As a case in point I might refer to an exercise in which direct force is applied to the spine, with the purpose of

bending the dorsal curvature, which I have seen in a manual of physical training. Such exercises should not be applied to classes of human beings during physical training, and semi-medical exercises of the nature of breathing exercises and leg exercises found not to produce the effects ascribed to them should be eliminated from the curriculum. Normal spines should be left alone and not tampered with by non-medical physical training instructors. Faulty spines require medical treatment.

It is not advisable to call constantly the attention of a pupil to his heart or breathing. The centres for these functions have worked for so many ages that they are capable of working best by themselves, and only need to be left alone, especially by the uninitiated.

In physical training, leg exercises after heavy exercise should be omitted. Breathing should be done naturally with no arm movements. The normal curves of the spine should not be tampered with.

These points and their physiology are fully discussed in the papers mentioned above—I am, etc.,

Southsea Oct 26th

HORACE B. HILL

VENERAL DISEASE IN THE NAVY

SIR—The letter in your issue of October 31st (p. 819) from a retired naval medical officer condemns (unheard) the Admiralty for ceasing to include in the prophylactic outfit a silver preparation for the prevention of gonorrhoea, and he attributes to "departmental economy" the "resulting increase of gonorrhoea on such stations where alternative methods are difficult of application." By "alternative methods" is meant, I suppose, the early application of skilled disinfection in a disinfecting chamber on board and on shore.

It would appear that prophylactic outfits can be improved so as to diminish the incidence of gonorrhoea and that in certain stations the providing of convenient disinfecting chambers would further tend to reduce venereal disease in the navy. Until such improvement and provision is brought about a share of responsibility for the shamefully high figures for gonorrhoea in the Royal Navy is rightly to be attributed to inertia on the part of naval medical officers.

Once the disease has been required treatment in naval hospitals would be altogether admirable were it continued until every case was non-infectious. What my original letter (October 3rd, p. 629) protested against was the practice of discharging from the service incurable cases of gonorrhoea before sufficient time had elapsed to make certain that these were not a source of danger to the health of the civil community. It is deplorable that the Admiralty has not shared in the general enlightenment of the fact that has taken place since the Royal Commission on Venereal Diseases issued its report nine years ago. The Admiralty still fails to carry out the Commission's recommendation that men in the navy suffering from venereal disease should be detained until non-infectious—I am, etc.,

ROBERT FORCEN, M.D.

Janakshree Joint Committee on
Venereal Disease

Glasgow Oct 31st

The Services

TERRITORIAL DECORATION

THE Territorial Decoration has been conferred upon the following officers of the R.A.M.C. T.A. under the terms of the Royal Warrant of October 13th 1920: Lieut. Colonels C. H. Stannett, Redmond, and E. Beverley, B.D.S.O., Majors Charles Corfield, William J. Harrison, and Alister F. Lee, M.C.

DEATHS IN THE SERVICES

Surgeon General Christopher Pearson, R.H.P. R.N. (ret.) died at the Royal Naval Hospital Chatham on October 24th, aged 78. He was the youngest son of the late John Pearson of Macroom, Co. Cork, and was educated at the Queen's University of Ireland where he graduated M.A. in 1875 and M.D. and M.Ch. in 1875. He entered the navy soon after, and attained the rank of Inspector General of Hospitals and Fleets in May 1908, the title of rank being changed in 1911 to Surgeon General. He retired in February 1912. He served in the Egyptian war of 1882 and as surgeon of HMS *Invincible* took part in the bombardment of Alexandria, receiving the Egyptian medal with clasp and the Khedive's bronze star. From 1909 to 1912 he was Inspector General at Chatham. He was appointed honorary physician to the King on October 1st 1912. He was unmarried.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

THE Special Board for Medicine has appointed Dr L Cobbett Sir F G Hoplins, and Mr G L Wherry as members of the M.D. Degree Committee for the present academic year. Professor H R Dean M.D. has been elected to fill one of the two vacancies on the Council of the University Senate.

At a congregation held on October 30th the following medical degrees were conferred:

M.D.—G H Oriel
M.B. B.Chir.—J H Francis R Cove Smith H J H Hendley
L C Walker J A W Robertson
M.B.—J Russell

ROYAL COLLEGE OF PHYSICIANS OF LONDON

An ordinary quarterly committee of the Royal College of Physicians of London was held on October 29th, at 5 p.m., when the President, Sir Humphry Rolleston, Bt., was in the chair.

Members

The following candidates were admitted Members, having passed the necessary examinations:

Wm Fielding Addey M.B. Harold Gilbey Anderson M.B. Tudor Nath Bandgopadhyay M.B. Ambuj Nath Bose M.B. M.S. Reginald Thomas Brain M.B. Oscar Brenner M.D. Frederick John Henry Campbell M.D. Voldon Dalrymple Champneys M.B. Samuel Harold Cookson M.D. Gerard John Crawford M.D. Thomas Howard Crozier M.D. Cyril Lloyd Ligoed M.B. Rowland Beattie Fawkes L.R.C.P. Louis Forman M.B. William Innes Gerard M.D. Paul Currier Gibson M.D. Francis Henry Kneibell Green L.R.C.P. Geoffrey Hadfield M.D. Frederick Wood Hamilton M.D. Richard Anderson Hickling M.B. Ronald Epey Lane M.B. Edward Bertram Marsh M.C. W.B. James Maxwell M.B. Alton Aird Moncreiff M.B. Benjamin Blandford Morgan M.D. Milroy Assepp Paul L.R.C.P. Wilfred Percy Henry She don M.D. John Forest Smith L.R.C.P. Norman William Snell M.B. Frederick Henry Wickham Tozer M.B. Leonard Francis Cyril Gliphant Valentine L.R.C.P. Richard Horbert Wade M.D. George Frederick Walker M.D. Adam White M.D.

Licences

Licences to practise were granted to the following 211 candidates:

A R Adderley R D Aiyar V M Albuquerque C R Alderson R B Alston R C Amies *L ab Appell H K Ashworth A A Atkins D G Balakrishay C V N Maltrey W A B-ll R Bandaly J V Bancheur T F Barlow J V Bassett J R Beal A D Bellios H S Bell W F Blackmore *Kathleen Blake V H Brink J M Broinck G P Brooks W Buckles *Margare A L Buckner *Gliva A Burnett Isabella M C Butler J P Carpenter *Fanny L Cattle R T Chadwick W S Chapman *Dorothy A Chown L V Clark C D Co'swell R Collins A Coomate may P F S Court *Anne A Craig I D J Cutting A J Daly A C Dalzell S W Davis G Dietrich J Dockray W H Dow II *Muriel E Drew J J F Dunn *Dorothy Durance J I Eccles N L Edwards A Elliott *Norah A M Emp on *Brenda H English J A Evans G F Farndon R R Fell *S J Fifth P H Flockton A O Gardner S D Cawthrop H Gear J F E Gillam B M O Gilsenan G N Golden J G Goodman M Gottfried E P Gough *Phyllis M Granger H W Greenwood *Margaret H Greg G J Grosvenor J C P Grey H R Griffin *Sarah P M Griffiths T A Griffiths W S Grove L J Hayden A B Holmes T A Jackson J P Huns *Ruth T Hunsford D S Jackson T A Jackson *Isabel I S James R Jones *Adele A Kahan M D Lampard I Landno D M Lang C G Le Comtiard A H Leters H M Levy S Levy Simpson R Lewthwaite D W E Lloyd *Mary C Luff *Joan L Lush J D S McGeech B W S Mackenzie W K McKinstry S B Malik *Margaret C Malone C Marian R Vead J A A Melchburg A A Monio D G Morgan G C Morris *Una F M Newbham H A Nicholls H E Nourse Eileen A August I C Oakley M Odess D Oliver C J S G Waller A O'Hanley *S G Pandit C I Parry F H Parsons G Paterson H L Leake L V Pearson B Perchman J D L Perera D Plum att J D Procter W J H Quennell J D Rear L I Richards A E R J Rozario E J Rnhra N L Russell N Sankey *I thel M Sargent A G ones E M Shackle J W Shclee J R Sworn C C Tuffs G K aylor Jones G A J Teeddale A B W Van Zyl W A J Vince D C Virmani I N Wauds Smith J K G Way Weiner A S Wesson *Joyce D P Williams T I Williams Anterton J T Woodhead A T

*Sara C A Sharp J Silverstone T St J H Silverster H Simmons G Simon F M Smith K F Smith E H J Stevens *Gertrude H K Taylor Jones G A J Teeddale A B W Van Zyl W A J Vince D C Virmani I N Wauds Smith J K G Way Weiner A S Wesson *Joyce D P Williams T I Williams Anterton J T Woodhead A T

Worthington E W C Routersz
* Under the Medical Act 1876

Dr J A Nixon of Bristol was appointed an Examiner in Medicine to serve until July 1927 in the place of Dr J W Russell (Birmingham) deceased.

A report was received from the President of the College who had attended the International Prison Congress as delegate.

The alterations in the by laws relating to the examinations for the Membership were read a second time and passed. Copies of the revised regulations can be obtained from the Registrar and a general indication of the changes will be found in a paragraph printed in the JOURNAL this week at page 860.

A letter from Dr Daniel O Connell Dunigan asking that the Membership which he resigned in 1912 might be restored to him, was read a second time. The application was granted.

Dr R A Young was re-elected a member of the committee of management and a report of a formal nature was received from the committee.

The President announced the award of the Streetfield Scholarship to Norman Leslie Capener, F.R.C.S. whose subject of research is "The comparative anatomy and function of the prostate gland", of the Jenks Scholarship for 1925 to Oliver Iye, of Guy's Hospital Medical School and formerly of Epsom College, and, by the University of Edinburgh, of the Murchison Scholarship for 1925 to Miss Sidney Elizabeth Gloskery.

After some other College business of formal character, the President dissolved the committee.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At the annual meeting of Fellows and Members to be held at the College on Thursday, November 19th, at 3 p.m., a resolution will be moved on behalf of the Society of Members of the Royal College of Surgeons of England reaffirming the desirability of admitting Members to direct representation upon the Council of the College, and requesting the Council (now about to apply to the Privy Council for a supplementary charter) to avail itself of this opportunity to insert a provision therein for some representation of Members, as such, upon the Council. The resolution will be moved by Dr L Haden Guest, M.P., and supported by Dr J O'Donovan, Mr M J Smyth, F.R.C.S., and Mr F Lawson Dodd.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY—R F Ashkeny A G Dreosti O L Froehlich E J Now man M Pettigrew M V Roberts G E Rowan P B Skeels J Tarshish M E G Wilkinson H J F Wood
MEDICINE—M Bannounah A O Dreosti A M El Misbad A L Evans C L Froehlich T H Harrison M Hook N H Ibrahim I G Martin P B P Mellews E J Newman L H Rampling F Reynolds L A Rostant G H Shanley J Tarshish
FORENSIC MEDICINE—A F Brighten V G Crowley A G Dreosti A L Evans W O H Evans N H Ibrahim I G Martin E G B McMahon F Reynolds G H Shanley M E G Wilkinson F Winelake H J F Wood
MIDWIFERY—J H Clapp T E Cliford S W Cuff A O Dreosti M Hook D P Hyde E J Jones P H L Moore T C Pain F Reynolds J B Scarr H J F Wood

The diploma of the Society has been granted to Messrs J H Clapp S W Cuff A O Dreosti A L Evans, T H Harrison, E P Hyde, N H Ibrahim, I J Neyman F Reynolds, M V Roberts G H Shanley, P B Skeels M L G Williamson, F Winelake, H J F Wood.

Obituary

GEORGE HAYNES FOSBROKE, M.R.C.S., D.P.H.,

County Medical Officer of Health for Worcestershire

WE regret to announce the death, on October 27th, of Dr G H Fosbroke, at the age of 75, after an illness lasting nearly a year. He died in the house at Bidford-on-Avon in which he himself, his father, and his grandfather had been born.

George Haynes Fosbroke received his medical education at the Westminster Hospital, and obtained the L.S.A. in 1871, the M.R.C.S. Eng. diploma in 1872, and the D.P.H. Camb. in 1875. During his student days he served as a surgeon's assistant in the Franco-German war, and subsequently received the French war medal. The Royal Commission at the end of 1871 led to the establishment of a public health service, the old Poor Law being superseded by the new Local Government Board, medical officers of health were appointed for different parts of the country, and in 1873, after holding house appointments at the Westminster Hospital, Dr Fosbroke was appointed whole-time medical officer of health to the combined rural and urban districts of Stratford-on-Avon, Licham, and Alcester. In 1890 he was appointed the first medical officer for the Worcestershire County Council, and, at his death, he was the last surviving county medical officer of those who were originally appointed when these posts were first created. His duties were extended in 1906 by his appointment as chief medical officer to the Worcestershire Education Committee. Dr Fosbroke published articles in the BRITISH MEDICAL JOURNAL and elsewhere on cancer, the etiology of diphtheria, copper poisoning, the Midwives Act, and on sanitary matters generally. He was summoned as an expert witness before the Royal Commissions on physical deterioration and the metropolitan water supply. He was a Fellow of the Society of Medical Officers of Health, and a member of the Epidemiological Society. He leaves no children, and so ends one of the first branches of

an English country family whose members for nearly 600 years have remained close to their original home

For the following appreciation we are indebted to Dr MIDDLETON MARTIN, County M.O.H. for Gloucestershire

Comparatively young as is the public health service, the time has arrived when it must be expected that the pioneers will have finished their allotted task. Yet when the death of one of them is reported deep regret is felt and the loss of Dr G. H. Fosbrooke is by no means the least of those which we now have to deplore. Evidently in his early days he was impressed with the possibilities of preventive medicine, for he was one of the very small number of whole-time officers appointed in 1873 for groups of sanitary districts, which included the late Dr Francis Bond, in the neighbouring county of Gloucestershire. Dr Fosbrooke's determination to equip himself fully for his life's work is shown by the fact that in 1875 he sat for the first examination held at Cambridge University for the diploma in public health. The esteem felt for him by his medical colleagues was indicated by his election in 1881 as president of the Birmingham and Midland Association of Medical Officers of Health, which became a branch of the parent society in 1888. There can be little doubt that it was largely as a result of his work and influence that the Worcestershire County Council was one of the first to take advantage of the permissive powers granted by the Local Government Act of 1888 to appoint county medical officers of health; this decision was not reached without considerable opposition, meetings of protest being held in a great number of places in the county. The final result was that the Worcestershire County Council was fortunate enough to secure the services of Dr Fosbrooke as county medical officer of health in 1890, and with his assistance it became one of the most progressive authorities in promoting public health measures; this appointment he held for thirty-five years. Not only was he successful and happy in his own branch of work, but he had the capacity, not usually possessed by whole-time medical officers of health in those days of maintaining friendly relations with his colleagues in general practice. This was demonstrated particularly by his election to the presidency of the Worcestershire and Herefordshire Branch of the British Medical Association in 1894. Dr Fosbrooke's public health work was not restricted to Worcestershire; he acted as adviser to the Gloucestershire County Council from 1900 to 1902, and summarized the public health reports for those years. He was also the representative of the Local Government Board on the London Sanitary Inspectors' Examination Board, and was an examiner for the Royal Sanitary Institute. In 1902 he was largely instrumental in founding the Knightwick Sanatorium for Tuberculosis, which, starting with sixteen beds, became, in 1915, the King Edward VII County Memorial Sanatorium, with eighty-six beds. Of him it may be said generally that there are few men in the public health service who have been more successful in promoting the true aims of preventive medicine, and this in a quiet, unassuming manner which overcame prejudice and encouraged the local authorities of Worcestershire to establish numerous works of water supply and sewerage to the advantage of the population of to-day and of generations to come. While these constructional works will long remain to be memorials of his public health activity, Dr Fosbrooke realized that preventive medicine had a far wider scope, and in few counties is there a more lively public health atmosphere than that which he was successful in generating in Worcestershire. As a man there were few more welcome in any sphere of life for Dr Fosbrooke was a sportsman in the best sense of the word. This was shown by his form of recreation, which was open-air sport, from boyhood to the time of a hunting accident he was a well-known follower of three packs of foxhounds and from 1876 to 1883 he was master and huntsman of the Bidford-on-Avon hounds. Inappreciated for this sport by his resident, game shooting took its place, and instead of a prolonged annual holiday, days spent in shooting—perhaps the better form of recreation—gave him the change he needed from official work. To younger men in the service he was particularly kind, and many owe him a deep debt of gratitude for his generous help and encouragement.

The deaths of the following foreign members of the profession have recently been announced: Dr I. Schwartz, honorary surgeon to the Paris hospitals and member of the Académie de Médecine, Dr Richard, professor of pharmacology and materia medica in the Paris faculty of medicine, Dr Ranvier, president of the Belgian Royal Academy of Medicine, and professor at the University of Louvain, Dr Victor Jacques, honorary professor in the Brussels faculty of medicine, where he had successively lectured on physiology, therapeutics, and pharmacy (aged 72). Professor John Addison Fordyce, well-known dermatologist of New York (aged 67). Dr Karl Schlosser, professor of ophthalmology at Munich (aged 68). Dr Juan Cisneros Sevilla, professor of otolaryngology in the Madrid faculty of medicine since 1902, and member of the Spanish Royal Academy of Medicine. Dr Anton Bum for many years editor of the *Wiener medizinische Presse* and of the *Wiener Anzeiger* (aged 69), whose book on massage and therapeutic gymnastics passed through several editions.

Medical News.

A SERIES of four lectures on the history of medicine will be given at University College Hospital Medical School by Dr Charles Singer. The first lecture, on Thursday, November 12th, at 4.15 p.m., will be on influenza, the succeeding lectures, which will be given on the same day of the week and at the same hour, will be on diphtheria, enteric fever, and small pox.

THE next meeting of the Dental Board of the United Kingdom will be held at 44, Hallam Street, W.1, on Tuesday, November 10th, at 2 p.m., when the chairman will deliver an address and the Board will consider disciplinary and other business.

THE fifth of the present series of lectures arranged by the Fellowship of Medicine will be delivered by Dr F. J. Poynton, on some points in the diagnosis of tuberculosis in the child on Monday, November 9th, at 5.30 p.m., in the lecture hall of the Medical Society of London, 11, Chandos Street. All members of the medical profession are welcome. Special courses now in progress are gynaecology at the Chelsea Hospital for Women and venereal diseases at the London Lock Hospital. Dr Porter Phillips and Dr Thomas Beaton began a series of eight lecture demonstrations on psychological medicine at the Bethlem Royal Hospital on November 3rd. At the Victoria Park Hospital a two weeks course in diseases of the chest has been arranged from November 9th to 21st. From November 23rd to December 12th the Royal Waterloo Hospital will hold a course in medicine, surgery, and gynaecology. For the convenience of general practitioners the London Temperance Hospital will give a five afternoon course in general subjects (4.30 to 6 p.m.) from November 23rd to December 4th. A course on diagnosis and treatment of nervous diseases will take place at the West End Hospital (73, Welbeck Street) from November 23rd to December 12th. Copies of each syllabus, and also the general course programme, may be obtained from the Secretary to the Fellowship at 1, Wimpole Street, W.1.

THE Huxley memorial lecture before the Royal Anthropological Institute will be given this year by Sir Arthur J. Evans, F.R.S., at the rooms of the Royal Society, Burlington House, W., on Tuesday, November 24th, at 8.30 p.m. The subject will be early Nilotic, Libyan, and Egyptian relations with Minoan Crete.

THE next meeting of the Royal Commission on Lunacy and Mental Disorder will take place at 1, Whitehall Gardens, S.W., on Tuesday, November 10th, at 10.30 a.m.

SIR DAVID PRAIN, F.R.S., formerly director of Kew Gardens, who before he held that office was director of the Botanical Survey of India, will give a lecture on some useful plants of India at an evening meeting of the Pharmaceutical Society of Great Britain, to be held at the society's house (17, Bloomsbury Square, W.C.1) on Tuesday next, November 10th, at 8 o'clock.

A SHORT course of lectures on functional nerve disorder has been arranged at the Tavistock Clinic for Functional Nerve Cases, 51, Tavistock Square, W.C.1. The course will include six lectures by Dr J. R. Rees on the psychological factor in general practice, to be given on November 16th, 17th, 18th, 23rd, 24th and 25th at 4.30 p.m. Four lectures on the endocrines and general metabolism in the psychoneuroses by Dr W. Langdon Brown on November 19th, 20th, 26th, and 27th, at 4.30 p.m., and ten lectures by Dr H. Crichton Miller on the theory and causation of the psychoneuroses,

to be given daily at 5.30 p.m. from November 16th to 20th and November 23rd to 27th. The fees for the combined course are for medical practitioners £2 2s., and for medical students 10s. 6d.

THE International Society of Medical Hygiene will hold, in conjunction with the Section of Bacteriology and Climatology of the Royal Society of Medicine, a special meeting in the Barnes Hall of the Royal Society of Medicine, 1, Wimpole Street, W. 1, on Friday, November 27th, at 10 a.m., to discuss the treatment of rheumatism in industry. The president of the International Society, Dr. Gustave Monod (France), will take the chair, and among those expected to take part in the discussion are Sir George Newman, chief medical officer to the Ministry of Health, Dr. Van Bredon (director of the Institute for Physical Treatment, Amsterdam), Dr. Kern Pinnle (Harrogate), Dr. F. Konmann (Switzerland), Dr. Buckley (Bristol), Dr. Kahlmeter (Consultant to the Pensioners Department, Stockholm), Dr. Louis Blanc (France), Dr. Schmidt (Czechoslovakia), and Drs. Otto May, Llewellyn, Ray, and Fortescue Fox.

At a meeting of the Dutch Section of the International Society of the History of Medicine at Gorinchem on October 18th, in connection with the congress to be held at Leyden in 1927, an executive committee was formed with Dr. J. G. de Lint of the Hague as president, and Drs. J. E. Kroon of Leyden and J. B. I. van Gils of the Hague as secretaries.

THE annual Sheffield medical dinner will be held in the Royal Victoria Hotel at 7.30 p.m. on Thursday, November 12th. Applications for tickets (12s. 6d.) should be made to the Honorary Secretary, Dr. J. Eric Stacey, 2, Durham Road, Sheffield.

THE Aberdeen University Club, London, will hold its biannual dinner at the Criterion Restaurant, Piccadilly, at 7.30 p.m., on Thursday, November 19th. Professor H. M. Macdonald will be in the chair, and the guest of the evening will be Sir Humphry Rolleston Bt., President of the Royal College of Physicians of London. Any graduate, past or present, wishing to attend the dinner or join the club should communicate with Dr. Milhigan, 11, Upper Brook Street, W. 1.

THE Royal Dental Hospital School of Dental Surgery will give in "At Home," which medical men are invited to attend, at the hospital (32, Leicester Square, W. 2) on Saturday, November 21st, from 2 to 5 p.m. The annual dinner of the staff will take place the same evening.

THE annual dinner of the British Serbian Units Branch of the British Legion will be held on December 10th, with Sir James Purves Stewart, K.C.M.G., M.D., in the chair. All who worked for the Serbians and their friends are invited. Tickets, price 7s. 6d., may be obtained from Mr. H. B. Ives, Oxford House, Junction Road, N. 19.

DR. FRANCIS HARD asks us to correct the announcement, supplied to us by the Norwood Sanatorium, Limited, and published last week (p. 821). He has, he says, resigned his connexion with the Norwood Sanatorium, not owing to ill health, for his health is excellent, but only that he may open a similar institution at Chislehurst.

DR. W. JAMES SUSMAN has been unanimously adopted as Mayor for the borough of Henley on Thames for the ensuing year.

THE appointment of Sir William Job Collins, K.C.V.O., to be Vice-Lieutenant of the County of London has been approved by the King.

DR. JAMES FERGUSON LEES, Director-General of Public Health Ministry of Interior of the Government of Egypt, has been granted by the King licence and authority to wear the insignia of the second class of the Order of Ismail conferred upon him by the King of Egypt in recognition of valuable services rendered.

THE Sanitation supplements of the *Tropical Diseases Bulletin* ended with the issue of October 30th. It is announced that the publication of a monthly *Bulletin of Hygiene* will begin in January, 1926; this periodical will review the literature of public health and preventive medicine of the English speaking world, the annual subscription will be 21s., post free, payable in advance to the Tropical Diseases Bureau, 23, Endsleigh Gardens, N. W. 1.

A RECENT report issued by the Nobel Prize Committee arranges in the following order the countries which have been recipients of the prize from 1921 to 1924: Germany 26 times, France 21, Great Britain 14, America 9, Sweden 7, Denmark and Holland 6 times each, Switzerland 5, Austria, Belgium, Norway, and Italy 4 times each, Spain 3, Poland 2, Russia and India once.

WE have received the first issue, dated October 1st, of *Forschungen und Fortschritte*, a fortnightly journal published in Berlin, which is to be devoted to recent progress in German science and technique, including the relations of German science with that of other countries.

THE Tokyo municipality has decided to build six new hospitals with isolation wards for infectious cases, since at present considerable delay occurs in the transfer of these patients to the only isolation hospital existing in Tokyo. All the buildings will be reinforced concrete, three stories high, with a basement, and with gardens on the roofs. It is proposed to establish three new hospitals in Tokyo and elsewhere for the benefit of employees in the department of communications. The temporary building to replace the Yokohama General Hospital, which was destroyed in the earthquake of 1923, has been completed, and the hospital committee hopes to have sufficient funds in hand by the end of the year to begin the reconstruction of the permanent building.

THE Moscow Public Health Office has recently issued a German version of a report for the six months October, 1924, to March, 1925. This contains a brief survey of its activities, which include the establishment of dispensaries and sanatoriums for combating tuberculosis, venereal diseases, and drug taking, the inauguration of infant welfare centres and maternity homes, the improvement of workmen's dwellings, the prevention and treatment of the common infectious diseases, especially scarlet fever, diphtheria, and malaria, and the provision of sanatoriums for tuberculosis.

MESSRS. W. HEFFER AND SONS, LTD., Cambridge, announce for early publication *The Nature of Tumour Formation: The Erasmus Wilson Lectures, 1925*, by Dr. W. G. Nicholson, reader in morbid histology in the University of London, and lecturer in clinical microscopy, Guy's Hospital Medical School.

PROFESSOR KARL JOSEPH LEBERT, who discovered the typhoid bacillus in 1880, has recently celebrated his 90th birthday.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W. C. 1**.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their article published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W. C. 1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the *Journal* should be addressed to the Financial Secretary and Business Manager.

THE TELEPHONE NUMBERS of the British Medical Association and the *British Medical Journal* are: *MUSEUM* 9361 9362 9363, and 9364 (internal exchange four lines).

THE TELEGRAPHIC ADDRESSES are: EDITOR of the *British Medical Journal*, *Antology Westcent, London*.

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc.) *Articulate Westcent London*.

MEDICAL SECRETARY *Mediscra Westcent London*.

The address of the Irish Office of the *British Medical Association* is 16 South Frederick Street, Dublin (telegram: *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Drumsburgh Gardens, Edinburgh (telegram: *Associate, Edinburgh* telephone 4361 Central).

QUERIES AND ANSWERS

THE PROPHYLACTIC VALUE OF QUININE IN MALARIA

"G. M." writes: It has been stated by different observers that quinine is of no value as a preventive of malaria, its failure being attributed in some cases to the relative insolubility of the tablets used. I should be glad to know whether quinine is still generally accepted as a prophylactic and if so what is the most suitable preparation and what the dosage to employ.

.. The statement that quinine is of no value as a preventive of malaria is largely based on experimental work—that sporozoites are not destroyed by the drug. In practice however it is found efficacious and a vast majority of old residents in the tropics vouch for this. It is true that tablets can be hammered without being broken and that they can also be collected from the faeces unaffected by passage through the alimentary canal. This is due to the coating of sugar, stearates etc., which becomes very hard in the tropics. For effective prophylaxis the quinine must obviously be taken in an absorbable form as liquid or powder or if in tablets these should be uncoated and not too compressed. Five grains daily is the dose usually employed and, though some take only two grains the former is safer. The bishydrochloride, being the most soluble, is the best salt to use.

INCOME TAX

War Pensions

"X" is in receipt of a civil pension, having been invalided from the Gold Coast service. His retirement was caused or at least accelerated, by haemorrhoids developed as a result of dysentery contracted whilst serving on the medical staff in the Cameroons during the war. Is he chargeable to income tax in respect of the pension?

* * The exemption which "X" has in mind applies to wounds and disability pensions granted to members of the naval, military, or air forces of the Crown, or retired pay of disabled officers granted on account of medical unfitness attributable to or aggravated by naval etc., service. It is, we think, fairly clear from the section (Section 16 of the Finance Act, 1919) as a whole that it deals only with pensions, etc., given for military etc. service and not with civil pensions, even though, as in

"X's" case their early receipt and consequently the reduction in the pensioner's income is referable to similar causes. We fear that he has no claim to exemption in respect of his pension.

Division of Partnership Assessment

J. D. F. puts the following query: A, B, and C are partners in a medical practice. A proposes to retire from the practice on June 30th 1926. Owing to a change in partnership some years ago the books of the firm were made up on June 30th in each year and the assessment of the firm for the income tax year 1926-27 has already been agreed to with the inspector of taxes as under:

Profit for year ended June 30th 1923	£
1924	4 408
1925	2 887
	2 752
	310 017
	£3 349

Assessment for 1926-27

Our correspondent asks: What is A's liability in respect of the profits of the firm up to June 30th 1926 and what is the usual procedure in these cases?

* * The tax payable in July 1926 will relate to the assessment for the year to April, 1926 and therefore will not be affected by the change. The tax so affected will be that payable January and July 1927, in respect of the assessment for the year to April, 1927. The statutory rule is laid down by Section 20 of the Finance Act 1918, and provides that the income of a partner shall be deemed to be the share to which he is entitled during the year to which the claim relates etc. Consequently (assuming A, B, and C to be entitled to the profits in equal shares) A's share of the 1926-27 gross assessment will be one third for one quarter of the year—that is one twelfth of the whole or £279 and from this he will be entitled to the usual allowances and reliefs. If he is a married man, for instance his net liability would be £279-£225=£54 at half the standard rate of tax less any life assurance and other reliefs to which he may be entitled. If there should be any tax payable by him for 1926-27 it may be convenient for him to pay (by arrangement with his partners) the whole of his share as part of the January instalment, thereby obviating the trouble of making a small payment in the following July.

LETTERS, NOTES, ETC.

COCKROACHES

We have received a number of replies to the inquiry as to how to rid a country hospital of cockroaches. They may be summarized as follows:

"F" tells us that he quickly got rid of cockroaches which overrun his house by acting on the following advice: Mix 1 part powdered borax with 4 parts of sugar. Place a little heap of this heap and there near the runs of the cockroaches. See no crumb or remains of food are left about.

Dr F. C. Forster (Bournemouth) recommends Scott's beetle exterminator made by Messrs A. Scott and Co. 244 Beresford Street London S.E. It can be obtained from any chemist. It is a powder and is sprinkled over floors especially in cracks and crevices, and along the skirting junctions of walls with the floors. Its use must be resisted with Dr Forster wishes it to be understood that he has no interest in the firm mentioned.

"M.B." recommends either "Blattis" sold by Messrs Howarth 473 Cooke's Moor Road Sheffield or "Magnet" insect powder to be obtained from Messrs Boots.

An "M.O.H." recommends "Rydene," a proprietary substance manufactured by Messrs Rydene Ltd 115 High Holborn, W.C. It is cheap, non-corrosive and non-inflammable. It is not to be recommended for bugs as it has not the penetrative power of the petrol containing mixtures but for vermin in clothing and for cockroaches it is he says excellent. For bugs "Solution D" (also a proprietary substance) gives he finds good results: cylinder 1/2 pint water 5 pints) used as a spray is efficacious, both for bugs and cockroaches. It is not inflammable, both these substances are expensive however.

Dr D. A. McCurdy (Londonderry) advises the inquirer to employ a plumber to go round the places where cockroaches congregate thoroughly treating each area with the flame of a blow lamp.

Messrs. ARNOLD AND SONS (John Pell and Croxden, Ltd) 50, Wigmore Street London W.1, write to recommend 'Boli No' liquid. It is used as a spray.

Messrs. HAYMOND inform us that they sell a liquid preparation, "Pestelin," which is used as a spray. It is effective, they say, against flies and moths as well as beetles.

TREATMENT OF DEAFNESS AND TINNITUS

Dr F. G. CANNON (Durban) writes: May I suggest that more consideration be paid to the possible removal of the upper wisdom teeth, cauterization of the inferior turbinate bodies, and the avoidance of congestion of the middle turbinates by attention to the diet and by an early morning dose of sodium sulphate in those cases of chronic deafness and tinnitus where there is no obvious indication for the correction of nasal obstruction due to deflected septum or nasal spur or for the surgical treatment of a latent sinusitis. Many such cases are unlikely to respond to nasal douching with saline, and electrical methods are still on trial, while a gastric cause of the condition is sometimes overlooked. I have often found that a good deal of discomfort can be avoided at night by raising the posts of the bed on bricks at the head end of the bed, and am sure that a great deal of unnecessary suffering of patients who experience a severe reaction after local anaesthesia of the nasal passages can be avoided by this method of sleeping on a slope, instead of causing further healing of the head by the use of pillows.

FIAT AND LORD

Mr H. MASSIE BUIST writes: With reference to the statements cabled at intervals during the last four weeks by responsible news agencies from the United States of America and from the continent of Europe concerning an alleged agreement entered into between Fiat and Lord, Messrs Fiat (England) Ltd., now inform me that that information is without foundation. In reviewing the passenger car show at Olympia from the doctor's viewpoint I made tentative reference to the proposal apropos the new 7 h.p. Fiat chassis pointing out that without this insouciant, that production firm would still have a notable effect on the evolution of the small car during the next five years. Moreover, of course the above disclaimer does not in any way affect the current activities of American financiers and motor manufacturers to secure control of important British car building enterprises: the Vauxhall shareholders, for example, having accepted the proposals put forward on behalf of General Motors at an extraordinary general meeting on October 30th, at which there were, however, some dissentients.

ULTRA VIOLET RADIATION

We have received from Messrs Watson and Sons (Electro Medical), Ltd (Fisher Street, Kingsway, W.C.) a pamphlet entitled *Artificial Sunlight*. In a few pages it gives a sketch of the history of the therapeutic application of ultra violet radiation without however lending itself to the exaggerated claims which have lately been prevalent in some sections of the lay press and then it goes on to discuss the comparative value of the different types of lamps for general or local irradiation. The remainder of the pamphlet is an illustrated catalogue in which seventeen models of lamps are described including various arrangements for utilizing mercury vapour tungsten, and carbon arc sources and, for low intensities metal filament lamps in quartz. The pamphlet slight as it is gives a comprehensive picture of the range of instrumentation now available in photo therapy. For the general practitioner the tungsten arc is recommended by the producers of the pamphlet as the source of greatest general utility, although special conditions might lead him to favour one of the other sources.

AN EXPLANATION

Dr JEFFREY WENTWORTH MALIM (St Marychurch Torquay) writes: In the *Daily Mail* of November 3rd is an account of an inquest on a medical practitioner calling himself Dr Jeffrey Wentworth Malim of South Kensington. I am Jeffrey Wentworth Malim and the dead man was not a doctor, or else was one using my name.

SMITH'S VISITING LIST

Smith's Physicians' and Surgeons' Visiting List is a neat and well made volume for the pocket which has been of service to generations of medical practitioners. Two varieties can be obtained in either cloth or leather binding; the one (No. 3) with space for seventy five patients and a journal for engagements and the other (No. 4) for 100 patients without the journal.

¹ *Smith's Physicians' and Surgeons' Visiting List for 1926* (Fiftyth year London: Hazell Watson and Viney Ltd 1925) (34x6 1/2) No. 3 cloth 7s 6d leather 10s 6d No. 4 cloth 10s leather 12s.)

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 43, 44, 45 and 48 of our advertisement columns and advertisements as to partnerships, assistantships, and locumtenencies at pages 46 and 47.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at pages 167 and 168.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BATH, 1925

SECTION OF SURGERY.

SIR BERKELEY MOYNIHAN, Bt, KCMG, CB, MSc, FRCS, President

DISCUSSION ON CARCINOMA OF THE STOMACH

OPENING PAPERS

I—SIR WILLIAM I. DE COURCY WHEELER, MD, FRCSI, Past President RCSI

To emphasize the tragic importance of this subject to the community, I need only remind the meeting that there are about 10,000 deaths annually from cancer of the stomach in the British Isles. Looking back twenty-five years I can recollect, as a student, the orthodox teaching at the bedside the emphasis laid on the palpable tumour, on the coffee-ground vomiting, on the absence of hydrochloric acid, and when, by good fortune more than by good management, an early cancer of the stomach was found at operation, the discovery was usually followed by rapid closure of the abdomen. Except in the hands of a few surgeons gastrectomy was regarded as outside the bounds of justifiable surgery.

A great advance has been made. Efforts to ensure early diagnosis and efforts to perfect operative removal have gone hand in hand, and the results of a recent years operative technique has of diagnostic endeavour. To-day, in the absence of prevention, the early diagnosis of cancer of the stomach is the real problem on which all attention should be concentrated. Early diagnosis means safe operation and a reasonable chance of permanent cure.

DIAGNOSIS

I think perhaps a useful purpose will be served if my criticism of diagnostic methods is, in the first place, destructive, in this way attention will be focused on the fallacies which surround a large proportion of textbook teaching. It may be said at once that the symptom-complex of carcinoma of the stomach is so vague, and varies so considerably, that an early gastric cancer may escape detection although every path known to science has been explored in the search. Gastric analysis, for example, is one of the beaten tracks, but does not, of necessity, lead to any definite goal. In 1879 the absence of free hydrochloric acid in gastric carcinoma was noted, but we know now that it is present in over-abundance in cases where an ulcer is undergoing malignant degeneration. In the records of the Mayo Clinic it is stated that the absence of hydrochloric acid occurs in a little less than one-half the cases of carcinoma of the stomach, normal or hyperacid values may be expected in one-fourth. It is not too late to broadcast such findings, for, notwithstanding all the biochemical reports in connexion with cancer, there is still a wide belief that the presence of free hydrochloric acid excludes the likelihood of gastric cancer.

Peterson and others lay stress on the importance of complete fractional analysis in differentiating between such conditions as gastritis, gastric ulcer, hour-glass stomach, and carcinoma, but the broad fact remains that the diagnostic results obtained by any method of analysis of the gastric contents are not encouraging. Furthermore, free hydrochloric acid may be absent in many conditions which clinically simulate cancer of the stomach—viz, for example, pernicious anaemia, hour glass stomach, syphilis, actinomycosis, viscerosptosis, and wasting diseases in general. It is absent also in about 29.4 per cent of cases of simple gastric and duodenal ulcer. The presence of lactic acid and the absence of hydrochloric acid may be regarded as a straw of evidence to show which way the wind is blowing, but

such a finding is little or no aid towards early recognition. Some pin their faith to the presence or absence of occult blood in the faeces, but the tests contain too many fallacies to be of any real practical importance. The Salmon albumin test, the serum reactions of Kelling, and such like procedures, have not received wide approbation. Barnett Joseph sums up the situation well when he says that there is no specific diagnostic test, either chemical, microscopical, or serological, of any value in gastric cancer.

Probably the advent of accurate x-ray examinations represents the greatest advance in the diagnosis of gastric malignancy, but in admitting this we must be fair to the radiologists and not classify them amongst miracle mongers. If a malignant tumour involves all the coats of the gastric wall, the rays usually show a defect in the contour of the stomach, and a lack of peristalsis is visible in the involved portion, but if the carcinoma is small and has not yet infiltrated the muscular coats of the stomach, then neither defect in contour nor abnormality in peristalsis is of necessity evident. Cancer at the cardiac end of the stomach and cancer with a patulous pylorus may escape detection in the hands of the best radiologists. Negative findings, just as in the case of clinical investigation and gastric analysis, are of doubtful value, and the value of positive findings should not be too emphatically emphasized. Tumours of neighbouring organs pressing on, or adherent to, the stomach wall may produce a filling defect which closely simulates an intragastric lesion. I have no experience of the use of the gastroscope, nor, for that matter, of the oesophagoscope, and for this want of experience I am consoled by Sir John Bland-Sutton, who referred to the use of these instruments as requiring the instinct of a sword swallower and the eye of a hawk.

Some rare signs of early cancer of the stomach should be borne in mind. My colleague, Professor T. G. Moorhead, has drawn attention to venous thrombosis as an early sign of gastric cancer. Trousseau stated that if, when in doubt as to the nature of an affection of the stomach, one observed a vein to become inflamed in the arm or leg, all doubt may be dispelled and a positive diagnosis be made. This obliterative phlebitis is a recognized factor in cases of advanced cancerous cachexia, but it may be the earliest symptom of a latent carcinoma. Various explanations of the phenomenon have been given: enfeeblement of the circulation, changes in the blood, and terminal microbial infection have been mentioned.

The first of four cases mentioned in Dr Moorhead's paper illustrates what a valuable sign venous thrombosis may be in early gastric carcinoma. The patient to whom I refer, when apparently in good health, suddenly developed thrombosis of the internal jugular vein, which gradually extended into the axillary and innominate veins, with swelling of the right arm. Radiographical examination of the thorax was negative, as was the Wassermann test, and there was a normal count of both red and white blood cells. The patient had a good appetite, and for a few days the thrombosis appeared to be subsiding, but it then appeared on the opposite side of the neck, the left arm became affected, and death supervened. At the necropsy an unexpected but typical cancer of the lesser curvature of the stomach was found. The thrombi in the veins contained neither cancer cells nor other organisms. Goff, in 1894, described a case with symptoms of generalized phlebitis lasting eight months, without signs or symptoms of malignant disease. A non-ulcerative cancer of the lesser curvature was found after death. These cases belong to the rare group of latent cancer of the stomach with peripheral venous thrombosis as the earliest, and indeed the only prominent symptom throughout. I have always looked for, but never once found, the glands above the left clavicle enlarged; the point is mentioned so frequently as a diagnostic aid that I would like to hear the experience of others in this connection.

Exploration.—How is the goal of early diagnosis to be reached? In the majority of early cases, in which there is a strong suspicion that the patient is suffering from some gastric ailment not responsive to medical treatment, there is only one reliable means of making the diagnosis, and that is by exploration. William Mayo, in 1904, insisted upon this

point Exploration can be safely accomplished through a small incision, and with only a short time of disability. Ho writes as follows:

"It is said that the patient will not submit to an abdominal incision upon suspicion. Herein we do the intelligence of the public an injustice. We have seldom been refused the opportunity when the matter has been fairly and candidly laid before the patient and his friends. The plea for delay has more often come from the attending physicians."

I have for many years taught my students that if there is no gain of weight, or at least maintenance of weight, in a gastric case after efficient medical treatment, malignant disease should be suspected and exploration is more than justified. Sir Thomas Hordey told me that he suspected carcinoma and recommended laparotomy in a gastric case, irrespective of age, whenever there was a failure to gain weight or to maintain weight after the end of the third week of efficient medical treatment.

There is a small group of patients who seek advice the moment their health becomes impaired, and in whom early diagnosis is easy. In this lucky few the accumulation of evidence—clinical, biochemical, and radiographical—all points in the same direction, and a large percentage of such cases are cured by gastrectomy. In late cases diagnosis is easy but futile, adding only mental misery and despair to the physical suffering of the victim.

Anæmia—We are frequently confronted with the type of patient in which anæmia is the prominent feature, and it would be well to focus attention on this group by describing it as the "pernicious anæmia" type of cancer of the stomach. The differential diagnosis is often difficult. In pernicious anæmia the blood changes are not so characteristic as some would have us believe. Achlorhydria is always present, gastric stasis may or may not exist. In doubtful cases it is helpful to treat the patient with arsenic for about three weeks. In pernicious anæmia there is often temporary marked improvement, but in cancer of the stomach there is no improvement, and more often diarrhoea and nausea follow the administration of the drug. It is interesting in this connection to note the pernicious type of anæmia which follows complete gastrectomy.

Cancer in Young People—There has been too much said, I think, about the "cancer age." From time to time young people are admitted to hospital suffering from cancer of the stomach. Sullivan of New York mentions six cases below the age of 10 years, four cases in infants under 6 weeks, one in a child of 18 months, and thirteen cases in the second decade of life.

By thinking too much of the "cancer age" I missed the diagnosis of a fairly clear case of cancer of the stomach in a patient aged 20. He was admitted into Meigs's Hospital some years ago suffering from gastric symptoms before the time of routine bismuth meal examinations. At operation an extensive inoperable malignant growth of the stomach was found. With rigid medical treatment for over six months previously the course of his illness had continued progressively downhill, loss of weight and anæmia increasing in defiance of every therapeutic effort. At the moment I have a patient aged 30 in the last stages of gastric carcinoma.

In young people there is often an absence of cachexia, an early onset of high temperature, and rapid appearance of metastasis. These three special signs may be explained by the accelerated disintegration and breaking down of carcinomatous tissue which is to be expected in the early and active years of life.

Differential Diagnosis

It must be borne in mind that other pathological conditions may coexist with cancer of the stomach. In *Hamlet* we find—"There needs no ghost, my lord, to come from the grave to tell us this", and yet the obvious often escapes our attention.

I recall a case in which the diagnosis of early carcinoma of the cardiac end of the stomach was made by a medical colleague and radiologist friend on what seemed to be inconclusive evidence. I saw the patient in consultation, and detected a tumour in the left hypochondriac region. I felt certain, from its size, that the tumour was not a carcinoma

of the stomach, for all the evidence pointed to a very early growth. Further investigation brought me to the definite conclusion that the tumour was renal in origin, and that the filling defect shown by the x-rays was due to the tumour pressing on, or being adherent to, the stomach wall. On opening the abdomen a solitary cyst of the left kidney was found, but on passing the hand upwards I ascertained that there was an early carcinoma of the cardiac end of the stomach. This case illustrates the wisdom of compromising with our medical brethren rather than disputing their diagnostic acumen.

There are many cases on record of tumours of the stomach found at operation, believed to be advanced cancer, but in which the patients remained well for many years after exploration. A very distinguished consulting physician in London gave me a verbal description of an operation for suspected cancer of the stomach. An irre-movable mass was found, and the abdomen was closed. As time went on the patient got better, a Wassermann test was made, and was found to be strongly positive. Antisyphilitic treatment completed the cure. Syphilis of the stomach is rare, but not so rare that the differential diagnosis between it and cancer can be ignored. The symptoms are much the same in both conditions, but in syphilis hydrochloric acid is absent much more frequently, and only very rarely can a tumour be palpated.

In September, 1924, I had a lesson in the great difficulty of differential diagnosis. The patient was aged 40, and was a painter by trade. There was loss of weight, loss of appetite, pyrexia, and secondary anæmia, over a period of about six months. Hydrochloric acid was absent and there was some tenderness in the epigastric region, on one occasion he had a slight hæmatemesis. Blood cultures were negative. The radiologists reported that the stomach was dilated, hypotonic, with diffuse narrowing of the pyloric segment, and a gross irregularity of both curvatures. There was a very large six-hour residue. The report added that there was pyloric obstruction, almost certainly due to carcinoma. The clinical and radiographical picture of cancer of the stomach seemed to be complete. Owing to an accident to the x-ray couch at the operation the stomach and first portion of the duodenum were found to be quite normal but in the jejunum, about one foot from the flexure a tumour adherent to the surrounding coils of intestine was discovered. The involved portion was red and inflamed and had the appearance of an acutely inflamed appendix just before perforation. When the loop of intestine was resected the perforations were revealed. The loop of intestine was resected and the condition was found to be actinomycosis, or perhaps a while and the condition was found to be streptothrix infection. The patient died eight days after operation, and at the necropsy a white area of ulceration from the same cause was found in the third portion of the duodenum. In the erect position the stomach lay in front of the ulcerated duodenum which explained the erroneous conclusions derived from the radiologist's report.

Gastric disturbances in pulmonary tuberculosis and in diabetes may simulate carcinoma of the stomach which closely resembled mentions five cases of visceroposis which closely resembled carcinoma of the stomach. I had one case of leather-bottle stomach which stretched and lengthened the gastro-hepatic omentum to such an extent by its own weight that the tumour was felt freely movable in the pelvis, before a radiographical investigation I believed it to be a gynaecological case. This condition, termed "leather-bottle stomach," is renowned for the number of different names indicative of the same condition. It was first described in 1859, and from that date until now there has always been a question as to whether it is histologically malignant or benign. The prognosis in this class of case is always bad.

The Relationship between Gastric Ulcer and Gastric Cancer

This question has given rise to a controversy of great interest. It is well known that Sir Berkeley Moynihan, Mr. Sheeren, and others believe that over 50 per cent of cancer of the stomach arises from chronic gastric ulcers. MacCarty of the Mayo Clinic, who has written frequently on this subject, states that chronic gastric ulcers with a diameter greater than 2½ cm are cancerous, though he is not emphatic as to whether the cancer of the ulcer is primary. There is no doubt about the close association between chronic ulcer and cancer, but there appears to be very great technical difficulties in deciding in what proportion of cases the cancer of the chronic ulcer is the first lesion. Dible, in a recent issue of the *British Journal of Surgery*, states that gastric

carcinoma, so far as can be judged by histological evidence, are in a large majority of cases malignant from the very inception. The last ten stomachs removed in my own practice over a period of eighteen months were investigated histologically from this point of view, but the number is too small and the data too incomplete to serve a useful purpose. I will mention four (three recent) in which there was strong evidence of the development of cancer on gastric ulcer.

1 In 1909 I removed the stomach from a woman in which there was a pyloric stricture, an hour glass stomach at the cardiac end and a malignant growth between the two. It is reasonable to suppose that with the cicatrix following ulcer at either end of the stomach the malignant tumour in the centre was also preceded by ulcer.

2 In 1921 I saw in consultation a clergyman, full blooded and robust, but pain had commenced to follow the ingestion of food, there was vomiting with relief of pain, and marked hyperchlorhydria. At the operation what was believed to be a small chronic ulcer was found in the neighbourhood of the pylorus. It was burnt out by the Balfour method, and a posterior gastro-enterostomy performed. One year later extensive malignant disease of the stomach was established. Pauley and Hampton mention a similar case in which gastrectomy was performed for ulcer cancer secondary to a Balfour operation for ulcer done three years previously.

3 Last year a man, aged 50, was admitted to Mercer's Hospital, and what was believed to be a simple gastric ulcer was found in the pyloric region. With the case of the clergyman in my mind, I performed gastrectomy, and it was only after many sections had been made that a small area with carcinomatous change was found. The change was definitely carcinomatous and not due to distorted or displaced epithelium, often found in connexion with healing ulcers.

4 Two months ago I operated on a patient with an extensive cancer quite inoperable in the pyloric region, and involving the under surface of the liver. Twelve years ago this patient had a perforated gastric ulcer.

On the other hand, most of the cases of carcinoma of the stomach on which I have operated arose as if *de novo*, without symptoms which would suggest the previous presence of chronic ulcer.

As regards palliative operations in advanced cases, in my hands the temporary relief recorded by others has not been experienced. I have tried gastro-enterostomy, jejunostomy, gastrostomy (when applicable), and duodenal feeding, but never with any great success. Anterior gastro-enterostomy is the only operation applicable in some cases, and appears to have a widening field of usefulness. Radium emanation capillaries have not been available at times when I might have used them, but then use as a therapeutic measure in cancer of the stomach, as well as elsewhere, is worth trial. Mayo tried radium through a gastrostomy opening in twelve cases, but none were alive at the end of a year. In cancer of the bladder and cancer of the prostate I have had marked temporary success with this method. In cases of cancer of the stomach I think a two-stage operation is seldom, if ever, necessary. It has been a source of astonishment to myself, the resident staff of the hospital, and the sisters, how little shock or ill effects follow the operation of gastrectomy of the Mayo-Moynihan Polya type, even in cases which appeared to be the very worst surgical risk. Sir Berkeley Moynihan was in the theatre when I performed gastrectomy in this type of case. The following day the patient was reading a book and anxious for food.

I have always performed the sleeve operation when there was sufficient healthy stomach on the cardiac and pyloric side of the growth, and when, as far as I could judge, the growth was precancerous. Once only have I used the Billroth No. 1 operation—sixteen years ago. This patient was alive and well ten years later, but on inquiry from her doctor I learned that during the troubled times she disappeared, and "may have been shot or died from other natural causes." Once I removed a leather-bottle stomach by the Billroth No. 2 method, about fourteen years ago. The patient died some months after the operation.

Gastrectomy, in cases which appear to be on the borderline between the removable and irremovable, appears to me to be well worth while. The immediate results are very satisfactory, and a pleasant surprise may follow in an occasional case.

Two years ago I removed the greater part of the stomach in a man, after mobilization and division of the coronary artery. There was still little or no room for the application of clamps

beyond the growth, yet two years have elapsed and the patient remains in excellent health.

Six months ago I removed the stomach in a very advanced case of cancer. The x-ray report to the local practitioner suggested duodenal trouble and in consequence he believed that procrusteanism was safe. She was a deplorable surgical risk, but gastrectomy was followed with the even convalescence which I have indicated. She has put on weight and is in comparatively good health. A small cancer nodule of the liver was burnt out with the actual cautery.

Once I performed what I believed at the time to be a total gastrectomy, and that for a non-malignant, or perhaps precancerous, condition. The circumstances were as follows.

A woman, aged 60, looked well, the analysis of the stomach contents approached normal, x-ray examinations were negative, but she suffered definitely from gastric symptoms, and I regarded her condition as one which called for exploration. An ulcer was found on the posterior wall about the size of a halfpenny, high up in the cardiac region. The age of the patient and the extent of the ulcer strongly suggested malignancy, but subsequent repeated microscopic examinations proved it to be of the simple type. The gross specimen appears to comprise the entire stomach, and the x-ray photographs taken a month after operation showed the bismuth entering from the oesophagus into the jejunum without any intermediate pouch. Later x-rays showed the development of a cardiac pouch. The operation was performed more than two years ago and it is interesting to note that the patient has never suffered from any of the progressive or intermittent anaemias of the pernicious type which have followed complete gastrectomy in recorded cases. The leaving of even a very minute portion of stomach secures the patient from these serious sequelae. She is at present in excellent health.

I have endeavoured in the above remarks to indicate the direction we should take in the search for early cancer. I have tried to show the weak spots in diagnostic weapons forged to aid us in the battle, and I have striven to provoke discussion on points in connexion with which I seek information from those eminent authorities who are to follow me.

For the thorough and painstaking x-ray investigation of about thirty cases of cancer of the stomach I am indebted to Dr. T. Garratt Hardman, and for the pathological reports on twelve recent specimens removed by gastrectomy I gratefully acknowledge the work of Dr. E. C. Smith of Trinity College. Dr. Maurice Hayes, in several private cases, accurately completed by x-ray examination my clinical efforts at diagnosis.

II—E. I. SPRIGGS, M.D., F.R.C.P.,

Senior Physician, Ruthin Castle (Duff House), Consulting Physician, King Edward VII Welsh National Memorial Sanatorium.

CLINICAL MANIFESTATIONS AND EARLY DIAGNOSIS

The part in this discussion which is allotted to me is to speak of the clinical manifestations and early diagnosis of cancer of the stomach, excluding the use of laboratory methods. I propose to divide my remarks into three parts: first, to give a brief account of the classical symptoms of the disease, secondly, to compare the general picture of the disease with the records of the cases which have been under my own care, referring separately to cancer of the cardiac end, the body, and the pyloric part of the stomach, and, thirdly, to draw certain general conclusions.

Symptoms

The typical picture of cancer of the stomach is that of an elderly man who notices that his appetite has been failing for some months, and who has gradually become conscious of a vague discomfort somewhere above the navel or beneath the breastbone. He brings up more wind than formerly after food, and sometimes a little half-digested food with it, which he will describe as tasting acid, though it will frequently, but by no means always, be neutral or alkaline to litmus. The lack of appetite proceeds to nausea, which may be present before as well as after food, and no eructation may develop into vomiting. This will be irregular, small in quantity, and give little or no relief, or there may be the large infrequent fermented vomit of pyloric obstruction. The discomfort develops into pain, which is then the chief complaint. It is often constant, independent of meals, and may be felt in the pit of the stomach, the small of the back, and between the shoulders. A tumour now is felt situated about or above the navel, or can only be found by putting the hand deep under the seventh and eighth costal cartilages to the left of the epigastrium, or may not be felt at all. Glands may enlarge above the left clavicle and in the left axilla. By this time the look of health is

gone, there is an anxious expression, a loss of weight, of colour, and of vigour. As soon as the surface of the growth in the stomach has begun to ulcerate, mucous debris, and digested blood, giving the coffee-ground appearance, are seen in the vomit. A large hæmorrhage may occur, but this is regarded as more characteristic of simple ulcer than of growth.

An irregular mild fever may now develop, and surrounding structures may be involved in the progress of the growth, until at length nutrition fails, and, within two years of the first symptoms, the vital powers are overtaken.

COMPARISON OF THE SYMPTOMS IN A CONSECUTIVE SERIES OF CASES

I pass now to a comparison of the above picture with the records of 25 consecutive cases at Duff House and Ruthin Castle, in which the diagnosis was made or confirmed by a clinical examination, combined with the radiological, chemical, or operative findings. The series is small, but it excludes all patients in whom for any reason the history or the observations were inadequate. There were 21 men and 4 women, and the average age was 61 years—the youngest was 39, 14 were 65 or over. In this comparison I shall refer to early symptoms only, for the developed picture is a hopeless one.

These cases support the general experience that the history of the disease is commonly of short duration, for in 17 of them the onset of symptoms was recent, ranging from three months to two years before admission, with an average of eleven months. Four patients, however, had had lifelong indigestion, in one of these an ulcer crater was demonstrated, and two of them had tubular leather-bottle stomachs. Christopher Graham states that in over 40 per cent of cases there is a long history of ulcer. In this small series the proportion was not so great. In 7 other patients, however—that is, 28 per cent—including some who gave short recent histories, inquiry elicited that they had had indigestion in youth, with a long period, up to thirty years or more, of freedom, until the present illness began. This type was also referred to some years ago by Graham. He gives the proportion of patients displaying recent symptoms only as 58 per cent, in our series it was very close to this—namely, 56 per cent. It is clear, therefore, that whilst absence of indigestion before the illness is significant, occurring, as it did, in the account as given by four-fifths of the patients, no reliance must be put on a previous history of indigestion as excluding the probability of cancer in an elderly person.

As regards the few cases with a history of ulcer preceding definite cancerous symptoms, to which may be added those in which careful inquiries showed that there had been definite indigestion in youth for two or three years, which had passed off, no one can deny that these affections of the stomach probably had a share in predisposing to the development of cancer, and from this I draw the conclusion that if every case of persistent dyspepsia were investigated by modern methods, and suitable treatment, medical or surgical, applied, not only would much ill health be avoided, but it is more than probable that the number of people affected with cancer of the stomach would be less.

In 4 patients the growth was in the cardiac end, in 10 in the lesser curvature and body, of whom 3 showed a tubular leather-bottle stomach, and in 10 the growth was in the pyloric part.

In carcinoma of the cardiac end discomfort or pain may be felt to the right of the epigastrium, behind the sternum or in the back. Anæmia may be slight or absent up to a short time before death. Belching and regurgitation are prominent the picture passing later into one of oesophageal obstruction. A cancer is most likely to be undetected in this situation because of the position of the tumour, and especially if associated with some other illness of later life such as chronic bronchitis or disease of the kidneys.

In growths of the body of the stomach, the early symptoms were in unpleasant sensation in the chest, verging into pain and loss of appetite, or in some sense of hunger. Pain at a definite interval after food was a feature in several.

In all the cases of a tubular or leather bottle stomach, nausea and aversion to food were the prominent symptoms.

Such aversion may be combined with a hunger pain, which is relieved by food. There is usually no delay in these stomachs. The food rushes through the rigid lumen to a gaping pylorus.

In the cases of carcinoma of the pyloric part of the stomach an account is frequently given of pain one to three hours after food which might be relieved by food but often was not. In several a diagnosis of duodenal ulcer had been made. The cases differ from typical ones of duodenal ulcer in that the account of the daily round of symptoms varies, is less definite and clear-cut, also in that flatulence, nausea, and eructation are more frequent in cancer, with loss of appetite, weakness, and depression. There may be, however, with a well developed growth, no loss of weight and no anæmia, and it is precisely these cases which respond best to early excision. Such a growth, for example, in this series, was resected eighteen months ago by a distinguished surgeon who is taking part in this discussion, and the patient is now doing full work.

Dilatation of the stomach with vomiting of large quantities every two or three days may be the first sign of a growth at the pylorus. I have, of course seen this, many of us have, but it is uncommon, and when pyloric obstruction is almost complete with great dilatation of the stomach, both clinically and radiologically, there may be no vomiting, as in 3 out of 5 cases of pyloric obstruction in this series. Indeed, excluding acute and subacute gastritis, the cause of vomiting as a general symptom more often lies outside than inside the stomach. I must refer again to the importance of remembering that more than one lesion may be present and confuse the picture, as in a case in which a gall stone was present.

In three cases a large hæmatemesis was the first symptom, in one of these the growth was at the cardiac end and arose around an ulcer, in one it was on the greater curvature, and in one in the pyloric part. Of the anxious foreboding expression, which is described as a feature of cancer of the stomach, I will say this: it is, when present, characteristic and permanent, but the anxiety is not so intense, and particularly not so freely expressed, as that of a nervous patient with an innocent dyspepsia which he fears may be malignant.

There are cases—there were two in this series—in which the disease is beyond help before there are any reasonable clinical grounds to suspect, still less to diagnose, carcinoma of the stomach, though on looking back when all the facts are known an indication can sometimes be recognized. Such cases, are, however, in my experience, generally obscured by an accompanying affection, for, though the early stages may be symptomless I have not known a growth of the stomach to be found in a man who could be called healthy. Here is an example of such an insidious growth.

A man, aged 66, developed pneumonia a crisis came on the tenth day. Recovery was slow the consolidation not clearing up. On one day only during convalescence he had abdominal pain for a few hours. He became apparently well and remained so in active work, for six months when health began to fail. There was no digestive symptom except that for some years at least, he had brought up wind after a meal. On investigation the chest showed the picture on the screen. Consolidation of the upper lobe of the right lung was present but was thought to be a secondary growth which had given rise to pneumonia eight months before. There was adhesion of the right wing of the diaphragm. An advanced growth of the body of the stomach was found with typical rapid emptying and a gaping pylorus. The growth of the lung was probably secondary to the unsuspected growth of the stomach.

Sir William Wheeler has described the main points in the differential diagnosis. The difficulties are greatly lessened if a careful examination of the patient is made by modern methods. The gastric symptoms of cancer of the stomach are simulated by gastric and duodenal ulcer, gall stones and chronic appendicitis which are all frequent, and by benign growths and syphilis of the stomach, which are rare. The constitutional symptoms—namely, weakness and anæmia—are common features of pernicious anæmia, Bright's disease, tuberculosis and malignant growth elsewhere in the body, but they may also be caused by a host of other diseases which however a complete examination of the patient, including the laboratory tests, will as a rule eliminate.

CONCLUSIONS

The clinical study of every case of disease is of the first importance in the practice of medicine. It can never be eliminated or replaced by laboratory methods or exploratory operations. It is the first step on the ladder of our endeavour to help the patient, but it is only the first step. Cancer of the stomach has been known from time immemorial, and I suppose no disease has received more clinical study with less result as regards early recognition and treatment. Of this the protean nature of the symptoms and the frequent variations from type which I have been describing are explanation enough. Essential, therefore, as is a study of the symptoms, and especially of the early symptoms, is it my conclusion that by taking thought an adequate diagnosis can be made? It is not. It is the opposite. The attitude of a doctor often is that he should come to a suspicion of cancer reluctantly—that is to say, slowly. This is wrong and loses many lives. There should be no slowness. The case should not be "watched." When a diagnosis is made by such methods the prognosis is hopeless.

In every doubtful and unexplained case of indigestion, loss of appetite, or failing strength, early and rapid steps should be taken to exclude cancer of the stomach, without waiting for anaemia or cachexia. Of these the most important is an x-ray examination. By this I do not mean the taking of one or two antero-posterior photographs of the barium-filled stomach at fixed hours, I mean a careful watching on the screen of each part at different angles throughout the passage of the meal from the gullet to the duodenum, taking frequent photographs with short exposures. If after such an examination the stomach is passed by a good observer, it is most unlikely that it is the seat of growth. In all cases in which the examination is not completely negative, or in which any deformity seen is not fully accounted for, an exploration should be made at once in order that the patient may have the only chance which our present knowledge offers of the complete removal of the disease.

REFERENCE

¹ Collected Papers of the Mayo Clinic 1913 p 180

III—ARTHUR F. HURST, M.D. OXON., F.R.C.P.,
Physician to Guy's Hospital

AUXILIARY METHODS OF DIAGNOSIS—RADIOLOGICAL AND CHEMICAL

Four years of work with a diagnostic team has dispelled a good deal of my former pessimism with regard to the possibility of diagnosing cancer of the stomach at a stage in which radical treatment is still possible. We must depend, in the first instance, upon the recognition by the general public that instead of trusting themselves with patent medicines they should at once seek medical advice for digestive symptoms of a kind they have not previously experienced. Secondly, the general practitioner must recognize that if the symptoms described by Dr. Spriggs are not the result of some obvious cause and do not rapidly respond to simple treatment, the patient should undergo a complete investigation with the object of settling the diagnosis. I believe that it is possible in a very large majority of cases to decide definitely within ten days of taking a patient into a hospital or clinic whether the likelihood of cancer of the stomach is sufficiently great to warrant operation. The diagnosis can often be established with certainty, in the remaining cases it can be made with so great a measure of probability that an exploratory operation becomes the only justifiable treatment, even if the symptoms are of short duration or slight in degree. It is true that occasionally at operation no organic disease is found or the disease is of a less serious nature than was anticipated, but this is more than counterbalanced by the fact that it is very rare indeed for the diagnosis to be missed after a complete investigation. If the patient consults his doctor at the right time, and his doctor appreciates the value of a complete investigation in suspicious cases, a diagnostic team should be able to obtain sufficient evidence to decide whether an operation is indicated or not within a month of the onset of symptoms.

If a thorough investigation is only carried out in cases

in which cancer of the stomach appears to be the most likely diagnosis, many early cases will escape recognition. Such an investigation should be carried out in all suspected cases of organic abdominal disease before beginning treatment, whether medical or surgical, even if the diagnosis appears to be obvious, and also in cases of impaired general health, loss of weight, loss of strength, anorexia and anaemia, in which a sufficient explanation is not

found. In every case there are three methods, namely, x-rays, radiography, and barium meal helps in many cases, but reliable results can only be obtained when the tests are carried out by observers who are familiar with the fallacies of the methods and how they can be avoided.

The statistics I shall refer to have been prepared for me by Dr. N. L. Lloyd from the records of fifty cases investigated at Guy's Hospital and by Dr. J. F. Venables from a consecutive series of seventeen private cases investigated at New Lodge Clinic. Their results will be published in the October number of the *Guy's Hospital Reports*.

1. TEST MEAL

A fractional test meal properly carried out and properly interpreted gives very valuable information in a considerable proportion of cases of cancer of the stomach. The questions to consider are (a) the character of the "resting juice," (b) the acidity during the meal, and (c) the presence of blood.

(a) The Resting Juice

It is essential that the stomach should be completely evacuated before the meal is given. The "resting juice" obtained does not often exceed 50 c.c.m. in normal individuals, though it may be as much as 100 c.c.m. More than 50 c.c.m., and certainly more than 100 c.c.m., suggests the presence of some difficulty in gastric evacuation. The presence of visible food residue or of dissolved starch or sugar in the juice points strongly to organic pyloric obstruction; this can be diagnosed with certainty if the quantity of food is considerable and if much of the test meal is still present when the stomach is finally emptied at the end of three and a half hours. If in these cases free hydrochloric acid is present, an ulcer is the probable cause; if no free acid is present, and especially if the material removed is of uniformly thick consistence, a growth is almost certainly present. The diagnosis is rendered still more probable if it has a foul odour and contains excess of organic acids.

In the absence of pyloric obstruction information as to the existence of a growth can only occasionally be obtained by examining the resting juice. Bennett has laid stress on its foul odour in cancer of the stomach, but this was observed in only two of our cases, and Dr. T. W. Turner tells me that it was present to an equal or greater extent in several of our cases of achlorhydria due to other causes.

Some French observers pay great attention to the microscopic examination of the resting juice. But Graef, working in my clinic, found that the epithelial cells and pus cells in the resting juice were almost invariably present in the same proportion as in the spittle examined at the same time, and the large number seen in cases of achlorhydria was due to the pus and epithelial cells swallowed with the saliva remaining undigested in the stomach. Microscopic examination of the resting contents is therefore only of value if the spittle is examined at the same time; in some cases of cancer great excess of pus cells is found in the resting juice in comparison with the spittle, so far as our experience goes this does not occur in chronic gastritis with achlorhydria or in any other condition.

(b) Acidity

The value of the fractional test meal as compared with the old-fashioned one hour test is shown by the fact that in a consecutive series of 1,000 fractional test meals at New Lodge Clinic complete achlorhydria was found in 15.2 per cent, but free hydrochloric acid was absent in the one hour fraction in 7.4 per cent. In additional cases, these would have been regarded as having achlorhydria if the contents of the stomach at the end of an hour had alone been analysed.

The importance of this is well seen in cancer of the stomach, in which the old method showed achlorhydria in 80 per cent of cases, but with the fractional test meal free acid was absent throughout in only 63 per cent of our cases and 50 per cent of a Mayo Clinic series reported by Hartman.

The presence of free hydrochloric acid cannot therefore be regarded as evidence against the diagnosis of a growth. On the other hand, though complete achlorhydria is present in 4 per cent of normal young men (Bennett and Ryle) and in 15.2 per cent of 1,000 medical cases admitted to New Lodge Clinic, in which it seemed desirable to give a test meal, its presence must still be regarded as a point in favour of a growth if the other evidence points in the same direction. It is of special help in the diagnosis from gastric ulcer, as achlorhydria was only present in one out of a consecutive series of fifty cases at New Lodge Clinic. The presence of achlorhydria is, however, of no help in diagnosing from Addison's anaemia, in which it occurs in 100 per cent of cases, or from syphilis of the stomach, in which it is also generally present. Achlorhydria is common in severe chronic gastritis, which is generally secondary to alcoholism or oral sepsis, but whereas in our experience lavage of the stomach before the test meal is given only rarely leads to the subsequent appearance of free acid in cases of growth, it does so in most cases of chronic gastritis, as well as in all of chronic gastric ulcer, as in these conditions the achlorhydria is due to the neutralization of the free acid with the excess of all other mucus which is always present. Whenever, therefore, we discover achlorhydria, we invariably repeat the test meal a few days later after preliminary lavage, if it is still present in a suspected case of chronic ulcer, the ulcer should be regarded as probably malignant, and doubt should also be thrown upon a provisional diagnosis of chronic gastritis. In one case in which the symptoms and x-ray appearance suggested a simple ulcer becoming malignant, in which achlorhydria was replaced by hypochlorhydria after lavage, I advised partial gastrectomy, the marked x-ray appearance was suggestive of a large chronic ulcer becoming malignant, but microscopic examination showed that it was tuberculous.

In the achlorhydria of cancer of the stomach some hydrochloric acid is probably secreted, as the organically combined chloride is often, and the mucogenic combined chloride is generally greater than normal. This distinguishes it from the large majority of cases of achlorhydria, caused by constitutional achylia gastrica, an inborn error of gastric secretion which is present in about 4 per cent of normal people and is a predisposing factor of varying importance in a number of diseases, such as Addison's anaemia and subacute combined degeneration (100 per cent), gall stones (49 per cent), and chronic appendicitis (33 per cent).

(c) The Presence of Blood

In 44 per cent of our cases obvious blood was present in every fraction in sufficient quantity to tinge the whole specimen; in an additional 18 per cent it was present in one or more fractions. It is rarely present in sufficient quantity to be recognized with the naked eye in gastric or duodenal ulcer unless there has been a recent hæmorrhage, and it is still more rarely seen in other conditions. Its constant presence in association with achlorhydria has only been observed by us in cancer of the stomach. The only case I have seen of Addison's anaemia with blood in each fraction of the test meal proved to be secondary to the achlorhydria caused by a growth of the stomach.

2 RADIOGRAPHY

In the New Lodge Clinic series the x-rays showed definite evidence of the presence of a growth in every case. In the Guy's Hospital series the results were much less satisfactory, definite evidence being obtained in only 50 per cent of cases. The discrepancy is due to the fact that in the former the examinations were all carried out by Dr P. J. Briggs, who is an expert in the radiology of the alimentary tract, whereas at Guy's Hospital, owing to the pressure of work, the examinations were carried out by various observers, some of whom had had comparatively little experience. With good technique and an experienced observer I think that some abnormality suggestive of growth would be discovered with the x-rays in almost every case. The

radiological evidence is, however, not yet quite so trustworthy as in the case of gastric and duodenal ulcer. I am nowadays unwilling to diagnose an ulcer without direct radiological evidence of its presence, but if the other evidence was very strong I would be prepared to advise operation in a case of suspected carcinoma of the stomach, even if nothing abnormal had been seen with the x-rays.

Though a definite deformity can generally be recognized in the outline of the stomach in good radiograms, it is remarkable how normal the appearance may be, even with growths of considerable size. For this reason the screen examination is of still greater importance, especially with early growths involving the pyloric half of the stomach. In most of these cases careful observation reveals some abnormality in the peristaltic waves. Instead of becoming slowly and steadily deeper as they approach the pylorus, they may disappear entirely, or they disappear and reappear an inch or more further along the curvature. We have often observed this in the absence of any permanent filling defect which could be recorded on a radiogram. Unfortunately it is in the cardiac half of the stomach, in which peristalsis does not normally occur, that filling defects are most likely to be missed, though this should rarely occur if the patient is examined in various positions, especially in the Trendelenburg position, which results in the fundus being completely filled with the opaque meal.

Until recently radiologists experienced great difficulty in deciding whether pyloric obstruction was due to cancer or some other cause. We have found that the difficulty can be overcome by completely emptying the stomach with a Senoian's evacuator before the opaque meal is given. In pyloric obstruction the stomach always contains fluid and often some food residue when the patient is fasting in the morning. Consequently, when the opaque meal is swallowed it drops to the bottom of a distended stomach. The transparent gastric contents are generally not observed, a diagnosis of dilatation due to obstruction is made, but as the opaque meal lies in the most dependent part of the stomach the immediate neighbourhood of the obstruction is not clearly seen. After being evacuated it is found that, though previously distended, the stomach is not permanently dilated, as it never always contracts to a normal or almost normal size. Consequently an opaque meal taken now fills the stomach in a normal manner, and the outline of the pyloric end of the stomach and the progress of the peristaltic waves from their commencement to their end can be satisfactorily investigated.

I have seen a number of cases in which the most careful abdominal palpation failed to reveal any tumour, but on repeating the examination under the x-ray screen, when the stomach was visualized, it has been possible to recognize a thickening when an irregularity in outline or an abnormality in peristalsis was observed, the method of combined radiography and palpation, which should be carried out by the clinician and not the radiologist, because of the necessary exposure of the hands to the x-rays, may therefore be of great value when neither method alone has led to a conclusive result.

3 EXAMINATION OF THE STOOLS FOR OCCULT BLOOD

So far from agreeing with Sir William Wheeler that the test for occult blood in the faeces "contains too many fallacies to be of any practical importance," I regard it as a test of the very greatest value. When blood is swallowed or is derived from an ulcer or growth in the alimentary tract, it is evacuated in the stools partly as acid hæmatin and partly as hæmatoporphyrin. The chemical tests for "occult blood"—traces of blood insufficient to produce any change in the appearance of the faeces—depend upon the conversion of a substance with little or no colour, such as guaiac or benzidine, into a coloured substance when oxidized by hydrogen peroxide in the presence of a carrier, such as hæmatin. Hæmatoporphyrin, which contains no iron, does not give the reaction. The stools should also be examined with the spectroscope, as traces of hæmatoporphyrin, which is occasionally present in the absence of acid hæmatin, would otherwise escape recognition. Moreover, a positive spectroscopic finding is a valuable confirmation of a positive chemical reaction, as, although it is much less sensitive, there is less chance of error.

Before examining the stools the patient is given a haemoglobin free diet. Chlorophyll should also be excluded, as it gives a feebly positive guaiac reaction and its many banded spectrum may cause confusion in the spectroscopic examination. A charcoal biscuit is given with the first meal on the restricted diet, and the first and subsequent stools passed when the faeces are no longer blackened by the charcoal are examined. For the guaiac and spectroscopic tests a small amount of faeces is macerated with glycerol rectic acid into a thin paste. An equal quantity of ether is then added to extract the pigment, the ethereal extract is poured off, some being kept for the spectroscopic examination. Two or three drops of tincture of guaiac are added to the remainder, a small quantity of ozone alcohol is then poured in, and a changed colour is looked for at the junction of the two fluids. A "positive reaction" is one in which a deep blue colour rapidly appears, a "feebly positive" reaction is one in which the colour is faint purple, bluish, or greenish. A positive guaiac reaction signifies the presence of occult blood, and a positive spectroscopic examination shows that it is present in fairly considerable quantities. A negative guaiac reaction proves the absence of occult blood, except occasionally at the end of a period of haemorrhage, when the spectroscopic test may alone be positive, as the traces of blood still present may then be completely converted into haematoporphyrin, which gives a characteristic spectrum, but does not give the chemical reaction.

With the technique described no sign is of more value than the discovery of occult blood in the stools. I have never seen a growth, either of the stomach or the colon, in which occult blood was not present. Thus the guaiac test was positive in 100 per cent of the Guy's Hospital and New Lodge Clinic cases, and a haematoporphyrin spectrum was given in 91 per cent of cases. It is true that occult blood is also present in nearly all cases of active ulcer of the stomach and duodenum, but the very appearance of these two conditions is so characteristic that difficulty in diagnosis rarely occurs.

I am a great believer in the medical treatment of gastric and duodenal ulcer so long as no hour-glass contraction or pyloric obstruction is present. The danger of failing to recognize that a chronic ulcer is becoming malignant is not great, as the x rays generally settle the question at once. But in the very earliest stages the appearance may still be that of a chronic ulcer. In such cases the immediate result of treatment does not help, as the symptoms disappear as quickly as in an uncomplicated ulcer. The crater of the ulcer also becomes smaller, though it does not disappear completely, as it does in nearly all cases of chronic gastric ulcer. But what is of far more importance is that occult blood persists, however long the treatment continues and however well the patient appears to get. If, therefore, at the end of a fortnight's treatment symptoms are still present, or at the end of a month the crater has not either disappeared or become much smaller, or, most important, if occult blood is present in undiminished quantity, an operation should be advised without further delay. In a considerable experience I have only once failed to recognize that an ulcer was becoming malignant, and generally within a fortnight of the commencement of treatment. The one exception is of such importance as demonstrating the value of looking for occult blood compared with all other methods of examination in cases of this kind that I must briefly relate the history of the case.

Gastric Ulcer becoming Malignant whilst under Observation

A man aged 66 had had typical symptoms of gastric ulcer for four years. On admission to New Lodge Clinic on February 23rd 1924 the diagnosis was confirmed by the discovery with the x rays of a large crater on the lesser curvature, this was coated with hyperchlorhydria and the constant presence of occult blood in the stools. Though all symptoms disappeared within a week, I wrote to the patient's doctor when he went home in order to continue treatment after being three weeks in the clinic, that if occult blood is still present after a few more weeks the question of operation should be reconsidered, as this is just the type of ulcer which undergoes malignant degeneration. The patient returned for re-examination on April 11th and again on May 18th, the x rays showed that the crater was much smaller but as occult blood was still present I advised a continuation of strict treatment. He returned for the third time on June 22nd. He felt and looked strong and well, had gained 5 lb in weight since his first admission and had had no trace of indigestion. At this stage I thought that the small deformity still seen with the x rays must represent a scarred depression in the pancreas

produced in the healing of the ulcer. I was very satisfied that I did not feel simply because a trace of occult blood was present in the stools.

Early in August for the first time since the commencement of treatment he experienced pain it was quite different in character from the old ulcer pain and was accompanied by nausea and anorexia. No relief followed careful dieting and he returned to the clinic on August 31st. He had gained another 4 lb in weight since June. Nothing abnormal was felt on abdominal examination. Occult blood was still present in the stools and a most remarkable change had taken place in the x ray appearance in the nine weeks which had elapsed since the last examination. Instead of a very small niche with a smooth outline there was a large irregular deformity which was unmistakably due to malignant disease. The hyperchlorhydria was still present in undiminished degree.

A few days later Mr L. Bromley performed a partial gastrectomy. A large thick scar was found on the lesser curvature its centre formed a smooth walled depression in the pancreas. Microscopic examination showed that carcinomatous change were occurring on one side of the scar and that the neighbouring mucous membrane was becoming infiltrated. There were no enlarged glands or secondary deposits. In spite of radiotherapy signs of a secondary deposit in the spine appeared seven months later.

There can be little doubt that the persistent occult blood was due to the fact that malignant degeneration had already begun in March. This sign, therefore, preceded the earliest symptoms by five months and the earliest radiological changes by at least three months, and no diminution in gastric secretion had occurred in six months. The case also shows how little reliance can be placed on a gun of weight, contrary to what Sir William Wheeler suggested, I believe that the majority of patients with cancer of the stomach gain weight after a fortnight in bed with careful dieting.

EXAMINATION OF THE BLOOD

In every suspected case of cancer of the stomach the blood should be examined. But it is of the greatest importance to recognize that anaemia is not always present, though it may be severe, in one of our cases the haemoglobin percentage was only 23. Thus in two advanced cases, in one of which the whole organ was infiltrated to form a leather bottle stomach, the haemoglobin percentage was 95, and in another case the percentage was actually 103.

I hope that Sir William Wheeler's suggestion that the group of cases in which anaemia is the most prominent symptom should be described as the "pernicious anaemia type" of cancer of the stomach will not be adopted. There should never be the slightest doubt about the diagnosis of Addison's (so called "pernicious") anaemia from cancer of the stomach. The difficulty in the past has arisen from the character of the blood picture, which the majority of haematologists required before making a diagnosis of Addison's anaemia. We now know, largely as a result of Price-Jones's work, that the only constant feature of the blood in Addison's anaemia is megalocytosis. This occurs in no other condition likely to be mistaken for growth, it is present in the very earliest stages of the disease, as, for instance, in most cases of subacute combined degeneration of the cord or Hunterian glossitis, in which no actual anaemia has yet developed, and it also persists after apparent recovery, when the haemoglobin percentage may be over 100, although in such conditions none of the other features, such as the presence of megaloblasts or poikilocytosis, are present. Moreover, in Addison's anaemia, though achlorhydria is always present, the stomach is normal in size and outline, and occult blood is never found in the stools, in the active stages, in which difficulty in diagnosis might possibly arise, the indirect van den Bergh test is positive, though the direct is negative, whereas in cancer both are negative, unless jaundice is present as a result of secondary deposits in the liver, in which case both are positive.

Megalocytosis is never present in uncomplicated cancer of the stomach. I have however, seen two cases, and others have been described, in which Addison's anaemia occurred as a complication when the cancer had led to complete achlorhydria, so that the essential predisposing conditions for the development of the disease were present. But as the anaemia is secondary to the growth it only appears at a late stage, in which there is no longer any possibility of radical treatment.

In this connexion I should like to refer for a moment to a remark made by the opener with regard to gastrectomy. I feel sure he is wrong in believing that the possibility of Addison's anaemia developing as a sequel to the operation can be prevented by leaving a very minute portion of the stomach. Gastrectomy causes complete achylia, consequently oral sepsis may lead to secondary infection of the intestine, and in 1910 instances to the development of haemolytic and neuro-toxic poisons, which give rise to Addison's anaemia and subacute combined degeneration of the cord. The danger is present to a less extent after partial gastrectomy, and even after gastro-enterostomy, if complete neutralization of the acid which is still secreted occurs, though of course only with total gastrectomy is absolute achylia produced. The danger can be easily prevented if before every gastric operation, whether total or partial gastrectomy or simply gastro-enterostomy, all oral and naso-pharyngeal sepsis is as far as possible eradicated.

The Wassermann reaction should always be ascertained in a hundred consecutive patients at New Lodge Clinic, none of whom showed any obvious signs of syphilis or of a disease known to be due to syphilis, a positive reaction was obtained only once. It is clear, therefore, that a positive reaction in a case of suspected cancer, at any rate in better-class practice, should be regarded as of considerable significance. One group of cases of syphilis of the stomach is clinically almost indistinguishable from cancer, as the x rays show a deformity, acholhydria is present and occult blood may be present in the stools. If in such a case a positive Wassermann reaction is obtained and the patient appears to be in better general health and has lost less weight than one would expect from the extent of the disease, a trial of active antisyphilitic treatment should be made, especially if it seems unlikely that the whole mass in the stomach could be completely removed. But if obvious improvement does not occur within two or three weeks there should be no further delay. I have myself seen three cases of proved cancer of the stomach in patients whose blood gave a positive Wassermann reaction.

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PATHOLOGICAL GENERAL RELATION OF CANCER TO ULCER

My contribution to this discussion will consist of two parts—(A) a brief review from the morbid anatomical standpoint of 165 cases of cancer of the stomach seen during the last fifteen years in the post-mortem room at Leeds, and (B) a short account of my personal experience of the relation of ulcer and cancer, based on the detailed microscopic examination of 216 stomachs or portions of stomachs removed at operation.

A SOME PATHOLOGICAL ASPECTS OF CANCER OF THE STOMACH

Age and Sex Incidence

The age and sex incidence in 165 cases seen in the course of 7,930 consecutive post-mortem examinations was as follows:

TABLE I.—Age Incidence

0-9	0.0 per cent	40-49	28.5 per cent
10-19	0.6	50-59	32.7
20-29	0.6	60-69	20.7
30-39	13.3	70-79	3.6

Thus 82 per cent of the cases in this series occurred between the ages of 40 and 70. The youngest patient was aged 18, the eldest 76.

The sex incidence was 113 males to 52 females—a male preponderance of rather more than 2 to 1.

Topographical Distribution

In trying to determine as accurately as possible the primary point of origin of chronic ulcer and of cancer I have analysed a series of 248 cases from the post-mortem room, 13 cases of cancer in which the whole or almost the whole organ was involved have been excluded, leaving 235 cases in which

accurate information as to site was available—namely, 115 cases of chronic ulcer alone, 110 of cancer alone, and 10 in which it was considered that the cancer had probably originated in a simple chronic ulcer. For topographical purposes the stomach was divided into four areas: (1) the pylorus and prepyloric inch, (2) the cardiac end, including both the cul-de-sac and the immediate neighbourhood of the oesophageal orifice, (3) the lesser curvature and immediately adjacent portions of the anterior and posterior walls, but stopping short about one inch from either ostium, and (4) the rest of the organ. In each case the centre of the lesion has been regarded as the starting point except that all cancers abutting on the pyloric ring have been included in the pyloric and prepyloric group.

TABLE II.—Position of Chronic Ulcer and Cancer of Stomach

	Chronic ulcer (125 cases)	Cancer (110 cases)
Pylorus and prepyloric inch	17.5 per cent	67.0 per cent
Cardiac end	0.0	16.5
Lesser curvature region	73.0	11.5
Rest of stomach	9.5	5.0

The observation of clinical specimens confirms these results, at least in respect of the salient facts that the great majority of simple chronic ulcers occur on the lesser curvature well away from the pylorus while cancer, when it occurs in the distal two thirds of the stomach, is most frequent at or close up to the pyloric ring. This, it seems to me, is an important piece of evidence against the very intimate relationship between ulcer and cancer claimed by some authors. Another interesting fact emerging from the present series is that of the 10 cases in which cancer had apparently arisen in a pre-existing simple ulcer, 9 were in the lesser curvature region as above defined and only one near the pylorus. The same fact may perhaps be stated more interestingly by saying that of 14 cases of cancer arising in the lesser curvature region no fewer than 9 had originated in a simple chronic ulcer.

Glandular Dissemination

In 21 of the present series of 165 cases of cancer partial gastrectomy had been performed, and this group is excluded in considering local lymph gland metastasis. Of the remaining 144 cases, 104, or 72.2 per cent, showed obvious nil else involvement of adjacent lymph glands, those in the lesser curvature of the stomach most frequently, but very often those along the greater curvature and in relation to the head and body of the pancreas as well. Involvement of the subpyloric glands and of those in the portal fissure was frequent. It is fairly certain that the figure quoted above is an underestimate, as all the autopsies were not done with equal care.

In considering more remote metastasis, the whole series of 165 cases is included. (a) In 26 cases (16 per cent) there was more or less extensive involvement of the lumbar (periaortic) glands, always with well marked local gland involvement. (b) In 17 cases (10.3 per cent) there was intra-thoracic lymph gland involvement, and in only 5 of these was this unaccompanied by downward extension along the abdominal aorta. (c) In 9 cases (5.5 per cent) there was involvement of the supraclavicular glands—in 7 (4.2 per cent) on the left side only, in 2 on both sides. Intra-thoracic metastasis coexisted in 7 of these cases, including the 2 in which the supraclavicular adenopathy was bilateral. The 2 remaining cases, both left-sided, are probably examples of direct thoracic duct metastasis. In one the local gastric glands only were involved, in the other partial gastrectomy had been performed ten months before, and, apart from local recurrence in the gastrojejunum and stomas, the left supraclavicular adenopathy was the only cancerous lesion found.

Peritoneal Dissemination

This was present in 42 cases (25.5 per cent), and in 25 of these it was both extensive and profuse. Ascites in large amount was present in 11 cases, being associated with peritoneal metastasis in 7, with extensive hepatic involvement in 2, and with both these lesions in 2. Pleural dissemination occurred in 3, pericardial in 2 cases.

Visceral Dissemination

1 Direct extension to adjacent organs occurred with the following frequency: pancreas 9 times (54 per cent), transverse colon 8 times (48 per cent) (once with formation of a gastro-colic fistula), spleen 6 times (36 per cent), liver 5 times (30 per cent), and kidney once (0.6 per cent). In 8 cases (48 per cent) the tumour had transgressed the pylorus and invaded the duodenum.

2 The frequency of metastatic deposits is shown in the following table:

TABLE III—*Visceral Metastasis in Cancer of Stomach*

	No of Cases	Incidence Rate
Liver	44	26.6 per cent
Ovaries	10	19.2* "
Adrenals	6	3.6 "
Kidneys	3	1.8 "
Pancreas	3	1.8 "
Spleen	2	1.2 "
Heart	1	0.6 "

* Female cases only

In 3 cases there was a metastatic deposit at the umbilicus. Of the 10 cases of ovarian metastasis, 6 were bilateral, and in 7 there was an accompanying peritoneal dissemination, local or general. Of the 3 cases in which ovarian metastasis was unaccompanied by other evidence of peritoneal dissemination, 2 were right-sided and 1 bilateral.

The largest livers in the series weighed 176, 188, and 196 g respectively. Definite jaundice was present in 5 cases. In one of the cases with liver metastasis, there was extraordinary infiltration of the walls of all the main bile passages.

It is interesting to note that in 20 cases which died as a result of the operation of gastrectomy, there were 3 in which the whole of the disease had not been eradicated. In one a portion of cancerous stomach still remained, in the second there was a single metastatic nodule in the liver, while in the third there was extensive invasion of the lumbar lymph glands. In 2 cases the carcinoma had originated in stomachs which were already the seat of generalized polyposis, and in a third there was a single large polyp springing from the pylorus.

Perforation and Haemorrhage

In 16 cases of the present series (9.6 per cent) perforation, acute or subacute, had occurred, with resulting general peritonitis in 12 cases, and in the remainder perigastric abscess, peritonitis of the lesser sac, subphrenic abscess, and gastro-colic fistula respectively. It is worthy of note that 5 of the 16 were regarded as instances of ulcer-cancer, and in these it was the ulcer rather than the cancer which had perforated. In my series of 150 cases of fatal chronic ulcer previously reported¹ the incidence of perforation was 38.5 per cent.

Severe haemorrhage in the cancer cases was even less frequent, although, of course, intermittent haemorrhage in small amount is practically constant. In two cases only was haemorrhage regarded as the proximate cause of death, and in only one other had bleeding been at all profuse. In all three there had been a recent gastro-enterostomy. In the chronic ulcer series haemorrhage was the immediate cause of death in 8 per cent.

B THE RELATION OF ULCER AND CANCER

I or obvious reasons conclusions on this point are drawn from operation specimens only, and of these I have examined to date 216 examples. With the exception of two or three cases in which local excision was practised, the operation was that of partial gastrectomy, and the specimens have been delivered to me in the fresh, untouched state. The method of examination has been, after inspection of the exterior, to lay open the portion of stomach, usually along the line of the greater curvature, and to pin it out flat on a lint-covered board. This has then been floated, specimen downwards, in a large tank of formalin (Kuserling's No 1 solution) for a few days, after which the specimen has been sliced up for histology. The method has the disadvantage of giving an artificial

and to some extent untrue view of the relation of the various parts of the lesion, but it has the incomparable merit of permitting the closest possible naked-eye scrutiny of the inner aspect of the ulcer or growth while the specimen is still in the fresh state. It then becomes possible to make one's cuts in such a way that the most suspicious parts can be taken for microscopic examination, while a portion may still be available for mounting as a museum specimen if desired. It has been an invariable practice for some years now to make a rough sketch of the specimen so pinned out while it is still fresh and unaltered, noting the exact shape and position of any ulcer, growth, or scar which may be present, and any other points of interest, especially with a view to subsequent histological study.

It may be stated at the outset that in only one case of simple chronic ulcer was unsuspected malignancy found microscopically, while one case of apparently uncomplicated cancer (but with a two years' history) was found to show microscopic evidence of pre-existing simple ulceration. In a third case what was supposed by naked eye examination to be a simple ulcer became malignant failed, on microscopic examination, to show any evidence of pre-existing simple ulceration.

The histological criteria for the differentiation of ulcer-cancer from the uncombined lesions have been clearly stated by Dible in his recent paper,² and are almost precisely those on which I have myself relied.

1 With Dible, I attach special importance to the presence or absence of muscle in the floor of the lesion. In all the early cancer cases and many of those which are fairly advanced a more or less continuous band of muscle is present. Even in advanced cases where the tumour has completely penetrated the stomach wall over large areas relics of the muscular coat persist every here and there in the midst of the neoplastic tissue in a way which is never seen in the floor of a definitely chronic ulcer.

2 Except for the rare instances of acute perforating ulcer, the depth to which the muscular coat is penetrated is a very fair index of the chronicity of a simple gastric ulcer, at least for the first two or three months. After that, in my experience, the muscular coat is invariably breached, its severed ends turning upwards towards the mucosal aspect. The floor of the ulcer is composed of a variable quantity of granulation and fibrous tissue, with a narrow or sometimes broad zone of sloughing on the surface, and it is the persistence of a portion of this densely fibrous floor, unpenetrated by cancer cells, which is one of the most valuable positive indications, in a case of cancer, that there has been pre-existent simple ulceration. Even sclerosing cancers of the stomach do not produce these large areas of cancer-cell free fibrous tissue, nor do I think that cancer cells readily penetrate the densely fibrous floor of such ulcers. On these points I find myself rather at variance with the views expressed by Dible.

3 The third point is the presence or absence of obliterative endarteritis and organized thrombo-phlebitis in the floor of the lesion. This also is a valuable criterion, inasmuch as these changes occur rarely, in my experience, in primary cancer, very commonly in simple chronic ulcers and their resulting scars.

Working on these criteria, it is possible to classify the clinical specimens which I have examined in the manner shown in the following table:

TABLE IV—*Analysis of 216 Clinical Specimens of Gastric Ulcer and Gastric Cancer*

Simple chronic ulcer alone	134
Cancer arising in chronic ulcer	14
Cancer alone	68
	216

In other words, 9.5 per cent of the cases of chronic ulcer had become cancerous, or, approaching from the other standpoint, 17 per cent of the cases of cancer had originated in a chronic ulcer.

[Professor Stewart showed on the lantern the actual sections from seven typical cases of ulcer-cancer and four of primary carcinoma to illustrate the points referred to.]

SECTION OF SURGERY

GENERAL DISCUSSION

Dr GARFONK COLF (New York), who was invited by the President to give the views of radiologists in America on the ulcer cancer theory, said that five years ago it was taught that 68 per cent of all his ulcer cases since 1910, however, gave the following figures. In approximately 10 per cent of cases it was difficult or impossible to state definitely from the radiological evidence alone whether the case was one of simple ulcer or of cancer when first seen, of the remaining 90 per cent, all of which were regarded as definite cases of simple ulcer, only one case subsequently developed cancer. He therefore regarded the evidence as being strongly contrary to the view that cancer was frequently a sequel of chronic gastric ulcer.

Mr JOHN MONLFY (Manchester) said that the view that cancer of the stomach commonly originated in a simple ulcer made a very strong appeal to the surgical mind. Amidst so much that was nebulous in the etiology of cancer various known irritants—chemical, mechanical, thermal, and radiatic—stood out as solid rocks of fact, and the argument by analogy was always a tempting one. The weight of powerful authority, both pathological and clinical, was behind the ulcer cancer theory. The pathologists of Mayo Clinic, Wilson and McCarty, had stated that 71 per cent of specimens of cancer of the stomach showed evidence of preceding ulcer, and that 68 per cent of apparently simple ulcers showed evidence of cancer on the clinical side, had said that Sir Berkeley Moynihan, on the other side, gave a previous history of a steady average of two out of three cases of cancer that he saw on the operating table gave a previous history strongly suggestive of ulcer. This view, if they could accept it, lent point to their advice that patients with gastric ulcer should submit to an early, direct, and radical surgical attack upon the ulcer.

On all these grounds it was a most attractive theory, but a careful and unbiased study of the cases at his disposal had led him quite definitely to the view that, attractive though the theory of origin in a simple ulcer might be, it was not true. The problem was both pathological and clinical, and could not be settled in one field to the exclusion of the other. If they accepted the figures of Wilson and McCarty, that 68 per cent of apparently simple chronic ulcers showed early carcinoma in their edges, and if they agreed that cancer of the stomach seldom ran a longer course than three years, or of ulcers treated by simple gastro-enterostomy, some 68 per cent of the patients would be dead of cancer in three years. But it was well known that such statistics did not tally with clinical experience, or with any published series of case records. How, then, were they to account for the views of these American investigators who claimed that gastric ulcer resulted in cancer with such alarming frequency?

The main fallacy underlying the claims of the ulcer-cancer school of pathologists would appear to be that they had interpreted certain irregularities in the gland tubules, and certain misplaced columns of cells often found at the edge of a chronic ulcer, as early cancer, when in reality they were distortion of the epithelium entangled in scar tissue, and were due to attempts at healing. This was the definite opinion of Sir Bernard Spilbury, and more recently Professor J. H. Dible, in a paper of great importance in the *British Journal of Surgery*, had given overwhelming evidence in favour of the same view. Professor Dible, in a consecutive series of 126 cases of simple chronic ulcers excised by various Manchester surgeons, found no single case of genuine cancer, though many of 33 cancers of the stomach examined, good evidence of preceding simple ulcer at the edge. He also found, in a series of 33 cancers of the stomach examined, good evidence of preceding simple ulcer in only two. Professor Stewart of Leeds, following another line of inquiry, had shown that the usual position of simple ulcers differed very materially from that of cancer of the stomach. On the clinical side, also, he believed that evidence was decidedly against the ulcer-cancer theory. His experience was that patients with proved cancer of the stomach gave on an average a little over twelve months' history of gastric symptoms before operation, whereas in

proved simple ulcer cases the characteristic symptom had been present for an average of over ten years. He found that, roughly, 70 per cent of cancer patients give a history of the classical symptoms coming on insidiously in middle life with no previous history of indigestion, while 30 per cent give a history of periodic attacks of gastric pain, generally over a period of two to five years, simulating ulcer at first, but later becoming continuous. This late change in the character of the symptoms was due, he believed, not to a change from a simple to a malignant ulcer, but to the onset of partial pyloric obstruction from a lesion which had been malignant from the first. There was a type of slow growing cancer of the stomach which before its symptoms with the failure to recognize the occurrence of this ulcer simulating cancer, simulated cancer. No surgeons to support the ulcer-cancer theory. The origin of benign stomach cancer was caused by an ulcer which had advanced to malignant changes in some cases, and commonly accepted that more often under six years in duration than over. If ulcer give rise to cancer with any frequency, surely the ulcers of longest standing, of which those causing hour glass stomachs were typical, should show the highest incidence of cancer. The fact that they did not do so, was important evidence against the ulcer cancer theory. He did not deny that a simple ulcer of the stomach might result in cancer, and he believed that occasionally that did happen. But when it happened it was a clinical and pathological curiosity, an event of such comparative rarity should not influence the unduly either in the diagnosis of gastric cancer or in the treatment of gastric ulcer.

Spilbury, B. Proc. Roy. Soc. Med. 1921, 22, 55, 25.
Brit. Jour. of Surgery, 1925, 32, 666-700. J. Moynihan, John
Hollander, Thurston, 1921, 11, 1923, 1, 57.
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Dible, J. H.
Brit. Jour. of Surgery, 1925, 32, 666-700.

Dr W. D. HIGGARD (Nashville, Tennessee, U.S.A.), after making a reference to the work of Dr. Goe on the etiology of carcinoma, said he regarded the clinical association of ulcer with carcinoma of the stomach as hopeful rather than the reverse, for with better means of diagnosis of ulcer, and earlier operation, the incidence of cancer of the stomach might be reduced. His own learning was strongly toward the ulcer cancer theory that he made it a routine practice to excise ulcers with the enteric and have them examined pathologically. He pointed out that the death rate among patients suffering from what was considered to be simple ulcer, and who had been treated by gastro-jejunostomy alone, was three times that of the normal population in the same age group, he regarded this as to some extent confirmatory of the ulcer cancer view. Among cases which were definitely cancerous he found 28 per cent of "five year cures" by gastrectomy.

Mr A. H. BRADSHAW (Manchester) said that once the diagnosis of cancer of the stomach was established as a reasonable probability the question of surgical measures at once arose. One should always aim at a radical operation, and the first question was present which part out of was whether any condition was present which put out of count any hope of a radical removal. Such contraindications might be explicable of discovery (a) before laparotomy or (b) only after the abdomen had been opened. Apart from conditions of a general and constitutional nature such as would preclude any severe operation, certain local conditions were definite contraindications (1) enlargement of the liver, especially if associated with a supracardiac nodules, (2) ascites of a degree sufficient to be detected clinically, (3) enlarged glands in the suprarenal regions, particularly on the left side, (4) secondary peritoneal deposits engorged by gravity, upon the pelvic peritoneum and detectable clinically on rectal examination. An enlargement of the recto-vesical pouch, a rectal examination should never be omitted when considering the feasibility of radical operation in any abdominal malignant

condition, and the detection of induration in the recto-vesical pouch would not infrequently prevent a useless operation, and (5) a mass palpable through the abdominal wall was frequently held to contraindicate radical measures, but need not necessarily do so. It depended more upon the question of fixity than palpability. A palpable mass, if fixed, would certainly prevent a radical operation, but not so if mobile. Contraindications to radical operation discoverable only after a laparotomy were: (1) small secondary deposits in the liver—these were detectable only when near the surface, (2) peritoneal deposits on the peritoneum of the recto-vesical (or recto-uterine) pouch too small to be felt per rectum, (3) secondary glandular deposits beyond reach of the operative field—at the hilum of liver, superior mesenteric, meso-colic, or lumbar glands, and (4) fixity of the stomach to other parts, especially liver and pancreas—such adhesion might be inflammatory only, and superficial slices might be removed from the liver and pancreas with the growth. If the transverse mesocolon was involved in the growth so that its removal would necessitate sacrifice of the middle colic artery, and, consequently, excision of a large part of the transverse colon, a radical operation, except in otherwise extremely favourable circumstances, should not be attempted. If, owing to the presence of any of these contraindications, radical extirpation was considered impossible, the next question to decide was whether a palliative operation was advisable. Gastro-enterostomy, except where the growth was near the pylorus and where pyloric obstruction was actually in existence or threatened to do so shortly, gave such a small measure of relief as to be scarcely worth performing. Any palliative operation for carcinoma other than in the pyloric portion should take the form of a partial gastrectomy, and, provided that the whole of the disease in the stomach could be removed, was well worth while undertaking, even though disease be left in the glands, peritoneum, or liver. The immediate results were often remarkably good, and there was always a chance that an error in the original diagnosis or in one's estimate of the extent of the disease might lead to a pleasant surprise in the form of a permanent cure.

If no contraindications were present radical extirpation should be attempted. A consideration of the lymphatic arrangements showed that the minimum amount of stomach to be removed was between a line continuing downwards the right edge of the oesophagus to the greater curvature and a line one inch beyond the pylorus—that is, the whole of the lesser and about one-half of the greater curvatures were removed. All operations of the type of Billroth No. 1 were, therefore, excluded, Schoemaker's operation was also unsuitable, since it left too much of the greater curvature. Only operations of the type of Billroth No. 2 or the Polya modification of it were worth of consideration. As regards the technical details of the operation, the incision should be ample to prevent much pulling about by retractors, a paramedian incision through the right rectus muscle was usually adopted, though where radiography showed the growth to be towards the cardiac end a left paramedian gave better access to the most difficult step of the operation—the satisfactory clearing of the upper end of the lesser curvature. When operating for carcinoma all the omentum corresponding to the part of the greater curvature excised should be completely removed, since it was not uncommon to find enlarged glands in the omentum some distance away from the greater curvature. This was best effected by making the first step of the operation the thorough separation of omentum from transverse colon so opening up widely the lesser peritoneal sac, as recommended by Pruchet. By gentle traction upwards on the omentum the stomach was steadied and the posterior surface of stomach and duodenum could be very readily freed by gauze stripping, while the arteries—pyloric, pancreaticoduodenal, or right gastro-epiploic—were readily exposed and secured at this stage. For the division of the duodenum he preferred Miles's crushing clamp, which crushed a portion about one inch wide, a ligature was passed and tied around each end of this crushed portion, which was then cut across just proximal to the distal ligature and the duodenal stump invaginated by two successive purse-string sutures. The lesser omentum was divided as close to the hilum of the liver as possible and the coronary artery secured near its

origin. For the division of the stomach he was at present using the three-bladed clamp of Dr de Martel. The divided end of the stomach was then anastomosed to the jejunum, preferably by the Moynihan-Balfour modification of the Polya operation, where the jejunum was brought around the splenic end of the transverse colon in a very short loop (three or four inches) and applied to the divided end of the stomach so that the proximal jejunum was attached to the greater curvature.

Dr F. N. G. STARR (Toronto) held that the surgery of the stomach had advanced so far that, given an early case of cancer, one might promise almost uniformly good results that were lasting. The unfortunate thing was that many such cases failed to seek advice until the disease was well advanced. When a patient presented himself with a history of some gastric disturbance, with loss of "pep" and loss of weight, it behooved them to hasten with their investigation in order to clear up the diagnosis as quickly as possible. They should not wait for pain, because pain, in his experience, was one of the later symptoms, and its presence usually meant that the growth had extended beyond the stomach, was no longer localized, and was in consequence no longer operable.

Mr GARNETT WRIGHT (Manchester) considered that the clinical evidence was all against the ulcer-cancer theory, and in his practice only 6 per cent of ulcer cases developed carcinoma.

Mr J. S. ROWLANDS (London) described a case of tuberculous ulceration of the stomach which so closely resembled a carcinomatous condition that the true diagnosis was only made when the ulcer was examined pathologically after a gastrectomy had been performed. He favoured an early exploration in cases where there was any suspicion of carcinoma. The operation of gastrectomy was not a dangerous one if the patient's vitality had not already been sapped by the disease. He preferred the ante-colic anastomosis when performing partial gastrectomy either for ulcer or for carcinoma, the jejunal loop should be short, but not so short as to constrict the transverse colon. It was important, he held, to remove the great omentum with the stomach. The danger of wounding the mid-colic artery had been much exaggerated, for he believed that the collateral circulation was quite sufficient to ensure the vitality of the gut.

Mr M. MAZOUZIAN (Ashton-under-Lyne) spoke of the value of local anaesthesia, and described a formidable operation performed by a Continental surgeon at which he had assisted. The operation, which amounted to a nearly total gastrectomy, together with removal of the transverse colon, necessitated by an injury to the mid-colic artery, occupied six hours. At the conclusion, the patient, who said he had felt no pain, was able to hold a conversation with the surgeon.

Mr H. S. SOUTER (London) believed in the value of operation, even in late cases, and gave two instances from his own practice. The first patient was explored for pyloric obstruction, and found to be "ludicrously inoperable." A gastro-enterostomy was performed, the stomach being placed in the one small unaffected portion of the stomach that was available. This patient was able to return to work for six months before he died. The second case was one of an extensive carcinoma of the stomach in a patient aged 26 for whom a resection was performed and life was prolonged by twelve months. Mr Souter concluded with a reference to the type of gastrectomy performed by Schoemaker which he considered excellent. It was possible by applying Schoemaker's clamp appropriately, to make the resection much more extensive than it appeared to be in the published description of Schoemaker's operation.

The PRESIDENT summed up the situation by saying that surgery had now outpaced medicine in the treatment of carcinoma of the stomach. There must be some morbidly attached to every surgical operation, but the mortality of partial gastrectomy was surprisingly small. In the operation for cancer of the stomach he did not regard it as necessary

to remove the whole of the great omentum, which could be put to the useful purpose of covering the operation field if retained. A modified Billroth I operation, while suitable for gastric ulcer, did not permit resection in carcinoma cases. He

performed a modified Polya operation with an intercolic no loop anastomosis between the jejunum and the whole cut edge of the stomach. He had never needed to reoperate for any complication following this operation. The preparation of patients for operation was most important. He advocated blood transfusion, heliotherapy (either artificial or real sunlight being used), and massive intravenous injections of glucose pushed to the point of producing diabetic coma, from which the patient was rescued with insulin. As very little further improvement could now be hoped for from advances in surgical technique there was a need for the education of the medical profession, and of the public at large, in order to bring about an earlier diagnosis. The Ministry of Health was likely to take this matter up in the near future.

SECTION OF LARYNGOLOGY, OTOTOLOGY, AND RHINOLOGY

ARTHUR H. CHEATLE, C.B.E., F.R.C.S., President

DISCUSSION ON OCCUPATIONAL DISEASES OF THE EAR, NOSE, AND THROAT, AND THEIR PREVENTION

OPENING PAPERS

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INDUSTRIAL diseases have occupied the close attention of the Secretary of State from time to time since the introduction of the Workmen's Compensation Act in 1906, which included a list of industrial diseases in the third schedule, and which was extended by several Orders, including those of the years 1913-16, dated February 26th, 1918 (S.R. and O. No. 287), November 15th, 1921 (S.R. and O. No. 1786), December 31st, 1921 (S.R. and O. No. 2031), January 2nd, 1923 (S.R. and O. No. 6), January 16th, 1924 (S.R. and O. No. 20), all of which are consolidated in the recent Act of 1923.¹ There is therefore a definite list of diseases or injuries with a description of the process in which and by which they are incurred, with the result of causing incapacity of the worker from following his or her occupation for a definite period. As, however, workers may suffer from disease which cannot be definitely attributed to causes arising "in and out of" the occupation, but which are common to the population of the district, it is incumbent on the workman to prove that his incapacity is due to the disease which is included in the said schedule, and arising in the process described. There is, however, a provision in Section 8, para (10), which states that—

Nothing in this section shall affect the rights of a workman to recover compensation in respect of a disease to which this section does not apply if the disease is a personal injury by accident within the meaning of this Act.²

It is furthermore enacted in "Statutory Rules and Orders," 1918, No. 287, Master and Servant, Workmen's Compensation Industrial Disease,² Section 2

A person suffering from any of the diseases described in the schedule as dermatitis produced by dust or liquids ulceration of the skin produced by dust or liquids and ulceration of the mucous membrane of the nose or mouth produced by dust, shall not be entitled to compensation under the provisions of the said section on account of the said disease if he is disabled only for employment in the particular process in which the disease has been contracted. (Third Schedule 11 (c) Ulceration of the mucous membrane of the nose or mouth produced by dust.)

Thus it is observed that should a workman be incapacitated for his occupation in the process detailed in the schedule and be fit to work in any other occupation and earn his former wages, his entitlement to compensation from his employer ceases. The most frequent illustration, perhaps, of this principle at the present time is the example

of "baker's dermatitis," which recurs after healing on resumption of baking, and yet the workman is fit to carry on any other employment. This may arise in any affliction of ear, nose, or throat.

The subject of occupational diseases of the ear, throat and nose may most conveniently be discussed under two headings:

(1) Industrial diseases which are included in Schedule 3 of the Act of 1903 extended by various orders, and included in the Act of 1923.

(2) Industrial diseases which are met with in workers which are not so included and may or may not cause incapacity of employment.

In the first category a list of the diseases and description of the process which have reference to afflictions of the ear, nose, and throat, under the numeral shown in the list is as follows:

Schedule 3

Description of Disease or Injury	Description of Process
1 Anthrax	Handling of wool hair, bristles, hides and skins
2 Lead poisoning or its sequelae	Handling of lead or its preparations or compounds
3 Mercury poisoning or its sequelae	Any process involving the use of mercury or its preparations or compounds
4 Phosphorus poisoning or its sequelae	Any process involving the use of phosphorus or its preparations or compounds
5 Arsenic poisoning or its sequelae	Handling of arsenic or its preparations or compounds
<i>Extension of Schedule 3</i>	
5 Poisoning by nitrous fumes or their sequelae	Any process in which nitrous fumes are evolved
11 (c) Ulceration of the mucous membrane of the nose or mouth produced by dust	
13 Chronic ulceration or its sequelae	Any process involving the use of chromic acid or bichromate of ammonium, potassium, or sodium, or their preparations
15 Compressed air illness or its sequelae	Any process carried on in compressed air
22 Glanders	Care of any equine animal suffering from glanders handling the carcasses of such animal

It will be observed that No. 11 of the list above—which includes (a) dermatitis produced by dust or liquids (b) ulceration of the skin produced by dust or liquids—does not lay down any specified process, and is applicable to any occupation, indoor or outdoor. Experience shows, however, that it is very exceptional to find any cases arising under this category, owing to the fact that no incapacity is caused by the disease. In the second group of diseases which affect workers, not included in the list of specified diseases and occupations, there are many which deserve more thorough and extended observation and research to determine how far such diseases are due primarily to conditions of occupation, and how far they are due to local climatic or hygienic conditions of life of the town or district. Much work in examination of individuals in factories and workshops, dwellings, clothing, and habits, needs to be done before any valuable opinion can be formed as to the influence of the occupation on the individual or the disease. An extended investigation of the literature on the subject has failed to provide any matter upon which a definite statement can be made, although departmental committees have often been set up to hear medical evidence in support of or against inclusion of a disease or diseases under the provisions of the Act. I need only refer you to the able disquisition of Dr. Edgar L. Collis, H.M. Medical Inspector of Factories, in his Milroy Lectures (1915)³ on "Industrial pneumoconiosis, with special reference to dust phthisis." The difficulty is further appreciated when divergence of medical opinion is expressed by able practitioners of long experience in industrial districts and whose professional work has very largely in dealing with workpeople in factories and workshops. Nothing exemplifies this better than the Report to the Home Office and to the Local Government Board upon an inquiry into the alleged danger

of the transmission of certain diseases from person to person in weaving sheds by means of "shuttle-kissing," in which the evidence of fifty-eight Lancashire medical officers of health is given in replies to a circular letter addressed to them by the Local Government Board in 1911. The report further demonstrates the difficulties of deep inquiry into the history of cases and the great amount of time required to establish with any certainty the incidence of the disease to any process of the industry or even to its aggravation. This is the reason why the inclusion of many affections has been rejected by the courts of inquiry held.

It is proposed to discuss the occupational diseases which are scheduled under the Workmen's Compensation Acts first of all, because of their definite position, and to deal afterwards with the others. It is convenient to follow the list scheduled in the Act, and to deal only with such signs and symptoms as are applicable to the particular organs in the regions of the ear, nose, and throat, but it must be appreciated that in the majority of cases the disease or injury is not limited to those parts, but affects in even a wider degree the skin surface of the body, or the lungs, if not other organs. A further point to be considered is that incapacity is, in most cases, not produced by the local affection but by its wider extent.

Anthrax

In the handling of wool, hair, bristles, hides, and skins, anthrax is contracted by workmen employed in (a) Dealing with live animals suffering from anthrax, such as drovers, shepherds, farmers, veterinary surgeons, etc. (b) Those who touch the carcasses of animals which have died from anthrax, such as slaughterers and butchers. (c) Those who handle skins or offal of diseased animals, such as felle-mongers, tanners, wool or hair workers, plasterers, felt makers, brush and mattress makers. (d) Transference from one human being to another. It is said to be probable that those who eat very little animal food are most susceptible to the disease.

The disease appears in more than 99 per cent of the cases on exposed parts, such as the hands, face, neck, or chest. When the disease is on the neck, within two or three days the swelling may involve the larynx or mediastinal glands as well as the cervical glands, producing difficulty of breathing and swallowing, and fluids swallowed may return through the nose. In such cases a fatal result in 40 per cent of cases has been recorded chiefly at Guy's Hospital between 1873 and 1893. It is rare, however, to find affection of the larynx or mouth, compared with the instance of lung infection. Prevention can only be carried out by either prohibiting importation of foreign hides or those of suspicious origin or conditions, or by sterilizing the hair before or during manufacture.

Lead Poisoning or its Sequelae

Apart from the general manifestations of acute or chronic plumbism the only symptoms of any moment are the neuritis of the auditory nerve and acute labyrinthitis with Meniere's symptom complex, which have been observed by myself in three or four workers. The symptoms subsided in all but one case, so far as they could be traced. There is little doubt that alcohol indulgence had an influence, and possibly syphilis in the permanent case. Paralysis of laryngeal muscles occurs in some cases. Tanquerel¹ called attention to aphonia in horses in lead works, neck-sitting tracheotomy, and Syjous² described adductor paralysis in a house painter. Unilateral paralysis of the adductors in persons suffering from plumbism was described by Moir³ Mackenzie,⁴ whilst Sieret⁵ records a curious case in which paralysis of the transverse and oblique arytenoid muscles prevented approximation of the posterior ends of the vocal cords. Also a second case of paralysis of the posterior crico-arytenoid muscles on both sides, the adductors remaining unaffected. Sensory disturbances of taste and smell are unusual, except in general nerve paralysis and mental changes.

Mercury Poisoning or its Sequelae

Under this heading is included any process involving the use of mercury or its compounds or preparations. The

dangers of mercurial poisoning in this country arise chiefly in the manufacture of barometers, thermometers, and electrical meters, in gilding and silvering generally known as "water gilding," in chemical works making corrosive sublimate, vermilion or red oxide of mercury, in hatters' and furriers' workshops, the manufacture of hard felt hats, from utilization of the crocted rabbit fur, in print and colour works, in the manufacture of surgical dressings containing salts such as cyanide and perchloride of mercury, etc.⁶ Mercury gives off vapour to a certain extent even at ordinary temperatures, but warmth increases this tendency. When the metal, as distinguished from its salts, is used, the danger of poisoning arises chiefly from inhalation of the vapour, and in a minor degree from swallowing or from absorption by the skin. In the case of mercurial salts it is by swallowing.

The symptoms are those familiarly known to all in the administration of the drug for syphilis. Locally it is manifested by a bluish line on the gums similar to that seen in lead absorption. Sometimes the tonsils and pharynx become involved in the inflammatory processes affecting the mouth. The important point in most patients, and especially those engaged in the hatters' and furriers' process exposed to the fumes of mercuric nitrate, is the condition of the teeth. The typical appearance in the teeth of these workers for years in "crocting" is loss of the molar teeth in both jaws. The upper incisor and canine teeth are frequently absent, and what teeth remain are blackened and loose. They show a marked tendency to erosion, principally of the enamel, and distinct from caries when the dentine suffers. The gums recede and the anterior surfaces of the roots become exposed. Inflammation of the nasal and laryngeal mucous membrane is associated with conjunctivitis and dermatitis.

The best means of prevention is frequent examination and careful cleaning and repair of the teeth. When the teeth are quite sound the symptoms of mercurial poisoning are exceptional. An important symptom of chronic mercurial poisoning is the implication of the nervous system which is not infrequently manifested by deafness with Meniere's syndrome in addition to tremors and muscular weakness. This is not uncommon in hatters' and furriers' workshops, and hard felt hat makers. Cases have been observed for years, and although treatment has in some instances enabled the worker to continue his occupation in others the symptoms have remained after cessation of handling the dangerous materials.

Phosphorus Poisoning or its Sequelae

The disease commonly known as "phossy jaw"—necrosis of the jaws due to absorption of phosphorus used in the manufacture of matches—is rarely met with at the present time owing to the prohibition of its use by Government in all countries where public health legislation exists. It is really now of historic interest only. It chiefly occurred in persons employed as "mixers" or "dippers," arising from the phosphorus fumes gaining access to carious teeth in the upper and lower jaws the latter being more often affected, this is the only mode of entrance. The process commences by setting up periodontitis and periostitis, followed by necrosis. In cases of superior maxillary infection the other bones of the face and skull may become involved, as well as the meninges and brain causing danger to life. The affected teeth fall out or are removed by operation after becoming loosened, persons with good teeth are not affected. When the disease is started severe pain and swelling of the alveolus supervenes, necessitating surgical intervention.

The course of the disease is very gradual taking from two to five years. Prevention consists of careful cleansing of the teeth, regular inspection and the use of a carbolic or sodium phenate mouth wash. The hands are to be carefully washed before eating meals, which must be taken outside the factory. Improved ventilation, wearing of respirators and the substitution of the less dangerous forms of phosphorus together with exclusion of workers with bad teeth from the industry, have prevented its occurrence.

Arsenic Poisoning or its Sequelae

Disease due to the handling of arsenic, its preparations, or compounds occurs chiefly as a result of (1) inhalation of, or contact with, the dust of salts of arsenic, and (2) inhalation of arseniuretted hydrogen gas. The symptoms exhibited locally are hoarseness, with soreness and dryness of the mouth and throat, in addition to conjunctivitis. The characteristic lesion produced on the upper air passages by salts of arsenic, in the form of dust, is perforation of the nasal septum, which is rapid—it may be in the course of one month from the commencement of work.¹⁰ The perforation may be small or large, but the anterior and lower borders are never involved, so that no bone is attacked and nasal deformity is not induced.

The salts of arsenic act as an irritant or an escharotic on the mucous membrane, whilst arseniuretted hydrogen acts haemolytically, pure metallic arsenic is innocuous. When once the perforation is complete and its edges healed no further discomforts are experienced, indeed, some workers do not even know of the existence of the condition. Prevention of disease is not possible so long as hand labour is employed in the manufacture of arsenical compounds, even with regular medical inspection, protective respirators and garments, together with exhaust ventilation. Instances of suppurative nasopharyngitis and suppurative otitis media have been reported. In a case of chronic arsenical poisoning recorded by Lewin, an inflammation of the internal ear followed arsenical poisoning in the nasopharynx and middle ear.

Poisoning by Nitrous Fumes or its Sequelae

The effect of nitrous fumes is to set up an oedematous inflammation of the mucous membrane of the respiratory tract, more particularly of the larynx, trachea, and bronchi. Death may ensue in a few moments or hours.

Dermatitis Produced by Dust or Liquids

Diffuse dermatitis, eczema, and furunculosis are produced in workers in zinc ore containing also lead, cadmium, and arsenic, which has an irritating effect. Wood polishers and jig-saws, who use denatured alcohol, are similarly affected. Eczema of the auricle and external auditory meatus, due to dust and grime, is met with in workers in metal, glass, stone, and wood, grinders, polishers, mother-of-pearl cutters, and brushmakers. Dermatitis, with or without burns on the hands and wrists, due to extreme heat, is met with in stokers and firemen, smelters, braziers, and puddlers, and in many cases it is followed by deformity, it would be admissible under Section 8, para 10.

Ulceration of the Mucous Membrane of the Nose or Mouth Produced by Dust

Any industrial process giving rise to dust is held to be responsible for incapacity of the worker, and a very large field is opened up, considerable doubt may arise as to the active agent. In some instances irritant metallic particles are present in the air of the workroom, or vapours containing soluble or semi-soluble salts or other matter suspended in them produce the same result. In a dried air penetrating particles are productive of a more irritating effect. Of metallic particles the most pronounced are silicates of copper or zinc, siliceous quartz, slate rock, and arsenical ores. The incidence of chronic catarrh and suppurative disease of the nose, nasopharynx, and pharynx, Eustachian tubes, and middle ear, is favoured in workers in close relation to machinery, especially irritating quality and as metal burnishing, glass grinding, mother-of-pearl cutters, lime burning, fertilizer mixing and packing, it is also encountered in trades dealing with wool, hair, and grass sorting, and jute and hemp spinning. Unless the inflammatory process goes on to actual ulceration a claim under the Act could not be upheld except under Section 8, para 10. In mercury mining the initial symptoms occur more commonly in the mouth, but in some cases there is acute labyrinthitis and Meniere's symptom complex. Inflammation of the nasal mucous membrane, with or without perforation of the septum, is met with, not only in those engaged in handling arsenical preparations, but also in workers in hygroscopic salts, such as sodium chloride and

the chlorides of calcium and magnesium. Jegge¹¹ quotes Muller, who examined 165 salt grinders and pickers, and found that 45 had catarrh of the nasal mucous membrane and 42 perforations of the nasal septum. Cement dust exerts nearly all its effect on the upper air passages, leaving the lung tissue unaffected.

The effect of dust inhalation is to produce hyperemia of the blood vessels, and frequently an eczematous condition round the rhina. Chronic nasal catarrh comes on later, possibly after several years, and finally atrophy with pallor of the mucous membrane and loss of the vibrissae. In the majority of cases, however, which have been observed in South Lancashire, the condition of chronic hypertrophic rhinitis, giving rise to nasal obstruction and mouth breathing, is the disability presented by patients in the outpatient departments of the hospitals, much depends on the atmosphere and climate, and it is considered that the humidity of this industrial area is responsible for the hypertrophic rather than the atrophic state. Occupations such as fun-pulling, cotton-waste sorting, flannelette raising and all kinds of polishing operations on a wheel, produce similar pathological changes. The harder and more gritty the particles the more rapidly and surely will the condition be produced.

Collis,¹ who examined thousands of grinders and granite cutters and others exposed to dust, states that the lining membrane of the nose for the anterior quarter of an inch is smooth and dry and pale in colour, behind this the membrane, which is probably covered with a crust of dust, is red and inflamed. Dust is also seen on the pillars of the fauces, and on the back of the pharynx, which is insensitive to the touch of a spatula. The reaction is first mechanical, repeated irritation and the pressure caused by the deposit of dust on the septum leads to ulceration and perforation. This process extends by continuity of tissue up the Eustachian tube to the middle ear, causing deafness. Inhalation of lime dust in unloading cargoes such as coloured sphatite ores, gives rise to severe inflammation of the lining membrane of the nose, and also to small ulcers on the mucous membrane of the buccal cavity.

Mycosis of the External Auditory Meatus (Otitis Externa)

This occurs in weavers, spinners, wool sorters, paper mill tenders, laundry workers, and dust workers. The growth of spores is favoured by an oily or fatty soil together with a warm atmosphere. Repeated attacks cause thickening of the dermoid coat of the membrana tympani and so impaired hearing. A heated ear impregnated with dust and foul gases affects the ear by extension from the nose and nasopharynx. There may be a chronic non-suppurative progressive thickening of the soft tissues of the middle ear or a more or less destructive suppuration of the middle ear tract.

Preventive measures in all dust diseases have been successfully undertaken by means of exhaust ventilation in shops and factories, producing a marked change in the worker's occupation. This ventilation consists, not only in removing the foul air from the building, but special fans are provided also for each machine used. Respirators have been found ineffective for long continued use, on account of interference of breathing by fouling and the great difficulty in keeping them clean. The factories and workshops of Lancashire are now in such a well constructed and organized state that the health of industrial workers compares very favourably with any occupation in this country. Incapacity from the various industrial diseases is limited to isolated cases, as the records of insurance companies dealing with workmen's compensation abundantly prove.

Chronic Ulceration or its Sequelae

This is one of the important industrial diseases which affects a large proportion of the workers but which causes little or no incapacity. The Departmental Committee on Compensation for Industrial Diseases, in its report in 1907, states, under para 15, Chronic Ulceration

"Where in the manufacture of the crystals dust is inhaled, the septum of the nose generally becomes perforated but during the months that this process of ulceration takes before it is completed

there is no evidence that the pain or inconvenience is ever such as to cause incapacity for a week. The lesion can be distinguished without difficulty. The affection arises directly from the employment and we recommend that it should be added to the schedule."

Chromic acid and the bichromates of potassium and sodium cause erosion of the septum of the nose from inhalation of the dust, but as dust is given off only in the manufacture of potassium bichromate, perforation of the nasal septum is limited to the workers in such factories. Legge examined 198 out of 743 workers employed in such factories, and discovered 145 (73.7 per cent) with the septum either ulcerated or perforated. The perforation occurred in some cases within a few weeks of commencement of employment.

Bichromates are used in the following trades and crafts:

1. Ais. Chrome yellows, oranges, and reds, and by interaction with a solution of lead acetate, in which a risk of plumbism is added.

2. Dyeing and calico printing.
3. Photography and litho etching.
4. Oxidizing agent for coal tar colours.
5. Tanning by the "two bath" process. (The "one bath" process is not so dangerous, as the basic chrome salts only are used such as chrome alum. In the two-bath process, the hides are first treated with chromic acid, this is the dangerous stage. The second bath is a slightly acid solution of sodium thiosulphate. Sodium hyposulphite is useful in the treatment of "chrome holes" in the skin, and hence men are removed from working on the first bath to work on the second. It is rare to find an unbroken skin being affected by chrome, on the other hand, chrome dust will attack and ulcerate the nasal mucous membrane.)
6. French polishing.
7. Manufacture of safety matches, coloured glass, and porcelain.

In 1899 Legge¹² examined 176 men, of whom 126 had perforation of the septum and 26 had ulceration, probably a stage preceding perforation. Nearly all the men employed in the crystal department or furnaces had perforation. It usually appears in six to twelve months after starting work, in one instance it appeared in seven weeks, in two others in less than twelve weeks. The usual situation of ulceration or perforation of the nasal septum is a point a quarter of an inch from the lower edge of the septum and a short distance from its anterior limit. It is rather anterior to the so-called Zuckerkandl area, but it may encroach upon it, and, eroding the septal artery, set up severe epistaxis. Owing to the inspiratory tract it tends to spread upwards and backwards. Deprived of its mucoparichondrial blood supply the cartilage becomes necrosed, the process is arrested at the margin of the bony septum, and, as the anterior border recedes, no external deformity results. The appearance of a healed perforation is an oval with a smooth white scar edge of regular continuity. The affection commences with irritation of the mucous membrane, congestion, and free mucous discharge, accompanied by attacks of sneezing without pain. This is followed by thicker plugs of mucus in the nasal passages with more or less crust formation. The removal of these with the finger-nail assists in the rapidity with which necrosis and perforation ensues. Occasionally mucous patches without ulceration are seen on the pharynx, tonsils, and soft palate.

Prevention is not entirely possible, but exhaust fans and elaborate systems of ventilation have proved very successful. No constitutional effects have been found from chrome poisoning. Chrome ulceration has been notifiable under Section 73 of the Factory and Workshop Act, 1901, since January, 1920, and in the years 1920-22 197 cases have been notified, of which 100 came from bichromate factories, 83 from dyeworks, 9 from tanneries, and 7 from other industries.

Compressed Air Illness or its Sequelae

This clause in the schedule comprises cases of workmen who are affected by rapid or gradual increase or decrease of atmospheric pressure, such as caisson workers, divers, and aviators. The more rapid the change of pressure the more marked are the symptoms, which consist of reflex nausea and vomiting, vertigo and tinnitus. It is more marked during decompression, and particularly if there is Eustachian obstruction, although the symptoms are manifested during or after decompression, they are probably induced during compression by increase of positive pressure on the membrana tympani, fenestra rotunda and ovalis, raising the blood pressure in the vessels of the middle ear and labyrinth with extravasation of serum or blood. This

may destroy the terminal fibres of the auditory nerves in the cochlea and cause permanent deafness. On decompression gas is liberated in the blood vessels and may give rise to air emboli, or a similar action may take place in the perilymph or endolymph. Inflammatory conditions of the middle ear track and Eustachian tubes will magnify the symptoms and prevent also the opening of the tubes by the act of swallowing.

The objective signs are serous or haemorrhagic bullae on the tympanic membrane, which is rarely ruptured. Similar conditions are met with in bell divers and submarine workmen in diving suits. Aviators rapidly changing altitude are subject to the same changes in the middle ear and labyrinth which are characterized by the variable subjective noises experienced. When the pressure is stationary disturbances of the organ of hearing are not noticed. The symptoms usually pass off, with restoration of hearing, within a few days, but if a haemorrhage has occurred or the terminal nerve endings are damaged the deafness will be permanent.

Glanders

Care of any equine animal suffering from glanders, and handling of the carcass of such animal, tends to cause glanders, which may affect men in the form of a chronic form with skin eruption and nasal discharge which contains the *Bacillus mallei*. Knockers who deal only with the carcasses of glandered animals rarely contract the disease because the bacilli are practically confined to the lesions and the discharges from them.¹⁴

The second group of occupational diseases not scheduled under the Workmen's Compensation Act are such as are not considered to be capable of incapacitating the worker from following the employment, although if any personal accident could be proved a claim under Section 8, para (10), could be established.

Ear Diseases

Inflammation of the middle followed by slough and necrosis occurs in cold-storage workers. In rupture of the membrana tympani due to explosions in mining, blasting, tunnelling, or gun-firing tests the membrane usually ruptures along the line of the malleus. The edges are irregular, there is free bleeding, and speedy repair. The concussion causes a damage to the nerve endings, either functional or by extravasation of serum or blood, giving rise to deafness and vertigo. In the functional cases recovery follows more or less completely, but in apoplexy the hearing is permanently impaired or lost. In continuous noises, such as riveting in boiler-making or loud machinery, which gives rise to continuous nerve strain, deafness is due not so much to damage to the sound-conducting mechanism as to destruction of the sensitive nerve endings which constitute the sound-perceiving apparatus. More severe deafness is produced by intense sounds made up largely of overtones of high pitch than by noises of lower pitch such as are heard in cotton mills, etc. Tinnitus is invariable, but vertigo is only present in direct proportion to the loss of perception of the upper tone limit. Vertigo is more frequent also when vibration is present in machinery as well as noise.

Dr Thomas Barr of Glasgow, as a result of the examination of a large number of boiler-makers, concludes as follows:

- (1) No one engaged in boiler making for any length of time escapes impairment of hearing.
- (2) In about half the number of boiler makers the hearing power is so defective that the tick of a watch which should be heard 36 inches from the ear is either not heard at all or only in contact with the ear.
- (3) Three-quarters of their number either could not hear at all at a public meeting or could hear with difficulty.

It should be added that these workers can hear fairly well when talking in the noise in which they work. Barr and others are satisfied that long continued exposure to noise causes the delicate structures of the perceiving apparatus in the internal ear to lose its power of conveying impressions to the brain. The proof is that air conduction is better than bone conduction. The sensory apparatus, for high-pitched notes especially, becomes abnormally lost. Prevention has been directed to plugging the external auditory meatus. Telephone operators are subject to similar symptoms, induced by constant irritation of

the perception apparatus by the instruments or by loud cracking noises due to thunderstorms or intense electrical discharges in the installation.

Holt states that changes in the middle ear and sound-transmitting apparatus are mainly the cause of impaired hearing. Gadenigo makes three differentiations: (a) labyrinthitis without otitis media, (b) chronic extralabyrinthine otitis media with labyrinthitis, (c) chronic advanced otitis media with labyrinthitis, with vertigo as accompanying symptom. Ropke describes it as a combination of labyrinthine disturbance and a extralabyrinthine process in the middle ear. Urbantschitsch reports a case in which concussion of the labyrinth was accompanied by contraction of the intrinsic muscles of the middle ear.

The mass of evidence favours the view that the principal channel through which the internal ear is injured is through the sound transmitting apparatus of the middle ear and not through other bodily channels. Tones of medium low pitch readily transmitted by bone conduction are not a cause of impaired hearing. High pitched sounds are only transmitted because the passage of their short wave-lengths is obstructed by the soft body tissues. It is observed that only the ear exposed to loud sounds is affected. On examination the membrana tympani is found to be retracted, owing to contraction of the tensor tympani muscle. The tympanic mucosa is also thickened.

The sort of damage produced by sounds on the hearing apparatus has been the subject of controversy. Some support the theory that it is in the brain centres, while others maintain that the excessive stimuli expend their energy on the particular areas of the organ of Corti as exhibited by atrophic changes limited to certain areas of the basilar membrane with a point of maximum intensity corresponding to the maximum amplitude of stimuli. Gair supports this view and states that even a pure tone represents roughly an octave, so that a wide area may be found to be atrophic.

It is further added that no changes have been observed in the trunk of the auditory nerve and it is unlikely that central degeneration can have occurred.

The atrophic areas being limited to certain sounds, it is possible that normal areas will respond to higher or lower stimuli, as is found in clinical observations, until long-continued irritation over several years brings about gradually ascending and descending changes, till complete deafness results.

Throat Diseases

Acute or oedematous laryngitis may be directly caused by inhalation of irritant fumes of chlorine, bromine, iodine, ammonia, or sulphuric acid.

Membranous laryngitis, non-diphtheritic, occurs in workers in boiling steam or irritating vapours, such as in stokers and cooks.

Chronic laryngitis is found among professional voice users, or street callers, from misuse or faulty voice production.

Hypertrophic laryngitis is frequent in street hawkers, salesmen, or those exposed to dusty occupations, such cases may develop into pachydermia laryngis. Influenza in horses may convey the disease to those in charge of them. In a recent case under my care oedematous laryngitis was set up, with high temperature and death within three days.

Tuberculous laryngitis has been considered to be caused by dust acting directly on the mucosa and causing irritation in wool workers,¹⁵ but it has not been satisfactorily established whether it is a direct infection or through the blood or lymphatic system.

Extrinsic carcinoma of the larynx has recently been made the subject of a claim (on the ground of dust irritation) on behalf of a cotton-spinner who died from the disease. The claim was rejected, but was prompted, no doubt, by the recent successful arbitration on the subject of mule-spinners' epithelioma of the scrotum.

There can be no doubt that a comprehensive view of our industrial occupations at the present time will be convincing of the fact that the health of the worker has very much improved under the beneficent influence of the Factory Acts, the scientific methods of improved hygiene in construction of buildings and appliances to prevent well known evils, as well as the supervision of factory surgeons

and the establishment of welfare organizations in industries, combined with a higher standard of intelligence of the worker in the principles of personal hygiene.

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II—S. W. GRIMWADE, O.B.E., M.B., Surgeon Commander R.N.

It is a fair statement to make that occupational diseases of the ear, nose, and throat are not common in the navy, in point of fact, they are almost entirely limited to diseases of the ear. There is undoubtedly a widespread opinion among officers and men in the service that they are liable to suffer from "gun deafness." It is important clearly to define what is meant by this. Is it a middle-ear or internal ear type of deafness?

Noise deafness as met with in boiler-makers and riveters is essentially a labyrinthine deafness, and it might be supposed that men who are frequently exposed to the detonations of guns would suffer from this type of deafness. Between December, 1921, and December, 1924, at the Royal Naval Hospital, Plymouth, 167 ratings were invalided from the service on account of deafness. This is a period shortly following the termination of the great war, and therefore likely to show cases whose hearing had been affected during the war, which might have been expected to show further deterioration. Of these 167 ratings, 74 per cent were suffering from suppurative middle ear disease, 17 per cent from chronic middle ear catarrh, and only 3 per cent from diseases of the ear directly attributable to the service—namely, traumatic rupture of the tympanic membrane and labyrinthine deafness.

During nearly two years' service at the Royal Naval Hospital, Plymouth, I have seen only four cases of labyrinthine deafness from gunnery practices, these all showed a very marked degree of deafness, which was temporary only and rapidly returned to normal, and only one case of labyrinthine deafness.

Inquiries were made as to the type of deafness found in ratings serving in H.M.S. *Excellent*, the Naval Gunner School, these patients were treated at the Royal Naval Hospital, Haslemere. I was informed that 99 per cent of cases were due to suppurative middle ear conditions, or applicable to occupational diseases, the statistics and conclusions of Got, otologist in the French army in 1915, are interesting. They are published in the *Revue d'Otologie*, January, 1916. He asks, "Who are the subjects most frequently attacked?" He found that those straining with healthy ears were more often injured in their labyrinth than those with defective ears. Of 283 patients with traumatic labyrinthitis, 144 (50.8 per cent) had no objective lesions of the middle ear, 74 (26.14 per cent) had objective lesions, but these arose at the same time as the labyrinthine lesions, and only 65 (22.9 per cent) had defects of the middle ear antecedent to the war. These statistics clearly indicate that true gun deafness or "noise deafness" is uncommon in the navy.

As to prevention, the common means adopted is the supply of cotton-wool for use as a plug in the external meatus. This is served out before all gunnery practices in H.M. ships, and although its use is not compulsory there is no doubt that it is commonly used. It has the disadvantage of making the user quite materially deaf. The Milloch-Armstrong mental plug is used frequently by officers, and has been of considerable value in reducing the shock of the detonation. Ordinary conversation can be heard quite readily while the plugs are being worn. Divers and players of wind instruments in the bands of the Royal Marines occasionally report themselves complaining of deafness, the cases I have seen are of the middle-ear type. It is associated with Eustachian obstruction and nasal conditions favorable to Eustachian catarrh.

The common type of deafness in the naval service is undoubtedly the middle-ear type, and although a proportion may be due to suppuration following traumatic rupture of the tympanic membrane, the vast majority of cases are due to previous middle-ear disease which has been quiescent for some years and is then reawakened by external inflammatory affections of the nose and nasopharynx.

There is no question that more careful examination of recruits for old middle-ear disease and for affections of the nose and nasopharynx would eliminate a large number of cases of potential deafness, and avoid the necessity of invaliding many fully trained seamen after four or five years' service. It would also prevent an element of malingering which does exist, and reduce the number of claims for compensation for impairment of hearing, alleged to have been caused essentially by their occupation in the service, many of them made quite honestly and in good faith, though ignorantly.

III—Wing Commander D RANKEN, R A F M S

I propose to confine myself to those diseases of the nose, throat, and ear especially associated with aviation as an occupation. Such diseases arise in the aviator for three main reasons: first, he works in an environment where rapid changes of barometric pressure are a constant factor, secondly, he may have conditions of the upper respiratory tract which cause symptoms, apparently trifling in importance at sea-level, but considerably aggravated at high altitudes, thirdly, he is continuously exposed to the noises of powerful motor engines and their exhausts.

The first and second of these causes are so closely interwoven that I intend to consider them together. We find in the Air Force that the effects of nasal obstruction, though disagreeable enough on the ground, are intensified in the air. Mouth-breathing, the result of nasal obstruction, may start or aggravate gingivitis or pyorrhoecia, especially when the inspired air is cold and dry, as occurs at high altitudes. Pyorrhoecia in its turn accelerates the onset of flying stress, and may bring about staleness, the cause of this may be confounded with excessive flying, overwork, worry, or lack of exercise. Laryngitis and tonsillitis are other sequelae of mouth-breathing in aviators, the engorged nasal mucous membrane associated with altitude frequently gives rise to insufficient ventilation and drainage of the frontal sinuses, and pilots often complain of headaches of varying duration during or immediately after descent. Most important, however, in this connection is the presence or absence of Eustachian obstruction, and I would like to speak in rather more detail on this matter. In flying, particularly in high flying and in rapid descents therefrom, it is important that the aviator should accommodate himself to and regularize the unequal pressures that may arise on either side of the drums. Any external condition or congestion of the Eustachian tubes will make this difficult or impossible. In consequence, if equalization by means of swallowing or auto-inflation is not or cannot be made during a rapid descent, the drums may become congested, invaded, or even ruptured, and pain and deafness, together with such effects of increased labyrinthine pressure as vertigo, nausea, or even fainting, may occur. Such symptoms have also been noted where unilateral Eustachian obstruction alone is present.

You will readily understand, therefore, the importance to the aviator and his passengers of adequate ventilation and drainage of the middle ears through the Eustachian tubes under rapidly varying degrees of atmospheric pressure. Broadly speaking, any condition of the nose and throat causing or likely to cause pharyngeal catarrh or inflammation is a potential factor in the causation of Eustachian obstruction. Such conditions are deflected septum, the various types of rhinitis, accessory sinus disease, unhealthy tonsils, adenoids, and any infectious catarrh of the nose or throat. Mouth-breathing, as also excessive smoking and drinking, are other predisposing causes. Free nasal respiration, a healthy upper respiratory tract, and satisfactory hygienic conditions of life are essential to the flying officer, and if one of the above-mentioned pathological conditions be present it should be corrected.

Passing now to the effects of noise on the aviator, there is, first, the deafness affecting pilots and observers, wholly due to the sharp reiterated crack of the exhaust. This is always of a temporary nature, and often lasts for several hours after a flight, the time depending as a rule upon the length of the flight. It is not due to changes in atmospheric pressure, presuming normal Eustachian tubes, and never occurs during or after decompression in a low-pressure chamber. Secondly, there is the deafness affecting those employed in testing aeroplane engines, this also is usually temporary in nature, the men on the work being only exposed to extreme noise for short intervals every day with frequent changes.

With respect to prophylaxis we have two methods of preventing aeroplane deafness. First, by cutting off or damping down harmful sound waves at their source by the fitting of silencers on exhausts or the leading of outlet pipes away from the pilot and observer, both are often matters of considerable technical difficulty. Secondly, we may protect the persons exposed to noise by some device designed to prevent sound waves stimulating the cochlear nerves and their filaments. For this purpose ear protectors of various types are sometimes used, many being based on the principle of a "baffle system." Cotton-wool lubricated with oil or glycerine is simple and often effective, and may be combined with pads sewn on the inside of well-fitting helmet ear flaps and pressing on the tragi. Precautionary measures to be adopted for those employed in testing aeroplane engines are (1) a special preliminary nose, throat, and ear examination and the non-employment on noisy work of men whose hearing is already affected, (2) periodical examinations with regard to depreciation of hearing, (3) shorter shifts on the noisy jobs. Proper hygiene of the nose and throat on general medical and surgical lines is essential where the deafness is not solely due to noise, but also to affections or irritation of the upper respiratory tract.

May I, in conclusion, say a few words on vestibular stability and the occurrence of vertigo in aviators. In this country we have never attached great importance to the supposed "motion sensing functions" of the vestibular apparatus, we are alive, however, to the value of a history suggestive of hyperexcitability of the labyrinth, and consider significant the degree of vertigo induced in a rotation chair, particularly when associated with nausea, vomiting, or well marked changes in the blood pressure. A healthy man responds in a certain way to rotation although the degree of vertigo varies greatly in different people, in certain persons who suffer from morbid phenomena in the air the reaction is abnormal and excessive. Dr. Henry Head has pointed out that complete adaptation to disturbances of equilibrium in the air is associated, not merely with stable labyrinths but also with automatic control of the afferent and efferent activities of lower levels of the central nervous system. A perfect pilot desires that his machine shall behave in a certain manner, and the evolution occurs, thus, however, is an acquired faculty, and may be disturbed by any condition leading to diminished control such as a gastro-intestinal attack or domestic anxiety. This loss of control over the activity of lower levels may be manifested, not only in bad management of the machine, but in some dangerous reaction, such as "giddiness" or "fainting" in the air, the former

usually associated with nausea. Careful inquiry will usually reveal the cause of this reaction, which can often be cured by appropriate treatment. Finally, though there is evidence to the effect that extremes of labyrinthine excitability are a bad sign, yet slight hyper- and hypo-excitability vary with age, training, and length of flying career, and in my opinion do not matter very much, if at all.

IV—T. JEFFERSON FAULDER, M.B., F.R.C.S., Major R.A.M.C., T.I.

ANYONE considering occupational disease from a military point of view automatically thinks of experiences, whether personal or otherwise, in the last war. That is only natural. But it would be a mistake, even in a brief survey such as this must be, to limit ourselves in that way. The reference contains the word "prevention," which greatly widens the scope not only of military but of industrial hygiene. For example, we have some knowledge of the effects of nasal obstruction in producing disease of the ears and respiratory tract. What is the influence of nasal obstruction in gas warfare? What is its influence in dusty, dangerous occupations? Taking a narrow view, I ought to begin with recruits and end with casualties. But the very facts of the last war force us to deploy, so to speak, on both flanks, and to begin with boys and end with pensioners.

In that war experiments on a large scale were going on, in preventive and curative medicine, and surgery, some of which had results likely to benefit for a long time to come not only an army but a population. It is not the fault of members of this Section if an analogous claim cannot be made for otology—as, for example, in standardizing, as it were, the effects of modern war and war conditions upon the ears, which an unwary person might expect us to be able to do.

In a former paper¹ I stated that it would not have been difficult to find an otologist who knew clinically the nasal condition of, say, a thousand fighting men. Here was a fine chance for a control test, whereby the mass of casualties might have been properly evaluated. The opportunity was missed. I cannot say that I hope it will recur very soon, but, in consequence, we have to depend upon individual experiences and opinions, and those somewhat limited. As another consequence records and statistics have to be taken with more or less reserve.

It will be profitable to make a few statements demonstrating the importance of this matter and the magnitude of the problem. I am greatly indebted to Sir Duncan Rhynod and Dr. Fitzgerald and their assistants at the Ministry of Pensions for the information now given.

The total number of first awards for various nasal disability has been 31,750. In June, 1922, there were still in receipt of compensation 23,889, and in December, 1924, there were 18,500. As a matter of interest, approximately one-half of this last total are assessed at 20 per cent or less disablement. The cost of all this disablement in a financial sense is evidently considerable.

The figures just given have their counterpart, or origin, or whatever it may be called, in the records of the men's medical histories during the war, worked out scientifically and elaborately by the Ministry of Pensions. These records show that admissions to hospital on account of diseases of the ear amount to a total of 182,440, diseases of nose 37,520, diseases of respiratory organs other than tuberculosis 801,840, tonsillitis and sore throat 441,040. It is easier to imagine than to describe the loss of man-power indicated.

How much of this mass of disease is directly due to service conditions there is no sure way of determining, we can, however, show that in the civil population there is, or was, an equally vast amount of our special diseases. I will, for convenience, leave this point till later, when I shall have something to say on recurring.

Having worked back from pensioner to casualty, we are brought naturally to field service. Time will only permit me to mention a few points.

1. Ruptured Drumhead

The most obvious and spectacular is perhaps the question of ruptured drumhead, about which various views have been

expressed, usually, in my opinion, in the direction of over-estimation. We know that granulations in the middle ear or an exposed tympanic mucous membrane can bleed spontaneously. This occurs the more readily in persons exposed to unusual stimulation as by gunfire, by jolting of wagons, and so on. Therefore blood in the meatus is not necessarily a sign of traumatic rupture. In three years I could vouch for three cases of ruptured drumhead—I mean in men who survived. In twenty years I know of no case of drumhead ruptured by the firing of a gun, except when a man by inadvertence got into the danger zone. A minor point to mention is that the membrane is not necessarily forced inward, as is commonly supposed. One of my patients had the membrane torn outwards into the meatus.

I entirely endorse all that has been said about treatment in these cases—as, for example, in the *Medical History of the War*. The ear should be cleared as far as possible of any debris, etc., without swinging, the auricle and meatus treated with iodine, and a light dressing applied. Morphine helps to relieve the vertigo, nausea, and tinnitus which are usually in evidence at the beginning.

2. The Hearing

This is a most difficult subject. We have no standards whereby to differentiate deafness due purely to war conditions from that due to natural causes. This difficulty exists even in the case of apparently normal ears. It is still greater in cases where there is already some nasal defect. There is great individual variation in powers of resistance. That was abundantly shown during the war, precisely as it is in noisy factories. One man gets impaired hearing while another under exactly similar conditions remains normal.

In a book on occupational diseases of the throat, nose, and ear by Rophe, kindly lent to me by Sir Thomas Legge of the Home Office, it is stated that in the German pre-war army deafness of a purely temporary character was common amongst the short-service rank and file, but that deafness of a more permanent sort was frequent in the long service staff of officers and non-commissioned officers. That is a kind of testimony to the theory of cumulative stimulus. I have, however, found little or no support for it in our own Royal Regiment of Artillery except as regards the temporary character of the deafness. Like others, I have observed the development of many cases of impaired hearing. They were for the most part not severe. Usually air conduction and bone conduction were both diminished, sometimes air conduction and bone conduction were apparently increased, I suppose from a form of hyperaesthesia. Some cases, notwithstanding continuance of excessive stimulation, became normal, as though resistance were developing. This, I believe, happens also in noisy factories. Other cases slowly deteriorated, but in my experience most of these begin to recover as soon as the cause was removed. This view is supported to a large extent by experiences at the Ministry of Pensions. I think it requires very prolonged or very excessive overstimulation to produce permanent deafness. There is also, as above indicated, a personal equation. On the other hand, I have seen ex-soldiers with apparently far higher degrees of deafness than are ever seen in civil practice. Some of these are no doubt due to what I might call psychological inequities. Others of them seem to be inexplicable unless we postulate permanent rupture of synapses in the cerebral tract of the eighth nerve.

3. Chronic Catarrhal Otitis Media and Chronic Suppurative Otitis Media

There is no doubt that far more disablement and loss of power is caused by disease than by injury of the ear. Chronic otitis of various kinds is also given as one of the common causes of short service. Unlike pure injury, these diseases are more or less preventable, and it is in this direction that improvement is to be looked for. Yet I erred to the conclusion that men with old perforations or eardrums of the membrane were less affected by noise and vibration than those with normal ears.

4. Preventive Measures

A number of protective appliances are made for the purpose of excluding noise and other vibrations. These are the Malloch Armstrong plug of vulcanite made with

a diaphragm, the Ward Cousins hollow rubber plug, plasticine wool, and the Macnoughton-Jones celluloid or rubber one. Incidentally celluloid is dangerous. Personally I used only plugs of ordinary wool with vaseline. All of these means protect the ear to some extent, but I do not think them necessary except in special circumstances, as when guns are being worked in an enclosed space. In proportion as they interfere with the hearing, they are disliked by most men, who prefer to be able to hear what the enemy is doing. Also I have seen orders misunderstood in this way.

5 Gas Warfare

From the medical history cards it appears that there were 440,000 admissions on account of gas. As regards pensions, in June, 1922, I find that there were on the books of the Ministry of Pensions 12,322 men disabled by gas, while in June, 1924, the number was 3,567. Some of these men have simple chronic laryngitis. Why is it that so many have recovered to an extent which justifies the discontinuance of pension? It has doubtless been noticed that nearly all persistent cases of laryngitis have some form of nasal obstruction. Now nasal obstruction *per se* is not a disability in gas warfare, because with some forms of protection it has to be produced mechanically. The inference is that primary laryngitis or pharyngitis set up by a gas irritant is prevented from recovery by nasal obstruction. Very likely this opinion applies to the rest of the respiratory tract also.

I lend with some remarks on recruiting. It is, I suppose, now a matter of common knowledge that the process of recruiting discloses a formidable amount of physical defect and ill health. One valuable source of information is the report of the Ministry of National Service. From November, 1917, to November, 1918, the medical boards dealt with nearly two and a half million examinations. Out of these no fewer than 250,280 were placed in Grade IV—that is, considered useless for any sort of service. What proportion of these were rejected on account of ear disease is hard to estimate, because the percentage rejected for that reason varies much in the different recruiting areas, in some it is about 2 per cent, in others nearly 10 per cent. Dr. Fitzgerald has explained to me that when a formal examination of ear, nose, and throat was carried out, as was done in his area of Liverpool, the result was a percentage much higher than the average, 10 per cent means nearly two divisions of troops.

On the advice of Dr. Fitzgerald I wish to amplify this statement. Grade III were men who presented marked physical disabilities or such evidence of past diseases that they were not considered fit to undergo the degree of physical exertion required for Grade I and Grade II men. 756,859 men were placed in Grade III—that is, 31 per cent, Grade IV were men totally and permanently unfit for any form of military service, 250,280 men were placed in Grade IV, or 10 per cent. Grade III and Grade IV therefore accounted for 1,007,139 (41 per cent). These men were unfit for the fighting line and for strenuous manual labour. Suppose that 4 per cent of these were ear, throat, and nose cases, and we have 40,285 men placed in Grades III and IV.

Another source of information on this subject are the Blue Books called *Health of the Army*, in which much the same tale is told.

In conclusion it appears that for any marked improvement in the incidence of ear disease in soldiers as well as ordinary people we must go further back again—namely, behind the recruit. I am informed that since the institution of medical inspection of schools there has been a great reduction of otitis media in children at the age for leaving school, some say by as much as 50 per cent. At the same time we are told that otitis media in children entering school is about as prevalent as ever. To this there are three corollaries: (1) If school inspection is worth the trouble and expense involved, it is also worth following up by action. (2) We can ask whether anything more can be done in the pre-school age. (3) We have a further argument for using the services of otologists in every fever hospital.

I have been able to touch only a mere fringe of the subject, which is important for tropical as well as for temperate climates. The ordinary life of a soldier is in general a healthy one. Service injuries and diseases of the ear are not amenable to preventive medicine, in any ordinary sense of the term. Prevention must begin at an earlier period.

REFERENCE

Journal of Laryngology June 1911.

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I SHALL confine my remarks to that portion of the paper which deals with the deafness induced in those who work in noisy surroundings. Just before the war, on the suggestion of Drs. Logan Turner and J. S. Fraser, with whom I was working at the time, I undertook an investigation of this subject. My conclusions for the most part were in accord with Mr. Westmacott's. His copies Barr and Habermann, however, in speaking of the high-pitched sounds prevailing in boiler shops. It is quite true that these sounds are high as compared with the rumble and whirr of the cotton mills, as Mr. Westmacott says, but they are still very low in the scale. I went down to the boiler shops in Leith with my pockets bulging with tuning-forks, and found that the predominant noises ranged round about 400 and 500 double vibrations a second. Barr and Habermann had been struck with the well marked loss of hearing for high notes, and sought to explain it by exposure to sounds of high pitch. As a matter of fact that depreciation of hearing for notes at the top of the scale is a late manifestation, and was doubtless more apparent in the cases reported upon by these observers because they were dealing with actual patients—workmen who applied for advice because their deafness was becoming a real disability. For my investigation I persuaded the workmen to come to me at the adjacent hospital, selecting men of all ages, they came not for advice but to oblige me, and several of the younger men protested that they were not deaf at all.

For the examination I used four tuning-forks—32 double vibrations to test the hearing for low notes, 419 and 512 as representing the lower and upper limits of the boiler-shop noises, and 2,048 as a fairly high note. The cases were divided into three categories—those employed less than ten years at the work, those over ten but less than thirty, and those over thirty years. In the first category every one, even the youngsters who protested they were not deaf at all, showed depreciation for forks 419 and 512, while a fair proportion had no loss at all for low and high notes, and in the others it was only slight, and among these last the high notes were actually better heard than the low. It was only in the third category—that is, the men employed over thirty years—that one met with the typical case described by Barr and Habermann with the loss of hearing for high notes a really well marked feature. This was confirmed by using the monochord for testing the upper tone limit. In the first category this was scarcely affected at all. For instance one youth could actually hear 20,000 double vibrations although his appreciation for the medium forks was reduced to two thirds. Even in the third category 60 per cent could appreciate between 9,000 and 11,000 double vibrations. These clinical results were quite in accord with the findings of the experimental work done on the Continent about the same time by Wittmann, von Eichen, Hoessle and Yoshii. Guinea pigs were subjected to loud noises for varying periods and then killed for examination of the petrous bone. The lesion in the cochlea was easily demonstrable, and the site of the trauma varied according to the pitch of the sound used. I cannot take time to detail these experiments here, but anyone interested will find a summary in my papers in the *Journal of Laryngology* (April 1915 and February, 1923), the latter paper being in argument in favour of the Helmholtz theory of sound perception based on the same investigations. Then Mr. Westmacott says of vertigo in these cases that it is only present in direct proportion to the loss of perception of the upper tone limit. That may

be so, Barr found a history of giddiness in 14 per cent of his cases and Habermann in 16 per cent. The fact that I found it in only 10 per cent may quite well be attributed to my inclusion of such a large proportion of young men in whom the upper tone limit was scarcely if at all affected.

But it must not be assumed from the juxtaposition in the opener's sentence quoted that the lowering of the upper tone limit has anything to do with the incidence of vertigo. The latter must be due to coincident injury to the vestibular apparatus. The experimental work referred to revealed no *post-mortem* change in the end-organs of equilibrium until Yoshii tried detonation instead of electric bells, when he obtained immediate clinical results, the animal showing nystagmus, rhythmic movements, and inco-ordination, as well as *post-mortem* signs of injury. When one thinks of how much the noise resembles that of repeated detonation, "holder-on" is inside the boiler with riveters hammering on the outside, one can understand the frequent incidence of vertigo.

Lastly, I agree with the opener that the mass of evidence is in favour of the view that the injury to the cochlea is conveyed by conduction, not by bone conduction. Middle-ear defects have no part in the causation. Indeed, the very opposite is the case, any middle ear defect at all, by diminishing the impact of the stapes against the oval window, will prevent the onset of inner-ear deafness. This was exemplified in 6 of the 86 ears I examined. In these either otitis media or a large perforation was present, and the signs of nerve deafness were absent. In 3 others, however, in which there was a history of otitis media of short duration, and in 2 with small perforations, nerve deafness had supervened, doubtless because the sound-transmitting apparatus was practically unaffected. Von Eicken and Hoessle in their experiments also found that the induction of middle ear suppuration or the removal of the incus prevented the onset of changes in the cochlea in the ear affected. This point, of course, is all-important as regards prevention. Wittmack's advocacy of a rubber mat was based on the idea that the injury was conveyed through the bone. Mental plugs of wax or vaselined wool was the only hope, and if workmen could be persuaded to use these regularly there is no doubt that boiler-maker's deafness would be much less prevalent.

GENERAL DISCUSSION

Mr E. B. WAGGETT confined his remarks to the subject of chronic otitis media in the army, and excluded the chronic sequelae of the influenza epidemic of 1918, of which he had no special knowledge. The subject, he said, must be considered from two distinct points of view: (1) as occurring in a nation in arms for the purpose of a war, (2) as affecting the regular standing army.

I have considered that the statistics of the great war gave a wholly misleading impression, and he believed that the very heavy figures concerning hospital entries for chronic otitis media and aural, nasal, and throat operations were to be explained on psychological rather than surgical grounds. Chronic otitis media formed a convenient excuse for the soldier desiring a holiday at the base, moreover, many men who had neglected a mild otitis media in civil life very naturally seized the opportunities for treatment afforded by the Army Medical Service. Very few medical officers had any thorough knowledge of aural diseases, and, being unable to distinguish the different causes of chronicity in otitis media—namely, infection from the meatus, the nasopharynx, and the mastoid cavities respectively—they very properly relied upon the impressive warning of the "slumbering volcano," and sent cases down to the base indiscriminately. At the base such cases must frequently have come under the charge of medical officers influenced by a desire to improve their operative technique. The speaker based these beliefs upon his personal experience of four years' field ambulance service in the front line. Thanks to the co-operation of his brother officers in the division, and of intelligent and cleanly medical orderlies, he had found it necessary to send to the base precisely one case of otitis media during the whole period of the war. He considered that the status of a chronic otitis media was,

under the conditions at the front as he had witnessed them, safer than in normal unorganized civil life. Acute cases had without exception cleared up in the field ambulance. Otolaryngology had now become a compulsory subject for medical qualification. If teachers would concentrate upon the public aspects of the subject, the next great war would be served by medical officers capable of furnishing statistical figures of a totally different magnitude.

2. The regular standing army presented a different problem, which must take account (a) of the definite fact that, for cogent reasons, the Army Medical Department could not supply competent specialists in sufficient numbers, (b) that a regular soldier must at all times be fit for field service in any war area, (c) financial considerations arising out of discharge during the six months following enlistment, etc., (d) deafness, increasing to the degree of disability, during prolonged service. For these reasons the problem had to be met and dealt with at the time of recruitment. The War Office had employed him to make recommendations on this point. He understood that these had, in the main, been accepted by the medical recruiting authorities, and if embodied in full in the new recruiting regulations they would, he was confident, satisfy aural surgeons. These regulations were not yet issued, and it was possible that the Adjutant-General's office might have found it necessary, on military grounds, to amend his recommendations.

Dr J. KERR LOYD (Glasgow) said that he would draw a distinction between true middle-ear disease in which the hearing was sometimes better in a noise, and boiler-maker's deafness, an internal ear condition in which the hearing was not better in a noise. As an example of the former, a friend of his, sitting along with her husband in the back seat of a motor car, heard what was going on in the front seat better than her husband, who had perfect hearing. The speaker asked Mr Westmacott whether he had seen what he (the speaker) had called the blue membrane of miners, a condition he had described twenty years ago, and which was due to the pressing up by the Instichum tube of cond dust which was deposited on the lining of the middle ear.

Dr T. B. JONSON (Guildford) said that in 1915 he had the opportunity of making some observations on the effect of prolonged gunfire on the healthy ear. He examined fifty German soldiers who had recently been exposed to gunfire. Cases with any history of previous ear disease, abnormal membranes, and naso-pharyngeal disease were excluded. He found that about 80 per cent of these men showed a slight diminution of acuity of hearing both for bone conduction and for aerial conduction. Examination of these cases after an interval of three to six months showed that the hearing had in almost all cases returned to normal. This corroborated Mr Faulder's remarks on the powers of resistance to gunfire of the normal healthy ear. The number of cases of serious ear injury, exclusive of wounds, due to gunfire which came under observation was small—unexpectedly small.

DIAGNOSTIC EXPLORATION OF THE NASAL SINUSES BY THE AUTHOR'S SUCTION SYRINGE METHOD

DEMONSTRATION AT THE BATH EAR, NOSE, AND THROAT HOSPITAL

BY

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BEFORE proceeding to demonstrate the technique on cases requiring investigation, I would point out that the bacteriological investigation of the nasal accessory sinuses affords valuable guidance both for accurate diagnosis and for treatment. Where the discharge of pus is copious the value of the method lies in the means afforded for rapidly determining which sinuses are healthy and which involved. But few conditions illustrate the value of the suction syringe method more than those cases without purulent discharge—for example, patients in whom signs of cranial optic neuritis point to the sphenoidal sinuses or a posterior ethmoidal cell as being the probable source of infection,

though even careful anterior and posterior rhinoscopy fails to demonstrate escaping discharge, in other words, cases in which the nasal findings by ordinary methods are negative and yet the progressive optic nerve lesion renders accuracy of diagnosis of a source of infection of grave import. Equally does this apply to cases of rhinitis in which a nasal source of infection is suspected.

It is, however, in determining and exactly localizing the focus of infection when present in the sphenoidal sinuses or posterior ethmoidal cells that the suction syringe has proved most helpful. Investigations in the *post-mortem* room which I carried out in 1896 with the co-operation of Mr S. V. Stock led me to introduce a method of puncturing the anterior wall of the sphenoidal sinus and sucking any contained discharge back into the attached sterile syringe, instead of syringing out the sinus by the natural opening. Subsequently I applied the same method to the posterior ethmoidal cells, and thus with the suction syringe one can determine the presence or absence of active infective processes in either the maxillary antrum, sphenoidal sinuses, and anterior or posterior ethmoidal cells on either side.

Let us take, for example, a patient threatened with loss of vision from cranial neuritis, suspected as nasal in origin. Having explored various sinuses and found them sterile, it is necessary to make certain that no infected sinus has been "missed," because the failure to locate exactly the infected focus may cost the patient his eyesight, if nothing worse. Further, if some of the sinuses have been proved to be infected, it does not follow that they are the chief or sole source, or even the source at all, of a cranial neuritis, unless one can be certain that the other sinuses, which might cause the neuritis, have also been explored and proved sterile. Briefly, the method employed consists in attaching to a syringe a cannula suitable for entering the suspected sinus and sucking up the discharge, which is then placed in a sterile bottle and submitted to bacteriological investigation. It is usually helpful to inject a small quantity of sterile water from the syringe into the particular sinus and then suck it back with the contained discharge. By such means the bacteriology of the maxillary antra, the ethmoidal cells, and the sphenoidal sinuses can be determined individually. By centrifugalizing and making stained films of the fluids thus obtained the presence of polymorphonuclear leucocytes and often of phagocytosis, as well as the organisms present, may be noted prior to culture of the organisms by usual methods. While similar methods are often applicable to the frontal sinuses, the resort to shuntograms seems to afford all the information desired in these cavities. It is the systematic exploration of doubtful cases that has proved so helpful to the author, because by exploring both antra, the ethmoids, and the sphenoidal sinuses, it so frequently happens that those believed to be infected have proved normal while those sinuses which were not suspected have often yielded undoubted proof of infected and purulent discharge.

Diagnostic exploration by the suction syringe can be performed under local anaesthesia by cocaine, tutocain, or eucaine, etc., in all but children or highly nervous adults for whom a light general anaesthetic is desirable. With the patient then lying flat on the back, a cotton wool carrier dipped in 10 to 12 per cent solution of cocaine hydrochloride, or of tutocain or any efficient local surface anaesthetic, is carried well up and back into the middle or superior meatus, according to the route chosen and in the space of three or four minutes the patient is ready for the exploratory procedure.

For the maxillary antrum a stout curved hollow needle is used, with a bore of 2 mm., so that even thick sticky pus can be drawn up into the syringe. While it may be entered through the inferior meatal wall, it can be passed with greater ease through the middle meatal wall in the region corresponding to the processus uncinatus and with no pain (as it traverses only very thin bone or often only mucous membrane), and this is the route always chosen by the author. For the sphenoidal sinus a straight blunt trocar and cannula, measuring $4\frac{1}{2}$ inches in length, is used, and the same is used for posterior ethmoidal cells. With the patient supine, the blunt trocar and cannula are made to enter the sphenoidal sinus through the thin

anterior wall—that is, through the sphenoidal turbinate bone, avoiding, if possible, entering through the natural ostium, because it is then difficult to suck out the contents of the sinus.

For the posterior ethmoidal cell exploration the sphenoidal trocar and cannula are most readily entered through the middle meatus. The trocar and cannula are passed into the top of the middle meatus, between the ethmoidal bulla and the middle turbinal (or sometimes through the bulla), and slipped upwards and backwards until the point rests high up on the posterior oblique attachment of the middle turbinal. Just before puncturing the cell wall the direction of the trocar and cannula is rendered less oblique by raising the instrument, and, if necessary, the tip or the nose, and it is now made to take a slightly outward direction. The instrument is then gently pressed through the thin anterior wall of the posterior ethmoidal cell or cells, so as to enter the posterior cell just outside the thicker bone which corresponds with the attachment of the middle turbinate bone. Care should be taken not to fracture the outer wall (into the back of the orbit), nor to direct the point too much upwards through the roof into the cranium. If this route is followed, and the pressure made somewhat outwards and but slightly upwards, there should be no risk of accident in skilled hands. When the point has fully entered the cell, the cannula is held steadily *in situ*, while the trocar is withdrawn and the suction syringe, containing about 3 c.c. of sterile distilled water, is attached as in exploring the sphenoidal sinus.

A slight movement of the piston to and fro serves to wash the water into the sinus and suck it back—it may not go quite so easily as with the sphenoidal sinus, probably from a difference in the size of the cell's natural ostium, which serves as a bung-hole. As it is essential to use a sterile instrument and sterile syringe for each sinus explored, the author has six syringes, four sphenoidal trocars and cannulas, and two anti-curved needles at hand so as to avoid unnecessary delay in sterilizing any of the used instruments during the course of exploration. The whole procedure, apart from cocainization, usually occupies two minutes only, and often less in cases under general anaesthesia.

Having thus entered a sinus cavity, the blunt trocar is withdrawn and the syringe attached to the proximal or piercing end, and the sample of the investigated sinus content sucked into the syringe. If much pus is lying in the sinus, it may appear in the syringe in ropes, or as very bloody mucus, leaving one in no doubt as to the sinus being infected. In other cases the fluid extracted may be perfectly clear and watery, proving sterile on culture. Other samples obtained may be suspicious only, and doubtful until submitted to film and culture examinations, which may either prove negative or definite phagocytosis, abundance of polymorphonuclears and pyogenic cocci may afford conclusive evidence of active infection.

The posterior ethmoidal cells are similarly explored by the blunt trocar and cannula entered either above and internal to the middle turbinated body, or, as I usually find much simpler, by piercing the posterior ethmoidal cell wall beneath the attachment of the middle turbinated body to the outer wall of the nasal passage.

With the maxillary antrum, ethmoidal cells, and sphenoidal sinuses explored thus through the right and left nasal passages, at least six samples have been obtained for investigation by the pathologist, which, if the anatomical arrangement of the sinuses be normal, should yield exact and reliable information as to the normal or infected condition of each sinus. Unfortunately, the sphenoidal sinuses and ethmoidal cells are often most irregularly developed. For instance, one sphenoidal sinus may be very large and extend right across the midline, pushing the sinus of the other side which is correspondingly small, so far outwards that the exploring cannulas passed backwards through the right and left nasal passages enter the one large sinus, the other small one being altogether missed. This is not difficult to discover if, with both cannulas in one sphenoidal sinus, water injected down one will come back through the proximal end of the other. If left in doubt as to whether one has entered the sphenoidal sinus instead of the ethmoidal cell, by again keeping both cannulas *in situ* and injecting

water down one it is quite easy to determine whether the two canals be in the same or in separate cavities. Such piercations are by no means fanciful, and I have met with cases of encephalic optic neuritis where the sinus infection did not correspond with the retinal defects until further careful exploration revealed such irregularities as I have described, and which had very nearly led to the source of the very serious ocular defect being missed and the patient unrelieved.

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A NEW METHOD OF FITTING ARTIFICIAL LEG SOCKETS

BY

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CONSULTING SURGEON, ROYAL NATIONAL ORTHOPAEDIC HOSPITAL

ONE of the greatest difficulties in fitting an artificial limb after amputations in general, and particularly after amputations of the thigh, has lain in the method of attachment of the false limb to the living stump. The ideal must be so to connect these two that the prosthesis shall partake of all movements of the stump in all directions as though it were part of it. Any movement, whether longitudinal or angular, which occurs between the socket of the artificial limb and the stump—what is called by mechanicians "lost motion"—is a source of weakness, gives rise to troubles in the skin of the stump, and is to be eliminated as far as possible.

In the case of amputation of the thigh the attachment has hitherto been made by means of straps or suspenders passing over the shoulders, and by means of belts around the pelvis made of steel, leather, or woven fabrics. When the patient with such an attachment assumes the erect position and rests some or all of his weight upon the limb, the pressure is transmitted almost entirely through the ischium, which bears upon the inner upper edge of the socket. Very little weight is taken on the thigh stump itself in most cases. When, as in taking a step in ordinary walking, the weight is transferred to the sound limb and the artificial limb is swung forward, the socket slides down upon the stump to a greater or less extent, until its movement is stopped by the suspenders or pelvic band. When weight is once more put upon the artificial limb, as the sound one comes forward, the stump descends into the socket until its movement is stopped by contact between the ischium and the top of the socket. When the patient sits down a similar descent of the prosthesis occurs, so that the artificial knee is more prominent than the living one. It has been the constant aim of the limb-maker to reduce this movement to a minimum, but it is nearly always to be detected. Out of thousands of cases of amputation of the thigh which came under my notice at Roehampton and elsewhere, only one was able to dispense with all straps and belts for the attachment of his artificial leg. This was an officer who had a very long stump, and who had found out that he could so jam it into the socket that the prosthesis would not drop off of its own weight. He thrust his stump into it as one might thrust a foot into a riding boot, and walked off without any suspender or belt whatever.

Some two years ago Mr. Ernest Underwood, a pensioner who had suffered amputation through the middle of the

femur, made himself a wooden socket, not shaped *secundum artem*, but actually turned in a lathe with three or four inch-wide annular grooves on the inside fitting the bare stump as closely as possible. Wearing this he was able to give up all suspensory attachments. His stump measures 9 inches in length from the tip of the great toe to the knee. It has an end posterior scar which is partly adherent.

From past experience I should have been strongly sceptical of the possibility that there could be any practical value in such a method of fitting, but last July Messrs. Charles A. Blatchford and Sons, Ltd., who had for some time been patiently working upon Mr. Underwood's rather crude idea, brought him, and four other amputees wearing socket fitted on his principle, to see me. There was then no room for doubt that, in these cases at least, the method was a complete success. Since then I have been shown six other cases fitted with equal success, and have had opportunities of watching the progress of all the eleven cases, of which short notes are subjoined.

CASES

1 D. J. A., aged 32. Amputation, September, 1916 of right thigh 9½ in. below trochanter. Posterior scar. Seen August 27th and October 6th, 1925.

2 J. F. C., aged 42. Amputation of right arm and right thigh in 1917, 14½ in. below the trochanter (he is a very tall man). Posterior scar on which he has formerly borne weight. Seen July 27th, September 1st, and October 6th, 1925.

3 S. D., aged 30. Amputation (in Germany) August, 1918, right thigh 10½ in. Posterior scar. Seen August 27th and October 16th, 1925.

4 H. G., aged 26. Amputation October 1917, 12½ in. End scar adherent. Seen August 27th and October 6th, 1925.

5 T. G. G., aged 33. Amputation August 1916 left thigh 9½ in. Extensive posterior and internal scars. Seen August 27th and October 16th, 1925.

6 A. I. J., aged 28. Amputation February, 1918 left thigh 13½ in. Posterior scar. Seen July 27th and October 16th, 1925. This patient is a record breaker for walking in an artificial limb. He walked the mile in 11 minutes 8 seconds wearing a limb with shoulder control. In this limb he has done it in 9½ minutes, and 4 miles in 45 minutes.

7 J. I. Amputation September, 1916 right thigh, 12 in. Posterior scar. Seen August 27th and October 6th, 1925. A localized thickening of the derma, commonly called a cyst, which was caused by his former loose socket, is now disappearing.

8 T. W. P., aged 28. Right thigh 10½ in. Posterior scar not adherent. Seen July 9th, 1925 when the following note was made.

Cannot be pulled off without very great effort and when he relaxes his muscles when he opposed I could not pull it off at all. Seen again October 6th, 1925.

9 C. T., aged 42. Amputation December, 1917 right thigh 13 in. Very conical stump, muscles much retracted, scar not adherent. Seen July 30th and October 19th, 1925.

10 D. U. Right thigh, 9 in. End and posterior scar partly adherent. Wearing a socket with groove of three turns of a spiral and one ring at bottom. Seen July 18th and October 6th, 1925.

11 J. N. Left thigh, 8 in. End scar not adherent. Seen October 6th and November 2nd. This patient is only now (November 2nd) just beginning to use the leg continuously. Although he has been used to a pelvic band and hip joint, on account of his short stump, he walks better in this limb without that addition.

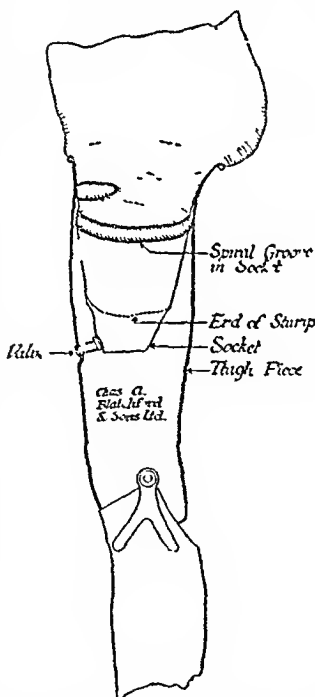


FIG. 1.—Diagrammatic drawing of a socket showing the groove and the valve.

The socket is made of aluminium, and experience has shown that a spiral groove of a little more than one turn is enough. The groove is 1½ in. wide and 1/8 in. deep. It is shown in the diagrammatic drawing (Fig. 1). The socket is made to fit without any sock as closely to the stump as is consistent with comfort, but the end of the stump is left free. This fit is so close that a partial vacuum is created when an attempt is made to withdraw the stump, and an rushes in with an audible noise as the socket leaves the stump. To facilitate withdrawal a spring valve is fitted on the socket, through which air may be admitted when it is desired to remove the leg. Attempts to pull

off the limb by main force without opening the valve failed in all cases. The patient might be pulled across the floor by the artificial foot, but the limb seemed to be as firmly attached to the trunk as was its living fellow. It appears to me that it is not so much the vacuum as the close contact made by the metal socket and its groove which holds the leg on. This opinion is supported by a recent experience of a case in which there was positive air pressure below the end of the stump, so that on opening the valve air rushed out with force enough to blow out a match.

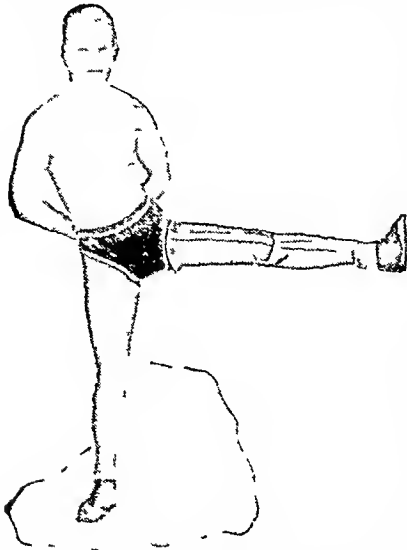


FIG 2—Demonstrates the absence of angular or tilting movement between stump and socket

It might have been feared that this close contact and the absence of ventilation would have a bad effect on the skin, or that the constant pressure might cause atrophy of the upper part and oedema of the end of the

stump. In practice I have found that such fears are groundless—at any rate in the cases of the eleven men in question. After wearing these sockets for periods varying from two months to two years the skin is in a healthier condition

than before, and the stumps have increased in circumference. The absence of friction between skin and socket eliminates the risk of sores and callosities, and the increased use as a lever of the stump, which is rendered possible by its close alliance with the socket, appears to have led to increased development of muscle and better nutrition of the stump. It is a commonplace of limb-fitting that the better a limb fits the less is its weight felt. Therefore it is not surprising that the wearers of these sockets make light of their disability.

As regards the question of ventilation, it seems likely that the partial vacuum may be dispensed with, in which case the lower end of the socket might be ventilated in the usual way. As regards the close-fitting metal socket, which in the nature of things allows no ventilation of the skin, it is to be remarked that this is made of thin metal and is suspended inside the metal thigh-piece, which is itself freely perforated. There is thus an air space all round it with free circulation.

Figs 2 and 3 show how firm is the hold of the socket on the stump.

As far as I know, this method has not been tried in artificial arms, but there seems no reason to doubt that it might be adaptable to certain cases of amputation above the elbow.

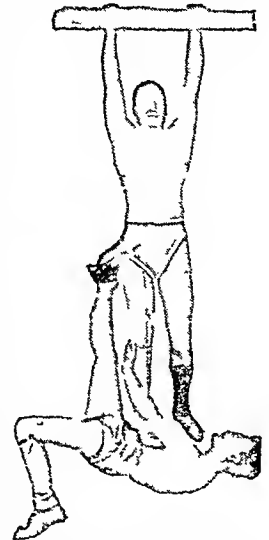


FIG 3—Shows the strength of the adhesion between stump and socket. The whole of the lower man's weight is borne by the artificial limb.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

INTESTINAL OBSTRUCTION DUE TO GALL STONES

In my comparatively limited experience I have seen several cases of this kind. One I operated upon in 1914. The patient was an old man, aged 78. He made a good recovery. The case is fully recorded in the *Liverpool Medico-Chirurgical Journal* of 1915. The calculus weighed 418 grains and measured 2 inches in length and $1\frac{1}{2}$ in breadth. The circumference measurements were $5\frac{1}{2}$ and 4 inches. The specimen is in the Royal College of Surgeons Museum in London.

Southport

FRANCIS J. BALDON, M.B.

STRICTURE OF THE VAGINA DELIVERY BY CAESAREAN SECTION

In May, 1925, Dr. Minett asked me to see a case for her at the Tsung Yuen Hospital.

The patient, aged 36, was pregnant for the second time. She came into hospital because her first labour, thirteen years earlier, had been difficult. She was delivered in a Chinese village; no instruments were used, apparently. The child was full term and was dead.

The external pelvic measurements were: interspinous 9 in., intercrural 10 in., external conjugate $7\frac{1}{2}$ in. At the time she was about eight and a half months pregnant. There was a very rigid stricture admitting only the tip of one finger, situated at the junction of the middle and lower thirds of the vagina. It appeared to have resulted from trauma during the previous confinement, but no details were available. The patient was told to return in a month for further examination.

When she next presented herself it was decided to perform Caesarean section shortly before the estimated date of full term for the following reasons: (1) Any attempt to incise or dilate the stricture would inevitably lead to extensive laceration during the delivery of the head. (2) The patient had no living children, and had not been pregnant for thirteen years, and further there was a great probability of the pelvis being contracted, although no internal measurements could be taken owing to the stricture. The child was alive and healthy.

The external measurements of Chinese women appear to be smaller than those of European women, the average of five patients who delivered themselves is as follows: Interspinous $9\frac{1}{2}$ in., intercrural $10\frac{1}{2}$ in., external conjugate $7\frac{1}{2}$ in.

I wish to thank Dr. Minett for having asked me to see, and treat, the case, and for her kindness in superintending all the arrangements for the operation.

R. E. TOTTEHAM, M.D., F.R.C.P.I.,
Professor of Midwifery, University of Hong Kong.

"NEURASTHENIC" NEURALGIA

The following case is worthy of being placed on record as it demonstrates the importance of a routine x-ray examination in all cases of intractable neuralgia.

Mr. D., a well-developed man, aged 49, consulted me with regard to a 'new wisdom tooth'. He also complained of neuralgia which had attacked him frequently during the last seven years. He said that about six years previously his doctor commenced medicinal treatment for the neuralgia. As there was no improvement at the end of the month the doctor advised the removal of all his teeth, although they appeared fairly good. This drastic measure gave no relief, and finally the patient was described as neurasthenic and apparently abandoned.

Examination showed a healthy edentulous mouth except for a small mass of enamel near the middle line which I diagnosed as an unerupted supernumerary central incisor. Under a local anæsthetic the gum was reflected and a portion of the external alveolar plate removed, exposing deep in the alveolus a very large perfectly developed canine which I removed. The appearance of the periodontal membrane suggested hyperæmia, otherwise the tooth was healthy.

In reply to questions the patient stated that as far as he was aware there had been no abnormality in his dentition. Three months later he returned for new dentures and then volunteered the information that since the removal of his wisdom tooth his neuralgia had completely disappeared.

It would appear that an x-ray examination would have saved the doctor considerable trouble and the patient much suffering.

Lower Bebbington, Cheshire.

J. P. FLYNN, L.D.S.

FATAL CASE OF GASTRIC TETANY

In a recent number of *Surgery, Gynecology and Obstetrics*, vol. 41, No. 5, a case of gastric tetany was reported, the pathological condition being indefinite. The following case presents the usual clinical and pathological picture, the obstruction was due to a chronic ulcer of the pylorus.

A man, aged 44, had had a history of vomiting, epigastric pain, and flatulence for twelve months. Six months previously he was said to have had an operation on the stomach, no relief of the symptoms followed, and the patient gradually became worse. He had lost 5 st in weight in the course of the last year, and during the week prior to admission he vomited all food taken. No previous account of tetany was elicited.

On examination the patient was found to be emaciated and obviously distressed. He was vomiting brownish fluid at intervals, and there was epigastric tenderness. On the next day he became collapsed after a prolonged spell of vomiting, and was delirious during the afternoon. The following day a carpopedal spasm was present, also "main d'accoucheur," clamps in legs, and twitchings of the facial muscles.

At the operation a large gastric ulcer was found on the lesser curvature, encroaching upon the pylorus, and posterior gastro-enterostomy was performed. The tetany was relieved by the operation. The patient's condition improved, and the vomiting was much diminished. Later on the vomiting returned, the patient gradually became weaker, acute dilatation of the stomach set in on the twelfth day, and death followed twelve hours later.

The necropsy showed a large chronic gastric ulcer encroaching on the pylorus and causing stenosis.

I am indebted to Dr. A. D. Nelson, medical superintendent of Wanganui Hospital, for permission to publish this case.

Wanganui, New Zealand

R. F. AITKEN, M.B., Ch.B.

OPERATING TABLE RACHIALGIA

It is quite common, after abdominal operations, to hear patients complain of pain in the back, which, as often as not, we attribute to some inoperable peritoneal or intestinal reflex disturbance, but one cannot fail to be struck with the incidence of such pain following operations on gall bladder and kidney, in which, by the way, dorsal pain is a frequent symptom, this induces one to allow for some post-operative exacerbation caused by the necessary manipulation of the inflamed organ, but on close inquiry another factor arises—namely, the method whereby the Robson or renal position was required, and the duration.

There are three forms of table in common use: (1) in which the particular position is obtained by adjustment of segments of table, (2) elevation of part by rack with cross-bars, (3) an ordinary flat table on which sandbags are placed for a similar object.

I have had an extensive experience of the last mentioned, and am bound to state that it causes much less subsequent backache than the first, which I now rarely use except to procure the Trendelenburg position. I have never employed the second method, I looked on metal crossbars for such purpose as unhygienic, but I consider them essentially useful for operations on the cadaver.

This lesion is so common that I think it opportune to invite attention to its prevention, and beg of my surgeon who wishes to test the validity of the above statements to give credence in Robson position, without anaesthesia, a personal trial for ten minutes (by the watch), allowing, for obvious reasons, an interval of one month between the sciences.

It is almost unnecessary to repeat the verdict of surgeons engaged in the late war that the most important detail in prevention of operative shock is heat, and as electricity is now ubiquitous there is no person why such a particularly appropriate and ready method of elevation should not be applied to all operating tables, only a thin rubber-covered mattress is required to insulate. It makes a warm, cosy bed for the patient, who should always, in abdominal operations, have the limbs and thorax wrapped up in wool and a macintosh enveloping that, all secured in position by strong safety pins. The windows should then be opened so that patient and operator may have full advantage of fresh air. The operating theatre which does not receive its meed of sunlight is a microbe hunt.

JOHN O'CONNOR, K.B.E., M.D.

Reports of Societies.

OBSCURE PYREXIA IN CHILDHOOD

At a meeting of the Medical Society of London on November 8th, the President, Sir HENRY J. WARR, in the chair, Dr. ROBERT HUTCHINSON opened a discussion on obscure pyrexia in childhood.

Dr. Hutchinson stated that he classified the obscure pyrexias of childhood in three main groups: cases of acute fever lasting more than a week, cases of fever recurring in bouts, and cases of prolonged but slight fever continuing over a period often of years. In the first group a child was acutely ill with fever lasting for about a week or so, but without obvious physical signs, such a case was far too often labelled "influenza." Influenza, except during an epidemic, was rare in children, and if no complications occurred the fever did not last a week. In these cases of acute fever the enteric group of infections should be thought of first, the paratyphoid type seemed to be more common since the war, and in many cases in children classical signs, such as the enlarged spleen, the rash, and diarrhoea, might all be absent. Blood culture or agglutination reactions would quickly clear up the diagnosis, other diagnostic features included leucopenia and a relatively slow pulse. A frequent cause of obscure pyrexia in this group was an overlooked pneumonia—undetected because it was deep seated or at the extreme apex of the lung. Dr. Hutchinson emphasized the importance of very light percussion, and also drew attention to the increased respiration rate and to the occurrence of the "mottled" type of breathing in these cases. The next important cause of fever without physical signs was infection with the *Bacillus coli* group, especially the condition of *B. coli* pelitis. Cultural examination of the urine gave proof of this, though in the early stages the urine might appear normal to the unaided eye. A high swinging temperature with little constitutional disturbance, a reluctance to being handled, and the microscopic discovery of pus cells and bacilli in the urine, would enable a diagnosis to be made. The therapeutic test of administering alkalis was also very valuable. Cases of so-called "milder septicaemia," where the source of infection was not discoverable, were very rare in children, and signs of profound constitutional disturbance were usually to be found. Of the minor troubles which might produce an acute fever, Dr. Hutchinson mentioned acute otitis media, where the child complained of little earache and where the drum was difficult to see, teething, which was a common sort of serpegant diagnosis but which appeared to be a genuine cause of fever in two cases he had seen, and constipation. Among the rarer causes mention was made of acute leukaemia, where anaemia, the presence of enlarged glands and spleen, and a blood count soon enabled a diagnosis to be made, and lastly, acute tuberculous infection, which might cause fever long before there were any physical signs present. In this connection the importance of pyrexia, a very rapid pulse, and possibly the presence of choroidal tubercles, were mentioned. The speaker insisted on the difficulty of finally excluding tuberculosis in a case of this sort, and also on the importance of endeavouring to make a diagnosis, since the prognosis of this variety of tuberculous infection was so very bad. The second group of cases with recurrent bouts of fever were commonly due to an "alimentary" origin, called "food fever" by Estree Smith. The liver appeared to be the organ at fault, and it had been suggested that this organ accumulated imperfectly metabolized material which at intervals was suddenly utilized and burnt up, causing the pyrexia. These cases were very similar to those of cyclic vomiting, and vomiting and pyrexial attacks might alternate. Milk, eggs, and cream must be cut down, and mercury and rhubarb used as aperients. Another cause of the recurrent type was a latent source of sepsis, especially in the tonsils, where the tonsillar glands were nearly always enlarged. Chronic *Bacillus coli* infection, especially in older children and in girls, was a not uncommon cause, and the urine might be normal between the attacks. In the

colitis had again to be considered, but was not a common cause of this type of fever. The third group of prolonged slight fever, usually at night, often lasting for months and even years, was frequently due to tonsillar infection. Other causes included mucous colitis, when the faeces would indicate the diagnosis. Latent rheumatism was probably very rare, if it really existed without giving some signs or symptoms. The question of tuberculosis had again to be considered, but it was exceptional for a case of this type to develop obvious tuberculosis infection at a later date. Instability of the heat-regulating mechanism seemed to be a cause occurring occasionally after such a disease as pneumonia, but "neuro-mimetic" pyrexia never occurred in children, and even in adults Dr Hutchinson believed it was always fraudulent.

Dr WILFRED PEARSON agreed as to the importance of pyelitis and of aurial infection as commonly missed causes of fever. He referred to several of the problems in the alimentary group of cases, pointing out that insufficient fluid, ingestion of excess of sodium chloride or of certain proteins might give rise to pyrexia, but nothing appeared to be known of the mechanism of this. With regard to the persistent slight fever cases, he insisted on the fact that up to the age of 10 the normal temperature for the child in the morning was 99° and in the evening 99.5°, and slight variations due to such causes as excitement were not uncommon. Similarly certain families appeared to have a raised normal temperature. Dr Pearson discussed the difficulty of diagnosing tuberculosis in which a steady loss of weight was very frequent, from "mucous" disease and chronic infection of the nose or throat.

Professor LANGEHEIM agreed as to the frequency with which *Bacillus coli* infections were missed, but he thought the constitutional disturbance more serious than indicated by Dr Hutchinson. Otitis media was a real danger, and might even be overlooked when the drum was well seen. He agreed that teething might be a cause, as also roundworms. The alimentary group comprised constipation, colitis, cyclical vomiting without any vomiting, and certain food idiosyncrasies. He thought latent rheumatism did exist and accounted for a certain number of cases of mitral stenosis in later life. Latent tuberculosis appeared also to be a cause of many fevers, but fortunately this latent type was a benign disease. Easily diagnosed, obvious tuberculosis was usually fatal in young children.

Dr WALTER BROADBENT referred to certain cases of streptococcal sore throat in children, due, he thought, to the presence of manhole ventilators near the children's homes. He also confirmed Dr Hutchinson's views as to teething as a possible cause, and recommended fanning of the gums as a more frequent practice.

Mr CECIL ROWTHREE described the frequent occurrence of enlarged mesenteric glands indicating in old tuberculous infection, and suggested that in x-ray of the abdomen, by showing early flocculent shadows, might help the diagnosis of some obscure fevers.

Dr G. D. S. WARD described a case diagnosed as enteric fever with enlarged spleen, prolonged pyrexia, and a "typical" tongue, all these signs disappeared after a round-worm was vomited. In a second case diagnosed as tuberculous meningitis all the symptoms, including pyrexia, disappeared after the lid of a doll's teapot was vomited.

Dr CASTELLANI described "parenteric" infection as a possible cause of these fevers, and emphasized that intestinal parasites were also not infrequently responsible for a pyrexia of obscure origin. Dr F. G. CHANDLER referred to tuberculosis of the mediastinal glands. Dr GORDON GOODHART and the PRESIDENT both mentioned the frequent occurrence of *Bacillus coli* in the urine apart from pyrexia.

Dr ROBERT HUTCHINSON briefly replied to many of the points raised. Some of the persistent slight febrile cases were best dealt with by ignoring them. He thought the connexion of bad drums and sore throats was certainly established, although a little difficult to understand, and he emphasized what Professor Langmead had said, that fortunately latent tuberculosis as a cause of obscure pyrexia had in general a good prognosis.

PRE-CANCEROUS STATES

A discussion on this subject took place at a meeting of the Section of Surgery of the Royal Society of Medicine, held on November 4th, with the President, Sir LENTHALL CHEATLE, in the chair.

The discussion was opened by Dr J. H. SEQUEIRA, whose remarks were illustrated by a very fine series of lantern slides. He dealt with the pre-cancerous conditions of the skin. These he divided into (1) congenital and (2) acquired forms, they were characterized by atrophy of the skin, pigmentation, and hyperkeratosis. With reference to the duration of such conditions the speaker recalled that Sir Frederick Tieses used to tell his students that every patient with leucoplakia of the tongue would develop cancer if only he lived long enough. The pre-cancerous conditions of the skin described and illustrated by photographs were:

1 *Tylosis*, a familial condition of hyperkeratosis, which in some members of the family became cancerous.

2 *Xeroderma pigmentosum*, a congenital and familial state of extreme sensitiveness to sunlight, in which the exposed skin showed excessive freckling, telangiectases, and warts, epithelioma might supervene even in childhood. A similar condition might occur in adults. A detailed account was given of a farm labourer in Essex, who came every summer for hospital treatment on account of the development of very numerous warts upon his face, some of these had been excised and had been found on microscopic section to be epitheliomatous. These tumours were clinically not very malignant except at mucocutaneous junctions.

3 An affection consisting of very numerous warts on the backs of the hands in persons exposed to sunlight, especially common in Australia.

4 *Sailor's cancer* (*Seemannshaut* of Umm) in sailors and other outdoor workers.

5 *X-ray dermatitis* showing pigmentation, atrophy, and hyperkeratosis. This might follow a single burn but was more often the result of many short exposures. Formerly about 2 per cent of cases of lupus became epitheliomatous, after the introduction of x-ray treatment the percentage was much increased, many such cases had received 200 to 400 exposures. Photographs were shown of a case of cancer of the wrist in a taxicab driver following x-ray treatment of lupus of the forearm, in which the situation of the growth seemed to depend upon friction against the side of the cab. A case of cancer following non-irradiated lupus was shown also.

6 Workmen exposed to tar and crude anthracene likewise showed pigmentation and atrophy of the skin, warts, and epithelioma, the men treated such warts with caustic soda.

7 *Arsenic*—The keratoses of the palms and soles were characteristic, and resembled the condition in tylosis, there was a peculiar "rindop" pigmentation. A patient whose case was described had taken arsenic for nine months in the year for thirty-five years. Epithelioma occurred also in men making arsenical sheep dip, whether the absorption of arsenic in them took place through the skin, alimentary, or respiratory tract was not clear.

Among the cases illustrated were (1) An epithelioma in a woman of 85 under a wedding ring worn for fifty years. (2) An epithelioma of the thumb in a baker, the site of the growth had come into frequent contact with a hot poker, though no actual burn had occurred. The similarity to the kangri cancer of Kashmir was pointed out. (3) Multiple basal celled carcinoma (rodent ulcer). The suggestion was made that such cases were more common than was supposed, and might be mistaken for psoriasis. (4) Cancer of the tongue in a shoemaker at the point of contact with tools which the man held between his lips, there was syphilitic glossitis.

Sir LENTHALL CHEATLE referred to two terms (1) *desquamitate*, and (2) *dysgenetic epithelial hyperplasia*, the latter included the malignant conditions. A large series of sections of tumours of the breast illustrating these states was shown. When a malignant growth was produced by application of tar to the skin of a mouse, or man, four successive stages could be distinguished (1) *desquamative hypertrophy* with lymphocytic infiltration of dermis, (2) a *wart*, (3) growth downward, but not beyond normal limits, (4) invasion of deeper tissues. Now Dr J. A. Murray had shown that if cells from Stage 3 be transplanted to another part of the same animal they continued to grow and formed metastases—that was to say, they were malignant—whereas cells transplanted similarly from Stage 2 either atrophied or formed non-malignant cysts.

Hence cells in Stage 3 were potentially malignant, although not yet invading other tissues. The same four stages could be distinguished in tumours of the breast, the first two of them were to be classed as pre-malignant.

Mr SAMPSON HANDLEY was not in favour of a distinction between pre-malignant and pre-cancerous states, since both might precede cancer. He emphasized the importance of changes in the connective tissue. Epithelium was nourished from connective tissue, and hence might be said to be an obligatory parasite upon it. The normal desquamation of the skin illustrated the death of epithelium when removed sufficiently from connective tissue. Carcinoma followed long-continued changes in the connective tissue. Victor Bonney had demonstrated accumulation of lymphocytes and plasma cells in the dermis in pre-cancerous conditions. A section was shown of gastric carcinoma cells attaching themselves to the peritoneal connective tissue in the region of the umbilicus. Cancer nodules in lymphatics, when of sufficient size showed central necrosis. Around a lupus nodule there was lymphangitis, leading to a blocking of lymphatics, probably thus caused an auto-intoxication which was of importance in the production of cancer. Deviation of the nipple in chronic mastitis was an important sign of malignant change. Mr Handley described a case of cyst adenoma of the breast in which an innocent tumour formed a large protruding fungating mass.

Mr ZACHARY COPE dealt with the pre-cancerous conditions of the alimentary tract, which he classified as follows:

1 *Of the mouth* (a) Leucoplakia. He described a case of cancer in a leucoplakial tongue, which he removed. There was no recurrence, but later a second cancer appeared in a patch of leucoplakia upon the gum. (b) Any papilloma of tongue or cheek. (c) Dental ulcer.

2 *Of the stomach*. The relation between gastric ulcer and gastric cancer had been a subject of controversy since 1840. In 1900 Osler and McCrue collected 150 cases of gastric cancer, in only 4 of them was there any history of gastric ulcer. Some later American authors found a history of gastric ulcer in 71 per cent of cases of gastric cancer, but in a later paper by them this percentage was reduced to 7.9. One hundred cases of gastric cancer analysed recently by the Manchester Cancer Committee gave very little evidence of association with ulcer. The speaker's own impression was that the percentage in question was nearer 5 than 70. If every case of gastric ulcer which perforated—in which there was therefore no doubt that ulceration had occurred—were followed up for five years, there would soon be decisive evidence on this question.

3 *Of the small intestine* papilloma.

4 *Of the colon*. Many cases of multiple papilloma were pre-cancerous. There was no evidence that dysenteric ulceration, or diverticulitis, led to cancer. He did not consider that there was enough evidence upon the alleged relation of intestinal stasis to cancer, although one could not deny that any toxæmia might possibly be of importance in this respect.

In the course of the discussion which followed, Dr SNAY described various forms of chronic inflammation, and made a plea for the establishment of a national pathological museum. Dr H. W. LIVINGSTONE compared the chemical state of acutely and chronically inflamed tissues and said that the latter resembled Dr Gye's culture medium. Mr J. E. ADAMS referred to 135 cases of chronic mastitis, in only 4 of which cancer of the breast was known to have developed. Mr LOCKHART-MUMMERY considered that papilloma were the preceding condition in 80 to 90 per cent of cases of cancer of the large intestine, and were the source of the multiple cancers, sometimes three in number, of this part of the intestine. He had known an adenocarcinoma of the colon to occur in a patient eighteen years after excision of the rectum for cancer. He agreed with Mr Zachary Cope that ulceration of the colon was not a precursor of cancer.

ANAESTHETICS IN CHILDREN

At a meeting of the Anaesthetics Section of the Royal Society of Medicine held on November 6th, with the President Dr F. E. SHIPWAY, in the chair, Dr HAROLD SINGTON (London) read a paper on anaesthetics in children.

Dr Sington began by saying that it could not be sufficiently emphasized that a child was not a diminutive adult. The central nervous system of the child was much less stable than that of the adult, and was receptive of impressions which might persist throughout later life. It was

necessary, therefore, to endeavour to gain the patient's confidence beforehand, and to take great pains during induction to avoid as far as possible unpleasant impressions and to shorten the period of induction to a minimum. Preparatory to operation, atropine sulphate should be given by the mouth, and not hypodermically. The dosage employed at the Great Ormond Street Hospital was: Up to 6 months 1/300 grain, from 6 to 12 months 1/200 grain, from 1 to 2 years 1/150 grain, and from 3 to 6 years 1/75 grain, in solution in drachm doses, given one hour before operation. Over 6 years two doses of 1/100 grain were given two hours and one hour before operation respectively. Purging and enemata were dispensed with, starvation avoided, and glucose administered for several hours beforehand. Each case had to be treated on its merits, but there should never be any hurry in the matter of induction, and the child should never be deceived. Attempts should be made to explain things to the child, but once he had started to breathe the anaesthetic the induction period should be shortened as much as possible compatible with safety. Ethyl chloride and ether was the anaesthetic of choice in nearly every case, and was perfectly safe if there was a free airway. In dental cases ethyl chloride was the ideal anaesthetic for children. In 10,000 cases he had met with no fatalities, and only in 2 cases had there been cessation of breathing, both patients showed evidence of asphyxia, but recovered and were able to go home two hours later. When ether followed ethyl chloride his procedure was to give essence of orange in alcohol as a preliminary to spraying on the ethyl chloride, 3 to 5 c.c.m. In about three breaths the child was unconscious, and ether could be given in rapidly increasing doses. Ether was so far the best anaesthetic for children, and the only exceptions to this rule were when the actual cautery was to be used and in certain special cases mentioned later. Induction by chloroform and mixtures containing it was dangerous. Gas and oxygen with a minimum of ether vapour was the anaesthetic of choice for operations for congenital hypertrophic pyloric obstruction, acute intussusception, and in cases where there was prior starvation and much shock. Lastly, Dr Sington pointed out certain helps to the comfort of the child—for example, in the case of the dissection of tonsils. Anaesthesia should be deep, for then the tissues became lax, haemorrhage was slight and easily controlled. The throat should be kept free of blood, and there must be complete co-operation between the anaesthetist and the surgeon. The mouth should be swabbed out with normal saline solution at the end of the operation to avoid any blood sticking to the tongue. Recovery was made quicker if sedatives such as potassium bromide gr. xx and aspidium gr. x were given per rectum when the patient got back to bed.

Dr JOSEPH BIRT (London) said that he had given gas and oxygen in some 250 cases, including many of pyloric stenosis. There was little shock if cyanosis was avoided. Great vigilance on the part of the anaesthetist was necessary for the nice adjustment of the percentage of oxygen given. Breath holding, which occurred at times, could be combated by rubbing the abdomen and giving more oxygen reinforced with a small amount of ether. The ether vapour should be obtained by passing the gas over, and not through, the ether. The gas should be made to emerge close to the mouth, and not at the far end of the bag. The ether was necessary, especially at the initial incision, when closing the peritoneum, and at the final suturing of the skin. A narcotic should be given at the end of the operation. As some free pieces did not fit well, he had found it useful to insert a wet pad of Gamgee tissue under the mask.

Mr THURSTON HICKINS (London), speaking as a surgeon, said that experience was very necessary in the anaesthesia of children, and there must be understanding between surgeon and anaesthetist. He agreed with all that Dr Sington had said. The abolition of chloroform as an anaesthetic for children was a distinct advance. Ether was the anaesthetic of choice, with gas and oxygen as an adjunct in the type of cases mentioned. He asked whether there were any lines on which improvements could be made to interpose further buffers against psychic shock. A non-toxic anaesthetic was needed, and improved methods

of administration in certain cases. Several operations could be made more comfortable, such as those on the brain, neck, mouth, larynx, chest (especially for empyema), and he asked whether the solution could not be found in the employment of rectal anaesthesia.

Mr A. T. PIRTS (London), a dental surgeon, said that he found ethyl chloride the best anaesthetic, as it produced a quiet, deep anaesthesia lasting from two to three minutes, enabling the surgeon to remove milk teeth leisurely and carefully, which called for more skill and care than was usually thought necessary. Gas did not afford the surgeon time to extract with care, and often necessitated second visits to the surgery—visits which were unpleasant to the child and an expense to the parent, not to mention a disturbance in the domestic arrangements of the mother in the poorer class patients. The second visit, consequently, was often avoided, with possible ill effects from caries on the permanent dentition. In country districts where skilled anaesthetists were rare he thought it better that ether should be given rather than indifferently administered gas or ethyl chloride.

The PRESIDENT agreed that the fright caused by a badly administered anaesthetic might easily lead to the development of night terrors. Ethyl chloride was the ideal anaesthetic, especially if given by the open or semi-open method as these allowed of adequate supplies of air. He believed ethylene to be a better anaesthetic than gas and oxygen despite its inflammability and unpleasant smell and it might turn out to be the ideal anaesthetic for children. Chloroform was certainly contraindicated, and he wished to draw the attention of the meeting to three specimens of fatty liver removed from patients who had died after the administration of this drug or a mixture containing it.

Dr W. J. MCCARDIE (Birmingham) joined issue with the opener on the wholesale condemnation of chloroform, which he considered still had a place in the anaesthetist's armoury for such cases as needed operations on the eye, brain, or mastoid. Ethyl chloride had its dangers, but was safe if given on an Ormsby mask with equal quantities of ether. Instead of inserting Gargec tissue under a face-piece he used the old-fashioned leather mask. He asked what was the position of the registered but unqualified dentist in the matter of giving ethyl chloride, as he had not had any training in the administration of the drug. In view of the cost of ethyl chloride it would be well to know how much was needed for its administration by the open method. He was quite prepared to find that ethylene might be of use in children.

Dr I. W. MACILL (London) asked why intratracheal anaesthesia was not more often used in children. He had employed the method in babies a few weeks old with satisfactory results, and thought it without danger. He used a No. 9 double French catheter in these cases.

Dr DIETRICHSON BEAUM (London) was interested to hear that chloroform was out of fashion. In her early days she had administered many thousand anaesthetics for operations on the tonsils by the closed ether method with a Clover inhaler without ill effects, despite the fact that no atropine was given beforehand.

Dr HUGH PHILLIPS (London) questioned whether tact alone could deal with a refractory child, if so he would be pleased to hear the receipt. He preferred shock tactics in these cases—to knock out the patient as quickly as possible. He also thought that atropine did not act as well when given by the mouth as when given hypodermically. The danger of faint from the giving of a hypodermic injection reflected on the training of a nurse. He knew from personal experience that many nurses did not know how to give a hypodermic injection properly and painlessly. He thought the best method of anaesthetizing in special cases was to use gas and oxygen with local anaesthesia. In rectal cases over 3 years of age he recommended that 1/10 grain morphine should be given with the atropine to prevent after-pain. He doubted whether chloroform could be placed entirely on the shelf, it was useful in cases of bronchoscopy and in operations for squint. He believed in inducing with ether and adding a little chloroform later, this was also useful in tonsillectomy cases. In his experience rectal ether was a failure in children, as the oil ether was not retained long enough to produce anaesthesia.

Dr H. W. FATHERSTONE (Birmingham) said that even ethyl chloride was not always sufficient for a dental operation. He had recently reapplied the mask in such a case with the addition of 2 c.c.m. of ethyl chloride. The patient passed into a deep anaesthesia lasting five or six minutes. He wished to know why such a small addition of anaesthetic should have produced such a marked result. He had used rectal oil-ether with satisfactory results in a girl of 12 suffering from exophthalmic goitre.

Dr Z. MENNELL (London) said he intended to try the administration of atropine by the mouth. He asked what depth of anaesthesia and how much ethyl chloride should be given in any one case. He named the advocates of chloroform of the danger of using this drug in decompression cases where there was much tension, a fatality was bound to occur. He believed that with skilled operators, not necessarily surgeons, an anaesthetic was quite unnecessary for circumcising children under 14 days of age.

Dr R. J. CRAVER (London) endorsed the opener's remarks with regard to ethyl chloride. He inquired whether its use was prohibited in certain hospitals. He used it for dental operations in children by the open method and found vomiting thereby diminished. Nasal gas he found quite satisfactory for most children, and approved of endotracheal methods. He thought ether and oxygen preferable to open ether for children.

In reply, Dr SINGH said he had a horror of chloroform for children. He preferred closed to open ethyl chloride for dental extractions, as it gave a longer anaesthesia, but a free airway was essential. He believed that ether could be used satisfactorily for ophthalmic operations. He had no experience of endotracheal methods in children. Salvation at the beginning of an operation was due to the atropine not having been given sufficiently early, in such cases, if the mouth was well swabbed out, salvation did not occur. He understood that the average cost of an operation at the Great Ormond Street Hospital was 1s 9d. He was not able to say exactly how much ethyl chloride was needed for each case as this depended on the case. The important thing was not how much of the drug was poured out, but how much was taken in by the patient and this could only be regulated by careful observation of the clinical signs of anaesthesia.

THE PREVENTION OF SCHOOL COLDS

At a meeting of the Medical Officers of Schools Association on November 6th, with Dr L. R. LEFEBVRE (Halesbury) presiding, a discussion took place on the prophylaxis of common colds in schools.

Dr A. I. SIMER (Rugby) said that the prevention of these affections, which had such a hindering effect upon school work, and possibly such a damaging effect upon the future health of the individual, resolved itself into keeping the children out of the way of infection and raising their immunity. An infection was usually brought into school at the beginning of term by children who had left home with a cold or whose resistance had been lowered by the late hours and festivities and outings of the last week of the holidays. An appeal might be made on this point to parents, but to be of any use it must be addressed to them individually and periodically. Attention must be paid to the cleaning and ventilation of the schoolrooms, and fires should be lighted a few days before the pupils were due to return. It was impracticable to provide in a school a separate dormitory for each boy, and such a separation would be inadvisable on social and moral grounds, but there might very well be fewer beds in each dormitory and a stricter rule in the matter of spacing. More attention should be paid to tidiness both of place and person. His impression was that girls' schools suffered less from influenza and similar epidemics than boys', and this he attributed to the greater care taken in girls' schools in the matter of tidiness and the supervision of living quarters. The provision of adequate footwear was also very important. With regard to the raising of immunity, in some individuals immunity was naturally high, and even before puberty they passed through epidemics unscathed, on the other hand he had known two well marked attacks of influenza quite apart from relapses, to occur in the same

individual within three months. So far there had been no combined effort on the part of medical officers of schools to tackle prophylactic vaccination. He urged that in many schools as possible should join in one concerted experiment. It would be well if those who agreed to such an experiment would send cultures from the nasopharynx or throat or specimens of sputum to one laboratory in order to have a vaccine of local origin prepared, leaving it to the pathologist to use and incorporate as many strains as his experience led him to consider necessary. He hoped that some such work would be undertaken under the supervision of a committee of the association.

Dr G E FURD (Christ's Hospital) said that it would be of great value if in public schools there could be enforced a system of vaccination with either an influenza or mixed vaccine twice a year, but he was afraid there would be practical difficulties. He had carried out two mass inoculations at Christ's Hospital. The first was in the winter of 1918, when he inoculated 633 boys—about 73 per cent of the school—with seven or eight strains of the Pfeiffer's bacillus which was grown from an epidemic which was then going on in St George's Hospital. At the time of the vaccination there was no case of influenza in the school. He was told that he must expect about 10 per cent of the cases to react fairly violently, he therefore arranged for the taking of temperatures systematically for a few days round about the period of the vaccination, all games were stopped, and on complaint of headache or anything else a boy was sent for inspection to the infirmary. There were 186 local reactions (swelling in the arm), 35 focal reactions (sore throat, resuscitation of an old ear discharge, or acute cold), and one general reaction (fever and malaise). The cases of focal and general reaction were admitted to hospital, and all recovered in a few days. There were no cases of influenza following in the school, though there were several cases among unvaccinated members of the school staff living in the precincts. At the second mass inoculation, in 1920, when 762 boys were inoculated, the results were even better with regard to reactions, and again no cases of influenza occurred in the school. The immunity appeared to be brief, in the term following the one in which the first inoculation was made there was an epidemic of 300 cases of influenza or pyrexia of unknown origin, about six times the normal term average, though none of them were serious. It appeared also that if something like 70 per cent of a school population were protected in this way, those protected sufficed to protect the unvaccinated. It was possible also that a wider non specific immunity was given even by a specific vaccine such as the one used in these instances. The difficulty of these mass inoculations was greater than in the case of inoculation against typhoid or dysentery by reason of the fact that whereas in these latter diseases perhaps none of the inoculated would be carriers, in the case of influenza or pyrexia of unknown origin the carriers might number 30 per cent of the inoculated. It was also rather a big undertaking to restrict the liberty of the school in the manner necessary for carrying out of the inoculations. There was another method by which the resistance of the individual could be assisted—namely, by nasal drill and definite instruction in personal hygiene. Before he introduced nasal drill there was an average of 80 cases a term of pyrexia of unknown origin or similar conditions, since the introduction of the drill the average had fallen to 50. If these matters of personal hygiene were properly attended to a great deal in the way of prevention might be done. He would not suggest that they should supersede experiments in vaccination, but he saw many practical difficulties in getting concerted action for such experiments.

Dr G L BURNING (Tonbridge) said that in his school regular inoculations had been carried out for five or six years. In the first year the results were sensational. Over 80 per cent of the boys were inoculated, and the results were most evident even to the superficial observer. At school chapel, where previously the preacher, especially if his sermon was dull, could scarcely hear himself speak, there was scarcely a cough to be heard. In subsequent years the proportion of those inoculated was not quite so high, but he did not think it had ever fallen below 65 per cent. The

vaccine used against colds was that prepared under the instructions of Sir Almroth Wright, and issued by Parke, Davis and Co. Not very large doses had been used the first dose being 0.2 c.c., followed by 0.4 to 0.6 according to the size of the boy. In order not to discourage inoculation it was thought better to underdose rather than overdose, and good results had been forthcoming from doses however small. It was essential that the inoculation should be carried out within the first few days of the term. He agreed that the carelessness of boys with regard to hygiene was a contributory cause of colds, and inadequate footwear—much of the leather of the present day being more like blotting paper—must also be held responsible. A few unhealthy throats in a school sufficed to start an epidemic.

Dr S P HUGGINS (Wycombe Abbey) said that he had found some good from the Wright vaccine, but there was difficulty with parents in carrying out the system as thoroughly as might be wished. In one inoculation, out of 117 girls only six got a temperature above normal, and only one of the six had a really bad cold in the head and some bronchial catarrh. The majority of children showed a very slight reaction after the first dose, and none after the second and third. He would like to know whether it was desirable to give a third dose after a rather sharp reaction following the second. Games were not stopped during the inoculating period, except for those who showed temperatures. He had always stuck to the old formula for antiscorbutic vaccine, in the new formula the staphylococcus had been dropped, but he thought the staphylococcus very important, it existed in very many of the nasal discharges. The result of the inoculation was to make the school all round much more free from colds and minor sickness. The best time to start inoculations was at the beginning of the Michaelmas term. If the Lent term were chosen one was liable to begin at a time when there were already a good many children in the school suffering from colds, and if care were not taken severe reactions might be set up.

Dr MISS DOWNING hoped that if any committee was appointed it would consider the case of day schools as well as boarding schools. In girls' schools there was less influenza than in boys', partly because girls were rather more cleanly, and their clothing also was more washable. The difference in cleanliness between boys and girls appeared to arise after they began to go to school, which rather suggested that schools had in this respect a corrupting influence upon boys.

Dr LEWIS NASH thought that any evidence with regard to the value of inoculations should be collected and collated very carefully by a committee, which should submit recommendations to a general meeting of the association. It was not wise to rush this matter. Any step must be taken carefully on account of public prejudice. On the general question of the prevention of colds, he believed that cold and wet feet had a great deal to do with causation. If school floors could be warmed so that children would no longer have to sit with cold feet at lessons much good might be done. In Lancashire the people were extremely immune from colds although they worked in factories in a humid atmosphere, and this might be due to the fact, largely, that they wore clogs and thus kept their feet warm from morning until night.

Dr JAMES KIRK also urged the necessity for the careful collection of evidence before a definite line was taken by the association on the subject of prophylaxis. At present there appeared to be no way of standardizing these administrations of vaccine. Some children did well with one injection, others required three.

Dr OCTAVIA LEWIS urged the importance of nasal drill. In one of the schools she had visited in the North of England the headmistress insisted on the girls having a clean handkerchief and a pocket in which to keep it, and that school, although situated in a foggy and unhealthy locality, had practically no loss of time from colds or other epidemics.

Dr S H A LAMPERT (Harrow) said that he was not at all clear that the difference in the incidence of colds as between boys and girls was a matter of personal cleanliness. In the preparatory schools the incidence was about the same for both sexes. It might be that in boys' schools the pupils

were accustomed to go to football and other sports in damp weather without enough attention being paid to boots and overcoats.

Dr J LAMBERT (Wellington College) said that he had had a good deal of experience in individual cases with the St Mary's vaccine. He estimated that from 70 to 80 per cent of those inoculated remained free from colds for from three to nine months, in some cases, however, the protection was certainly very limited. Inoculation was rather a "shot in the air," but it was worth trying. He had rarely found a bad reaction follow the use of this vaccine.

The meeting agreed to recommend the council of the association to appoint a subcommittee to investigate the best methods of preventing colds and infectious eruptions in schools.

SIGNIFICANCE OF OPTIC NEURITIS

A MEETING of the Royal Medico-Chirurgical Society of Glasgow was held on October 23rd, when the President, Professor ARCHIBALD YOUNG, in the chair, opened a discussion on optic neuritis and its significance.

Professor Young referred to the varying applications of the term "optic neuritis," and asked a number of questions on which he hoped the discussion might throw some light. What did the ophthalmologist really mean by optic neuritis? How was one type differentiated from another? Could the type due directly or indirectly to intracranial tumour be recognized with certainty from other conditions of the optic nerve? What was papilloedema and in what special types of intracranial tumour was it met with? How was papilloedema produced? Did ophthalmologists recognize in the anatomical relationship of the third ventricle to the optic tract any preponderating influence in the production of optic neuritis in cases of intracranial tumour? Could the ophthalmologist tell them, as surgeons, at what stage the condition had advanced so far that operative interference held out no hope of recovery of the nerve and the saving of some degree of vision? Such questions were of great importance from the point of view of the general physician, the neurologist, and the surgeon, and it would be valuable if, arising out of the discussion, a finer adjustment could be obtained regarding their views of the types, degrees, and stages of what was one of the most important signs in the diagnosis of intracranial conditions. Professor Young urged the importance of the early recognition of the presence of optic neuritis while the chances of saving vision were still reasonably good. He asked if it was possible in the very early stages to arrive with any degree of certainty at an authoritative distinction between the changes in the nerve resultant on a developing intracranial tumour and those which might be caused by other conditions, such as intracranial or extracranial suppuration, meningeal conditions, cardio-vascular disease, thrombosis, retrobulbar neuritis, injury in its different forms, tubercle, syphilis, or by any of the poisons which affected the optic nerve, such as lead, quinine, and arsenic.

Dr H WRIGHT THOMSON reviewed briefly the terms in common use in connexion with inflammation or congestion of the optic nerve, including retrobulbar optic neuritis, optic neuritis, papillitis, papilloedema or choked disc, neuroretinitis, and optic pseudo-neuritis. Having defined these terms, he divided optic neuritis as seen by the ophthalmoscope in the light of recent pathology into two classes: (1) A true neuritis—namely, an inflammation of the nerve head, to which the name "papillitis" was given. (2) Papilloedema, where the changes were due to oedema and histological evidence of inflammation was absent, or so slight as to be negligible. Considering next the mechanism producing papilloedema, he quoted Sir John Herbert Parsons's view that the predominant factor was increased intracranial pressure, and referred to the three common theories as to its production: (a) impediment to the return of lymph along the intracranial space of the nerve, (b) impediment to the venous return, and (c) arterial anæmia, leading to altered conditions of osmosis at the nerve head. Discussing the ophthalmoscopic picture, the speaker quoted De Schweinitz's modification of Marcus Gunn's description of the six stages in the development of papilloedema. While a true typical neuroretinitis was easily distinguishable from a true papilloedema, there were many cases in which it was

impossible to say whether the ophthalmoscopic picture was papilloedema or neuroretinitis. In cases which had been under observation for some time, the development of the fundal picture might establish the priority of the relative severity of the retinal and papillary changes, but unfortunately it was notable how frequently the discovery of the ocular condition directed attention to the more important primary lesions, such as intracranial tumour, or albuminuria. Finally, Dr Thomson referred to the extraordinary variation in the appearance of normal discs in different persons, and uttered a warning against the diagnosis of inflammation or oedema in the absence of any definite swelling or haemorrhages, especially if both fundi showed the same picture. He concluded by discussing the value of the commoner subjective symptoms, such as dimness of vision, variation in the field of vision, small scotomata, and peripheral restriction.

Dr A J BALLANTINE, discussing the part played by papilloedema in the diagnosis, prognosis, and treatment of medical and surgical cases, referred to some interesting figures obtained from the records of routine eye examination in (a) a general hospital and (b) an eye hospital. In 1,100 cases examined without selection in the wards of the general hospital, papilloedema was found in 5 per cent, intracranial tumour, renal disease, and tuberculous meningitis providing the vast majority of examples. Among 6,000 cases seen at the eye hospital, only 0.5 per cent showed papilloedema, and the majority belonged to two classes, renal neuroretinitis and acute retrobulbar neuritis. In private practice papilloedema of any form or degree apart from albuminuric neuroretinitis was extremely rare. In regard to the value of papilloedema as an aid to diagnosis, he had found that chronic degenerative types of renal disease provided the largest number of examples in the general hospital series. The ophthalmoscopic picture varied from a moderate degree of oedema, affecting equally the optic papilla and the general retina, to the more striking form in which all the details of the disc were obscured and parts of the retinal vessels buried by the extensively swollen papilla. In all cases, however, it was the rule to find haemorrhages, grey patches of exudate, and clusters of glistening spots, or the characteristic macular star. Occasionally a true choked disc was seen in such cases, and such a picture with severe headache and sickness might even in the presence of albuminuria and other evidence of kidney trouble, raise the question of cerebral tumour. Intracranial tumour came next in order of frequency, but few of these cases were followed for any length of time. In tuberculous meningitis (confirmed by necropsy or by the presence of choroidal tubercles), of which 11 examples were seen, the optic neuritis resembled the papilloedema of intracranial tumour rather than the optic neuritis of renal cases. Of a series of 61 cases of cerebro-spinal meningitis 5 showed optic neuritis, and in 5 cases of hemiplegia papilloedema was present. Dr Ballantine referred also to the presence of optic neuritis in encephalitis lethargica. In the eye hospital cases not a single example of choked disc or of intracranial tumour was found in over 6,000 cases. Papilloedema occurred most frequently as part of a neuroretinitis either frankly renal or arterio-sclerotic in type. Acute retrobulbar neuritis was surprisingly common, but differed from the classical description in that the cases presented a notable degree of papilloedema indistinguishable sometimes from that due to early cerebral tumour or from that of renal neuroretinitis. They resembled each other and the typical cases of acute retrobulbar neuritis in giving a history of rapid and profound loss of vision, sometimes associated with severe headache. The ophthalmoscopic picture showed a definite optic neuritis with oedema of the papilla either unilateral or bilateral. In all cases a tendency to recovery was manifest with usually a more profound central defect, especially for coloured vision. In one or two of such cases definite disease of the ethmoid or sphenoid sinuses was detected, and in the differential diagnosis a full investigation of such possible sources of infection was advisable. Referring to the question of trauma as a cause of optic neuritis, the speaker quoted two cases in which papilloedema occurred, with other evidence of injury of the base of the brain. This was attributed in the one case to oedema of the brain following concussion, and

such was the dread of catching the natural small-pox that the practice of inoculation continued to gain favour, and the Princess of Wales, having seen the operation successfully performed upon some charity children, decided to have the two young princesses inoculated. The operation was again successful, and this example of royalty did much to make the new practice fashionable. Results were not always satisfactory, however. Sometimes, for reasons not properly understood, the resulting attack, instead of being mild, was very severe and even fatal. There were 17 deaths among the first 900 cases inoculated, or about 2 per cent. Thirty years after inoculation was first introduced the Prince of Wales contracted small-pox in the natural way, and it was then decided to inoculate the other two royal children. About this time the College of Physicians issued the following declaration in favour of the practice:

"The College, having been informed that false reports concerning the success of inoculation in England have been published in foreign countries, think proper to declare their sentiments in the following manner:—namely, That the arguments which at the commencement of this practice were urged against it have been refuted by experience, that it is now held by the English in greater esteem and practised among them more extensively than ever it was before, and that the College thinks it to be highly salutary to the human race."

It was some ten years after this declaration that a new epoch in the history of inoculation was introduced through the success attending the practice of Mr. Daniel Sutton. Sutton at first surrounded his method with much mystery, and advertised that he possessed certain secret remedies which ensured the attack being always very mild. A clergyman friend, supposed to have been employed by Sutton, preached sermons extolling the success of Sutton's method and claiming that amongst 20,000 cases inoculated by Sutton and his assistants in three years there had not been one death which could fairly be attributed to the operation. Sutton was certainly very "successful" from the financial point of view, and soon made a fortune out of inoculation. But even allowing for his own and his friend's exaggeration, his results certainly were better than had previously been obtained, and his method became known as the "Suttonian." It is not certain to what this improved result was due. His chief departures from established usage were (1) to take his "matter" for inoculation very early in the life history of the pustule, even before the lesions had become pustular, and (2) to allow his patients to expose themselves freely to fresh air instead of keeping them closely shut up indoors.

Dimsdale, another famous inoculator and one of the first to follow Sutton, appears to have attached little importance to the first point. Such was Dimsdale's reputation that he was summoned to Russia to inoculate the Empress. He obtained his "matter" on this occasion from a natural case in a child (in St. Petersburg) in whom the eruption was just beginning to appear. The result was entirely successful, and the Empress was able to return to Court sixteen days after the operation. As a reward for his services Dimsdale was made a baron of the Russian empire, appointed Counsellor of State and physician to Her Majesty, and granted a sum of £10,000 together with an annuity of £500. In a treatise on inoculation Dimsdale described the points in which, as the result of fuller experience, he had modified his earlier practice. He had come to the conclusion, he said, that it was hardly necessary to prepare the patient beforehand or to enjoin restriction of diet. He did not prescribe special medicines, and had become more sparing in the use of purgatives. He preferred the lancet to the needle, using the smallest puncture possible. If no suitable patients were available from which to obtain matter, he employed dried matter which had been stored.

Trouseau, one of the latest of those to write from personal observation, described the phenomena of inoculated small-pox as follows:

At the act of insertion of the virus a small red pimple appears on the second day. By the fifth day it has become an accumulated vesicle but is depressed in the centre. On the sixth or removal of unhealthy matter a pustule with an areola appears, another matter, and might be a pustule with an areola as a modern development. No previous centre and bluish to arise till the latter part of the eighth day. The pustules appear on the eighth day and within the fortnight and successive

crusts form and separate. Constitutional symptoms—head ache, vomiting, rash, etc., begin on the ninth or tenth day and from the eleventh to thirteenth day a specific eruption shows itself following the course of modified or normal small-pox.

It was difficult to say (Dr. Millard continued) to determine whether inoculation as practised in this country in the eighteenth century was, from the point of view of the whole community, beneficial or the reverse. No doubt, in view of the serious menace of natural small-pox, it benefited the individual, but, on the other hand, it tended to spread small-pox to those who might otherwise have escaped, and it had been alleged that by thus increasing the prevalence of natural small-pox it actually increased rather than diminished the total number of deaths. After the introduction of vaccination inoculation was soon superseded by it. The underlying principle of both inoculation and vaccination was the deliberate infliction of an attack of disease in a mild form upon a healthy individual in order to protect from the possibility of a more severe attack. It was a form of insurance, but whether such insurance was good policy or not clearly depended upon (a) the amount of the premium, (b) the gravity of the risk insured against, and (c) the duration of the protection conferred. As regarded (a) vaccination was an undoubtedly less serious matter than inoculation, but the duration of the protection it conferred (c) was certainly much less. The chief consideration to-day, however, was that the risk to be insured against—the menace of small-pox—was negligible compared with what it was in the eighteenth century. It must be concluded, therefore, that the case for vaccination in the twentieth century was very much weaker than was the case for inoculation in the eighteenth.

NEWPORT MEDICAL SOCIETY

At a meeting of the Newport Medical Society on October 28th, the President, Dr. S. HAMILTON, in the chair, Dr. H. R. BLURITT gave an address on mental deficiency in which he briefly explained what constituted mental deficiency, its incidence in the population. Mental deficiency was one of the greatest sociological problems, and it was the duty of the medical profession to strive for its solution. The private practitioner could help greatly by using all his influence to prevent marriage of the unfit. He could also help to mould public opinion in favour of urging Parliament to pass measures for some form of segregation.

Mr. RUFUS THOMAS and Dr. T. GUYAN JAMES showed a case of genital maldevelopment in a newborn female child in whom the early embryological condition of a cloaca communicating with the bladder in front and the rectum behind had persisted. There was no urethra and no anus. Urine and faeces were passed into the cloaca and thence to the surface. Both labia majora were well developed and at the posterior end of the left labium was a lipoma the size of a small walnut. The vagina was present with a rudimentary cervix, and a post-anal dimple appeared to be connected with the tip of the coccyx. A certain amount of control of both urine and faeces had been developed in the fortnight which had elapsed since birth.

Dr. L. E. ACOOM gave an account of a rare case of abnormal pregnancy which proved to be one of full-term ovarian foetation. A primipara, aged 33, complained of great pain, distension, and inability to lie flat in bed during the latter months of pregnancy. As he was unable to determine the position of the foetus or the nature of the presenting part, even under anaesthesia, he referred the case for x-ray examination. The skiagrams showed a fully developed foetus lying in an extremely irregular and distorted position. He performed Caesarean section and found it was a case of extruterine gestation. The uterus was still in the pelvis, the right Fallopian tube was flattened and stretched over the gestation sac, and the tissue of the right ovary was thinned out and constituted the outer layer of the sac. He believed it was a genuine case of ovarian foetation. The foetus was dead, but the mother made an excellent recovery. Dr. T. I. CHAMBERS showed and described the three skiagrams which he obtained of the case prior to operation. He thought they were unique, and possibly the first x-ray photographs on record of a case of pregnancy of this nature.

Reviews.

FOETAL SYPHILIS

In a recent study of the subject of foetal syphilis Professor EKHORN divides the children born of syphilitic mothers into four classes, basing his conclusions on statistics furnished by Professor THOMSEN of Copenhagen. The first class contains the healthy children, some 39 per cent of the total number, free from syphilis at birth. The second class contains the cases of what he calls "post-natal syphilis," the children being infected but apparently free from infection at birth, and developing signs of it only some weeks, as a rule, later. The third class consists of cases in which the infection is manifest at birth and the child is alive, these are cases of foetal or pre-natal syphilis, having no doubt been ill *in utero* for several weeks, and they all die soon, usually in a few days or less. The fourth class is that of the stillborn children with foetal syphilis.

The children in the last three classes described above are all cases of congenital syphilis. Syphilitic endometritis was seen in 70 per cent of the cases, it took the form of foetal and later diffuse infiltration of the basal and parietal decidua with leucocytes, often accompanied by invasion of the chorion and amnion also, and in the foetal placenta going on to the formation of abscesses, gumma formation seems to be unknown. The more extensive the maternal endometritis the greater the chance that the child will be infected also, though there is no parallelism between the extent of the infection in the endometrium and its extent in the child at birth.

Professor EKHORN argues that the course of foetal syphilis (classes 3 and 4 above) depends on the age or degree of maturity of the children at the time when the infection takes place *in utero*, the older the foetus the less malignant the syphilitic infection, while the strength of the infection is a matter of indifference. In its early days the unborn child has no resistance to the infection, and has acquired only a little by the time it is born, while adults may be described as having good resisting powers. Hence the syphilitic spirochaetes multiply in the foetus and may be found in enormous numbers in it, while in the maternal placenta they are always very hard to find. In the still-born children the evidences of tissue reaction to the syphilitic infection are much scantier than in the foetuses of class 3. The development of such things as abscesses, splenic hyperplasia, hepatic hyperplasia, and sclerosis of the lungs and pancreas, all evidences of tissue reaction, is hardly met with before the last two months of intra-uterine life, and receives a long survey from the author. Discussing syphilitic excretion in the foetus, Professor EKHORN classes it among the reactive processes, and describes it, not to degeneration, but to the action of an antitoxic or anti-spirochaetal ferment analogous to that found by Lundbeig in tuberculous granulation tissue, and produced in all probability by the granulation cells and epithelioid cells. The immediate cause of death in foetal syphilis is said to be evident paralysis due to spirochaetal toxins. Regarding the subject from an evolutionary point of view, Professor EKHORN concludes that the lesions of foetal syphilis are so much more severe than those of syphilis in the adult because foetal syphilis is a disease of undeveloped organs that have not had time to develop any but rudimentary powers of resistance.

The book ends with a brief bibliography. It should be read by all medical men and pathologists who are interested in the subject of congenital syphilis. The author expresses his views with considerable force and not a few repetitions, and throughout his book he refers to the spirochaetes of syphilis as spirochaetes or bacteria indifferently. Spirochaetes are by definition, coil-shaped organisms, and bacteria stick-shaped, to call spirochaetes by the name "bacteria" is perhaps a little unfortunate, for it seems inevitable to call up pictures of Sir Harry Lauder's walking-stick.

* *Syphilis Fetusum*. By C. O. EKHORN. Acta Medica Scandinavica Supplementum VII. Stockholm. P. A. Norstedt and Soner. 1925. (Med. 8vo pp. 145.)

ORTHOPAEDIC SURGERY

By operative orthopaedics we understand Dr STEINDLER to mean only such proceedings as involve free division of the skin and exposure of the parts to the eye of the surgeon, although he also describes the operation of subcutaneous tenotomy. It is to be presumed that he would not classify the reduction of a congenitally dislocated hip by the method of Lorenz as an operation. From a cursory survey of this book the student is likely to carry away the impression that bold cutting operations are the main occupation of the modern orthopaedic surgeon. But in his opening chapter Dr Steindler is careful to impress upon his readers the caution that "there is no room in operative orthopaedic surgery for any method unless it be applied with the strict understanding that it shall constitute merely an incident in the treatment." In order that his readers may see orthopaedic surgery in its true perspective, it will be necessary for Dr Steindler to publish a companion volume devoted to manipulative and bloodless treatment and the after-care of those cases which are dealt with in this volume. In discussing operations on tendons Dr Steindler unwittingly discloses how strong is the German influence in some American schools. Although the classical work of W. J. Little on club-foot appeared in 1839, he ignores it, and gives credit instead to a work by Dieffenbach, which appeared three years later. Such familiarity with German surgical literature should have prevented him misspelling Stromeyer as Stromyey. His statement that "In the early pre-antiseptic era even the subcutaneous tenotomies constituted a formidable operation which was often followed by suppuration and other accidents" is of variance with recorded and well known facts. It was the almost complete immunity of the operation from such accidents that made its use general until and even after Listerism became the rule, but if the incision for tenotomy of the tendo Achillis were often as free as that depicted in Plate III, we can well believe that without Listerism appalling results would have ensued.

Dr Steindler relies considerably upon statistics, and gives his own as well as others' figures, but the value of such data is diminished by the persistent difficulty of ascribing what exactly is meant by such terms as "good," "fair," etc. There is no such ambiguity about the caption "Died." The chapter on cinematization might well have been omitted. In this country at least, and we believe in other European countries, the method has been abandoned as of little use or no practical value.

The student who wishes for information as to the conduct of any open orthopaedic operation will find this book of use, for the drawings are clear and well designed for their purposes, but its value would have been greater had the writer's modesty allowed him to afford rather more guidance to his reader in the choice of methods.

Dr SEVER's book on orthopaedic surgery for students of medicine differs widely from the subject of the preceding notice. It is difficult to classify, for while its title suggests that it is intended for those with knowledge of anatomy and physiology, its style and the language seem more suited to the lay reader. The greater part of the book is almost elementary in its simplicity and avoidance of technical detail, but some subjects are treated more fully than others. Among these are tuberculous joint disease and specially birth-piles of the shoulder, which latter and spritic piles, oddly enough, are included in the section on infantile paralysis. There are few directions for the performance of operations, but Dr Sever's own procedure for the relief of contraction in birth-piles of the shoulder is described in considerable detail. Dr Sever argues well that in recurrent dislocation of the shoulder-joint the muscles, and not the capsule, play the chief part in its causation and its cure. The pages on back troubles and spinal curvatures are practical. The section on spastic

1. *Textbook of Operative Orthopaedics*. By A. Steindler, M.D., F.R.C.S. New York and London: D. Appleton and Co. 1925. (Med. 8vo pp. xv + 403, 83 plates, 30s. net.)

2. *Textbook of Orthopaedic Surgery for Students of Medicine*. By James Warren Sever, M.D. New York: The Macmillan Company, London: Macmillan and Co. Ltd. 1925. (Med. 8vo pp. xviii + 353, 169 figures, 20s. net.)

pnualysis is very meagre. The characteristic deformities of Little's disease are very shortly described, but no attempt is made to specify the morbid anatomy of the defects which are the foundation of the symptoms. The surgical treatment is dismissed in seven lines, and Stoffel's operation (wrongly printed as Stocflo) is vaguely referred to in another six as likely to be useful, but a reader previously unacquainted with the procedure could hardly learn from what is here said the principles on which the proceeding is based, and still less how it is to be carried out.

The last chapter contains a great deal of practical value in instructions for the preparation and fitting of various appliances. The Bradford abduction splint for hip disease is well described, and so are the knock knee irons, which appear to be used in America in place of the simple wooden ambulatory splints which satisfy many British orthopaedic surgeons. Valgus shoes and club foot shoes are described at considerable length, but unfortunately without illustrations. The technique of plaster-of-Paris casts and splints and jackets is as practical as one would expect from the Boston school. Celluloid splints and jackets are also described, as are Thomas's splints and steel spinal supports. The great St Bartholomew's surgeon deserved much more than a knighthood, but Dr Sever should not call him Sir Percival Pott. Charles Beevor's work is sufficiently well known for his name to be correctly spelt, and not Beevor.

DIXON'S "PHARMACOLOGY"

Dr W E Dixon's *Manual of Pharmacology*, of which the sixth edition* has just appeared, is well known as one of the most popular student's textbooks in this subject. It is only three years since the last edition appeared, and no extensive alterations in the general arrangement have been necessary. The new edition, however, is a little longer than its predecessor, and a number of new illustrations have been introduced. The final chapter, which deals with cod-liver oil and internal secretions, has been enlarged and contains some interesting photographs showing the effect of lack of vitamin A on the development of the bones and teeth.

The *Manual* is intended primarily for students who in this country study pharmacology before or at the commencement of their clinical work, the author, therefore, with reason confines himself chiefly to the experimental aspect of the subject. We think, however, that the book would be improved if more were said regarding the practical importance of the experimental conclusions. For example, the author discusses carefully the action of alcohol on the circulation and shows that under certain conditions alcohol can produce a very slight rise in blood pressure, and the conclusion is that "alcohol, then, has some title to the term circulatory stimulant." It is not, however, said whether there is any reason to suppose that alcohol can produce in man a rise in blood pressure sufficient to be of any therapeutic importance. The difficulty in applying laboratory results to therapeutic problems is well known, and it would seem desirable to help the student as far as possible to bridge this gap, for otherwise he may fail to realize that pharmacology has any bearing at all on therapeutics.

The special feature of the *Manual* is the clear manner in which the main actions of drugs are described, these descriptions, aided by the abundant illustrations, will enable students to form a very clear conception of the subject.

RADIOLOGICAL EXAMINATION OF THE MALE URETHRA

The Radiological Examination of the Male Urethra,⁵ by Kohnstam and Cave, is a short monograph giving in detail the technique necessary in this examination, together with the results it yields in pathological conditions. While this is the first work to be published in England on this method

of investigation, much has been written by Continental and American authors since it was first attempted by Cunningham of Boston in 1910.

The small volume under review, which contains some eighty pages of letterpress and over sixty illustrations, is not intended to be a complete work on urethrography—a clumsy word—but an introduction to its practice and to the interpretation of the skiagrams reproduced. The method is to inject diluted lipiodol into the urethra, but the interpretation of the resulting skiagrams is not easy, owing to the various curves of the shadow. The illustrations consist of diagrams and of reproductions of skiagrams, but the latter are not very satisfactory or convincing. We may note that Figs 53 and 49 appear to be placed upside down.

The authors in describing their method state that they use only five milliamperes through the tube, and that the exposure varies from two to six seconds. As most of the radiographs have to be taken while the fluid is being run in, rapid exposure appears desirable. This calls for a larger output of x rays, and this, at the present day, is easily obtainable. The impression formed after perusal of the book is that the method is a means of diagnosis of comparatively little value, but that it might be of some use in supplementing the present means of investigation.

EARLY DIAGNOSIS OF ACUTE ABDOMINAL LESIONS

Mr Zachary Cope's book *The Early Diagnosis of the Acute Abdomen* has reached its third edition⁶—welcome evidence, not only of its intrinsic excellence, but also of the eagerness of the profession to profit by such an aid to better work. The volume might well be the breviary of the young surgeon in his unflinching daily study.

There are few changes in this edition, and that is well, for it is just sufficiently dogmatic, and refinements will lead to qualifications, limiting adjectives and adverbs, from which lightho the text has been comparatively free. Criticism, for this reason, must be restrained, especially as in all essentials the dogmas are sound.

Some surgeons might think there is more rejoicing over one case in which segmental pains display their proper distribution than over the ninety-and-nine in which no help is derived from a search for them, but at any rate this consideration makes for clear thought and is properly encouraged. The excellent "Form for acute abdominal cases" on page 21 might with advantage have an entry for "stools." It is a book of permanent value.

QUANTITATIVE CHEMICAL ANALYSIS

The Theory of Quantitative Analysis and its Practical Application,⁷ by Dr H Basset, supplies a want in analytical chemistry. Since the early days of chemistry an immense number of methods of quantitative analysis have been devised, and from time to time modifications have been introduced, some of these were aimed at saving of time or labour, others were intended to safeguard a principle of accuracy. In most cases the devices of analytical procedure were evolved before the theoretical views relating to them were fully elucidated. Chemical theories in mathematical form have usually had their birth in experimental work directed towards aims other than those of chemical analysis, and physics and physical chemistry have been the chief contributors. Practice and theory were thus only to be found in different contexts and places. We have hitherto met with no book in which they were directly conjoined in their reciprocal relation to each other. This book is written on the presumption that the reader already understands the principles of mass action and of ionization. Such an understanding is necessary, since the powers of mass and the products of ionic dissociation affect all quantitative operations, and there has been sometimes a tendency to assume that a knowledge of

* *Manual of Pharmacology* By W E Dixon M.D. F.R.S. Sixth edition. London: Edward Arnold and Co. 1925. (Demy 8vo pp x + 478 5s net.)

⁵ *The Radiological Examination of the Male Urethra* By G L S Kohnstam M.R.C.S.Eng. L.R.C.I. Lond. and E H P Cave M.B. B.S.Lond. D.M.R.C. Camb. With a preface by Sir John Thom on Walker F.R.C.S. London: Baillière, Tindall and Cox. 1925. (Cr. 4to, pp xvi + 115 6s figures 15s net.)

⁶ *The Early Diagnosis of the Acute Abdomen* By Zachary Cope B.A. M.D. M.S. Lond. F.R.C.S. Eng. Third edition. Oxford Medical Publications. London: H. K. Mulford. Oxford University Press. 1925. (Demy 8vo, pp xiv + 233 28 figures 10s 6d net.)

⁷ *The Theory of Quantitative Analysis and its Practical Application* By Henry Basset D.Sc. Ph.D. Twentieth Century Chemistry, edited by Sir William Tilden F.R.S. and J. O. Philip F.R.S. London: G. Routledge and Sons Ltd. 1925. (Demy 8vo, pp vii + 308 15s net.)

these matters is alone sufficient for the understanding of the subject. An examination of the author's work, however, will show that quantitative analysis not only embraces a wider theoretical knowledge but offers many opportunities for the study of theoretical aspects which have not even yet been fully explored. The most easily pardonable fault in a book is that its contents should be limited to an epitome of the author's own experience. This volume conveys that impression, but in this instance the experience is extensive to a rare degree. Among the subjects he has selected for special consideration are the condition of ammonia in aqueous solution, the significance of colloidal chemistry in quantitative analysis, the amphoteric compounds, and coordination and solubility. Views are expressed in the discussion of these subjects which will contribute much to the understanding of the behaviour of substances in solution and reaction.

NOTES ON BOOKS

DR MAX BRAUN's textbook on the animal parasites of man is so well known to parasitologists that little need be said about its scope and purpose. In recent editions it has been divided into two portions. The first part, by Dr BRAUN, deals with the zoological side of the subject, while the second, by Dr SEIFERT, discusses the clinical aspect. In the first part of the sixth edition,⁸ which is before us, this arrangement is still adhered to, and only the parasites and their biology are considered. The subjects, however, rapidly becoming so large that it is necessary, in order that it shall be adequately treated, to have the various sections written by specialists. This has not been done in the present case, and so the treatment of the more modern developments is to a certain extent superficial and patchy. As is to be expected, the German work of recent years is considered in some detail. The British advances are, however, in many cases overlooked. Thus, for example, Ashworth's monograph on Rhinosporidiosis is not mentioned, while several other important papers are also overlooked. Many of the illustrations have now only a historical interest and might well be omitted, while a number could be replaced by the more modern and more accurate drawings available. The nomenclature leaves much to be desired, and a number of species are retained which modern workers consider to be invalid. The protozoan and helminth sections allotted 157 and 253 pages respectively. Only the actual entomological parasites are considered in detail—the "carriers" are only briefly mentioned—and the number of pages given to the insects and arachnids is about 75. There is a large and, despite several misprints, valuable bibliography. The book is, indeed, a useful compilation, but if it is to retain its encyclopaedic character there must be a further division of labour, and no time must be lost in preparing a seventh edition in order to incorporate the work of recent years.

An elementary textbook, dealing with public health, has been issued under the auspices of the Press Committee of the Middlesex Hospital. It is entitled *The Nurses Handbook of Hygiene*,⁹ and has been written by Dr L. E. H. WHITBY. Now that hygiene is included in the examination of the General Nursing Council for England and Wales it is important that a suitable manual should be available for candidates for this examination. This book supplies in an elementary and readable form the information a nurse should possess about the fundamental principles of public health. The figures and diagrams are clear; the only criticism that might be made is that the amount of magnification is not stated below each figure. A useful glossary of technical terms is added, and there is an index.

Dr A. E. HERTZLER's little book on *The Technique of Local Anesthesia*¹⁰ is based very largely on his own experience with the methods he employs and is therefore very practical. He is not an out-and-out advocate of local anaesthesia, and does not appear to use it as a routine for every occasion. In his own words, "It is the proper selection of method that marks the skilled surgeon and not his ability to do certain things with local anesthesia," and he lays much stress on the planning

of the operation. The first chapter, on the drugs employed, is well written and contains as much information as is likely to be asked for by a beginner. The technique of administration is dealt with clearly and fully, and then a chapter is devoted to general operations. Subsequent chapters are concerned with special operations, and the descriptions, which are clear, concise, and interesting, are illustrated by excellent semi-diagrammatic drawings in which the anatomy of the parts is clearly set forth and the direction of the injecting needle shown. The book is well got up and remarkably free from misprints, though there is one on page 75, where "subperitoneal" appears for "subperiosteal" infiltration in the description of operations on the extraction of teeth. We were also unable to find any warning of the danger of injecting the anaesthetic fluid into the blood stream, as may readily occur in attempts to anesthetize by the paravertebral route, if the fluid be injected without pulling out the piston of the syringe to see whether blood is withdrawn into the barrel of the syringe. If only for the possibility of doing this we agree with the author that the proper type of syringe to use is one with glass barrel and piston with metal mountings. The book can, however, be recommended to the beginner, as the teaching throughout is sound and practical, and no unnecessary space is taken up by anything in the nature of padding.

In *The Changing School*¹¹ Dr P. B. BALLARD gives an entertaining and suggestive account of modern tendencies in the education of children, and in particular of the movement towards freedom and individual work. The author is a teacher and examiner of large experience and a shrewd observer, and he writes with that freshness of style and breadth of outlook which make a book on a technical subject interesting to the general reader. This little work is in fact addressed quite as much to the parent as to the teacher, and medical men and women, whether as fathers and mothers or as family advisers, will find in its pages much to stimulate thought and clarify ideas on the problems of discipline and early education, both at home and in the school. Dr Ballard's attitude towards current psychology strikes us as sane and practical, it is a subject to which he pays a good deal of attention in several chapters. In his view the new psychology has not yet provided us with a new pedagogy. "It is true that the new psychology of the unconscious lends support in a general way to the modern educational trend towards freedom and individualism. But the two currents are independent. They merely happen to be running in the same direction." Of the Oedipus complex he remarks in the course of a footnote that the classical myths are extremely useful; you can make them mean anything you please. In a brief analysis of why some children misbehave themselves at school, he insists that "the teacher cannot fully understand the behaviour of the child at school without first understanding the behaviour of the child at home. For it is within the home, in the family life, that the roots of his temperamental troubles lie." Here, as in many other passages, the author will surely carry with him the medical reader.

Professor SIEGBAHN's account of *The Spectroscopy of X Rays*¹² is a book for crystallographers, mathematicians, and physicists. It gives a practical account of the subject from the purely technical beginnings to the most recent and important theoretical results to be deduced from the work done in many European and American laboratories, special references are made to atomic physics and full accounts are provided of the technique and apparatus employed. The author describes the direct conclusions drawn from the ever increasing mass of empirical material, but has chosen not to go very deeply into the consideration of the theoretical side of atomic and crystalline structure, as this has been recently set out very fully by Sommerfeld in his book on atomic structure and spectral lines. The translator, using the German edition of Professor Siegbahn's treatise, has done his work well, and so has the publisher. There are many tables useful for the practical worker in x-ray spectroscopy, and the literature of the subject is given very fully at the end of the volume.

The essay on dysenteric hepatitis and its treatment, by Dr PETRIDIS and the late Dr VALASSOPOLLO¹³ gives a good and complete account of the medical and surgical treatment of

⁸Die Tierischen Parasiten des Menschen. Von Dr. Otto Seifert. Erster Teil. Die Parasiten des Menschen. Von Dr. M. Braun. Verlag von Julius Springer, Berlin. 1925. (Sup. 105 8vo pp. x + 603. 416 figures. Paper. N 19.50 bound M 21.60.)

⁹The Nurses Handbook of Hygiene. By L. E. H. Whitby. B.A. M.B. B.Ch. (antab.) D.P.H. (R.C.P.S.) London: Faber and Gwyer Ltd. (The Scientific Press) 1925. (Cr. 8vo pp. xii + 157. 20 figures. 4s. 6d. net.)

¹⁰The Technique of Local Anesthesia. By Arthur E. Hertzler. A.M. M.D. Ph.D. L.D.S. (F.R.C.S.) Professor of Surgery in the University of Kansas. Third edition. London: Henry Kimpton 1925. (Sup. 8vo pp. 272. 140 figures. 2s. net.)

¹¹The Changing School. By Philip Isoswood Ballard. M.A. D.Lit. London: Hodder and Stoughton Ltd. 1925. (Cr. 8vo pp. xiv + 332. 6s. net.)

¹²The Spectroscopy of X Rays. By Max Siegbahn. Translated with the author's additions by George A. Lind. London: H. Milford Oxford University Press 1925. (Ro. 8vo pp. xii + 267. 119 figures. 20s. net.)

¹³Hépatites dysentériques et leur traitement. Par A. Valassopolou et Pavlos Petridis. Préface du Dr. F. Rist. Paris: Masson et Cie 1924. (Med. 8vo pp. 155. 6 plates. 12 fr.)

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PREPARATIONS AND APPLIANCES

amoebic inflammations of the liver. It is based on many years of experience at Alexandria in Egypt, and is divided into two parts. The first deals with the medical treatment, this consists in the subcutaneous injection of emetine in doses of 0.04 or 0.05 gram once or twice a day for four or five days together, this course of injections is repeated if necessary a few days later. Almost always the total quantity of emetine required for a cure is less than one gram. Were it not for the grave dangers attached to exploratory puncture of the liver Dr. Valassopoulos would employ it as an adjuvant in the treatment of amoebic hepatitis, because there is much evidence to prove that the local depletion of blood accelerates the processes of hepatic repair. The second half of the volume, by Dr. Pétidis, describes the surgical treatment of hepatic abscess, he states that the number of cases surgically treated in the Gicok Hospital at Alexandria in a year has fallen from an average of 25 to no more than 5 since the introduction of the emetine treatment. The book should be in the hands of all medical practitioners who have to deal with amoebic hepatitis.

Recently we recommended to readers interested in ships a delightful book by a medical writer, Sir Alan Moore, Bt., entitled *Fast Days of Mast and Sail*, which was described as an "Essay in Nautical Comparative Anatomy." Sailing ships are becoming more and more scarce, and Sir Alan Moore gave a picturesque account of a younger generation. But familiar and perhaps unknown to a younger contrast to the elegance of the sailing ship was a marked contrast to the life of the seafarer was compelled to lead, as the reader will find who turns from the essay in nautical anatomy to another book, *Fast Winds and Foul*, which gives a narrative of daily life aboard an American clipper ship. This astonishing account of life at sea was written by Mr. FREDERICK PERRE, who made the voyages described in the eighties and nineties of last century. It must be confessed that some of the stories told as though they had been embellished by the storied load as though they had been embellished by the repeated telling in the smoke laden atmosphere of a seaport tavern, but even though the tales may be exaggerated here and there the story is obviously founded on personal experience. The book gives a very vivid picture of the crowded ships and diversions, the bravery and humanity of the crew of a sailing ship making voyages lasting two or three months from port to port.

In his work on the pathological and social aspects of syphilis, which forms the latest addition to the series entitled "Science et Civilisation," edited by MAURICE SOLOVINE, Professor F. JEANSELINE has given an admirably lucid and concise account of present knowledge of the disease. The work is divided into two parts. In the first, which deals with the consequences of syphilis to the individual, an authoritative description, illustrated by original photographs, is given of the clinical aspects of the disease, including the latest methods of diagnosis and treatment, preceded by an historical sketch and sections on bacteriology, morbid anatomy, and experimental syphilis. In the second part the social significance of the disease is discussed, special attention being paid to such questions as the regulation of prostitution, the civil and penal responsibility for the spread of syphilis, infection, sexual education, individual prophylaxis, and the part the dispensary may play in combating syphilis.

The recently revised edition of the St. Mary's Hospital Pharmacopoeia contains a few changes in the titles of mixtures and some additions to the stock mixtures, hypodermic injections, and lists of dangerous drugs, common incompatibles, and caloric values of various foods. Copies may be obtained from the secretary, St. Mary's Hospital.

We have received a copy of Mr. G. S. COLEMAN'S *Calculations in Heating and Ventilation*. The author's object is to furnish senior students of this branch of engineering and their teachers with a practical textbook containing copious working examples. The book is too technical for the ordinary requirements of public health officers or students of domestic hygiene but it should prove of value to municipal and sanitary engineers.

14 *Fast Winds and Foul* by Frederick Perry who made the voyage of the "M. Hoplin" on and Co. Ltd. 1925 (Demy 8vo pp xi + 204 London: M. Hoplin on and Co. Ltd. 1925) (Demy 8vo pp xi + 204)
15 *Science et Civilisation* par Maurice Solovine Paris Gauthier
16 *Pharmacopoeia of St. Mary's Hospital* (Fcap 8vo pp 61) 1s 6d
17 *Calculations in Heating and Ventilation* by G. S. Coleman D. Sc. Eng. London: Longmans Green and Co. 1923 (Demy 8vo pp xvi + 252 figures 15s net)

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Almata (a Food for Infants)
Messrs. KEE, ROBERTSON & Co. claim that their preparation "Almata" will be valuable in infant feeding. The manner in which the preparation has been placed on the market certainly presents a very welcome departure from usual custom, for the makers have subjected their product to rigorous scientific and clinical tests before introducing it to the general public. The most stringent test was one for vitamin content carried out at a well known biological laboratory. Rats were fed for three generations solely on "Almata," and the third generation still showed normal growth. This is a satisfactory supply of good evidence that *Almata* contains an adequate supply of vitamins A and B, and also all the mineral constituents essential for normal growth. The makers claim that the content of anti-scorbutic vitamin also is sufficient but this vitamin so readily disappears on keeping that it would seem wiser not to advocate the discarding of such easily accessible food adjuncts as orange juice even if the freshly manufactured article contains a full amount of this antiscorbutic vitamin. The results of chemical analysis show that *Almata* contains fats, proteins and carbohydrates in proportions similar to those occurring in human milk, that gastric juice does not produce a dense clot, and that the food is rapidly and completely digested by the pepsin and its pancreatic ferments.

Almata is prepared from egg yolk, butter, malto-dextrins, and dehydrated fresh fruit juice. The makers quote a number of clinical reports which show that infants fed on *Almata* develop a normal and satisfactory manner and charts are given which show that infants which have failed to gain weight on other foods have put on weight rapidly when fed on *Almata*. The makers claim that the ingredients and the conditions of preparation are controlled entirely according to instructions and advice received from leading living authorities on dietetics and infant feeding and that for three years *Almata* was submitted to exhaustive laboratory and clinical tests before being introduced to the general public.

The makers are to be congratulated on the care and expense which they have devoted to making their product as satisfactory as possible before introducing it to the general public. The composition of *Almata* represents many new ideas in the preparation of infant foods, and the reports quoted indicate that in practice the food has many advantages.

Cream of Nujol

Cream of Nujol with Agar is a pleasantly flavoured emulsion of oil of nujol and agar. Nujol is, we believe, an emulsion of liquid paraffin. The makers (the Anglo-American Oil Company, Albert Street, Camden Town, N.W.1) state that the product contains no cathartic ingredient or sugar. The preparation appears to be a palatable and convenient form of laxative.

A Series of Preparations

We have received the following preparations from the Chiron Aniline Company Ltd. (68, Upper Thames Street, London E.C.4): "Coramine" (pyridine β -carbonic acid)—Professor E. Sturmer Faust (*Lancet*, June 27th 1925) stated that this substance has an action on the heart similar to that of camphor. Coramine is soluble in water and therefore can be given by hypodermic injection more easily than camphor. The drug is recommended as a general cardiac stimulant. *Cibalgin* is a combination of amidopyrin and dinal (diallyl barbituric acid). It is intended as a non-narcotic analgesic and the makers express the hope that it may prove valuable as a substitute for morphine. *Cibalbumin* is an aqueous and limpid solution of egg albumen put up in aseptic form suitable for hypodermic intramuscular or intravenous injections. The preparation is intended for use in non-specific protein therapy.

"Diacene" is a new synthetic local anesthetic. In chemical constitution it is para-dialkyl-orthoethyl diphenyl diamidine. It is particularly intended as a local anesthetic in ophthalmology. Lussi (*Schweiz med Woch*, 1924, No 25) found that a 0.2 per cent solution was suitable for use in clinical practice. It is stated that the drug can be sterilized by boiling, and that instillations are non-irritant to the conjunctiva, and therefore pimple. One drop of a 0.2 per cent solution is stated to suppress the corneal reflex for about fifteen minutes.

Agomensin and *Sistomensin* are extracts of the corpus luteum. In 1914 Seitz Wintz and Fingert (*Munch med Woch* 1914, 30 1734) described the isolation from cow corpora lutea of two substances: (1) lipamin or sistomensin found in older corpora lutea. It is claimed that the first of these extracts produces menses in amenorrhoeic women and that the second inhibits the menstrual function. The manufacturers give numerous references to clinical workers who claim to have obtained satisfactory results with these extracts.

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RECURRENT DISLOCATION OF THE SHOULDER-JOINT

TRAUMATIC dislocation of the humerus at the shoulder joint is a not uncommon accident, complete recovery in the course of a few weeks is the rule, with a joint just as useful and secure as it was before the accident. But in a certain number of cases, be it from inherent weakness of the joint and its musculature or because of imperfect recovery of the damaged parts, the dislocation recurs on the application of a luxating force less than that which caused the original injury. The classical example, perhaps, is the hunting man who, having once suffered a dislocation, is very apt to bring on a recurrence in throwing up his arm as his horse takes a stiff hedge or fence, but the facility of displacement may be such that it may occur on comparatively slight movement—for instance, on turning over in bed during sleep. To those who do not realize that the muscles around a joint are of far greater importance than the ligaments in maintaining its stability, it must be matter for wonder, not that luxations of the shoulder sometimes occur, but that they do not happen much more often than they do, for the loose capsule and the small and shallow glenoid cavity seem to invite displacement of the head of the humerus, which is, however, prevented by the postural tone of the muscles—a kind of action which was first described by Sherrington, and of which the importance is being more and more appreciated by surgeons.

The weak spot in the defences of the joint is situated at its lower anterior part, where the muscles are less closely placed than elsewhere, and where on extreme and forcible abduction and extension the head of the bone either tears through the capsule or rends it from its attachment to the scapula. This is the movement which is associated with recurrent dislocation in nearly all cases. Many persons engaged in non-laborious occupations may go through the daily routine without over-abducting the arm, and to such a recurrent dislocation may not be of much moment. But to those whose bread has been earned by heavy labour, involving often the freest possible arm movements, such a disability may mean unemployment and privation, and it is likewise a misfortune for the athlete and the sportsman. For such a radical cure is necessary, or at least desirable, and it has been attained by various operations in a number of cases.

These proceedings may be classified as operations (1) on the joint capsule, (2) on the muscles, and (3) on the bones. The last class may be dismissed from our survey, as only applicable to special cases. The first of these has been in great favour in the United States, and has undoubtedly given good results. Dr. T. Turner Thomas of Philadelphia, who has long been a consistent advocate of capsulorrhaphy, read a paper on the subject at the annual session of the American Medical Association last May, an abstract of which has recently been published.¹ Dr. Thomas's name is well known in this connection, and this is by no means his first publication on the subject, which he has studied for a good many years. He now states, as the result of his experience of operations on fifty-seven

shoulders of fifty-four patients, that capsulorrhaphy "offers close to 100 per cent cure of the dislocations, and close to 100 per cent functional results in non-epileptic patients." Epileptics—who, it should be said, are particularly liable to this disability—are often incapable of carrying out after-treatment properly. This claim, which amounts to one of universal success and no failures, is a big one, and we fear that it is not justified by the case histories which Dr. Thomas has published. Possibly he means that he looks forward to such a result in future practice.

He admits two "acknowledged failures" out of thirty-three cases, or 6 per cent, and dislocation has recurred once at least in eight other cases, so that the percentage of undoubted cures is 66. But Dr. Thomas does not admit that one recurrence after proper after-treatment means failure. On the contrary, he holds the original opinion that a rent in a capsule thickened by operation causes fresh inflammation and increased thickening provided that stretching is prevented for a long enough time afterwards. Whatever might be the verdict of the morbid anatomist, the history of some of his cases seems to bear out this assertion. According to Dr. Thomas, then, a shoulder that has once been dislocated, provided that abduction and outward rotation of the arm have been strictly limited for some months, is more secure than an uninjured one. He maintains that in the typical cases of recurrence the head of the bone when luxated lies in a hernial sac of capsule, and thus displacement causes no trauma of capsule and no salutary inflammation and thickening.

Operations on muscles consist of proceedings for shortening the subscapularis, division of the tendon of the pectoralis major, or for slinging up the head of the humerus by a strip of muscle detached at the lower end from the front part of the deltoid and passed through the axilla to be fixed to the deltoid behind the joint. This latter operation was introduced by Clamont and Ehrlich in 1909,² and in the hands of Mr. Ollenschaw of Manchester it has given quite satisfactory results. In his book on orthopaedic surgery, which is noticed on page 907 of this issue, Dr. Warren Sever of Boston, Massachusetts, takes a thoughtful survey of this subject. He holds that although plying or constricting operations on the capsule have been apparently successful in a number of cases, yet that the success was due, not to any contraction of the capsule, but to the necessary interference with the muscles around the joint, and in particular to the division and subsequent suture of the tendon of the subscapularis near its insertion, which is a marked feature of Turner Thomas's operation of capsulorrhaphy. Other operators have divided part of the pectoralis major in order to enlarge the field of inspection. These two proceedings are, Dr. Sever says, the two important factors, and all that are really necessary. There is, we think, very great weight in these arguments, especially as regards the subscapularis tendon.

In considering dislocations we are too prone to forget the injuries which must necessarily be suffered by the muscles. Everyone is familiar with the atrophy of the quadriceps extensor which ensues on fracture of the patella, and with the difficulty of remedying it. Does it not seem probable that a similar atrophy and impairment of postural tone may be present in certain of the shoulder muscles after dislocation of the joint? The consequent disturbance of the balance between different muscles or groups of muscles might well account for the recurrence of dislocation.

¹ Journ. Amer. Med. Assoc., vol. 85, October 17th 1925, p. 1202.

² Arch. f. Clin. Chir. 1909, LXXXIV, 793.

PRE-CANCEROUS CONDITIONS

IN view of the limitations of surgical or other forms of treatment in full blown malignant disease much attention has been directed to the conditions which may precede it, since, if these were known and proved amenable to control, more certain and satisfactory results might be expected. Even if these prodromal states produced little in the way of warning signs or symptoms, yet their recognition would advance our knowledge of etiology—still a dark field to the pathologist. Does the malignant condition start *de novo*, or is it the terminal phase of a series of pathological states? Some there are who stoutly maintain the one and others as stoutly the other. It must be confessed that the easily detectable pre-cancerous stages on which all would be agreed are few, but that such do exist admits of no doubt. On the other hand little purpose is to be served by maintaining that in all cases of malignant disease there is a definite preceding lesion.

The discussion held on November 4th in the Surgical Section of the Royal Society of Medicine (reported at page 899) served to emphasize at once the known pre-cancerous conditions, or rather those that are generally recognized as apt to terminate in malignancy, and the mass of dubitable material built on speculation. Dr. Sequeira presented an admirable summary of the pre-cancerous skin conditions: *xeroderma pigmentosum*, *eczema*, *dermatitis*, *tar* and *arsenic* warts, etc., and of *leucoplakia* of the tongue—conditions that lend themselves to direct examination and well authenticated histories. The frequency with which these lesions develop into epithelioma is capable of more or less exact computation, and the opinion is becoming more general that in all cases, if the natural evolution were not interrupted and the patient lived long enough, such a catastrophe would result. That certain forms of treatment may have the effect of increasing rather than diminishing this liability is borne out by the results of x-ray treatment of lupus. Here the proportion of cases developing into epithelioma has been greatly increased by such treatment.

Of recent years the question of the relationship of simple gastric ulcer to malignant ulcer has become prominent, and rather wild statements, unsupported by trustworthy pathological observations, have been made on the point. One of the speakers called attention to the remarkable discrepancy between the earlier and later estimations given by surgeons who have written on this subject. If excisions of the whole or a great part of the stomach for simple ulcer are to be justified (and even in the best hands they are accompanied by a mortality far from negligible), it must be on other grounds than the excessive tendency to become malignant. It is probable that the danger of a simple gastric ulcer becoming malignant is no greater than the operative risk attending gastrectomy for the condition. More definite information of the liability might be obtained—as Mr. Cope suggested in the course of the debate—if the subsequent histories of perforated gastric ulcers could be followed up.

Of the pre-cancerous states in other parts of the intestinal tract little is known. That multiple polyp of the large intestine frequently undergo malignant degeneration is usually admitted, but that carcinoma in that situation are generally accompanied by papilloma, as one speaker maintained, is a proposition to which few pathologists of experience would assent. The most interesting part of the discussion, we should have expected, would have centred round the pre-cancerous conditions of the breast but the con-

tributions of the speakers were not particularly illuminating. Until we have more certain pathological observation, not merely semi-speculative conclusions it is open to doubt whether there is an appreciably higher percentage of cancers developing from chronic mastitis than in mammary glands not so affected previously. That in cancer of the breast there are often widespread changes, as has been demonstrated by Sir Lenthal Cheate, may be accepted, but that such minor changes are pre-cancerous, in the sense that they would invariably or even frequently develop into cancer, is far from being certain.

THE ROYAL SOCIETY

THE annual meeting of the Royal Society will be held, as is the custom, on St. Andrew's Day, November 30th. The usual periods of office having expired, Sir Charles Sherrington will be succeeded as president by Sir Ernest Rutherford, and Sir William B. Hardy as one of the secretaries by Dr. H. H. Dale, head of the department of biochemistry and pharmacology of the Medical Research Council's Institute at Harpenden. Among the other members of the council of the society are Dr. J. B. Jentles, professor of physiology in the University of Sheffield, Professor J. C. G. Ledingham of the Lister Institute, Sir Thomas Lewis, lecturer on cardiac pathology, University College Hospital Medical School, London, and Dr. J. P. Hill, professor of embryology, University College, London. Sir David Prain will continue in office as treasurer of the society.

ERRORS OF VISION AND AVIATION ACCIDENTS

THE importance of visual defects in causing motor-car accidents was indicated in our columns of December 8th, 1906 (p. 1636), and it was pointed out that, besides refraction errors, weakness of muscular tone and defective accommodation were sources of danger. The author of that article, now Wing Commander E. C. Clements, R.A.F.M.S., in an address at the Royal Society of Medicine last Monday, dealt with the visual problems concerned in flying, which were shown to be of a similar nature for efficient flying correct balance of the eye muscles was essential. Before the war he had examined a considerable number of bank clerks, students, typists, and other close workers, and had shown that failure of binocular vision was followed by constitutional disturbance. Investigation of flying accidents had brought out the interesting point that in many cases the aviator concerned had been employed in such occupations as these, which involved continuous strain upon the mechanism of accommodation. In about 70 per cent of all flying accidents some error of judgement in landing had been found to be responsible. It was therefore of the greatest importance to ensure that the visual apparatus of those who intended to fly was healthy in every particular. The tests most employed were the following. Convergence was tested by the ability to focus an object at decreasing distances from the face. If convergence was still possible at a distance of two inches this was classified as "very good", at two to three inches "good", at four inches "fair", and anything over four inches was considered "poor". The errors brought to light were inability to fix at a nearer distance than four inches, and the continuance of convergence in one eye after it had ceased in the other. A second test was the covering of one eye while an object was brought near to the nose. The eye was then uncovered, and should be found directed to the object. The exclusion of conditions of heterophoria was of considerable importance, and the usual test was employed, red glass being placed in front of one eye and green glass in front of the other.

With normal vision two images were obtained, but in abnormal conditions one image was suppressed either temporarily or permanently. This suppression might be the result of habit, and Commander Clements pointed out that in some schools the pupils were taught to close one eye—in reading the slide rule, for example—in order to secure accuracy. This practice tended in time to induce deliberate suppression of one of the two images produced by binocular vision. He attached particular importance to the frequent occurrence and serious consequences of this suppression, and in a series of examinations of engineers' draughtsmen he found it was particularly marked. This type of person invariably failed as an aviator. In the examination of 397 civilian pilots 387 showed no visual errors, 3 were border-line cases, and the remainder showed more serious errors. Of 124 civilian pilots distinguished for their ability to land skilfully, 123 showed the absence of visual errors, whilst the remaining pilot was eventually proved to be suffering from temporary fatigue owing to a long railway journey. The immense importance, therefore, in flying of these visual tests could not be overestimated, since in landing after a flight rapid and accurate changes in accommodation were required. The condition of heterophoria was also of great interest in industry, and, as the result of examining a long series of industrial accidents, he had found that hyperphoria and hypophoria appeared to account for the majority of them. In one factory, for example, where he had examined 53 boys, 43 of them who were without visual errors had an average of 0.8 accident per boy, while the 10 boys with visual errors had an average of 2 accidents per boy. To illustrate the effect of these errors on the earning power he added that in a brush factory out of 17 persons 2 were outside the border-line of visual error, and these two earned 25 per cent less than the remainder. He discussed the ability to judge distance as it developed from infancy, this ability was first based on monocular vision, then on binocular, and finally on the formation of tracts of association and on co-ordination. He had been able to test the power of orientation in space possessed by a patient suffering from a temporary paralysis of the sixth nerve on one side. Using body movements, this patient was able to localize an object correctly, but without this aid and relying only on ocular movements there was considerable error. It was further pointed out that the part played by heterophoria in the production of neurasthenia was very considerable, but was receiving inadequate attention from medical practitioners. He had found also that after such conditions as concussion, neurasthenia, influenza, and the fatigue brought on by high altitudes, there might often follow loss of convergence and binocular vision. There was a considerable amount of evidence to show that this loss was toxic in origin. Convergence errors due to influenza disappeared slowly, but there was some tendency to the formation of a habit of suppressing one image. The occurrence of fatigue tended to increase suppression of one visual image, and flying accidents were due not so much to failure of visual acuity as to failure of convergence, whether arising from fatigue, toxic conditions, or essential causes.

PREVENTION OF THE COMMON COLD

The chief subject discussed by the Medical Officers of Schools Association at its meeting on November 6th (reported this week at page 901) was the prophylaxis of common colds in schools by means of preventive inoculation with a vaccine. A boarding-school provides an excellent place in which to assess the value of this form of treatment, because those who have been vaccinated can be watched for some time, and because external conditions which affect such a comparatively isolated population can usually be recorded. There have been instances in which vaccination

against coryza has been conducted with the rigorous control demanded of a scientific experiment, but these have not been on a large enough scale nor led to sufficiently unequivocal results to convince the sceptical. Many of the experienced school medical officers who took part in last week's discussion obviously have faith in prophylactic vaccination against colds, and some could point to successful mass inoculations. When, however, the lack of precise knowledge about dose, optimum time of inoculation, repetition of doses, and duration of immunity after antiserum vaccines is compared with the well founded knowledge about other forms of vaccination—as, for instance, against typhoid fever—we realize that hesitancy and lack of confidence are not out of place. Nor should it be forgotten that no single *causa causans* of the group of infectious loosely labelled as coryza has as yet been identified. With so many uncertain factors it is not surprising that opinions differ, and the meeting did wisely, we think, in recommending the council of the association to set up a subcommittee to investigate the best methods of preventing infectious catarrhs in schools. The subcommittee will perform an important public service if it collects and reviews the literature of previous attempts in this direction, and after sifting the evidence draws up a workable plan for putting vaccination against colds to the test on a large scale. The uncertainty which exists about this more technical method of prevention naturally resulted in greater prominence being given to vaccination than to other and better established means of prophylaxis. But such important measures as nasal and nasal hygiene, avoidance of overexertion, and attention to proper ventilation and clothing, must not be relegated to a subordinate position. These are well tried common sense precautions, and it would be a pity if hopes based on the possible value of a few thousand million microbes in a bottle should induce any school medical officer to neglect rational measures which have proved their worth.

EMPHYSEMA AND BRONCHIAL CATARRH

For many years Dr. Emile Feuille of Paris has been investigating the etiology of bronchial catarrh and associated conditions. Some seventeen years ago he reported that he had been able to produce these conditions experimentally without the intervention of a primary bronchial lesion, and suggested that leucocytic stases and migrations played an important part in the pathogenesis. In 1922, while studying anaphylaxis in the dog, he obtained precisely similar bronchial conditions after subcutaneous and intravenous injections of toxic substances, and he was able also to confirm his previous view that mercury was a most effective treatment for them. He has now given an account of the changes found in the lungs of certain animals after excessive haemorrhage, or after injection of emulsions, chromic acid, egg albumen, horse serum, and antidiphtherial serum. With the first two poisons pathological changes appeared in the lungs in a few minutes, with the remainder after several hours. Twenty-four hours later the following conditions were found. The bases of the lungs were collapsed although an overexcess floated in water, and the bronchial vessels were dilated, the bronchial epithelium was invaded and loosened by lymphocytes which, mixed with red cells and epithelial debris filled the bronchial lumen. No evidence of any primary bronchial irritation was discovered. The lungs were intensely congested, with some infarcts surrounding cavities, scarcely any normal lung tissue was to be seen. A preponderance of lymphocytes, sometimes massed together, was noticeable. The elastic fibres of the lung were broken. The macroscopical appearance was that of ordinary small lung emphysema with isolated patches of

infiltration on the bronchial walls. In animals kept alive sclerosis began to appear in five or six days. The patches of lymphocyte infiltration became transformed into fibrous plaques, but there was still no evidence of local irritation. This pathological process the author wishes to distinguish as a sclerosis of morbid leucocytic origin, for which no pre-existent local lesion is responsible. Similar leucopathic scleroses appeared freely in the kidney and liver. If the dose of the toxic agent was large definite atrophic emphysema followed from rapid and extensive destruction of tissue, sclerosis only followed very small doses, after each such injection the sclerotic area extended. Such pulmonary changes were found to persist as long as three to four months. The blood vessels dilated simultaneously, and repeated weak injections of the poison caused an extensive infiltrative endarteritis like that in anaphylactic shock. In anaphylactic shock just below the fatal degree, in dogs sensitized to antiphragmin serum, to horse serum, or to egg albumen, subacute pulmonary emphysema followed in less than an hour, with rupture of the pulmonary elastic fibres and intense vaso-dilatation. The similarity of the pulmonary changes in anaphylaxis and in these toxic conditions, and the resemblance of the anatomico-pathological pictures in the two conditions suggest to Fennell that anaphylaxis is the outcome of the activity of a toxin resulting from a dyscrasic condition, with a secondary factor acting on the nervous system to produce vaso-dilatation. These pulmonary changes caused by anaphylaxis or toxic poisons, and characterized by the absence of any primary bronchial lesion, i.e., he thinks, entitled to be placed in a special category, and he proposes to apply to them the term "pneumoses" or "bronchopneumoses." Without rejecting accepted theories of the causation of emphysema, he holds that his dyscrasic or general toxicemic theory explains certain pulmonary conditions, the local changes are secondary to a general toxicemic or anaphylactic condition, for "an antigen can evoke the lesions of anaphylactic shock, the ultimate consequences are the same, usually atrophic sclerotic emphysema." Secondary infections occur and maintain a general toxicemia, chill may act in the same way. He suggests that a small, sharply defined, and closed tuberculous focus in a lung may give rise to such a dyscrasic state, from this such non-tuberculous conditions as asthma, pulmonary congestion, and general atrophic emphysema may ensue, either from the setting free of toxins or the absorption of products of cell destruction. He recommends that in asthma or early bronchopneumonia subcutaneous injections of colloidal silver should be given on alternate days, with daily intramuscular injections of mercury for a fortnight. Thyroid and adrenaline extracts may be given by the mouth, together with enough calomel to maintain slight diarrhoea. A similar but milder course of treatment is suggested for chronic bronchitis and emphysema.

MEASURING THE FRUITS OF HYGIENE

A COMMISSION appointed lately to inquire into certain matters affecting the health of estates in Malaya prints as an appendix to its report a statement submitted as evidence of the value of money spent on health measures. Obviously such outlay is economically productive in the fullest sense of the term, but there is perhaps some danger in an attempt to prove this by the device employed of contrasting one period with another in tabular form. Without the detailed information necessary to elucidate this particular statement we therefore abstain from comment, allowing the facts thus reported to speak for themselves. The product under cultivation on the estate making the return is presumably rubber. From the commission's

report it is clear that the medical and sanitary provision to be made on each estate is determined almost entirely by the policy adopted by the management, the execution of that policy being committed to a visiting medical practitioner, who, within the limits prescribed for him, is made responsible on a contract basis for the health of the labourers. It should be added that, while the commission included two medical practitioners, its personnel was predominantly lay. The purpose of the appendix is, as we have indicated, to contrast the value of expenditure on hygiene (a) when the measures were crude and the main effort was directed to curing the infected coolies, and (b) when health measures were understood and the main effort was directed to the prevention of disease. For the purpose of (a) the year 1911 is taken, and for (b) 1923. Conditions, it is admitted, have greatly changed in thirteen years, and the comparison can only be general, but "there is sufficient to show that money spent properly in the prevention of disease is sound business." The estate from which the figures (reproduced below) are taken was, and is potentially, as unhealthy as any estate in the Federated Malay States. It was first opened in 1906.

	1911	1923
Average cultivated	1 632 acres	2 600 acres
Average labour force	870 Indians only*	450 (all labour)
Dependants	1 practically nil due to deaths	220
FOB cost	\$1 03	18 64 cents
Yield	83 000 lb	778 000 lb
Total expenditure	\$240 215.33	\$145 018.44
Medical (cure)	\$12 444	\$6 208.67
Medical (prevention)	Nil	\$9 531.20
Death rate	232 per mille	3 per mille
Number of deaths	202	2
Staff (Europeans)	7	4
Hospital	Overflowing	Empty
Total loss of labour	862	13
Percentage loss of labour	100	30
Cheek roll average	30 (15% above standard)	35.5 (standard)
Hospital admissions for year	1 084	275

* There was also a large but unknown number of Chinese.

This tabular contrast is supplemented by some additional particulars intended to throw further light on the changed conditions. The staff in 1911 consisted of "seven unhealthy Europeans, all stating they could never marry, constantly very sick, cheering themselves with the bottle, taking no interest in bungalows or gardens." In 1923 it consisted of "four healthy Europeans (three married, one engaged), three healthy children, pretty gardens, comfortable bungalows and no drinking, no one is ever away on sick leave." In 1911 the labouring population of the estate consisted of "870 coolies, with practically no dependents, miserable cowering wretches with narrow shoulders, prominent stomachs, bloodless, lifeless, miserable squab in the lines, no gardens or livestock, and no children born alive." In 1923 there were "450 coolies doing three times the work done in 1911, 220 healthy old people and young children, births have become a chronic habit, the coolies are happy, fat, well set-up people, clean and well clothed, there are excellent gardens, over 60 head of cattle, the property of the coolies, hundreds of goats, and thousands of chickens." In regard to organization and efficiency, it is said that in 1911 the tappers were sent out to new tasks every day, one-third to one-half of the tasks had to be tapped or finished in the evening as the coolies had returned sick or too weak to finish the work. "Now a coolie is not taken off his task for months on end, and

* Report of the Commission appointed to inquire into certain matters affecting the health of estates in the Federated Malay States, 1924.

men has to finish off tasks in the evening. Other works were of course in the same condition. In 1911 a gang was sent out digging graves every day and we never got third of our requirements. Coolies constantly died in the field. It can well be imagined that in 1911 there was very little organization, efficiency, or decent work done. The estate is now one of the cheapest producers in the Federated Malay States, and the cost of production compares favourably with Ceylon and Java."

NEW YORK ACADEMY OF MEDICINE

THE New York Academy of Medicine was founded eighty-two years ago for the purpose of advancing the science and art of medicine, maintaining a public medical library, and promoting public health. Last year the Carnegie Corporation undertook to provide a new and larger building for the Academy, and the Trustees of the Rockefeller Foundation offered in endowment, these two gifts amounting together to upwards of £500,000. The foundation stone of the new building was laid on October 30th. In an editorial article announcing this ceremony the *Journal of the American Medical Association* has given an appreciative outline of the work, past and present, of the Academy, and of the steps taken by its executive to ensure that none of its activities, now about to be increased, shall overlap those of the American Medical Association and its councils on education and on pharmacy, or of the Association of American Medical Colleges. The munificent gifts of the Carnegie Corporation and Rockefeller Foundation have made possible six requisitions: a full time director, an executive librarian, a new library service, a bureau of clinical information, a committee for post-graduate medical education, and a monthly bulletin. The post of executive librarian, we learn from our Montreal correspondent, has been filled by the appointment of Dr. Archibald Millock, M.R.C.P. Lond., assistant physician to the Royal Victoria Hospital, Montreal, who will take up his new duties at the beginning of next year.

THE PHYSIOLOGY DEPARTMENT AT KING'S COLLEGE

THE extensions to the department of physiology at King's College, London, have now been completed, and were formally opened on November 6th by Professor W. D. Halliburton, F.R.S., Emeritus Professor of Physiology in the University of London. A reception was given in the new laboratories at which were present many well known physiologists and biologists. The new building will provide facilities for experimental research, for the teaching of advanced practical mammalian physiology, and a professor's room. Further, the rooms formerly occupied by the bacteriology department have been taken over for biochemistry, for the provision of animal and polarimeter rooms, and for a staff room and library. The reception was followed by a public inaugural lecture, entitled "Science and culture," by Mr Julian Huxley, M.A., who has recently been appointed to the chair of zoology at King's College in succession to the late Professor Arthur Dendy, F.R.S.

FOCAL INFECTION

At the James Mackenzie Institute for Clinical Research, St. Andrews, on November 3rd, Professor Lorain Smith discussed the pathology of focal infection, illustrating his remarks by numerous lantern slides. He demonstrated the spread of infection from focus to focus in many infective conditions including tubercle and showed clearly that certain organisms could circulate in the blood without giving rise to noticeable symptoms until they formed a focus in the tissues. These foci were found in connexion with the lymph nodes which were exceedingly numerous in all tissues. On the settlement of an organism the local resist-

ance might be sufficient to destroy it, but if the focus became established it acted as a centre of distribution and other foci were established. The main agent in the destruction of organisms was, however, undoubtedly the blood. The explanation commonly given of the formation of foci was the arrest of active material by mechanical obstruction in lymphatics or capillaries, but similar focal lesions resulted from the presence of soluble toxins in the blood. An investigation into the focal mechanism responsible for such results should advance greatly our knowledge of the liability to disease. Professor Lorain Smith drew attention also to facts observed by Rosenow, suggesting that infective organisms might sometimes require a selective preference for certain sites. Typhoid bacilli, for example, showed a noteworthy preference for the gall bladder, while metastatic infection in bronchiectasis tended to appear in the central nervous system. In conclusion, he said that while the problem of general immunity had been widely investigated, the question of local immunity and the focal mechanism upon which it was dependent had not been worked out. The paper gave rise to an interesting discussion.

THE MEDICAL PROFESSION AND THE OFFICERS' TRAINING CORPS

OUR allusion a few weeks ago to that well known regiment of the Territorial Army, the Artists Rifles, brings to mind the existence of the intimate connexion between the medical profession and the Officers' Training Corps. The Senior Division of the O.T.C. is established at most of the universities in Great Britain, the larger ones possessing, in addition to other units, flourishing medical units. The object of the O.T.C., as stated in the War Office Regulations, is to provide students at (schools and) universities with a standardized measure of elementary military training, with a view to their applying eventually for commissions in the Militia, Territorial Army, or Regular Army Reserve of Officers (including the Supplementary Reserve). The medical students at the various hospitals form the only field for recruiting for the medical units of the O.T.C. Such highly technical qualifications as these of the medical profession are to a great extent wasted if these students would be required, in a national emergency, as medical officers in the army, and those possessing an O.T.C. training would be eligible for commissions without additional military training. The military authorities, we are informed, have taken steps to prevent a recurrence of the conditions in 1914, when hundreds of the flower of the nation's youth died fighting in the ranks instead of being retained for training as officers. In London the University possesses a flourishing and highly efficient medical unit in which all the leading hospitals are represented.

It has been decided to create a Lothian Scholarship and a Duling Prize for the encouragement of malacological study in memory of Dr Norman V. C. Lothian and Dr Samuel Darling, the British and American members respectively of the Malaria Commission of the League of Nations, who were killed on May 21st last in a motor accident near Beirut while investigating malaria conditions in Syria. The "Lothian Scholarship," for which a credit has been found in the budget of the Health Organization of the League, will be awarded by the Malaria Commission to a selected candidate, whose course of study should be in conformity with the general programme of the Commission. The Duling Prize, in the form of a medal or other reward, will be given to the scientist who has carried out recent distinguished research work on a subject connected with malaria which comes within the scope of the Commission's investigations. It is proposed to raise the funds for the latter foundation by private subscriptions.

CHRONIC NASAL FOCAL SEPSIS

THE SIMON LECTURE

THE SIMON LECTURE of the University of London was delivered in the Baines Hall of the Royal Society of Medicine, on November 5th, by Dr P. WATSON WILLIAMS of Bristol, with Sir WILLIAM MILLICAN in the chair. Dr Watson-Williams took as his subject "The toll of chronic nasal focal sepsis on body and mind," in the firm belief, he said, that the specialty of rhinology was destined to afford valuable assistance in the solution of some of the problems arising in the domain of the physician, surgeon, and chemist. More and more clearly it was being recognized that focal sepsis was directly accountable for disease far afield from the local infective source. Sepsis had also an important bearing on many cases of mental disturbance, and even of delusional insanity. The lecturer excluded from the discussion oral and tonsil sepsis, apart from "adenoids," as being already appreciated, and sometimes even overestimated perhaps, obscuring the factor of sinus sepsis. Septic tonsils and adenoids were often only sub-infections of nasal sinus infection, and hence came those cases of repeated removal of adenoids reinfected by an overlooked sinus infection. The complications of nasal focal sepsis, apart from direct extension to surrounding structures, involved other territories in two distinct ways: (1) by the infective organisms being inhaled or swallowed and thus directly entering the pulmonary or the gastrointestinal tract, and (2) by the toxins (and sometimes the organisms themselves) passing into the lymph vascular or blood streams, and thus involving the liver, arteries, kidneys, joints, peripheral nerves, and the cerebral hemispheres.

Infective Organisms Inhaled or Swallowed

It was well known that septic tonsils and adenoids were a fruitful source of recurrent bronchitis in children, but the septic focus might lie in a nasal sinus, particularly in later life, when the tonsils and adenoids were normally atrophied. Again, while it was generally recognized that enlarged cervical glands were much more often due to sepsis than to tuberculosis, it had yet to be determined how great a percentage of so-called pulmonary phthisis, cases unsupported by the evidence of tubercle bacilli, were in reality non-tuberculous and simply subinfective pulmonary sepsis. A nasal sinus infection was a serious factor in pulmonary tuberculosis, but the wasting of chronic sinus sepsis, with bronchial subinfection, nocturnal rise of temperature, night sweats, expectoration, and febrile reaction to exercise, afforded a clinical picture hardly distinguishable from true pulmonary tuberculosis, often aggravated by a chronic septic laryngitis.

Patients with septic infection of the mouth, throat, or nose often swallowed daily millions of pyogenic organisms with relative impunity, the gastric juice being strongly bactericidal. But, when overwhelmed with the swarms of virulent organisms from the mouth or nose, gastro-intestinal catarrh and flaccid dyspepsia quite commonly developed, and diarrhoea, alternating with constipation, and even definite colitis, were not rare consequences. How far appendicitis and gastric or gastro-duodenal ulcers were caused by persistent infection from organisms swallowed it was difficult to determine, but the extraordinary percentage of patients with chronic sinus infection who had undergone the operation of appendicectomy, or had suffered from gastric or duodenal ulcer, was most striking and suggestive. The coincidence was usually unnoticed, because in that connexion the surgeon and the laryngologist respectively did not usually make the necessary inquiries. The infectivity of chronic nasal sepsis and its causal relationship to appendicitis was perhaps even more strikingly suggested in families where a parent acted as a carrier infecting the children, and Dr Watson-Williams cited two illustrative examples of this. It was recognized that diphtheria, scarlet fever, and enteric fever might be spread by "carriers" but in Dr Watson-Williams's opinion the spread of chronic septic throat and nasal infection was a still more constant menace.

Lymph-vascular or Blood Infection

Seriation and various manifestations of neuritis were the common heritage of focal sepsis. While migraine, supra-orbital and occipital headache were now commonly ascribed to nasal sinusitis, it was less generally recognized that the intense neuralgic pain in the fifth nerve, of the double-nerve type, might be due to a toxic neuritis from pyramidal sepsis. Various affections might arise from irritation of the sensory nerve endings in the mucosa, either directly or reflexly through communications of the sensory nucleus of the fifth nerve with the motor vagus nucleus in the medulla, such were neuralgia, paroxysmal sneezing and asthma of nasal origin. The influence of a nasal stimulus on the vagus was recognized in practice when smelling salts were used in faintness. Many infectious involving the orbit and globe were often legacies of nasal sinus sepsis, but, being direct extensions of septic infection from the nose, were outside the scope of the lecture. Iritis and ecchyma were always septic in origin, and the recorded examples of exophthalmic optic neuritis, relative scotomata and enlargement of the blind spot, were very numerous and important. Rheumatism and rheumatoid arthritis afforded plentiful examples of either subinfection or toxemia from nasal sinus sepsis, although, hitherto, investigation of the source of infection had been mainly directed to the teeth and tonsils. Often the last areas to be considered were the nasal sinuses and the ear.

In Dr Watson-Williams's own experience a number of cases of rheumatoid arthritis had been cured or relieved by draining infected nasal sinuses.

Relation of Local Sepsis to Mind and Character

It was, the lecturer said, common knowledge that toxemia from oro-nasal sepsis, in the form of septic tonsils and adenoids or dental sepsis, might cause neurasthenia or mental unsoundness, but it was only recently realized that the degree of sepsis, not the hypertrophy causing mechanical nasal obstruction, was the measurement of the mischief caused by the tonsils and adenoids. Key and Retzius, and later Andre, among others, demonstrated the close relation of the lymphatics of the pituitary membrane crossing the cribriform plate to the perimeningeal lymph spaces. Even if there were no direct communications between them they afforded channels for cerebral intoxication, by a process of transudation, much as paralytic tetanus infection caused a serious perilabyrinthitis. This might in a measure explain the frequent association of nasal sepsis with disturbances of mind and character, and also the frequent improvement in the mental outlook, as a result of operative removal of some source of sepsis in the teeth, tonsils, and adenoids, or in chronically infected sinuses. With the added social responsibilities and relationships of adult life, the psychic disturbances from focal sepsis were more striking and often more disastrous, the slightest degrees of mental disturbance which, in a child, might be hardly noticed in the adult might be sufficient to cause unhappiness to the patient and those about him. Again, on account of the mild toxemia, the mental deterioration might be so very slow as to be attributed to alteration in character rather than to a form of disease. The retro individual often became disinclined for exercise, actual muscular weakness, being added to lessened zest in life. When such symptoms were not recounted for by a recent illness, such as influenza, the patient was apt to be labelled neurasthenic and treated by rest, a voyage, and so forth. Improvement often followed such measures, but, if an unsuspected focal sepsis was the essential cause, the symptoms probably recurred in course of time, and might become more pronounced. The depression might deepen into profound apathy or melancholia, suicidal impulses were by no means rare, while the patient certainly might drift into habits of intemperance, and loss of mental balance might end in definite hallucinations or delusional insanity.

Crime and Sepsis

There were two directions in which the infective disease might operate. The first was by mental confusion and loss of memory, and of this a good illustration was afforded

by a lady who had frontal sinusitis and stole a ring from a friend's dressing-table. The patient never knew that the matter had been in the hands of the police, and later told Dr. Watson-Williams as news all that had occurred, evidently ignorant of everything save her loss of memory. He had no doubt whatever that other instances, such as failure to account for money received, had occurred quite innocently, the patient suffering from "aprosia" due to septic toxæmia. In the second class, with delusions of suspicion, or of being persecuted, or poisoned, the unbalanced mind was liable to lead to disastrous crime. Creosote and foul taste of food from sinusitis, both common complaints in such cases, might, in the mind unhinged by focal sepsis, become delusions suggesting "gassing" or "food poisoning." Sir George Savage had recorded examples of the growth of delusion in this way. Dr. Watson-Williams suggested that they were warranted in believing that between these extremes mental depression and confusion might certainly suffice to account for criminal acts which were obviously stupid and utterly at variance with the known character of the perpetrator. Though it might be difficult at present, and perhaps dangerous, to distinguish between those cases in which crime was determined by infections, and those due to innate moral obliquity, it was surely a duty to consider how far sepsis should be ranged with other toxic causes of mental and moral degeneration, such as alcohol, morphine, cocaine, or syphilis, and thus perhaps help to prevent many social and legal transgressions. Ford Robertson's eschewes had furnished evidence of the causal factor of bacterial infection in dementia præcox.

The slightest disturbances of the character, disposition, and power of concentration were fruitful causes of unhappiness in the home, of broken hearts, of business losses, and loss of time and energy to the working man. More pronounced manifestations were seen in the lunatic asylums, perchance in the prisoner or the suicide, amounting to a stupendous toll of truly national import, and the pity of it was that the causal infection was so largely an enable to successful elimination.

On the laryngologists and rhinologists who guarded the portals where such a large preponderance of these infections gained entry lay perhaps a greater responsibility than fell to any other department of medicine and surgery. Every industrial school, Borstal institution, prison, and asylum called for a more systematic co-operation of the rural, laryngeal, and dental surgeon. Of the thousands of suicides that occurred, the story was not unusual that the wretched individual had "suffered lately from pains in the head and was depressed," but the verdict of "Suicide while of unsound mind" closed the chapter without any systematic *post-mortem* investigation to determine the material and remediable cause of those tragedies which, in a very large proportion, was almost certainly some form of toxæmia. In the young delinquent, at any rate, there was reason to believe that the evil genius was much more often "Sepsis" than "Sin."

THE PLACE OF THE MIDWIFE IN THE MATERNITY SERVICE

CONFERENCE IN LONDON

A CONFERENCE arranged by the Post-Certificate School for Midwives, and presided over by Sir FRANCIS CHAMBERS, Bt., M.D., Chairman of the Central Midwives Board, was held in London at the house of the Royal Society of Arts on November 9th, to consider how the midwife can help in the reduction of maternal and infantile mortality.

Dr. J. S. FAIRBAIRN, in an opening paper, urged that there need be no rivalry between the general practitioner and the midwife. Their functions were not competitive but complementary. The sphere of the midwife was attendance on normal labour, and that of the practitioner was the general supervision of ante-natal and post-natal conditions and attendance on difficult labour. The position was complicated by the large amount of midwifery done by practitioners for inadequate fees and, owing to the pressure of other work, often in a hurried manner. One consequence was the high proportion of forceps deliveries in

private practice. The proportion of forceps deliveries in some lying-in hospitals was 4 per cent, in private practice it must be nearer 40 per cent. He did not blame the practitioner, it was part of the system, but forceps delivery was not physiological delivery—which ought to be the primary objective—and with all instrumental interference the morbidity rate went up. He also urged the importance of attracting the best type of women into midwifery practice by the provision of a pension scheme on civil service lines and by a sympathetic attitude on the part of local authorities.

Miss E. M. DETLEFSEN spoke of the value of the midwife in educating both the prospective parents owing to her free access to the home during pregnancy. Rather more than half the births in this country were attended solely by midwives, and in the remainder a midwife ought to be the maternity nurse. The midwife should encourage medical examinations during pregnancy, the first at about the third month. At present the facilities for such examinations were inadequate but from an experience in Middlesex there was some hope that consultative centres staffed by specialists might be set up in the near future.

Dr. F. C. TREMAYNE, M.P., dealt with the role of the midwife in rural areas. He had had something to do, as *medical officer of health*, with bringing the *Midwives Act* into operation in one county, and he remembered looking at the records compiled by one exceptionally charming type of the home-side village midwife who, under the column headed "Presentations," had written "one umbrella!" Village problems were in many respects peculiar. As a rule the rural midwife could not be in independent practice, there were not sufficient births for her to attend. The only way to ensure a proper service of midwifery in the rural areas was to link up this work with all the district nursing services, including tuberculosis and school nursing, and health visiting. The village nurse was as essential as the village parson, and it would be a splendid bit of philanthropy to endow a house in each village for the occupation of the nurse in the same way as ancient piety had endowed the church and rectory.

Sir JOHN ROBERTSON (M.O.H. Birmingham), in a paper read in his absence, said that the town midwife had considerable advantages as compared with her village sister. She went about her duties with the knowledge that if anything untoward happened she could get help at once. The area of her practice seldom extended more than a mile from her door, she could choose her patients, and she need not take any work other than midwifery. The fear was expressed by midwives that they were liable to lose their patients if they sent them to doctors or hospitals. He thought that medical men should practise towards the midwife the same scrupulous etiquette as they practised towards one another. He considered that confinements in hospitals or maternity homes were safer than those which took place in the homes of the people.

Miss LIDDIARD, matron of the Mothercraft Training School at Highgate, said that until some definite arrangements for the better remuneration of midwives and the provision for their future were made, the disinclination of nurses to take up this form of work would continue. She felt that confinement in the home was preferable to confinement in hospital. Child-bearing was a natural thing, why make it unnatural by taking the mother away from her husband and family at such a time? To do so was very likely to add to the shock and trouble of labour.

Miss ROSALIND PAGER, formerly a member of the Central Midwives Board, gave some figures obtained from the Queen's Nurses relating to the work of over 2,000 trained midwives in 1924. The maternal mortality in the cases attended by these women was 15 per 1,000, this figure including all deaths in childbirth from influenza or other causes, not puerperal sepsis alone. This was said to be the unadmissible minimum, but she could not agree. She urged that before a death certificate was given in the case of a woman dying during childbirth a *post-mortem* examination should be made. It would also help matters if the Ministry of Health would issue a notification of birth card uniform for the whole country, with a space for the name of the person who actually delivered the woman.

Miss OLIVE HAYDON, speaking as a member of the Central Midwives Board, said that she had been struck by the number of penal cases in which it was shown that the midwives were incapable of taking the pulse and the temperature. After twenty-three years of the Midwives Act there ought not to be a single midwife on the roll who could not make such records accurately. She believed that the midwives now on the roll were effective in reducing maternal and infantile mortality, but still more could be done if midwives had post-certificate education, which she desired to see compulsory.

Dr FUSTICE HILL (M O H Durham) said that co-operation between doctor and midwife was important but difficult to achieve. In the congested industrial district from which he came the proportion of cases attended by midwives a few years ago was only 19 per cent., thanks to co-operation of the county council and the county nurses association it had now risen to 30 per cent. One of the difficulties had been the strong opposition of the average medical practitioner to the midwife working in his district. Midwives did not get the support from practitioners that they ought to have, and in many cases their welcome was so lukewarm that they were not able to get a living. The position was much the same in Northumberland, where the doctors in many districts were hostile to the midwife, and were content to go on giving a general supervision and leaving the rest to handymen, which in many cases led to disaster. The two main causes of mortality were ignorance and the indiscriminate use of the forceps. As to ante-natal precautions, Miss Doubleday had urged that there should be a medical examination in the third month, but the Durham mother richly thought of calling in anybody until the last month. The midwife was essential for healthy and satisfactory midwifery. He would like to see a limit to the number of cases which a trained midwife could take in a year. He knew instances in which one woman had had something like 300 cases in a year, while other women in the locality could not get a sufficient number.

Dr ANNIE MCCALL thought that in the past the midwife had been in the habit of calling in the doctor a great deal too early. This speaker wanted midwives to be entrusted with the use of a certain number of drugs.

Dr H SCURFIELD said that very little ante-natal or preventive work was being done to-day by medical men, for the reason that there were not enough doctors who had given attention to the matter. The midwife could act as a scout for the obstetrician, but she could not herself do the preventive work. He hoped that something might be done in this country along the lines of an American experiment, whereby the doctors in a town gave up midwifery work altogether, and the work was placed in the hands of midwives, backed by a panel of skilled obstetricians. Most of the present high mortality was due to meddling midwives.

Sir EVEN MACLEAN said that he was prepared, as chairman of the committee of the British Medical Association entrusted with this subject, to explore the problems put forward that evening. The references to the general practitioner—who was a very important person—had been on the whole kind and fair, but some remarks which might be construed as inimical to the practitioner were due to a little lack of understanding. After all, it was the people themselves who chose, they could not be compelled to have a midwife in preference to a doctor, or the reverse, and in the long run they would judge by results. He described the system in Cardiff, where, thanks to the co-operation of all concerned, something near to the ideal arrangement had been worked out. The Cardiff authorities had established a number of ante-natal centres, from these any cases requiring special consideration were sent to a central clinic working in close association with the hospital and medical school, and the clinic had the entire use of thirty-one beds.

Sir FRANCIS CHAMBERS, in closing the discussion, said that he felt strongly that not all cases ought to go into hospital for confinement, but the corollary was that the homes of the people must be such as made confinement safe. The question had been asked in whose practice the mortality occurred. He had for many years, in season and out of season, urged upon the Local Government Board, and afterwards the Ministry of Health, the need for stating on each

certificate who actually delivered the woman, and he would continue to press this point. The Central Midwives Board had been trying to get the local supervising authorities to pay a great deal more attention to the accuracy of taking the midwives of temperatures and pulse readings. The resentment of medical practitioners at the employment of midwives had been referred to. When the Midwives Act first came in, or was first contemplated, there was a great outcry that the bread was being taken out of the mouths of general medical practitioners, and that a set of unqualified practitioners was being raised up, and because he himself signed the diplomas of the London Obstetrical Society he was threatened with proceedings before the General Medical Council. Then came a time when practitioners did not want midwifery work at all and said that it did not pay them, and now apparently, in some parts of the country, they wanted it again. Dr McCull had accused the Central Midwives Board, by implication, of discouraging the use of drugs by midwives. The Board had often been urged to say that no midwife should use any drug except a simple aperient, but that the doctor should be called in. He felt strongly that to deny the use of proper sedative drugs, of which opium was far and away the best, was an act of cruelty. Opium was a combined drug, and contained a great many more things than morphine, and sometimes it had a very useful stimulating as well as a sedative effect. Over and over again in protracted labours he had given it with great advantage. He appealed to everybody not to give up opium, and he had never known any woman in childbirth the worse for a good dose. One point which had to be remembered, in view of the competition for cases between medical students and midwives, was that if midwives attended all the cases the future medical practitioner would not get the experience necessary to qualify them to act in difficult labours. But a number of cases were undoubtedly wasted on women who took a midwifery course with no intention of becoming midwives, but who desired to be health visitors or something of that kind.

Scotland.

RECTORIAL ADDRESS AT EDINBURGH

THE PRIME MINISTER delivered his rectorial address to the students of Edinburgh University on November 6th. The address was delivered in the McLellan Hall, and the Chancellor, the Earl of Balfour, presided.

The Lord Rector said that Sir James Mackintosh had declared a hundred years ago that it was not easy to conceive a university where industry was more general, where learning was more fashionable, and where indolence and ignorance were more disreputable than they were at Edinburgh in his day. A university could only work within the limits of the human material it received from the homes and schools of the country, but it was a rich storehouse of knowledge, and an instrument for increasing knowledge, for some students—a small proportion—did continue to add to the accumulated learning of the ages. Besides this a university must be regarded as a school of character. An ideal character was a harmony of many virtues, and it was a tradition to give to truthfulness the position of the cardinal virtue. The inculcation of the practice of truthfulness, no less than the acquisition of knowledge, was the motive force of the educational system. The student was there to learn habits of accuracy in measurement, precision in statement, honesty in handling evidence, and fairness in presenting a case. That was the goal of British education, because it was recognised that no man could be a worthy citizen whose word could not be trusted, and whose deed was compounded of deceit. Mr Baldwin recalled a passage in which John Locke showed himself so impressed with the defects of language as to affirm that if anyone "shall well consider the errors and obscurity, the mistakes, and confusion that are spread in the world by an ill-use of words, he will find some reason to doubt whether language, as it has been employed, has contributed more to the improvement or hindrance of knowledge among mankind." It was possible at all events

to agree with Bentham that "error is never so difficult to be destroyed as when it has its roots in language." No small part of education lay, therefore, in learning the right use of words, in tracing their birth and behaviour, and in fitting them closely to facts and ideas. No man who could do good Greek or Latin prose could deceive people with words unless he sinned against the light, and he could no longer be deceived himself. Through mathematics was to be learned on the threshold the very lesson which, universally known and applied, would prevent daily mistakes which might be disastrous. The principle that two and two made four, and could, in no circumstances, make anything else, was a principle taught through all the physical sciences. Efforts should be directed to compelling the material facts of the world to reveal their nature and to watch their behaviour; truth was the accurate statement of the facts observed. Lastly, there was the study of the ultimate sciences, the science of sciences, moral philosophy, for which the University of Edinburgh had been justly famous. There had been a time when it might be said that the chief export of Scotland was metaphysics. Philosophy forced the student to examine the assumptions on which all the other sciences rested and the hypotheses by which they all worked. Magic, myth, ritual, religion, the mysterious and emotional story of human belief, the theological speculations of mankind, the very instrument by which mankind knew anything at all, were all so examined as facts of experience, and an attempt was made to interpret them and fit them into some coherent explanation of life and destiny. Throughout all these activities there was a double motive of acquiring knowledge and of learning to think truly, and the latter was the more important task. Why was it, he asked, that in politics a lower standard of habitual truthfulness was alleged to prevail than in the world of science or of business? He thought that primarily this was due to the fact that ever since states began they had been in peril of war, and the preparation for war. They had had recourse to the stratagems of diplomacy and the dropping of the ordinary code of morals. The statesman's goal had been the preservation of the State, and reasons of state had been held to justify all policies. Grotius had declared that human life was essentially a society, and that fidelity to pledged word was its most important law. On the other hand, the principles of Machiavelli had been accepted in Europe, at any rate as late as the days of Cavour and Bismarck. It had been the prevailing view for centuries, openly avowed and defended, that there could be one code of morals among nations and another more exacting code among individuals, but this view had never in this country been accepted in the bold and summary form in which he had put it. The party system had its advantages in team work and loyalty. It appeared to our sporting countrymen as a game with rules which were, for the most part, honourably obeyed. But the party system put a certain embargo on complete frankness of speech in the arena of debate. The material of politics was human nature, with motives honourable and base, appetites for power and for service, memories and aspirations. But the politician could not work with serks and forceps, test tubes and mortars, his instruments were written and spoken words, so that politics could never be an exact science. The perils of the platform orator had been pointed out since the days of Cleon. The difference between the Greek sophists and the modern demagogues was said to consist in this: that the former displayed his ingenuity by appearing to prove what his hearers knew to be false, while the other displayed his ingenuity by appearing to prove what his hearers wished to be true. It was the business of the universities to change all this, and they were doing it, they should take their stand on public right and a law of nations with Grotius rather than with Machiavelli. This principle had asserted itself in August, 1914, when it was made plain that ethics was not a branch of politics but the reverse, and it was at the root of their support of the League of Nations.

Mr. Baldwin was entertained at luncheon after the rectorial address by the Edinburgh University Union, and in the course of the afternoon he visited the Edinburgh University Settlement in High School Yards. In the

evening the students held a torchlight procession, at which a collection was taken up on behalf of the Royal Infirmary of Edinburgh.

GLASGOW HOSPITAL FOR WOMEN

In submitting the directors' report to the forty-eighth annual meeting of subscribers to the Glasgow Hospital for Women, on November 3rd, Mr. H. Stuart Curran, honorary secretary, stated that out-patient consultations had numbered 4,482, an increase of 432 over last year. The annual revenue had amounted to £1,978 and the expenditure to £2,487. The directors noted with satisfaction that there had been an increase of subscriptions received from employees of works, while a sum of £1,093 had been contributed by patients. In the medical report it was stated that the work at the hospital was steadily increasing, but that greater in-patient accommodation was required, as cases often had to be treated outside the institution on account of lack of accommodation.

England and Wales.

TREATMENT OF CRIPPLES IN WALES

A CONFERENCE of representatives of health authorities in Wales was held at Wrexham on November 6th to discuss the best means to be adopted for the treatment of crippled children. Dr. D. Llewellyn Williams, the medical member of the Welsh Board of Health, was in the chair, and Sir John Lynn Thomas gave an address, in which he emphasised the necessity for early treatment by persons specially trained in the care of crippled children. He expressed the hope that provision would be made in connexion with the Prince of Wales's Hospital at Cardiff to give surgeons special opportunities of studying orthopaedic treatment. The conference unanimously adopted a resolution in favour of the formation of a Welsh branch of the Council for the Cure of Cripples which has been established in England.

ST. PETER'S HOSPITAL FOR STONE

The story of a small but very well known special hospital was retold at the appeal dinner held at the Hotel Victoria, London, on November 5th, on behalf of St. Peter's, in Covent Garden, which is devoted to the treatment of stone in the bladder and minor diseases generally. The Royal Family, represented by the Marquess of Crisbrooke, who presided, the peerage, by Lord Warrington, the Bar, by Sir Patrick Hastings, the world of business, by Sir Howard Frank, as well as the medical profession, by several distinguished members, bore testimony to the hospital's usefulness. The result of the appeal, announced before the close, was a sum of nearly £4,000, which will go some distance, though by no means all the way, towards providing the modernized operating theatre, the enlarged quarters for nurses, the cost of the recently installed X-ray equipment, and other extensions which are necessary. The Marquess of Crisbrooke said that the hospital was established sixty-five years ago, and for half a century it remained the only hospital of its kind. The urological departments now existing in large general hospitals might be regarded as the children of St. Peter's. He mentioned that over 100 cases were awaiting admission to its thirty-two beds. Sir Patrick Hastings, in a moving speech, said that however different the views which might be entertained even in this gathering concerning the future of voluntary hospitals, they would all agree that in this country there existed the finest hospital system in the world, one which made the highest medical and surgical skill available to the poorest citizen. Sir Thomas Holder, in proposing the health of the surgical staff, pleaded that special hospitals had a function which large general hospitals with special departments could never discharge. When it came to making a thorough study of a special subject recourse must be had to these small special institutions, it was from these rather than from the general hospital that additions to knowledge was the result of research had emanated. They had the advantage of bringing into close daily association men engaged on the same line of work and they were also very convenient

centies for post-graduate instruction. What little he himself knew of thiornts he had learned at Golden Square, what he knew of eyes, at Moorfields, and if his career had been in surgery he would have derived his knowledge of the treatment of urological conditions by surgical procedure at St Peter's. He paid a tribute to those associated with the hospital in the past, especially the late Sir Spencer Wells and the late Sir Peter Freyer, to the present consulting surgeons, Mr Swinford Edwards and Mr Henry Fenwick, and to the present surgical staff, Sir John Thomson Walker, Mr Swift Joly, Mr A. C. Monson, Mr F. J. Barrington, Mr Ogier Ward, and Mr Alban Andrews. In responding, Sir John Thomson-Walker referred to the world-wide reputation of the hospital. He said that if in any clinic in Europe or America a case came forward of the kind with which St Peter's had to deal, the name of St Peter's would almost certainly be mentioned, or the name of some member of its past or present staff, or there would be some indirect allusion. This reputation had been built up by steady and continuous good work. Old methods had been revised and brought up to date, and new methods introduced. The knowledge gained was regarded by the staff as a trust to be imparted as widely as possible. He mentioned that during a tour he undertook not long ago in Canada, from Quebec to Vancouver, 60 per cent of the medical men to whom he spoke had visited St Peter's.

Ireland.

REDUCED DEATH RATE FROM TUBERCULOSIS

At the inaugural annual meeting of the Medical Society of University College, Dublin, the President, Dr W. D. O'Kelly, Professor of Pathology, University College, read a paper on the epidemiology of tuberculosis. The tuberculosis test showed, he said, that by the time they had reached their twelfth year 70 per cent of children had become infected, in the case of children living with tuberculous parents this figure was reached much sooner. The death returns showed that one in every nine or ten deaths in these islands was caused by tuberculosis. Least fatal in the school age, the mortality rose rapidly after the fifteenth year, the female being more liable to die at this period. Before the twenty-fifth year, with the mortality still rising, the death rate in males exceeded that in females, and continued higher throughout the remaining span of life. The maximum mortality in males was reached at about the fiftieth year—twice as high as that occurring in the female. This was specially noticeable in industrial countries like England, but in Ireland the maximum in males and females occurred between the ages of 20 and 35. To some extent the mortality depended upon housing conditions, but the nature of the occupations was all-important. Infection with the bovine type of bacillus was frequent, especially among the young. This could only be attributed to the use of milk from tuberculous cows. Thirty to fifty per cent of cows in Ireland were, some years ago, tuberculous, but only 1 per cent had diseased udders. Yet their milk might be mixed with that of healthy cows, so that something like 8.16 per cent of city milk contained tubercle bacilli. Instancing the infectivity of such milk, he cited an experiment in which one ten-millionth of a cubic centimetre of the milk set up generalized tuberculosis in a guinea pig. This risk could be eliminated by securing a good milk supply. Although common in early life, the human type of tubercle bacillus was much more frequently met with in man after the sixteenth year. It caused bone and joint tuberculosis, meningitis and pulmonary tuberculosis, was almost entirely due to it. Overwork, strain, pregnancy and bad health might light up the disease in adult life. It was often stated that the Irish race was particularly susceptible to tuberculosis, but Professor O'Kelly thought that when corrected death rates were compared the position might not look so bad. He admitted that the death rate from tuberculosis was high. It rose steadily in the years 1865-1900 but the campaign initiated by Lady Aberdeen brought a marked change. Since 1908 the death rate had steadily declined and now was little

more than half of what it was in 1907. There had been a marked falling off in the mortality from tuberculosis in infancy. In 1907 tuberculosis caused 11,679 deaths, but in 1923 about 4,000 only. In 1918 the mortality from influenza was 2,432 per million persons living, but the mortality from tuberculosis had never reached so low a figure during the thirty years 1879-1909. The end of tuberculosis was, the lecturer suggested, in sight. Osler had foretold a 50 per cent reduction in the mortality of the disease in Ireland within a generation, and he had nearly lived to see his prophecy fulfilled. The lecture was illustrated with lantern slides, which showed wonderful results achieved in the treatment of tuberculosis by sun light and ultra-violet rays. Sir William Thompson, in proposing a vote of thanks, spoke of the treatment of tuberculosis in the Franco State. He considered that the result of sanatorium treatment would be much better if something was done for advanced sufferers, for the convalescents, and for the sanatorium patients during the period from discharge to resumption of work. But if the disease was to be completely eradicated preventive measures must be taken. The question, What is meant by prevention? arose. For prevention the standard of living must be raised, housing conditions, wages, and the home life improved.

Correspondence.

RAW PANCREAS BY MOUTH COMPARED WITH INSULIN

SIR,—I feel that I cannot let Dr Bernstein's note of November 7th (p. 844) pass without a protest that he has given in his tables none of the essential facts necessary to prove the efficacy of raw pancreas by mouth in the treatment of diabetes. He makes no mention of the diet of his patients, whether it was weighed and closely supervised, or even whether it remained constant from month to month. Nor does he state whether the time of the blood sugar tests in relation to meals was always the same—a point of great importance. Only when these data are available can his tables be considered as serious evidence that raw pancreas has any effect in diabetes.

In the recent discussion in your columns, all investigators who have carefully controlled all the factors have found raw pancreas quite useless—I am, etc.,

London, W 1, Nov. 7th.

R. D. LAWRENCE

PLANT POISONING

SIR,—In the report of the Section of Comparative Medicine of the Royal Society of Medicine in the *BRITISH MEDICAL JOURNAL* (November 7th, p. 847) Dr W. H. Andrews, in his interesting paper on plant poisoning, expresses the opinion that further investigations should be conducted by biologists, chemists, and pharmacologists. The role he would assign to the first of these is to determine whether any specific plant is or is not poisonous to any specific species of animal, and, if so, in what circumstances and to what animals. May I suggest that to this should be added an experimental inquiry as to what extent, if any, the young and inexperienced of animals—the herbivora, for example—when freshly weaned from their mothers, consume plants possessing toxicity to themselves. It is of interest to record the fact that some 2,000 years ago the great evolutionary poet Lucretius, in his *De Rerum Natura*, called attention to some of the very points discussed at the Royal Society of Medicine on October 28th, 1925.

Leaves of wild olives yield a sweet repast
To Goats to Man a rough and bitter taste
Thus pigs fly sweetest odours those that please
And tickle Man offend and poison these
Yet they will roll in dung in filth delight
Though squeamish Man can scarce endure the sight.

And again

'Strong poison unto me another loves,
And eats and lives. Thus Hemlock juice prevails
And kills a Man but fattens Goats and Quails.'

—I am, etc.,

Chatham Nov. 7th

C. MARSH BROADLEY,
Surgeon Rear Admiral R.N.

PROPHYLAXIS OF TUBERCULOSIS IN INFANCY AND CHILDHOOD

The Grancher System

Sir,—The Grancher system is acknowledged to be scientifically sound, but, apart from the financial difficulty, there is one great obstacle which prevents it being carried out on a large scale—namely, the objection of parents to allow their children to be sent away. To the parent stricken with tuberculosis, the suggestion of such a separation often brings overwhelming distress, and consent is refused, however desirable this step may be in the interests of the children in the long run. It appears from Dr Bolton Tomson's letter (November 7th, p 866) that at Hastings the children are only boarded out in the "spring, summer, and early autumn months," that the average stay is from four to five months, and that only children in failing health and those in an early stage of tuberculosis are sent to allow children who are in poor health to go to the country for a few months in the summer, but that is not the Grancher system as I understand it. Dr Armand Dehille in his paper read at the Tuberculosis Conference in London in 1921 said that the children boarded out under the Grancher system in France are taken away while still perfectly healthy, as long as it is necessary for the disappearance of contagion in their own family. This disappearance becomes sometimes happily a cure, but more often the death of the tuberculous parent. This demands in average of three years.

It appears to me that although the number of cases where it is practicable to carry out the system will be limited, it is on lines such as described by Dr Armand Dehille that we must work if it is to be a real protection of these children against tuberculosis.—I am, etc,

ARTHUR C. WATKIN,
Tuberculosis Officer, Shropshire

November 9th

Sir,—Dr W Bolton Tomson (November 7th, p 866) and your readers may be interested to know that there is a Plymouth and District Hostel for the children of tuberculous parents established and at work. The London County Council is also doing similar prophylactic work. The Plymouth system accommodates the children in a pleasantly situated obsolete bungalow, rented from the War Office, and has resident foster-parents there. A boarding-out system will be added when possible. Our system is based on Leon Bernard's principles combined with those of Grancher, but we are not yet taking "contact" children under 3 years of age. We contemplate, however, linking up infantile prophylaxis with creche and accouchement centres (Leon Bernard's system at the Hotel Lemoine), and finally with the Grancher system for children of school age.

I have all the literature of Dehille and Bernard available on the subject, and shall be pleased to afford any information at my disposal to anyone interested. Our results generally have been excellent and encouraging, and confirm the opinion I formed from visits to "preventoria" in France, and what I heard first hand in Paris, Brussels, Bordeaux and London. The medical officer of health for Plymouth, Dr A T Nankivell, is interested in the hostel.—I am, etc,

November 7th

F G BUSHNELL,
Chairman and Medical Officer, Plymouth and District Hostel for the Children of Tuberculous Parents, etc

OSTEOPATHY AND CHIROPRACTIC

Sir,—In your issue of November 7th (p 868) Dr J S Manson, in dealing with the proposed registration of osteopaths, publicly decries of the commonwealth, not without a fairly plain hint of the culprits responsible for his sackcloth and ashes. There weighs upon him the conclusion that neither individually nor collectively is the medical profession likely to express or to organize opposition to a scheme which would imply State recognition of persons who have not been trained or examined as the law at present

directs. And the ground for this conclusion seems to be the non acceptance by the Representative Meeting at Bath of a motion that the medical profession should endeavour through legislative action to ensure "that no unqualified person be allowed to practise medicine or surgery."

Dr Manson is, of course, perfectly free to deplore the decision of the Representative Meeting, but by what process of reasoning he interprets this decision to mean an acquiescence in the construction of a State register of osteopaths I am unable to imagine. Surely it is possible to decline to embark upon a crusade to "put down" unqualified practice by force of law, and yet to object to an official registration of unqualified practitioners. Because some of us felt ourselves unable to follow Dr Manson's "lead" towards a campaign of prosecutions and penalties we must not be reproved as "sympathetic" towards an entirely different proposition.

Had Dr Manson asked the Representative Meeting to express an opinion on an official recognition of any group of groups of unqualified practitioners he would probably have received an answer very different from the one which to judge from his letter, appears to have plunged his mind in an atmosphere of unrelieved gloom. His proposal is not of this order, and it was declined. Hence these tears.—I am, etc,

London W 1, Nov 9th

C O HAWTHORNE

Sir,—As the years pass many medical practitioners realize that the average medical education tends to create a physician or surgeon who is admirably fitted to deal with the emergencies of sudden illness and accident which demand prompt decision and urgent treatment. Many of the chronic ailments, in which body and mind are so inextricably and inextricably mingled do not respond so readily to the methods of treatment by diet and drugs which are taught in the scientific curriculum. For dealing with those obscure cases other qualities are required—common sense and a special "flair" for adapting the best of several available methods to the special psychology of the individual. Therefore those whose work lies chiefly with the innumerable forms of chronic minor diseases find that in order to obtain successful results they have to concentrate on definite lines of treatment in the administration of which they gradually become expert. Thus there are spheres of usefulness for the vaccine therapist, the psychotherapist, the electrotherapist, the specialist in the treatment of various organs, in massage, in orthopedics, in x-ray and radiotherapy. Of recent years the need as well as the demand for these methods of treatment has led to the formation of special post-graduate courses of instruction. Already a diploma (D M R E) has been arranged by those whom experience had convinced of the great therapeutic value of electricity when employed by experts who know exactly how to use it.

It is certain that there is much value in treating the reflex centres along the spine, and much scientific study on this subject remains to be done. Those who work with electricity have recognized for a generation the tonic effect (surpassing that of drugs) which is obtained by treatment directed to the lower cervical and upper dorsal the lower dorsal and lumbar regions of the spine. How and why these results are obtained is still a matter of controversy. There are already many qualified medical practitioners who use manipulative methods upon the spinal centres. The work of Cyriax and others who have specialized in manipulative massage and many cases of chronic spinal pain and circulatory engorgement of the head and neck. It is impossible for every qualified practitioner to learn every branch of treatment. Even if a seven or eight years study enabled him to have some knowledge of every branch of treatment no matter how well trained and instructed a man may be his personality, experience and judgement play a large part in the cure of the patient who suffers from chronic ailments. We hear so little of the successes of the osteopaths and numerous other cults of mental and physical healers? Every medical practitioner comes

across many of these failures and cures them. But how can this be explained to the layman?—I am, etc.,

London, W 1 Nov 4th

AGNES SAVILL

SIR,—Although I am opposed to any State recognition of semi-qualified persons, there can be little doubt that many of the medical profession are too apt to brush aside anything coming from outside its folds. Pasteur's fight with the French Academy is a case in point, and Gentry's masterpiece emphasizes the absurdity of imagining that nothing of value can come except from within the fold. From time to time men appear who, holding no academic degrees, yet give to the world something of great value. After all, we as medical men or women should inquire into anything and everything that may be beneficial to mankind. Much may be rubbish, but now and then a diamond may be found. Any water-tight compartment policy lays us open to deserved public censure.

Incidentally, during the war, I offered the run of the hospitals, over which I had the honour of being in charge, to a well known osteopath, my object being to give the unfortunates under my care the benefit of this gentleman's supposed special knowledge. I offered to undergo a course of instruction, pay for it, attend anywhere and any time. No one man can possibly see every case, but he can instruct others and so broadcast his skill. My offer was not accepted, and I am still waiting a reply to my second letter in which I asked to be allowed to attend his clinics or anything else.

This year I received a letter from the secretary of an osteopathic clinic, pointing out the value of the work done. It once more asked to be allowed to attend for instruction and observation. I had conversations with one of the osteopathic doctors, read some of the medical books he kindly sent me, but my suggestion of my attending the clinic met with a negative response.

An osteopath is usually definite in what he can do. This gains the patients' confidence. The results may or may not be successful, we hear of the successful ones only, the man who says that he has never had a failure has either no practice or is the other thing.

Because one great man appears outside an academic profession all who follow in his footsteps are not necessarily great, therefore the cry that all should be admitted to State recognition is fallacious. We know of a certain man, still alive but for the moment removed, whose logical knowledge is said to equal that of any State recognized lawyer. Will any of the courts admit him on this plea into their very seclusion bodies?—I am, etc.,

London SW 7 Nov 7th

A MACBETH ELLIOT, M D

A LETTER OF THANKS

SIR,—I am returning to Moscow after a visit of three weeks to England as the representative of the Russian Endocrinological Association. Mrs I, through the columns of your esteemed JOURNAL, express my thanks for the courtesy with which I was so readily afforded opportunities for visiting your leading hospitals and medical institutions, and for the great kindness extended to me by the many professors and medical men whom I had the pleasure of meeting there?

I was fortunate in being granted introductions, and at all hospitals and institutions unfailing courtesy was shown to me and services were willingly placed at my disposal. My visit to London was made most interesting, and it has been most gratifying to learn of the enormous progress made in your country, in regard to questions concerning infant mortality and scientific research work, since my last visit to England eleven years ago.

It has given me great pleasure to realize, from the attitude shown to me at the hospitals and institutions I visited, and from the very interesting talks I had with many of your leading professors and medical men, that scientific relations between England and my country are becoming firmer, and, through your medium, I again desire to express my deep appreciation of the co-operative spirit shown to me by all those members of the English medical profession I had the honour of meeting during my visit.—I am, etc.,

Paris Oct 25th.

EUGENE WILKIN, M D

RHEUMATOID ARTHRITIS

SIR,—As a general practitioner, might I crave your indulgence for a few remarks in regard to the recent discussion in the JOURNAL on the treatment of chronic arthritis? In the first place, is rheumatoid arthritis to be considered a distinct entity, or simply the end result of a number of various and dissimilar factors? Briefly, is there such a disease as rheumatoid arthritis *per se*? From the opinions expressed by our teachers and those of our profession best qualified to pronounce judgement I must confess that I am at a loss to draw any clear conclusion.

Unfortunately, I am a victim of osteo-arthritis, and also subject to acute and chronic attacks of fibrositis with the formation of nodules, particularly in the lumbar fasciae, and am therefore of the opinion that the *fons et origo mali* is the same in both complaints.

Professor Wild's exacerbations with a falling barometer and humid atmosphere are exactly my own. The various forms of arthritis, fibrositis, etc., designated as rheumatoid seem to point to some error or defect of metabolism. The tissues which bear the brunt of the disease are the same as those we find affected in gout. In fact, they may be looked upon as kindred complaints, but while gout can be cured by dietetic and therapeutic measures, and probably in another generation will be extinct, there is no such optimistic outlook for the unfortunate victim of rheumatoid arthritis. Perhaps the solution may be in the hands of the chemist or biochemist. Osteo-arthritis is a universal concomitant of old age in man and all mammals, and the oldest known disease. Even the Pharaohs were not immune, and the fossilized bones of the extinct Irish elk show that before the dawn of history the animal was a sufferer.

Any effective remedy would be one of the greatest therapeutic blessings conferred on suffering mankind in this or in any other age.—I am, etc.,

October 12th

A VICTIM

Universities and Colleges.

UNIVERSITY OF OXFORD

THE degree days in the present academic year are as follows: Saturday, November 14th; Thursday, December 17th; Thursday, January 21st, 1926; Saturday, February 13th; Saturday, March 27th; Thursday, April 29th; Saturday, May 22nd; Thursday, June 24th; Saturday, July 3rd.

Entrance scholarships and exhibitions have recently been awarded to the undermentioned members of the Oxford Medical School at the hospitals named—Guy's Hospital O A Beadle (New Coll), L T Ride (New Coll), King's College Hospital C F J Cropper (University), A W Cabbitt (Wadham), W G Rees (Jesus), St George's Hospital H E Mansell (Pembroke), St Mary's Hospital D H Brinton (New Coll), W Hurst Brown (Queen's), Westminster Hospital W R Greco (Pembroke), A T Leslie Spinks (Oriel), M G Pearson (Keble), H G Wells (Magdalen).

A decree was passed in Convocation on November 10th accepting the sum of £2,200, a bequest by Mrs Constance Jenkinson, for the endowment of a lectureship in comparative and experimental embryology, in memory of her husband, John Wilfred Jenkinson (Queen's). Westminster Hospital W R Greco (Pembroke), A T Leslie Spinks (Oriel), M G Pearson (Keble), H G Wells (Magdalen).

UNIVERSITY OF CAMBRIDGE

Pinset Darwin Studentship in Mental Pathology

THIS studentship was founded in 1924 by the bequest of Mrs Pinset and Sir Horace and Lady Darwin for the purpose of promoting research into any problem which may have a bearing on mental defects, diseases, or disorders. The studentship is of the annual value of about £200 and is tenable for three years in the first instance. The student (who may be of either sex and need not be a member of the University of Cambridge) must engage in original research in Cambridge or elsewhere, but may, subject to the consent of the managers, carry on educational or other work concurrently. Further particulars of the studentship may be obtained from the Registrar of the University of Cambridge and applications for appointment to the studentship should be sent before December 1st, 1925 to the Secretary of the Studentship, Psychological Laboratory, should state their age and qualifications, the problems in which they are interested and should give the date at which they would be prepared to begin work if appointed. No testimonials are required but applicants should give the names of not more than three referees.

UNIVERSITY OF LONDON

A MEETING of the Senate was held on October 21st. The following were recognized as teachers of the University in the subjects and at the institutions indicated:

St Bartholomew's Hospital Medical School—Mr Hugh E Griffiths (anatomy), Dr James W D Scott (physiology), Mr Arthur Edmond (anatomy), Mr Noel St J Dudley Burton (anatomy), Mr Cecil G Valerius (surgery), *London School of Hygiene and Tropical Medicine*—Mr Andrew Robertson (protozoology).

The resignation by Professor A V Hill, Sc D, of the Todrell Chair of Physiology tenable at University College was accepted, with effect from December 31st, 1925. We believe, however, that this will not terminate Professor Hill's connexion with University College.

A bequest from the late Sir Rickman Godlee, Bt, by which, after the death of his wife one moiety of his residuary estate is given to University College and the other moiety to University College Hospital, was accepted.

The Senate accorded its thanks to Dr O. Inghley for his offer to contribute £10 a year for ten years towards the cost of a prize in pharmacology at King's College.

The regulations for the Dunn Exhibitions in Anatomy and Physiology (Red Book 1925-26 p 265, and Blue Book September, 1925, p 232) were amended by the insertion in the fifth line of the words "at the March examination" after the words "shall be awarded."

The following appointments of examiners were announced: Mr C H S Frankau to succeed Mr G Gordon Layton (resigned) as staff examiner in surgery at the M B B S examination, Mr B R Carling to be associate examiner in surgery at the M B B S examination, vice Mr Frankau, Mr A G Boulerton to succeed Sir F M Legge (resigned) as staff examiner in State Medicine at the M D examination.

The External Council reported that Dr R T Williamson one of the staff examiners in medicine, was unable to act at the forthcoming M B B S examination on account of ill health, and that the Vice-Chancellor had appointed Dr Gordon Holmes, an associate examiner to act in his place and had also appointed Dr E P Poulton to act as associate examiner in the place of Dr Holmes.

Essays or dissertations for the Rogers Prize on the value of the methods of investigating diseases of the pancreas should reach the Vice-Chancellor at the University on or before April 1st 1926. Further information regarding the prize (value £100), which is open to all persons whose names appear on the *Medical Register* of the United Kingdom, may be obtained on application to the Academic Registrar.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

The following officers have been elected for 1925-26: President, Mr R M Buchanan, Visitor, Dr G H Lindington, Treasurer, Mr J H MacDonald, Honorary Librarian, Dr L H L Oliphant.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

At a meeting of the President and Fellows held on Friday November 6th, Sir James Ram Males, L R C P Lond, M R C S Eng, and M R C P Edin, having passed the necessary examination, of the College.

Dr Bethel Solomonson was appointed an associate examiner in practice midwifery, and Dr Robert A MacLavery was appointed an examiner in gynaecology and obstetrics for the membership.

The Services

The sixth annual dinner of the medical officers of No. 14 Stationary Hospital will be held on Friday December 4th at the Trocadero Restaurant Piccadilly at 7.45 p.m. Lieut Colonel J R Harper, CBE will be in the chair. The price of the dinner will be 15s (exclusive of wine). Evening dress or dinner jacket, miniature medals optional. The honorary secretaries are Major H M Perry and Dr H L Tidy, 39 Devonshire Place W1.

DEATHS IN THE SERVICES

Lieut Colonel Peter Thomas Frazer R A M C (ret.) died at Bournemouth on October 24th, aged 80. He was educated in Dublin at the Medical School of the Royal College of Surgeons in Ireland and took the L R C S I and L R C P in 1867. He entered the army as assistant surgeon in 1868, became surgeon major after twelve years' service and retired in April 1888. As a regimental officer he served in the 16th Lancers. He took part in the Afghan war in 1879, was present at the forcing of the Khyber Pass and received the medal.

Major George King Indian Medical Service (ret.) died at Corstorphine Middlethian on September 23rd, aged 54. He was educated at Edinburgh where he graduated M B and Ch M in 1896. After acting as demonstrator of anatomy in the Royal College of Surgeons School as clinical assistant in the Royal Hospital for Sick Children and as resident surgeon to the Royal Maternity Hospital Edinburgh he entered the Indian Medical Service in January 1899, became major in 1910, and retired in February 1917. Most of his service was spent in civil employ in the province of Bengal.

Obituary

J N LANGLEY, Sc D, Hon M D, LL D, F R S,

Professor of Physiology in the University of Cambridge

We regret to record the death, on November 5th, of Professor J N Langley, who had held the chair of physiology at Cambridge for the past twenty-two years. An estimate of his pioneer work in experimental physiology, and of the great place he held in the realm of biological science, will be found in the tributes from colleagues, which we have the privilege of printing below.

John Newport Langley was born in 1852, and entered St John's College, Cambridge, from Exeter Grammar School with a scholarship in 1871. He soon came under the influence of Michael Foster (who had just been appointed to the new post of Praelector in Physiology at Trinity College), and obtained a first-class in the Natural Sciences Tripos of 1874. Then began the long series of brilliant investigations into the physiology of the visceral nervous system, which made the name of Langley famous throughout the scientific world. In 1877 he was elected to a Fellowship at Trinity, and after acting for some time as one of Foster's demonstrators was appointed university lecturer in physiology in 1884. In 1900 he undertook the duties of deputy professor, and in 1903, on Sir Michael Foster's retirement, was appointed to succeed him as professor. In 1883 he was elected F R S, in 1892 he received a Royal Medal, and in 1904-05 served as vice-president of the Royal Society. He was president of the Neurological Society of Great Britain in 1893 and of the Physiological Section of the British Association in 1899, and Baly medallist of the Royal College of Physicians of London in 1903. For more than thirty years he edited the *Journal of Physiology*, at first in association with Michael Foster. His many academic distinctions included the honorary degrees of LL D St Andrews, Sc D Dublin, and M D of Groningen and Strasbourg. He was a corresponding member of the Société de Biologie, Paris, and the Imperial Academy of Medicine, Petrograd, honorary member of the Swedish Society of Physicians, the Belgian Royal Academy of Medicine, and of many European physiological and biological societies.

When the British Medical Association held its first Annual Meeting after the war at Cambridge, in 1920, Professor Langley took a warm interest in the arrangements made by the University for this visit, and, as vice-president of the Section of Physiology and Pharmacology, opened a discussion on the treatment of denervated muscle and on the "disuse" theory. The object of his paper was to put before a medical audience some results of the laboratory investigations he had carried out during the war into the degeneration of muscle and regeneration of nerve with a special eye to recovery after suture. His conclusion—not too cheering perhaps, to the electrotherapist and the physiotherapist—was that the treatment of denervated muscle must be regarded as still in the experimental stage.

Cambridge

Sir Humphry Rolleston, Bart, F R C P, Regius Professor of Physics at Cambridge, writes:

The death of Professor J N Langley, the leader of the Physiological School, following on the loss of Sir Clifford Allbutt, the doyen of British medicine, has been an irreparable blow to Cambridge. He lectured as recently as October 31st, and was busily engaged in experimental work up to the onset of the pneumonia which carried him beyond the veil on November 5th. Educated at St John's College and taking a first class in the Natural Sciences Tripos he was, after a close contest with A Sheridan Leys, elected a Fellow of Trinity, thus following the example of Richard Bentley, the great Master of Trinity (1700-1742), who is supposed to have remarked "With the help of God I got over the wall." Sir Michael Foster organized the Physiological School, and inspired Gascoigne, Langley, Sheridan Leys, and other pupils with the ideals of research which raised British physiology to its pre-eminent position.

Langley, who succeeded him as professor in 1903 and is editor of the *Journal of Physiology* (really from 1894), was for years a lecturer on advanced physiology, and in the middle eighties I had the great advantage of coming under the kindly and stimulating influence. His early work on the zymogen granules in the cells of secreting glands, though not undertaken with any idea of application to the practice of our profession, has, like his subsequent investigations on the autonomic system extending over some thirty-five years, been of the greatest importance in connexion with the problem of present-day medicine. Gaskell's genius first established the broad lines of the general arrangement of the nervous system, and Langley carried on this task and added much, both in principles and in details, to our knowledge, for example, in connexion with pharmacology and the endocrine system. In contrast to Foster, he was essentially an experimenter and communicated his enthusiasm to many pupils, such as Sir Charles Sherrington, the late A. S. Granbaum, the late Ice Dickinson, whom he associated with himself in the brilliant discovery of the paralyzing effect of nicotine on the sympathetic at the junction of the white ramus with the ganglion cells, and Sir Hugh K. Anderson, now Master of Corpus College, who collaborated with him in further experiments on the autonomic system. His papers in the *Journal of Physiology* numbered about a hundred, and our knowledge of the subject which he had more specially made his own is summarized in his work *The Autonomic Nervous System*, the first part of which appeared in 1921, and was reviewed in this JOURNAL (1922, 1, 230). As an editor he was extraordinarily conscientious, wisely critical, and set up both for himself and for others a very high standard of accuracy and argument. As an organizer and administrator it was obvious that the mantle of his predecessor had fallen on most competent shoulders, and thus, if proof were needed, is shown by the results of his supervision of the construction of the new physiological laboratory opened in 1914. It is a pathetic coincidence that the current number of the Rockefeller Foundation's *Methods and Problems of Medical Education* (third series), which came to hand on November 5th, should contain a full account of his departure from his own land. As a patient and pioneer research worker he was indeed an outstanding example of the importance of relying on solid observation and of resisting the attractions and attendant fallacies of hypotheses. Essentially a shy soul, he had an air of reticence which some could neither understand nor penetrate. It is as a willing guide and charming friend that I mainly think of him, some forty years ago, making an occasional companion of one of his junior pupils in games and walking tours at home and abroad. Generous in all things, and with many outside interests—literature, travelling, skating, and gardening—he was much younger, both in mind and appearance, than his years suggested, and his death in the full tide of his activities is sadly premature.

We are indebted to Sir W. B. HARDY, F.R.S., University Lecturer in Physiology, Cambridge, for the following appreciation.

Langley was one of the small band of workers gathered together in the early seventies by Michael Foster. The physiological department at Cambridge then consisted of a single room—the one now occupied by the philosophical library. All the members of the school were young, including Foster himself—for to the end he never lost his boyish capacity for fun—and stories, his fast fading into oblivion, tell of their enthusiasm for play as well as for work. Francis Mott and Balfour, Dew Smith (who founded the Cambridge Scientific Instrument Company), Newall Martin (who did so much for American physiology), Vines, Bridges, Gaskell, and Langley—they were a notable band. Their early papers were issued as *Studies from the Physiological Laboratory, Cambridge*, to which the *Journal of Physiology* established in 1878, was the successor. As might be expected under Foster the interests of the infant school were wide. They included embryology, comparative anatomy as well as the physiology of animals and plants, for nothing was beyond Foster's sympathy. Langley was almost the last survivor of the band, and when death closed

his career last week he had entered upon his fiftieth year of active research. He was at work until the last, and to the last he taxed his powers to the utmost. A week before his death he was in the laboratory experimenting, without food or rest, for eight hours, and there were then no signs that age had impaired the steadiness of his hand or the sureness of his touch.

The first fifteen years of his active scientific life were devoted almost wholly to the mechanism of glandular secretion, to the relation of the cell granules to the formation of mucus and pepsin, and to the action of the cerebral and sympathetic nerve fibres upon the secretion of saliva. From this last he passed by easy transition to his life work—the study of the sympathetic nervous system. To Gaskell and Langley—the two names cannot be separated—belongs the credit of having built up the major part of our present knowledge. Langley was helped by his discovery that nicotine, applied locally to a ganglion, paralysed the sympathetic nerve fibre at its junction with a nerve cell. This enabled him to map out the path of the fibres to various organs and fix the position of the relay cells upon their course. He also, at a later period, investigated the mechanism through which the nervous impulse starts the contraction of the muscle fibre.

The quantity of his published work must be extraordinary, and the quality was always high. So far as the writer knows, Langley never made a mistake. All that he has written will stand as testimony to his most unusual skill as an experimenter and his capacity for accurate observation and self-criticism. Valuable as were Langley's direct services to science, he rendered mother almost equally valuable as editor of the *Journal of Physiology*, a responsibility which he shouldered in 1894. The titillation of the physiological paper had been that of the "descriptive" sciences. Langley changed it to that of the "exact" sciences, with resulting gain both to readers and authors. He was a great editor as well as a great physiologist.

A man of great natural dignity, knowing his own mind and impatient of delay, he was apt to give an impression of hardness and want of sympathy to those who knew him only superficially. The impression was largely false. Langley did not spend his capacity for friendship recklessly, but when it was called upon he could, and did, give freely. On two occasions known by chance to the author, and there certainly were many others, he rendered services which few would have done.

Sir D. Sharpey Schaffer

Sir EDWARD SHARPEY-SCHAFER, F.R.S., Professor of Physiology, Edinburgh, has, in response to our request, sent the following tribute to his friend's memory.

The death of Professor Langley is a severe blow to physiology, in which, as an investigator of certain subjects, he was *facile princeps*. His loss will be felt not only in this country but throughout the world. At the triennial Congresses of Physiology no one will be more missed, for he was always present, and took an influential part in the proceedings.

The outstanding feature of Langley's work is the accuracy of observation which throughout characterizes it. So far as I am aware no statement of fact that he has made, although frequently based only on unaided ocular observations, has ever been seriously questioned. And most of the generalizations which we owe to him—such as the law of distribution of the autonomic nerves, and that concerning the "receptive substance" of the cell—have been so universally accepted that they have come to be regarded as axiomatic. It may be said without fear of contradiction that no more solid contributions to physiology than those of Langley have issued from any physiological centre. It has, indeed, been a surprise to his friends that his work has never found the recognition by the Nobel Committee it has seemed to deserve. For whatever its nature—whether secretion, or nervous functions, or the action of drugs, or degeneration processes in nerve and muscle—there was no subject of which he undertook the investigation without illuminating it. Moreover, his work furnishes a striking example of the importance of keeping microscopic observation in close touch with physiology.

I have known Langley intimately for more than

fifty years. The last occasion we met was at the International Physiological Congress which was held in Edinburgh in 1923. He then appeared as vigorous, not to say as youthful, as ever, and looked as if he might easily enjoy at least another decade of active scientific life. But the fates have willed it otherwise, and we, his old colleagues and friends, can, alas! do no more than express our regret for the loss we have sustained by his untimely death.

Sir Charles Sherrington

SIR CHARLES SHERRINGTON, F.R.S., Professor of Physiology, Oxford, has sent us the following:

The invitation to submit some words of tribute to the memory of Professor Langley is a privilege valued by me, not only as one who, in common with all those who pursue physiology, admires his work and deeply regrets his loss, but also as one who was his pupil and owes him that kind of personal debt which lifelong gratitude alone can attempt to repay. To work under him or with him was to see exemplified a fidelity of observation, a detachment from preconception, and an untiring search for new facts which formed at once a lesson in character and an inspiration for method. It is unnecessary here to bear witness to the importance of his achievements, his discoveries speak for themselves. He was in many respects a pioneer, not least so in that, without having received formal training in medicine, he yet chose to devote his life to physiology. His gift of minute observation was such that in his hands simple inspection was often as reliable as graphic registration by recording instruments. He was always on his guard against deception by technique. This was early and typically shown in his studies on secretion, there, though an expert histologist, he was not content to pin his faith to the appearances of his fixed and stained preparations, decisive though these seemed, but he systematically controlled them by observations taken from the living, though perishable, tissue itself. He will be remembered as one of the makers of that renaissance of British physiology which was one of the features of the scientific progress of his time.

E. J. DOMVILLE, OBE, LRCP, MRCS,

Consulting Surgeon to the Royal Devon and Exeter Hospital.

Very many members of the British Medical Association who knew of the excellence of the work he unassumingly did for it will learn with great regret of the death of Mr. Domville of Exeter. The announcement came as a surprise to many of his friends in Exeter, for though he had retired from practice some years ago and was living at Symondsburry, Dorsetshire, he was until recently quite often seen in Exeter, apparently in good health.

Edward James Domville was the son of a naval chaplain, and was born at St. Ives, in Cornwall, seventy-six years ago. He studied medicine at Guy's Hospital and obtained the diplomas of MRCS Eng. in 1871 and LRCP F Lond. in 1872. After serving a term as house-surgeon to the Royal Devon and Exeter Hospital he later on started in private practice in Exeter, in 1885 he was appointed to the honorary staff of the hospital as surgeon, and continued diligently to discharge the duties of that office until shortly before he left Exeter to live in the country.

Mr. Domville's association with the hospital was in some respects unique in character. He twice filled the appointment of senior house surgeon. At his first appointment he was the youngest house-surgeon the hospital had ever had. His second appointment came soon after the outbreak of the late war, when he emerged from his then recent retirement from Exeter and practice to take up the post as the best form of practical war service he could devise for himself, perhaps during no period of his professional life more than in those war years were his dominating characteristics of superabundant energy and forcefulness combined with kindness more manifest. On the conclusion of the war, therefore, he retired with the thanks of the governors of the hospital, who further expressed their appreciation in tangible form by the gift of a grandfather clock. He was also made an officer of the Order of the British Empire. At this latter period, also, the formation of a venereal centre in Exeter was due to his initiative and he acted as its first

medical officer. Since the war his energy and influence were used to the full in bringing about, despite strong opposition, the erection of the costly new block of buildings known as the Victory Wing of the Royal Devon and Exeter Hospital.

Mr. Domville joined the British Medical Association in 1884, and eventually came to take a great interest in its affairs, both local and central. He had been for many years vice-president of the South-Western Branch, when in 1907 he was elected its president. In that year the Association held its Annual Meeting in Exeter, and Domville was vice-president of the Section of Surgery. He was Chairman of the Exeter Division, 1911-12. Centrally he served on the Public Health, Hospitals, and Ministry of Health Committees, and on various subcommittees, and from 1907 to 1913 was a member of the Central Council. His services in these various capacities were very greatly valued by his fellow members, who appreciated his wide knowledge of affairs and his unflinching courtesy.

In 1920 Mr. Domville took the lead in appealing to medical men to subscribe to a fund to establish a memorial to Sir Victor Horsley. A general committee was formed and received subscriptions from all parts of the world. The committee, over which Sir Charles Ballance presided, and of which Sir Frederick Mott was treasurer, Sir William Albuthnot Lane and Mr. Domville being honorary secretaries, decided that the sum collected, which amounted to over £1,000, should be invested in the name of trustees, who should triennially appoint a person to deliver a lecture in London under the title of the "Victor Horsley Memorial Lecture." Sir Edward Sharpey-Schafer accepted the invitation to give the first lecture, it was delivered in October, 1923, and was on the relations of surgery and physiology. It was printed in our columns at the time (1923, vol. 11, p. 739).

A man of wide interests outside his profession, he took for many years an active interest in municipal affairs, and was a fluent speaker who spoke his mind fearlessly. Becoming an alderman, he was for a time the leader of the Conservative party on the Exeter City Council at a time when party feeling ran very high in that body, and became mayor in 1895, in which year the Church Congress was held in Exeter.

To many of the present generation he was chiefly known for his connexion with the stage. When the old Exeter theatre was destroyed by fire in the early eighties, largely through his efforts another theatre was built on a new site in Longbrook Street, but unhappily that house, too, was destroyed by fire, this time, unfortunately, with terrible loss of life. Mr. Domville thereupon worked again unflinchingly to overcome the sentimental objections to the erection of another theatre on this same site, and finally succeeded. For a long number of years, therefore, he had been the chairman of directors, and formerly also for many years he was the mainspring of the old Exeter Amateur Dramatic Society. Among his other activities he took a keen interest in the university extension movement locally, and was one of those who laid the foundation of the movement which has resulted in the present University College of the South-West. It was also chiefly due to his agency that the Linsborough House Refuge for aged and infirm gentlemen was opened. He was a keen Churchman, and very active in connexion with the Church Defence movement.

In short, though naturally less personally known of recent years to the inhabitants of Exeter, his name will remain, as it has done since his retirement from Exeter, as that of one who led a strenuous, full, and useful life in the service of the community. The large number of people present at the funeral service at St. David's Church, Exeter, to which his cremated remains had been brought overnight, was a striking testimony of the regard in which he was held by all classes. Representatives of many of the organizations with which Mr. Domville had been associated were present, and also the Mayor of Exeter, Sir Robert Newman, M.P., and the Bishop of Crediton, as well as many members of the medical profession.

Mr. Domville married Miss Druce of Exeter, and had a son and a daughter. His son, David, died several years ago. He is survived by Mrs. and Miss Domville.

Dr WILLIAM EDWARD NICHOLAS DUNN, who died on October 19th, at Mentone, was born in 1871, and went from Monmouth Grammar School to St Bartholomew's Hospital. In 1895 he obtained the diplomas M.R.C.S., L.R.C.P., and in 1897 graduated M.B. Lond. He held the appointments of house surgeon to the Metropolitan Hospital, house-physician and resident anaesthetist to St Bartholomew's Hospital, and senior resident medical officer to Queen Charlotte's Maternity Hospital. During the South African war he served as civil surgeon in the hospital ship *Auba*. At the end of the war, owing to impaired health, he began to winter in Egypt, where he became well known, first as medical officer of Messrs Cook's Nile Service, and later in Luxor. During his residence in that town he practised among the visitors there, and devoted much time to the Luxor Hospital for Natives. He was the author of a book entitled *Tunisi as a Health Resort*. During the recent war Mr Dunn served in the R.A.M.C. from 1915 to 1919 at Netley Hospital and the Horton Hospital at Epsom, attaining the rank of major. In consequence of the strain of this work the pulmonary trouble which had threatened for nearly thirty years returned, and he again spent the winters in Egypt from 1920 to 1922. His condition grew steadily worse, and after living for some time in Assoum and Cairo he entered a nursing home at Mentone where he died. A colleague, G. V. W., writes "Bill" Dunn was always a favourite with his fellow students and resident officers, but it was in Luxor that I was closely associated with him and learned to know him well. He was a first-rate practitioner and good anaesthetist. He had his idiosyncrasies, was a staunch, and a very faithful colleague. He was very jealous of the good name of the profession and very plain spoken about anything he considered unworthy or not altogether straight and upright. In spite of the ill health which dogged his footsteps while practising in Luxor, he made a great name amongst very many of his old patients, both British and American, who much appreciated his excellent qualities. With the natives of Egypt he was a great favourite, and in fact with all who came into contact with him. In whatever sphere he worked he would have made his mark. His very numerous friends will much regret his loss.

A veteran West Country practitioner, Dr SYMUR CRADDOCK, died at Bath on November 4th, at the age of 91. He was born at Shepton Mallet, received his medical education at King's College, London, and took the diplomas of M.R.C.S. in 1856 and L.S.A. in 1857. On the death of his uncle in London, whom he had assisted in practice, Dr Craddock set up practice at Shepton Mallet, but removed to Bath in 1882. In November of that year he was appointed medical officer of the Bath Workhouse and held that post for over thirty-one years, during which a number of reforms in the nursing and other services were introduced at his instigation. After serving as deputy coroner for South-East Somerset for five years he was appointed coroner for North Somerset in 1867, and continued to hold that office until his retirement last year. In the course of sixty-two years more than 6,000 inquests were held by him. Dr Craddock was an ex-president of the Bath Pathological Society, and consulting surgeon to the Shepton Mallet Hospital, and for many years was a member of the British Medical Association.

Dr SIDNEY JOSIAH STUCK, who died on October 31st, aged 56, received his medical education at the Middlesex Hospital, he obtained the diplomas M.R.C.S., L.R.C.P., and L.S.A. in 1893, and the M.D. Brux. degree in 1896. He then became house surgeon at Ryde Hospital and afterwards resident medical officer to the Chelsea Hospital for Women. Entering the Whitechapel Infirmary as assistant medical officer, he developed a high degree of operative skill and became a skilful anaesthetist. In 1900 he joined Dr F. B. Hastings in practice in Bow. In 1907 he moved to Leytonstone, the partnership continuing until 1921, from which date until his death he practised alone. His former colleague writes of Dr Stuck that he was most industrious and conscientious, his judgement was sound

and his kindness won the affection, as his skill won the confidence, of his patients. His early and unexpected death is mourned by all who knew him.

We regret to announce the death of Dr GEORGE REIN, consultant medical officer of health for Staffordshire. We hope to publish a biographical notice in an early issue.

Medical News.

THE next session of the General Medical Council will commence on Tuesday, November 24th when the President, Sir Donald MacAllister, Bt., K.C.B., M.D., will take the chair at 2 p.m. and give an address. The Council will continue to sit from day to day until its business is finished.

THE following members of the medical profession are among the majors elected in England and Wales on November 9th: Dr H. J. Campbell (Dartmouth) re-elected; Dr J. C. Dixey (Barnstaple); Dr E. A. Gregg (St Pancras); Dr W. R. Jones (Bristol); Dr R. W. Pearson, M.C. (Arunclay); Dr J. Welsh (Chester).

As announced in our advertisement columns, all applications for 1926 for participation in the Government grant for scientific investigations must be received at the offices of the Royal Society by January 1st, 1926. Applications must be made on printed forms to be obtained from the Clerk to the Government Grants Committee, Royal Society, Burlington House, London, W.1.

THE annual dinner of the Royal Society of Medicine will be held on Thursday next, November 19th, at the Hotel Victoria at 7.45 p.m. The Minister of Health will be the chief guest. Fellows are welcome to invite guests, ladies or gentlemen who can be accommodated at separate tables, if they will notify the senior honorary secretary immediately.

THE annual dinner of the London (Royal Lico Hospital) School of Medicine for Women will be held at the Savoy Hotel, Strand, W.C., on Thursday, December 3rd, at 7.30 p.m.

SIR H. H. PRINCE OF WALLS has graciously consented, as President of the National Association for the Prevention of Tuberculosis, to take the chair at a dinner in aid of its funds on Wednesday, December 9th.

THE Glasgow University Club, London, will dine at the Trocadero Restaurant, Piccadilly, on the evening of Friday, December 4th, when the Right Hon. Sir Henry Galk, K.C.B., LL.D., M.P., will preside. Any Glasgow University men, who, though not members of the club, would like to attend, are asked to communicate with the Honorary Secretaries, 1, Harley Place, N.W.1.

THE next quarterly meeting of the Royal Medical Psychological Association will be held at 11, Chandos Street, Cavendish Square, W.1, on Tuesday, November 17th, at 2.30 p.m. The president, Sir Frederick Mott, will be in the chair, and Dr Garwood will open a discussion on insanity and crime, and will deal with some suggestions arising out of the report of Lord Justice Atkin's Committee. To commemorate the fact that the King has granted permission to use the prefix "Royal" in the title of the association, an informal dinner will be held on the evening of the same day.

A MEETING of the Fever Group of the Society of Medical Officers of Health will be held at 1, Upper Montague Street, W.C.1, on November 27th, at 3 p.m., when Dis O'Brien and Okell will contribute a paper on the Dick test.

ON November 16th, at 5.30 p.m., Sir Henry Gauvain will lecture for the Fellowship of Medicine on the light treatment of surgical tuberculosis, in the lecture hall of the Medical Society of London, 11, Chandos Street, this lecture is open to all members of the medical profession. The West End Hospital for Nervous Diseases will hold a three weeks' course from November 23rd dealing with the diagnosis and treatment of nervous diseases. From November 23rd to December 12th the Royal Waterloo Hospital will hold a course in medicine, surgery, and gynaecology. For the convenience of the general practitioner the London Temperance Hospital has arranged a late afternoon course (4.30 to 6) in general medicine, surgery, and the specialties from November 23rd to December 4th. There will be a special course at the Infants Hospital from November 30th to December 13th. For December the following special courses have been arranged: dermatology (December 7th to 19th) at the Blackfriars Skin Hospital, and a similar afternoon course (4.30 to 6.30) at the Hampstead General Hospital from December 7th to 19th. A copy of each syllabus and the Fellowship general course programme will be forwarded on application to the secretary of the Fellowship, 1, Whitpole Street, W.1.

DR T WATTS EDEN will deliver the David Lloyd Roberts Lecture at St Mary's Hospitals, Whitworth Street, Manchester, on Tuesday, November 17th, at 4 15 p.m., the subject selected is "What we can do for the unborn child."

At the meeting of the Chelsea Clinical Society at St George's Hospital at 8 30 p.m., on November 17th, there will be a discussion on insulin treatment. Drs E P Poniton, George Graham, P J Cammidge, and T G Crookshank will take part.

THE Benjamin Waid Richardson Memorial Lecture before the Model Abattoir Society will be delivered this year by Dr William J Howarth, CBE, medical officer of health, City of London, on the slaughtering of animals for human consumption. The lecture will be given at the honso of the Royal Society of Medicine, 1, Wimpole Street, on Friday, November 20th, at 5 30 p.m. Admission is free without tickets.

At the meeting of the Tuberculosis Society on Friday, November 20th, at 8 p.m., at 1, Upp Russell Square, Dr A Sandison, of the will read a paper on Swiss sanatorium standpoint.

At the meeting of the Central Midwives Board for England and Wales, held on November 5th, with Sir Francis Champneys, Bt, M.D., in the chair, the report on the work of the Board for the year ending March 31st, 1925, was considered, signed by the chairman, and directed to be forwarded to the Ministry of Health. Dr Gerald F Keatinge was approved as a lecturer.

THE National Council for the Unmarried Mother and Her Child will hold an informal conference on Friday, November 27th, at 2 30 p.m., at Carnegie House, 117, Piccadilly, W 1, to discuss the reasons for the disproportionately high death rate among illegitimate children, and the methods of co-operation by which it might be decreased. Professional and voluntary workers interested in this matter will be admitted on presentation of visiting card.

THE disinfection of ships will be the subject of a discussion at a meeting in Plymouth of the Royal Sanitary Institute on Saturday, November 28th, at 10 a.m. The discussion will be opened by Dr G A Borthwick, Port Medical Officer. On the evening of the previous day Dr A T Nankivell, M.O.H. Plymouth, will speak on some points in public health propaganda. Free particulars can be obtained from him.

THE KING on the occasion of the Prince of Wales's return from his visit to Africa and South America, has appointed Surgeon Commander Henry E Y White, M.V.O., R.N., to be an Officer of the Civil Division of the Order of the British Empire.

DR A N BOYCOTT, on the occasion of his retirement as medical superintendent of the Hants County Mental Hospital, Hill End, has been entertained by the staff and presented with a set of table silver.

DR JOHN DYNE, barrister at law, has been appointed colonel for the city of Hull.

CALDECOTE HALL, Nuncaton, organized as a home for cures of certain types of functional nervous disorders, will be formally opened by the Rt Hon Sir William Johnson Parnell, Bt, Secretary of State for Home Affairs, on Tuesday, December 8th, at 1 o'clock. Invitations for the ceremony have been sent out in the name of the Bishop of London and the Central Council of the Church of England Temperance Society. The premises will be open for inspection during the day from 11 till 5 o'clock.

THE first number of *Medicina e Pharmacia*, a monthly journal printed in Portuguese, has been published at Rio de Janeiro under the editorship of Dr Joige de Medeiros e Albuquerque. The issue contains articles by Professor Renato de Souza Lopes on infection in gastro-intestinal ulcers, orthopaedic resection of the knee joint for ankylosis by Professor Figueiredo Brena, the choice of routes for administration of opotherapeutic drugs by Dr Carlos de Silva Arango, and an answer to Pirie by the editor.

IN connection with the present interest in improving post-graduate work in this country it is interesting to note that the Sun Life Assurance Company of Canada has offered to provide 30,000 dollars for the first year's working expenses of inaugurating throughout the Dominion a post-graduate lecture course similar to that arranged in the province of Ontario. It is announced in the *Canadian Medical Association Journal* for August that the offer was gratefully accepted by the association. It will be remembered that on September 26th 1925 (p. 583), we referred to the good work of the Health Service Bureau of the Wesleyan and General Insurance Society, Birmingham, in preparing and distributing health literature and in proposing to make periodical health surveys. These new developments on the part of insurance societies are gratifying indications of their interest in preventive and scientific medicine.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The Editor, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W C 1 on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the *Journal* should be addressed to the Financial Secretary and Business Manager.

THE TELEPHONE NUMBERS of the British Medical Association and the *British Medical Journal* are **MUSEUM 9861, 9862, 9863, and 9864** (internal exchange, four lines).

THE TELEGRAPHIC ADDRESSES are
EDITOR of the *British Medical Journal*, **Astology Westcent, London**.

FINANCIAL SECRETARY AND BUSINESS MANAGER
(Advertisements etc) **Articulate Westcent, London**.

MEDICAL SECRETARY **Medicaria Westcent, London**.

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams **Bacillus Dublin** telephone 4737 Dublin) and of the Scottish Office 6 Drumshigh Gardens, Edinburgh (telegrams **Associate, Edinburgh** telephone 4361 Central).

QUERIES AND ANSWERS

"Q" asks for suggestions in the treatment of asthma in a young married lady. The condition has existed for some years. The skin reactions are negative. Leptone has been given intravenously and later intramuscularly with temporary relief. The attacks invariably begin between 1 and 3 a.m. and last for hours. The use of an air pillow brings temporary relief. The patient takes nothing to eat after 5 p.m. and is normal in every other respect. The bowels are regular and there is no nasal obstruction.

CRACKED NIPPLES

MEDICALS asks for advice as to the best treatment both prophylactic and curative for cracked nipples. When possible he advises women to keep the nipples scrupulously clean during pregnancy and during the last two months to apply equal parts of castor oil and water daily. If a crack appears he has been accustomed to paint it with frills but would like such precautions as the use of a nipple shield and the application at intervals of hot dipped in saturated borax solution.

MILK STOOLS

DR D W MACDONALD (Ainslie, Westmorland) writes in reply to L.G.'s query (October 31st, p. 822). I have seen excellent results follow the administration of powdered linseed oil. A teaspoonful mixed with marmalade or jam is given each morning, an hour before food. No water or fluid should be swallowed with the marmalade or jam after taking it. When the marmalade persists a second dose may be given (with similar directions) during the day. No special dietary is invoked. The bowels open regularly, with built-up motions.

INCOME TAX

Depreciation of Car

"D W M." has been informed by the local inspector of taxes that he can have an allowance for depreciation of his car but in that case as a change in the method of the allowance is involved the amounts deducted in previous years for cost of replacement of the old car cannot be allowed.

"We are unable to agree with the inspector's view. The cost of replacement was actually incurred and as it seems to us, is clearly allowable especially as no depreciation allowance was ever given in respect of that car. Equally the depreciation allowance is due by statute in respect of the new car. The point has been discussed between inspectors of taxes and other correspondents of this *Journal* and we suggest that D W M. might ask the inspector concerned to reconsider the question and, in the event of his adhering to his view, place the facts before the Secretary, Inland Revenue, Somerset House, London, in writing."

Allowance for Obsolescence of Plant

"D S." inquires as to what allowance can be claimed for the loss incurred through rays and other apparatus being set aside, although not worn out in favour of more up-to-date appliances.

On the value of the whole of the professional apparatus, whether in actual use or not, D S. is entitled to a percentage allowance under the 1925 Finance Act in respect of diminished value by reason of wear and tear, the value should be taken as at the end of the last professional year—**FRY**.

December 31st, 1924—and the allowance operates as a deduction from the assessment (on the usual average basis) for the financial year—that is 1925-26. The obsolescence allowance operates as an allowable expense incurred in the professional year in which the disused apparatus is sold or otherwise disposed of, provided it has then been replaced, and is calculated at the cost price (£x), less the sale price (£y), and less the amount of depreciation allowed for income tax purposes on the particular apparatus (£z). When the obsolescence allowance is made, the latter amount (£x - (£y) + (£z)) should be deducted from the capital value of the plant, etc., for the calculation of future depreciation allowances.

Three Years' Average

"WEST HERTS" has for many years paid tax on his income "year by year" (presumably on the basis of the previous year's earnings), his income has been falling, and the authorities have now assessed him on the average of the past three years. Is this correct?

* Yes, there are certain circumstances in which relief from the three years' average can be obtained—for example, when the income falls off owing to some specific cause, such as may follow on a succession to the practice—but not on the ground that there is an annual reduction, although the result may be that the taxpayer is adversely affected.

LETTERS, NOTES, ETC.

For the benefit of correspondents who have been asking about the rubber boots and shoes recommended by Dr J Fletcher in his letter on the prevention of rheumatism and influenza (October 31st, p 819), he asks us to state that they are procurable from Messrs Foster Bros, Midland Works, Ashbourne, Derby.

A LARGE VERGICAL CALCULUS

Dr J N TURNBULL (Corbridge, Northumberland) writes with reference to the large vesical calculus described (October 31st, p 822) by Dr W A Young of the Gold Coast Medical Research Institute, to say that had Dr Young worked in South Arabia the calculus might have seemed to him quite average. "During my last term at Sheikh Othman, Aden," Dr Turnbull continues, "I removed suprapubically several large stones, mainly from Arabs from the interior, my largest specimen weighed 12 oz/avoirdupois. Unfortunately I have no record available of its dimensions, but they were considerably greater than those recorded by Dr Young. So large as this stone was it is quite possible that the veteran Dr J C Young, who was my senior colleague at Aden, has removed a larger."

MIXED MIA

Dr T M ALISON (Newcastle upon Tyne) writes. With reference to Dr L. L. Fox's letter (October 24th, p 768) I well remember the two letters of Dr Hector Mackenzie and Dr Fox appearing in 1892 in the same issue on the subject of the oral administration of thyroid gland. I was engaged in doing the same thing myself, and had told my colleagues at the Newcastle Dispensary of the good results, and on going to the dispensary on October 29th, 1892, one colleague said, "You are too late, there are two letters in to-day's B.M.J." I quite agreed with Dr Fox that the credit of oral administration should justly be given to Englishmen and not to Denmark. I embodied my own work in my M.D. thesis on myxoedema. One result I obtained was that cooking did not impair the efficacy of the glands, as one of my cases in 1892 obtained the glands from his butcher and took them cooked for breakfast, with good results. If the tablets of thyroids were sterilized by heat they would, I think, keep better and act equally well. Since then I have always given scrums and some vaccines by the mouth, and I think the results are equally as satisfactory as in the case of the thyroid gland.

DIPHTHERIA AND SMALL POX

Dr J READIE SALMOND (Apploby Magna, near Mergham, Burton on Penty) writes—The following case may be of interest. In April last I was called to see a girl aged 9. She was complaining of a sore throat and her mother said she was "taking nothing." I found a typical diphtheritic membrane covering the right tonsil. I took swabs (and had a report later: Klebsiella, bacilli present in large numbers) and injected an initial dose of 8,000 units of antitoxin. The patient was isolated. On the ninth day after injection I received an urgent message to see the patient as she had "broken out all over her." I found her covered with a typical small pox rash. She was seen by the medical officer of health and the county medical officer, who confirmed my diagnosis and she was removed to the county small pox hospital. The father and mother and two brothers were at once successfully vaccinated. Other contacts were traced and vaccinated and the patient made a good recovery, no further cases arising. Save for three pox marks on the forehead the child is very well, the appearance of the small pox rash at the time when one would be expecting a scarum rash might have led to confusion as to the etiology.

GENERAL PRACTICE TO DAY

"JUNIOR G.P." writes. Several years ago I attended some 200 midwifery cases a year, now I do not deliver more than 100. The birth rate may be falling but I think that most of those

cases are sniped by the midwives who, supported by the county council, have undertaken. If the midwife takes out normal cases does it not stand to reason that she should be properly remunerated for attending the abnormal ones who cannot manage? Our training is costly. Last week, at 3 a.m., I responded to a midwife's order—namely, adherent placenta. A general anesthetic was necessary, and the case required several subsequent visits and medicines. For this the county council pays £1 1s, for abnormal labour it pays £2 2s, which is totally inadequate. Do the present day general practitioners realize that private practice is practically slipping away and that we as a class will soon cease to exist? Tuberculous officers visit and treat tuberculous cases, the M.O. often visits and deals with infectious cases, the public vaccinator does vaccinations free, the children attend the school clinics, ante-natal work is taken from us, and venereal cases are provided for. Has the public no sense of independence and responsibility? Must the State provide everything? Again, all middle-class operations and accidents go to hospital and are treated free. The work of the honorary medical staff increases daily, notwithstanding general practice. Can nothing be done to retrieve our position? We have brought this upon ourselves by our apathy and good nature.

INCIDENCE OF OPERATIONS

Dr D. M. OGDEN (London, S.E.) writes to suggest that hospitals should give their patients a card with a brief account in medical language, of any major surgical procedure undergone there which the patient could be instructed to keep carefully and show to any doctor who subsequently attends him or her. "My own experience, and that of many others with whom I have discussed the matter, affords a number of instances of laparotomies that would never have been undertaken had the surgeon been in possession of all the facts precedent. It will be contended perhaps that the patients would lose their minds or that they would by reading them learn what had been done and misinterpret it with the aid of a dictionary, subsequently developing hypochondriacal symptoms. But the proportion of patients whose relatives and friends would permit them to lose so important a document must be very small, while neurotic persons likely to dwell on the subject hardly would hardly be in worse case for having the truth to go upon instead of their own imperfect and exaggerated recollection of a subject which they have not the knowledge to evaluate correctly."

MICROSCOPIC 220

Dr BRIAN B. SHARP (London, W.) writes—On bottles of this dye, as supplied by Messrs Martindale of 10 New Cavendish Street, W., appears a label bearing the inscription "Note particularly error in American literature suggesting 25 per cent solution in gonorrhoea. Strength should not exceed 25 per cent." This statement is misleading. A 25 per cent solution of mercuric chromo 220 can be used with perfect safety and with benefit for application to the mucous membrane of the vagina in children on gonorrhoeal vulvovaginitis. In the treatment of these cases at the Hospital for Ormond Street, the application being made twice a week, and I have never seen any ill effect therefrom. To ensure the thorough painting of the whole of the vaginal wall, and especially the fornices, the application is made through an all distraction in microscope, as described and designed by Colonel Harrison at St Thomas's Hospital. A 25 per cent solution of mercuric chromo is also useful as an application to the cervical canal in women with gonorrhoeal cervicitis. Thus I agree with the above warning only in so far as it applies to the urethra.

"ROAD WISDOM"

UNDER the title *Road Wisdom* the Anglo-American Oil Company has issued in booklet form a series of little notes on the use and abuse of roads. Each of these notes is illustrated with a coloured diagram or drawing. A few simple signals and depicted hints are given on the avoidance of dangers, such as "cutting in," and on taking care at corners and crossings, and on roads under repair. There are illustrations of various "tram track trucks." In several notes the motorist is reminded of sundry courtesies of the road. The up-to-dateness of the booklet is shown by the page devoted to the "white line," and by that which describes and depicts the operation of the "off-side rule," which has recently been approved and advocated by the Automobile Association. Readers of the *BRITISH MEDICAL JOURNAL* may be reminded that the suggestion of this rule was first made by a medical man, and that it has been discussed in our columns on several occasions. The illustration given in *Road Wisdom* shows how well the author has appreciated this excellent solution of precedence and responsibility in traffic. The latter half of the booklet contains short signed articles on the use of various parts of the car on gears, gear changing, driving in traffic, and on some of the rights of motorists. A copy of the work can be obtained on application to the proprietors, *Pratt's Motor Spirit*, 36, Queen Anne's Gate, London, S.W.1.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 39, 40, 41, 42, 43 and 46 of our advertisement columns and advertisements as to professorships, assistantships, and locum tenencies at pages 44 and 45.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at pages 175 and 176.

The Lloyd Roberts Lecture

OR

THE NATURE OF MAN'S STRUCTURAL IMPERFECTIONS.

GIVEN TO THE ROYAL SOCIETY OF MEDICINE,
NOVEMBER 16TH, 1925,

BY

SIR ARTHUR KEITH, M.D., LL.D., F.R.S.

BETWEEN the activities of Archdeacon Paley and those of Elie Metchnikoff lies the greater part of the nineteenth century. At the beginning of this century we find the Archdeacon extolling the perfections of the human body—just as Celsus had done sixteen centuries before him¹. By the close of the nineteenth century the alert and fearless brain of Elie Metchnikoff had discovered, or he believed he had discovered, that the human body was blemished by many imperfections. The evangelist of this new and startling doctrine approached the study of man's body by an untrodden pathway, one made possible by the advancing science of his day. On his arrival at the Institut Pasteur in 1888, being then 43 years of age, he set himself to investigate the means by which the human body combats and keeps at bay such swarming hosts of micro-organisms as find a natural habitat in its internal passages and recesses. He saw man's body as a battlefield—the scene of a perpetual warfare, and as his investigations proceeded the conviction grew on him that the chances of the body's success were imperilled by a heritage of structures which had become out of date and useless. In the Wild Lecture given before the Literary and Philosophical Society of Manchester, on April 22nd, 1901, he declared that man "was being killed by his intestinal flora," and that his great intestine had not only become useless, but was a positive and continual menace to the rest of his body. He believed that the stomach itself, and also part of the small intestine, could be dispensed with. Early in 1903 appeared *Etudes sur la Nature Humaine*,² in which Metchnikoff greatly extended the list of man's structural imperfections.

Between the times of Paley and of Metchnikoff lie three great discoveries, and we must take note of them if we are to understand how it was possible for the one to praise the perfection of man's structure at the beginning of the nineteenth century and the other to

at the end. There was first the discovery that man's body was an aggregate or society of living microscopical units, it was Metchnikoff's fortune to approach the study of man's highly complex body through the simpler societies represented by the bodies of the lower invertebrates, it was thus he came by his discovery that certain units of such societies retain their freedom, thus permitting them to serve as scavengers or phagocytes.

In the second place there was Darwin's discovery, Metchnikoff was a convinced evolutionist. He therefore presumed that the alimentary outfit which served in an anthropoid phase of human evolution must be ill adapted to deal with the dietary of civilized man.

There was in the third place Pasteur's discovery, and so far as Metchnikoff's outlook was concerned this was the most potent of the three. It was under the influence of Pasteur's discoveries that Metchnikoff came to think that the destiny of man lay in the issue of the everlasting contest which went on between the living tissues of the body and the invading hosts of micro-organisms which threatened them.

It is noteworthy that of the three men—Darwin, Pasteur, and Metchnikoff—who revolutionized in the nineteenth century our conception of man's body, and of the struggles to which it is subjected, not one of them was a professed anatomist, the anatomist stood too near to the subject of his study to see it in its true perspective.

Twenty-two years have come and gone since Metchnikoff's

studies on *La Nature Humaine** first appeared, and I propose in this lecture to ascertain how far his doctrines of man's structural imperfections and functional disharmonies have stood the test of time. His thesis presumed that Darwin's theory of man's origin was true, that presumption has been supported by every discovery of the present century, and such evidence as we now have justifies us in believing that the rate of man's evolution has been more rapid than has hitherto been supposed.³

We realize to-day, more precisely than was possible when Metchnikoff wrote, that the most critical chapter in man's long history opened with the discovery of agriculture—a discovery of but yesterday if we reckon time on a geological scale. Agriculture revolutionized the conditions of human life, it made modern civilization possible. We have reason to believe that this revolution in the condition of man's life was initiated either in Mesopotamia, Egypt, or adjacent lands, not more than 8,000 years ago. It is certainly not more than 5,000 years ago, since agriculture began to be practised in Western Europe. The vast majority of the people of these islands, probably 90 per cent of them, are the descendants of men and women who, two hundred generations ago, were dependent on the natural but precarious harvest which is provided by shore, river, forest, and moorland. City life is a new experiment for Europeans, most of us who live in London, if we could go back twenty generations, would find an ancestry which was living on the soil and of the soil. And now the poorest of us can add to our dietary produce brought from the ends of the earth. The alimentary system which was evolved to meet the needs of our primitive ancestors has now to accommodate itself to a modern dietary.

Beyond a doubt civilization is submitting the human body to a vast and critical experiment. It is not only the alimentary system which is being subjected to new conditions—the bony and muscular framework of our bodies is being subjected to novel stresses. Of the present manhood of Britain one-half earns its bread by muscular labour, the other half lives sedentary lives. Our forefathers, when they arrived in Western Europe, were hunters, then bodies were unaccustomed to either manual labour or an indoor life, under the stress of civilization the hunter's body has to serve modern needs. It says much for the adaptability of the human body that it stands these stresses so well as it does. Dr J. D. Cornic,⁴ on examining 10,000 recruits for the army, found that 363 of them suffered from hernia and 113 from flat-foot. Such breakdowns in the supporting system of the body do not occur with this frequency among hunting peoples. Civilization has laid upon some of the weak points in the human body, but the conditions which have provoked them are not of Nature's ordaining but of man's choosing.

If modern civilization is making new demands on our bones, muscles, and nerve controls, it is otherwise with another important system of our bodies. As our manner of living increases in comfort the calls on our heat-regulating mechanism become fewer in number and less urgent in character. Our primitive forefathers lived in the open, their bodies, unhoused and scantily clad, were exposed to sun, rain, wind, and storm. Such a mode of life throws an increasing burden on the machinery which regulates body temperature—on skin on respiratory mucous membrane, and on that elaborate system of reflexes which control the rate of internal combustion. Modern civilization, so far as temperature is concerned, tends to make the human body a hot-house plant.

Metchnikoff perceived that civilization had plunged man's body into a new environment and that the rate of its progress had far outstripped the power of adaptational response which had carried man so far beyond the anthropoid stage. A belief grew within him—almost a grudge—that Nature was letting man down. He brought against the evolutionary powers which preside over the destiny

* In 1907 Metchnikoff published a further work of which an English translation appeared in the same year, edited by Dr P. Chalmers Mitchell under the title *The Prolongation of Life*. In this Metchnikoff replied to his critics and produced more evidence in support of his thesis. Sir W. Arbuthnot Lane formed the opinion that the great intestine was a useless and dangerous structure independent of Metchnikoff's so-called Professor Harold Smith (see an article on the nature of the caecum and appendix in the present lecturer in the BRITISH MEDICAL JOURNAL, 1912, vol. ii, p. 1533).

of man both sins of omission and sins of commission. We shall deal with a sample of each.

The first complaint on his list of omissions is that we have not shed from our skins the last remnants of an anthropoid pelage, hair on the body, he held, was useless and a source of disease. Whether or not a completely hairless body is desirable we may leave as a moot point, a hairless breed of dogs has been produced, and no doubt a hairless race of man could be evolved. In this matter the Chinese has been outstripped by the negro and by the Mongol, the most hairless of races.

It is more to the point to inquire how man has come by a comparatively hairless skin, and in the solution of this problem we have been making some advances. A hairless condition became possible with the evolution of the higher vertebrates, a foetus in the womb draws its heat from the mother's body, it has no need of a hairy covering until the period of birth arrives. There is in the Museum of the Royal College of Surgeons of England a chimpanzee foetus in the eighth month of development, the hair of its head and body has reached a stage identical with that of a newly born child. A stage of development which is over in us. We have come by a new character through the inheritance of one evolved in foetal life. Many of our structural features have come to us in this way. The base of the human skull is greatly flexed. In the foetal stage of all mammals the basi cranial axis is bent, but in man only has this character been carried into adult years. Foetal inheritance becomes more and more possible for man because civilization tends to make man's world into a protective womb.

As an instance of a sin of commission, the introduction of a new and useless structure to the human body, Metchnikoff cites the case of the hymen. It is scarcely time to describe, as he does, the hymen as a new structure, it is present at a certain stage in the embryonic life of every higher mammal, it is only in the human species that it persists and forms a definite and substantial structure in the fully formed body. The hymen provides another example of the human body coming by a new character by retaining and modifying a structure which made its first appearance during embryonic or foetal life. When we seek to explain its use we must enter the parlours of psychology, for around man's sense of sex has grown up a strange hinterland in his subconscious mind. Metchnikoff described the hymen as "an unpleasant impediment", but love, as the world has long recognized, thrives on impediments. The human prepuce, although not a new structure, was, in Metchnikoff's opinion, a useless and dangerous one, circumcision in one generation does not diminish the completeness of its development in the next. In this the prepuce resembles the hymen. Indeed, Metchnikoff said of the latter structure that the only purpose it had ever served was "the overthrow of the dogma of the inheritance of acquired characters".

The examples of the failure of man's body to adapt itself to present requirements which I have cited above are of little more than academic interest, but when Metchnikoff applied his analytical genius to the problems of man's alimentary system he carried us into the realms where thought becomes the guide to action.

It would be no longer rash to say " (so he wrote in 1903) that not only the rudimentary appendix and the caecum, but the whole of the human large intestine is superfluous, and that their removal would be attended with happy results.

Since Metchnikoff penned this sentence the operation of complete colectomy has been performed on many thousands of men and women, but I do not think that even the surgeons who have performed this operation most frequently and most successfully would maintain that a man or woman who has been rendered colonless enjoys that moderate share of health which falls to the average intact individual. If a finger becomes permanently fixed in an awkward position, the hand is improved by the amputation of the offending digit, but the relief thus gained does not restore the hand to its original capacity. The relief afforded by colectomy is of the same kind, the results of that operation in no wise bear out Metchnikoff's doctrine that

the colon has become a superfluous organ in man's body. On the other hand, we have only to consult the pages of the medical press, to listen to tales which reach our ears daily, to note the ever-growing demand for patent purgatives, to be convinced that there is, as Metchnikoff maintained, a grave disharmony between the functional capacities of our great intestine and the dietary which modern civilization has compelled us to adopt. The way out of our difficulties is not to call the colon a useless organ, a "sewage pipe," a "cesspool," but to discover its original purpose and ascertain how far we can modify our mode of living to suit its inherited capacity. What that capacity is we have yet to discover, for we have no complete or exact knowledge of the uses of the great intestine in any animal whatsoever. So far as the human organ is concerned surgery has stepped far in advance of physiology.*

Since Metchnikoff first promulgated his belief that the appendix, caecum, and colon had become superfluous organs in man's body our knowledge concerning the evolution of these structures, and of certain conditions which regulate their action, has increased. That increase of knowledge rehabilitates the ancient belief that Nature in her evolutionary mood exercises not only a surprising ingenuity but also the strictest economy. The ferment and catalysts, elaborated by plants for their own use, were made to serve in the animal body as vitamins. How necessary such substances are for the proper working of the great bowel has been shown by the recent researches of McCarrison⁶ and of Cramer.⁷

It was for the purposes of economy that the great bowel came into existence. In fishes, the earliest vertebrate forms known to us in the living state, potent digestive juices have to be produced at the expense of body tissues, with the evolution of land living, air-breathing forms much of this expenditure was saved by the utilization of bacterial digestion. The great bowel was added to the original intestine for this purpose, the oldest part of this annexe being the caecum and appendix. The great bowel as we know it in fishes is a mere diverticulum from the hinder end of the gut, it takes no part in the digestion of food. Its epithelium forms a glandular structure which has all the appearance of an organ designed for the supply of an internal secretion.⁸ That secretion, whatever it may prove to be, is carried to the liver by the inferior mesenteric vein. In the mucous membrane of the human great bowel there is set embedded in a stratum of reticular tissue (or reticulo endothelium) some 15 million of minute test-tube glands—the glands of Lieberkuhn. No one who has noted the structure and setting of these glands and the finer changes which their cells undergo in the course of action can believe that their sole function is to supply a lubricating fluid for the intestine, they have all the appearance of also supplying an internal secretion, and the evolutionary history of the colon favours such an inference.⁹ The reticular stratum of the colon, which Dr Scott Williamson⁹ regards as the most important constituent of its mucous membrane—and in this I agree with him—represents a spleen of considerable size. Indeed, just as the liver and pancreas represent extrusions of highly specialized parts of the intestinal epithelium, the spleen represents a specialization of the reticulo-endothelium of the alimentary canal in Cyclostomes,¹⁰ the spleen is still intra-intestinal. Nor must we forget how closely the great intestine is linked to the central nervous system—both by afferent and efferent pathways. When we take all these considerations into account we must conclude that the great bowel of man is not a useless or superfluous organ, but one which we, in our ignorance, are maltreating.

Darwin regarded the appendix as one of man's vestigial structures, and Metchnikoff accepted this verdict without demur, although there were then anatomists, particularly Professor R. J. Berry,¹¹ who refused to regard the appendix as a useless structure. Every child is born with a fully and well developed appendix which varies in length round a

* The reader will find a summary of the anatomical evidence relating to the nature of the appendix, caecum, and great bowel by the lecturer in the BRITISH MEDICAL JOURNAL 1912 vol. ii p. 1399.

¹¹ I have not mentioned the excretory function of the colon. This has been investigated by Dr Owen T. Williams. See BRITISH MEDICAL JOURNAL, 1912 vol. ii p. 1281.

mean of 35 mm. Ribbert's investigations¹² showed that amongst the Swiss the appendix has reached its maximum length—97 mm—by the twentieth year, thereafter the average length falls slowly, so that by the sixtieth year it has become reduced to 85 mm. Professor Berry¹³ found in the population of Edinburgh that the appendix did not attain its full length—89 mm—until the fortieth year, falling to 83 mm by the sixtieth year. Drs Garcia and Sillero¹⁴ measured the length of the appendix amongst Filipinos—a people living chiefly on a vegetarian diet. By the twentieth year the appendix of this people had attained a length of 81 mm; its maximum length, 96 mm, was not reached until the fiftieth year, while the average length fell to 82 mm by the seventieth year. An organ which increases in length until the twentieth year, or even until the fiftieth, does not merit the name "vestigial."

The size of the appendix at birth in the various forms of anthropoid apes we do not know, but in adult ghouls, chimpanzees, and orangs, the appendix usually attains a length of 150 or 160 mm—nearly double the length of the human appendix. In the most primitive form of anthropoid known to us, the gibbon, the appendix is most variable in length. In six animals which I dissected fresh from the jungle, all of them adult, the appendix varied in length from 75 to 175 mm. In two of the animals the caecum contained, as part of its contents, numerous fruit stones as large as those of a cherry, the appendix in these two cases held a row of fruit stones showing that it shared in the digestive work of the caecum. There is no evidence to lead us to believe that anthropoid apes suffer from appendicitis in their natural habitat; they become subject to this disease when kept in confinement. Of sixty-one chimpanzees dying in captivity, ten of them suffered from appendicitis.¹⁵ The evidence, such as it is, leads us to believe that when the appendix breaks down under the conditions of modern civilization it does so, not because it is "vestigial," but because of its inability to withstand the conditions to which it is being exposed.

To express the real nature of the structural and functional imperfections seen in the human appendix it is convenient to use a term coined by the late Sir William Gowen. He noted that in some families certain structures, such as the hair on the crown of the head, was apt to be shed as the result of a premature atrophy of the scalp. To such instances of premature senility on the part of any organ or structure he applied the term "abiotrophy."¹⁶ In this sense the appendix is an abiotrophic structure, one which is apt to suffer from a disordered life-history, in a large proportion of Europeans it becomes atrophic or senile when other parts of the body are in full vigour.

On the evidence collected by anatomists and pathologists it is permissible to infer that if we could follow the life-histories of a thousand modern Europeans from birth to their seventieth year the following would be the fate of their appendices. By the end of the tenth year the lumen of this structure would be partially or completely obliterated in 40 of them, by the twentieth year the same fate would have overtaken 70 more, by the thirtieth year 60 others would have been added to the list, by the fortieth year 80 further cases of obliteration would have occurred, by the sixtieth year there would be 110 additional cases. Of the thousand people who reached the age of 70, only 500 of them would retain their appendix in an unblemished functional state, in the other 500 the appendix would have undergone a premature atrophy at succeeding stages in the journey through life. In this the appendix keeps company with all structures which are of a lymphoid nature. The tonsils, the thymus, lymphatic glands, and Peyer's patches have similar life histories, but no one would describe them as vestiges or rudiments. There is much in the name we apply to structures, when we name them "vestigial," "congenital," or "useless," we shut the door on all further inquiry. As Paley declared a century ago, our list of "useless" structures decreases as our stock of knowledge increases.

The eye, which is man's chief organ of sense, has, under the stress of civilization, become the subject of a wrong growth or abiotrophy. If we take a thousand men or

women over the age of 25 we shall find that about 150 of them suffer from a degree of myopia which prevents them from seeing distant objects clearly. And yet in all of them, just as was the case of the appendix, the eye was normal at birth. The incidence of the disorder is somewhat similar to that which befalls the appendix, myopia appears during the period in which the eye is undergoing growth—a process of the most complex kind*, in a few, myopic changes appear by the fifth year, the highest rate of incidence taking place as puberty is reached and passed. We cannot believe that among our hunting ancestors, for whom distant sight was so vital, every seventh man was myopic.

Myopia we must regard as a structural disharmony occasioned by the conditions which civilization has entailed on us. Short sight, as Dr John Kirk has stated,¹⁶ is certainly a disorder of growth and the essential problem is to discover, not why 15 per cent of our population suffer from it, but why it does not occur in the remaining 85 per cent. Children may be fed on the same food and undergo the same school tasks, yet only in certain individuals does the eyeball undergo abnormal elongation. They only are affected by modern conditions, the others are not.

Perhaps no structure in the human body illustrates abiotrophic changes so well as the lens of the eye. By the age of 45 the elasticity of the lens has become so reduced in most of us that we have to seek the aid of spectacles. Some time ago Mr Ernest Clarke¹⁷ examined the eyes of 1,200 people of all ages and charted in graphic form the condition of the lens. From that chart we can see that some individuals at the age of 45 retain the elasticity of lens which is normal to those of 35 years of age, while others have reached a stage usually found in men and women of 60. It is with the lens of the eye as with the appendix—abiotrophy sets in prematurely in some, in others the change is delayed.

The consideration of the functional failure of the lens of the eye brings us to a problem which fascinated Metchnikoff. What is the term of life which was natural to man in his primitive state? Metchnikoff inclined to place it at a hundred years—that if we escaped accident and disease the inherent vitality of our tissues was sufficient to make a centenarian of everyone. At the age of 45 the lens of the normal man is already old, it has reached the term of its full utility. We have no reason to suppose that civilization has shortened or is shortening its period of usefulness. The indication it affords supports the belief that Nature has worked out the evolution of the human family on a mean life tenure of 45 years. She has, until recently, run the human army on a short-service system. Unfortunately we have no vital statistics of our nearest allies, the anthropoid apes. Mickey, a chimpanzee which died lately in the Zoological Gardens, lived there for twenty-six years, and was 3 or 4 years of age when he became an inmate.

Thirty years ago I made an intensive study on the age changes of the teeth and skulls of the great anthropoid apes and came to the conclusion that very few of them reached the fifth decade of life. The elastic tissue and cartilage of our body keeps the lens company in their rate of ageing; they lose their resiliency by the middle of the fifth decade. The age of 45 sees the end of the term of child bearing which is normal for women. When we consult the rates of mortality which now prevail we find that a sudden rise sets in during the fifth decade, and this rise assumes a steeper and steeper gradient with every subsequent decade. All of these facts seem to show that 45 was the span allotted to man when he was the blind slave of Nature. Civilization now permits many men and women to live the span of two such lives, but whether it would be an advantage for civilization that all should live to be centenarians is Metchnikoff believed, is a moot point. We must take civilization in the round, if it has scratched out the weak points in our inherited organization it has also added incalculably to the span and comfort of life.

All the structural imperfections of man's body which have been discussed up to this point are of a kind which perish in the grave. We have no means of telling whether or not

* Subsequently the reader will see that I use this term in a somewhat wider sense—one which includes irregular as well as reduced growth.

I have dealt with the incidence and nature of myopia in the *British Journal of Physiological Optics* 1925 vol. 1 p. 369.

our remote ancestors suffered from appendicitis or were the victims of myopia. Fortunately from this point of view there are certain of the durable parts of man's body which manifest abiotrophic changes—the teeth and jaws. During the last twenty years I have had an opportunity of examining the facial parts of over 300 individuals who lived in England more than a thousand years ago, some of them as much as eight or ten thousand years ago. Seven years ago I made an elaborate comparison between 50 of these ancient skulls—25 of which were adjudged to be those of men and 25 of women—with equal numbers of individuals who had lived in England within the last two centuries.* In only 3 of the 50 ancient skulls did the upper and lower teeth fail to meet in an edge-to-edge bite, in all of the 50 modern skulls the bite was of the overlapping or scissor type. Our teeth are in an abiotrophic state, the failure of the wisdom teeth or third molars to form, or to erupt if they are formed, is but one symptom of this abiotrophic change, it affects crown cusp, and root development. In the 50 ancient skulls, instead of 100 upper wisdom teeth, there were only 82, 13 being absent from non development and 5 from non-eruption. In the 50 modern skulls, instead of 100 upper wisdom teeth, there were only 59, 30 of these were absent from non development, 11 from non eruption.

Such evidence shows that although abiotrophic changes had overtaken the dental system of the Western European as early as the Neolithic period, yet these changes have been accelerated during the more recent centuries. Dental abscesses were nearly as common in the ancient skulls as in the modern, carious teeth, on the other hand, were three times more frequent in modern skulls than in the ancient. The researches of the Mellanbys¹⁴ have proved that the quality of enamel and of dentine, particularly of secondary dentine, has a relation to the vitamin content of a dietary. Equally important for the proper formation of teeth, as McCollum and his colleagues¹⁵ have demonstrated, is the presence in food of a due proportion of certain mineral salts. Nevertheless, although a school of children are exposed equally to unfavourable conditions it is only in a certain number that dental defects will occur, in this respect the dental system behaves as do all structures which are liable to abiotrophic changes.

In not one of the 50 ancient skulls was the palate contracted, whereas in the 50 modern skulls there were 13 in which this condition was present to a recognizable degree—in more than half of them to a marked extent. No matter on which stratum of our population we make observations, we shall find that every fourth or fifth child or adult we examine possesses a palate which, compared with the older type, may be described as both deformed and reduced in size and in shape. I have never seen this defect and irregularity of palatal growth except in skulls from cemeteries of the eighteenth and nineteenth centuries. It may be thought that this irregular growth, with reduction in the size of palate, and the defects in the formation of the jaws and face which usually accompany them, are merely the results of the soft and highly prepared kinds of food we eat, with such a dietary the teeth, jaws, and chewing muscles are deprived of the work which fell to them in more primitive times. That this is not the true explanation is proved by this fact: when children are fed, clothed, and exercised exactly alike all are not affected, only some of them develop irregularities of the palate and jaws. There is a special susceptibility to these imperfections in certain races and in certain families.

Amongst modern British people are to be observed various facial characters, seen particularly in the orbits, in the cheek bones, and in the bony supports of the nose, which are never to be noted in the facial framework of people who lived in Britain during the pre-Nostrum period. When a Continental cartoonist seeks to represent John Bull he always emphasizes these new facial characteristics. Such changes in the form of the facial bones, like contraction of the palate, which they usually accompany, are not the result of a nasal obstruction such as might be caused by enlarged adenoids or tonsils, the cause lies deeper. The incidence of irregularities in the growth of the face follows the same laws as hold for all abiotrophic structures—such as the appendix, the sclerotic coat of the eye, the

thyroid, and the tonsil. Further research will likely prove that the disorders of growth which overtake all of these structures are linked to a disturbed action of lymphocytes and of all the constituent elements of the lymphoid tissues. Dr W. Cramer has become convinced that lymphocytes are actively concerned in assimilation of food and in the nutrition of tissues, and that the nature of the dietary does directly affect their activities. It seems to me very probable that a fuller knowledge of the life-histories of lymphocytes, particularly of the office they perform in growing tissues, will go far to explain the disharmonies which civilization is producing in the bodies of some of us. But the problem of explaining why some members of our community are highly susceptible to these new conditions, while others are less so, and why the majority remain unaffected, will still remain.

I have touched only the fringe of a great subject, I have left undiscussed the numerous imperfections and disharmonies which civilization has made manifest in structures concerned in the maintenance of posture,* and in those which are concerned with the circulation of blood and with the duties of respiration. I have said enough, I believe, to convince you that Metchnikoff was right when he declared that civilization had launched man on a great experiment. From this experiment there is no turning back. We cannot return to the conditions of human life which prevailed in this country six thousand years ago, there are more people in one of the lesser back streets of London than could find an existence in the whole length and breadth of the Thames valley if they returned to the manner of living of our distant ancestors. We cannot go back, we must go on. Seeing how differently we are now circumstanced in every relationship of life—in food, in drink, in shelter, in warmth, in occupation, and in amusement—the wonder is, not that structural imperfections and functional disharmonies should develop in a proportion of our numbers, but that so many of us should escape harm altogether and enjoy good health. It says much for the adaptational reaction which is inherent to the human body that it withstands the artificial conditions of modern civilization as well as it does.

How are our bodies to be protected against these ills with which civilization threatens them? Metchnikoff, a declared and open rebel against Nature, hoped that science might discover some short cut for man's escape, some way of speeding up the evolutionary machinery of his body, and of so making it perfectly fitted for the life which ever advancing civilization is forcing on mankind. I also believe that science will find a means of escape, but not by Metchnikoff's way. The solution of our problem is a fuller knowledge of the use and working of these parts of our bodies which are most apt to give way under our modern ways of living—the use of such structures as the great bowel, and when we have replaced our ignorance by real knowledge we shall then be in a position, not to adapt our bodily structures to our mode of living, but our mode of living to our bodily structures. This seems to me the best way out.

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CLOCKWORK CONTROL OF THE CARREL-DAKIN TREATMENT.

BY

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AMONG many methods of treating lacerated septic wounds which were tested in the great war the Carrel-Dakin treatment, by intermittent irrigation with solutions of chlorine compounds, proved to be by far the best. Its use saved countless limbs and lives. A nurse, passing from bed to bed, opened a stopcock to allow fluid from a douche can to flow into the distributing tubes and irrigate the wounds. The fluid was released both day and night, every hour in bad cases, and every two hours in less severe cases. The quantities varied with the size of the wound, on the basis of 1 oz. for every three distributing tubes in the wound.

In order to save the labour thus involved, several surgeons suggested the use of siphons, which, when fed slowly, would accumulate fluid and discharge it at definite intervals. I also tried this method, but found it unsatisfactory, because the slow rate of dropping necessary does not continue for more than a few minutes.

The rates of dropping required to supply definite quantities of fluid per hour are easily determined. Since there are 60 minutes in a drachm, and 60 minutes in an hour, the number of drops per minute will yield a corresponding number of drachms per hour. Thus an ounce (8 drachms) per hour would require 8 drops per minute—that is, about 1 drop every 8 seconds. When several different forms of stopcock were tested with pure water (which does not act upon brass) such rates as from 1 to 20 drops per minute steadily decreased in number and soon ceased altogether. A shake of the stopcock would restart them, but they very soon slowed down again and stopped as before. In order to obtain a steady rate of dropping, it was found necessary to begin with about 100 drops a minute—a rate prohibitive for the purpose in view. The use of water with a brass stopcock, moreover, showed that the difficulty does not arise from any corrosive action of the fluid on the metal at the orifice of the stopcock. This behaviour of fluid when made to drop slowly seems to be due to some physical change in the fluid, the nature of which is obscure.

When, as the result of experiment, it seemed impossible to obtain a satisfactory method of intermittent irrigation with a siphon automatically discharged by slow dropping of the fluid, I thought that the desired result might be obtained with a siphon which could be discharged with fluid released, at intervals, by clockwork. This plan, after many experiments, has fortunately proved satisfactory. The clock is used to make and break an electric circuit, which, while closed, actuates an electro-magnet. The magnet, by a simple mechanism (to be afterwards explained), opens a valve and releases quantities of fluid, the amounts of which can be regulated.

The various parts of the apparatus and their relation to one another will be easily understood by an examination of the accompanying illustrations with their explanatory notes.

Fig. 1 shows

(1) The front of the modified clock. The clock face and the hands have been removed, and a light metal wheel has been fixed to the

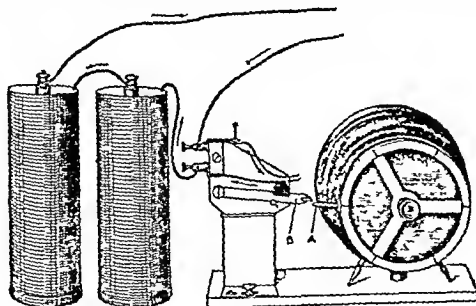


FIG. 1.

spindle which normally carries the minute hand. A short brass lever A has been screwed into the rim of the wheel. It revolves once in an hour. Other levers could be employed if desired.

(2) Lever 'B'. This carries a vulcanic knob projecting upwards. When this lever is raised high enough by lever A, the knob presses the two adjacent springs together to make a

"contact" and so complete an electric circuit. This in turn, by the action of the electro-magnet lever, raises the piston of the valve and allows fluid to pass (see Fig. 2).

(3) The battery of two dry cells and the ends of the wires which go to, and return from, the electro-magnet. The arrows indicate the direction of the electric current when the circuit is complete (see also Fig. 2).

Fig. 2 shows the essential parts of the stand with its pole 8 ft. high and the frame which it supports. Attached to the frame are

(1) The reservoir, consisting of a 40 oz. bottle, hung upside down, with its mouth within a glass cup, which is attached to the neck of the bottle. (This form of reservoir ensures that the valve is supplied with fluid at a uniform pressure whatever be the level of the fluid in the reservoir itself.)

(2) The small glass siphon and its rubber tube (D), which conveys fluid to the valve when it is opened by the raising of the piston.

(3) The valve. This consists of a small cylinder which has a piston which has a weighted piston rod to make it fall more certainly when released. The upper end of the piston rod is joined to the long arm of the electro-magnet lever by a pin chained to the arm, to prevent the pin from being mislaid. The cylinder is held in position by a thin rod fitting into a socket (not shown). The rod permits of oscillation as the piston is raised. It also holds the valve in its place.

The electro-magnet is of the usual construction. Over the magnets is placed the short arm of a brass lever of the first order, bearing a small piece of steel. When the electric current actuates the magnets they lower the short and raise the long arm and with it the piston rod attached to it. This opens the valve.

The siphon bottle is shown below the valve. The inner end of the curved siphon tube of exit is seen after it has withdrawn a discharge of fluid and passed it into the receiving funnel. The relative levels of the two ends of the siphon tube of exit should be noted.

Four siphon bottles are supplied with their tubes adjusted to deliver
of 1 oz., 2 oz., 3 oz., and 4 oz. of fluid
regulated by the distance, inside the
bottle, of the two tubes from one another.

The quantities delivered by the valve are regulated as follows. The clockwork and electric mechanism has been arranged to hold the valve open for twenty seconds each hour. During these seconds the valve can be adapted to deliver either $\frac{1}{2}$ oz., 1 oz., $1\frac{1}{2}$ oz., or 2 oz., according to the aperture of exit which is given to it. The largest size of aperture is the normal exit. The three successively smaller apertures required can be adapted to the valve by means of three separate nozzles (D), any one of which can be screwed on it will over the aperture of the valve itself. (For convenience, these nozzles are screwed on to the side of the frame which carries the reservoir and siphon, as shown in the figure.)

Generally the hourly quantities selected are allowed to double themselves and be delivered by suitable siphons every two hours. Should the quantities for flushing be required hourly, the larger sizes of aperture may be employed or a second lever "A" may be added to the clock. In every case the siphon which is adapted to deliver the required quantity of fluid must be used (see last paragraph of the description of Fig. 2).

Conduction of the Supplies of Fluid from the Siphon to the Wound

The receiving funnel is used to allow the discharges from the siphon to flow downwards without hindrance from air bells. These, if present, can rise through the fluid in the open funnel, but are held down if the siphon tube is connected directly with the tubes leading into the wound. For a similar reason the tubes leading from the funnel should take the shortest and most vertical route possible to the distributing tubes.

Batteries.—Allow two 1½ volt dry cells for each wound treated. If a number of patients were being treated by irrigation in an accident or military ward it might be advisable to lay an electric circuit round the ward near the floor and supply plugs to tap the circuit at each bed. The strength of the circuit would have to be regulated in accordance with the number of wounds under treatment.

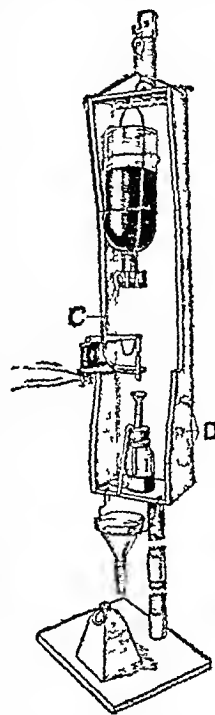


FIG. 2.

From the account now given of the working of this appliance it will be seen that

1 The clock, by its control of an electric circuit, can actuate, hourly or oftener, any required number of electro-magnets for a given number of seconds

2 Each electro magnet can, during that time, open a valve which will deliver more or less fluid to the siphon below it, in accordance with the size of its aperture selected for the particular sound to be treated

3 The required quantities of fluid, when accumulated, can be delivered by the siphon through a tube of sufficient calibre to flush the distributing tubes in the wound

This clockwork controlled douche, which has only recently been completed, has been tested on a severe case of compound fracture of the tibia, infected with *Bacillus pyomyositis*, in Professor John Fraser's ward in the Royal Infirmary, Edinburgh. It irrigated the wound quite satisfactorily. In about a fortnight the wound had improved so much that the clockwork control, being no longer required, was discontinued

There are many septic surfaces and cavities met with in civil practice, from different causes, for which the Carrel-Dakin treatment will be required. It is hoped, therefore, that this appliance will serve a useful purpose for these apart from the possibilities of war wounds, which, unfortunately, cannot yet be excluded from the horizon

In working out the details of this appliance new problems had to be faced and many experiments were necessary. I am much indebted to several co-workers whose services have been invaluable

To Mr Hurford of Messrs Smith Hurford, and Drysdale for adapting the clock for its new purpose and working out the details of the supply valve for me also for devising and making several experimental stopcocks to Mr T. Alexander, the head of the dispensary in the Royal Infirmary, Edinburgh, for testing the action of enamel on metal and keeping me right in chemical questions and very specially, to Mr A. H. Baird, for the electrical outfit and all glass work, and along with him, his ingenious and skilful mechanic Mr George Pringle

The complete outfit will be supplied by Mr A. H. Baird 30 Lothian Street Edinburgh

THE PATHOLOGICAL LABORATORY IN GENERAL PRACTICE.

BY

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THE conception of the pathological laboratory which I wish to put forward is that of a centre for the diagnosis and investigation of disease. By diagnosis I do not mean the mere application of a name to a particular morbid condition or syndrome, but a comprehension of the disordered processes underlying any particular set of symptoms. That correct diagnosis is the first step towards efficient treatment—where such exists—will, I suppose, be universally admitted, and it is as an instrument for the achievement of correct diagnosis that I would regard the pathological laboratory of a general hospital. In spite of the accumulation of physiological and pathological knowledge which has marked the last few decades, it must, I fear, be admitted that the points at which actual contact is established between the science and the art are still few. None the less such contacts do exist, and are increasing. The function of the pathologist in the medical community, as I see it, is to familiarize himself with those points of contact and to place the knowledge won by the workers in medicine and the science at the disposal of the workers in medicine.

Of the ways in which recent advances in biochemistry have added to our knowledge of disease one of the most important is the devising of a simple and easy method for the estimation of the sugar in a small sample of blood. Several methods have been worked out within the last few years, the one most generally used in this country is that devised by Professor H. Macleod of St Thomas's Hospital, London.

* An address delivered before the Wolverhampton Division of the British Medical Association.

Which method is used is of no particular importance. The point of importance is that the introduction of this procedure has brought about a better understanding of that group of conditions having the common symptom of glycosuria than was ever before possible.

Time was when the presence of a reducing substance in the urine was always regarded as an ominous symptom. Soon it became recognized that lactose might appear in the urine of pregnant and nursing women without being of any serious prognostic significance, later the occurrence of pentosuria was recognized. When faced with a reducing body in the urine of a patient it is necessary to make sure that that body really is glucose. A fragment of brewer's yeast will, of course, give the answer. The presence of glucose being established, the question demanding an answer is, Is this, or is it not, a "diabetic" condition? The answer is readily afforded by the examination of the blood

To make clear how this answer is given, I must go briefly into the variations of the blood glucose level after the ingestion of carbohydrate by a normal subject. In investigating the rise and fall of the blood sugar after the ingestion of carbohydrate it is obviously desirable that some standard method should be employed. All the curves given below are plotted as suggested by Professor Macleod on the results of blood sugar estimations made after the ingestion of 50 grams of glucose following a fast of at least three hours

The Normal Sugar Curve (Fig 1)

You will note that from a fasting level of about 100 mg per cent the blood sugar rises rapidly to 180 mg per cent. This height is attained in about one hour, after which there is a rapid fall to the original level or just below it, so that in a normal person within one and a half hours the blood sugar is back to where it started from. The two points to which I particularly wish to draw your attention are this rapid fall and the maximum height of the curve. The rapid fall is due to some mechanism for the storage of glucose in the body, the nature of which is not understood, it is apparently the disturbance of this storage mechanism which is the essential lesion in diabetes. The height of the curve is of importance because it represents the level to which the sugar may rise in the blood without passing through the kidney into the urine—that is to say, there is a threshold for glucose in the blood. This threshold occurs at a level of about 180 mg. When below that level in the blood, glucose will not normally appear in the urine, when above, it will.

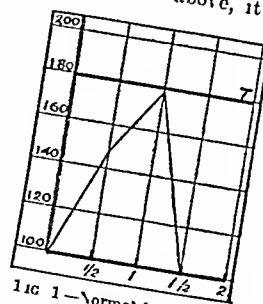


Fig 1—Normal blood sugar curve. Ordinate=Blood sugar in milligrams from ingestion of 50 grams of glucose by the mouth. T=Normal renal threshold for glucose.

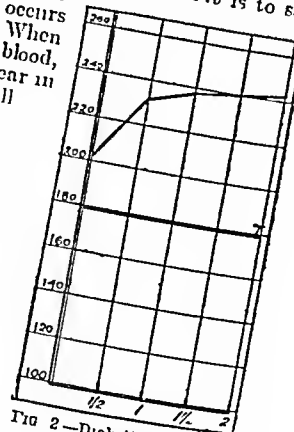


Fig 2—Diabetic blood sugar curve. Abscissae=Time in half hours from the mouth. T=Normal renal threshold for glucose.

The Diabetic Curve

The level of the diabetic curve may vary, but its shape is perfectly characteristic (Fig 2). There is a complete absence of that rapid fall due to the coming into play of the storage mechanism which is characteristic of the normal subject. This, as I have remarked before, is apparently the actual physiological basis of the diabetic condition, the level of the blood sugar rises well above the threshold, and this, of course, accounts for the glycosuria. It may be, and usually is, above the threshold to start with. That is a further very important point in the diabetic condition.

is that the threshold may be raised, this is so frequently the case as to be almost the rule in elderly persons. Thus no sugar may be excreted in the urine until a hyperglycaemia of 300 mg per cent has been established, as opposed to only 180 mg per cent in the normal subject. You will at once perceive from this that the absence of sugar from the urine is no proof of the absence of a hyperglycaemia, and it is the hyperglycaemia which matters.

The importance of the estimation of the blood sugar as an aid in insulin dosage will be apparent to you without further comment on my part. In diabetes it is the level of the blood sugar that matters, the appearance of sugar in the urine is in the nature of an accident, its amount is really neither here nor there, and its disappearance is no indication that the hyperglycaemia is under control.

Before I leave this question I will draw attention to two other forms of glycosuria.

It happens in some cases showing glycosuria that the blood sugar curve shows that the level of the blood glucose rises and falls in a perfectly normal manner. If samples of urine are taken half-hourly throughout the estimation, however, one finds that sugar is passed in the urine when the blood sugar is at its highest level. Careful observation will reveal a definite level below that of the usual threshold at which sugar passes from blood to urine—that is to say, there is a lowering of the threshold for glucose. This condition is compatible with perfect health and requires no treatment. Its recognition, however, is of obvious importance, and this is only made possible by plotting the blood sugar curve.

The "Lag" Curve

A further somewhat rare type of blood sugar curve is the "lag" curve (Fig 3). The essential feature of this curve you will note to be a delay in the coming into play of the storage mechanism. When it does come into play it works as efficiently as in a normal person. The result of this delay is that the blood sugar rises higher than normal and that, consequently, sugar passes into the urine. The significance of this type of curve is as yet doubtful. It appears to be compatible with a rude state of health and requires no treatment, though moderate limitation of carbohydrate in the diet might be advisable.

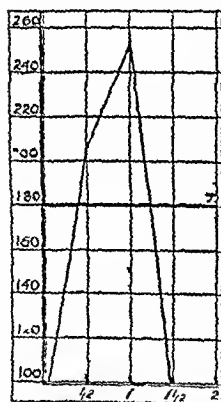


FIG 3.—Lag type of blood sugar curve.

I will now pass on to the question of the investigation of the state of the kidneys in nephritis and other conditions. To start with, may I point out that under the heading of "nephritis" are included a large number of diverse pathological conditions. Roughly, however, they may all be grouped under three heads: (1) acute nephritis, (2) chronic nephritis, secondary to acute, (3) primary chronic nephritis.

Clinically Group 1 is characterized by oedema and albuminuria. Group 2 in its early stages is characterized by the same symptoms, later, however, if the patient survives, the oedema may disappear and the albuminuria become less. Group 3 in its early stages is characterized by no marked symptoms and is one of the most insidious of all diseases.

Of cases belonging to Group 1, I have, as a result of my own observations, been able to satisfy myself that two types exist. The symptoms of these two types in the early stages are practically identical, but their actual pathological bases are entirely different and the prognoses poles apart. I have been able to demonstrate that in the one type, which, following the German authorities, I may speak of as a nephrosis, there is no evidence of inflammation of the kidney, in the second type the whole renal substance, but particularly the glomeruli, shows evidence of intense inflammation. Clinically in the early stages the two types are indistinguishable—both show oedema and albuminuria, the former may persist for months, the latter for life. But the outlook in the two types is quite different. In the first recovery is the rule, the second

tends to go progressively downhill. The oedema may disappear, but even so chronic interstitial fibrosis progresses in the kidneys, and death ultimately occurs from renal failure.

By examination of sections of the kidney removed during life it would be an easy matter to give a prognosis. I have done this, but do not recommend it as a routine. Fortunately examinations of other sorts are almost as efficacious. These examinations depend upon the ability of the kidneys to excrete urea. In both the types of nephritis of which I have spoken there is during the first week or so a failure on the part of the kidney to excrete urea, but the later course of the two types shows a marked difference in this respect. In the nephrotic type, even when the oedema and albuminuria still persist, the kidneys are soon able to excrete urea as well as those of a normal subject. In the inflammatory type, on the other hand, the power to excrete urea undergoes a progressive impairment, and this substance tends to become backed up in the blood.

By estimations of the blood urea and the power of the kidneys to excrete a dose of urea given by the mouth, as recommended by Maclean and De Wesselow, one can usually gauge in which direction any given case is likely to proceed and gain important information both as to prognosis and treatment.

Consideration of the findings in two typical cases may make the matter clearer. Clinically these cases were of the same hydraemic type, both showing albuminuria and oedema.

Case 1—The facts are contained in the following table

Urine urea before ingestion of 15 grams of urea	17 per cent
1 hour after	27 "
2 hours after	29 "
3 hours after	30 "

Blood urea 30 mg per 100 ccm

Case 2—In this case the results were as follows

Urine urea before taking urea	11 per cent
1 hour after	11 "
2 hours after	12 "
3 hours after	09 "

Blood urea 68 mg

In the first case there is no failure of urea excretion, in the second there is such a failure. In Case 1 the prognosis is good, in Case 2 some degree of recovery may take place, but the ultimate prognosis is poor.

Case 3—A third case indicates the usefulness of this procedure in another direction. It is that of a boy who originally suffered from an attack of acute nephritis. The oedema disappeared but the albuminuria persisted and the boy suffered from bouts of head ache and vomiting. It was plain that these might be renal in origin and he was kept on a strict low protein diet and treated more or less as an invalid. Investigation of the case revealed the following state of affairs:

Urine urea before urea by mouth	17 per cent
1 hour after	21 "
2 hours after	25 "
3 hours after	23 "

Blood urea 35 mg per 100 ccm

Obviously in this case there is no urea retention and therefore no necessity for a low protein diet. The patient was put on a full diet, his parents were told no longer to regard him as an invalid, an error of refraction was corrected by suitable glasses, and as a result the bouts of sickness ceased, and he is now in excellent health in spite of a slight persistent albuminuria.

Nephritis of the last type—the primary chronic interstitial—is essentially a disease of the fourth and fifth decades, but may appear and run its insidious and unchecked course at all ages. Albuminuria and oedema are never marked and are frequently altogether absent. Often the only complaint of the patient is of headache and dizziness. The outcome is always death in uraemia. This is above all the type of nephritis associated with urea retention. The following case is typical.

Case 4—A man aged 42 complained of headache and malaise for some months past. His skin was muddy, he was anaemic and showed pouching under the eyes but no oedema. Examination of the power of disposing of urea yielded the following results:

Urine urea before taking urea	11 per cent
1 hour later	11 "
2 hours later	09 "
3 hours later	05 "

Blood urea 90 mg

Two months later the condition is as follows

Urine urea before taking urea	0.9 per cent
1 hour later	0.9 "
2 hours later	0.8 "
3 hours later	0.75 "

Blood urea 120 mg

After another two months

Urine urea before taking urea	0.65 percent
1 hour after	0.65 "
2 hours after	0.5 "
3 hours after	0.4 "

Blood urea 210 mg

Death took place in a few weeks, with a blood urea of 450 mg per cent

As to treatment, the only point I should like to make is that in cases in which urea is being well excreted there is obviously nothing to be gained by withholding its principal mother substance—the protein of the diet. In fact, in the nephrotic type of case of which I have already spoken definite harm results. Urea is an admirable diuretic, and when it can be excreted its presence in the blood is invaluable in getting rid of oedema. In this type of nephritis not only should the patient be encouraged to take a full protein diet, but urea may with benefit be administered in large quantities by the mouth.

There is one other type of case in which examination of the renal function is of the greatest value, and that is in prostatic enlargement when an operation is contemplated. In these cases, when there has been prolonged obstruction to the urinary outflow, the kidney function as a rule becomes to some extent impaired. The degree of impairment varies and is subject to very great improvement with treatment. In many cases where the prostatic enlargement has persisted for some time examination of the urea concentrating power of the kidney shows definite failure. If prostatectomy is performed while the patient is in this state the results are bad—a fatal issue is common. If, on the other hand, a preliminary cystotomy is performed and the urine is allowed to drain, subsequent tests usually show a progressive improvement of renal function and indicate with comparative certainty when the operation may be completed with safety.

I would not have you think that it is only on the biochemical plane that the pathological laboratory may be of assistance in the diagnosis of renal disease. In all forms of infection of the urinary tract—coccal, coliform, or tuberculous—the ultimate diagnosis must be made by the microscope or culture medium. Here, however, let me point out that although information of the very greatest importance as to the nature of infections of the urinary tract can be gained by an intelligent use of the pathological laboratory, the attainment of those given results depends entirely upon close co-operation between the clinician and the pathologist. There is no more useless specimen than the bottle of urine unaccompanied by details of the case and the mode of collection. For the interpretation of results it is necessary to know something of the history of the case and also of the particular specimen. Often, in order to arrive at a definite result, it is necessary to call in the surgeon to collect specimens from each ureter separately. All this may seem to entail a lot of trouble, but, unfortunately, correct diagnosis is like that. It does entail trouble, in this and in most other instances. On the whole, however, it is worth it. I will cite two instances.

Case 5—A medical man had suffered for two weeks from an irregular pyrexia, with diffuse abdominal pain. The diagnosis however lay between infective endocarditis, typhoid fever, and a grumbling gall bladder. The urine was said to show nothing beyond a trace of albumin. Culture of the blood the Vidal reaction, and various other procedures were without result. Examination of the urine gave an immediate diagnosis of *B. coli* infection of the right kidney.

Case 6—A boy had suffered for many weeks with painful and frequent micturition. The urine showed pus and blood but no organisms. X-rays showed a shadow that might have been a stone in the left ureter. Catheterization of the ureters showed that the pus was coming from the right kidney only. Examination of suitably stained films of this catheter urine showed numerous tubercle bacilli. At operation the right kidney was found to be almost destroyed by a tuberculous infection.

Assistance can be given in many other directions. There is, for example, the examination of the test meal in the differential diagnosis between simple and malignant gastric ulcer. The x-rays will frequently detect the presence of the ulcer but they are powerless to diagnose malignancy

or its absence. The presence of lactic acid and the absence of free hydrochloric acid are almost proof positive of malignancy. The examination of the faeces as to the relative amounts of split and unsplit fat will often throw light upon the nature of obscure diarrhoeas. In such conditions a relative increase of the unsplit fat due to the absence of the pancreatic lipolytic ferment is practically diagnostic of a pancreatic lesion. In the differential diagnosis of jaundice the van den Bergh reaction for the detection of urobilin in the serum is often of the greatest assistance. This reaction appears to depend upon the fact that the urobilin which ultimately finds its way into the bile is not produced in the liver, but in the widespread endothelial reticular system, its source being the haemoglobin of broken-down red cells. When first produced the urobilin is apparently linked to a protein molecule, but becomes separated from it on passage through the liver cells into the bile. When still linked to the protein the urobilin will give no colour reaction with the van den Bergh reagent, the linkage, however, can readily be dissolved by treatment with alcohol, whereupon the reaction occurs. The occurrence of a colour reaction on simply bringing the van den Bergh reagent in contact with the serum constitutes the direct reaction and indicates an obstructive icterus. If, on the other hand, no reaction occurs until the serum has been treated with alcohol, the reaction is spoken of as indirect and indicates that the jaundice is due to pigment that has never passed through the liver. Such reactions occur in those cases of haemolytic jaundice where, presumably owing to rapid blood destruction, so much urobilin is produced that the liver cannot readily dispose of it. It is in the identification of this particular type of icterus that the test has its particular use.

Very valuable information may be provided by the examination of the blood picture in the various anaemias. I can best indicate how important such an examination may be by citing a case.

Case 7—A man presented himself with the statement that he was suffering from leukaemia. His spleen was large reaching to the umbilicus. He was slightly jaundiced and showed ulcers on both legs just above the ankles. He stated that he had been ill for seven years. Examination of the blood showed the following picture:

Red cells	2,500,000 per c mm
White cells	18,300 " "
Haemoglobin	45 per cent
Differential count	
Polymorphs	75 per cent
Lymphocytes	20 "
Monocytes	4 "
Eosinophils	1 "

This is obviously and emphatically not the picture of a leukaemia. Guided by the slight jaundice and the splenomegaly I estimated the fragility of the red cells and found that lysis commenced at a concentration of 6.5 per cent of sodium chloride and was complete at 4 per cent—a very marked increase of fragility. The van den Bergh reaction gave an indirect positive result indicating the haemolytic nature of the jaundice. The whole picture was that of haemolytic or acholic jaundice. The importance of the differential diagnosis here lies in the fact that whereas in leukaemia removal of the spleen is invariably fatal in acholic jaundice it is equally invariably followed by marked improvement. A spleen weighing some 2 lb was removed by Mr E. Darnley, F.R.C.S., and the patient is now doing excellently.

I could cite many other instances of the value of laboratory methods in providing diagnosis and indications as to treatment. In conclusion, however, I should like to lay stress upon a point which I have already mentioned, and that is the absolute necessity for close co-operation between practitioner and pathologist if really useful results are to be attained. With the possible exception of the examination of sputum for tubercle bacilli, I can think of no laboratory procedure used in diagnosis from which the best results can be obtained without some knowledge of clinical details. All results obtained in a laboratory require interpretation in the light of experience and the nature of the individual case. In many instances a few minutes' consultation between practitioner and pathologist over the case may lead to the opening up of fruitful lines of investigation of which neither would have thought alone. In short, to get the best results from a pathological laboratory it is necessary to regard it, not as a slot machine which, on the insertion of a bottle of something and a fee, produces a diagnosis and a bottle of vaccine in return, but as an institution for the practical application of some of the accumulated knowledge and experience of the nature of disease.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL
MEETING, BATH, 1925

SECTION OF ORTHOPAEDICS.

Professor E W HAY GROVES, M S, F R C S, President

DISCUSSION ON
TUBERCULOUS DISEASE OF THE SPINE

OPENING PAPERS

I—Sir HENRY GAUVAIN, M D, M CHIR,
Medical Superintendent Lord Mayor Tieton Cripples'
Hospital and College

TUBERCULOUS disease of the spine is one of the most common and most serious of all forms of bone and joint tuberculosis. It is therefore particularly appropriate that it should receive the attention of this Section. Untreated or inadequately treated, it is a grave menace to the patient attacked, appropriately treated, few forms of severe bone tuberculosis offer such satisfactory prospects of cure without considerable disability.

Reviewing the years since I started work at Alton, the most striking facts to record are (1) the slow but steady revolution that has taken place in our conceptions of the nature of the treatment to be adopted, (2) the greatly increased and increasing facilities for such treatment by the establishment of specialized county hospitals for the cure of such patients, particularly for children, and also to a lesser extent for adults, (3) research into the etiology of the disease, which has established the fact that a considerable proportion of the cases in children are due to infection by the bovine bacillus, a source of infection which could be prevented, (4) education of the public as to the dangers of infection, means of prevention of infection, and the treatment to be enforced by the propaganda of societies such as the National Association for the Prevention of Tuberculosis and other admirable bodies, (5) co-ordinated work by public health authorities, the appointment of tuberculosis officers and nurses who search out and examine contacts, school medical officers, infant welfare clinics, and the like, the sum total of whose work in limiting infection and ensuring early diagnosis must be considerable, and lastly (6) the combined effect of all these factors in limiting the incidence and ensuring early and efficient treatment of the disease.

Distressing cases of advanced tuberculosis of the spine with severe deformity, from large urban areas, notably London, are not nearly so common as they were a generation ago. Indeed, by the organization existing in London it is possible for infected school children to obtain residential institutional treatment within a week or two after the diagnosis of spinal caries. Naturally, therefore, cases with advanced deformity are becoming increasingly uncommon. I think it is safe to predict that in ten years they will be rare, and in twenty years' time should be almost non-existent. From country districts severe cases are still exceedingly frequent, but it is not improbable that in another twenty years a discussion on the correction of severe deformity following tuberculous disease of the spine will be of mere academic interest—at any rate, it should be if the efforts now inaugurated are continued.

With regard to treatment, I think it may be taken for granted that in the present state of our knowledge conservative treatment, in its widest sense, is the treatment of choice. Spinal caries, like other forms of surgical tuberculosis, is but a manifestation of a general disease, and demands general as well as local treatment. Conservative treatment as undertaken to day may be defined as the adoption of all measures which tend to improve the patient's general health, increase his powers of resistance to tuberculous disease, and preserve or restore the part attacked. It includes consideration of general treatment, involving climatic, hygiene, drug, disciplinary, educa-

tional, and other measures which it is desirable to employ, and of local treatment of the actual spinal lesion, which is concerned with the correction or prevention of deformity and is largely orthopaedic in character, but subject to those limitations enjoined by reason of the fact that the patient is tuberculous. Under this heading may also be included those surgical measures, also conservative, which as yet retain a place in treatment certain of these are still essential.

Further to my remarks about the frequency of bovine infection, there is reason to believe that this is increasing relatively. It is difficult to convince the lay mind that milk, which is admittedly one of the most valuable of foods, may be in the raw state the most dangerous to the health of the child. In young children the percentage of cases of surgical tuberculosis infected from bovine sources is high. The incidence decreases rapidly with advancing age. It would appear that certain bony lesions are more liable to infection from bovine sources than others, and of these the vertebrae are the most frequently attacked. There are reasons for believing that from 30 to 40 per cent of all cases of non-pulmonary tuberculosis in children in England are infected from bovine sources, in Scotland the percentage is even higher. The subjoined table, of certain cases of my own in which the pus was bacteriologically examined by Dr A. Stanley Griffith, shows an incidence of over 60 per cent of cases of spinal caries originating in children under the age of 10 years infected from bovine sources. Above the age of 10 years the incidence of infection from bovine sources very rapidly diminishes.

Analysis of 192 Recent Cases of Surgical Tuberculosis of the Author's

	Under 5			Between 5 and 10			Between 10 and 15			Total Percentage Bovine
	H	B	Percentage Bovine	H	B	Percentage Bovine	H	B	Percentage Bovine	
Spine	7	12	63.1	11	18	62.0	10	4	28.5	51.8
Hip	8	2	20.0	32	5	13.0	28	0	—	9.3
Knee	2	2	50.0	5	1	16.6	3	0	—	23.0
Lupus	1	0	—	4	2	33.3	3	8	72.7	55.5
Glands	2	0	—	—	—	—	0	4	100	66.6
Other	6	0	—	6	2	25.0	4	0	—	11.1
	26	16		58	28		48	16		49.0

The pus from each patient was examined by Dr A. Stanley Griffith for human or bovine tubercle bacilli. (From a paper entitled, 'The extent of damage done by tuberculosis derived from infected milk and methods of prevention,' *Proceedings of Ninth Annual Conference of National Association for Prevention of Tuberculosis*.)

I consider these facts to be of the utmost importance and justify allusion even before a Section concerned with treatment rather than prevention.

I do not propose to deal at all with the question of diagnosis of spinal caries. With modern aids, diagnosis is as a rule easy, at any rate when the disease is fully established and even before marked deformity arises. The chief obstacle to early diagnosis occurs in young children in whom symptoms pointing to disease in the spine have not been discovered by the parents until deformity has developed, or in older patients where referred pain and absence of complete examination has permitted the condition to be overlooked. Perhaps differential diagnosis may be discussed by subsequent speakers, considerations of time prevent me from further alluding to this interesting and essential subject.

Allusion should be made to those methods of treatment which have attracted very considerable attention in recent years and which I shall term adjunct. These include heliotherapy and artificial light treatment, aerotherapy, balneotherapy, vaccine therapy, chemotherapy, x-rays, and other electrical forms of treatment. All these adjunct methods are of extreme interest and often exceedingly helpful, they are never absolutely essential, but are frequently capable of being utilized with advantage at some

on all stages of the disease, alone or in various combinations, and if judiciously employed they may be of much benefit to the patient. Before a Section such as this, while emphasizing the importance of general and adjuvant treatment, and asserting that these should be regarded as almost indispensable aids to cure and certainly utilized to the fullest extent wherever and whenever possible, I deem it more appropriate to confine my remarks to local treatment entirely, as it is this feature in the therapy of spinal caries which is of especial interest to the surgeon and orthopaedist, and is also essential if the best results are to be obtained.

I would first briefly allude to surgical measures in treatment, and would state as a rule, to which there should be few exceptions, that tuberculous abscesses secondary to spinal caries should not be opened. When closed, except in those situations, as within the spinal canal, where from mechanical reasons they may be dangerous, they are comparatively harmless. When incised and drained there is a very real danger of sinus formation and secondary infection. Reliable statistics show that, in general, in cases of spinal caries with septic sinuses, an ultimate direct mortality of some 75 per cent may be anticipated from septic exhaustion or myeloid disease. With the assistance of adjuvant measures this mortality may be reduced, but will always remain high. Neither is it wise to leave tuberculous abscesses to absorb if that is avoidable. While rarely directly dangerous to life, they permit spread of the disease, destroy the tissues with which they come into contact, incite toxicemia, and delay cure. Where these abscesses are accessible, as soon as possible after their formation and as early in their evolution as the skill of the surgeon permits, they should be aspirated. Occasionally then aspiration may be assisted by the employment of modifying fluids. The technique and arguments for the selection of this method of treatment of spinal abscesses Calvé and I have already described.⁴ Given efficient technique, I have no hesitation in

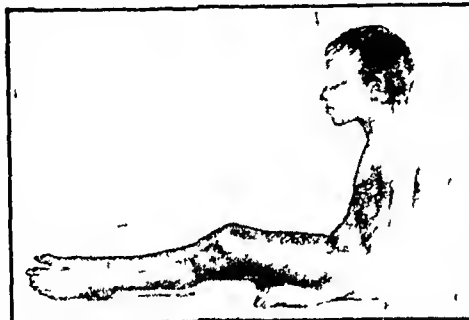


FIG 1—Deformity which had arisen after Albee's operation

advocating this method of treatment of spinal abscesses in preference to all others, and I believe this treatment is now being increasingly favoured. Aspiration may be adopted in even seemingly impossible situations. Thus, with a special trocar and cannula I have been enabled to aspirate retropharyngeal abscesses through the mouth. Such abscesses if drained through the neck are, if deeply situated, difficult of access, and sinuses in this region are often very slow in healing. In cases of paraplegia due to abscess formation within the spinal canal Calvé's aspirates by means of a specially designed trocar and cannula which he introduces through the intervertebral foramen. In unsuccessful cases costo-transversectomy or laminectomy has to be undertaken. Calvé has asked me to express his disapproval of Albee's and Hibbs's operations in spinal caries in children. His view is, I think, now fairly generally accepted, and with it I cordially agree. Such operations have little value in shortening the period of treatment in children, they are by no means devoid of danger, unless prolonged and careful after-care is instituted, they will not prevent the onset of deformity, and, if deformity exists, they will prevent the application of measures calculated to correct the deformity. They will not even ensure against relapse. I have under my care at this moment a patient who, ten years ago, had an Albee operation performed on the lumbar spine. The spinous processes remain ankylosed, but the disease has either recurred in the original lesion or was never quiescent, and the patient has a psoas abscess which has extended under Poupert's ligament. This is interesting in showing that immobilization of the spine may not be sufficient of itself to arrest cures. Another patient on whose spine, then without deformity, Albee's operation was performed came under my care two years later with extreme deformity which could not be corrected (Fig 1).

These operations are of interest, as they are essentially conservative. No attempt is made to deal with the lesion

which calls for such an operation. They are simply an internal method of splinting the spine and a substitute for instrumental skill. In adults bone-grafting of the vertebrae has a field, though it cannot be argued that it is an essential operation. It is attractive, almost dramatic, and doubtless succeeding speakers will testify to its value in selected adult cases, but it behoves us to remember that while it may leave a rigid spine it does not necessarily leave a healed spine, and valuable external evidence of healed tubercle is lost. In children I assert that it is an unnecessary operation, provided reasonable facilities are available for treating the patients, in certain cases it has distinct and considerable dangers. Its great value, to my mind, is that it simply confirms the experience that to immobilize an extensive bony tuberculous lesion is a better way to promote its healing than to attempt its extirpation.

I would appreciate the operation more if it made cure certain where a purely non-operative treatment would have failed, but I cannot conceive that it would have saved the life of any one of my spinal patients who have died. I know it would have increased my mortality if generally adopted, and I think I can demonstrate that it would have made little appreciable difference in the length of treatment required. Therefore I would reserve such operations, which are rarely, if ever, essential, for selected adult

cases. In adults justification may be found for the operation when vertebral destruction is taking place, as in lesions arising within the vertebral bodies, but it should be remembered that in adults the primary lesion commences not infrequently just beneath the anterior common ligament, and the tendency here is for the disease to spread beneath this ligament and not to invade the bodies deeply. In such cases immobilization in plaster is, I think, sufficient. Where adequate conservative treatment will not relieve pressure symptoms, then I think it will be generally agreed

that laminectomy or costo-transversectomy is indispensable, but I need hardly remind you that really adequate conservative treatment should first receive thorough trial. It is surprising, if such treatment is first adopted, how rarely recourse has to be had to operative measures.

I turn now to the consideration of mechanical means of treatment, which aim at the prevention or correction of deformity and are of great interest to us from an orthopaedic standpoint, but, as I would again emphasize, are but a part of the treatment to be adopted. Regarded from this aspect, one may briefly sum up that in early, acute, or progressive cases, three desiderata are called for: (1) dorsal recumbency to ensure rest to the body, (2) immobilization of the part attacked, the spine, to secure rest of the lesion, and (3) as a general rule, and provided extreme deformity has not already developed, hyperextension of the spine to prevent the occurrence of deformity, or to reduce moderate deformity which may have arisen, and to relieve muscular spasm, which, though Nature's way of holding a spine rigid and thus checking movement in the inflamed area, nevertheless often involves the crushing in of inflamed and softened vertebral bodies and the production of deformity. Dorsal recumbency alone is insufficient, hyperextension of the spine is essential if deformity is to be certainly prevented. In an ordinary case of acute caries, provided these essentials are obtained, the method matters but little. Details will be found to differ greatly in the practice of different surgeons, and the various methods applied have their respective advocates. If a surgeon decides on any particular method and his staff is properly trained in its use he will get such good results that he may be inclined to regard his method as superior to the methods adopted by others. My own feeling is that the simpler the appliance employed, the greater the comfort ensured to the patient, and the fewer the complications in the apparatus, the better the result will be.

I have tried every method I have heard of, and have come to the conclusion that the simple spinal board, with jacket, mattress, and hyperextension applied as required, and as used at Beck, is the best for all round treatment in straightforward cases. It meets every essential, it is clean and hygienic, it is comfortable, and it is effective. The but unless this is specially arms and legs may be moved, contained there is no objection to this and the patient's comfort is increased. If it is desirable to keep the legs still they may easily be strapped. Further and no refinements in the simple early case are of no commensurate value. It is again the story of common sense in treatment—the man, not the machine. In a hospital especially such a standard apparatus is particularly useful. Its fittings are standardized—a great convenience for stock and laundry. It is available for every case and may be adapted to meet every need. Nevertheless, for particular phases of the disease

more elaborate apparatus is often required if the best results are sought for. With paraplegia it is often desirable to add head and leg extension, with at times some degree of hyperextension. If there is deformity with much muscular spasm it is advisable first to flex the spine until the compensatory curves are eradicated and combine with dorsal recumbency extension of the head and pelvis with or without that of the legs also. Gradually the spasm is relieved, and then moderate hyperextension may be gradually employed with benefit. Should the case be one of cervical curves the head may be conveniently fixed in a box splint, traction applied to the head by means of an occipital band, the jacket and traction of the body serving as the counter-extension. It is not desirable to employ a chin strap, which is uncomfortable, and in children may cause deformity of the jaw. With much psoas spasm the contraindication known as the "wheelbarrow splint" is often effective. With moderate deformity without much muscular spasm the "swinging back-door" splint may be used to advantage. I have endeavored to suggest that while the standard spinal board described is of general value, the patient is most greatly helped if special appliances are utilized according to the ingenuity of the surgeon to meet existing needs, modified and altered as and when they arise. Other methods will naturally suggest themselves, designed for any complication, and thus every conceivable condition is countered by appropriate mechanical means.

There remains the consideration of extreme deformity resulting from tuberculous disease of the spine. It is often said that extreme deformity cannot be safely corrected, in children, at any rate, that is not always true. In a very large number of cases even extreme deformity may be often safely reduced, with great benefit to the patient. The most marked deformity occurs in the mid and lower dorsal regions. Deformity in spinal curves may always be prevented in both children and adults. Its correction when extreme is not easy, but it is often possible in children, and less frequently in adults. When associated with lateral curvature the most effective apparatus in my hands has been the "wheelbarrow" splint, followed by a carefully moulded

plaster jacket. Where there is an extreme kyphotic curve, hyperextension is not only impossible but cannot be tolerated. In such cases the only method which I have found to offer any prospect of success is by use of the apparatus known as the "Marconi" (Fig 2). The spine is further flexed until the compensatory curves are straightened out.

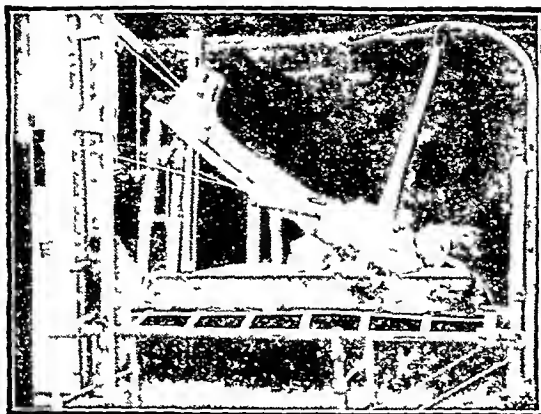


Fig 2 - Marconi apparatus for reducing severe spinal deformity

It will then be found that if the deformity is extreme the chest rests on the sternum, and that owing to the pre-existing lordosis and consequent shortening of the psoas muscles the thighs do not follow the line of the straightened lower portion of the spine, but are further flexed. Gentle traction on the legs gradually lengthens the psoas muscles and brings the thighs into alignment with the lower vertebrae. Traction on the pelvis and head in the direction the vertebrae now occupy corrects the compensatory curves and keeps them straight. Pressure immediately above, below, and at the angle of the deformity

reduces the angle formed by the disease, and gradually the deformity is reduced and the spine straightened.

The results of treatment are illustrated by an example (Figs 3 and 4). Lateral skilograms of the patient show that the angle of deformity has been definitely but safely widened. It need hardly be said that correction of such extreme deformity is not to be lightly undertaken and requires both patience and care. Where the slightest suggestion of commencing pressure on the cord occurs it must be abandoned. I would not recommend attempted correction of such extreme cases in other than special hospitals

for surgical tuberculosis, but in such institutions, with trained and intelligent nurses, attempts at reduction of such deformity may be undertaken with confidence and assurance.

When some dorsal deformity remains in a spine no longer active the apparatus known as the "push and pull" splint is often very effective. The pelvis is immobilized by a pelvic band. The patient is ventrally recumbent. A wedge pillow under the chest keeps the spine hyperextended. From the pelvic band ventral straps pass around each shoulder and are fixed behind the patient. They check forward movement of the trunk, but permit further dorsal flexion, which is encouraged. A padded dorsal board, as in the accompanying illustration (Fig 5), produces continuous gentle pressure on the deformity, and very gradually that deformity is diminished and at length corrected, with gratifying results. I conceive it to be of the utmost importance to correct or reduce deformity if possible, not only for aesthetic reasons but because by so doing the thoracic cavity is maintained as physiologically efficient as

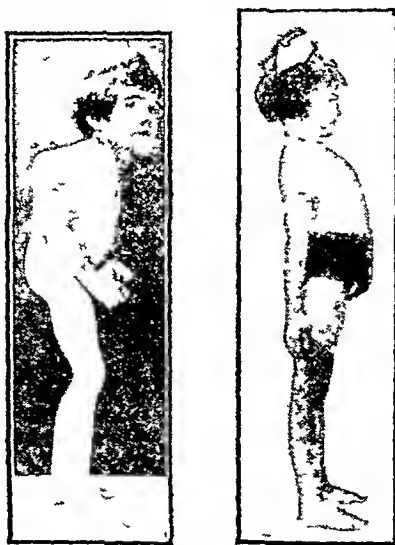


Fig 3 and 4—Tuberculous disease of the spine treated on the Marconi apparatus

possible. There is less visceral displacement and the tendency to pulmonary complications which is the direct cause of early death in so many cases with badly deformed spines is very greatly reduced.

I agree with Rollier that in the final stages of the disease ventral recumbency with freedom to hyperextend the back is of value in improving the dorsal musculature, and is of value also in decreasing and preventing further deformity.

These are but examples of some means of preventing, or reducing deformity. They illustrate the desirability of utilizing standard methods of mechanical treatment

when such are possible, but also the necessity of being prepared to devise appropriate mechanical methods of treatment for particular cases when and where required. Again, we must always bear in mind that mechanical methods of correction of deformity are only justifiable when they are capable of safe employment, owing to the fact that the patient is tuberculous, unless attempts at correction of deformity involve a very real danger. Forceful correction of deformity in spinal curvatures is now a procedure of the past, and the techniques which followed attempts at correction by such means are a warning of their risk. I cannot resist quoting the following epigram, which is perhaps apt in this connection.

'Socrates, promising to set Diodorus' crooked back straight, piled three solid stones each four feet square, on the hunchback's spine. He was crushed and died but he has become straighter than a ruler.—Catheter from *The Greek Anthology* translated by W. R. Paton, vol. 1, 1918 p. 129.

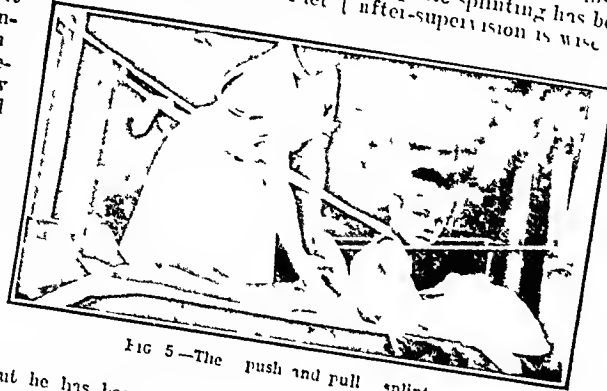


FIG 5.—The push and pull splint

Nevertheless, by the exercise of judgement and common sense, most severe angular curvatures may be safely and widely reduced in children, at any rate, if suitable means be devised to this end at appropriate periods in the progress of the disease.

Time does not permit me to discuss at any length the use of plaster of Paris in the mechanical treatment of spinal curvatures. It is often of great value, and indeed, as Calot has remarked, it may be used quite efficiently as the sole mechanical method of treatment during the progress of the disease. My views as to its value are fully stated elsewhere. With modern developments of heliotherapeutic treatment the indications for its use are somewhat diminished. Nevertheless it is frequently of great value, particularly after correction of deformity and while consolidation of the lesion is taking place. It is also often indicated when it is desirable to intermit ambulatory with recumbent treatment. Sometimes a deeply situated abscess will remain stationary, being neither absorbed nor obliterated the patient may become toxicæmic. In such cases it is often wise to apply a carefully moulded plaster jacket with a large ventral window and to permit ambulatory treatment, sometimes with the direct object of encouraging the development of the abscess to enable aspiration to be undertaken. Again, in certain cases of chronic sinusses from the spine, ambulatory treatment in plaster often assists drainage, with advantage to the patient.

Lastly, I would allude somewhat briefly to the question of after-care. It has been asserted that in even the most mild infection in spinal curvatures three years must elapse before the inflamed infected bone is replaced by sound tissue. I have had no opportunity of verifying this statement, but imagine it has considerable truth. Absence of pain and onset of flexibility in the spine are valuable clinical signs suggesting arrest of the disease. Reclassification of the lesion with clear-cut outline of the part attacked is an important confirmatory x-ray finding. Added to these are you have the best guides in arriving at a decision of quiescence of the lesion. General constitutional signs will have generally completely subsided soon after adequate treatment is instituted and long before ambulatory treatment is even contemplated. But even when one is assured that ambulatory treatment may be safely started and the disease has been arrested, it is a wise precaution to insist on the application of a suitable mechanical protection for the spine in the form of a removable celluloid splint generally, I prefer a properly fitting jacket. Speaking to any other form of apparatus followed perhaps by a Taylor's brace or modification thereof. Such appliances may be worn without discomfort, and no valuable means of preventing late onset of deformity. In healthy subjects

with good musculature late onset of deformity is rare, if efficient and sufficiently prolonged treatment has been given. In cachectic subjects with poor musculature it may easily occur, even in the absence of active disease, but where adequate splinting has been neglected. In the former, while after-supervision is wise and desirable, it will be found that relapse and the development of deformity rarely follow unless ill health supervenes, or gross neglect and carelessness is shown. In the latter case the lack of proper subsequent supervision and the early abandonment of splinting means almost certain disaster.

The essentials in making celluloid jackets are (1) Careful moulding round the pelvis, from which support is derived, such moulding is obtained, not only by moulding the plaster cast when it is being applied to the downwards when the cast is being taken. The plaster is moulded well round the pelvis which act as counterpoints for pressure from the pelvis. The jacket, when made, will not ride up on the patient if it is moulded below the costal margin. In this way forward flexion of the spine is effectively prevented.

The subjoined references, as further developing personal views on the treatment of spinal curvatures, are appended.

1. *Surgical Tuberculosis: its Needs and Treatment* Lancet Aug. 10, 1912.
2. *Non-operative Treatment of Spinal Tuberculosis* Ibid. 1912.
3. *The Role of Heliotherapy in Surgical Tuberculosis* Ibid. 1912.
4. *The Organism and Work of a Light Therapy* in a Journal for Surgical Tuberculosis. Lancet July 11, 1923.
5. *Calot's Case of Spinal Tuberculosis* Lancet March 5th 1910.
6. *Calot's Case of Spinal Tuberculosis* Lancet March 5th 1910.
7. *Calot's Case of Spinal Tuberculosis* Lancet March 5th 1910.
8. *Calot's Case of Spinal Tuberculosis* Lancet March 5th 1910.
9. *Calot's Case of Spinal Tuberculosis* Lancet March 5th 1910.
10. *Calot's Case of Spinal Tuberculosis* Lancet March 5th 1910.

II.—G. R. GIRDLESTONE, M.B., B.Ch., F.R.C.S.,
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Honorary Consulting Orthopaedic Surgeon, Shropshire
Orthopaedic Hospital.

OPERATIONS FOR SPINAL FIXATION
I do not quite share Sir Henry Graham's opinion regarding the part played by spinal fixation in the straightening of deformity. In 1919 I published a paper recording the results of fifty cases operated on, mostly by the Albee method, by my colleagues and myself. I then believed in the value of the operation at any age between infancy and senility. In 1923 I summarized the end-results of the original fifty cases with the results of another fifty I had either changed my opinion as to the need for the operation in children. Further experience has however, convinced me that in certain cases and at certain stages spinal fixation is indicated in children.

I felt then, and feel now, that operation is most valuable for adults, but definitely, in the words of Sir William Wheeler, as "part of the conservative treatment of Pott's disease." It shortens the need for recumbency, and there is no short cut to cure. I never cease writing and saying this, and learning it again and again myself by bitter experience. There is no short cut. In adult with the very greatest cure after he goes home. Calot emphasizes this, he says that the patients must be fit for several hours a day, go to bed early, avoid fatiguing work and sudden movements, and wear a splint (external or internal) for life.

To return to children the stage for operation is, I think, when the disease is quiescent, after several years' recumbency, and the cases are those where curvatures lead to such instability of the column as will through strain cause progressive deformity difficult to check by splintage,

and will also for the same reason be likely to lead to recurrence of disease

In lumbar and dorso lumbar cases an Albee graft is generally satisfactory, but in mid and upper dorsal cases a Hibbs's operation. I think a Hibbs's operation recommended by an osteoplastic graft (Delageniere) is best. Dr Philip Lewin of Chicago advocated this in the *Journal of Bone and Joint Surgery* in January, 1924, and Professor Osgood tells me he has been doing this operation for some time

The operation performed at this late stage, with the internal fixation it should produce, is really part of the after-care rather than the treatment, it is particularly indicated in cases in which recurrence of disease or increase of deformity is to be feared. I would strongly emphasize the advantage of using the "turning-case" technique, both for conservative treatment and during operation, as described in my article in the *British Journal of Surgery*, vol 1, No 39, 1923

THE DEFORMITY

The kyphos is determined in extent and in angle by the number of vertebrae attacked, the amount of bone destruction, and the site of the lesion. In considering the mechanics we may, for the moment, assume that there has been extensive bone destruction, but that everything has been done to limit the disease and heal it by general treatment and accurate splintage. The final essential of orthopaedic correction is stability, if telescoping and imbrication do not bring the bodies above and below the lesion into contact, angular curvature sufficient to do so is an advantage. Then with good compensatory curves, good musculature, and either a graft or, for a time at least, a good spinal support, the spine may be able to stand stress and strain without harm

That an angular deformity is right when there has been much loss of bone must not be forgotten, and the angle must be protected during the efforts to produce compensatory curves. Sir Henry Gairdner speaks of correcting the angular deformity, but we do not want to open up the angle, but rather to produce compensatory curves

SEPSIS

Sepsis is almost always a result of failure in early diagnosis or inefficient treatment. Elsewhere I have quoted Dr Rollier as saying "To open and drain a cold abscess is to commit a surgical crime." Rollier labelled such a surgeon "catastrophic," and said it was "almost a condemnation to death, not at once, but in two or three years," and added, "We cannot sting too much against it"

I have particulars of a series of 30 cases of tuberculosis of the spine admitted five years or more ago to the Wingfield Hospital, Headington. Of these patients 9 had been admitted to hospital with discharging sinuses, and 21 were admitted without open discharge. All the 21 patients, so far as I can ascertain, are alive at the present day, but 2 have definitely relapsed as a result of very bad home conditions and semi starvation, 3 others have required temporary readmission, but are doing well. So far as I can ascertain the other 16 are in good health and activity. Of the 9 septic patients 1 is well and at work, the other 8 are dead. May I repeat Dr Rollier's remark? "It is almost a condemnation to death, not at once, but in two or three years." Sepsis in spinal disease in adults is almost a sentence of death. How can we prevent it and how treat it?

Prevention of Sepsis

This includes (1) Early treatment (2) Efficient treatment, general and local, with careful aspiration, not too meddling and not too late (3) Long continued treatment (4) After-care, we must prevent relapse

Treatment of Sepsis

In the case of patients with sinuses there must be (1) efficient general treatment, (2) efficient immobilization and protection of the site of disease so long as there is active crises or instability of the vertebral column. When

this stage is long past, the patient may be allowed off his frame, on a light support, and, if not feverish, be allowed to get up for some hours each day

In a proportion of cases the sinuses will heal and the disease become quiescent. In others, probably the majority, the patients remain ill, and show signs of septic absorption, the discharge shows no sign of drying up—sometimes it comes freely, at other times there is swelling of the parts and retention of the pus. The patient is on the road to indurated disease, and unless we can alter this state of affairs altogether he will go straight on till he gets there, and it is a miserable destination. I have watched their last months

We must continue the general and local treatment of the disease as already outlined, applying every means of general treatment, including heliotherapy, open air, and a correct diet, but not overfeeding. In thoracic cases costo-transversectomy is sometimes advisable, and in lumbar disease an operation, such as that described by Treves in 1884. We must spare no pains in the effort to drain the fons et origo of the abscesses, freely, and by a route as short and direct as possible, and then we must keep up free direct drainage, often a recurring hateful task

Hospital Provision for Adults

Adults are often attacked by spinal tuberculosis, and of a grave type. They need prompt admission to a special hospital, even more urgently than young patients. Yet there is no provision for them at Alton, Heston, Lersow, Crishalton, and Pinfold. I do appeal that they shall not be overlooked in the new hospitals that are being developed. Joint and bone tuberculosis, with the accidents of industry and transport, provide the majority of adult patients needing orthopaedic in-patient treatment

Light—One last word as to heliotherapy. In our special hospitals we use open air, sunlight, the right diet, purposeful and accurate splintage, and an environment full of interest and happiness. It is dangerous to stress the light overmuch lest it lead to neglect of the other and more important factors

GENERAL DISCUSSION

Mr W. T. Gordon Pugh (Crishalton) said that he had always regarded bone-grafting the spine as unsuitable for children. In spinal crises the affected centra were decalcified to a marked degree, and the one essential in treatment was to keep the weight of the upper part of the body off the weakened centra. The operation endeavoured, by bringing the spinous processes together, to throw the whole of the weight on the articular processes. An examination of a child's skeleton suggested that this was mechanically unsound. The articular processes were only a short distance in front of the graft, whereas the weight of the body fell well in front of it, the latter had thus great leverage action, and, a child's articular processes being largely cartilaginous and not fitted to bear undue pressure, compression of the centra was not prevented. The weakness of the processes was accentuated by the fact that the plane of their articular surfaces was not horizontal but almost vertical. These facts and the fact that the graft was sometimes absorbed in children, had a bearing on the result. If, as not infrequently happened, too much reliance was placed on the operation and the recumbent position was given up too soon the weight produced collapse of the weakened bodies, the diseased tissues liquefied, and gravity quietly conducted the abscess into the groin, where it pointed. A number of cases had been received at Crishalton with septic sinuses that had originated in this way. When a sinus formed in these cases it was exceedingly difficult to get it to heal for the graft impeded the telescoping which usually played an important part in the healing of lumbar crises. The risks of the operation itself were almost negligible, but investigation of the end-results would prove unfavourable. In the case of children he advocated prolonged recumbency. There had never yet been devised a jacket or splint or, in his opinion, operation which was capable of relieving the diseased vertebral bodies of an erect child from super-

incumbent weight. By recumbency deformity could be prevented if the patient came under treatment early enough, and, if already present, could be lessened by a flattening of the spinous processes and by a modification of the natural curvature of the healthy part of the spine to compensate for the abnormal curve in the diseased section. Sir H. Gauvain had stated that he applied hyperextension at the seat of disease. With this the speaker did not agree, so far as the dorsal region of the spine was concerned at any rate, where the close approximation of laminae and spinous processes prevented hyperextension taking place without separation of the surfaces of the diseased vertebral bodies. Such separation was not conducive to bone formation in the affected region, it prolonged the treatment and was often followed by recurrence of deformity. The bend in the spinal frame should be placed above the seat of disease if this were in the lower part of the spine, and below it if the upper part were affected. Growth was naturally stunted in the diseased centre, but would go on normally in the healthy ones, with the result that a prominence which appeared to occupy a considerable fraction of a young child's spine would become much less obvious after some years' growth, provided that a compensating modification of the curvature of the rest of the spine was secured. Two-thirds of the cases began under the age of 6, and the curves of the growing spine were readily modified. When the period of recumbency was over a jacket should be worn, extending anteriorly well up in front of the shoulders but behind only to the point at which the bend in the frame had been made, so that the continued production of the compensating curve might be encouraged. It was now fairly generally recognized that a jacket could not take off weight, and that its function was to prevent flexion compression of the diseased area and to maintain or increase compensatory curvature.

Mr D. McCRAE AITKEN (London) said that although he agreed with the opener that the nature of the splint did not matter, because a skilful surgeon would make his splints effective, yet the teaching was very dangerous. More particularly he attacked the apparatus called the "push and pull" splint, which the opener had said was only to be used when the disease was completely quiescent. Sir Henry Gauvain had lived constantly with tuberculous disease for many years, and perhaps he could be sure that the disease was cured and that there was only residual deformity to be corrected. Sir Henry used apparatus which allowed much more mobility than the splint would do to permit, and certainly he would not recommend it. He regretted that the opener had attacked fixation operations such as the Albee bone graft operation. Mr McCRAE AITKEN had for many years performed the bone graft operation, at one time almost as a routine. He agreed with Mr Pugh that it was not an operation for young children, except perhaps in very special cases. Nearly twenty-five years ago, when he was Sir Robert Jones's house surgeon, in discussing results with other house-surgeons, it was said that the spinal cases did not do well unless kept fixed for about five to seven years, and that five years' recumbency in a Thomas frame was not too long to get a really good result. Having performed Albee's operation for the last dozen years or so, he was prepared to say that it did not greatly shorten the period during which some sort of spinal support should be worn. He believed that he employed the bone graft in the spine exactly as he used a graft or sliding graft in an ununited transverse fracture in the humerus—namely, to check small local lateral movements which were preventing ossification and were not properly controlled by external splints. It was therefore of value in hastening repair, but was not a substitute for a back brace or a back support. He had performed the operation in a child as young as 8 or 9 years of age, the graft or the bone which grew in its place grew with the child, and would inevitably bend if it was expected to take the place of the destroyed bodies. It was necessary to wait for effective bone formation in the region of the bodies before dispensing with spinal supports. In adolescents and adults rapid healing was essential to a good end-result, therefore a graft was more often called for as an aid to fixation. Of the regions of the body in which it

was most strikingly effective the cervical region came first and the lumbar region second. The imbricated arrangement of the vertebrae in the dorsal region made injurious lateral movements less likely. Finally, the deformity should be corrected as fully as possible before operation. This meant correction in recumbency for periods up to perhaps two years or more before operation was thought of. If possible he liked to correct the deformity, as Sir Henry Gauvain had described, at the seat of disease, but that was only possible in early cases in children, such as he was accustomed to handling at Alton. In later cases, where there was already consolidation at the seat of disease, the method of compensatory correction described by Mr Pugh must be used. Early operation in a case of active disease with gross deformity, in a desperate hope that the bone graft would steady the part and hasten recovery, had been a total failure. If the deformity could not be corrected the body weight would put a cross-strain on the part and relapse was liable to occur. If the case was one in which the deformity could be corrected quickly, then an early operation was a help in getting more rapid consolidation at the seat of disease.

Mr F. C. PAIN (Newcastle-on-Tyne) thought that the results shown by Sir Henry Gauvain emphasized the need for special hospitals, specially trained staffs, and after-care associations. He spoke as a general surgeon who had been compelled to treat many such cases under considerable difficulties. He emphasized the need for prolonged treatment, not one or two years, but for four or six. In determining when a case might be considered cured clinical signs were useful, but x-rays were more valuable, showing the fusion of the vertebrae with a clean-cut appearance. When a person's abscess increased in spite of rest or aspiration, or for other reasons, a radical cure could be undertaken, although it must be recognized that the abscess was a complication and not the disease. The main drawback of the operation was the infection of the wound with tubercle bacilli, aseptic healing occurred, but later broke down. He described his operative procedure, which included careful exposure and definition of the sac, protection of the wound, aspiration to evacuate the pus, opening the sac and dry scrubbing to remove pyogenic membrane, treating the inside of the cavity with iodine, and closure of the cavity and wound. With perfect technique no single organism from without or within must be allowed to come into contact with the wound. Good results would then be almost certainly obtained.

Mr ALAN SMITH (Cudiff) held that the question of treatment depended, from the national standpoint, on an adequacy of open air beds. No ambulant treatment would do away with the necessity for prolonged recumbency. The Welsh National Memorial Association, on account of its insufficient surgical beds, had to make arrangements for plaster fixation and immobilization at home pending admission. This was a poor compromise any ambulant fixative treatment depended on the efficiency of after-care schemes and the fineness of the mesh of their network. When or how were they going to obtain osseous or fibro-osseous fixation of the central remnant? Did anyone know the number of cases who recovered without or with inadequate treatment? Those who were seen in middle life were dwarfed and had a large deformity, but they were apparently fairly fit. Did one get a better fixation of the central fragments by this crushing effect of body weight? He was somewhat conservative in bone-grafting, he did it in adults where the kyphos was not greater than 45 degrees, and only after preliminary recumbency until the generalized condition became subacute. The operation was merely an addition to the other methods of fixation. He mentioned the question of paraplegia in adults, in children recumbency in hyperextension was generally sufficient to produce a reduction of the granulomatous pressure on the meninges. He had performed a decompressive laminectomy in adults, and had removed a thickened doughy granuloma from the dura, with a complete cessation of symptoms and subsequent recovery. In such cases Calve's aspiration would be useless as the granulation tissue did not break down to pus.

Mr R C ELMSLIE (London) pointed out that the diminution in the number of cases of severe deformity was very evident in two surveys of the children in the London County Council schools for crippled children made in 1907 and in 1922. This improvement was largely due to the increase in special hospital accommodation, but he thought that Sir Henry Grayan might have given some credit to the teaching of early diagnosis in the medical schools. Mr Elmslie doubted whether the correction of deformity at the site of the disease was advisable. He had always considered that it was necessary to allow a moderate degree of collapse, in fact, he understood that this was one of the arguments made against the bone graft operation, of which he was still an advocate. He performed the operation almost as a routine for adults, and although he had given it up for children for ten years he was not sure that he was right. The trouble was that the operation had been so much misused. It was not a cure for the disease, but only a form of internal splint, it should be performed only after preliminary treatment, and followed up by rest and hygienic treatment.

Mr H A T FAIRBANK (London) referred to differential diagnosis in children. He thought it was not superfluous to insist on the absolute necessity of having first-class stereoscopic radiograms before giving a decision in a difficult case. In his experience developmental error and new growth had given the greatest difficulty. He showed radiograms of two cases of congenital abnormality in which mistakes in diagnosis had been made. The first had been regarded as tuberculous and treated as such for five years. There were two abnormal sites, both in the lumbar spine. The lower was, at first, regarded as congenital defect, the upper as caries, but recent x-ray examination showed that both were congenital abnormalities, with fusion of laminae and spinous processes, and, at one spot, also of two bodies. In the other, in which he himself had made a mistake, the lumbar spine was again affected. As an example of sarcoma in a child he showed radiograms of a girl, aged 11, with clear areas in the tenth dorsal body and a long opacity in front of the bodies some vertebrae higher up. The two lesions should have suggested the correct diagnosis. The child had a progressive paraplegia with anaesthesia. He performed laminectomy, and found a sarcomatous mass surrounding the thorax. As a contrast to the last he showed a radiogram illustrating two distinct lesions of the spine. He had grafted the lower, and only discovered the upper at a later date, though it was probably present at the time of operation. He had met with other similar cases of double lesion. After grafting a small series of cases in children he had given it up, and now would not graft under the age of 14. He thought it possible that in the future they might come to fixing a smaller extent of the spine as a routine than was done at present. He had had grafts fracture some months after insertion. He thought it possible the shorter graft would be as efficient as the longer. As to abscess, all agreed that in draining abscess without skin involvement aspiration was the treatment. When the skin was involved and about to give way, opinions as to treatment differed. He preferred excision of involved skin and closure of wound in the hope of getting healing, and even repetition of this procedure. When there was a discharging abscess with obvious mixed infection, free drainage was indicated. Lastly, he showed radiograms of two cases of atlanto-axoid disease, with marked displacement of the atlas, but without paralytic complications.

Mr T P McMURRAY (Liverpool) was glad to notice that all agreed as to the essential part which prolonged fixation held in regard to the treatment of tuberculous disease of the spine. Other factors were present and helped to a greater or a lesser degree, but in his opinion the essential part of any efficient treatment was a complete fixation which allowed the consolidation of the fibrous tissue and the destruction of the living tubercle bacilli. In his opinion this fixation could be employed to its best advantage by means of a frame which fixed the child's body, head, and legs, and so prevented the irritation of the diseased area.

As regards operative treatment, this should only be employed after the consideration of all the conditions, and should not be employed in any circumstances in children. In its essentials operative fixation of the spine was only an attempt to shorten the period of recumbency with fixation, and was not, and never could be, so satisfactory a fixation as the former. It was impossible to say what length of time was necessary for the cure of tuberculosis, but there were certain clinical signs which helped in estimating the stage of the disease. If no abscess formation could be shown by the x rays, if there was no exaggeration of reflexes present, if pain had disappeared completely for at least a year, then more freedom was justified, and the period of recumbency could, with some degree of safety, be brought to a close. The disadvantage of the operative fixation of the spine was that the surgeon was tempted so to reduce the period of fixation that cure of the disease was much less likely. In two cases of tuberculous spine in children, in whom a successful bone-grafting operation had been performed and the patients allowed up after a period of nine months, pyous abscesses developed in both cases, although the bony fixation was complete. Thus, in his opinion, was the great error of the matter. They knew that the cure of tuberculous infection could be obtained by prolonged fixation, then why not always use this method in children?

In adults another factor entered into the problem. Usually the patient could ill afford two or three years of recumbency, and also the adult patient did not react to prolonged fixation as well as the child. Here the operation of bony fixation was justified, even though it involved a percentage of risk which was not present with the other form of treatment, and the operation was especially useful in the lumbar region. No form of brace or support could possibly prevent the movement of the spine in this region. As each movement of the hip was accompanied by a rotation of the lumbar spine due to the action of the psoas muscle, bony fixation of the spine in this area would undoubtedly help, and would enable the patient at an earlier period to return to his or her duties. One other very important point had been brought up in the discussion, and that was the treatment of the chronically discharging pyous abscess. He had found that several of these cases, which had resisted all forms of local and general treatment for years cleared up very rapidly when the period of recumbency had been brought to an end, and the patient had been allowed to walk about with the proper form of posterior support. Whether the cure was better drainage or increased vascularization of the abscess wall or a combination of both—this seemed the most probable—this method had been successful in several chronic cases.

Dr ROBERT B OSGOOD (Boston, U.S.A.) said that in America they were equally convinced that the treatment of the tuberculous bone and joint lesions was primarily the treatment of the general disease, aided by those surgical procedures and mechanical appliances which the morbid process demanded. They were therefore stressing as a *sine qua non* recumbency in the fresh sun-washed and wind-washed air, heliotherapy, and an antituberculosis diet. In the acute stages in children they immobilized them as completely as possible, either on frames, or more often in the specially made plaster shells of Schwartz* striving if deformity existed, to reduce the obvious kyphos by producing compensatory curves above and below according to the safe rules of leverage laid down by Schwartz. He reminded them that absolute and complete immobilization of the spine was impossible, unless they restricted normal respiratory movements to a hardly to be desired extent, relative immobilization was all they could attain. As the activity of the disease became less they were inclined to insist on less and less complete immobilization as long as the reflex irritability remained absent. They agreed as to the wisdom of recumbency for one two and generally for three years in young children, they believed in the aspiration and not the open incision of abscesses. The commission appointed by the American Orthopedic Association in 1920 to study the

*See The mechanics of a new plaster shell in the treatment of Pott's disease in children with lateral x-ray control by R. Plato Schwartz, A.B., *Journal of Bone and Joint Surgery* October, 1922, p. 787.

end results of ankylosing operations on the spine in young children reported, he thought, (1) that the operations had, in well trained hands, an almost negligible mortality, (2) that ankylosing the spine did not of itself cure the disease, surely influenced favourably a paraplegia, or prevented an early ease from going on to deformity. They had, therefore, at the Boston Children's Hospital rarely performed the operation until they believed the disease to be quiescent, and even then in only a few instances. At present he advised some form of ankylosing operation after the disease appeared to be entirely quiescent, if not cured, and as complete as possible redressment obtained. Waldenström's report of one hundred cases of this sort without a death attributable to the operation, covering a period of ten years, 1909-19, had fortified their opinion, and his careful end result studies were most encouraging. The type of operation which he had performed was the Albee, and he was apparently satisfied with it. They had been employing the fusion operation of Hibbs, not always antiseptising the intervertebral articulations, but splitting the spinous processes vertically, turning the leaves up and down, and making the chips turned up and down from the laminae interdigitate—as Mackenzie Forbes had described it, making a veritable forest of bone. Over the flat bleeding chip strown surface they applied a flat, flexible, ribbon like osteo-periosteal graft removed from the tibia, and they expected firm ankylosis. They thought it should provide a local internal splint, more efficient than any external splint, that it might be obtained without appreciable or unavailing risk, and that it made the wearing of a lighter or no apparatus safe, and the development of gravity deformity less likely. In Boston, he thought, they were inclined to advise an ankylosing operation in adults earlier and more constantly than in children, for the reasons that had been so well stated by the other speakers. The Albee type was more easy and quicker than the Hibbs, and the fate of the graft with wide spinous process contacts was more certain. Dr Calvé's trocar for aspiration of spinal abscesses through the intervertebral foramen was most ingenious, and in his hands and in those of others was seemingly devoid of the hazard it suggested. In two recent cases they had found on laminectomy such solid tuberculous granulation tissue that it could not have been drained. Mr Lambank had too modestly suggested that the differential diagnosis of tuberculous eries of the spine was not always easy. They had mistaken syphilis, metastatic carcinoma, sarcoma, and multiple myelomata for tuberculosis, and performed useless operations for ankylosing the spine. Mr Fairbank had also pointed out the comparative frequency of multiple foci of tuberculous disease of the vertebra. These also they had so often overlooked that they now insisted upon complete spinal radiograms before treating the obvious lesion.

Mr S W Daw (Leeds) thought that no diagnosis should be made without x-ray evidence, and believed that at the stage of the onset of clinical symptoms changes demonstrable by the x-rays were well advanced. A narrowing of one or more intervertebral discs usually occurred, and there was a type of case with narrowing of a vertebra but without narrowing of the adjacent discs. He would like to be satisfied that this was really tuberculous eries. As regards abscess, the results of modern treatment made one more optimistic than formerly. Abscesses generally disappeared with rest, with or without aspiration, open operation was very much required. With reference to bone-grafting there were theoretical grounds on which this operation was difficult to defend, since it would appear to interfere with collapse and consolidation leading to cure, and it also seemed likely to prevent the necessary compensatory atrophy of the posterior elements of the spinal column at the site of the lesion. As a practical measure it was extremely successful, however, and he urged that if it was particularly suitable for hard workers, as had been stated, then it must be a good operation for other classes of adults. Bone-grafting by two lateral grafts had become almost a routine treatment for spinal eries in Leeds as regards adult patients. Children were not bone-grafted. In cases of paraplegia, suitable splinting

would usually bring recovery. Aspiration of an abscess close to the spine was sometimes necessary and successful. If long continued conservative treatment failed to relieve the paralysis, laminectomy without opening the dura mater should be performed, this generally relieved pressure sufficiently. Opening the dura mater would seem to involve danger of infection of the cord with tuberculosis, and was to be avoided if possible.

Dr HARRY MARTIN (Liverpool) wished to point out that in his opinion the methods adopted for the correction of kyphosis in tuberculous disease of the spine should depend on the stage of the disease. He had found that in early cases with acute kyphosis it was possible to attempt correction at the level of the kyphos, to "open out" the affected vertebrae, and to secure correction by calcification of the fibrous tissue replacing the destroyed vertebral bodies. He felt that in later cases where the anterior ligaments of the spine had contracted beyond the point whence they could be stretched, that the methods of Schwartz, which produced a lordosis above and below the kyphos, were the most satisfactory in the prevention of increase of kyphosis. With regard to Calvé's aspiration of abscesses within the spinal canal, he wished to differ from some of the previous speakers that the operation was attended with risk of damage to the spinal cord, performing the aspiration on the cadaver would prove this to the uninitiated. He felt that the surgeon should be prepared to go further in his search for causes of pressure in the event of the aspiration through the intervertebral canal being unsuccessful.

Mr W I DE CONEY WURRIN (Dublin) said that he had performed forty consecutive bone grafts without a death or complication for spinal tuberculosis. He never operated upon children. The operation was a simple one, and consisted in making a fresh bony bed under the erector spinae muscle on one side and placing a long substantial graft from the tibia in the prepared bed. The patients were kept on a double Thomas frame for three months and in bed with a posterior spinal support for a year. The cases were watched closely for a long period. The bony bed was freshened by a special raspator bent to a suitable angle. In dealing with persons abscess in adults which resisted fixation and aspiration, he packed the cavity with gauze smeared with bipp, and stitched the wound up completely with the gauze *in situ*. In two days the gauze was removed through a small additional opening, which was then immediately closed. Many cases so treated gave no further trouble.

Mr HENRY GAYLOR, replying, said he was sure he voiced the feelings of the Section in thanking their distinguished American colleague, Professor Osgood, for his illuminating contribution, the outcome of an immense experience. They would also join him in welcoming back Mr McCrae Arthur after his illness, and in rejoicing at his restoration to health as shown by his vigorous criticism. Experience with chronic tuberculous cripples at Alton had taught him that the very strict immobilization over a prolonged period formerly practised was unnecessary and often undesirable when all signs of activity had completely subsided. The discussion, which had largely centred round operative measures in the treatment of spinal eries, had been undoubtedly helpful.

OBSERVATIONS ON THE OSGOOD SCHLATTER DISEASE

By

ROBERT OLLFRENSEHAW, F.R.C.S.F.,
Orthopaedic Surgeon to the Royal Manchester Children's Hospital

SINCE 1903, when Dr Osgood described ten cases of lesions of the tibial tubercle in adolescents, a good deal of interest has been taken in this condition. Five years later Schlatter published an account of further instances, and many later writers have discussed causes and pathology, and in some cases have cast a certain obscurity over the condition—an obscurity which, to my mind, is quite unwarranted. In the

most recent French textbook on the surgery of childhood the author makes the pathology both complex and uncertain. I would like to say, therefore, at the outset, that as a result of personal investigation and treatment of thirty-two cases, I have come to the conclusion that the condition, which certainly does show some clinical variations, has a purely traumatic origin, a definite pathology, and a clear line of treatment. Strains thrown on the terminal portion of the quadriceps mechanism are common and, at different ages, produce varying lesions—in elderly people fracture of the

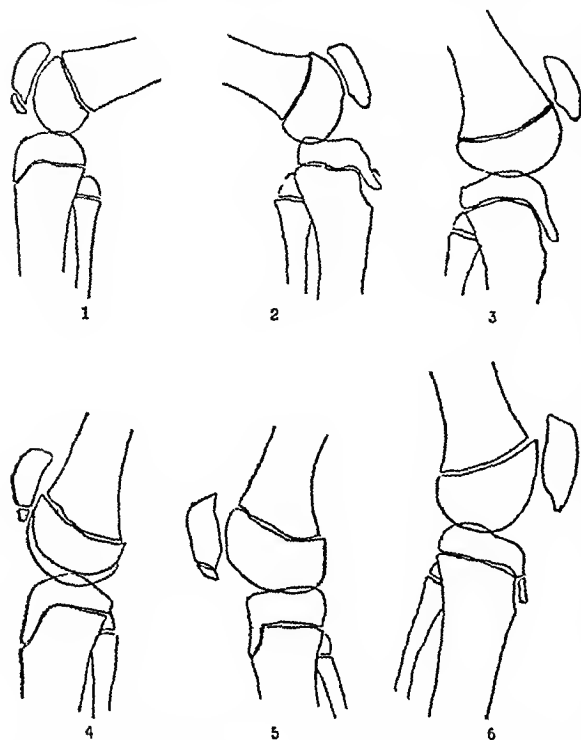


FIG 1 shows the left knee of a girl aged 14 who fell from a swing and who reported that both knees struck the ground. There was well marked tenderness and some swelling of the tibial tubercle and the figure shows separation of a fragment.

FIG 2 shows the right knee of the same patient and whilst the tubercle of the tibia was normal radiographically and clinically the lower edge of the patella was torn off and this area was very tender to pressure.

FIG 3 shows the left knee of a boy aged 15 who had a fall in the gymnasium and hurt both knees. The figure shows a separation of the tibial tubercle.

FIG 4 shows a fracture of the patella in the right knee.

FIG 5 shows the right knee of a girl aged 13 who fell from a haystack. She did not actually fall on the knees but jumped and fell awkwardly. The right knee shows a fracture of the patella.

FIG 6 shows the separation of the tubercle of the tibia in the left knee.

patella or rupture of the tendon above the patella, a condition of which I have had two recent personal experiences. In the middle aged fracture of the patella is the common result. In adolescence avulsion or separation of a fragment of the tibial tubercle, or a fracture of the lower border of the patella, may occur. I regard, therefore, what is known as Osgood's, or Schlatter's, disease as the representative in childhood of the fracture of the patella in the adult. I am sure that the two lesions of childhood—(1) separation of the tibial tubercle, and (2) fracture of the lower edge of the patella—are due to the same cause, because I have had three patients in whom both knees were simultaneously and similarly injured, and on examination one knee showed a separation of the tibial tubercle, whilst the other showed a torn-off lower edge of the patella.

Treatment

I think this lesion is a fracture and should be treated as a fracture by complete immobilization for six weeks. I find that the best immobilization is achieved by a well fitting plaster cast, fitted close to the limb and moulded closely round the knee. It reaches from the groin to the ankle and,

whilst it is worn, walking is permitted. After removal of the cast massage is instituted and a knee cage, with a stop allowing only 45 degrees of flexion, is worn for a further six weeks. The cases which I have seen where symptoms have persisted for months or years, and which have been called "apophysitis," "periostitis" either traumatic or mildly infective, or the like, have in every instance been the cases which have not been treated by immobilization, but where continued strain has been allowed to take place.

Most of these cases which one sees later in the day settle down well and consolidate if completely immobilized in the same manner as is advised for the recent cases, but a few old standing cases where a tender non-union exists are improved by operative fixation of the fragment to the diaphysis. Many textbooks, in a scant reference to the subject, say that the "slightest cases" may be treated by strapping or a little rest. In a case reported in the same journal in which Dr Osgood's original paper appeared, I came across the following case report of a separated tibial tubercle in a girl: "Under treatment by strapping the leg became almost functionally perfect, and aside from slight pain on pressure, or when kneeling, she has recovered." I should like to hazard a guess that the result remained almost perfect, and that the tenderness on kneeling and pain on pressure remained for many months or even years.

In my series of cases more than half (nineteen) occurred in girls, though it is generally stated that the condition is more frequent in boys. Dr Osgood's original ten cases were all in boys, and in drawing attention to this fact he attributed it to the increased athletic activities of boys. I can only suppose that the young ladies of the North of England, where I work, must be more "tomboyish" and less prim and proper than their sisters of Boston, Mass.

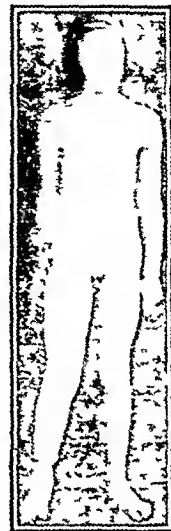


FIG 7—Plaster splint.

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DISCUSSION

Dr ROBERT B OSGOOD (Boston, U.S.A.) agreed with Mr Ollerenshaw as to the pathology of the lesion. He had found that treatment with adhesive plaster strapping was generally sufficient without use of a plaster splint. He called attention to the two methods of development of the tibial tubercle—the one as a tongue-like extension from the upper tibial epiphysis, and the other as a separate osseous centre which later joined with the upper tibial epiphysis. He emphasized the importance of having both these in the same plane in a case of suspected lesion of one side, since the variation in the development of the tubercle differed so much within normal limits. By experiments on the cadaver he had found that the chief pull on the tubercle was exerted in the last five or ten degrees of complete extension, the patella tendon proper being then most tense while the lateral expansions of the quadriceps were entirely capable, with the tubercle detached, of extending the knee to within five degrees of complete extension.

THE eleventh French Congress of Forensic Medicine will be held in Paris in May, 1926 under the presidency of Dr Antheaume, general secretary of the Society of Forensic Medicine in France. The subjects to be discussed include the dosage of alcohol in the blood and the diagnosis of intoxication introduced by Dr Viellend of Lille, the psychologist as an expert witness introduced by Dr Roques de Lursac of Paris, and traumatic arthritis, excluding tuberculosis, introduced by Dr Derieux of Paris. The general secretary of the congress is Dr Etienne Martin, Lyons.

Mentoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

EXTRADURAL SPINAL MENINGEAL HAEMOR- RHAGE WITHOUT GROSS INJURY TO SPINAL COLUMN

We venture to place on record the following instance of death occurring after an apparently trivial accident, as we think such cases must be extremely rare

Whilst cycling to her work about 2 p.m. on September 6th, 1924, a shop assistant came into collision with a motor car, and fell off her bicycle on to her left side, bruising her left arm. The accident was most trivial, as the car was only going about five miles an hour at the time of contact, and never touched the cyclist whose front wheel struck obliquely the running board of the car.

She went to work by bus immediately after the accident and on the following day, Sunday, felt quite well, except for a little stiffness in her arm and slight pain in her back. On September 8th she did not feel quite so well, and remained at home, on the next day, September 9th, as she felt much worse, she came to see us about 7.30 p.m. Her expression was anxious, the face flushed, and she complained of pain in her back, which was most apparent when she attempted to rise to her feet after sitting down. The temperature was 101°, the pulse 110, she was menstruating, the pupils were normal, and there was no trouble with bowels or bladder. The knee jerks were present but not brisk. She walked across the study perfectly well, and had come from her house, a distance of about a mile, apparently without much difficulty. We sent her home to bed at once, and the next morning examined her thoroughly; the temperature then was 100°, pulse 110, she was quite conscious, pupils normal, there was flaccid paralysis of the right leg and partial of the left leg, no vomiting, the bowels had not acted since September 9th. There were no bladder symptoms, no signs of bruising in the lumbar region or spinal damage of any sort, zones of ovarian hyperaesthesia were well marked. She had been previously attended by us for dysmenorrhoea and its attendant neurosis. We saw her again on September 11th, when her condition was much worse—temperature 100°, pulse 115, flaccid paralysis of both legs, loss of all reflexes and sensation, and paralysis beginning in arms. She was very anxious but conscious with jerking respirations. The bowels acted in the morning, there were no bladder symptoms. She was seen again at 3 p.m., when she had become much worse and the respiratory centre began to fail. She was still conscious and paralysis of arms and legs was complete. Spinal puncture was considered, but deemed inadvisable owing to her condition. At 5 p.m. she was in a moribund state, and died at 8.30 p.m.

The post mortem examination revealed extensive extradural meningeal haemorrhage, extending the whole length of the cord up as far as the level of the third cervical vertebra, tuberculous foci in both tubes, lungs, and an area about the size of half a crown on the meninges in the occipital region. There was no sign of tuberculous foci in meninges of cord, no fracture or dislocation of column, and the actual vessel from which haemorrhage originated was not discovered.

The haemorrhage in this case undoubtedly started in the lumbar region, and must, to begin with, have been extremely slight, possibly stopping altogether for some time, when it began to recur and continued until it reached the level of the third cervical vertebra, and paralysis of the phrenic ensued. We suppose that a wrench or twist of the spinal column at the time of the accident caused the rupture of a small vessel.

J. REID, M.D., D.P.H.

Ashford, Middlesex.

J. KENNEDY, M.B., F.R.C.S.I.

FULL-TERM MULTIPLE PREGNANCY IN A UTERUS BICORNIS BICOLLIS

The condition found in the case here recorded is sufficiently rare to merit publication.

A woman, aged 25, 6 para, who in August, 1917, and February and December 1918, had had miscarriages, and in 1920 and 1924 had full term deliveries of live children, was admitted to the Lady Reading Hospital, Simla, on September 17th, 1925, in the ninth month of pregnancy complaining of great abdominal discomfort and difficulty in breathing. The abdomen was greatly distended. Two foetuses could be palpated, and there was some excess of liquor amni. Early the next day the membranes ruptured. A few hours later a healthy female child was born. Immediately after the birth of the child there was very severe haemorrhage. On vaginal examination the placenta was found protruding through a cervix lying on the left of the vagina. It was removed. The uterus at once contracted down and the haemorrhage ceased. On further examination the second child was found to be lying transversely in a second uterus on the right of the abdomen. By vaginal examination a second cervix was found very high up on the right and separated from the first by a thick fleshy mass. This cervix felt very hard and resistant and was dilated about one third. There were no apparent con-

tractions in this uterus. After waiting about two hours, as no pains came on and the child was lying transversely, the membranes were ruptured and a foot brought down. After fifteen hours it was still no pains in the right uterus although there were severe after pains in the uterus on the left, the cervix, however, was found almost fully dilated and the buttocks in the vagina. As the child's condition was becoming serious it was decided to extract. This was done with considerable difficulty and the child was stillborn. There was no haemorrhage after the delivery, and the placenta was expelled after a few minutes. On abdominal examination the two uteri could be felt as two separate hard balls, quite distinct from one another. Convalescence was uneventful, except that after pains were severe for three days first in one uterus and then in the other.

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RENAL DECAPSULATION IN ACUTE NEPHRITIS WITH ANURIA

I HAVE seen little or nothing in recent British literature dealing with renal decapsulation in acute nephritis, and it appears to me that all cases in which this operation is done should be recorded, whether the result be failure or success. I was much encouraged in giving my patient what seemed to be his only hope by an article by Sir Thomas Holder in the BRITISH MEDICAL JOURNAL of November 13th, 1920, entitled "Treatment of subacute nephritis by kidney decapsulation," in the course of which he said, "One other clinical type of nephritis requires brief mention, and that is acute nephritis puncture or incision of acutely inflamed kidneys is, in my opinion, quite justified whenever anuria and uraemia persist despite energetic general measures."

While I feel convinced that the operation saved the patient's life in the following case, I, of course, do not mean to suggest that every patient with nephritis should be operated on. I suggest, however, that a patient suffering from acute nephritis should not be allowed to die from anuria without renal decapsulation having been tried. The operation may prove to be without value, but it should not be condemned without a trial in a reasonable number of cases. Would it not be logical to go a step further and try the effect of renal decapsulation (or nephrotomy) on patients suffering from blackwater fever with anuria? With the usual treatment the mortality in these cases is so very high that the experiment would seem to be quite justifiable.

The operation is not difficult and does not demand much skilled assistance or special instruments. Chloroform, I imagine, would not be safe in these cases, and gas and oxygen would not be available in remote places in the tropics, but a spinal syringe and a few ampoules of storaine can easily be included in the medical officer's equipment.

R. F. K., aged 37, had blackwater fever some years before the war. While a prisoner of war in Germany he had a feverish attack and passed little or no urine for a day or two.

History of Present Illness

On September 27th, 1924, he felt feverish (temperature 102.8°). He complained of no particular symptoms, and examination was negative. The following day the temperature was normal. No urine was passed, there were no symptoms. On September 29th and 30th the temperature continued normal. About 3 drachms of urine was passed, it contained much albumin, some blood, some pus, and an enormous number of casts. The patient was given plenty of bland liquid, diuretic, laxative, etc.

On October 1st the temperature was 97.6°, pulse 52. Two drachms of urine was withdrawn by catheter. A skagram of the kidneys and ureters revealed nothing abnormal. The following day no urine was passed. The passage of a catheter showed the bladder to be empty. The patient exhibited well marked signs of uraemia and was clearly becoming rapidly worse.

Operation

Dr. A. Morrison and Dr. S. Forrest, who saw him in consultation, agreed with me that the condition was desperate, and that it was justifiable to try a renal decapsulation in what was all regarded as a forlorn hope.

Under spinal anaesthesia (storaine) the left kidney was decapsulated at 6 p.m. The capsule was adherent to the renal tissue and its separation caused free oozing. The wound was completely closed and healed by first intention. The patient improved rapidly and caused little further anxiety.

The excretion of urine after operation was as follows: October 3rd 4½ oz. October 4th 6 oz. October 5th 9½ oz. October 6th 21 oz. (traces of albumin, a few red cells, urea 95 grams per litre). October 7th 51 oz. October 8th 75 oz. The urine rapidly returned to normal and has remained so since. The patient is in excellent health.

Schutz, Alexandria, Egypt.

E. N. RUSSELL, M.D.

STRANGULATION BY UMBILICAL CORD

On August 1st I was called to Mrs C, a 2-par. The unruptured membranes were bulging at the vulva. The presentation could not be made out, the skull bones feeling loose and plate-like. During a pain the membranes ruptured, allowing the escape of dark brown fluid. The head was delivered, and the shoulders followed with some difficulty. The cord was tightly encircling the neck once, and was so tight that it was necessary to cut it. The child had been dead some days, being macerated. The head and neck were deeply congested, and there was a distinct groove round the neck. The appearance of the eyes, partly opened, was characteristic.

This case is of interest from a medico-legal point of view.

P HENDERSON, M.D., L.R.C.P. and S
Seghill Northumberland.

British Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

OXFORD DIVISION

THE fifth meeting of the year of the Oxford Division of the British Medical Association was held in the Radcliffe Infirmary on October 28th, when Dr A W NELL was in the chair.

Dr W COLLIER, sen, read notes of a case in which the diagnosis between gall stone colic and abdominal angina was difficult.

A woman aged 48 had had two previous attacks of gall stone colic twenty four and four years respectively before her last (fatal) illness, which commenced one week before death with repeated attacks of severe abdominal pain and vomiting of bile. The pain was not quite typical of gall stone colic and in view of the cardiac enlargement and the irregularity of the heart's action the possibility of angina was at first considered. Later the gall bladder was found enlarged and hard and it appeared to contain a stone. The patient died suddenly two days after admission to hospital. At the necropsy the pericardial sac was found full of fluid and clotted blood, the heart was hypertrophied, mainly on the left side and, on the posterior aspect of the apex there was a rupture three quarters of an inch long, surrounded by a rough haemorrhagic clot. The tip of the left ventricle was much thinned and infiltrated with clot extending up the wall as far as the posterior capillary muscle, and also up the anterior wall, was an area of ischaemic necrosis, apparently in the distribution of the descending septal branch of the right coronary artery, where this became too small for naked eye dissection. The main coronary arteries were patent and contained no clot or embolus. The valves were healthy and the pulmonary artery contained liquid blood. In the gall bladder a large stone was present.

There was nothing in the patient's history to suggest syphilis, but a fairly pronounced history of alcohol was obtained.

Dr J RICKARDS showed a woman, aged 69, with chronic intestinal obstruction. She was suffering from emaciation and abdominal pain, and the abdomen showed peristalsis and a ladder pattern.

Dr A G GIBSON showed a boy, aged 7, with sequels of an attack of encephalitis lethargica in the early part of the year. The boy was duller than normal and was subject to attacks of vomiting. The eyes were rather staring and there was overaction of the levator muscles of the eyelids, with feeble accommodation reflexes and slight nystagmus. In walking he tended to keep the left arm still, while swinging the right arm.

Professor R A PETERS gave a lantern demonstration on recent researches in rickets. He showed how the rival and apparently contradictory dietetic and hygienic theories of the causation of rickets had been harmonized by another factor—namely, the action of light on the body. Radiation could confer curative properties on foods which were otherwise useless.

The unfavourable verdict on oatmeal which had been pronounced by Professor Mellanby called forth vigorous protests from the Scottish members present, and it was suggested that any alleged rickets-producing factor in oatmeal might be more than compensated by judicious use of the national beverage and by the free radiation treatment of kilted lower limbs!

Reports of Societies.

INFLUENCE OF THE OVARY IN PARTURITION

At a meeting of the Section of Therapeutics and Pharmacology of the Royal Society of Medicine on November 10th with Dr GEORGE GRAHAM in the chair, a brief account was given by Mr F H A MARSHALL, Sc.D., F.R.S. (Reader in Agricultural Physiology, Cambridge) and Professor W L DIXON, M.D., F.R.S. (Reader in Pharmacology, Cambridge), on some recent work to determine the influence of the ovary in parturition.

Dr Marshall said that it was certain experiments in pseudo-pregnancy produced in rabbits which led up to the theory he was about to expound. Pseudo-pregnancy was a condition—depending upon the employment of sterilized males—in which the corpus luteum was present and acting in the same kind of way as in true pregnancy. From these experiments it appeared that when the corpus luteum reached a certain stage in its evolution changes took place similar to those at the advent of parturition, and extending even to the animal's habits and instincts—the rabbit, for example, beginning to make her nest. No evidence was forthcoming in this work that the ovary acted directly upon the uterus in promoting contraction, extracts of ovary had no specific effect at all, but, on the other hand, pituitary extract was found to have a specific effect upon the uterine muscle, thereby suggesting that the pituitary gland might be a factor in parturition. The experiments were then extended to some pregnant sows, in these also it was found invariably that the extract obtained from the ovaries was negative except at the very end of the 115 days' pregnancy, when it gave a markedly positive result. In the non-pregnant sow at about the time of oestrus the effects also were positive, but in the middle of the cycle, when the corpus luteum was fully developed in the ovaries, the effects were negative, as they were during the whole period of pregnancy except at the very end. This suggested an interesting interaction of the ovary and the pituitary and an interference of the corpus luteum. The theory seemed to follow—though it might be wrong—that the ovary worked through the pituitary, but that when there was an active corpus luteum present in the ovaries it so dominated the ovarian metabolism as to neutralize any pituitary effect. It was only at particular times when there was no corpus luteum in the ovaries, or only a non-active corpus luteum, that the ovarian secretion acted upon the pituitary, and this in turn upon the uterine muscle. This was the state of affairs obtained at about the time of parturition, and also at the time of oestrus, which explained why uterine contractions were to be observed in the menstrual cycle. The main objection to this theory was based on those cases in which the ovaries had been removed during pregnancy and the pregnancy had gone on. But very little was known as yet about the compensatory mechanism of the endocrine system, which might be of considerable importance. Ordinarily, for example, parturition was regulated by nervous mechanism, and yet it was known that nervous mechanism in parturition might be entirely dispensed with. Nobody disputed, again, that the thyroid gland had a definite function, and a belief in the function of the thyroid in respect to internal secretion was in no way upset by the fact that the thyroid could be removed in some cases without very much happening. Therefore he did not think that too much stress should be laid on this objection.

Professor Dixon added that not only had Dr Marshall, in the course of his experiments, made it clear that by removing the corpora lutea the animal was made to abort every time but it was also evident from the experimental work of numerous observers that if extract of corpora lutea were injected into animals over a prolonged period ovulation was inhibited. Professor Dixon showed some graphs illustrating experiments of his own bearing out the conclusions already put forward by Dr Marshall and demonstrating the effect of pituitary, or of something which acted in the same way, in the cerebro-spinal fluid. He recounted some observations of Meyer, who, in the case of ten women on whom Cæsarean section

had been done, had been able to make a lumbar puncture and extract cerebro-spinal fluid at this period, and, treating with this fluid other patients who showed uterine inertia, he had produced uterine contractions in eight cases and the normal birth of the child in four.

Dr WILFRED SHAW showed some microscopic sections illustrating the close resemblance between the corpus luteum in menstruation and in pregnancy. He said that one of the characteristics of the ovarian function was its periodicity. This applied, not only to the menstrual cycle, but also to pregnancy, it was quite common in the early months of pregnancy, on dates closely corresponding, to find small uterine haemorrhages taking place, and in the last months, eight weeks and four weeks before the commencement of labour, to have false labour pains. No explanation of this rhythm of ovarian activity had been given, but it was possible that the periodicity was related to the process of follicular ripening. If one assumed that follicular ripening was a rhythmical function of the ovary, one would expect the haemorrhages in early pregnancy as a result of the ripening and of the degeneration of a certain amount of tissue. Such haemorrhages hardly ever took place after the twelfth week, which was the time when the decidua capsularis fused with the decidua vera.

Dr W. LANGDON BROWN said he thought that everyone, however sceptical with regard to the pharmacological actions of extracts as indicative of gland function, would agree that these experiments meant something. It seemed that there was a chain of events by which the ovary stimulated the pituitary and the pituitary activated the uterus and the mammary gland, and that the corpus luteum could interfere with that sequence at almost any stage. It had been thought that the effect on the mammary gland was principally connected with the expulsion of milk by the contraction of the ducts, but it was difficult to see how, if that was all, the secretion could be kept up for two years, as he had known it in one case. It seemed to him clear that the line of work which Drs Marshall and Dixon had been pursuing ought to stimulate further study on the glycosurias and toxæmias of pregnancy. Dr MacLenzie Wallis had shown many graphs to prove that the glycosuria of pregnancy was a pituitary glycosuria. Was it due to the fact that the "hold up" which the corpus luteum ought to exercise was not taking place properly? With regard to the toxæmias of pregnancy, a good deal had been done on that point also. Not only was pituitrin directly antagonistic to insulin, but Coope of Liverpool had shown that a very important part pituitrin played in the transport of fat from the deposits to the liver. The overaction of pituitrin due to the failure of the corpus luteum to hold it might lead to the overtransport of fat into the liver, and at the same time pituitrin, antagonizing with insulin, would interfere with the glycogenic function, and so some toxæmias of pregnancy might develop.

Professor SWALE VINCENT said that he was not converted to the theory put forward that evening, though he agreed that any facts which were fully proved must mean something. At the same time, there might be views wide as the poles asunder as to what they did mean. He had been much interested in the development of this work, though he confessed that he had hoped to hear some further corroboration of the theory. The mere fact that a juice was extracted which had a certain pharmacological action did not necessarily throw any light on the function of the gland from which the extract was made, it meant simply that the juice had these pharmacological properties and nothing more. In the case of glands which it was believed had an internal secretion, the belief in this rested upon other evidence more important perhaps than the pharmacological.

Dr MARSHALL, in reply, said that Dr Shaw had put forward interesting evidence of the ripening of the follicles during pregnancy being responsible for subdued "heat" periods. It had been known for a long time past that in the mare one did get ripening of follicles at intervals after the beginning of pregnancy, and there were subdued "heat" periods in other pregnant animals. It was known also that abortion was likely to occur at particular periods, partly due to the loosening of attachments, but also possibly to some attempt at oestrus at that time.

Professor DIXON thought that the evidence was very clear with regard to the part played by the corpus luteum, because it was known what happened when it continued to exist and when it was removed. With regard to sugar tolerance and the influence of the pituitary, the work on this subject was continuing, and he had no doubt that very shortly the position set forth by Dr Langdon Brown would be made clear experimentally.

PROGRESS IN PSYCHIATRY

Dr P. H. COLE, physician for mental diseases, St Mary's Hospital, in his presidential address read before the Section of Psychiatry of the Royal Society of Medicine on November 10th, gave a review of the progress in psychiatry in his own time, and sketched the present trends of this branch of medicine.

In recalling changes and progress in the medical aspects of psychiatry, Dr Cole noted a recurrence to-day of many questions which were being raised in similar terms when psychiatry first claimed his attention thirty years ago. In Britain, Maudsley, Blandford, Hack Tuke, Savage, and Clouston were all then in active work. He had the good fortune during his early days to be closely associated with Maudsley, Mercier was commencing a steady output of valuable writings now too little studied, Crichton-Browne was already renowned as an orator, Clifford Allbutt became a member of the Lunacy Commission, and the present Lunacy Acts were coming into operation, not without some travail. Both psychiatry and psychology were on the eve of great developments. The French school was pushing hypnotism, and was sharply divided by Bernheim at Nancy and Charcot in Paris. The subject was very much to the fore at home, and was investigated by a committee of the British Medical Association. Its value was recognized when applied to hysteria, its study led to far-reaching results and acted as a stimulus to many who were confronted with mental phenomena that seemed to have little or no explanation. Among the difficulties the medical student of those days encountered in the study of psychiatry was the absence of systematic lectures and clinical demonstrations at many medical schools. As a consequence a medical officer took up an asylum appointment in ignorance of the mental maladies of patients he was to treat. Psychology was outside the scope of medicine. The older methods of introspection were being modified by experimental psychologists. The purely academic student still perused the writings of Mill, Spencer, and Sully, although the classical textbook of William James soon became the standard work. But psychology still seemed remote from human affairs and did little to assist the psychiatrist in his special study, and psychiatric science was almost sterile. Yet the accumulation of knowledge regarding the structure of the nervous system and its functions had been remarkable. Besides the work carried out on anatomical, physiological, embryological, and clinical lines, the comprehension of the autonomic system and its relation to the cerebro-spinal system, together with the functions and biochemistry of the endocrine glands, were engaging attention.

Among those who had made the most important advances in neuropathology in recent times the President recalled to memory the names of Hughlings Jackson, Flechsig, Mott, Bolton, Elliot Smith, Golgi, Gaskell, Langley, Sherrington, Head, and Pavlov. Sharpey-Schafer had taught much about the endocrines, while important work had been carried out by Orr and Rous on the path of infection in the nervous system by means of the lymphatics. Improved methods of staining had done much for histology, and the use of ultra violet rays in microscopy might yet teach more about the properties of the living cell. It must, however, be acknowledged that the mystery of mind was still unexplained and that its physical basis required more precise and exact knowledge to disarm criticism. The fresh psychological views had thrown new light on the mechanism of insane conduct and symptoms. The illuminating writings of Janet formed a landmark in the progress of psychiatry. Janet's conceptions of dissociation paved the way for the psycho-analytic movement initiated by Freud which had attracted followers all over the world. This movement had met with powerful opposition some of which was reflected in the establishment

of separate schools headed by Jung and Adler. Certain features of the work of Freud were worthy of careful notice, for besides being based on clinical observations it appeared to obtain biological confirmation. It had been claimed that the concept of primitive mental processes obeying the pleasure principle received some support when applied to child study, fairy tales, folk-lore, philology, and anthropology. Further, no work had done so much to attach meaning to the apparently meaningless symptoms of insanity.

Psychology used to be centred upon the cognition aspect of consciousness. The modern schools had moved the interest to the field of instinct, and psychology had been vitalized and brought into close relation to psychiatry. The work of McDougall, Rivers, and Trotter had contributed much to this desirable result. Psychology was now being applied to social as well as medical problems, as indicated by the instructive work on industrial psychology by C. S. Myers. And its application to other fields of inquiry was being sought, such as to the unrest in the political world, the change in religious beliefs, and the modern trends in art. But to psychiatrists the importance of the recent developments in psychology lay in a clearer understanding of psychopathology, psychotherapy, and the prevention of mental disease. Bernard Hart had done much to present the new psychology to the medical profession in a lucid and incisive style. The modern terms such as conflict, repression, projection, sublimation, transference, and *libido* were finding a permanent place in the literature of the mechanism of mind, although discussion concerning the nature and functions of the unconscious mind continued. It was not possible to speak with conviction as to the results of psychoanalysts. Their methods seemed of little use in the established psychoses, and there was little information available to determine whether in early cases or in psychoneurotics better results were obtained than from older methods of treatment. Yet psychoanalysis opened up fresh fields for research.

In the consideration of brain pathology the study of general paralysis best illustrated the progress made. Mott had taught the specific origin of paresis with a persistence and insight that was fully justified by the demonstration of the organism in the brain of a sufferer by Nogueira in 1911. Much fresh work was being accomplished concerning this disease, but many problems remained unsolved. Of late years the malarial treatment applied to suitable cases had introduced new hope. Noteworthy advances had been made in clinical conceptions of the psychoses, due mainly to the work of Krapelin, but a standardization of nomenclature was still very desirable. The institutional care and treatment of mental patients had received unemitting attention. There was less activity in building the immense institutions of the past, and asylums were daily becoming more hospitalized. The withdrawal of beer as a beverage had had a quieting and beneficial result in institutions. Alcohol was an etiological factor in 23 per cent of admissions in 1890, whereas it had fallen to less than half in 1920. Contact of the patient with the outer world was maintained more and more, and marked improvement in administration had taken place, including the reconstitution of dietary scales. The standard of mental nursing had progressed *pari passu* with the establishment of examinations and certificates, and occupation therapy was being developed further. Since the London County Council instituted its laboratories at Chisum, and at Denmark Hill much activity had been shown by workers throughout Britain. Heio Di Colo recalled the labors of Barin Lewis at Wakefield, the patient investigations of Ford Robertson in Scotland, and the centre at Cardiff under the energetic direction of Edwin Coodrill. Much more was being done by therapeutic measures based on scientific principles, and bed treatment for acute cases was now the rule. Two schools were striving for the ascendancy as regards treatment: the psychological laboured to prove the worth of psychotherapy, while the toxic searched for hidden sources of infection. Dr. Colo had been privileged to see the epoch-making work of his colleagues, Sir Almaroth Wright and his enthusiastic assistants—the pioneers of vaccine therapy—and he believed the clinical field of psychiatry must for the most part be held in common by both the psychogenic and physiogenic schools.

The teaching of psychiatry and psychology was of immense importance if progress was to be maintained. The medical practitioner still commenced his professional life with but a scanty knowledge of the mind in health and disease. But the advances lately made in the status and education of medical men entering the service of mental hospitals must be placed on record. Original research was now encouraged, study leave was granted, and the possession of a diploma or degree in psychological medicine was becoming necessary for promotion. The teaching of psychiatry in medical schools had made decided progress. The lecturer in this subject was now invariably on the staff of the hospital and had in out-patient department which the student could attend and see early cases of mental disorder, mental defectives, and psychoneurotics. Much had been written and spoken concerning the proposed clinics for the treatment of mental disorders, which no doubt would do much to speed up early treatment in psychiatry. A parallel movement was the desire of many to obtain power to allow voluntary patients to enter rate-aided institutions. Both proposals deserved whole-hearted support, for the clinics would help to bring this specialty into closer touch with general medicine, and existing mental hospitals would still further increase their hospital character and lose the invariable element of detention which so diminished their prestige and value. From the study of recent statistics Dr. Colo believed that the recovery rate of patients in mental hospitals compared favourably with that of patients in general hospitals. An afternoon spent in the out-patient department of a large general hospital revealed a high incidence of chronic disease. While so much was designed for the curable, let them not proceed too far and segregate the so-called chronic patient anywhere and anyhow, remembering also a mistake in prognosis was apt to occur and recovery sometimes took place after a period of many years.

The President next passed to psychiatry and the law. Prison doctors were now required to have a knowledge of psychological medicine, and criminology was making considerable advance. The criminal responsibility of the insane was still a matter of contention between the medical and legal professions. The recent Atkin report upholding the M'Naghten rules did not satisfy psychiatrists. Defect of reason should not be the sole governing factor in establishing irresponsibility for crime. It was, he held, a mistaken notion that the doctrine of psychological determinism might absolve a person from the consequences of his actions. The tenets of medical men and psychologists did not differ from those of their fellow citizens in regard to the necessity for primitive measures. But the criterion of insanity in criminal cases should be established by fresh methods to be abreast of modern knowledge. There were other differences also between the legal and medical professions, and doctors were undoubtedly hindered in their work by existing legislation. In this respect they had welcomed the advent of the Royal Commission, and hoped that real progress would result from its labours. The public attitude towards psychiatry also required consideration. It was disappointing to find a recent leader in a highly respectable daily journal referring to the devoted men who have laboured for psychiatry in the past as "keepers of mad-houses." Such an expression applied to the memories of a Maudsley or a Meigs could only reflect a deplorable ignorance on the part of educated public opinion. A recent novel by a distinguished author dealt with the adventures of an elderly psychotic finally admitted to a mental hospital. The descriptions and the unfavourable shown with existing conditions indicated the want of sympathy and understanding shown by the general public towards the psychiatric physician and his work. Yet both articles and novels hostile though they might be in some respects were portents of a growing concern for the welfare of the insane. In view of this widespread public interest, the first step should be to insist that insanity was no strange plague that struck down without reason or warning, that from the "shell-shocked" soldier to the maniac of popular imagination there was but a difference of degree, that both suffered from mental disorder and for both there was a good hope of amelioration and cure. Psychiatrists wanted co-operation, financial aid for research, generous contributions to the funds of mental

institutions, and, above all, the trust that had happily been given to medical men in every other branch of practice. With the progress that had been made Dr. Cole felt the future could be regarded with hope.

PLASTIC OPERATIONS IN THE REGION OF THE EYE

The Sections of Ophthalmology and Surgery of the Royal Society of Medicine combined for a discussion on November 13th on plastic operations on the face in the region of the eye. Sir ARNOLD LAWSON presided. All the speakers showed lantern slide photographs of their cases, and much of the time was occupied by describing in detail, with the aid of these illustrations, the nature of the disfiguring condition and the measures taken for its repair.

Mr H. S. SOUTER, in opening, said that he spoke as a general surgeon, one or two of whose methods might perhaps be of interest to the ophthalmic specialist. A good many years ago Dr. Bequaert of the London Hospital began to send him a number of cases of hairy moles, which frequently presented very extensive surfaces. He did not at first realize the real difficulty in treating these cases. It was comparatively easy to deal with a hairy mole which did not come into the neighbourhood of the eye, but when the mole reached up close to the eye the operation became difficult and delicate. He had treated these cases—all except one of them being cases of children—by the am-flap method. In children it was easy, by throwing the arm up above the head, to apply to the face a turn-up flap from the upper part of the chest or shoulder, and thereby to replace very large areas of skin. The child remained bound up in this condition, with the head, as it were, buried in the arm, for about a week. He felt confident that if a considerable amount of skin was wanted for plastic surgery of the face in a child—it was different in an adult—this method would be found the most satisfactory in its results. But the arm should be so arranged as to leave a certain space between the arm surface and the cheek. The difficulty in dealing with hairy moles in the neighbourhood of the eye arose on account of ectropion. His practice was to leave a little of the mole in the corner of the eye, and afterwards, when he had got his graft, to excise that small remaining portion and put in a Thiersch graft. In this way any danger of ectropion was avoided. The results in these cases were very good, and, generally, with a little powder, no permanent disfigurement was noticeable. In one adult case he showed how, the patient having been left without an eyebrow as a result of excision, he swung down a piece of hairy mole from the forehead to take the place of the eyebrow, and the difference was not easily discernible. In adults generally, he thought, the tubular flap was preferable, though he had done the am flap in one instance. He also showed a cutaneous ulcer which had developed on lupus of the face in a young woman, which he had treated by dissecting out the ulcerated area and replacing it with a graft from the arm so that the disfigurement was scarcely to be noticed.

Mr A. W. ORMOND recounted the considerable variety of procedures available in ophthalmic surgery to meet different conditions. He illustrated in particular the method he used, in the case of destroyed eyelids, for forming an eyelid from the ordinary pedicle flap. Long pedunculated flaps might be obtained from a distance, and, in favourable situations, successfully grafted, but homoplastic grafts were rarely successful, whereas autoplasties might be and often were quite satisfactory. The problem of dealing with a contracted socket in which an artificial eye was to be placed was one of the most difficult in plastic surgery, and not very often successfully overcome. It involved repeated operations and the exercise of much patience, on the part of both surgeon and patient. The technique of Thiersch grafting was important. A large flap knife, with a blade one inch or more deep, should be used, the knife and the skin should be kept moist with sterilized normal saline, the skin should be maintained taut by an assistant, and the knife used as horizontally as possible. In con-

sidering which of the many procedures should be used in a given case various points had to be kept in mind, but not the least important was the length of time involved in carrying out one method or another and the number of operations it would be necessary to perform. The necessity of a long stay in hospital and the psychological effect of repeated operations and of enforced inactivity sometimes reacted unfavourably on the patient's mental outlook. The surgeon should not look upon these cases as presenting fascinating problems for the exercise of his skill, but should have regard to all the patient's circumstances, which sometimes might indicate a procedure stopping short of the cosmetic result which would be attained if treatment were further prolonged.

Mr T. P. KILMER described a procedure for replacing lost eyebrows. He had learned from a considerable experience of cases of burns that eyebrows had very definite functions, apart from their cosmetic value. They shaded the eye from the sun, they acted as sweat collectors, and they protected from wind. Eyebrows might be made by means of Wolff or whole-thickness grafts of hair-bearing skin taken from the scalp. Care must be shown, of course, in choosing an area in which the hair is growing in the right direction, and it was rather interesting to speculate whether a piece of hair-bearing scalp which would become bald at its original site would retain its hair-bearing properties when transferred to the eyebrow region.

Mr G. H. POOLEY described some cases in which repair had been undertaken for the extensive loss of skin due to surgical removal of tumours, or to burning with molten metals, or to septic conditions. Plastic operations could be performed fairly quickly on cases which were surgically clean, but in cases in which there was sepsis it was advisable to wait twelve months or so until everything had quietened down and all sepsis had disappeared before attempting to do plastic operations, otherwise the sepsis lighted up again. He found that the best results were given by a large flap on a wide pedicle. It should be rather pressed into the space instead of stretched across. He got as much subcutaneous tissue as possible to avoid any hollow or tunnel at the edge of the flap and the skin. A large flap taken from the temporal and frontal region, just at the junction of the hairy scalp and the forehead, he found most satisfactory. Care should be taken to hold the flap exactly in place during dressings in order that the little vessels which were forming might not be broken down again. In cases of extensive burning with molten metal, resulting in a very large adhesion of the lower eyelid to the corner, he found it useful to divide freely and to put in a piece of india-rubber tissue with a suture through it, leaving it in for many weeks until all the cut tissue had healed quite soundly and the epithelium had grown over it, and then to remove the india rubber.

Mr J. J. McINTOSH showed some pictures illustrating the results in trauma in the region of the eye, treated at the Queen's Hospital for Facial Injuries, Sidcup, also in a number of pathological conditions. He insisted that the shrunken socket was really a much greater deformity than no socket at all, and therefore in some cases of war injury under his care it was decided to remove the socket altogether and skin it over. He had done this operation also in civil life under certain indications—for example, in a coal miner who had lost his eye in an explosion, and who, if the socket had been left as it was, would have been subject to constant irritation from coal dust. If one was not going to get definitely a good result in the socket it was better to skin it over completely.

Mr M. W. B. OLIVER showed a number of diagrams illustrating the methods of reconstruction of eyelids. He could not agree with Mr. Pooley that as much subcutaneous tissue as possible should be taken, for, in reconstructing the lower eyelid particularly, it was important to avoid making it look too bulky. He laid stress also on the need for removing the whole of the conjunctiva and the whole of the orbital tissue to obtain a proper epithelial inlay. Most important of all was the cutting of the skin graft. The mould must be covered with one single skin graft, with any gaps there was almost certain to be failure.

Mr A. EDWARDS said that the cases which had interested him were mostly those of rodent ulcer in the neighbourhood of the eye, and he had always felt that where it was possible to excise the growth and replace it by a sliding flap, that was the method to choose. There were, of course, cases in which that could not be done, and the very beautiful results shown by Mr Souttar could not have been obtained by such a method. Most of the cases of rodent ulcer that came to him were cases in which radium and x rays had failed, incidentally it was rather a reproach that those who gave radiological treatment did not seem to know when they were beaten. If radium was going to succeed at all it succeeded fairly early, and if such early success was not forthcoming it was of no use at all going on with the radium treatment of the case. The method of making sliding flaps was somewhat difficult in practice, but it was infinitely more difficult to describe because the surgeon did it more or less by instinct. With regard to artificial eyes, he found that a mould painted in very low tones, as if the eye were in shadow, was superior to the ordinary artificial eye, and if the patient wore "spectacles of the American pattern" the result was not conspicuous.

The CHAIRMAN then threw open the meeting to general discussion, but although there was a crowded attendance only one member spoke, Mr HARRISON BUTLER, who remarked that for holding Thiersch skin-grafts he preferred dental wax to stent, because it remained soft and answered the purpose very much better, it was well to oil the razor when cutting the graft.

MYOMECTOMY FOR FIBROIDS

At a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on November 5th, the President, Mr T. G. STEVENS, in the chair, Mr VICTOR BONNEY read a paper on myomectomy as the treatment of election for uterine fibroids.

Mr Bonney contended that conservation of the uterus should be the ideal aimed at by the surgeon whenever the uterus, apart from the fibroids, was reasonably healthy. He reported a new series of 120 consecutive myomectomies performed by him in the last three years. A single tumour was removed from the uterus in 47 of these cases, in the remaining 73 the tumours removed were multiple, the greatest number enucleated at one operation being 80. The successful removal of so large a number was rendered possible by the use of the clamp invented by him which, when applied over the lower uterine segment, simultaneously compressed both uterine arteries, so that if the ovarian vessels were compressed by ring forceps the operation became practically bloodless. This was an immense gain, for it rendered many myomectomies possible which previously were impossible. In applying the clamp both round ligaments, as well as the lower uterine segment, must be included in its grasp. He referred to the paper on myomectomy read by him before the Section three years ago and recalled the general technique of the operation that he then described. In the new series of 120 myomectomies he had had 3 deaths, and in his first series of 100 cases 2 deaths, so that the operative mortality for the 220 operations was 2.2 per cent. The difficulties of the operation, as practised on a wholesale scale, would be largely circumvented by the experience accruing from increasingly widespread adoption. It had been objected that new fibroids would probably develop subsequent to the operation, but this was a bogey. It had also been objected that menorrhagia might persist in spite of the removal of the tumours, but this was equally unlikely. He had never yet had to operate a second time on any of his patients for continuance or reappearance of excessive bleeding. It had been argued that the uterus from which a number of fibroids had been removed would be functionally useless. This also proved to be fantastic. A number of the women on whom he had operated had subsequently become pregnant, and the idea that the conserved organ would probably be an incubus to its

possessor could be dismissed. Mr Bonney illustrated the beneficent possibilities of the operation by describing cases in which, in spite of the presence of a large number of tumours, or of tumours in difficult situations, he had been able to send the patient home, not only cured, but whole and normal. This was an enormous improvement compared with hysterectomy, in which the removal of the tumours was counterbalanced by the loss of an organ which had other uses besides that of child-bearing. The removal of the uterus inflicted on most women a severe psychological injury. The aim of all treatment should be, not merely to remove disease, but to leave the patient normal, and any method which failed to achieve this end was obviously second-rate. It was now possible in practically every case of fibroids to conserve the uterus, and myomectomy should therefore be regarded as the treatment of election for these tumours. He hoped to see the time when every surgeon called upon to operate for that condition would enter upon his task with that conception in the forefront of his mind.

Dr ARTHUR GILES said he was convinced that myomectomy was a valuable operation, and that it was probably not used as often as it might be. He had always been greatly interested in the operation, which he had first employed in 1899, and he had so far performed 203 myomectomies, with 3 deaths. He differed from Mr Bonney mainly as to the scope of the operation, and considered that it was seldom advisable in patients over 40 years of age. The chief aim of the operation was to preserve the uterus for child-bearing, and when this was virtually out of the question the purpose of the operation was gone. It could be admitted that the uterus had some influence over the ovaries, but after the age of 40 this was unimportant. His desire to limit the scope of myomectomy was based on several considerations: first, the question of mortality. Mr Bonney recorded 5 deaths in 220 cases, a mortality of 2.2 per cent, and said that the mortality of hysterectomy was 2.5 per cent. He could not agree to such a high figure for hysterectomy, in his last 1,000 hysterectomies for benign conditions there were 6 deaths, a mortality of 0.6 per cent. Then there was the question of recurrence. If every seedling fibroid was removed during a myomectomy the chance of recurrence was very small, but this would involve microscopic examination of the uterus, and though Mr Bonney might have no records of recurrence it was quite possible that he would meet with some when more time had elapsed. Dr Giles felt strongly, therefore, that when child-bearing was out of the question hysterectomy was the better operation. As to myomectomy during pregnancy, he had seen 18 cases, one patient miscarried, but the others went on to full term. From one patient who went to term he removed ten fibroids. He had never had occasion, however, to remove the pregnancy as well as the fibroids, the whole object of the operation was to preserve the pregnancy, and consequently, if there was any likelihood that the operation would entail the sacrifice of the foetus, he would prefer to wait and perform a Caesarean section at term, dealing with the fibroids at the same time.

Mr GORDON LUKER remarked on the importance of the conservative treatment of fibroids during pregnancy, rest and sedatives were nearly always effective in relieving symptoms. Operative treatment was but rarely indicated owing to the risk of sacrificing the pregnancy, as actually happened in one of Mr Bonney's cases.

The PRESIDENT confirmed and augmented the previous speaker's remarks on conservative treatment during pregnancy.

Lady BARRETT agreed as to the great importance of performing myomectomy instead of hysterectomy where a healthy uterus could be conserved. She did not understand, however, why it should be necessary to interfere with an existing pregnancy when myomectomy was required. The removal of numerous seedling myomata seemed an unnecessary prolongation of the operation, for she had found in seeing for microscopic myomata that they occurred more commonly in uteri containing multiple seedling tumours—especially in women of 30 to 36 years of age—and these presumably would grow later.

Mr VICTOR BONNEY, in reply, said that in spite of many fortunate runs of luck, the general operative mortality of

hysterectomy in hospitals did not differ much from that which he had recorded for myomectomy. In regard to pregnancy complicated by fibroids, he agreed that only a proportion of these cases required operative treatment, and of these it was possible in a good many to remove the fibroids and leave the pregnancy. Where, however, a large number of tumours were present, or the tumour was unfavourably situated, it was absolutely necessary to remove the pregnancy with the tumours. He strongly deprecated the harsh view that the uterus was merely of use for child-bearing. Anyone who said so had no knowledge of women as women, but merely as cases.

Origin of the Lutein Cells

Dr WILFRED SHAW, in a communication on the lutein cells of the corpus luteum, said that their origin had for long been disputed. At present two theories held the field, that of von Baer, who attributed the origin of the lutein cells to the theca interna layer, and that of Bischoff who held the granulosa cells responsible. In view of the vast amount of work done on this subject in different fields, the problem must now be considered from a very broad aspect. In the rabbit and mouse ovulation occurred at a fixed time after copulation. A graduated series of specimens could therefore be obtained showing corpora lutea at various stages of development. This technique, first employed by Sabott, showed that in the mouse and rabbit the lutein cells were derived from the granulosa layer. Later, Marshall confirmed this in sheep. Van der Stricht, working with the ovaries of the bat, showed that, besides the large lutein cells, another series of cells could be seen, at the periphery and in the hills of the convolutions, they were much smaller and less numerous than the large lutein cells. Van der Stricht had demonstrated these cells in the human corpus luteum, and his observations were confirmed by Bohler, Seitz, and others. The term "para-lutein cells" had been applied to them by Pinto and American authors. The cells had been found in some fifty specimens of corpora lutea that Dr Shaw had examined, and it seemed clear that in the corpus luteum two types of cell were represented. There was no reason to believe that the para-lutein cells were early forms of the large lutein cells, so it must be assumed that they had a different origin. As there was no evidence that the theca externa cells underwent luteinization, the structure of the mature corpus luteum suggested that the theca interna cells developed into para-lutein cells and that the granulosa cells gave rise to the large lutein cells. This view was borne out by the results of methods of differential staining. Dr Shaw added that the problem of the origin of the large lutein cells of the human corpus luteum would be solved with mathematical accuracy if a reliable series of young specimens of known date was available. Such specimens were rarely obtained, and at present one could only give the results of investigations of isolated specimens. He had obtained, so far, eight specimens of young proliferating corpora lutea—the oldest corresponding to the nineteenth day of the menstrual cycle. These showed the mode of development of the corpus luteum from the follicle after ovulation. The outstanding feature of the early forms was the hypertrophy of the cells of the granulosa layer. These cells soon attained a great size, and because of the denseness of the surrounding stroma proliferated centrifugally. Further early specimens showed the convoluted outline characteristic of the mature corpus luteum. The theca interna cells did not proliferate or hypertrophy beyond the state they had reached when ovulation occurred, and in these early specimens the two layers could be easily identified because of the great difference in size between the two sets of cells. The study of this series of young corpora lutea indicated clearly that the theca interna cells became the para-lutein cells of the mature corpus luteum, and that the granulosa cells gave rise to the large lutein cells.

Specimens

The President, Mr T G STEVENS, showed a specimen of fibromyoma of the uterus, weighing 47 lb 5 oz, removed from a woman aged 59.

The patient was known to have had an abdominal tumour for twenty years, but had refused operative treatment as long as she could get about. When brought to him she was suffering from an abdominal tumour which hung down to about the middle of her thighs, she was short of breath and had oedema of both

legs. She could only walk when held up by two persons, and then with a tottering gait. An apparatus consisting of a block and tackle was rigged up over the operating table with four large metal hooks attached, which were fixed into the tumour so that it could be pulled up and held in position during removal. Subtotal hysterectomy was performed through an 18 inch incision, the apparatus worked perfectly and eliminated any mechanical difficulties. The patient made a good recovery, and five months later was reported to be learning to walk again. The tumour proved to be a single fibromyoma containing a few small cystic cavities. There were no important degenerative changes.

Mr STEVENS also showed a specimen of a large "cystic tumour of the liver simulating an ovarian cyst."

The patient had had the menopause two years previously, and her only complaint was enlargement of the abdomen with a little pain for about six months. The tumour was about the size of a twenty-eight weeks' pregnancy and occupied the greater part of the abdomen. It seemed to consist of two parts, one resting on the pelvic brim and the other felt under the left epigastric region. The consistency of the tumour was that of a multilocular ovarian cyst. The patient was wasted. The diagnosis of an ovarian cyst was made, and owing to the wasting of the patient and the peculiarity of the upper tumour it was thought that the larger mass was a malignant growth and the upper mass perhaps a secondary growth in the omentum. Operation was performed at St Mary's Hospital on October 6th. The upper tumour was found to be a ruptured portion of the lower tumour originating in the left lobe of the liver. The tumour had no pelvic connexions, and examination of the pelvic organs showed the uterus, tubes and ovaries to be small and atrophied. There were numerous adhesions to the inferior surface of the omentum. After ligature of these adhesions the tumour was excised from the liver. Macroscopically it was soft containing large numbers of spaces, the result of necrosis. Microscopically it had the structure of a sarcoma composed of uniform spindle cells arranged in a structureless matrix without any fibrillated connective tissue.

Mr W McCULLAGH said that a specimen had been shown by him at the society in January last, by permission of Dr C H Roberts, whose case it was. The tumour had a similar appearance and connexions at the exploratory laparotomy, it was a columnar-celled carcinoma arising from the gall bladder. The patient was 57 years of age, and had been sent in as a case of twisted or malignant ovarian cyst.

Dr R DONALDSON said that a few days previously he had received for examination a tumour of similar appearance, removed by Mr Ivor Bael, who found it attached by a thin, short pedicle to the greater curvature of the stomach. There were no adhesions.

Mr D W ROY and Dr R DONALDSON showed microscopic sections of a case of early endometrioma of the Fallopian tube, discovered in the course of subtotal hysterectomy for fibromyomata of the uterus.

XEROPHTHALMIA

A MEETING of the Newcastle-upon-Tyne and Northern Counties Medical Society was held in the Royal Victoria Infirmary, Newcastle, on November 5th, Dr NEIL MACLEOD presiding, when Mr J S ARKLE read a paper entitled "Xerophthalmia, a vitamin deficiency disease."

Mr ARKLE dealt with the condition as it presented itself to an ophthalmic surgeon, observing that it was to him, rather than to the physician, that these patients usually went for advice and treatment. Yet it had to be recognized that local treatment in itself was insufficient, and for a proper understanding of the disease the underlying nutritional factor must be taken into account. Except in times of great distress, it was an uncommon disease, but in such a town as Newcastle, under the present industrial conditions, its incidence in the eye department of a large general hospital was about six or seven cases a year. The clinical work of Bloch of Copenhagen, and the experimental work of Osborne and Mendel, had established that the disease was due to an absence from the diet of a sufficient quantity of a certain specific substance present in milk, butter, egg yolk, fat, and cod-liver oil. In all probability this substance was the necessary food factor "fat-soluble A." The practical clinical point arising from this was that where the nature of the disease was recognized treatment could only be effective when the errors in diet were corrected, if no dietary correction was made local treatment with lotions and ointment would have no effect. If the condition were allowed to progress a more or less extensive ulceration of the cornea would ensue, followed by keratomalacia, and in some cases blindness. The chief

point in the recognition of kerophthalmia was the dryness of the conjunctivae, which became wrinkled and shrunken. Later on small yellowish-white spots were formed, giving the conjunctivae the appearance of having been spotted with paraffin wax. At a still later stage the dryness spread over the whole conjunctivae and over the cornea, which was then dull and hazy or greyish in appearance. These changes were well seen in two cases shown to the society that night.

Treatment of Lobar Pneumonia

Dr H S BROWN, in a paper on the treatment of lobar pneumonia in general practice, dealt first with the special difficulties in treatment met with in the small houses of the working classes, where the majority of their cases were to be seen. The difficulties were the fixed prejudices of the relatives against allowing fresh air into the rooms, even when the rooms were so built as to admit it, and the absence of skilled nursing. Good nursing with poor doctoring was more valuable than poor nursing with good doctoring. After reflecting on his experience of this type of case which gave most difficulty, he had decided that the practitioner should try to assess as early as possible the patient's physical capacity to withstand the infection, and to review this day by day during the progress of the illness, in the same way as an estimate of the fighting chances of a boxer in the prize ring might be made. Careful attention should be given to the patient's previous state of health and history, to the condition of his heart, and to his blood pressure. If the fighting chances appeared good, the medical practitioner's attitude was one of inactivity until symptoms appeared, when, if severe, stimulant treatment should be instituted early, it should not be withheld as a form of extreme unction until heart failure was imminent. Local applications were only useful when there was pain. The drugs he had found most useful were digitalis and strychnine, opium and morphine were valuable during the first three days of the illness in sleepless patients to conserve their strength. At one period he had given an extended trial to vaccines as a form of treatment, without being able to arrive at any definite conclusion as to their value. The most he could say was that if vaccine treatment was started early it appeared to shorten the acute illness, although followed by a slower convalescence and recovery.

Clinical Cases

Dr R A BOLAN showed a group of cases of lupus vulgaris illustrating the improvement after treatment by general irradiation from ultra violet rays and carbon arc lamps. Dr GEORGE HALL showed a case of bronchiectasis after hipiodol injections and a ray examination, also a case of parenchymatous nephritis occurring in a man during a recessive period of lymphadenoma. Mr N HOPKINSON showed a case of calcified adenoma of the thyroid with toxic symptoms. Dr D WELLS PATTERSON showed a case of recent acute anterior poliomyelitis in a boy aged 16, where the paralytic condition had arisen without any prodromal illness or symptoms. Dr N R RAWSON showed a case of micromelia with absence of the arms, and radiograms and photographs to illustrate this and kindred conditions. Dr J C SPENCE showed (1) a case of idioglossia to indicate the improvement that could be attained by visual demonstration to the patient of methods of speech, and (2) cases of congenital hypertrophic stenosis in infants after and during medical treatment, with charts demonstrating the value of atropine treatment. Mr G GREY TURNER presented (1) Two cases of cleft palate illustrating functional and aesthetic recovery after operation. One was a child, six years after operation in infancy, with almost normal speech and articulation, the other was a woman, aged 29, two years after operation for complete cleft palate, with great improvement. (2) Two cases ten and eleven years after excision of the rectum for carcinoma, both patients now in good health. The character of the growth had been determined microscopically, and specimens of the tumours were shown with the cures. (3) Two cases after successful transplantation of the ureters into the rectum for ectopia vesicae. Both patients were now well, one was aged 7, three and a half years after the operation, the other, aged 21, four years after operation. In neither case was there any evidence of impairment of renal function. One patient had subsequently had a second operation for osteotomy. Mr A HEDLEY WHITE showed a case of acute osteomyelitis of the tibia in a boy after operative treatment and the use of hipp dressings. There was complete healing with removal of the sutures after four dressings.

Reviews.

TAYLOR AND POULTON'S "MEDICINE"

THE late Sir Frederick Taylor's *Practice of Medicine* first appeared in 1890, two years before Osler's *Principles and Practice*, the tenth edition of which was noticed in our columns on October 31st. Both these popular textbooks are now in editions brought out by pupils of the original authors and are admirable in every respect. Comparison of the first with this edition¹ shows that Taylor's *Medicine* has been transformed in size, get-up, pages, and, of course, in matter, and that the present volume differs from the last (the twelfth) edition in containing eighty more pages and double the number of plates, of which eight are coloured, the number of radiograms being increased from nineteen to thirty-six. The coloured plates show the retina in arterio-sclerosis and parenchymatous nephritis, normal and abnormal blood cells, and nucleated red cells, and in addition sixteen of the commoner skin diseases are depicted on four coloured plates. The plates representing the cells of the blood are most successful and should be of great use to the reader. Another and a welcome change is that, as far as possible, the text has been kept clear from the names of authorities and references, which have been collected to form a list at the end of each section. These lists are not long and have been specially chosen from two points of view to provide means of verifying statements about which doubt may arise in the readers' minds, and to indicate fuller reviews of the subjects with bibliographies.

Among the fifteen new articles there is a short summary of melioidosis, a rare infection resembling glanders and due to *Bacterium whittmorei*, which is closely allied to *B. mallei*. The section on metabolism and diseases of the endocrine glands contains several additions and a monogram showing the relation between basal metabolism, age, and weight. Dr H W BARBER has largely rewritten the account of the diseases of the skin, and Dr C P SYMONDS has made a number of changes in the text of the diseases of the nervous system. That revision has been thoroughly up to date is shown by an appendix on the etiology of malignant neoplasms, in which Gie and Barnard's recent discovery of an ultra-microscopic virus and a specific factor is described.

In conclusion, Dr POULTON and his assistants, Dr C P SYMONDS and Dr H W BARBER, should be heartily congratulated on the improvements in this well known textbook.

RENAL VASCULAR DISEASE

Dr F M ALLEN, who is so widely known in connexion with the investigation and treatment of diabetes mellitus, writes from the Physiatric Institute, Morristown, New Jersey, on the *Treatment of Kidney Diseases and High Blood Pressure*. Part I, described as a *Practical Manual for Physicians and Patients*,² is now published, Part II, dealing with "questions of anatomy, pathology, renal function tests, and other complex or obscure problems of etiology," is delayed pending the completion of some investigation now in progress. The proceeds of this publication and of the author's practice will be devoted to the support of the Physiatric Institute, the adjectival description of which made the reviewer look at the printed word more than once, and of the researches undertaken there. Though the lay reader will doubtless be impressed by parts of this work, such as the high death rate of renal circulatory diseases, which in America far exceeds that due to any other cause, and was responsible for the deaths of the last two Presidents of the United States, there is much that he is unlikely to understand, for the author seems sometimes to forget the double character of his audience.

There is a great deal of interesting material in this handbook, especially the view expressed on the deleterious action of ordinary table salt which is regarded as both raising

¹ Taylor's *Practice of Medicine*. Thirteenth edition. By F. P. Poulton and F. M. Allen. London: The Physiatric Institute, 1925. (Pp. 810.)

² *Treatment of Kidney Diseases and High Blood Pressure*. By Frederick M. Allen. Part I. *Practical Manual for Physicians and Patients*. Morristown, N.J.: The Physiatric Institute, 1925. (10s. 8vo pp. 210.)

the blood pressure and acting as an irritant to damaged kidneys, for in addition to causing oedema salt may induce changes in size of the capillary endothelium and spasm of the arterioles.

In the discussion of the etiology of renal-vascular disease a number of factors, such as intestinal auto-intoxication, endocrine disorder, the wear and tear of modern life, emotional disturbance and worry, are practically ruled out. Infection is not regarded as a proved cause of high blood pressure or of arterio-sclerosis, though it is admitted that there are some strong arguments in favour of this view, and in the section on prophylaxis the prevention and removal of focal infections are recommended. That excessive protein feeding has an evil influence Dr. Allen agrees, but not with the wholehearted enthusiasm with which he condemns excess of sodium chloride. The dogmatic pronouncement, "One central fact seems to be that hypertension never exists with normal kidneys," is at once qualified by the admission that "even in rather severe and long-standing hypertension the renal lesions may be limited to such slight changes in the small arteries that only close study reveals them." The significance of these slight changes in the small renal arteries, especially in late middle life, should have received some attention before summarily controverting the late Sir Clifford Allbutt's conception of hyperpiesia, to whom and to which no reference is made, indeed, to British eyes Dr. Allen may appear a little inclined to plough his native furrow to the exclusion of others.

In discussing protein restriction the practitioner is advised to regulate the diet according to the percentage of blood urea, and it is stated that, while in critical emergencies, such as severe acute nephritis or a chronic case with an excessively high blood urea and imminent uraemia, a diet containing no protein or only the small quantities present in fruits and some vegetables may be used, it is regarded as a temporary expedient to be limited to a week or two at most. The term "pseudo uraemia" is employed for all the cases usually described as uraemia in which the blood urea is not raised, and "muscle oedema" is, after Widal, described as a condition of sodium chloride retention disproportionate to the water retention, "often overlooked by physicians." The great majority of patients stand restriction of salt to 0.3 gram daily indefinitely, but a few show serious symptoms of salt deficiency, which can be diagnosed by their rapid relief after the ingestion of 2 grams of sodium chloride. The principles of diet are discussed at some length, recipes and menus are given in detail, and the use of drugs is critically considered, not without flashes of humour, as, for example, in saying that the much advertised yeast treatment has as its chief merit its harmlessness, and otherwise "is merely a faith cure created by printer's ink."

PSYCHOTHERAPY

In a volume entitled *Principles of Psychotherapy* Professor PIERRE JANET summarizes the evolution of the various methods of mental treatment, pointing out their historical origin, outlines the laws on which the various therapies are based, and indicates the conditions under which such methods of treatment can be applied with reasonable chances of success.

The author believes that the term "psychotherapy" should be used in a much less restricted sense than is usual. Most definitions suggest that it should be confined to those methods which provoke psychological reactions simply and directly, but, as Janet points out, in our efforts to change a man's behaviour we cannot make a radical division between what is mental and what is physical. Our advice is given by means of words which involve physical phenomena just as a man's behaviour involves movements as well as ideas. Changes also of routine, cathartics, sedative or stimulating substances have both a physical and mental action. He goes on to show that from a more general point of view there is a question whether it is possible to make an exact division between physiological and psychological functions. Neuropathic disorders are the expression of the activity of the whole organism, its growth, its evolution,

its involution. The organs and functions that take part in these phenomena are not well understood, their disorders are scarcely suspected, but they exist, and must be given more and more study. Psychology is not independent of physiology, but it demands a more delicate and profound physiology than that of respiration or of digestion. The study of mental diseases cannot do without medical and physiological information, on the contrary, it will demand increasingly a much more thorough medicine and physiology. The treatment of these diseases, far from being possible after brief medical study, will fall to the most accomplished clinician, and will require the use of all forms of examination and all the most delicate methods. All treatments of this kind should be, so Janet considers, included under the term "psychotherapy"—anything, in short, which exerts a favourable influence upon disturbances of mind and behaviour.

As might be expected in view of the distinction and wide experience of its author, this volume contains much excellent advice on the treatment of psychoneurotic patients, and will well repay careful study.

COLLECTED PAPERS OF THE MAYO CLINIC

THE sixteenth volume of the *Collected Papers of the Mayo Clinic and the Mayo Foundation*,⁴ edited by Mrs M. H. MERRITT, is a complete record of all the papers issued during 1924 from this energetic centre, some are given in full, others abridged or abstracted, making up a total of 165, there are 27 others mentioned by title only. There are no fewer than 160 contributors, the Mayo brothers are each responsible for 13 papers, Dr F. A. Willis for 15, and Dr Melvin S. Henderson for 8. The articles are arranged under the nine heads of the alimentary canal, urogenital organs, ductless glands, blood and circulatory organs, skin and syphilis, head, trunk, and extremities, brain, spinal cord and nerves, technique, and miscellaneous. The last contains the largest number of articles (44), some being general addresses, such as Dr L. B. Wilson's, rather intriguingly entitled "Necropsies as an index of efficiency of treatment," in which he states that in the United States of America necropsies are performed on probably not more than 2 per cent of all fatal cases, and expresses a grave doubt if "an internist, however skilled, can maintain a high degree of efficiency with a low percentage of necropsies." The first two papers in this section are of rather special interest, they are by Dr E. C. Rosenow, and deal with focal infection and elective localization, and on a precipitating and neutralizing semilabral antistreptococcus horse serum.

In the section on the ductless glands, Dr L. G. Rowntree's contribution on Addison's disease shows that the Munherd system of treatment, so called after a medical man thus treated at the Mayo Clinic, has been employed in eleven other patients, seven of whom are living. The principle of the treatment is forced organotherapy—namely, frequent administration of epinephrin hypodermically and by the rectum, and of the whole gland or adrenal cortex by the mouth to the point of tolerance, which varies widely in individuals and therefore has to be determined in each case in order to settle the proper dose. Writing on the treatment of epidemic encephalitis, Dr J. B. Doyle mentions that out of 130 patients treated by Dr E. C. Rosenow with his streptococcal vaccine, 85 improved and 43 did not show any change, and expresses the opinion that no reliable data for determining the efficacy of vaccine therapy are available. Among the thirty-nine papers in the section devoted to the alimentary canal, which occupies one-fifth of the volume, there are about a dozen on peptic ulcer, and two valuable papers by Dr F. C. Mann and his co-workers on the physiology of the liver as elucidated by total removal of that organ.

This collection of papers is a valuable source of reference, and inspires sincere admiration for the Mayo Foundation and its beneficent influence on medical research.

⁴ *Principles of Psychotherapy*. By Dr Pierre Janet. Translated by H. W. and E. N. Gurrill. London: George Allen and Unwin Ltd. 1925. (Demy 8vo pp viii + 22. 10s. 6d. net.)

⁴ *Collected Papers of the Mayo Clinic and the Mayo Foundation*. Edited by Mrs M. H. Merritt. Vol. XVI. 1924. Published May 1925. Philadelphia and London: W. B. Saunders and Co. 1925. (Med 8vo pp viii + 131. 25s. 6d. net.)

THE MEANING OF SYMPTOMS

A RECENT addition to the series of small volumes with the general heading "To-day and To-morrow," written by some of the most distinguished English thinkers, is entitled *Pygmalion, or the Doctor of the Future*. The relationship between title and subtitle is not solved until near the end of the homily, when the author, Dr R. McNAM WILSON (who dedicates his book to the memory of Sir James Mackenzie), says that he looks forward to the time when the practitioner of medicine, "like Pygmalion, will look on his work and see, not disease and death, but the glowing lineaments of life." The author believes that a very simple, but nevertheless new, medical idea is slowly making its influence felt. This idea challenges the belief that "a symptom is a sign of disease." The correct definition is that a symptom is an expression of "inadequate reaction to life." "It may be suggested that every stimulus is lethal, a potential death-blow." "Every failure to react completely is a failure to recover completely from the blows by which Nature chastises us for our good." "On the other hand, without stimulation there can be no reaction." Here, says Dr Wilson, is a paradox man must struggle all his life to overcome circumstance and condition, yet could not live at all if these adversaries were to cease to trouble him. The thesis of inadequate reaction is illustrated by cases. Thus a man is giddy and exhausted after receiving a shock, or a glutton who has eaten too freely experiences a pain in his stomach. "These people are reacting normally to violent stimulations." Their symptoms cannot be accepted as signs of disease. Then we have the case of the man with a great pain in the region of the stomach. He was treated without success for gastric catarrh, apparently by a doctor of the past. Then the doctor of the present gave the patient a scientific bismuth meal examination, with negative results. So the man was told that his pain was imaginary. Unfortunately the doctor of the future did not get an opportunity of dealing with the case, the patient wanted glasses, went to an ordinary present-day ophthalmic surgeon, and found that his stomach trouble was miraculously cured by spectacles. The doctor of the future, for whom a symptom means a reaction to life, would have directed his attention to any circumstance tending to exaggerate the force of stimuli—that is, tending to put the individual in a false position towards his environment. From all this it appears that the doctor of the future is not altogether unlike the capable doctor of the past, for whom, as in Dr Wilson's ideal, the science of medicine was "the science of life, of humanity."

With the not unfamiliar statement that "the age of materialism is past, with its dull and deadening influence," and a quotation from Wordsworth that we should "Learn by a mortal longing to ascend towards a higher object," Dr Wilson closes his book. What it is all about we are not quite sure, but we may readily agree with Dr Wilson that the doctor of the future should be a humanist, a cultured man ripe in intellectual attainments, not lacking in emotional sympathy, a lover of arts as well as a student of the sciences.

SMOKE ABATEMENT

It is satisfactory to find evidence of a renewal of interest in smoke abatement. The subject was very much alive about a quarter of a century ago, when something was done, but public interest soon afterwards died away. Last July four societies—the Society of Chemical Industry, the Institution of Chemical Engineers and Gas Engineers, and the Midland Institute of Mining Engineers—held a conference at Leeds, at which a number of papers were read, but there was not time for any full discussion. The conference was therefore adjourned, to meet again in Sheffield on November 20th, and arrangements are being made for another conference in February in Manchester. Further evidence of the growing interest of the subject is afforded by the fact that after an interval of thirteen years a

second and much enlarged edition of the book by Dr J. B. COHEN, professor of organic chemistry at Leeds, and Dr A. G. RUSTON, entitled *Smoke: A Study of Town Air*,⁶ has been published. The evidence which Professor Cohen and his collaborators have published in scientific journals and collected here has been a valuable aid in the campaign for smoke abatement. Their main interest has not been the health question, but the damage done by soot and coal smoke to vegetation and in the disintegration of the stonework of ancient buildings, on these aspects of the problem it has been possible to collect more precise evidence than can be furnished by medical statistics. This second edition contains a new section on the plant as an index of smoke pollution. The book is illustrated with twelve striking photographs depicting the damage done by smoke to vegetation and public buildings.

Dr W. VERNOR SINCLAIR's little book on *Combustion and Atmosphere and their Relation to Disease*⁷ is a brief but strongly worded condemnation of the evils of a smoke-polluted atmosphere. The subject is treated in an elementary fashion, and to some assertions a word or two of explanation or qualification might be looked for by the thoughtful reader. But there is surprisingly little exaggeration or controversial matter, and the book will prove very useful in awakening greater interest in the question of the pollution of the atmosphere.

KENYA

In his book on *Kenya*⁸ Dr NORMAN LEYS, who spent some years in medical service in East Africa, purports to describe the conditions of life in the colony and the sociological problems it presents for solution for the benefit of European readers. Beginning with a brief historical and general survey, in which he lays stress on the debilitating effect of many of the widespread chronic infectious diseases that are the bane of native energy and progress in Tropical Africa, he gives in the second chapter a brief account of native life in East Africa as he knew it some years ago. Comparing village life in Africa with village life in England, he finds the former superior in a surprisingly large number of particulars. The remaining fourteen chapters of the book are written, so far as the reader may judge, with the object of proving the uniformly disastrous results on the native of European settlement in the colony. To readers who do not know East Africa Dr Leys will no doubt appear perfectly successful in his effort, but those who have some acquaintance with the facts of life in Kenya will notice many misstatements and sins of omission. Thus, to quote a few out of many, in his chapter on "Recent history," Dr Leys, while seeking to show that the natives have been dispossessed of an unduly large proportion of the agricultural land in Kenya Colony, states that it includes "a desert that covers nearly 200,000 square miles out of a total area of 240,000" (p. 67). In the recently published volume⁹ and maps by Shantz and Marbut it is shown that there is no desert, properly so called, in Kenya Colony, and only a comparatively small area of semi-desert shrub. Most of the area described by Dr Leys as "desert" is mapped by Shantz and Marbut as acacia savanna, with a definite and often high agricultural value, and a rainfall for the most part over 20 inches a year. It is not easy to understand in what sense such land can correctly be described as "desert." The same fault vitiates three of the maps given by Dr Leys on pp. 106, 107, in which large (and variable) areas of the Masai reserve are labelled "desert", yet these areas are described by Shantz and Marbut as composed of acacia savanna, mountain grassland of high value as pasture, and thorn forest. To describe as "desert" a large area of the reserve given

⁶ *Smoke: A Study of Town Air*. By J. B. Cohen, Ph.D. B.Sc. F.R.S. and Arthur G. Ruston, B.A. D.Sc. New and enlarged edition (second). London: E. Arnold and Co. 1925. (Demy 8vo pp. xi + 103 14 plates. 6s. 6d. net.)

⁷ *Combustion and Atmosphere and their Relation to Disease*. By W. Vernor Sinclair, L.R.C.P. I.R.C.S.E. London: J. Bale Sons and Daniel on Ltd. 1925. (Cr. 8vo pp. 47. 2s. net.)

⁸ *Kenya*. By Norman Leys, M.B. D.P.H. With an introduction by Prof. or Gilbert Murray. London: 1 and 1 Woolf. The Hogarth Press. 1924. (Demy 8vo pp. 410. 1 map. 15s. net.)

⁹ *The Vegetation and Soils of Africa*. By H. L. Shantz and C. F. Marbut. New York: 1923.

⁵ *Pygmalion or the Doctor of the Future*. By R. McNam Wilson, M.B. Ch.B. London: Hegan Paul Trench Trubner and Co. Ltd. New York: E. P. Dutton and Co. 1925. (Fcap. 8vo pp. 71. 2s. 6d. net.)

to the Masai for the grazing of their cattle is misleading. Throughout the volume Dr. Leys shows a certain unhappy eagerness to blacken the character of the white settlers in Kenya Colony, that is best illustrated, perhaps, in his chapter on "Black and White." Here he sets out at length two cases in which Europeans were accused of causing the death of natives, in each instance he records the case for the prosecution but omits all mention of the evidence for the defence. How is it possible in such a manner to give a fair picture of what occurred in these instances? Professor GILBERT MURRAY, President of the League of Nations Union, who writes an introduction, says in it that the attempted humanization of the existing world order embodied in the Covenant of the League of Nations implies that the advanced races of mankind have definitely accepted the task of governing and guiding in their own interests, those peoples which are "not yet able to stand by themselves under the strenuous conditions of the modern world." He questions whether there is "a single mandatory Power in which the preponderant political forces can be kept true to the spirit of this treaty except by constant vigilance and unsparring criticism." Great Britain, as compared with most other nations, he considers, has, on the whole, in these matters a creditable record, but he believes there is a real and dangerous opposition between average colonial opinion, based on knowledge of the facts and daily intercourse with black people, and public opinion at home, sentimental, disinterested, and genuinely anxious for justice, but grievously crippled by ignorance and lack of understanding. Dr. Leys, he thinks, has "the power of possibly helping these two opposites to understand one another." Professor MURRAY continues, "The rule of black by white appears to be, for the present time, an absolute necessity." He therefore seems disposed to accept the view that the native races are not yet fit for the equality before the law desired by Dr. Leys.

Dr. Leys's information about the colony is not up to date, and it seems likely that a visit to Kenya would do much to correct many of his misapprehensions. However harsh may be the judgement of Dr. Leys on the Kenya settlers, at any rate he shares with the majority of them a real affection for the native population, and this must be counted the chief virtue of his book.

MEDICAL FOLLIES

PRACTITIONERS of the cult of osteopathy are moving heaven and earth, and the House of Commons, to grant them an official register in order (it is said) that the public may be protected from unqualified osteopathic imitators. The time is opportune, therefore, for reviewing *The Medical Follies*,¹⁰ a book by Dr. MORRIS FISHBEIN, Editor of the *Journal of the American Medical Association*, from which we have quoted on two occasions lately. Starting with Elisha Perkins, an American, who in 1796 produced Perkins's patent tractors to draw disease from the body, Dr. Fishbein describes the origin and history of homoeopathy, osteopathy, chiropractic, and the electronic reactions of Abrams. There are also chapters on the antivivisectionists, health legislation, physical culture, birth control, and rejuvenation. In his introduction Dr. Fishbein compares the medicine man of the savage tribe with the leaders of modern medical cults. Both have the habit of believing themselves to be divinely inspired, both have some mental or physical peculiarity, or a "magnetic personality," both are students of the psychology of their patients, understand the importance of the fundamental urge of sex, and realize that a strong claim is far more convincing than a weak one if neither can be proved. It is through neglecting this last characteristic that Dr. Fishbein thinks apparently that osteopathy will come to grief, and that chiropractic will "engulf its mother organism." The better sort of modern practitioners of osteopathy have thrown over a great many of the claims of their founder, Andrew Still, and are endeavouring to make the faith into something resembling the actual practice of medicine. Throughout the book there are many acute observations on the state of mind of the followers of the various cults. Thus "Learned persons with one-track

minds can always be found who will endorse the most ridiculous hoaxes-poems in matters of health." "Credulity is not limited to any single class. There is a pride of learning and accomplishment that is more dangerous than the most abject ignorance." Dr. Fishbein cultivates his pages with amusing stories, such as that of the nine clergymen who told lion Elisha Perkins's tractors brought them relief, while one of the clergymen found "them also useful in picking walnuts." He records how the great-grandfather of Andrew Still, who "flung to the breeze the banner of osteopathy," came from England to Buncombe County in North Carolina, an irrelevant fact, says Dr. Fishbein, cited merely because of the name of the county. It appears also that Andrew Still's brother James, a clergyman, thought at first that Andrew was crazy. Andrew hoped that James's brain would ripen in time, so he let him pray until at the end of eighteen years James said "Hallelujah, Drew, you are right, there is money in it, and I want to study osteopathy." Despite these cynical touches, Dr. Fishbein gives credit where he can. "Perhaps," he says, "osteopathy has taught us something by its stress on massage perhaps even Iddism has made itself valuable by showing the value of suggestion in conditions affecting the mind." But chiropractic and Abramsism he cannot endure, they "teach only the ease with which delusions may be foisted on the public."

A NEW BOOK OF CHILD CARE AND PROTECTION

THE second edition of *The International Year Book of Child Care and Protection*¹¹ has recently been published for the Save the Children Fund of London. It has been compiled, as was the first edition (1924) by Mr. LEONARD FURMAN, the editor of *The World's Children*.

The book gives a record of State and voluntary effort for the welfare of the child, including information on marriage, divorce, illegitimacy, education, the care of the destitute child, treatment of juvenile delinquents and conditions of juvenile employment throughout the world. In the preface written by the Marchioness of Aberdeen and Temair she commends the book to the attention of the public, now aroused to the recognition of the claims of childhood.

It is a valuable book of reference, and represents an enormous amount of work in collecting data from all parts of the world. At the beginning of the book is an index to new and projected legislation and other developments since the first edition. The countries are again arranged in alphabetical order, but the "Whos Who" section has been omitted, and in its place is provided a useful international bibliography of works on child care and protection, and of periodicals bearing on the subject. The chapters on Roman Catholic and Mohammedan law have been abridged, but an interesting chapter on Hebrew law by Dr. W. M. Feldman has been added. In his introduction the compiler makes a plea for reform in the demography of child welfare, and expresses the hope that *pari passu* with the development of technical aspects of work for the care, protection and education of the world's children, the question of developing a common international system of recording at least the more essential statistics will engage the attention of Governments and of international bodies and conferences competent to deal with it.

NOTES ON BOOKS

IN the BRITISH MEDICAL JOURNAL of May 16th, 1925, we published, under the title "Lister, the Investigator and Surgeon," an abridged version of the first Lister Memorial Lecture, delivered before the Royal College of Surgeons of England, by Sir WILLIAM WATSON CHEYNE, Bt. The full text of the lecture has now been published in book form, with a portrait of Lister as frontispiece and an appendix.¹² In his brief preface Sir Watson Cheyne explains that his wish had been to give a short history of Lister's work, but that was impossible in a single lecture. Hence the lecture was first

¹¹ *The International Year Book of Child Care and Protection* Compiled by Edward Fuller from official sources. Second edition. London: Longman, Green and Co. and The World's Children, Ltd. 1925. (Cr 8vo, pp. vi + 565, 7s. 6d. net.)

¹² *Lister and His Achievement*. By Sir Wm. Watson Cheyne, F.R.C.S. London: F.R.C.S. etc. London: Longmans, Green and Co. 1925. (Demy 8vo, pp. 136, 1 portrait, 7s. 6d. net.)

¹⁰ *The Medical Follies*. By Morris Fishbein, M.D. Second edition. New York and Liveright. 1925. (Cr 8vo, pp. 223, 2 dollars.)

written out in full and afterwards compressed. The lighter portions, illustrating Lister's character and the general plan of his work, formed the lecture as delivered, the remaining more detailed account of his work and investigations (together with some personal experiences and opinions of the lecturer) have now been incorporated in the appendix. The former occupies the first 38 pages, and the latter 92 pages, the remaining 6 pages contain the index. The whole, now bearing the title, *Lister and His Achievement*, forms a worthy tribute to the master by his chief disciple. It only remains to add that the book is excellently printed and appropriately bound, with a gilt medallion portrait in profile on the cover, inscribed "Joseph Lister, 1827-1912."

In simple and easily understood language Mr D. WARD CUTLER, chief protozoologist to the Rothamsted Experimental Station, Harpenden, presents the results of modern research on *Evolution, Heredity, and Variation*.¹³ There is, of course, much about Charles Darwin, the greatest of all naturalists, who was born in 1809, the same year as Gladstone, Chopin, Mendelssohn, Oliver Wendell Holmes, and many other famous men, and was himself an example of the inheritance of high intellectual powers. Mendelism is clearly explained, and the predominant influence of heredity is firmly insisted upon. Professor Pearson and the late Professor Doncaster being quoted to prove that the kind of mind that the child will have is irrevocably decided before birth. This leads to the late Professor Doncaster's conclusion that although eugenic measures are as yet hardly within the range of practical politics, there can be little doubt that the nation which first puts them into practice will in a short time be the leader of the world. On the question of the transmission of acquired characters, which is of considerable interest from a medical point of view, Mr Cutler takes the orthodox biologists' position that quite apart from the absence of any known definite physiological process by which body changes could be transmitted to the nuclei of the germ cells, other evidence in support of the transmission of acquired characters is unsatisfactory, as it can always be interpreted in more than one sense, or is of an indirect nature.

The leading paper in the new number of *Brain*¹⁴ is that by Stanley Barnes and E. Weston Hurst on hepatolenticular degeneration, a condition first described by S. A. K. Wilson in *Brain* in 1912 under the title "progressive lenticular degeneration." Four new cases are recorded, and the conclusion is reached that Wilson's condition should be grouped with Gowers's "tetanoid chorea," certain cases of "pseudo scleriosis," and Thomsen's torsion spasm. The authors state that nervous symptoms of the disease never occur until the liver has been grossly damaged, and they believe that the toxin producing the attacks of acute hepatitis which cause the cirrhosis has a bacterial origin in the alimentary canal. The number also contains several other papers and some short notices on recent publications.

Professor H. STANLEY ALLEN's monograph on *Photo Electricity* deals with a subject that is of increasing importance to the physicist, and has practical applications in the sphere of work of the physiologist, the photographer, and the radio telegraphist. The characteristic feature of photo electric action is defined as the loss of a negative electric charge or the gain of a positive electric charge under the influence of light, which is traced to the emission of negative electrons from the illuminated surface. From the experimental point of view investigation of the subject presents a most complex affair, as great variations in the activity are found to result from trifling changes in the experimental conditions. Professor Allen goes into the whole subject very fully, he gives a large number of references to the original literature, and has brought this, the second edition of his book, very well up to date. His chapter on the physiological effects of photo electricity, including photo therapy and the photo electric theory of vision, is particularly interesting to medical men, the author concludes that "although a full explanation of colour vision is still wanting, the correct theory, when it is found, will be a photo electric one, the number of electrons liberated determining the intensity of the sensation and their velocity the quality or colour of the light perceived." The more immediately practical or commercial applications of the photo electric cell, an apparatus for the measurement or control of radiation, may,

he believes, lead to the production of a rival of the thermionic valve in wireless work. The book is well written, and may be recommended to experimentalists and readers interested in the subject with which it deals.

Professor MARTIN PAPPENHEIM's book has been translated into English by Mr. GEORGE CAFFEY, and published under the title *Lumbar Puncture*.¹⁵ It is based on many years of teaching in the neurological department of the University of Vienna, and deals with the anatomical and physiological relations and technique of lumbar puncture, with methods of investigation of the cerebro spinal fluid, and with the diagnostic and therapeutic applications of this test. It contains an appendix on encephalography and puncture of the cisterna. The practical character of the book and its insistence on details of technique make it a valuable exposition of the subject for both student and practitioner.

Physiotherapy in General Practice,¹⁶ by Dr. E. BELLIS CLAYTON, is intended for the use of general practitioners and to be a guide to massenses. The book describes treatment by massage, exercise, radiant heat, and the faradic and galvanic current, the descriptions being based on the methods in use at King's College Hospital. A valuable introductory chapter gives a short explanation of massage, electrical treatment, and medical exercises, this introduction will be useful to readers unfamiliar with the specialized forms of treatment dealt with in the later chapters. We note also a second commendable feature in the appendix, wherein certain medical gymnastic terms and exercises are briefly explained.

Mr. BRADLEY PATTEN's *Early Embryology of the Chick*¹⁷ is a handy book for students beginning the study of embryology. It is clearly written and well illustrated and explains very well questions which students often find difficult to understand, such as the establishment of the yolk sac, amnion, and allantois. The book carries the development of the chick only to the fourth day of incubation of the egg. Here the story comes to an abrupt end, and this will seriously diminish its utility for medical students in particular, who need to know more about the later stages of development. The addition of even one more chapter giving a brief account of further stages in development would have added greatly to the general usefulness of the book.

The book on methods of gas analysis,¹⁸ by Dr. WILHELM KLEIN and MARIA STEUBER, is a short one, but contains a careful account of the various methods of analysing the inspired and expired air in metabolic research. The authors are assistants at the Landwirtschaftlichen Hochschule in Berlin, where the study of the respiratory exchange has been pursued for many years. Much of our present knowledge of this subject we owe to this institution. The authors give full descriptions, accompanied by diagrams, of all the types of apparatus in common use. The technique of respiratory gas analysis has been worked out to a high degree of perfection, and we here find the advantages and disadvantages of the different types of apparatus minutely discussed. The book concludes with a series of useful tables of constants for making the numerous corrections necessary. Any person working on the respiratory exchange will find this book a very useful laboratory manual.

We referred on October 24th (p. 762) to the fourth of the Henderson Trust Lectures,¹⁹ which was given by Professor WILLIAM W. GRAVES, at Edinburgh, on October 16th. This lecture has now been published and may be obtained from Messrs. Oliver and Boyd.

Dr. J. SABRAZES, in collaboration with J. V. PRADE, has written a small book²⁰ on diaphragmatic hernias. The detailed history of a single patient forms the nucleus of the book, and paves the way for a consideration of the plural effusions that not infrequently supervene in this type of case.

¹⁵ *Lumbar Puncture*. By Martin Pappenheim, M.D. Translated by George Caffrey. London: J. Bale Sons and Danielsson Ltd. 1925. (Demy 8vo pp viii + 248. 9 figures. 15s. net.)

¹⁶ *Physiotherapy in General Practice And for the Use of Masseuses*. By E. Bellis Clayton, M.B., B.Ch. Cantab. London: Baillière Tindall and Cox. 1924. (Demy 8vo pp viii + 174. 22 figures. 10s. 6d. net.)

¹⁷ *The Early Embryology of the Chick*. By Bradley Patten. Second edition. Philadelphia: P. Blakiston's Son and Co. 1925. (Med 8vo pp xi + 177. 63 plates. 25s. net.)

¹⁸ *Methoden der Stoffwechsel- und Respirationsforschung*. Von Wilhelm Klein und Maria Steuber. Leipzig: Georg Thieme Verlag. 1925. (Gr 4to pp 355. 15 figures. 6d.)

¹⁹ *Des Hernies Diaphragmatiques et des Pleurésies Héréditaires*. Par le Dr J. Sabrazes avec la collaboration de J. V. Prade. Paris: G. Doin. 1925. (Gr 4to pp 355. 15 figures. 6d.)

²⁰ *Des Hernies Diaphragmatiques et des Pleurésies Héréditaires*. Par le Dr J. Sabrazes avec la collaboration de J. V. Prade. Paris: G. Doin. 1925. (Gr 4to pp 355. 15 figures. 6d.)

¹³ *Evolution, Heredity and Variation*. By D. Ward Cutler, M.A., F.R.S. London: Christophers. 1925. (Cr 8vo pp 147. 27 figures. 4s.)

¹⁴ Published in London by Macmillan and Co. and in New York by The Macmillan Company.

¹⁵ *Photo Electricity*. By H. Stanley Allen. London: Macmillan & Co. 1925. (Med 8vo pp xi + 177. 63 plates. 25s. net.)

THE PRESENT STATE OF THE TEACHING AND PRACTICE OF SURGERY

BY

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DURING the last year I had a heart-to-heart talk with a learned and thoughtful provincial surgeon. Among the things he said to me were the following: "Provincial surgeons no longer look to wards the surgeons of London for new notions of leadership, and this is because there is little or no original research work being done by London men. Provincial surgeons see as much surgery, operate on as many patients, and we are technically as perfect as London men." Gentlemen, although I would not hear you enemy say so, we have all had some such thoughts about ourselves.

Research Work

Let us begin with the first point he made—that London is losing its leadership, because so very few men are engaged in research work as well as practice. I think it must be admitted that, in these days, mere technical ability is not enough to maintain ascendancy of leadership, or to regain ascendancy if leadership be lost. I take it to be a fact all the world over that he who is only a so-called clinical surgeon and nothing more is losing, or has lost, his position as a leader in his profession. He can add very little knowledge, and except for acquiring skill in the technicality of his art he can acquire very little more of any value whatever. His thoughts can never be profound, and without research work there is very little encouragement for him to think at all, instead of his teaching being inspired by the results of his own original research, it is limited in outlook, dull and conventional in type.

It seems to me essential that every surgeon should be performing research work, however little, in a laboratory, however small, in conjunction with his practice. I know many men will say that practice excludes the possibility of such a scheme. I do not admit this. Time can always be found for things that a man wants to do. It will be said that some men are more fit for practice than investigation. I do not think that statement has been properly tested. But that is not so much my point. My point does not concern those men. They can never be leaders in their profession, however great their practice, or however high may be the social position of their patients. It is the men who aspire to leadership who should come back into the fold of original research as well as surgical practice.

That some men are fitted only for investigation is another point to consider. This statement is yet another instance of one that is made without proof. Besides, supposing that kind of man does exist, I am not talking about him. My point is that a surgeon will never "cut any ice" as a leader unless he does research work as well as being technically perfect in his art. Research work and technical perfection are not in opposition. Nearly all parts of research work are concerned with delicate manipulative processes, experiments on animals are pure clinical work, and such experiments would naturally help the worker in his operations on patients. It may also be said that doctors can be investigators by research work applied only at the bedside, and that great work in the past has been performed by this method. That, taken alone, is no longer possible. A man must have the backing of his own research laboratory work.

How research work leads from one thing to another is borne out by a conversation I had with a student the other day. When I advised him to start original investigation by cutting sections, at different ages, of skin wounds that had healed by first intention, he said, "What's the good of that? Surely everything is known about that." Well now, that student was wrong. Six months' work at that particular observation, provided he be a more enthusiastic and intelligent student than the one I have just mentioned, would make him now more about it than anybody else of his year. It would compel him to study the

healing of wounds in all the other tissues besides the skin, it would lead him into the study of controlled hyperplasia and the study of internal secretions. It would entice him into a study of uncontrolled hyperplasia and take him into the regions of tumour formation generally. Apart from that, the whole question of infection and the prevention and cure of infection would come under his research. At the end of a few years he would find himself, provided he had ordinary enthusiasm and intelligence, an authority on the subjects with which he was dealing. Supposing such a man, in the course of his study, came across a simple statement like this: "Malignant ulcers of the stomach commonly arise from simple ulcers." If he were to accept the main teaching of the present day, he would say, "Simple ulcers of the stomach commonly become malignant."

But such a man as I have described would not accept what others say on important questions of this kind, and the question is important, because it is said that simple ulcers of the stomach become malignant they ought to be excised by partial gastrectomy—a very serious operation. One of the first things he would say would be, "Let me investigate the pathological evidence on which is founded the statement that simple ulcers of the stomach commonly become malignant." He would find, on this evidence, two things: that ulcers excised as being simple were really extensive carcinomatous ones, and that ulcers which had been removed and reported on as early carcinomatous were not carcinomatous at all, but simple ulcers in which some epithelial cells were dislocated—a state of things with which he would be perfectly familiar in his examinations of many wounds that heal by first intention, and would regard it as a state of things that does not necessarily prove malignancy. He would also be perfectly aware that in other tissues which are healing—take, for example, the formation of bone round the healing of a simple fracture—bone tissue may appear in an abnormal situation, but it is not necessarily in an osteosarcomatous state. I would agree with his conclusions: that there is no pathological evidence to support the notion that malignant ulcers of the stomach commonly complicate a previously benign one.

Again, I think a man with this training would not be tempted to scrape the inside out of a uterus to see if he were dealing with uterine carcinoma. He would appreciate the fact, from his studies of uncontrolled growth, that one of the surest ways of inducing the spread of carcinoma is to open fresh lymphatic spaces and thereby transplant carcinomatous cells, and that a man who does this kind of preliminary examination is spreading disease before he removes it. Again I would agree with him. I would further suggest that all the discharge from a suspicious uterus should be collected, centrifugized, and the deposit cut in paraffin sections and stained and then examined. Dr. Ewing, of the Memorial Hospital, New York, pointed out to me the danger of this process, and the examination of the uterine discharges was also his suggestion.

The research worker, besides collecting data of this kind, perfects his own work and is also leading others to perfect theirs. During what appears to be unimportant research work, at any moment a fact may arise of epoch-making importance. Although it may be a genius who succeeds in recognizing it as being a fundamental fact, there is no harm in a man giving himself a chance of showing the world he is a genius. Original work is so interesting. It keeps the mind of the researcher alert, young, and thoughtful. His teaching is more inspired and gives to his listeners notions and facts that cannot be found in books. It is wonderful to note the immediate response of his students when they hear something of the teacher's own work and his views. It makes them think with him on matters relating thereto, and often those matters are the only ones which cause men to come after a lecture is over to ask questions.

The other day I was listening to Dr. Bigg in the Memorial Hospital of New York demonstrate some of his most recent work. Roughly speaking, it was this: He took a healthy strain of mice, mated them, and on the birth of the litters immediately separated them from the mothers so that no suckling took place. He re-mated

* Presidential address (abridged) delivered before the Section of Surgery of the Royal Society of Medicine, October 21st, 1925.

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these mothers at once, and the next litter was treated in the same way. Of these mothers 87 per cent developed fulminating carcinoma of the breast. The same results occurred after he ligated the mammary ducts on one side, and allowed the litters to suckle the other side. Carcinoma developed in the ligated breasts. That is a very dramatic experiment. Miss Maud Sly puts the whole matter on one side as being a question of heredity. Bagg himself considers it is a question of stagnation of irritating contents that induces carcinoma. Dr Gye would say that "neither Miss Maud Sly nor Bagg has taken into sufficient consideration the presence of the ultramicroscopic organisms and a specific factor." To which Bagg might reply, "Supposing I grant the presence of the breasts of these organisms and a specific factor in the breasts of these carcinomatous mice, it cannot be concerned that 87 per cent of them would have suffered from this fulminating carcinoma had I not treated them in the way I did. Therefore, supposing Gye be right, I may have proved that there is another factor essential to the action of the organism and the specific factor—namely, preparation of the epithelial cells." To which Gye might again reply, "You have not shown that to be an essential addition to my theory. I expect what you have really done is to make the specific factor more active." That is the line of research I humbly suggested to Dr Bagg.

There are no boundaries to the researcher's ambition, of all surgeons who aspire to leadership. I do beg compared with the micro surgical technical expert I do beg practice to work hard at original research. I would refer my audience to the first paragraph of Sir William Leishman's address which he delivered to the War Section of the Royal Society of Medicine on October 12th. He said

"At the outset it is my purpose if I can, to remove from your minds the impression that research is of necessity an sterile matter confined to mysterious laboratories and that it can be carried out only by professors and specialists who have given years of work to their subject who are a 'peculiar folk' and talk in a tongue not understood of the people. It is true that much experimental inquiry demands expert knowledge, special equipment, and comes within the opportunity of comparatively few of us, but I prefer to give to the word 'research' a much wider significance and to take it to cover any means by which we, of set purpose and on a deliberate plan, strive to add to our existing knowledge of the case, the prevention and the treatment of disease. I have on more than one occasion spoken on this subject and have urged in connection with it a far closer collaboration for this purpose between clinician and specialist than exists at present."

The Unit System

The great hope in the future that London will regain its position of leadership, and prevent its surgery from degenerating into mere practice, lies, I believe, in the encouragement given to research by the unit system of teaching. It may be said that trial has been made of this system and in many instances it has been a failure. Against that it must be admitted that there are instances of great success, and there are instances where it is promising to be successful. It must be recognized that they are part of a new scheme, and time is required for their directors to grope about and discover the best arrangements that can be made for research and for teaching. I sincerely hope that those bodies who are placing money at the disposal of these units will not be discouraged by want of immediate return in the shape of striking discoveries, and so forth. Money cannot subsidize genius, but it can, and I feel sure will, create a body of men more capable of leading in their profession than any body of men that has existed in the past, and in due course genius will come along.

What a wonderful, envious position the directors of these units occupy! Take only one example, which to me is of greater importance than is usually attached to it—namely, the skilled assistance which a director can always insist upon having in his surgical operations as well as in his research. Take a surgeon at a teaching hospital, who is not a director of a unit. His assistant is a house surgeon who only begins to be useful as an assistant at the expiration of his office, when the poor surgeon has again to start

with raw material. The same surgeon with skilled assistance works like an angel, but in his hospital, where everything should be the best from a showman's and teacher's points of view, you will see him working like a good man struggling with adversity. This is a more important question than that of merely a showman's or teacher's. Perfect assistance halves the length of an operation and lowers mortality, and, in fact, sometimes the hospital surgeon dare not undertake an operation with the unskilled assistance he has at his disposal.

Also it seems to me that a director of a unit should be allowed private practice, which would render him a more human, tactful soul, a better teacher, a better operator, and make him the possessor of a more complete conception of a surgeon's duties to all classes of men. The permission to practise would increase the number of men from which a director could be selected. As the teaching hospitals are now opening their doors to paying patients, I can see no reason why the director of a surgical unit should not operate upon his private as well as his hospital patients in the same institution, and thus save time for his unit duties. The directors of units are complaining that there is so much administration to be done that they have no time for original work of their own. A powerful man like the director of a unit could insist upon having someone under him who could take this part of his labours off his hands.

Specialties

I began my address with the conversation I had with the provincial surgeon. That morning he performed the following operations. He operated upon two patients suffering from gastric ulcer, completely removed two fibroid uteri, from a fifth patient removed a kidney that was a mere sac containing calculi, and finally he plated an ununited fracture of the tibia. The histories and examinations of these patients were complete in every detail, and his assistance was perfect. He had himself cystoscopically examined his renal patient. He had observed urine coming from the one kidney, and an absence of urine from the cystoscopic examination for himself, for no other man in his town was capable of doing so. This fact shows that practice made him—a general surgeon—efficient in what is a urological specialty in London. In London general surgeons do not get these patients. Therefore they have no practice in efficient urological examination.

The work of my provincial surgeon proves the absurdity of the contention that only specialists can efficiently examine urological patients. This leads me on to my next point. In addition to our negligence in appreciating the importance of original research, another great cause of the atrophy of surgery is the breaking up of its practice into various and completely unnecessary specialties. The system is wrong in principle, and is proving wrong in practice. It is wrong in principle because Nature does not specialize. She governs her dominions on large general principles, which she applies to different tissues of the body. Specialists are doing the opposite. They are studying as best they can minute portions of the human anatomy, and thereby too often lose sight of great guiding principles.

For example, infection and biochemical changes are forces that hit all tissues, and to study their respective or united effects on only a small part of the human anatomy excludes the possibility of a comprehensive view of their actions on all the other tissues as well, unless two or three more specialists are brought into consultation. It is proving wrong in practice. The men who practise the different specialties are consciously and unconsciously recognizing the error of their limited occupations.

The specialists of the new generation are gradually including parts of the body other than those to which they were originally limited. A modern gynaecologist operates on everything connected with the female, unless it be a cerebral lesion. I cannot see anything that is excluded by the modern orthopaedic surgeon, and the modern urologist appears to be gradually claiming all the surgical diseases that affect the male in the same way as a modern gynaecologist is claiming all the diseases that affect the female. Even the modern laryngologist is beginning to include within his

ambit diseases that are extra-laryngeal—such as goitre, carcinoma of the tongue, and the glands of the neck—and thus he appears to be encroaching on the realm of the modern gynaecologists and urologists.

However amusing and interesting it may be to watch, I regard this tendency of different specialties to widen their spheres of action as being all to the good. It is destructive to a bad system. At present, if I were to advise a man what to do if he wanted to become a general surgeon, I should advise him to take up at least one of the four specialties I have mentioned, for there is nothing to stop a man from taking up a specialty and performing operations on any part of the body. I congratulate that man for the reason I have given. He will help to stop a bad system. Hence the question I would like to ask, "Why break up surgery into specialties that are becoming only names, and which have no physiological, pathological, or technical reasons for their existence?" I am glad to say that the forces that control this great society clearly see this. I would like to encourage these forces that recognize the error of our ways, by suggesting that a committee be formed to consider the whole problem and to discover means by which the separation into specialties can be stopped, and to encourage more meetings of the whole society to hear new important notions that deal with new interests, no matter who the man is who provides such material. I would let any man, however young or however old, with a new notion well worked out, utter his message before the whole society rather than before a little part of it. There are many papers read before sections that would profoundly interest the whole society, but they are now lost and hidden away from general knowledge. We should get to know each other's work better, and be able to judge with what manner of man we are dealing and the value of his message.

Decentralization of Surgery

At the outset I particularly want it to be understood that I do not criticize any set of men, and that what I say refers only to the question of supplying the public with the best surgical treatment.

There can be no doubt there is a great, increasing, and perfectly reasonable demand on the part of the public for surgical aid that should be available near at hand. The diseases that call for urgent and immediate surgical attention compel the recognition of the fact that surgery must be as near the patient as possible.

Again, the volume of surgical patients who are not suffering from urgent and acute disease is so enormous that it cannot always be attended to from the great centres. Hence surgery is undergoing a great decentralization, which cannot and should not be stopped. In the numerous hospitals that have been established within a radius of thirty miles of London local men are operating three or four times a week. Inside and outside this radius general practitioners are forming groups that continue in operating partner, while in London itself the demand is greater than can be supplied by the hospitals attached to teaching schools. Large suburban hospitals have been built which have been staffed by surgeons of first-rate calibre, in fact, the reputations of these surgeons is so secure that these hospitals can be no longer regarded as mainly nurseries for men whose ambition is to be attached to their teaching schools. Lastly, the local infirmaries are opening their doors to surgical patients of all kinds, and often are obliged to admit patients for whom there is no room in the teaching hospitals.

Hence it is essential that the public in all areas should receive the best surgical aid, and the schools must supply it with surgeons whose knowledge, judgement, experience, and technique are second to none. It follows as a natural sequence of events that men who are operating in the hospitals of the decentralized areas must be also competing successfully in the private practices of those who taught them. Hence the economic state of the teachers becomes a momentous matter that has to be met and settled. The old system is obsolete, and the worst of it is that the old system is the present one. It must not go on indefinitely, for many unfortunate things will happen to the public if it be not supplied by the best surgical practice.

Let me inquire what is the economic state of these teachers at the present time, say, in London. It is impossible to describe in words that meet the situation, it is so obviously un sound. They are receiving no money for their hospital and teaching services, and they are considerably out of pocket in giving them. They are teaching the very men who are successfully competing with them for the money upon which they live.

In comparatively recent times surgeons required kudos by being attached to teaching schools. They treated the private patients who are now being generally treated in the decentralized areas. The amount of funds now brought to a man on a teaching staff is insignificant compared with older times. It was a system of polite blackmail at the best. The threat was "If you don't come and teach our students and treat our patients, you shall not have a private practice." Such as it was, the method of those days led to thriving private practices, and to some extent it still persists among men who have passed through those days. It is the brilliant younger teachers who are feeling the effects of the surgical decentralization, and however great a reputation they may make by original research and technical ability combined, they cannot hope to attract surgical patients from the decentralized areas.

What will be the natural consequence of all this if the old system persists? In order to live the teaching class (without private means) will be compelled to become the surgeons of the decentralized areas where private practice awaits. If the best men are thus rendered incapable of teaching, what will become of the high standard of teaching that will be necessary for the subsequent supply of absolutely efficient surgeons? There will be a disastrous shortage of efficient teachers. The demand for great teachers can be met only by giving them high salaries. The public, having once grasped this problem, must itself see how it can be solved. It can be solved only by the action of Parliament and a Ministry of Health unhampered by political fetters.

ROYAL MEDICAL BENEVOLENT FUND

At the last meeting of the Committee seventy-one cases were considered and £658 was voted to fifty-four applicants. The following is a summary of some of the new cases relieved.

L.R.C.P.E.D. 1838 aged 73 met with a motor bicycle accident while acting as assistant and broke both legs and the right clavicle. At the suggestion of a member of the medical staff of the hospital the Fund with a view to getting him away to a convalescent home had made an emergency grant of £10 and a further sum of £6 was voted.

M.R.C.S. Eng. aged 80 whose investments have failed is with his wife and young daughter aged 47 now living on money received by the sale of household goods. This case has been investigated through the Guild and the report states that the old home in which they live by a mortgage on it for £750. The interest on this and rents amount to £57 a year. The eldest daughter aged 51 is a widow and is maintained by her son. An emergency grant of £5 was sent and the Committee voted £40 in twelve monthly instalments.

Widow aged 68 of M.R.C.P.I. 1830 who died in 1898. She is a trained nurse and has supported her self since her husband's death. She has just had an operation for cataract and has no means and is not well old enough for the old age pension. £5 was sent as an emergency grant and a further £15 was voted.

L.S. 1384 aged 62 who prior to the war was a ship surgeon, served during the war and until 1923 when he was demobilized. He has since made a small income as a locum tenens. In February last was ill and unable to get further employment. In November 1924 the Officers Association gave £5 to enable him to take a post and again in September 1925 a further £5 was given to his sister for his benefit. He has recently been a patient in King's College Hospital and the Fund was asked to help to get him to a convalescent home. £2 12s 6d was voted for this object.

M.D. Brux and L.R.C.P.E.D. 1897 aged 57 unable to get locum tenencies, has applied to the Fund for assistance. During the last twelve months has received £105 from locum tenencies and has had unfortunately to apply to the guardians to live who made an allowance for applicant and wife of 30s a week from September 11th. The rent of one room is £2 6d a week. The local secretary sends a satisfactory report. On his recommendation £5 was sent at once.

Widow aged 85 of M.R.C.S. Eng. who died in 1894. She is permitted to live with her daughter who is a housekeeper earning £50 a year. The applicant has the old age pension and an allowance of £4 from her eldest son. Three other married sons unable to help. The applicant pays 5s a week towards her board. Voted £30 in twelve monthly instalments.

Subscriptions may be sent to the Honorary Treasurer, Sir Charles Symonds, K.B.E., M.S., at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and suits for ladies and gals holding secretarial posts, and suits for working boys. Gifts should be sent to the Secretary of the Guild, 58, Great Marlborough Street, W.1.

British Medical Journal.

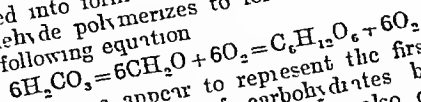
SATURDAY, NOVEMBER 21st, 1925

PHOTOSYNTHESIS AND THE ORIGIN OF VITAMINS

The progress of science as a whole is largely dependent on the mutual help afforded by its different branches, and it would be easy to multiply examples of the cases where new hypotheses of the greatest importance have been introduced to a science by a worker in another field. The suggestions put forward recently by Professor E. C. C. Baly, who holds the chair of chemistry in the University of Liverpool, regarding the possible origin and nature of vitamins, therefore deserve the careful consideration of physiologists.

Professor Baly, in summarizing his views on photosynthesis, begins by affirming that every chemical reaction consists of three separate stages: (1) the activation of the reactant molecules by the supply of a definite and specific increment of energy, (2) the reaction proper, whereby new molecules are produced in an activated condition, and (3) the loss of energy by the resultant molecules, which causes them to settle down into their normal and non-reactive state. Professor Baly points out that the second stage is the only one which is expressed by the ordinary equation of the reaction. He considers that this new theory of chemical change at once leads to the view that all chemical reactions may be divided into two main classes—namely, those reactions for which only a small increment of energy is necessary to activate the molecules, and those reactions for which a very large increment is required. Since the everyday methods available in the laboratory are capable of supplying only small quantities of energy, the whole of our experience of chemical reactions, he says, is necessarily restricted to the first class of chemical reactions.

High energy reactions can, however, be produced by the influence of ultra violet light, and Professor Baly has studied the reactions produced when ultra violet light acts upon mixtures of carbon dioxide with water, ammonia, and nitrates. He finds that under the influence of ultra violet light carbonic acid is converted into formaldehyde, and that this activated formaldehyde polymerizes to form hexoses according to the following equation:



These equations appear to represent the first stages in the photosynthesis of carbohydrates by living plants. The activated formaldehyde also can react with ammonium salts to form pyridine, which may represent the first stage of the synthesis of alkaloids by plants. Finally, the activated formaldehyde can react with nitrates to form nitrogenous bases and amino acids and these may represent the first stages of the synthesis of proteins by plants. The synthesis of every individual biochemical substance—carbohydrate, protein, and alkaloid—from the simple inorganic materials carbon dioxide and water, nitrates, and ammonium salts, remained a mystery so long as our experience was restricted to the laboratory processes, which are all of low energy. So soon as the field of high energy chemistry is entered, and study of the series of reactions initiated by the activation of

carbonic acid with an abnormally large increment of energy supplied by light is begun, the mystery begins to disappear. Each and all of the reactions peculiar to the living plant are then found to be quite normal and straightforward—as any reaction in the normal chemistry of the laboratory.

These conclusions are of the greatest interest in themselves, for they provide an explanation of the fundamental reactions upon which all life depends. Professor Baly, however, has carried his idea of the importance of high energy products in living matter a stage further, and has suggested that phenomena peculiar to living organisms may largely depend upon these containing activated compounds, and that the vitality of any organism, apart from all question of photosynthesis, depends on light. Finally, he has reached the following important conclusion: that although the theory leads to the view that the value of all foodstuffs is largely dependent on their energy content, yet modern biochemical research has established the existence of two or three substances of especial value, to which no name of vitamins has been given. I venture no opinion as to whether this restriction will be maintained by further research, for it has no essential bearing on my argument, but the conclusion seems to be forced upon us that these vitamins are compounds in a state of high energy content, and that their remarkable properties are due to this fact and to this fact alone. By this I mean that a vitamin is not a specific chemical substance which is thereby differentiated from all other compounds associated with it, but that it is one of these compounds in a high state of chemical activation.

This is, of course, a radically new view of the nature of vitamins, and it deserves most careful consideration, since it receives direct support from the recent experiments which have shown that the anti-rachitic factor appears when various substances, including cholesterol, are exposed to ultra violet light. The simplest test of the hypothesis would appear to be to ascertain whether light is essential for the production of vitamin B, and some workers also state that yeast can produce small quantities of vitamin A, but the presence of light is not essential for its growth. Again, germinating seeds produce large quantities of vitamin C, and here also the presence of light is not essential. Therefore vitamins B and C can be produced without the action of light, and there is some evidence that vitamin A also can be produced in the dark. There are various other objections that will have to be met before the attractive hypothesis of Professor Baly can be accepted in its entirety. Whatever may prove ultimately to be the truth, the new hypothesis will at any rate stimulate fresh lines of inquiry, and this, after all, is the most important function of any new hypothesis.

POTT'S DISEASE

It is within the memory of many now living that the connexion between consumption and what was called strumous caries of bone was firmly established, but more than three centuries have passed since Dr. Jacques Dalechamps, a Norman who had settled in Lyons, described the symptoms and complications of tuberculosis of the spinal column, which has since become widely known under the name of its second founder—if we may borrow a term familiar to

historians of ancient benefactions—Percival Pott. It is to be hoped that a much shorter time than another three hundred years will see the disappearance from this country of humpbacks due to tuberculous disease in children and adolescents.

In the discussion of this subject in the Orthopaedics Section at the Bath meeting (of which a report appears at page 937) more than one speaker commented on the diminution in the number of cases of severe deformity from this cause, due probably to early recognition and treatment of the disease, as well as to improved methods of preventing and correcting deformity. The excellent results achieved by means of open air treatment, reinforced as found necessary by ultra violet light, physiological rest, and conservative surgery, were well demonstrated by the two openers of the discussion, Sir Henry Gauvain and Mr. G. R. Girdlestone, the first dealt largely with methods of correction of deformity, while the latter largely emphasized the importance of permitting the formation of an angle at the actual site of disease as a part of the cure. In this, as in so much else in orthopaedic surgery, discretion and prudence are needed to point out to the surgeon how far he may safely go.

The means set forth by Sir Henry Gauvain and others as most useful in the correction of deformity require for their safe and successful employment highly trained and experienced nurses, with a degree of skill and experience in the use of special appliances which can only be obtained and kept up in special hospitals, or at least in special wards. Not the least important of the objects sought by the Central Committee for the Care of Cripples is the provision of a sufficient number of such highly trained orthopaedic nurses throughout the country.

Since the days of Hilton there has been a general agreement that rest is the primary need in the treatment of tuberculous joint disease, and fixation of the spine has been often spoken of, but, as Dr. Osgood of Boston reminded the Section, absolute and complete immobilization, in the thoracic region at least, is impossible without too great restriction of the normal movements of respiration. The bone grafting methods of Albee and others aim at completely fixing a part of the spine extending beyond the site of disease, but a majority of speakers considered that these operations should seldom be performed in children, except as a protective means in the later stages. Some surgeons in the past—let us hope that we are wiser now—have been too apt to treat the spinal column and the skeleton in general from an architect's or carpenter's point of view, and to forget that at the ages at which most cases of Pott's disease are treated they are living, growing structures. Hence came the failure of certain methods of correction now abandoned, and similar causes may prejudice the remote results in some cases which are now exhibited as triumphant successes for methods of correction. The humpback of an old case of spinal tuberculosis affecting the thoracic region is the outcome of two main causes. The one is destruction of bone in the front part of the column, which is not compensated by the formation of new bone, and the consequent ultimate falling together of the remains of the vertebral bodies. This produces the primary kyphosis which most surgeons now regard as inevitable. The other is the cessation of growth in the anterior segment of the spine only, its posterior segment, and also the ribs and sternum and the contents of the thorax, continuing their growth, in the course of which some exaggeration of the normal bowing forward of the sternum and ribs is bound to

occur, together with a corresponding backward projection of the dorsal portion of the spine. Time will show whether the production of small compensatory curves above and below the site of the disease, which produces a straightening of the column as a whole, may not have, if carried too far, a bad effect in restricting the capacity of the chest, and, by throwing the centre of gravity forward, in making the maintenance of equilibrium difficult.

Bearing in mind the grave differences in the course of the disease in adults as compared with children, there was a practical consensus of opinion as to principles among all the speakers on such important points as bone grafting, correction of deformity, and the treatment of abscesses and sinuses. On this last point Mr. Girdlestone quoted some most significant and impressive statistics showing the deadly results of septic sinuses and the overwhelming importance of aspiration as opposed to opening and drainage, unless the primary focus is accessible to treatment. The importance of a radiological study of the whole spine for the detection of multiple foci and other often unsuspected complications, which Mr. Turbank and Dr. Osgood emphasized, should be borne in mind in early diagnosis and treatment.

Once again the importance of the part played by milk in the causation of disease was stressed by Sir Henry Gauvain's quotation of some interesting statistics of the kind of bacilli found in the cases at Alton, which showed a great preponderance, in disease of the spine, of those of bovine origin, which appear to have a selective affinity for the joints and bones of the vertebral column.

THE LEAD TREATMENT OF CANCER

THIRTY years ago Professor W. Blau Bell of Liverpool claimed to have achieved remarkable results in the treatment of advanced cases of cancer by the administration of lead preparations. The treatment was based on certain theories he had entertained as to the nature of malignant disease. Since then three papers have been published by him, the latest of these, the subject of a lecture to the Toronto Academy of Medicine which excited great interest in the lay press, has appeared in the *Lancet* of November 14th. He believes that "malignant neoplasia is a specific growth process in that it is a reversion on the part of the striving cell to the nutrient seeking proclivities of its ancestral type, the chorionic epithelium," and that "a comparison between the chemical constitution of different tissues in regard to the factors concerned in growth processes demonstrates clearly not only that malignant tumours are richer in this respect than the corresponding normal structures and innocent neoplasms of the same parts, but also that the physiologically malignant chorionic villi show even higher values than pathologically cancerous tissues. The chorionic epithelium is super-malignant." The evidence so far put forward in support of any of the propositions is, however, neither sufficient nor convincing.

We have on several occasions during the last few years given some account of the investigations in progress at Liverpool into the effect of lead upon cancerous tissues, and Dr. J. G. Adams, F.R.S., in response to our request, has written us an interesting letter (printed at page 978 this week) in which he outlines the story of these researches.

The researches have been conducted by a staff working under Professor Blau Bell's direction and

(to quote his words) "in three years about 50 private interim reports have been circulated by members of the staff to their colleagues." It is possible that in these reports much of the information on which an outsider could form a judgement is contained, but so far as we are aware they have not reached other members of the scientific world. For example, it might be easier to appraise the value of the statement on which so much is built, that malignant tissues contain lecithin and other lipins in larger quantities than do normal somatic tissues. The information hitherto given on that point is inadequate. Again, the supposition that lead salts have a greater affinity for lecithin than for any other cell constituent would require more considerable proof than has yet been adduced. And so with all the other subsidiary contentions the evidence produced is small and the conclusions disproportionately great. To call normal epithelium super malignant seems to strain language.

But, whatever may be thought about the theoretic considerations, practical interest will centre round the efficacy or otherwise of the lead treatment. A question that at once arises is, Were these lead preparations extensively tested on tumours in animals before being tried in human beings? It is understood that Professor Blair Bell administers lead in some colloidal form. That the treatment has to be carefully conducted, and that the dangers are formidable, is made plain, but we have not seen any published account of the exact mode of preparation of these lead colloids, nor, so far as we are aware, has the mode of their preparation been made known to scientific inquirers beyond the circle of Professor Bell's immediate colleagues.

Further reports are promised in the near future. Without the additional information they may be expected to contain we must suspend judgement, and for this attitude of reserve support may be found in the later part of Dr Adams's communication.

DR H H DALE

THE announcement briefly made last week that a member of the profession and a research worker in medical science had been recommended for election as one of the secretaries of the Royal Society will have been received with particular satisfaction by all our readers. It is the practice of the Royal Society to have two general secretaries—the one distinguished in the physical sciences, the other in the biological. Dr Henry Hallott Dale, CBE, MA, MD, FRCP, FRS, upon whom this honour has fallen, comes, like so many others of our most eminent men of science, from Trinity College, Cambridge, where he obtained a first class in the Natural Sciences Tripos in 1897. He completed his medical education at St Bartholomew's Hospital, and after graduating in medicine in 1903 devoted himself to research. He first held the George Henry Lewes studentship, and then went to University College, London, as Sharpey scholar. He left University College in 1906 to become director of the Wellcome Physiological Research Laboratories, a post which he held for some eight years. During its tenure he made a number of discoveries of great importance to medical science. In collaboration with Brugger and Ludwig he worked out the active principles of ergot, and showed that in addition to the alkaloid ergotamine the drug contained the two putrefactive amines tyramine and histamine. The study of histamine led to the discovery of the action of the drug on the capillaries, and this knowledge is the basis of our present conception of the phenomenon of surgical shock.

Another outstanding piece of work was the analysis of the mode of production of anaphylactic shock, and the proof that the anaphylactic state was essentially due to an abnormal condition of the plasma muscle cells. In 1914 he was elected FRS, and the Medical Research Council appointed him to the staff of the National Medical Research Institute at Hampstead, where he is head of the biochemical and pharmacological department. In recent years a series of important researches have been carried out in this institute under his direction. We may recall in particular that workers at the institute have invented or perfected methods of biological standardization of a number of important drugs, including pituitary extract and insulin. Work of this nature is not so sensational as the discovery of new remedies, but the practical value of new and potent therapeutic agents depends on the accuracy with which they can be standardized. Dr Dale has received many other official recognitions of the high esteem in which his ability, his achievements, and his character are held. He has been, for example, Croonian Lecturer of the Royal Society (1919), Hexter Lecturer of Johns Hopkins University, Baltimore (1919) and Oliver Sharpey Lecturer of the Royal College of Physicians of London (1923). We may take the opportunity of recalling that he has in many ways shown his readiness to give assistance to the British Medical Association. He is an active member of the Science Committee, and has been for several years one of its visitors to report on the work of the Association's research scholars and grantees. The Science Committee, at its meeting last week, congratulated Dr Dale on the conspicuous honour now conferred on him by the Royal Society, and accepted with regret his resignation of the office of visitor. We are glad to add that he remains a member of the Committee.

USEFUL PLANTS OF INDIA

SIR DAVID PRIN, FRS, formerly director of the Royal Botanic Gardens, Kew, and of the Botanical Survey of India, was the lecturer at an evening meeting of the Pharmaceutical Society of Great Britain on November 10th. He dealt in the main with the two plants *cannabis* and *cinchona*. *Cannabis*, from the standpoint of the botanist, had to be dealt with as a plant of very distinctive character, of interest to commerce and industry as a source of a valuable fibre and of a useful oil, and of importance to pharmacy and medicine as a source of a potent but curiously unreliable drug. In spite of the nominal separation of the plant when grown as a narcotic from the plant when grown for its fibre or its fruit, and notwithstanding the subdivision into strains on which the fibre producer found it convenient to insist, it was not possible to disentangle the history of its economic and its pharmaceutical usages. Though wild in India it was not a native there, nor was it native in other countries where it had been met in a wild state. It was one of those plants of waysides and waste places which accompanied man in his migrations. After reviewing the history of the plant, and distinguishing known facts from hypothetical conjectures as to the origin and extension of man's acquaintance with its qualities, the lecturer dealt with the question of the variation in potency of the product prepared by pharmacy for use in medicine from raw material yielded by the hemp plant when cultivated as an excisable crop. The differences between *bang*, *ganja*, and *charas* were explained, the various kinds of *ganja*, in which pharmacy was more particularly interested, were discriminated, the nature of the changes known to take place in *ganja* was described, the possibility that the uncertainty of which pharmacy had to complain might be connected with these changes was suggested, as was also a method by which the

difficultly experienced in pharmacy and medicine might be overcome. As contrasted with cannabism, cinchona involved, from the hot medical standpoint, the study of a considerable number of closely allied but nevertheless distinct species, all of them natives of various parts of the Andes, from Colombia southward to Bolivia. Only a few of these botanically distinct species were of importance to medicine and pharmacy because of the value of their bark and its contents as remedies for malaria. If in this case the history of the discovery of the qualities of the crude drug was as obscure as in that of cannabism, the history of the exploitation in succession of crown, red, grey, yellow, and the Carthagena barks was easy to decipher as a whole from the record of isolated facts available. So, too, was the history of the circumstances that led to the substitution of the cultivation of cinchona outside South America for the exploitation of cinchona within that continent. The conditions that controlled the initiation of this planting enterprise were described, and the effects upon the conduct of that enterprise of medical preference and manufacturing policy were explained. The natural genesis of what had been abused as a monopoly, and the real character of what had been complained of as a shortage of quinine, were indicated. It was further suggested that perhaps the most suitable remedy for a somewhat unsatisfactory state of affairs might be found in a sustained effort to apply the results of recent medical research. It might be found that, after all, pharmacy, by holding fast to the belief that red bark alone should be regarded as official, had been at least in fully justified as medicine was in thinking that quinine was the cinchona alkaloid on which alone reliance could be placed, that cinchona barks other than yellow might once more be grown with profit, and that the bark of *remijia* might once more come into use as an auxiliary to that of cinchona.

THE SCHOOL MEDICAL SERVICE

In another page we begin a review of the Annual Report for 1924 of the Chief Medical Officer of the Board of Education. The work of the school medical service is now an integral part of the health services of the country. Although this service is of comparatively recent origin, it has been completely established in the regard of all parties concerned by its thoroughly practical character and because its work is of high value. Of the improvement which has been attained through it there can be no question. The children are healthier, and therefore the better able to take full advantage of the education provided for them by the community. If anyone should have a doubt about this, a reference to a single point will suffice to convince even the most sceptical. Let him refer to the statements regarding cleanliness. Twenty years ago a dirty head was very common amongst the girls, especially of the older years, a clean head was, in fact, a rarity. Now in London, in a great city where the vastness of the communal life affords every facility for the transference of vermin, there has been attained a high record of cleanliness even under the strictest of standards. The attainment of cleanliness is a worthy aim, one well worth securing even at some cost, for without it there cannot be comfort, and without comfort there can be no proper education. Besides the direct and indisputable gain to the children themselves, there is an added and wider advantage. The care that is taken of the children in the schools is impressed upon the parents, so that they learn to regard a high standard of health as of value, in this way the work of education is spread widely through the community. A work such as this, so directly beneficial to the race, so wide-reaching in its effects, must claim the interest of every medical practitioner, and there is ample evidence that it does, and in an ever-increasing ratio. The study of the review will enhance this interest.

REST-PAUSES IN INDUSTRIAL REPETITION WORK

DURING the last three years the Industrial Fatigue Research Board has paid special attention to the effects of breaking up long spells of repetition work of a high kind by the introduction of a rest—usually of ten minutes' duration—in the middle of a spell. A year ago the Board published a report (No 25) by Vernon and Bedford which showed that in several factories where the system had been tried it resulted in an increase of output amounting to from 5 to 10 per cent, in spite of the diminution of working time. The observations were made on large groups of workers and extended over several months, during which it was not possible to maintain uniformity in all the working conditions, such as temperature, ventilation, and lighting, the Board decided, therefore, to continue the investigation by an intensive study on smaller numbers of workers for shorter periods. In a report just published (No 32) Mr S. W. Watt, assisted by Mr J. A. Fraser, describe their observations on three small groups of workers for periods of three weeks before and after the introduction of a rest pause. They measured the rate of production over quarter- or half-hour intervals, and noted all the causes of delay, whether voluntary or involuntary. Thereby they obtained a clear picture of the activities of the workers investigated, before and after the introduction of the pause. In each instance there was an increase in the rate of working, the improvement varying from 15 to 8 per cent, and even after allowing for the productive time lost in taking the rests the total output showed an increase of 2 per cent in two instances, though there was a minute loss (0.7 per cent) in the third instance. Hence the favourable influence of the rest pauses was not so great as that observed by Vernon and Bedford, and thus for a very good reason. The workers usually take a considerable time to get thoroughly adapted to a change of conditions, and the full effect of introducing a rest pause does not show itself for three to six months. During this time the workers, feeling more vigorous and cheerful as the result of the rests, unconsciously get into the habit of working at a somewhat accelerated speed, and of taking somewhat shorter voluntary rests from their work. The writers of the present report draw attention to the fact that the operatives were numerous in their appreciation of the rests, and often volunteered such remarks as "The work is not so depressing," and "I feel less tired at the end of the work." Several other interesting points were established in the course of the observations. For instance, it was found that the group of girls engaged in folding handkerchiefs showed fairly large fluctuations in their rate of work at the beginning of the spell, but the fluctuations underwent a gradual reduction during the first two hours, and then, as fatigue and boredom became more pronounced, they rapidly increased again till they were at a maximum at the end of the work spell. After the introduction of the rest pause the fluctuations were smaller than before, and did not show a rapid rise till the last half-hour of the work spell. Again, it was found that the operatives who worked in close proximity influenced one another's activities to a marked extent. The rates of output of the handkerchief folders who worked nearest to one another showed closely parallel fluctuations, and for these and other reasons the conclusion was arrived at that it is important to include a few specially dependable and efficient operatives in any compact group of workers, in order that, by means of emulation, suggestion, and imitation, the more indifferent workers may be induced to maintain a higher standard of efficiency. The sceptic might maintain that the indifferent workers would be equally likely to infect the efficient workers. Fortunately this conjecture does not appear to be borne out in actual practice.

VICTOR HORSLEY MEMORIAL LECTURE

MR WILFRED TROTTER, M.S., F.R.C.S., senior surgeon to University College Hospital, has accepted an invitation to deliver the second Victor Horsley Memorial Lecture next July. The first lecture was given by Sir Edward Sharpey-Schafar in October, 1923, it was on the relations of surgery and physiology, and was published in our columns at the time (1923, vol. ii, p. 739). At a recent meeting of the trustees of the fund, with Sir John Bland Sutton in the chair, when the invitation was made to Mr Trotter, it was also decided to ask the Council of the Association to allow the lecture to be given in its house. This seems very appropriate when Sir Victor Horsley's services to the Association are recalled. He was the first Chairman of the Representative Body, which he had done so much to bring into existence, was a member of the Council, and in many other ways devoted much time and interest to its affairs. In the obituary notice published last week some account was given of the large share Mr Domville had in establishing the fund, to which he acted as one of the honorary secretaries from the beginning. The trustees had regretfully to accept his resignation, on grounds of ill health, at their meeting, and appointed Dr Alfred Cox, Medical Secretary of the Association, to be his successor. Mr Domville's motive in suggesting the establishment of such a fund was that it should commemorate the services of Sir Victor Horsley to science and the empire. The committee received subscriptions from all parts of the world, and a sum of over £1,000 was collected. This sum it was decided to invest in the name of trustees, who would triennially appoint a person to deliver the memorial lecture in London. The date suggested for the lecture next July is Friday, July 9th. Mr Trotter was for many years a colleague of Sir Victor Horsley at University College Hospital.

THE PATHOGENY OF MALARIAL COMPLICATIONS

HAEMOGLOBINURIA and jaundice as concomitants of malarial attacks are familiar to all tropical practitioners, but haematuria and purpura are much less frequently seen. Dr Trabaud has recorded in the *Revue de Médecine* three cases in which collectively all these signs appeared, and he offers an explanation of their pathogeny. The first patient had haemoglobinuria followed by haematuria, with renal colic and secondary pyelonephritis, but no jaundice, the second, jaundice and haematuria with marked uraemia, the third, jaundice and purpura, with a 20 per cent reduction only in red cells. The generally accepted explanation of the symptoms is due to haemoglobinuria from destruction of red corpuscles, attempts on the part of the liver to deal with this, and the excess passing on to be excreted by the kidneys, may be modified to show connecting links between the three recorded cases with their different symptoms. In the first, owing to the rapid liberation of the haemoglobin, efforts of excretion by the kidneys led to acute renal congestion and the passage of blood. In the second, the course of the disease being prolonged for three months, blood destruction was great but less rapid, and jaundice as usual followed. The haematuria Dr Trabaud explains as due to the setting free of haemolysis from the phagocytosis of the destroyed erythrocytes by the cells of the spleen and the vascular endothelium. This haemolysis might act as a toxin on the capillaries, renal or cutaneous. If the former, haematuria would result, if the latter, purpura. He postulates a case in which the whole of the symptoms could arise in the same patient. Thus, a massive corpuscular destruction might give almost immediate haemoglobinuria, as in the first case, prompt treatment (by serum injection, for example)

might avert the consequent haematuria, and by slowing down the blood destruction permit the intervention of the liver with the production of haemorrhagic jaundice, the resultant hepatic insufficiency might then manifest itself by a toxic action on the capillaries of the kidney, leading to secondary haematuria (as in Case 2) and of the skin, with the appearance of purpura (as in Case 3). The explanation is certainly ingenious, but more experimental work will be needed before the hypothesis is converted into fact.

CONTROL OF THE FOOD SUPPLY

WITHIN recent years the press has discovered that anything sensational about food will be read with avidity, and the public nowadays gets a great deal of information about food poisoning, microbes in milk, preservatives in pears, and so on. Since items of news that excite alarm or disgust are more acceptable than quieter records to those who read the papers for amusement, it follows that the former gain larger headlines and much more prominence than the latter. The publicity devoted to certain defects of the national food supply has probably given the ordinary reader a wrong impression of food hygiene in general because he hears, as a rule, only one side of the question. But though the scales of justice have not been held with steady hands, the cause of hygiene has benefited from the highly seasoned paragraphs on which the newspaper public is fed. This was brought out by Dr W. J. Howarth, medical officer of health for the City of London, in his recent Chadwell Lectures on the "Control of the food supply," when he acknowledged the debt of the public health official to journalistic presentation of food problems. Thereby the public has been prepared for the more stringent regulations about food promised by the Ministry of Health, and the work of medical officers of health and other officials has been received with something akin to sympathy. In his two lectures Dr Howarth gave a general review of the present state of affairs with regard to the control of food supplies in this country, and expressed the view that the position generally can be regarded as reasonably satisfactory, though there is room for improvement in certain directions. Within the last forty years great changes in food supply and distribution have been witnessed, and no doubt the better health of the masses should, at least in part, be attributed to these reforms. He laid special stress on two factors which have contributed to improvement—namely, the greater amount of imported food which now reaches this country, and the extension of the multiple supply system of shops and restaurants. Increased importation has led to increased supplies, this has brought prices down and allowed even the poorest family to vary its daily diet. The spread of the multiple shop system has resulted in a marked falling off in the sale of sophisticated foods. Large businesses with many branch establishments depend for their prosperity on maintaining a good name in all the districts they serve, and not one of the branches can be successfully challenged as being in default without this reflecting on every one of the company's other interests. Big firms buy in large bulk, engage expert buyers, and retain skilled chemists. They act as central distributors to retail shops which are maintained under the same central control. Dr Howarth described several instances in which the control of food supplies might advantageously be made more strict. We select one particular passage in his lectures because it deals with a question of pressing importance. He argued that present methods of controlling pasteurized milk are unsatisfactory, since only persons who are licensed may use the official term "pasteurized milk," but this regulation does not deter unlicensed persons from treating milk by some form of pasteurizing process and selling it in bottles under some fancy name such as

¹ *Revue de Médecine*, 1925, No. 6, p. 470.

"heat treated" milk, or by any other designation so long as the official plan is avoided. A considerable amount of milk in London to day is more or less efficiently pasteurized, though sold under unambiguous titles, but no standard of cleanliness is guaranteed, neither is there a guarantee that the milk has not been heated several times. Such heated milk is often sold as "fresh milk," a misrepresentation not easy to detect. The regulations should be altered, and it should be made an offence to treat any milk by heat without declaration on sale, and if to sold compliance with the requirements as to satisfactory pasteurization should be made compulsory.

BRITISH INSTITUTE OF RADIOLOGY

IN the account given of the Congress of Radiology in London at the beginning of last July mention was made of its international aspect (July 11th, p. 75), a matter which was emphasized also by several speakers. A practical step was taken when Dr. Robert Knox, chairman of the executive of the British Institute of Radiology, made a suggestion at the concluding meeting of the international delegates that some form of international club should be established, and extended an invitation to any member of a recognized foreign radiological society who might visit London in the future to make use of the facilities of the institute in Welbeck Street without financial obligation. He expressed the hope that some similar arrangement would be made in each country throughout the world. The purchase of the lease and the essential furnishings of the institute building have absorbed the available capital from the Mackenzie Davidson memorial fund and from private donations. Part of a bank mortgage remains to be cleared, and donations of money, books, and diagrams will be welcomed. The Congress proceedings are being published in the *British Journal of Radiology*, preliminary reports appeared in August and September, and in the October number are included the papers read by Dr. C. Regaud of the Paris Radium Institute, Professor A. Bayet of Belgium, Dr. H. H. Herg of Frankfurt-on-Main, Sir Frank Colver, and Dr. T. W. Pearson of Baltimore. The complete set of special Congress issues of the *British Journal of Radiology* may be obtained from the secretary of the institute at 32, Welbeck Street, W.1, price two guineas.

THE REGISTRAR GENERAL'S "STATISTICAL REVIEW"

WE announced a few months ago (August 8th, p. 277, and August 15th, p. 301) that the Minister of Health had issued a circular to public health authorities, boards of guardians, and Insurance Committees, stating that the Registrar General was in a position to make a special offer of the two parts, "medical" and "text," of his annual *Statistical Review* at the price of 12s. 6d. a year instead of £1, on condition that the subscription would be continued for five years. Mr. Vivian informs us that although the response has not reached the expectation formed, the degree of success realized has been such as to enable him to obtain the Treasury consent to the continuation of the arrangement. Subscribers will accordingly be furnished with copies of the volumes for 1924 and future years within the subscription term at the reduced price. Mr. Vivian asks us to state that it will not be possible to keep the subscription list open indefinitely, and that the higher price will be charged to all purchasers who do not enrol themselves as subscribers before the list is closed. Early application to him at the General Register Office, Somerset House, W.C.2, by all those who, not having already subscribed, desire to obtain the benefit of the reduced price, is therefore advisable. In the circular issued by the Minister of Health it was pointed out to public health authorities that they may legitimately cut of their funds

provide the volume for their medical officers, and the same principle will apply to other classes. In commenting on the proposal we observed that we believed it would not fail to command hearty approval, adding that no municipal library, and no library of any institution or organization relating to health and disease, could be complete without having the reports on its shelves. Every committee and every official dealing with any section of health administration ought to have immediately available the volumes both of tables and text. They will be found rich in suggestion as to many problems affecting preventive work. The principle of supplying the volumes to subscribers at a reduced price appears to be sound. We hope the response will be so general that it may be possible to reduce the subscription price still further at the end of the quinquennium.

INTERNATIONAL TREATMENT OF SEAMEN SUFFERING FROM VENEREAL DISEASE

THE Minister of Health announces (Circular 634) that an international agreement relating to the treatment of venereal diseases amongst seamen has recently been ratified by His Majesty on behalf of Great Britain and Northern Ireland. Under this the contracting parties undertake that facilities shall be available, at each of their chief sea and river ports, for the gratuitous treatment of merchant seamen, without distinction of nationality, and such facilities are to include out-patient treatment, in-patient treatment when the medical officer of the treatment centre considers it to be necessary, and sufficient medical supplies to carry out necessary treatment during the voyage to the next port of call. The agreement also requires that each patient shall be supplied with a card for providing a brief record of the diagnosis of his case, the treatment given, and the treatment to be followed during the voyage. Apart from the provision of medical supplies for treatment during the voyage to the next port of call, the necessary arrangements are already in force in this country, and the Minister will be prepared to approve the supply to a seaman patient for his treatment during the voyage to the next port of call of such drugs, dressings, and appliances as the medical officer of the treatment centre considers necessary, and as, in his opinion, can safely be used by the patient himself. A list of treatment centres in the chief ports throughout the world, prepared by the British Social Hygiene Council, is enclosed with the Ministry's circular.

ROYAL MEDICAL BENEVOLENT FUND'S CHRISTMAS GIFT

IT has been the practice of the Royal Medical Benevolent Fund for many years to present to the annuitants and some of the most necessitous grantees a Christmas gift of 25s. The treasurer of the fund now makes an appeal for £350 to keep up this practice. Last year the remainder of the Dinner Fund raised in 1913 was used for the purpose, but this reserve has been exhausted, and though subscriptions are coming in satisfactorily the committee has not in hand the amount necessary to make, this coming Christmas, the gift to which the recipients in former years are no doubt looking forward. It is a generous and friendly act, and we have no doubt that many readers will wish to make its continuance possible. Subscriptions may be sent to the treasurer, Sir Clunton Symonds, K.B.E., M.S., at the office of the fund, 11, Chandos Street, London, W.1.

THE twelfth Memorial Huxley Lecture will be delivered by Sir Oliver Lodge, F.R.S., on Thursday, December 3rd, at 3 p.m. in the out-patients' hall of Charing Cross Hospital. The subject is "Recent advances in science in their relation to practical medicine," and medical men will be admitted without tickets.

CUMBERLAND INFIRMARY PAST, PRESENT,
AND FUTUREBY
NORMAN MACLAREN, M.A., M.B., B.Ch. Cantab.,
F.R.C.S. Eng.
Surgeon to Cumberland Infirmary

In 1828 Carlisle was a very different city from what it is to-day. At that time only a few years had passed since a broad turreted wall had enclosed the city. On the south stood the castle with its frowning battlements, and on the north the city, named in accordance with the direction to which they pointed—the English, the Scottish, and the Irish—were shut at sunset. Armed sentinels kept watch and ward over them as if still threatened by the Scottish foe. The military parade gave life and colouring to the otherwise passive character of the city, the demizens of which were roused from their slumbers by the call of the bugle horn, and after the labours of the day were reminded of the hours of repose by the evening tattoo. To the traveller approaching from the south what a pleasant picture of a city, when the sun shone fair on Carlisle, and that wall had no other environs than the meadowed plain, the converging mountain streams and the knolled and wooded eminences beyond. The mail coach still plied through Carlisle, taking four days from Edinburgh to London, God willing. Ten years were still to pass before the first railway line from Newcastle entered the city. For only the past nine years had transport by water been effected by the ship canal to Port Carlisle, memories of which still remain near us in 'Port Road' and the 'Joiner Sailer Inn'. With increasing population the character of the city was becoming changed. Devoid of archaeological thought as well as architectural taste, persons guided only by the hope of pecuniary advantages had begun to erect wretched buildings in close proximity to the gates, and thus marred not only the beauty of the border city, but its well known natural salubrity. It was indeed fortunate that at this time there were in Carlisle two medical men Dr Heysham and Dr Thomas Barnes, to whose foresight and wide public spirited outlook the inception of the Cumberland Infirmary is due. Dr Heysham, the author of the *Carlisle Tables of Mortality*, had lived in the city since 1778 and had paved the way by forming and working at the Carlisle Dispensary since 1810. He had also materially helped in the work at the fever hospital or house of recovery since it was established in 1820 in a house on the outskirts of the city long since demolished to make way for the present station. Dr Thomas Barnes, who had come to Carlisle in 1817, took a very active part in establishing the Cumberland Infirmary and many of the early facts in connexion with its foundation are gleaned from a small book entitled *The Founding of Infirmarys*, which he published in 1830 to further this worthy cause.

It may not be irrelevant to take a general view of the medical establishments already provided for the sick poor of Cumberland and Westmorland. In 1830 Carlisle had a dispensary and fever house. About 3,000 patients were annually registered in the dispensary. The fever hospital was confined to patients with infectious fevers—mainly typhus fever, about 60 patients

were admitted annually. At Whitehaven there was also a dispensary and fever house, nearly 3,000 patients were annually admitted to the benefits of the former charity. The fever hospital was open only for the reception of persons affected with infectious fevers during 1829 nineteen persons were admitted. The subscribers to the Whitehaven dispensary had for many years a small fund which they hoped would one day assist them in establishing an infirmary.

The proceedings at Carlisle gave impulse to their generosity and compassion. Soon after the public meeting which will shortly be mentioned a meeting of the subscribers to the Whitehaven dispensary was held at Whitehaven and it was resolved to set afoot a subscription for the establishment of a hospital. A house and garden in Howgill Street were purchased, and the premises were converted into an infirmary, fever house, and dispensary.

At Kendal there were a dispensary and lying in charity from which between one and two thousand patients annually received medical and surgical aid. Between 1828 and 1830 a house of recovery for the reception of persons affected with infectious fevers was also established at Kendal. Cockermouth had a dispensary which was conducted on an economical plan and was productive of much good. The surgeons of the town attended the poor gratis, and supplied them with medicines,

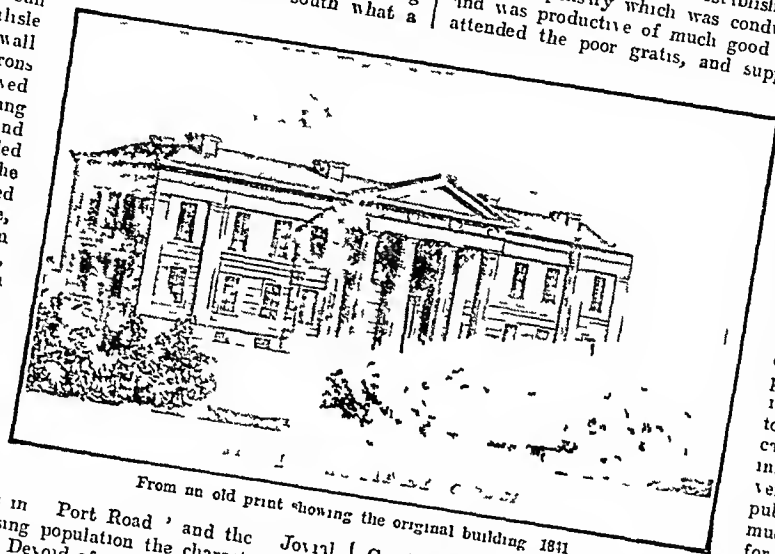
the expense of which was defrayed by subscription. Between 1828 and 1830 a dispensary had been established at Workington and fully proved its utility to the indigent sick of that town and neighbourhood.

It had long been the custom in various parts of Cumberland to send patients who required institutional treatment to the Edinburgh New castle, and Dumfries infirmaries and it was very evident that a public infirmary was much needed, not only for the necessitous sick poor in Carlisle, but also for those of whom this object in view.

Cumberland and Westmorland. With this object in view a meeting of a few friends and promoters of the establishment of a general infirmary in the county of Cumberland was held at Carlisle on November 27th 1828 with Mr John Hodgson, the mayor, in the chair. The following resolutions were unanimously adopted.

- 1 That it is in the opinion of this meeting that an infirmary for the reception and relief of the sick poor would be highly beneficial to the county of Cumberland.
- 2 That convinced of the advantages that would result from a county infirmary the gentlemen present deem it eminently entitled to their patronage and support and will use their best endeavours to promote its establishment.
- 3 That as the late Thomas Parker Esq. of Warwick Hall has bequeathed the sum of £1,000 towards carrying the above object into effect and as Anthony Longlake Esq. has offered to give the sum of £500 and the Ladies Committee of the Carlisle Bazaar have signified their intention of giving the residue of their Fund amounting to £380 for the same purpose the present appears to be a fit and proper time for setting on foot this work of charity.
- 4 That a provisional committee be appointed to carry forward this business.

A public meeting was held at the Carlisle Town Hall on August 24th 1829 and it was unanimously resolved that a public infirmary should be established and that a committee should be appointed to obtain money to choose a site and plans for building and formulate regulations. At a general meeting held at Wigton on January 18th, 1830, it was resolved that the land situate near Caldcoates Carlisle, which had been approved by the committee should be purchased, and that the

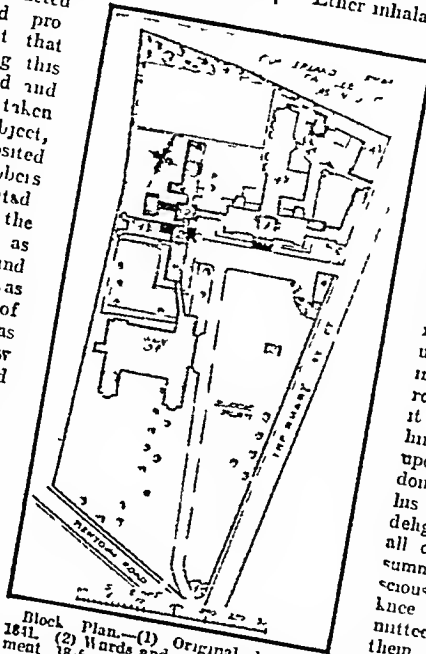


From an old print showing the original building 1841

CUMBERLAND INFIRMARY

Earl of Lonsdale the Lord Bishop of Carlisle, Sir J P G Graham, Bt, the Rev Sir C J Musgrave Bt, and Sir Wilfrid Lawson be appointed trustees to the institution

The plan submitted by Mr Tattersall of Manchester was considered the best and was adopted at a general meeting held at Carlisle on May 15th, 1830. The foundation stone of the infirmary was laid on October 1st 1830. In especial Provincial Grand Lodge of Masons was held for the purpose by Sir J R G Graham, Bt, M P, Provincial Grand Master of Cumberland and the Dean of Carlisle and the clergy, and the mayor and aldermen. The Bishop delivered in appropriate prayer, a vase containing coins, pavers etc was deposited in a niche of the stone and over it is placed a leaden tablet bearing an inscription. Sir J R G Graham then laid the stone according to the ancient forms of Masonry, and afterwards addressed the assembly. The record states that this interesting and solemn spectacle excited deep and general interest. An immense multitude of all classes were assembled and conducted themselves with great order and propriety. It is a matter of regret that during the Thursday night following this ceremony the foundation was removed and the urn containing the coins, etc, taken away. Plunder, no doubt was the object, but the whole of the coins deposited must have been woefully disappointed. Great force would be required to raise the stone and to separate it from the rest, as four tonnes of very large size were bound together with iron clamps. The stone was relaid by the workmen in the presence of the writer of the record, Dr Thomas Barnes on November 18th, 1830. A few coins and papers were first deposited, and the plate which had been left at the building was replaced. During the excavation in 1908 the foundations of the north east corner of the old house were found to be covered with a large amount of cement, evidently placed there to prevent further puffering but the plate was not seen.



Block Plan.—(1) Original building (2) Wards and out patient department 18.6 (3) Operating theatre and nursing home 18.5 (4) Ward 1908 (5) New out patient department in course of construction.

The building was 134 feet long, and was divided into five compartments. In the centre was a tetrastyle portico of the Doric order, and in imitation of the Choric monument of Thrasyllus and Thrasyvelles in the street of Athens. The portico with its Pausanias, under the south side of the bold extended flight of steps in front led to the entrance to the infirmary. The principal and end fronts were built with white freestone from Chalk Quarry, rubbed and polished. Chalk is considered the handsomest and most durable stone in the neighbourhood of Carlisle. The building was so contrived that it might be enlarged later at a moderate expense without lessening its architectural uniformity, the end fronts of the first erection being made to form one wing of the future flank elevation.

The early days of the charity were not all plain sailing through want of funds and misunderstandings with the contractors and it was not until 1841 that the edifice of the Cumberland Infirmary was complete and it became necessary to appoint the staff. An able physician was readily found in the person of Dr Thomas Barnes but owing to difficulties with local medical practitioners an influential deputation communicated with Mr Scott of the London Hospital with a view to the selection of a competent surgeon for the institution and on his recommendation Mr William Bousfield Page was appointed.

Describe his first journey to Carlisle Mr Page graphically records the hardships which had to be encountered when travelling by the mail coach. He narrates: "Forty three years have passed since almost frozen I arrived from London at the Bush Hotel in this city on a mid winter afternoon having travelled in a biting frost outside the coach from Preston. All sensation in my lower limbs was gone by the

time I had got over Chap I tell and when I had taken off my boots I had to look to see whether my feet were still in them.

His first visit to the hospital he describes as follows: "I bring to mind my first visit to the hospital an old man and woman occupying the kitchen and other rooms every room except the first patient came on the second day after my arrival—a course provided with instruments of my own and having secured the service of a Miss Gamp and with the able and ever-ready assistance of Dr Barnes and the help of an apprentice of the drugists of the town, I operated with double flaps in the middle of the thigh. In less than a fortnight the limb was firm and entirely healed. The case was simple and satisfactory except in one particular. There were no the days of anaesthesia and no small difficulty was experienced in completing the operation from the violent struggling of the boy and the inefficiency of our power to control him during its performance."

Ether inhalation was used at the Cumberland Infirmary within a few days of its being first employed in England for anaesthetic purposes. Mr Page records.

It so happened that a patient of mine was consulting Mr Liston in London and at the end of a letter to me respecting the patient he told me how he had just operated on a person rendered insensible to pain by ether and he described roughly the manner in which it was employed. When I went to the infirmary the house-surgeon and I went to work and having improvised a gum-bottle sponge and tube with the ordinary medicinal ether we got the pupil to allow us to experiment upon him. He was seated in an armchair from which he very soon rose like a man uproariously drunk, and it was only by the house surgeon tumbling him over on to the floor and then lying upon him that he was able to prevent his doing mischief to himself or to others until his consciousness returned and we were then delighted to find that he knew nothing at all of what had happened. Dr Barnes was summoned and while she was quite unconscious a young woman was cupped over the knee and Dr Barnes hastened to the Committee which was sitting as he wanted them to come and see the then wonderful sight.

While examining the early annual reports of the hospital I have come across one other fact of interest, especially in these days of internal secretions—namely, that Thomas Addison, F.R.S., of Guy's Hospital, was an annual subscriber to the hospital of one guinea for the last sixteen years of his life—from 1844 to 1860. He was a friend of Dr Goodfellow, Dr Lonsdale, and Mr Robert Brown—all members of the staff in those times. Throughout his life he retained a very warm regard for his family home at the Banks near Lanercost. One likes to think that during his visits to the North he may have found time to accompany his friends round the Cumberland Infirmary and discuss with them the problems of the diseases of the lungs on which he did so much, and possibly may have seen a case of anaemia with pigmentation, which helped him to correlate the symptoms of the disease with which his name will ever be associated. He now rests in the churchyard of the Lanercost Abbey while inside the church is a marble slab with an inscription to his memory. I may here record that Guy's Hospital has as a result of a letter in the BRITISH MEDICAL JOURNAL (February 9th, 1924, p 250), undertaken to provide for the upkeep of his altar tomb in perpetuity.

For thirty years the work of the hospital was carried on in the original building but by the end of the sixties it was evident that further accommodation was urgently needed. Two factors were no doubt predominant in producing this want—namely (1) that Carlisle was becoming a large railway centre with the necessary increase of population, both temporary and permanent (2) the publishing by Lister of his articles on antiseptic surgery in the *Lancet* of 1867, which caused a new

era to arise in the surgical world Carlisle may, I think, rightly claim some credit in helping the "master mind" in elucidating the principles which revolutionized surgery and have made his name immortal. I quote from Dr Wiensch—*Lord Lister, his Life and Work*.

The Carlisle authorities had for many years made use of carbolic acid to abolish the odour of sewage. Lister heard of its success, and went to Carlisle to see the process for himself. Lister concluded that it prevented the odour by killing the cause of putrefaction—namely the microbes. Other surgeons also knew of this power of carbolic acid to decrease faecal matter and they had used it in offensive wounds for that purpose. But they had not understood the mode of its action; they used it unintelligently and consequently with very varying and sometimes harmful results. Lister used it intelligently. He used it before the faecal matter arose; he used it deliberately to kill the causes of the condition that gave rise to the faecal matter.

In the Cumberland Infirmary matters were no better or no worse than in the other hospitals of the kingdom. Mr Herbert Page, who knew the hospital in those days, writing to me early this spring, says:

As to the surgery in the Cumberland Infirmary before Listerian days the less now said the better. With its small wards it was a hot bed of unceasing pyaemia, and it was no wonder that P. M. Bradwood, one of the house surgeons, should have gained the Astley Cooper Prize of the Royal College of Surgeons of England for 'Pyaemia' in 1863.

Ultimately with the sanction of the governors a wing containing accommodation for seventy-two beds in four large wards was built on the west side of the old hospital, and also a block on the east side containing the dispensary, waiting rooms, and consulting rooms for outpatients. These were formally opened in September, 1877. With the completion of this extension the hospital afforded accommodation for one hundred patients, at the same time there were corresponding changes and increases in the staff—medical, surgical, nursing, and domestic.

Further evidence of change of view of disease at this date is shown in the encouragement of fresh air and sunshine in treatment, by the establishment of the Cumberland and West morland convalescent home at Silloth in 1862.

Miss Enderby, who still lives at Clifton (Bristol), was appointed matron of the infirmary in 1883 and made many good changes, and Miss Allen in 1888 further improved matters by enlarging the staff of probationers to twelve, thus starting the training school for nurses. In 1894 the accommodation for nurses was increased by additions above the out-patient department, and a private nursing branch was instituted, which continued for many years. When the staff was augmented in 1896 arrangements were made for regular lectures and examinations. Of structural alterations the most important took place in 1899, when the operating room, which is still in daily use, was built and equipped at a cost of £2,000. The laundry, mortuary, and post mortem room were built in separate blocks.

It was during these years that the pioneer work which followed on Lister's revolution of surgery was faithfully and zealously carried out, and we of the present day owe much to the skill and initiative of those whose lot it was to carry the art of surgery and medicine into then untrodden paths.

In 1908 a new kitchen and nurses' wing—named the Barnes Wing, after the late Dr Henry Barnes—were built, also additional ward accommodation in the King Edward VII Memorial Wing, containing a male medical ward of thirteen beds, and on the first floor a children's ward to accommodate twenty-four cots. The heating and water supply (hot and cold) of the hospital was reorganized and the steam laundry erected near the boiler house. It is indeed fortunate that these additions were complete before the war, for they without doubt greatly facilitated the carrying out of the increased work of the hospital in those trying days, when it provided treatment for 669 wounded soldiers, 559 munition workers, and 84 discharged and disabled soldiers. When the railway accident occurred at Gretna on May 22nd, 1915, 180 cases were treated, 78 remaining as inpatients.

The Present

The central block, or "Old House," remains much as the architect left it in 1841, with its four imposing columns and steps at the central entrance. The wards have all been removed

from this portion of the building, and only the ward name boards over the doors remain to remind one of the early benefactors of the hospital—Parker, Bishop Percu, Rulton, Huddleston, Atwick, Lamb, Chambers, and de Whelpdale. The cellar and ground floor are now given over to stores, rooms and administration, secretary's office, and residents' quarters. The first floor temporarily accommodates the x-ray and electrotherapeutic and venereal departments until the new out-patient department is built.

The present out-patient department and dispensary, which have been in constant use since 1876, are situated on the east of the central block, connected with it by a corridor. They will shortly be vacated for the new out-patient department now in course of construction, and it is intended to remodel this portion for the venereal department. The wards are placed to the west of the main block, and consist of two stores served by a centrally placed electric lift for taking stretcher cases. On the ground floor are the male wards (George Moore and Page), north and south of the connecting corridor, each containing eighteen beds, with one side ward and the additional annexes. In addition there is the male medical ward (King Edward Ward) of thirteen beds, built in 1908. On the upper storey are corresponding female wards (Dean Close and Princess Louise), with the children's ward of eighteen cots in the King Edward block.

The operating theatre, opened in 1899, is connected with the ground floor by a corridor opening behind the lift.

The nurses' home—"the Barnes Wing"—built in 1909, is situated behind the centre of the "Old House," and is approached by a glass covered conservatory on the first floor. There is bedroom accommodation for forty-eight nurses, with dining hall, sitting room, and lecture and reading rooms on the ground floor. Between the "Old House" and the nurses' home on the ground floor is placed the kitchen, which has service both to the hospital and the nurses' dining room. The domestic staff are housed above the present out-patient department.

The present number of authorized beds in the hospital is 111, with six extra beds on balconies during the summer months.

The Future

In 1919 the governors sanctioned a scheme for the further extension of the hospital and appealed for funds, £30,000 was raised, including a grant of £1,200 from the Joint War Committee of the British Red Cross Society and the Order of St. John of Jerusalem in England.

Eight proposals were included in the programme of extension: (1) new out-patient department, (2) pathological laboratory, (3) electric lift, (4) new operating theatre, (5) isolation accommodation, (6) renovation of "Old House," (7) additional ward accommodation to increase the hospital to 160 beds, (8) additional accommodation for doctors, nurses, and servants. The increased cost of building delayed the proposed work, but in 1924 the lift was installed at the west end of the hospital and the plans of the new out-patient department were adopted. Building operations in the grounds south of the hospital were commenced in the spring of this year.

When this building is complete, which I hope will be during my year of office, the whole of the out-patient departments with the exception of the venereal, which is going into the old out-patient rooms, will be housed in one block connected to the main building by a corridor under Page Ward. This arrangement, it is expected, will materially facilitate the administration, as the various units of the hospital will then radiate from the main staircase and lift. The remaining six proposed extensions are very necessary to equip the hospital efficiently for the work that it is being called upon to undertake, and it is only the question of ways and means that prevents them being put in hand at once.

The thirty-fifth Congress of the French Association of Surgery will be held at Paris, under the presidency of M. J. L. Faurc in October, 1926, when the following subjects will be discussed: Pathology of the semilunar cartilages, introduced by MM. Mouchet of Paris and Trucner of Lyons; Conservative operations on inflammatory lesions of the kidney, introduced by MM. Tuffier of Paris and Chauvannaz of Bordeaux; Treatment of active gonococcal arthritis, introduced by MM. Mondor of Paris and Michel of Nancy.

FIRST INTERNATIONAL MALARIA CONGRESS

The First International Malaria Congress was held in the Exhibition Palace at Rome from October 2nd to 6th last.

The delegates representing various Governments and societies were officially welcomed by Senator Cicerone, in the name of the King of Italy, and the Congress was formally opened by His Excellency Benito Mussolini, the Prime Minister, on October 4th.

At the first meeting the French delegate, Dr. A. Michaux of Paris, presided at the lecture given in place to Colonel Jancz, the director of the Institute of Hygiene.

The following day the Italian delegate, Dr. G. Bignard, presented a paper on the treatment of malaria.

NAME on some of the pathologic changes occurring in
malaria, the latter differing from the former in regard
ing these is degenerative and proliferative, never of an
inflammatory nature.
Professor Victor Schilling (Germany) brought forward
evidence that the blood picture in malaria is by no means
so definite as the textbooks would lead us to believe, but
that, in other diseases, there is a "leucocytic curve," i.e.,
changes with in uncharacterized prodromal phase, a reaction
phase of combat phase of diminution of defense or
phases (mononucleosis), and a phase of healing, (as in
phlebotomy and lymphocytosis). In malaria the changes are
healed, rapid and tended to overlap.

Epidemiology
Group of

[illegible]

Amongst other papers communicated to this section was one by Professor Lachme Sargent, which led to fruitful discussion, it was concerned with the importance of having at command several methods of control which might be called for in combination, such as treatment of a prophylactic administration of quinine, education of the family, and so on. Dr. Kähler dealt with the question of the affected Pile time in particular. Professors Nocht, Schuller, Mühlen, Seidenreich, Brumpt, Colonel Jané, and Dr. Bentley were among those who took part in the subsequent discussion.

In the section devoted to Statistics Dr. Abtner dealt with malaria in the

Statistik

Statistics

In the section devoted to propaganda and statistics Dr Abtineer dealt with the prevalence and effects of malaria in the French colonies, and J. S. or Khin, with malaria in Sweden, showing that that country is an example of "anophelism without malaria," though in his opinion zoophilism alone did not afford an adequate explanation. Dr Ahmed Nihney Bey of the Public Health Department, Cairo, presented a report on the work of the Egyptian Malaria Survey for the last nine years, giving the results of the measures adopted. A communication in which the conditions, is, regards malaria in the Soviet Republic, received by Professor Nuznoski, and a paper on malarial prophylaxis in the Suez Canal zone, by Dr P.

The section devoted to malaria in the Soviet Republic, received by Professor Nuznoski, and a paper on malarial prophylaxis in the Suez Canal zone, by Dr P.

Department

The section dealing with the all kinds of encephalitis and
infectious therapy was marked by a general interesting com-
munication, starting with a general survey of the former
and their etiologic preparation, by Dr Kaufmann of
Switzerland and followed by a paper by Dr Dicks and
Colonel Jaffe jointly on the relative therapeutic effects of
quinine, quinine, and encephalitis, in which they showed
that the curative effects were the same for all forms of
infectious, and that, except for the relative cardiac degree
of action of the two, there was no difference in toxicity
on the two papers, together with one by Profe or Asch
on the personal experience with one of the specific treatment
of malaria, were discussed by Professors Griesa, Schaffner,
Mullens, Peroni, and others.

Pathology

Pathology
A paper by Prof. or Neuf (Cagliari) on complement in malaria was of more scientific than general interest. He quoted Rubezky's observation that there was a marked fall serum of complement during a malarial attack and stated that the same held good in chronic malaria. He suggested that this might explain cases of active malaria without clinical relapses. Papers were contributed by Prof. or Dürk of Munich and Prof. or Bürginn of

The Parasites
one by the

The first paper was one by the President on the unity or plurality of the parasites of malaria. The record changes in types of parasites and the fact that in the blood of I was found when it was relapse occurred after their return home, the large amoeboid forms predominated or, perhaps, were the only ones found. On the other hand, it was demonstrated that differences between examples of the same type (such as *P. falciparum*, and *P. malarie*) were equally marked. Further, the different times of evolution, though practically constant for each species, the invulnerable in mission of the same type to highly susceptible subjects, therapy is evidenced by the effect of arsenical preparation to support the idea of pluridity. Professors Mahlenz (Hamburg), Casio (Rome), Brumpt (Paris), Pitt lugn (Madrid), and Swellingel (Amsterdam) took part in the discussion, all favoring pluridity, while the last named, having found pluridity by experiment, suggested the use of these for a final diagnostic method in cases where blood examination failed either to find or determine the nature of the infection. Dr. Sidiac Buen (Spain) read a paper in support of the pluridity theory on epidemiological grounds.

The Parasites

A second subject which brought up the question of diagnosis is that designated "Therapeutic Use of Malaria." Professor Auerbach (Vienna) presented a paper in support of the therapeutic use of malaria in various diseases. He discussed the value of malaria in the treatment of certain nervous diseases, particularly in the case of hysteria and neurasthenia. He also mentioned its use in the treatment of certain forms of epilepsy and in the management of certain types of insanity. The paper was well received and led to a lively discussion.

Therapeutic Use of Malaria in Psychiatry

Therapeutic Use of Malaria in Psychiatry

A second subject which brought up many interesting points was that designated malarial fever. In this section Professor Augusto Minio presented a paper on malaria therapy in psychiatry, in which he pointed out the importance of blood controls, discussed the use of quinine and its uses of general paralysis recovered such a degree of stabilization as enabled them once again to resume family life and social responsibilities. He uttered a warning, however, against too great optimism in regarding these anchored patients as cured and not merely remissions.

The possible treatment of malaria as a mordant for specific medication mentioned, and a proposal put forward for it employment in other cases of cerebro-spinal syphilis and in non-psychic mental disease such as dementia praecox, confusion of mind, and lethargic encephalitis. Colonel Juncos and also Professor Mahkens pointed out the risks of the desferal molarion method especially about the dangers substitution might be moved with the dangerous substance tetra- (though Profes or Gharum of Rome were both) partly on this account, and partly because relatively of patients objected, perhaps mainly to direct inoculation employ infected mophics, the results, more or less apparent to be more satisfactory than when the direct blood inoculation method was used.

A paper by Profes on Neuropathology indicated a view of more recent researches of the same kind.

The section on malarial fever concluded.

... ..

Concluding Session

The final session of the Congress dealt first with the work of the Malaria Commission of the League of Nations, briefly detailed by Dr. Luzzatto, as Chairman of the Commission. This was followed by Professor Pittaluga, who discoursed on the factors of variability of endemic malaria in Europe, mentioning in particular the transfer of the virus by movements of population, and its corollary the transfer of people into an endemic area, the modification in domestic life and land cultivation in relation to man and animals, and insufficient quinine.

The concluding paper, by Professor Nocht, on new researches on the pathogenesis of blackwater fever, is of great interest at the present time in connexion with British work in Rhodesia. He showed that by injecting dogs with haemolytic serum and the same serum in combination with quinine it is the amoebocytes alone which bring about haemolysis, but that if haemolysins are present their effect is greatly stimulated by quinine. Thus, as Professor Nocht observed, does not, of course, prove that blackwater fever is produced in the same way, but it certainly indicates a line of research worth following up.

Among the motions unanimously adopted at the termination of the Congress was one brought forward at the instigation of Dr. Fernando Perez, the Argentine Minister in Italy, recommending the creation in Rome of an International Malarialogical Institute.

THE HEALTH OF THE SCHOOL CHILD

In the Annual Report¹ for 1924 of Sir George Newman, the Chief Medical Officer of the Board of Education, are correlated the reports of the medical officers of a great number of local education authorities, and a number of observations and suggestions are added, pointing out possible lines of advance.

The school medical service is a great piece of team work. Parents, teachers, attendance officers, care committees, nurses, and the school medical officers all combine together to ensure the success of the work, and there is everywhere evidence that they are really working together. Prejudice has gone, respect for and readiness to co-operate with the work is now established. Last year every education authority in the country fulfilled its statutory obligations with regard to the medical inspection of the children committed to its care, 2,420,305 children were inspected, most of these were at routine inspection in the three age groups: entrants, children 8 years of age, and children 12 years of age. Special examinations desired by teachers or parents were made in 722,744 cases. Since there are over five million children in the schools, that means that half of them were examined during the year.

Personnel

To do this work there are 1,844 medical officers, of whom 821 are whole-time, the remainder being private practitioners. The total does not include many who do work for the schools indirectly through arrangements with hospitals, as, for instance, in school clinics. Besides these there are 511 dentists. The figures include 289 women doctors and dentists. The nurses number 4,869. The work of the nurses is very valuable. Their immediate contact with the children in their homes contributes largely to the popularity of the work of the school medical service with the parents. The work done by the many voluntary workers on the school care committees, the efficiency of the school attendance officers in discovering the causes of absences from school, and the increasing powers of observation of the teachers, cannot be put down in figures. It is sufficient to remember that without the work of these three groups the medical personnel would be well-nigh valueless.

Medical Inspection

The report has an added value over those of earlier years, for there has now come into use a revised edition of model tables for the use of the local education authorities in the

¹ The Health of the School Child. Annual Report of the Chief Medical Officer of the Board of Education for the year 1924. London: H.M. Stationery Office, 1925. (Pp. 189. Price 1s. 9d. net.)

presentation of the chief facts and findings in connexion with the inspection and treatment of the children in the schools, so that the national figures are comparable on a common basis. Of the children, 20.2 per cent in the three age groups were found on inspection to require treatment. Besides these many had defects which required them to be kept under observation. The table giving a classification of the main defects shows that there has not been an appreciable change since last year, save in two respects. There is an increase in the number of cases of "malnutrition," and in nose and throat diseases. The increase in the latter conditions is thought to be referable to the climatic character of the year, in the former there is some evidence that it is due to the general stiffening up of the standard of the normal. If there be any definite evidence of a decline it is in the nutrition of the very young children.

Personal Cleanliness

The revolution in cleanliness that has been accomplished can scarcely be realized except by those who took part in the earliest school inspections. When these began in 1902 in many schools scarcely a girl was free from infestation, and vermin could be seen dropping from the heads of the older girls as they stooped over their lessons. To-day the standard of cleanliness expected in London is very high and rigorous, for a single nit to be found in a girl's head removes her from the class of clean children. Even so, last year there was attained the highest record for cleanliness amongst the elder girls: 82.5 per cent passed.

Following Up

The value of following up cases of defect through the nurses and care committees is especially noteworthy, the results of the medical inspections lead to the conclusion that much subnormal health amongst the children is not wholly due to the presence of definite disease. It is more often due to unsuitability of diet, absence of personal hygiene, physical or mental strain, and lack of rest. For the correction of these disorders influence that can be brought into the home is essential.

Secondary Schools

The inspection of children in the secondary schools is becoming steadily more efficient. On the whole the average of good records is slightly higher amongst these children than amongst those in the elementary schools. But there is still to be seen the round-shouldered spectacled pupil with ungainly walk, the traditional student type, in too abundant numbers, in spite of modern ideas of physical culture, in both the higher schools and the colleges.

Nursery and Open-air Schools

The nursery school meets a need that exists in the greater cities, particularly in their congested districts, in the main these schools are conducted on open-air lines. Amongst these babies there is the discovery of much defect that would otherwise be missed, and possibly become established in some serious disability. So that in these districts the nursery school presents a double advantage—immediate and future.

Open-air schools for the children of ordinary school age are becoming more numerous. Local authorities and managers of schools are slowly awakening to the requirements of a somewhat extended class of listless, pale, anaemic, and debilitated children, of whom there are representatives in every school. Open-air education calls for no elaborate organization or equipment or undue disturbance of school routine. A playground affords sufficient chance, probably the only additional article of equipment required is an awning for protection when necessary. In London thirty-three classes have been formed in parks, open spaces, squares, or gardens, and sixty-two in playgrounds. Sir William Hamer reported:

Generally the beneficial results in the case of debilitated children were remarked upon. Children who previously suffered from frequent attacks of bronchitis have had no attacks since attending and children suffering from anaemia have improved, although the poor summer (1923) and lack of sun were unfortunately adverse to the best results being obtained. Most of the reports refer to the increase of mental alertness, improvement was also noted in carriage and physique.

Akin to these facilities are the organized school journeys and school camps which are growing in popularity. Some authorities have provided open air classrooms in their schools. A few modern schools entirely constructed on the open air principle have been established in Derbyshire, on the North Wingfield type, under the direction of Mr. George Widdows, the architect.

Juvenile Employment

The law strictly limits juvenile employment. No child under the age of 12 years may be employed for gain, but a child between the ages of 12 and 14 years may, on any day in which he is required to attend school, be employed after school hours till not later than 8 p.m. The children are examined as to their physical fitness for employment, and in many cases periodical medical inspections of these children are held. One school medical officer writes:

"Whereas formerly many children arrived at school fagged from their early morning employment, and incapable of giving attention to their lessons they are now fresh and alert. Indeed the experience of seeing a child fall asleep across the desk hitherto a frequent occurrence, is now but a memory of a decadent past. A suspicion of tiredness on the part of the child sets inquiries in motion and any improper employment is immediately stopped."

Cost of the Service

A tabular statement is given of the costs of the medical service under the heading of medical officers, nurses, travelling expenses, drugs and material, spectacles, contributions to hospitals, office expenditure, including clerical assistance. The last item accounts for about one eighth of the total expenditure. The gross total amounted to £1,220,268 in 1923-24, or about one fiftieth of the total cost of public elementary education—not a high premium to pay for health insurance.

(To be continued)

THE CARE OF MENTAL DEFECTIVES

ADDRESS BY DR. DEVINE

THE Berkshire Panel and Local Medical Committee held a public meeting at Reading on November 10th, when members of the county council, guardians, social workers, and others attended by invitation to hear an address by Dr. Henry Devine, O.B.E., F.R.C.P., of Portsmouth, on "The care of mental defectives." A representative company attended and listened with great interest, as they were all acquainted with the distressing results that spring from allowing mentally defective persons, even of high grade, to engage in the struggle for existence without special education and continued care and supervision. The motives of the committee in calling the meeting were indicated in a report printed in the SUPPLEMENT of November 7th (p. 166). The arrangements for the meeting were made by Dr. P. Napier Jones, and Dr. J. McCrea of Wargrave, the Chairman of the Panel Committee, presided.

Dr. Devine began his address by remarking that in all civilized communities the problem of mental disorder had now become the subject of serious consideration. The incidence of mental disorder was difficult to estimate, but the number of persons rendered less efficient by reason of mental weakness probably tended to increase rather than diminish. The notified insane in England and Wales numbered 131,551, and their cost to the community, excluding that of private patients, was £6,953,804 in 1924, besides these there were 19,376 mental defectives under care, and also an unknown number of inadequate personalities, alcoholics, and neurotics whose social efficiency was more or less impaired.

Regarding the particular problem of mental defectives, experience had fully confirmed the views of the Royal Commission appointed in 1904 to inquire into the whole subject. The Commission reported that there were numbers of mentally defective persons whose training was neglected, over whom insufficient control was exercised, and whose wayward and irresponsible lives led to much crime and

misery, much injury to themselves and others, and much continuous expenditure wasteful to the community and to individual families. In view of these findings it was clearly the duty of the community to provide school, institutions, and supervision for these badly endowed individuals whenever the family had not the means to provide for their care and treatment. In devising appropriate treatment it had to be borne in mind that they were incurable in the sense that it was obviously impossible to provide them with intellectual attributes denied them at nature, that they therefore needed institutional care, guardianship, supervision, or guidance, according to the nature of their defect and their circumstances, throughout their lives and, lastly, that education and training were just as necessary for them as for the normal person.

As an outcome of the Royal Commission's report the State had devised mechanisms in the shape of the Mental Deficiency and amended Education Acts of 1914, which made it possible for the local authorities to put these principles of care and treatment into operation. Unfortunately, however, the war and economic conditions since the war had prevented many authorities from making the necessary provision for these cases, with the result that the Board of Control in its report for 1924 stated:

"Urgent cases, to the number of many hundreds have been and are being discovered for whom no vacancies in existing institutions are available. The country has in this respect come for the time being at the end of its resources. Since the existing institutions are full unless the local authorities give immediate consideration to this matter the beneficent intention of the Mental Deficiency Act will be hampered and will almost cease to operate. We take this opportunity of making an appeal for immediate action, and we do so more confidently because every year reveals clearly the terrible consequences of the neglect to afford this means of protection. Lack of accommodation means degradation, crime, pauperism, and disease to individual defectives, and all the expense to the community which is invariably attendant on those conditions."

The whole position turned upon the efficiency with which the education authorities carried out their function in relation to the mentally defective person. It was only by discovering these cases when of school age that continuity of provision for treatment of defectives, which it was the aim of the law to supply, could be attained. As things stood, these defectives were first discovered in many instances when they came under notice owing to some delinquency. It was essential that special schools or classes should be organized for defectives. If they were taught haphazard with other children their restlessness, stupidity, naughtiness and inattention caused disorder in the class as a whole, and exhausted the energies of the teacher. The defective child itself could grasp nothing of what it was taught in an ordinary class, acquired a sense of inferiority, and naturally became bored, withdrawn, irritable, defiant, and apt to play truant. Teaching designed to interest these children should be arranged of such a kind that the manual rather than the intellectual functions were developed. In this way some defectives might be able to earn something for themselves when they left school, and in any event, whether placed in institutions or kept at home, they could be turned to some extent into useful social units.

In conclusion, Dr. Devine impressed upon his hearers that to deal effectively with the problem of the mental defective the co-operation of the whole community was necessary. Such co-operation must be organized, however, and he strongly recommended that a branch of the voluntary Association for Mental Welfare should be formed in the district. Experience at Portsmouth had shown that this association performed an invaluable function. It had the full support of the statutory committees, and its officials worked in the closest co-operation with the borough officials whose duties brought them into contact with the mental defective. It was difficult to see how the work which had already been done at Portsmouth could have been carried out without the assistance of that excellent organization.

At the close of the address a number of pertinent questions were asked by members of the audience and replied to by Dr Devine, and a vote of thanks to him for his address was proposed by Mr G F SLADE, MBE, JP, and carried by acclamation.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

THE Royal Commission on Lunacy and Mental Disorder resumed its public sittings on November 10th, under the chairmanship of Mr H P MACMILLAN, KC.

The Problem of Certification

SIR MAURICE CRAIG was the first witness, and was examined on the subject of certification. He said that certification was a legal matter, and yet a medical man was directed to carry it out, and thus became responsible in law for a medical statement which by statute became a legal instrument. Such a statement could be challenged by the person against whom it was made, and could be taken by him before a legal tribunal to which no medical assessors were attached. It was no matter for surprise that medical men in increasing numbers were refusing to sign certificates on the ground that they did not understand the meaning of legal insanity.

Mr Jowitt, KC, one of the commissioners, said that he was impressed by the fact that, rightly or wrongly, the medical profession was apprehensive and wanted protection. He wished to know specifically what protection was desired. Sir Maurice Craig replied that medical men, even if they had protection, were afraid of having their time taken up by defending actions at law, even though their defence was successful. What had brought about the present unrest was recent legal proceedings. Mr Jowitt asked whether the medical profession wanted protection for a dishonest or a careless certifier. The Chairman said it had been urged by some witnesses on the medical side that the certifier should enjoy an immunity similar to that of a witness in a court of law, who had absolute protection unless he perjured himself. Sir Maurice Craig said that personally he would prefer to have it in this way, that any court in which an action was heard or in which a certificate was challenged should have medical assessors, and that the decision should rest with the judge alone (apparently he meant, sitting without a jury). Mr Jowitt said that to make any lunacy system work satisfactorily, the goodwill of the medical profession had to be secured, and at the present moment he did not quite see what the profession wanted. Sir Maurice Craig said that what the profession wanted was to be kept clear entirely of the anxieties and troubles attending this purely legal function. Certification was a legal matter, and the legal people ought to take it over. The Chairman said that the Commission would be very sympathetic with regard to anything which would restore the confidence and comfort of the medical profession. Some device was wanted which would protect the profession, and yet would not give the public the idea that dishonesty was being protected. Even the legal members of the Commission were puzzled by this problem. Sir Humphry Rolleston asked whether it would not be advisable to create a specialist class of medical officers, analogous to tuberculosis officers, who would undertake this responsibility. Sir Maurice Craig thought that on the whole this might be advisable, an officer holding a public position might be considered by a section of the public more trustworthy than a private practitioner.

Treatment of Early Insanity

Sir Maurice Craig went on to say that experience had taught him that the harm done by certifying patients in the early stages of insanity far outweighed any advantages. If such certification were done away with the whole outlook of psychological medicine would be changed. Patients in the early stages would be more willing and co-operative, knowing that treatment would not endanger their liberty. Provision for the treatment of willing patients should be made in the general hospitals or in special hospitals or clinics, entirely apart from mental hospitals.

Passive or non-volitional patients, who did not express their wishes, should be granted the same freedom from certification, at any rate for such a reasonable time as would permit of their recovery if possible. With regard to unwilling patients, although from a medical standpoint it was unfortunate that they should be penalized as a result of their hostile attitude, nevertheless he appreciated the difficulty of enforced detention without some form of notification or certification. These must continue to be treated in mental hospitals under some legal restraint. He believed that all mental hospitals should be permitted to take voluntary patients, and that, until fresh accommodation was found, the non-volitional group of patients should be admissible to these institutions without certification. Patients belonging to the willing and to the non-volitional groups should be permitted to go to nursing homes or the houses of medical men. Experience had taught him the great value of small well-run homes and of single care. Many patients preferred to be treated in this way instead of in large hospitals. He appreciated that in non-volitional cases some form of notification would be necessary, but the most satisfactory method would be registration and inspection of all nursing homes as opposed to a routine inspection of the patients.

The Chairman said that where the present system seemed to fall short was in the provision of early treatment and in the accommodation of those cases of insanity which were not certifiable. Sir Maurice Craig instanced the difficulty in the case of the patient who had lucid intervals, who was sane at certain times and not at other. Was such a person properly described as sane or insane? Mr Michlem, KC, said that legally such a person would be considered as of unsound mind. The legal test propounded in the statute was objective rather than subjective. Certifiable insanity had relation to a person's conduct and behaviour and the extent to which he was a danger to himself or others. Sir Maurice Craig said that medical men would prefer to treat such persons as not insane. The Chairman remarked that it appeared to be a cardinal drawback of the present system that before the full benefit of medical treatment could be obtained a patient had to be pronouncedly insane. Sir Maurice Craig said that the position was comparable to holding up treatment in a case of phthisis until there were cavities in the lung. In reply to Mr Michlem, he said that certification, not detention, was the stigma. He thought that the clinics for early treatment should have some power of infringing liberty if necessary, but the safeguard to the public would be that such infringement was temporary and incidental to treatment, and therefore it would not create a stigma.

With regard to the central authority responsible for supervising patients in early stages, Sir Maurice Craig said that for many years he had felt that the Board of Control was too much steeped in the traditional treatment of mental disorders, and that it might in practice be difficult to have this body visiting patients who were not insane. But it had been impossible to watch the work of the Board during recent years without appreciating to what extent it had taken the modern view of psychological medicine, and he now thought that this body was fitted to undertake the supervision of all mental cases, including those in the early stages. But the medical side of the Board should be strengthened, because any ordinary visitation of the willing or non-volitional patients should be entirely medical. Out-patient clinics for those suffering from mental disorders should be available at all hospitals, and he was of opinion that the system existing at Guy's was the best, with one neurological department where all patients, whatever their nervous complaint, attended.

A representative of the National Society for Lunacy Reform was permitted to put a question to Sir Maurice Craig on a statement made by him (Sir Maurice) that some two-thirds of the medical students who qualified during the years 1921-24 were not required to show any knowledge whatever in their written papers on the subject of mental diseases. Sir Maurice Craig said that in spite of the overburdened state of the medical curriculum he must insist that psychiatry should have a larger share in it, because it touched on so many other branches of medical knowledge. He wanted to see it more fully dealt with as an ordinary subject in the curriculum, and also to have more provision for those who were making a specialist study of the subject.

Research in Psychiatry

Dr F L GOLLA, director of the pathological laboratory in the mental hospital department of the London County Council, gave evidence on the subject of existing facilities for research in psychiatry.

Dr Golla described the Maudsley laboratory, with its bio-chemical, bacteriological, psychological, and pathological departments, and said that this central laboratory had a consultative function in respect to the various mental hospitals of the county of London. Specimens requiring special investigation for which the hospital staff could not find time were sent there, medical officers from the various hospitals were encouraged to go there for consultation, and a number of them were seconded to Maudsley for an intensive course of three months' duration during which they learned the routine methods of investigation in the laboratory and studied the development of 'borderland' cases in the wards. He considered that the solution of the problem of research in psychiatry lay in the grouping of various mental hospitals around a central laboratory. In the provinces perhaps a group of counties might cooperate to support one research institution which would be available for all the mental hospitals in the area. The supervising authority, such as the Board of Control, should insist that medical officers were given adequate leave for study to perfect themselves in methods of investigation, and governing bodies should be educated to regard time spent in investigation as part of the essential duties of the officer.

Adolescent Mental Disorder

Dr A F TREDGOLD, Miss EVELYN FOX, and Miss FLORENCE ANDREW, representing the Central Association for Mental Welfare, gave evidence chiefly with regard to adolescent mental disorder, a condition which they said, was widely prevalent and fraught with grave menace to the general well-being. These were not cases of incipient insanity, and they could not be dealt with under any existing administrative procedure. The condition, nevertheless, was one which rendered the individual socially inefficient or antisocial, and necessitated supervision, training, and treatment which could not be given at home. The association urged that local authorities should be empowered to establish training homes for these young persons, that such homes should provide skilled and adequate treatment appropriate to mental disorder, as well as industrial and other forms of training, and that persons should be admitted to such homes on the application of parent or guardian, or, failing this, on the application of the local authority, accompanied by a medical certificate stating that the person was suffering from mental disorder not certifiable under either the Mental Deficiency or the Lunacy Acts.

Mr JOWITT doubted whether this matter came within the Commission's terms of reference, which excluded mental deficiency, and a long argument ensued as to whether the persons concerned were mental defectives within the meaning of the 1913 Act. Dr Tredgold said that these young persons had developed normally up to a point, but control had broken down, and therefore they did not come in as mental defectives, which supposed a congenital condition. The Chairman said that he recognized the difficulties of this intermediate class, but the category was so indefinite that he thought the less rigid bond of charity might meet the case rather than the setting up of another type of retarded home, which would mean a certain sacrifice of independence. In reply to a question by Sir Humphry Rolleston, Dr Tredgold said that the number of cases of mental disorder accompanied by misconduct arising from lethargy and other forms of encephalitis in recent years had accentuated this problem. Sir Humphry Rolleston thought there might be a case for an amended Mental Deficiency Act, and the Chairman remarked that it was a question whether the existing definitions of mental deficiency were not too rigid.

The witnesses also stated that machinery should be provided for the adequate investigation of all persons charged with offences against the law in whom there was reason to suspect the presence of mental disorder or abnormality.

The Commission afterwards held a meeting in private, and adjourned to a date to be announced.

Nova et Vetera.

THE VICISSITUDES OF A DICTIONARY OF MEDICINE

AFTER having been for upwards of thirty years an incommensurable work of reference, the *Dictionnaire de Médecine* edited by Littré and Robin, has become out of date, but the vicissitudes of its various editions, published during the later part of the last century, form an interesting chapter of medical history which has been related recently by Dr Maurice Geuty in the *Presse Médicale*.

It was in 1806 that it occurred to Brosson, who was a doctor as well as a publisher, to produce a dictionary of medical terms. He entrusted the task to one Joseph Capuron, an ex-seminarist and a popular obstetrician, but the work was so badly done that when the next edition was called for it was placed in the hands of Claude and Nysten. The third edition, which appeared in 1814, bore Nysten's name only, and when he died in 1818 the dictionary changed publishers, though Nysten's name still appeared on the title-page, and was still there in 1855, when J B Brillière entrusted the revision of the tenth edition to Littré and Charles Robin.

Littré, who was a member of the Académie des Inscriptions et Belles-Lettres, was already well known by various medical writings, by the earlier volumes of his translation of Hippocrates, and he was in many respects an ideal editor for such a work, but both he and Robin were fervent adherents of Auguste Comte's new religion. Robin was a doctor of sciences, had been professeur agrégé at the School of Medicine since 1847, and was the author of upwards of a hundred communications to the learned societies.

This new edition, the tenth, made its appearance in 1855. Littré took charge more particularly of the philological part, and he added a glossary in six languages, of which he rewrote the Greek-Latin section. To Robin was entrusted the articles on natural history and general anatomy, and working together they corrected etymological and grammatical errors, and, being unwilling to relinquish "all general ideas, all higher doctrines," they emphasized the principles of the Positivist philosophy. In this wise their dictionary became a channel for enunciating the new scientific methods to which they were devoted. The new edition was a success, and an eleventh was soon called for.

It was at this juncture that Nysten's widow—Nysten's name having been retained at Littré's express desire "in order not to efface all trace of our predecessors"—claiming that the philosophical views set forth in the volume were no longer those held by her husband, wrote to the authors requesting them to omit all mention of Nysten's name. Thereupon the editors, hoping to encounter the difficulty, adopted for the 1866 edition the following title: *Dictionnaire de Médecine d'après le plan de Nysten*, adding that the edition had been entirely rewritten by Messrs Littré and Robin. In this way the work retained the name of the original author to whom it had owed its first success. Madame Nysten, however, was not satisfied, she summoned the editors before the Tribunal of the Seine, laying claim to the property of the dictionary, she demanded substantial damages, and that her husband's name should be altogether suppressed. The verdict was against the miserable widow except in respect of the last matter. The matter was taken to the Court of Appeal, which, in February, 1866, ordered the editors to pay the widow pecuniary compensation "for the damage done to the memory of her husband" by publishing under his name certain philosophical and moral doctrines which had nothing in common with those he entertained.

These legal proceedings were followed by a political agitation of formidable dimensions. The facts that in 1866 Robin had for four years been a professor in the Paris School of Medicine, and had been elected to the Académie des Sciences, with the support of Princess Mathilde, Taine, and Sainte-Beuve, did not disarm those attacking him.

"Attacked," said Tunc, "because he brought philosophical views into his science." The Catholic party, which deeply disliked and resented the liberal tone of the lectures in the State faculties, more particularly in the Paris School of Medicine, set on foot a fierce campaign against Robin, and appealed to the Minister, who was fain to recognize the minority of the accusations against him. The next move of the clerical party was to present to the Senate a huge petition, directed not only against Robin, but against Broca also, who was accused of having referred to Malthus in apologetic terms. Vulpian and Charcot were also denounced for having laughed at a patient who was wearing a religious medal.

In the indictment drawn up against Robin the principal item was the part he had taken in the new edition of the *Dictionnaire de Médecine*, which, it was alleged, "corrupted the young." D'Est-Ange was instructed to draw up a report, it was presented on March 27th, 1868. After pointing out that the outcome of his inquiries was to show that circumstances allowed of a very different interpretation from that advanced in the complaint, he assumed the petitioners that the Minister had warned the professors that any non department that "might shock beliefs worthy of respect" by useless digressions would be promptly dealt with, and finally advised that no further steps should be taken.

A few days later, April 10th, 1868, being Good Friday, a dinner was given at Sainte Beuve's house to which Laine About, Renan, Flaubert, Prince Napoleon, and Robin were invited. The particular day was chosen by chance to suit one of the guests who was leaving Paris. It was not a "demonstration" or a "baquet," but Cardinal Donnet, one of the clerical leaders, and his friends accused the diners of eating sausages and black pudding on that holy day, and once again denounced Robin's obvious atheism.

The Senate debated the conclusions of d'Est-Ange's report on May 19th, 1868, and Cardinal Bonnechose formulated his recension against the *Dictionnaire de Médecine*. It was, he said, looked on at the School of Medicine as a student's manual. It was a short dictionary of medicine, a very convenient work, since any information required could be found in it. This dictionary, the cardinal continued, had been in existence for a great number of years, but had undergone a transformation. Its author was M. Capuron originally, and it was quite Christian and spiritual, so was the second edition, edited by M. Nysten, in its tendencies. Since M. Nysten, MM. Robin and Littré had prepared several new editions which were stamped with their materialistic doctrines. M. Robin was a follower of Auguste Comte, the lamentable founder of Positivism, and M. Littré shared these views. He then quoted from various articles, and wound up by proclaiming "the necessity for uniting science and religion."

Sainte-Beuve delivered a speech in which he took up the cause of Broca, Charcot, Vulpian, Avenfeld, Robin, and See, and claimed entire philosophical liberty for his views. "I have the honour," he remarked, "of having been a student in the Faculty of Medicine which is attacked in the person of its most illustrious teachers. To it I am indebted for the spirit of philosophy, the love of accuracy and of physiological reality, and whatever good method has passed into my writings."

The Minister, in a short speech, asserted that the recensions had no foundation in fact, but promised that "if Robin's teaching proved to be based on materialism he would be punished." The debate had occupied no fewer than three sittings. The result left the clerical party very angry, and the attack broke out afresh, but in a way that had no relation to the dictionary, which henceforth pursued the even tenor of its way. In a new edition the eighteenth, in 1878, the editors thought well to recall the history of the volume, and contended by reference to the texts which had been attacked in 1866 and 1868 that if anyone was open to the accusation of materialism it was rather Nysten than they. It would, no doubt, be possible to indict them for Positivism, but not for materialism; they claimed, indeed, that in their philosophy materialism, an absolute doctrine, was repudiated. Positivism was a relative doctrine.

Later on the dictionary appeared under Littré's name only, though Robin's signature was appended to certain articles, and phrases which might lend themselves to a philosophical controversy were altered or eliminated. Robin was greatly vexed, so he set to work on a *Nouveau Dictionnaire abrégé de Médecine* (published by Doyn), in which was to be found "the scientific and purely philosophical spirit of the original Nysten." He accomplished this gigantic task unaided in three years. The first part (480 pages) appeared in February, 1885, and at the date of his death the second part (519 pages) was in the press, it appeared on December 22nd, 1885. Dr. Littré corrected the last proofs, and M. Variot, with the assistance of the editor's notes, wrote the preface.

With the publication of the *Nouveau Dictionnaire abrégé de Médecine* the history of the Littré-Robin dictionary ended. It was one of the most remarkable medical works of the nineteenth century.

England and Wales.

COMPLIMENTARY DINNER TO SIR WILLIAM HODGSON

THE Cheshire Local Medical and Panel Committee recently arranged a complimentary dinner to Sir William Hodgson, chairman of the Cheshire County Council. The guests included Dr. H. G. Dain, chairman of the Insurance Acts Committee of the British Medical Association, the chairman of the Cheshire Education Committee and the coroners for East and West Cheshire, Dr. Mush, J.P., chairman of the Cheshire Panel Committee, and the county medical officer of health. A Latin inscription in praise of the approximately fifty years' service of Sir William Hodgson appeared on the menu cards, ingeniously designed by Dr. Pietou. The chairman, Dr. Mush, proposing the health of Sir William Hodgson, translated the inscription, and referred to the distinguished nature of their guest's services, which included the representation of Lancashire, Cheshire, and Westmorland on the Insurance Acts Committee of the British Medical Association. Sir William Hodgson, in his reply, expressed the hope that he would be able to continue his active fighting whenever it might be required. He had much enjoyed the work on some of the Panel Committees, and had found himself able to make many close friends in the course of the years he had spent in public life. One of the urgent necessities of the present time in connexion with the medical side of the Insurance Acts was the right of appeal to a court of law, without which there was always danger of triennial treatment. Taking the medical profession as a whole there was no better class than the panel doctor, and it was wrong to judge the whole by the few black sheep who were to be found among them in every profession. Dr. Dain, replying for the visitors, urged the importance of loyalty to the Insurance Acts Committee, without which there was danger of such harmful divergence of opinion as had been recently expressed in London.

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION

A meeting of the London Association of the Medical Women's Federation was held on November 10th at the headquarters of the British Medical Association, Tavistock Square. The occasion was marked by the inauguration of the new president, Dr. Christine Marrell, and the delivery by her of the presidential address on the tendencies of the medical profession of to-day. She appeared rather pessimistic at the outset contrasting the position of respect and esteem held by the "family doctor" in the past with the rather anomalous position of the hosts of specialists and G.P.s of the present time. She emphasized the necessity for the training of men and women whose function it should be to exercise a not only on a certain scientific intimate knowledge of the patient and his surroundings—upon the various and often conflicting reports of the specialists. She deprecated the practice of the present time whereby the patient made his own diagnosis and

selected his specialist, often without reference to a general practitioner at all. She dealt also with the more obvious defects of medical education, stressing the fact that the newly qualified student, although well equipped to recognize and treat rare and urgent cases, had little or no knowledge of the commoner and slighter forms of disease. Dr Murrell's remarks were in the nature of a challenge to discussion, and a lively argument ensued, among the speakers being Mrs Flemming, Mrs Bunney, Dr Casson, Dr Tinsford, Dr Dobie, Miss Gordon Holmes.

CONVEYANCE OF MATERNITY CASES IN LONDON

Representations have been made to the London County Council by various bodies and persons to the effect that the night facilities for the conveyance of maternity cases to hospital should be extended to the whole twenty-four hours. During the night, when the ordinary means of transport are not available, the conveyance of women to maternity hospitals is undertaken by the Council's ambulance service, this can be done during the night hours without interference with the primary function of the service, the removal of casualties from the streets. The number of patients conveyed under this arrangement last year was 1,414. The ambulance service is also available, at any time of the day or night, on the application of a medical practitioner or registered midwife, for the conveyance of a maternity case in which sudden emergency arises and hospital treatment is desired, provided that the doctor or midwife accompanies the case, 661 such cases were dealt with by the ambulance in the daytime last year. It is estimated that to extend the night facilities to the day would mean an increase of about 20 per cent on the total number of calls received by the ambulance service, and would require the addition of four ambulances to the existing fleet. The authorities of the maternity hospitals have been asked by the Council whether the present methods by which parturient women reach hospitals in the daytime cause harm to the patients, and whether materially increased benefit to public health would result from the free conveyance of patients during the daytime, regard being had to all the circumstances. An unqualified reply in the negative to both questions has been received from thirteen hospitals and qualified replies from eleven, of which only three express themselves definitely in favour of the suggested extension. The Council therefore considers that no case has been made out for an extension of facilities.

Ireland.

A CRITICISM OF MODERN MEDICINE

DR V M SYNGE, F.R.C.P.I., president-elect of the Dublin University Biological Association, stated in the course of his inaugural address that the great age of Greece produced the greatest physician of all time. After Hippocrates medicine flourished for six hundred years, sank to insignificance and contempt amidst the superstitions of the Middle Ages, to rise again at the Renaissance. In the last eighty years medicine had progressed with increasing speed to its present proud position. Modern medicine could boast of a great increase in the average duration of life. Many infectious diseases had yielded to preventive measures. Plague, typhus, enteric—to mention only a few—had been practically banished from civilized communities. Preventive medicine had rendered life in the tropics comparatively safe for Europeans. Modern precautions had minimized the risks of industrial processes, and had maintained the health of the workers. Modern surgery had achieved wonderful cures of previously hopeless conditions. Great advances had been made in knowledge of the functions of the different organs of the body and of the causes of disease. Medical knowledge was very great, but everything was open to criticism, and modern medicine had its shortcomings as well as its glories. The incidence of all diseases was not decreasing, in some it was markedly increasing. As far as could be gathered from statistics and other sources, the various forms of insanity showed a sinister increase. The heterogeneous group of diseases which went by the name of neurasthenia was increasing

at an alarming rate. Many authorities thought that cancer was more frequent than ever before, it was certainly not decreasing. The great pandemic of influenza of 1918-19 swept across the world, destroying millions, yet their knowledge of influenza had not increased, its etiology was disputed, its prophylaxis was ineffective, its treatment was almost nil. Rheumatic fever still exacted its heavy toll of damaged hearts. Most recent advance in diagnosis had centred on special tests. Science used them rightly, pseudo-science misused them. The tendency of modern diagnosis was to neglect the evidence furnished by signs and symptoms, and to place undue reliance on special tests. The time had not yet come—he doubted if it ever would come—when special tests alone would establish a diagnosis, except in a minority of cases. X-ray examinations stood in the forefront of these special tests. They had, however, their abuses as well as their uses. The fallacies were numerous in the hands of the inexperienced or uncritical. X-rays, by simplifying diagnosis, had made clinicians lazy. The limitations of X-rays were often not appreciated. There were lesions which they could not show. A negative radiogram was often found in a case of chronic appendicitis or of duodenal ulcer. Bacteriology and serology would be of more value in diagnosis if bacteriologists visited hospital wards more often and if clinicians were more familiar with the inside of laboratories. The last fifteen years had seen biochemistry rise into prominence. It had furnished many useful results, and had carried forward medical knowledge far. But for the clinical diagnostician biochemical tests were often useless, because in most cases the significance of the results rested on hypothesis, not on facts. A large number of renal function tests were both worthless and misleading, even when performed by experts. Biochemists and clinicians did not collaborate sufficiently. New methods of treatment had proved of great value when properly and appropriately applied. Yet almost every new line of treatment had been run to death—sometimes the death of the patient. Every new method had been hailed as a panacea, and applied to the cure of any and every disease. The result was that modern treatment was chaotic. The newest methods were not necessarily the best. Succeeding waves of fashion often dictated treatment. At one time oral sepsis was looked upon as the source of all evil, the dentists thrived, the population became edentulous, its ills remained. Then it was the appendix—that disreputable atavistic organ. The publicity booms which characterized every fresh discovery were to be regretted, they raised unfounded hopes, followed by undue scepticism.

Referring to the medical curriculum, Dr Syngo said that it had long been disputed whether a knowledge of Latin should be compulsory for the medical student. There were more medical terms of Greek than of Latin origin, yet Greek was not compulsory. In discussing medical terminology, Trousseau had said that people gave themselves a great deal of trouble to torture the Greek language and heap up learned solacisms. All the Greek and Latin roots used in medicine could easily be learned inside a week by anyone ignorant of both languages. Latin imparted culture, yes, but not the smattering necessary to enter a medical school. Medical knowledge was increasing in bulk at a great pace. Already the medical curriculum comprised five years at least of strenuous effort, crammed with excess of subjects and excess of material, the only consolation held out to the student being that future generations will probably be required to spend six or seven years in medical studies instead of five. And yet, was all this knowledge really necessary? Was a knowledge of the terminal arteries and small cutaneous nerves and ridges on bones essential to a working knowledge of anatomy? If anyone thought so he was quickly disillusioned at the first operation he witnessed. The average man who was going to spend his life in endeavouring to cure the sick was compelled to learn far too much anatomy. It was fatuous to spend two and half years in the study of anatomy. *Materna medica* was another subject which until recently—and, indeed, in some medical schools still—was overloaded with useless paraphernalia. It was in the prevention of disease that modern medicine had achieved its most dramatic results, yet this subject occupied a very small

place in the medical curriculum. Pathology and bacteriology received too little attention. It was clinical work, however, which suffered most in the present-day curriculum. On paper, three years were allotted to clinical subjects, actually, few students were able to devote more than one year's real work to the hospitals. No matter what branch of medicine, what specialty a man was going to take up afterwards, a practical knowledge of clinical medicine and surgery was essential. The aim of a medical school should be to teach, not only the essentials of medicine, but also the right principles and methods of adding to knowledge after qualification. For this a five years' course was ample, provided that it was not cluttered up with non-essentials. Constant revision of a medical curriculum was necessary. Conditions changed year by year. What was a good course to-day would probably be decidedly out of date ten or twenty years hence. The tendency of the present system was to produce a temporary cum knowledge of each subject, which was quickly forgotten after that particular examination was passed. The Irish School of Medicine had a world-wide reputation in the days of Graves, Stokes, Corrigan, and other distinguished masters. Dublin still offered to the student more facilities for clinical experience than were available elsewhere, every student might have the invaluable opportunity of being a hospital resident for six months. In Dublin, at least, the patient had not been buried beneath a heap of modern instrumentology and laboratory tests. They had rather gone to the opposite extreme. The great need was for more pathological, bacteriological, and biochemical facilities to aid them in research. The difficulty in obtaining post-mortem examinations was a serious drawback to advancement. Waves of knowledge had in the past been followed by tangles of ignorance. In the Dark Ages Hippocrates' works were read, the letter, and not the spirit, of his teaching was followed, medicine declined. To-day the physical sciences had opened up immense possibilities for medical progress, wonderful discoveries had resulted, previous notions and ideas had been eclipsed, the belief in the magical and the irrational had increased, because the critical faculty had been dulled by so many wonders. Belief in everything was followed by belief in nothing. Credulity was succeeded by scepticism, scepticism by cynicism, cynicism made no effort, knowledge declined. People, dazzled by to-day, talked as if the millennium of science had come. This was a superficial view. Modern science made them more conscious than ever of the depth of human ignorance and of the great field which lay before them. Hard and conscientious work, accurate observation, sound reasoning, a mind free from obsessions and superstitions, a firm belief in the possibilities of medicine as an art and as a science—these were the things that had raised medicine to its present greatness, these were the things that would carry it onwards, always.

ULSTER MEDICAL SOCIETY

The second meeting of the Ulster Medical Society was held in the Medical Institute, Belfast, on November 5th, when Mr J. A. Craig, the president, was in the chair. Professor J. E. MacIlwaine read a paper on hyperpiesia, the essential hypertension of Allbutt. He dealt with the physiology of blood tension, quoted a number of statistics showing the average results of observations, and outlined some experiments. Clinical evidence showed that arterio-sclerosis and high blood pressure were not invariably associated. It was possible to have one without the other. The relationship of hyperpiesia with endocrine glands, with toxicity, with the menopause, with heredity, and its association with vascular neuroses in early life, were described, and its diffused variability was likened to neurasthenia. The chief symptoms were mentioned, cardiac pain and oppression, pain in the upper abdomen, vertigo, lack of concentration, and, in the end, signs of the breakdown of the myocardium. The duration of life was very variable. In treatment he favoured more general constitutional methods than the administration of vaso dilators. Dr Boyd Campbell read a paper on the prognosis and treatment of aortitis. Any infection might cause the affection, but a syphilitic was by far the commonest, it accounted for 80 to 100 per cent. It was often

complicated by incompetence, but never by aortic stenosis. Pain coming on without emotion or exertion, especially at night, a feeling of constriction or pain at the upper end of the sternum, dyspnoea on slight exertion and paroxysmal, variable cough on lying down, were the most characteristic, early fatigue and vertigo were the same as in other forms of cardiac disease. The characteristic physical signs were a sallow, septic look, abnormal pulsations in the supra-sternal region, increase of the dull area, change in the x-ray shadow, and a peculiar changing second aortic sound which was not lost when incompetence supervened, high blood pressure was not present. Dr Campbell divided the stages into three—early, moderately advanced, and advanced—and presented then diagnostic differentiation. In his cases the average length of life was five years, and the majority of the patients were in the fifth decennium. He gave, perhaps, a preliminary course of iodine and mercury, and then small doses of arsenic, and insisted on absolute rest. Dr McKisack, Professor John Milroy, Dr Colwell, Professor Thomson, Professor Fullerton, Dr Houston, and the President all discussed the papers.

Correspondence.

PREHISTORIC TREPHINING

SIR,—In your interesting annotation on prehistoric trephining (November 7th, p. 857) it is stated that Dr Wolfel has come to the conclusion that this operation was performed by prehistoric surgeons as a procedure for the treatment of depressed fracture of the skull. He based his conclusion on the fact that certain crurs—for example, South America and Melanesia, where the operation is still performed among savage races—are areas in which clubs are used as weapons of war. His argument appears to be as follows. As the clubs and the trephinnings occurred in the same districts, it is a case of cause and effect, the clubs produced the fracture and the trephining was adopted as a treatment. This to me does not seem a very conclusive argument, and a good deal more evidence would be necessary before it could be held that Dr Wolfel's thesis is proved. In my opinion he is wrong in drawing any conclusion as regards prehistoric trephining from these modern operations by savages. I should like briefly to argue the question and to examine the evidence.

In the collection of Peruvian skulls, numbering about 1,000, made by Dr Murry of the Peruvian army, nineteen have been trephined. These skulls are almost certainly very much later than the Neolithic period. In some of them the method of trephining was different from that of the premetallic surgeon, who made an oval or circular hole. The Peruvian skulls in certain instances show four linear incisions, the resulting piece of bone being rectangular. In one of these skulls there is a depressed fracture of the left temporal bone, such as might have been produced by the impact of a club. The operation of trephining has been begun but not completed, probably on account of the death of the patient. Three other skulls show evidence of fracture, and we may therefore agree that in the Peruvian skulls the operation was probably carried out as a surgical procedure for the treatment of depressed fracture. But when we come to the most ancient of trephining operations—those of the Neolithic period (and this is the period generally referred to by the expression "prehistoric trephining")—there are no facts to support him.

In the enormous collection of skulls found in France, where by far the greater number of ancient trephined skulls has been obtained, there is no evidence that the operation was performed for any surgical reason. To argue that because clubs are used by savages and trephining has sometimes been carried out by them for depressed fracture produced by the clubs, therefore the same obtained in the new stone period, where in an immense collection of skulls there is not a single one with signs of such a fracture, is fallacious. Dr Wolfel's theory is totally unproved and has no basis of fact to support it.

It has been urged by competent archaeologists that the

operation was carried out for various nervous disorders, such as convulsions, delirium, epilepsy, and insanity, which have always been considered indications of the possession of body and soul by evil spirits. There arose naturally the suggestion of making an opening in the body, the head by choice, to let out these evil spirits. Now what evidence is there in support of this? In the South Pacific islands a notion prevails that headache and other cerebral affections proceed from pressures of the skull on the brain. The remedy practised by the natives is a primitive method of trephining. This custom is so prevalent that very few of the adult males are without such a hole in the cranium. This race is in about the same state of civilization as the French Neolithic man of 4,000 years ago. This is certainly an argument in favour of trephining having been carried out by our remote ancestors for medical reasons. But allowing this assumption to be correct, it can only have applied to a very small number of instances, for even at the present time cases of nervous diseases sufficiently severe to justify trephining are quite rare. Much less would the operation have been required in those far-away savage days, when the necessities of modern life with its consequent train of severe nerve disorders was unknown.

I believe that the trephining of these ancient skulls was in the very great number of instances carried out for some ethical or religious reason. It is well known how throughout the ages the most varied and curious customs, many of them entailing severe mutilations, have prevailed as religious observances. No great stretch of imagination is required to bring this surgical procedure within the same category. The whole question is of course purely speculative, but I claim that so far no evidence whatever has been adduced in favour of its use by our Neolithic ancestors as a surgical operation for depressed fracture—I am, etc.,

Hove Nov 16th

L. A. PARRY, F.R.C.S.

RECURRENT DISLOCATION OF THE SHOULDER-JOINT

SIR,—The writer of the leading article in the current issue of the JOURNAL (November 14th, p. 911) apparently has not noticed that I described the pathology of recurrent dislocation of the shoulder-joint in the BRITISH MEDICAL JOURNAL of December 15th, 1923. This condition is not due to stretching or imperfect healing of a torn capsule, nor to weakness or lack of tone in the surrounding muscles, it is due to detachment of the fibrous capsule from the fibro-cartilaginous glenoid ligament. In most cases also the glenoid ligament is detached from the margin of the glenoid cavity. The reality of this essential lesion is not a matter of opinion, but of observation; and it can be verified by any competent surgeon who takes the trouble to look for it—I am, etc.,

London W 1 Nov 15th

A. S. BLUNDELL BANKART

* * It is regretted that in our leading article on recurrent dislocation of the shoulder no reference was made to the paper on this subject by Mr. Blundell Bankart in our issue of December 15th, 1923. Our article, however, had for its text a paper by Dr. T. Turner Thomas of Philadelphia. Mr. Bankart's very definite views as to the pathology and treatment of this disability are in contrast with those expressed by other authorities on this subject, and the discrepancy could perhaps best be accounted for by supposing that the conditions which he describes as found at operation are unusual. Burrell, Cotton, Turner, and others have all attributed the primary injury to a fall on the abducted arm, and have recorded a large number of successes after plication operations on the capsule. Several who claim that capsulorrhaphy is *per se* beneficial, yet admit that it is often followed by cure which, however, he attributes to other causes. It is difficult to believe that a number of competent surgeons have often exposed the joint cavity and failed to recognize the condition described by Mr. Bankart. It seems therefore probable that recurrent dislocation of the shoulder joint may be due to more than one kind of trauma and that it may exhibit more than one set of appearances and be curable by more than one procedure. The probability that this is so is

enhanced by the fact that capsulorrhaphy failed in a certain proportion of cases, and especially often in epileptics. The operation so ably devised and carried out by Mr. Blundell Bankart would appear to be certainly effective and probably the best for such cases as he describes.

PROFESSOR BLAIR BELL'S TREATMENT OF CANCER

SIR,—In answer to your inquiries, let me state, to begin with, that I have an absolute confidence in Professor Blair Bell and his work upon cancer, and let me give the reasons for my faith. Even the theory which underlies that work is in consonance with my personal views. So long ago as 1901, in an address given by me at Yale University on the "Causation of cancerous and other new growths," published in the BRITISH MEDICAL JOURNAL of March 16th of that year, I urged "that line of research which promises sure results and greater profit on the part of clinicians as well as of laboratory investigators lies in the direction of testing various methods of arresting the growth of the tumour cells without injury to the organism in general. Herein it seems to me that Coley has chosen the better part." And herein is the basis of Blair Bell's investigations.

Close upon five years ago, so soon as the first remarkable case of cancer of the breast treated by him was showing unmistakable signs of shrinkage, he honoured me with his confidence, I was shown the patient with the primary growth still not wholly absorbed, was given all the details of the treatment, nothing was kept back. I could not but be impressed by the vastness of the possibilities opened up, and the heavy responsibility should he publish this amazing case before the new method and its limitations had been thoroughly explored. I found that he had also taken into his confidence Mr. F. T. Paul, the well known Liverpool surgeon and authority upon cancer. Sir Charles Shearman, and Sir Robert Jones, and found, further, that he was willing and, indeed, anxious to place himself in our hands as an advisory committee. We asked and obtained his ready assent to the suggestion that nothing should be announced until he had treated fifty cases. He went further, and, while giving us free access to his cases, he offered to publish nothing that had not previously been submitted to us. It was under these conditions that his first paper was given out in the autumn of 1922.

We shied the responsibility for keeping back at this period the precise details of the treatment. Blair Bell's studies had led him to conclude that the most effective and least harmful form in which to administer lead was in a colloidal state, and at this period the preparations were safe for intravenous injection—that is, did not form precipitates—only within six or eight hours after they were made. They could not be distributed at a distance, they could only be prepared by experts under expert control. These fifty cases had shown that there was a very great variation in susceptibility to the drug, and it was not possible at this period to lay down precise details as to its safe use. There was, in short, so much still to be done from the standpoint of physical chemistry, pharmacology, clinical medicine, biology, and animal experiment that no one man, however industrious and however brilliant, could carry on the necessary laboratory investigations and at the same time maintain his practice and fulfil his duties as professor of gynaecology. Now it was that a group of generous and public spirited Liverpool citizens came forward and gave between them several thousand pounds to provide beds for poor patients, and to cover the cost of the needed laboratory investigations over a space of three years. Thanks to their generosity it has been possible to undertake team work upon a relatively large scale under the directorship of Professor Blair Bell. The term of some thirty members* includes several full time workers in various laboratories conducting researches under well known authorities, most of them heads of departments in the University, together with well known clinicians and members of the junior staffs of various hospitals. The members of the team meet every few weeks, receive discuss, and criticize freely the reports received

* The list of the members was given in Professor Blair Bell's paper in the LANCET last year (vol. 1 p. 267).

from different departments, and suggest new lines of inquiry.

The co-operation between the members has been remarkable, as again has been the co-ordination or harmony of the results obtained, clinical and laboratory. I lay stress upon these matters in order to impress upon your readers the conscientious and thoroughly scientific manner in which these investigations have been carried out, as again that the later phrases of Professor Blair Bell's investigations are the result of an amount of team work such as has never before been devoted to a medical problem in any one centre. The announcement by the Toronto correspondent of the *Times* that thus far 200 cases (or as a matter of fact a little under that number) have been treated in the course of the five years that have elapsed since the treatment was initiated is evidence of the care taken to study each case thoroughly and not to receive more patients than can be given this thorough study.

But it is peculiarly difficult at this juncture to speak freely about the results obtained. Professor Blair Bell left for America with the expressed intention of asking his audience at the Toronto Academy of Medicine not to discuss his address until it appeared in print here in England (in the *Lancet*). Evidently, notwithstanding his desire, it has been impossible to prevent certain of the results of his work finding their way into the public press. It has been equally impossible for his friends and co-workers here in Liverpool to deny the substantial accuracy of the cabled reports. The most that we can do is to beg everyone to wait until, as we hope, the full text of his two papers appears within the next fortnight—the one on the theory underlying his method of treatment, the other upon the methods and the results thus far obtained. As a matter of fact, the first of the two has appeared in the delayed *Lancet* of this week.

One other service we can perform—namely, to warn the public not to expect too much. It must, for example, be evident to every medical man that if a cancer is far advanced, and if either the primary or any secondary growth has extensively infiltrated and replaced the normal tissue of some important organ (such, for example, as the stomach), the very act of causing necrosis and deliquescence of the mass of cancer cells may be followed by a fatal gassing and rupture of the vessel involved, by perforation, hemorrhage, and the like. Granted that Blair Bell has discovered an agent which destroys the cells of malignant growths, it is only in relatively early cases where the primary growth does not involve what we may term a vital area—or, in advanced inoperable cases, where similarly by great good fortune neither primary nor secondary growths involve such areas—that the destruction and absorption of the cancer or sarcoma may be followed by restoration to good health. There can be, in the circumstances, no certain "cure" for cancer. At most we can look forward to a material reduction in the mortality. Even if this only can be accomplished it means much for humanity—I am, etc.,

Liverpool Nov 15th

J GEORGE ADAMI

PRE-CANCEROUS CONDITIONS

SIR,—The disappointment expressed in your leading article last week (p 912) is universally felt. We all regret that the evidence afforded by the visible pathological changes in the breast, or indeed of any other part, is not more conclusive.

The discussion to which you referred performed an important function. It demonstrated how limited is evidence based only on histological investigation. Evidence thus gained is essentially more or less speculative. Histological investigation and biological research, when combined, do not at present indicate a state of hyperplasia that will inevitably end in carcinoma. Yet the admission must be made that one or all of these states may be concerned in the carcinoma process. It must also be admitted that probably one state of hyperplasia is nearest to the culminating point of carcinoma.

In my share of the discussion I pointed out a particular state of epithelial hyperplasia that appeared to me to

be in that position. Rare opportunities occur where carcinoma cells can be seen streaming directly into the surrounding tissue from an epithelial hyperplasia in a duct. This particular type of epithelial hyperplasia within the duct resembles precisely that which I described as being the pre-cancerous state—I am, etc.,

London W 1 Nov 14th

G LENTHAL CHEATLE

RAW PANCREAS BY MOUTH COMPARED WITH INSULIN

SIR,—In reply to Dr Lawrence's letter (November 14th, p 920)

1 The diet was not rigid, the patients being allowed their normal diet but for the prohibition of sugar, potatoes, and foods rich in carbohydrates, such as beet. In fact, both patients were allowed substantial amounts of ordinary white bread after being on raw pancreas a short time, with no apparent ill results.

2 The blood sugar tests were always taken at the same time, three hours after breakfast—I am, etc.,

Preston, Nov 14th

J BERNSTEIN

FOCAL INFECTION

SIR,—It is now assumed that a focus of infection is the cause of many diseases of body and mind, but, surely, the evidence for this theory is inconclusive. It is certain that every unit in a civilized community is constantly collecting a bacterial flora, which becomes a permanent part of his body, we cannot estimate the effect of this until we have a standard of normality in bacterial infection. Such a standard could only be obtained by the bacteriological examination of the accessible passages of a large number of apparently healthy bodies. It is highly probable that such an investigation would materially modify our conceptions of infection, and it would certainly yield to the bacteriologist some interesting surprises.

At present all we know is that, if we look for a focus of infection, in many diseases we often find it. If this was shown to be present in the majority of presumably healthy persons, what becomes of its importance in etiology?

What makes the general practitioner sceptical is that he sees a very large number of people, with an obvious septic focus, who enjoy good health to old age, and, conversely, no septic focus can be found when it ought to be present—I am, etc.,

London, E 12 Nov 15th

A CAMPBELL STARK

ERRORS OF VISION AND AVIATION ACCIDENTS

SIR,—In your article on vision and aviation (November 14th, p 912) you rightly stress the importance of perfect vision and of perfect ocular muscle balance. I would, however, like to point out that I have two patients, both of whose names are famous as pilots, neither of whom has had an accident due to either his vision or muscle trouble, yet the first has a latent divergence, and 6/60 vision without glasses (he is myopic with some astigmatism) while the second has the left eye pushed backwards and downwards, the result of a gunshot wound of the orbit. This eye is to all intents and purposes blind, as he has fairly complete optic atrophy, while there is very little movement in the eye, owing to the derangement of the ocular muscles. Although he was so injured in the war, he has never made a false landing.

In 1902 Savage of America published a book on *Ophthalmic Myology*, dealing largely with the subject, and I have a set of *Biographic Clinics*, by the late Dr Gould of Philadelphia, dealing also with the same subject. Although one cannot agree altogether with all that they say (and many probably unnecessary muscle operations were performed for these defects in patients by our trans-Atlantic colleagues), undoubtedly, in many cases, uncorrected latent muscular defects may give rise to ocular symptoms and produce temporary diplopia. Against that, however, is the fact (and I have tested every patient's eye muscles that I have seen in private for the past sixteen

980 NOV 21, 1925]

CORRESPONDENCE

years, and think any practising ophthalmic surgeon will agree) that it is the exception to find perfect ocular muscles balance in anyone, just as it is to find an eye without some small error of refraction. But whether or not these defects give rise to symptoms entirely depends upon the nature of the work done, as a patient with a small amount of latent divergence of eye muscles and slight far-sighted astigmatism may have no symptoms whatever, leading a normal outdoor existence, but the defects may cause trouble, eye-strain and headache, if he be compelled to use his eyes much for near work. Similarly, he may have no error of refraction, but some degree of muscular trouble, which causes strain, and he is unable to converge and causing objects near at hand without one eye diverging and causing diplopia. These defects are generally associated with an error of refraction, however, and the usual thing is to find that the hypermetropic eye has an excess of convergence (not a disadvantage altogether in near vision), while the short-sighted eye generally has an excess of divergence. These defects are generally latent but become manifest in certain conditions, just as a small degree of astigmatism may or may not give rise to symptoms. It may be that fatigue or increasing age prevents the patient from correcting the defect himself—I am, etc.,

SIDNEY TIBBLES

London W. Nov 14th.

PREVENTION OF THE COMMON COLD
 Sir,—In your report (November 14th p 901) of the meeting of the Medical Officers of Schools Association, and your remarks thereon (p 913) you refer to hygienic and other precautions to prevent cold-catching. I think it would be well to emphasize one point which in my experience is of great importance. I refer to the avoidance of household dust. I have seen many instances of the development of an acute coryza through exposure to such dust. I will give two examples.

A lady who is very subject to catarrhs has several times traced an attack to dusty bedding or floors in boarding-houses and hotels where domestic attention is faulty. A superior mechanic on two occasions had to execute repairs in an exposed bungalow at the seaside during cold stormy weather. The bungalow was exceptionally clean, and he remained free from colds, but each time developed a severe one a few days after returning to dusty home quarters. Where other forms of infection are also present, it is still more important not to stir up the dust. A postmaster was under my care for tuberculosis some years ago. He came from an office where there was a possibly phthisical clerk in the next room, and the postmaster usually arrived just after the floor had been swept in the ordinary way.

I could mention other suggestive cases but fear to occupy too much of your space. Polished floors in hospitals and sanatoriums are a great help in preventing catarrhal attacks of all kinds, but only if the dust be not stirred up—I am, etc.,

F. R. WALTERS

Crook Farm Sanatorium, Farnham Nov 1th

OSTEOPATHY AND CHIROPRACTIC

Sir—Dr C O Hawthorne's letter in your issue of November 14th (p 921) contains a misquotation of the Warrington motion brought before the Representative Meeting at Bath. No doubt this has been due to an unintentional slip, but as it is of importance for accuracy of argument I draw attention to it. He writes in his first paragraph "And 'that no unqualified person be allowed to practise medicine or surgery.' If he refers to the agenda he will see that the motion stated that 'no unregistered person be allowed to practise medicine or surgery.' There is a distinct difference between an unqualified person and an unregistered person, and the motion was drafted so as to bring practitioners of general medicine on a parallel with practitioners of dentistry. Under the Dentists Act a person cannot practise dentistry unless he

is registered, no matter how well qualified he may be to extract teeth or fit dentures.

Registration is for disciplinary purposes and there are "prosecutions and penalties" for the practice of dentistry by unregistered persons no matter how well qualified they may otherwise be. After the passing of the Dentists Act large numbers of unqualified dentists of good character were admitted to the *Dentists Register*, thus giving them a legal qualification to practise dentistry.

If the Legislature should ever restrict the practice of medicine to registered persons—and the practice of medicine could never mean the casual prescribing of somebody's pills, and liniment by a kindly curate or by my Lady Bontal, although it might mean systematic shrine healing—then without doubt all manner of healers would clamour for admission to the *Register*, and by this means receive legal status and official recognition.

The point about the present controversy is that the osteopaths are seeking this status and recognition before there is any restriction on their right to practise. For some time previous to the Bath meeting it was generally well known that the osteopaths were using such influence as they have on members of Parliament to secure registration, but no one, I suppose, realized that the danger of their success was so imminent until Dr E. Graham Little's warning.

The Warrington motion was, I agree, too definite and drastic for practical politics at the present time, but it could have been amended or referred to Council or considered instead of being talked out in an amusing speech of humorous contempt by Dr Hawthorne—I am, etc.,

J. S. MANOY

"THE STRAIGHT SPINE"

Sir,—There is one point which has not been touched upon in connexion with "the straight spine" so ably advocated by Major Austin in the *British Medical Journal* of October 24th (p 769). It is as follows.

The muscles which play a major part in maintaining the erect attitude are the transverse short muscles of the spine. When standing with a straight spine, and little if any lumbar hollow, these muscles are brought into play and will strengthen with use. When standing with a full lumbar hollow the attitude known in my boyhood's days as "the Grecian bend" a certain amount of support is gained by the locking of the pelvis. This attitude does not are thus far not called into play. This attitude does not therefore tend to strengthen the back muscles to the same extent as is done by the straight spine—all

With regard to the attainment of a straight spine—that is necessary is to rotate the anterior part of the pelvis upwards so that the pubes come to lie at a higher level. This compels obliteration of the lumbar curve. On the other hand, allowing the pubes to drop to as low a level as possible will accentuate it. This rotation of the front of the pelvis upwards will ought to be taught to all, and especially to girls, owing to their greater liability to a weak spine than is the case with boys—I am, etc.,

T. STACEY WILSON

Birmingham Nov 13th.

MEDICAL MANIFESTOS

Sir,—During the past ten days I have received circular letters from two medical bodies. Each body proposes to issue a memorial or manifesto. One states that agreement will be assumed unless dissent is made. The other end thus "If I do not hear from you by return of post I shall conclude that you are willing to allow your name to be published in this connexion." And accordingly the names of non-committed men will be attached to a manifesto to the lay press which begins "We, the undersigned,"

It seems to me that this procedure is wrong and that if it be allowed medical manifestoes will be treated with contempt—I am, etc.,

London W 1 Nov 12th.

N. BISHOP HART

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

PARLIAMENT resumed on Monday, November 16th, to complete business outstanding at the August adjournment, and is expected to sit till about December 18th. The Lords had no business but the Commons were faced with a full programme, including many departmental bills, some of medical interest.

The *Expunging Laws Continuance Bill* was read a second time on Monday and passed through Committee next day. Among the measures which it continues are the Coroners (Emergency Provisions) Act, 1917, the National Health Insurance (Prolongation of Insurance) Act, 1921, Section 3 of the National Health Insurance (Cost of Medical Benefit) Act, 1924, and Section 54 of the National Health Insurance Act, 1924.

The list of bills down for consideration before Christmas is very heavy. The Lead Paint (Protection against Poisoning) Bill is one of special medical interest, but conflict is chiefly expected over the Rating and Valuation Bill and a special Insurance Bill proposing new import duties, which may include duties on imported cutlery and surgical instruments. The Opposition is also claiming time for several general debates. Mr Ramsay MacDonald has suggested that there should be a general discussion on the cases where war pensions are refused on the ground that the disability does not result from war service.

The Medical Committee of the House of Commons held an inaugural dinner on Monday. Sir Lenthal Cheate, who was a guest, gave an address in which he argued that the Minister of Health should always be a medical man. The Committee discussed this suggestion at length, but could not agree upon it, some members pointing out that much of the work for which the Minister is responsible is administrative rather than medical.

Supply of Insulin in Scotland

The question of the distribution of insulin was raised in the House of Commons on Tuesday, November 17th, on consideration of the Public Health (Scotland) Amendment Bill, on the Report stage. The measure authorizes local authorities under the Scottish Public Health Act of 1897 to make arrangements for providing medicines and treatment to persons suffering from diabetes.

Dr Shiels moved at the end of Clause 1, which is the operative clause an amendment providing that the Scottish Board of Health should require the local authority to arrange that any medicine used for the treatment of persons suffering from diabetes and who in the opinion of the local authority required assistance in obtaining such medicines and treatment, should be dispensed by a registered pharmacist or by a registered medical practitioner. He urged that insulin should be distributed under medical supervision. That precaution, he said, was already taken by the Poor Law authorities and under the National Health Insurance Acts. He did not see why the poor people who were to receive the insulin under this bill should not have the same definite safeguards as others.

The Secretary for Scotland (Sir J. Gilmour) declined to accept the amendment. Everyone wished the greatest safeguards to be observed in the use of this drug. It was manufactured in bulk and sold in closed capsules. It was prescribed by a doctor and at a certain stage of the treatment it might under careful medical directions, be administered by the patient himself. So far as its purity was concerned, it did not matter whether it was handed by the local chemist over the counter or dispensed by the local authority at its clinic. It could not be said that the risk of its being mishandled was any greater under the bill than in the way proposed by the amendment. It was desired that the Scottish Board of Health working through the local authorities should be able to dispense insulin at a price which would bear a fair comparison with that at which it could be obtained from a chemist's shop. The chemist would of course have to make a certain profit.

Sir A. Sinclair asked whether there was any risk of deterioration and whether chemists having been able to detect this had not rejected some of the supplies. Sir J. Gilmour said deterioration of the drug could not be detected by the local chemist.

Mr Westwood asked for a guarantee that only those persons properly qualified under the Pharmacy Acts should be allowed to manufacture insulin.

Sir John Gilmour said that he appreciated very much the natural and proper desire of members to see that every precaution was taken in regard to the manufacture of this article. He could give a guarantee that it was manufactured directly under the supervision of the Medical Advisory Council. So far as the handling and manufacture were concerned it was done by properly qualified people. The bill dealt not with the manufacture, but the distribution, which was made in glass capsules so that the drug was properly protected.

Dr Shiels's amendment was then rejected without a division. On the motion for the third reading of the bill, Mr W. Adamson said that although the Labour party supported the bill, they regretted that it was limited in its scope. The measure should have been extended to other diseases to bring the administration of public health in Scotland into line with England. An effective remedy might be found for cancer at any moment and it would be a tragedy if the poor people of Scotland could not get the remedy because of its costly nature.

Sir J. Gilmour said that he appreciated the support of the Opposition in regard to the bill. The problem of cancer was of such magnitude and so important that it should be dealt with when it arose. If a solution of the problem was found there could be no doubt that Parliament would deal with it adequately.

The bill was then read a third time and passed.

The Navy and Army Medical Services—Sir L. Wothlington Evans stated on Monday that the pay and conditions of service of medical officers in the Navy, Army, and Air Force were being examined by an interdepartmental committee which had authority to take evidence from outside the Government service and would be understood obtain the views of the British Medical Association.

Notes in Brief

Schemes for the improvement of unhealthy areas have been submitted by seventy local authorities since 1919. The schemes numbered ninety one, and eighty two have been confirmed.

The Prime Minister has announced that the bills to an end the Factories and Workshops Acts and the law with regard to the use of road vehicles will not be taken this session.

Obituary.

GEORGE REID, M.D., O.B.E.,

Consulting M.O.H. Staffordshire County Council.

THE announcement we had to make last week, that Dr George Reid had died after a long period of ill health will have been received with great regret by those who knew the excellence of his work as medical officer of health for Staffordshire and had come under the influence of the charm of his personality.

He was born in Aberdeen in 1854. He graduated M.B., C.M. in the university of that city, and took the M.D. degree in 1881. In 1875 he became house-surgeon to the Staffordshire General Infirmary, two years later he entered on private practice and was appointed honorary physician to the infirmary. At the time of his death he was consulting physician. He early turned his attention to public health and was appointed medical officer of health for the Stafford Rural District. The Local Government Act, which authorized the appointment of medical officers of health to counties, was passed in 1888, and in the following year Dr Reid became medical officer of health for Staffordshire, his was one of the earliest of such appointments made. He held the office for thirty-three years. One of the most important matters on which he was called upon to advise the Public Health Committee of the county council was the prevention of the pollution of rivers, upon which the local authorities of the county eventually expended large sums of money, being rewarded by a considerable measure of success. He became a recognized authority on the subject, and gave evidence before the Royal Commission on Sewage Disposal. He also gave much attention to questions of industrial hygiene, and in 1908 was a member of the Departmental Committee on the use of lead in pottery. Later on, as school medical officer for the county, he was responsible for the institution of medical inspection of schools, health visiting, and school nursing, and for the establishment of infant welfare centres in the county. He devised what is known as the pavilion type of elementary school building, which was approved by the Board of Education and has been extensively adopted both in this country and abroad. He was also concerned with the introduction of the organized work in the county for the prevention and treatment of tuberculosis, and was medical officer to the Staffordshire, Wolverhampton, and Dudley Joint Committee on Tuberculosis.

Dr Reid became a member of the British Medical Association shortly after obtaining his first degree, he was general secretary of the Staffordshire Branch from 1888 to 1894, and financial secretary from 1896 to 1900. He was president of the Birmingham and Midland Counties Branch in 1895 and of the Staffordshire Branch in 1907, and took part in the central affairs of the Association as a member of the Parliamentary Bills Committee, he was vice-president of the Section of State Medicine at the Annual Meeting in 1898 in Edinburgh, and president of the Section of Medical Sociology at the Annual Meeting in 1911 in Birmingham. He had also been president of the Society of Medical Officers

of Health, of the Midland Counties Society of Medical Officers of Health, and of the Association of Sewage Disposal Works Managers.

During the war he was advisory sanitary officer to the North Midland Brigade, but he was handicapped all through his life by ill health, and after about a year's service he was invalided. In February, 1922, he was compelled to resign the county medical officership, and was appointed consulting medical officer. He went to reside at Cheltenham, where only a few weeks ago his wife died, and Dr Reid was staying with his brother, Dr Charles Reid, physician to the Staffordshire General Infirmary, at the time of his death on November 6th. He is survived by a son and a daughter.

The funeral took place at Cheltenham on November 10th, Dr Ridley Bailey, chairman of the Public Health Committee of the British Medical Association, and a member of the Council of the Society of Medical Officers of Health, had intended to be present, but was prevented by indisposition.

ROY CHARLES MERRYWEATHER, M.R.C.S., Perth, Western Australia

Details have recently reached us of the death of Roy Charles Merryweather, which took place suddenly on July 21st, 1925, at Perth, Western Australia. He had been apparently in good health, and was at work until a few minutes before his death, which was due probably to angina pectoris.

The son of a doctor practising at Guisborough in Yorkshire, he was born in 1880, and received his medical education at University College and Hospital, London. He was very popular as a student, and became honorary secretary, and later vice-president, of the Union Society. He was good at all games, and was a member of the team which won the inter-hospital association football cup in 1900. He gained the Fellowes medal in clinical medicine. After taking the diplomas of L.R.C.P. and M.R.C.S. in 1903, he held the posts of house-physician at the Brompton Hospital for Consumption and Diseases of the Chest, house physician (to Sir Thomas Barlow) at University College Hospital, and assistant medical superintendent to the Brompton Hospital Sanatorium at Fimley.

After practising for a short time at Great Yarmouth, Merryweather left England for Australia in 1908, and entered into partnership with Dr William Trethowan at Perth, Western Australia, where the soundness of his judgement, the wideness of his knowledge, and the keenness of his intellect soon brought him a deserved reputation as a skilled physician, and determined his success in a very large practice. Early in his Australian career he was appointed honorary physician to out-patients at the Perth Public Hospital, and at the time of his death was the senior honorary physician. He took a very active part in the work of the Western Australian Branch of the British Medical Association, and was president of the Branch in 1916. He acted as delegate of the Branch at the Annual Meeting at Cambridge in 1920.

Roy Charles Merryweather was not only a skilled physician, he was a man of deep sympathy, a charming companion, a true and loyal friend. He leaves a widow and three children to whom we offer our sincerest sympathy in their great loss.

LANCELOT NEWTON, M.R.C.S., Alconbury Huntingdonshire

We regret to record the death from cerebral haemorrhage, on November 10th, of Dr Lancelot Newton of Alconbury Hill Huntingdon. Dr Newton was the senior medical practitioner in the county. He was born at Alconbury on November 7th, 1846, and was educated at Epsom College and at St Bartholomew's Hospital, where he was a prize-man and prosecutor to the Royal College of Surgeons. He took the diplomas of M.R.C.S. and L.S.A. when he was 21, and practised at Alconbury Hill till 1911, when he retired. At the outbreak of the great war he returned to practice, and continued till December, 1918. During this period he had charge of three camps for German prisoners of war,

in addition to his other extensive duties. Dr Newton was medical officer of health to the Huntingdon Rural District Council up to the time of his death. He was an active member of the British Medical Association, and served in the offices of president of the Cambridge and Huntingdon Branch and chairman of the Division. He was also chairman of the Panel Committee, of the Military Service Tribunal, and of the Medical Service and Medical Benefit Subcommittees, and he acted as secretary of the Panel Committee during the war. Dr Newton was an Oddfellow, and held office in the Foundation of Friendship Lodge at Alconbury. He was a vice-president of the Cambridge and Huntingdon Archaeological Society, secretary of the Huntingdonshire branch of the Bible Society, and people's warden at Alconbury Church for many years. Dr Newton leaves a widow and three daughters. He was of a genial and kindly disposition, and was beloved and respected by all with whom he came in contact.

We regret to record the death, on November 1st, of Dr GEORGE LUCAS PARDINGTON, consulting physician to the Tunbridge Wells General Hospital, who had practised in that town for many years. He received his medical education at St Bartholomew's Hospital, and obtained the diploma of M.R.C.S. in 1878, and those of L.R.C.P. and L.S.A. in 1879. In the following year he graduated M.B. of the University of Durham, and proceeded M.D. in 1882. In 1903 he obtained the M.R.C.P. Lond. After holding the post of house-physician to the General Lying-in Hospital at Lambeth he settled at Tunbridge Wells, became a member of the visiting staff of the hospital there, and engaged in general and consulting practice. While a student at St Bartholomew's he had collaborated with the late Sir Lauder Brunton in a research upon the influence of quinine and sulphuric acid on reflex action, which they recorded in the *St Bartholomew's Hospital Reports* for 1876, in subsequent years he published several practical papers on hydrotherapy, massage, and kindred subjects. Dr Pardington was for a considerable time a member of council of the Section of Balneology and Climatology of the Royal Society of Medicine, and after serving as vice-president was elected president for the session 1920-21, when he took for his presidential address the subject "Advancing years and balneotherapy", a full report appeared in our issue of February 5th, 1921 (p. 183). He was an authority on balneology, to which he had devoted much of his time, not only had he a very full knowledge of the medical aspect of the subject, but he had visited nearly every Continental health resort, so that he was also well acquainted with the best conducted and most suitable hotels, and thus was able to advise his patients on the subject. Dr Pardington was essentially a man of the world, with a wide practical knowledge of medicine, enhanced by his keen powers of observation and a natural ability for putting facts in their proper relative positions. Added to this was a kindness of nature and a great power of sympathy. He was a fine scholar, a keen sportsman, a good shot, and a good judge of gun dogs.

Dr H. R. CARTER, Assistant Surgeon General of the United States Public Health Service, who died at Washington on September 14th, was director of the hospitals of the Panama Canal zone from 1904 to 1909. He was closely associated with the campaign in the United States for the eradication of yellow fever and malaria.

Dr B. NAUNY, formerly professor of clinical medicine at Strasbourg, whose work on cholelithiasis was translated into English in the New Sydenham Society's publications, has recently died at the age of 85.

Dr OCTAVE LEFEBVRE, a well known Belgian ophthalmologist, recently died of an attack of angina pectoris as he was finishing an operation for cataract at the Charleroi hospital.

Universities and Colleges.

UNIVERSITY OF OXFORD

At a congregation held on November 14th the following medical degrees were conferred

MD—D F Chapman N A Sprott

UNIVERSITY OF CAMBRIDGE

At a congregation held on November 14th the following medical degrees were conferred

MD—D Donaldson L P Costobadie

MB—P T Ling admitted by proxy

The managers of the Pinsent Darwin studentship have made a grant to Miss M T Bride of Birmingham, in order to facilitate her investigations into the effect of education among the mentally deficient

UNIVERSITY OF GLASGOW

The following degrees were conferred on November 14th

MD—H S D Garren (with honours) C M Smith (with high commendation)

ROYAL COLLEGE OF SURGEONS OF ENGLAND

An ordinary council meeting was held on November 12th, when the President, Sir John Bland Sutton, was in the chair

Diplomas of Membership were granted to 204 candidates. (The names were included in the report of the committee of the Royal College of Physicians of London, printed in our issue of November 7th p 871.)

Mr James Shierren was appointed a member of the committee of management in the vacancy occasioned by the retirement of Sir Charles Ballance

Mr Norman Leslie Capener, F R C S, was appointed the third Streetfield Scholar the subject of his research being 'The connection of the prostate gland'

Court of Examiners occasioned by the resignation of Mr Hngh Lett will be filled up at the ordinary council meeting on December 10th

Medical News.

MR G R GIRDLESTONE will lecture for the Fellowship of Medicine on tuberculosis of the spine on November 23rd at 5.30 p.m., in the lecture hall of the Medical Society of London, 11, Chandos Street, all members of the medical profession are welcome. Courses begin on November 23rd in medicine, surgery, and gynaecology at the Royal Waterloo Hospital, in nervous diseases in the out patient department of the West End Hospital, 73, Welbeck Street, and a late afternoon course (4.30 to 6) for general practitioners at the London Temperance Hospital. From November 30th to December 15th the Infants Hospital will hold a special afternoon course, on the Sunday a morning visit will be paid to the Thavies Inn Clinic. Afternoon lectures and demonstrations will be given by Dr Eric Pritchard and other members of the staff, and visits will be made to the Nursery Training School, Hampstead Garden Suburb, and the Home for Blind Babies, Chorley Wood. The Hampstead General Hospital has also arranged a late afternoon course for general practitioners from December 7th to 19th covering medicine, surgery, and the special departments. There will be a course in dermatology at the Blackfriars Hospital for Diseases of the Skin from December 7th to 19th, instruction will be given in the out patient department, and venereal clinics twice weekly. A copy of each syllabus and the Fellowship general course programme will be forwarded on application to the Secretary to the Fellowship, 1, Wimpole Street, W 1.

THE American Medical Association has called into being a "Council on Physiotherapy" to define the scope of physical methods in diagnosis and treatment, including the various electrical and mechanical contrivances. The council consists of two experts in physics, four clinicians, two physiologists, and two pathologists, together with the secretary of the association, and the editor of the journal. At the first meeting of the council a committee was appointed to prepare a series of reports on therapeutical methods and the apparatus used, while other committees are taking up questions of organization and education. Many manufacturers of apparatus have promised to co-operate. The inquiries under taken by the new committee will be extended to the therapeutic methods of massage, manipulation, hydrotherapy, and physical exercises.

PROFESSOR F G PARSONS, F R C S, F S A, will give a lecture on the earlier inhabitants of London, in the Governors Hall, St Thomas's Hospital, Westminster Bridge S E 1 at 5 p.m. on Friday, December 4th. The

lecture will be illustrated by lantern slides, and skulls of the various peoples mentioned will be shown. Admission is free, without ticket.

At the meeting of the Zoological Society of London on November 3rd Dr H H Scott pathologist to the society, communicated a paper on some congenital malformations of the kidney in reptiles, birds, and mammals.

An institute of the history of science has recently been opened at the Florence Faculty of Medicine under the direction of Professor A Corsini, the well known medical historian. The institute contains collections of ancient surgical instruments, mortars, pictures, busts, journals, and the like.

The autumn dinner of the Irish Medical Schools' and Graduates' Association will take place at Pagani's Restaurant, Great Portland Street, W 1, on Wednesday, November 25th, at 7.30. Tickets (price 10s) may be obtained from Dr Peart, 5, Harley Street, W 1. The guest of the evening will be the Right Hon Charles Andrew O'Connor.

The annual dinner of the Medical Legal Society will be held at the Holborn Restaurant, London, on Friday December 11th, at 7.15. The chair will be taken by the President, the Right Hon Lord Justice Atkin.

THE Golden Square Hospital for Diseases of the Throat will, with its new extension, be reopened on Thursday, November 26th, by Mr Lionel de Rothschild, O B E. The hospital was founded by Sir Morrell Mackenzie in 1863. It has grown until it now occupies a considerable portion of the square whose name it has made familiar throughout the medical profession. The extension includes an enlarged special department with a new operating theatre and a ward to which children are admitted for minor operations.

THE League of Mercy has this year awarded £9,820 to extra metropolitan hospitals. In the last twenty years, the League has contributed through the King's Fund £368,034 to the London hospitals and £74,739 to hospitals outside London.

DR FREDLAY MURCHIE and Dr Theodore W Stallybrass, of the Middle Temple, were called to the Bar on November 17th.

THE College of Physicians of Philadelphia announces that the next award of the Alvanza prize, amounting to about 300 dollars, will be made on July 14th 1926 and essays intended for competition must be received by the secretary of the College by May 1st. These essays may deal with any subject in medicine, but must not have been previously published, they must represent some addition to knowledge and be based upon original or literary research. The prize for 1925 has been awarded to Dr Raphael Isaacs of Boston, Massachusetts, for an essay on the nature of the action of rays on living tissue. Further information may be obtained from the secretary of the College, 19, South 22nd Street, Philadelphia, Pa., U S A.

THE seventeenth Congress of the Italian Phreniatric Society was held at Trieste from September 24th to 27th, when papers were read by Drs Kobylinski and Vidoni on the constitution in psychiatry, by Dr Weiss on psychiatry and psychoanalysis, and by Drs Modena, De Paoli, and Moudini on the treatment of general paralysis. Trieste was chosen as the place for the next congress.

THE thirtieth Congress of French speaking Alienists and Neurologists will be held at Geneva and Lausanne from August 2nd to 7th, 1926, under the presidency of Professor Long of Geneva and Dr R Semelaigne of Paris, at the same time as the celebration of the centenary of Pinel's death. The following subjects will be discussed: Schizophrenia, introduced by Professor Bleuler of Zurich and Professor H Claude of Paris; Babinski's sign, introduced by Dr Tomnay of Paris; Treatment of mental disease by work, introduced by Professor Ladino of Geneva and Dr Demay of Clermont (Oise).

PROFESSOR ROGER, who had hitherto occupied the chair of experimental pathology in the Paris Faculty of Medicine, has succeeded Professor Richet in the chair of physiology, and Dr Bezangon, previously professor of bacteriology in the same faculty, has succeeded Professor Chaffard in the chair of clinical medicine.

THE twenty fifth anniversary of the foundation of the Hamburg Institute for Marine and Tropical Diseases was celebrated on October 16th.

ACCORDING to a recent census Vienna possesses 4,051 medical practitioners (1 doctor to 461 inhabitants), Graz 461 (1 to 331), and Innsbruck 189 (1 to 298).

A SMALL POX epidemic at Milwaukee has recently come to an end after lasting for four months. Of the 500,000 inhabitants 376 contracted the disease and 86 died. Of the latter 82 had never been vaccinated and the remaining 4 had not been vaccinated within the last twenty years.

THE well known zoologist, Professor Ehlers of Göttingen, recently celebrated his 90th birthday.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams **Bacillus Dublin**, telephone 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams **Associate, Edinburgh** telephone 4361 Central).

QUERIES AND ANSWERS.

"E O" asks for the results of experience with the use of parathyroid extract in the treatment of paralysis agitans—the dose, mode of administration, and effect.

ENCEPHALITIS LETHARGICA

SURGEON REAR ADMIRAL J J DENNIS—If by "sleepy sickness" our correspondent means the condition officially designated encephalitis lethargica he will find the geographical distribution of notified cases (the unit of distribution being of course the administrative area) given in the Registrar General's weekly return of births deaths etc. To obtain the distribution for the first ten months of 1925 it would be necessary to add the weekly figures. Probably direct application to the Ministry of Health would enable our correspondent to obtain a summary of this year's figures. It may be remarked that the gross number of notifications is not large enough to allow of any sound inferences as to the significance of small local prevalences.

RECURRENT URTICARIA

"N L" writes: A woman of 40, multipara previously in perfect health has for a year suffered nearly every night with severe urticaria. The itchy lumps rise, too at any time of the day if she knocks herself even if she rests her forearm on something hard. Dietetic experiments, salol and other means to cure have all failed. I should be grateful for suggestions for treatment.

CARBON DISULPHIDE IN SEBORRHOEIC ALOPECIA

"J A L O" asks for information regarding the usefulness and the method of using carbon disulphide in the treatment of seborrheic alopecia of the scalp. He believes it is used in France for this purpose, but can find no references.

* * The chief advocate of carbon disulphide in the treatment of seborrheic and seborrheic alopecia is Sahorrand. "J A L O" will find a chapter on it in his *Entretiens Dermatologiques* (published in 1913) on pp 421-426. Sahorrand recommends a saturated solution of sulphur in carbon disulphide. He has also written on the same subject in his series of "Entretiens" (published in 1924) dealing exclusively with diseases of the scalp. The results which he claims for this remedy have, however, not always been obtained by other clinicians.

HYPODERMIC NEEDLES

DR. J. PIRIE (Camington Spa) asks where he can get reliable hypodermic needles that will not break off at the shaft. He has not been able to get pie war quality needles so far in England, and is thinking of trying a German make.

LETTERS, NOTES, ETC

SMALL-POX IN THE UNITED STATES

The incidence of small pox during the last quarter of a century in the United States and the evidence afforded of the value of vaccination are considered in detail in an article in the *Boston Medical and Surgical Journal* for September 3rd, 1925 (p 466) by Dr W F Draper, Assistant Surgeon General to the United States Public Health Service. He reports that the small pox death rate in the areas for which data are available was 1.9 per 100,000 in 1900 and 6.6 in 1902, whereas from 1905 to 1922 it ranged

between 0.2 and 0.9, and in 1923 it fell to 0.1. During the last twelve years the annual case rate in various States has ranged from 23 per 100,000 in 1916 to 100 in 1920 and 1921, which would indicate that in the whole country there was an incidence of between 25,000 and 106,000 cases each year. Although the death rates in some cities have been as high as 42 per cent, they are low compared with those of pre-vaccination times. In 1751, for example, small pox was introduced into Boston by a ship from Barbados. At that time Boston had a population of 15,684 of whom 5,998 had previously had small pox. During the epidemic 7,669 persons contracted the disease, 1,843 fled from the town to escape infection, so that only 174 were left in Boston escape infection. Dr Draper points out that in the case of the alleged failure of vaccination in Japan, so frequently quoted by anti-vaccinists there is ample evidence that such vaccination had been improperly administered, and that even so the epidemic singled out the unvaccinated and those who had not been revaccinated. Following the epidemic the Japanese investigated the value of vaccination and made their vaccination laws much stronger with the result that a striking decrease followed both in the incidence and in the death rate of small pox.

PREMATURE OSSIFICATION OF THE CRANIUM CONVULSIONS DEATH

DR. LACHLAN H. GILCHRIST (Pollokshields, Glasgow) writes: I recently attended a puerpera (full time) who was delivered of twins. Owing to ineffectual pains the first child which was little macerated, was brought away with forceps. On examining for the second I had difficulty in feeling the anterior fontanelle, and a hard ridge could be made out running posteriorly. The child seemed all right at birth, the shape of the head, however, reminded me of the moulding seen in a brow presentation. Fits ensued within the first twenty-four hours and gradually a regular status epilepticus terminated the condition within forty-eight hours.

I obtained permission to examine the infant, and on reflecting the scalp I discovered that the cranial bones presented a marked degree of ossification. The anterior fontanelle was merely a crevice bridged over by a tough fibrous membrane—the metopic suture was fast disappearing and so was the posterior fontanelle. Where the line of overlap between the parietals at the sagittal sulcus is normally to be found there was a hard calcified ridge and if there had been only a single child with a large head I imagine the dystocia might be difficult to deal with anyone feeling that peculiar ridge, however, and knowing that the child would not live might be justified in thinking of craniotomy if things were very bad.

The convulsions, I take it, ensued as the intra-cranial pressure rose under the conditions of extrauterine life—the plates were of remarkable density for a newborn infant. I am curious to know of the incidence of this condition, especially as a cause of obstructed labour and infantile convulsions.

STERILITY IN THE MALE

DR. J. BARKER SMITH (London, S.E.) commenting on the article by K. M. Walker on sterility in the male (referred to in the *Eptome*, September 19th, para 201), suggests that the custom of taking sodium sulphate as a daily aperient in preference to magnesium sulphate may have an effect on spermatogenesis. According to some biologists magnesium induces fertility in plants and animals, while its absence causes sterility. In a recent case of sterility investigated by him the husband's semen contained no spermatozoa, and he had been taking Glanher's salt regularly.

HUMANISM IN MEDICINE

DR. RICHARD GILLIBARD (Willesden Green, N.W.) writes: In the *JOURNAL* of October 24th there are two noteworthy utterances, and I hope signs, on medical education. Professor John Fraser "would make great sacrifices to take an arts course before commencing a study of medicine." At the Harveian Festival it was said of Clifford Allbutt that he not only had "added greatly to the knowledge of medicine, but he was above all things a friend, a wise counsellor, and an upright and kindly gentleman." Is the profession to day in danger from falling from this level? With the advent of recruits from the commercial world into it with the inevitable limitation of specialism, to retain the character it is essential to cherish ideals. That can only be realized by a liberal education, whether logic, as an example, suggested by Professor Fraser or literature to illuminate. Without it in "medical amenities" and publicity in deliberations of policy, the magnanimous and larger view will be beyond our ken.

GENERAL PRACTICE TO DAY

"ANOTHER JUNIOR G.P." writes: With reference to the letter from Junior G.P. (November 14th, p 928) I agree that county council fees for dealing scientifically with abnormal labour are quite inadequate. Two guineas was reasonable when midwives were ill trained and doctors dealt with nine normal cases to one abnormal, but now when all doctors' cases are abnormal, difficult and anxious, fair remuneration would be at least four guineas, if not five or six.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 42, 43, 44, 45, 48 and 49 of our advertisement columns and advertisements as to partnerships, assistantships, and locum tenencies at pages 46 and 47.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at pages 179 and 180.

Report

OF

A SUCCESSFUL CASE OF EMBOLECTOMY,

WITH A REVIEW OF THE LITERATURE

BY

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Cases of embolism in which the plugged artery has been opened and the clot removed with complete success are sufficiently rare to make records of single cases worth the making. The clarification of our views on this subject has largely come about through Eliar Key of Stockholm, whose masterly paper (1922) has done much to advance the surgical treatment of embolism. It is interesting to note that, whereas prior to 1922 only thirteen successes could be claimed out of forty-five cases, no fewer than fifteen successes have been obtained in twenty-eight cases published since that date. The result of the local teaching of Key is reflected in the literature of "embolectomy," which has been until now almost a Scandinavian operation. Pioneer work was done in England by Handley, Moynihan, Brodman, and Gordon-Watson, though their cases were less fortunate in result than that now chronicled.

J. E. male, aged 42, a patient of Dr. Gray of Lydesley, was admitted to the Salford Royal Hospital under my care for the radical cure of an umbilical hernia. The hernia was small and contained a little omentum only. The patient was well built, rather obese, but was in excellent general health. He had had no serious illnesses. The heart was normal, the pulse 80, and the urine free from abnormal constituents.

On April 23rd, 1925, radical cure of the hernia was performed by the resident surgical officer, Mr. R. L. Galloway. A transverse elliptical incision $3\frac{1}{2}$ inches long was made, the neck of the small hernia defined, the sac opened, a lobule of omentum which was lightly adherent was pulled down and ligatured off. The sheath of the rectus was incised and the deficiency repaired. The operation lasted from 3 to 3.15 p.m., and was performed without tearing or bruising. This wound healed by first intention, without any sign of local contusion.

Pre-op.—A quart of a grain of morphine tartrate was given at midnight to allay such pain as the patient had. The next morning he looked and felt well. At 5.15 p.m. on this day, twenty-six hours after the conclusion of the operation, whilst being moved in his bed by the nurses, who were straightening the drawsheet, he complained of a tingling sensation of "pins and needles" in the left arm, with increasing numbness. This rapidly developed into an intense pain, with complete paralysis of the arm. I saw him one hour later.

The man was very much disturbed at the sudden paralysis of the limb, and still more so by the pain which accompanied it. The arm was blanched, cold, and pulseless, insensitive to touch, and completely paralysed below the elbow. Feeble movements of flexion and extension were possible at the elbow joint. On tracing the line of the vessels up the arm pulsation was finally detected high in the axilla, but was not very clear. The man was stout and palpation not easy. Lodgement of an embolus about the termination of the axillary or commencement of the brachial artery was diagnosed, and operation advised. This was eagerly accepted by the patient, who was exceedingly disturbed at his misfortune and in a very agitated state.

At 7.45 p.m., two hours and a half after the embolism occurred, operation was undertaken under novocain and adrenaline infiltration. An incision 4 inches long was made over the axillo-brachial junction and the vessels cut down upon. The incision was placed so as to expose an inch or more of pulsating artery. Further novocain injections had to be made after incising the deep fascia, as the proximity of the great nerve trunks made the exposure of the artery painful at times. The axillary artery was seen to be pulsating freely, but it was not easy to be certain whether the pulsation felt was that of the normal vessel or merely transmitted. As a finger was passed downwards along the vessel a doughy substance was felt in its interior. This distal portion (brachial artery) was seen to be contracted, no larger than the normal radial, so that one passed from normal pulsating vessel, over a resistant portion to a contracted and apparently empty vessel. The artery was now freely encircled all round. This was difficult owing to the presence of the superior profunda artery, at the origin of which the embolism was situated. Clamps for occluding the

vessel were rapidly improvised by covering the serrated blades of artery forceps with appropriate rubber tubing. With these the vessel was gently held by my assistant, Mr. Galloway, and fulfilled their purpose admirably.

A longitudinal incision about 2 cm long was made into the vessel and a dark piece of clot immediately protruded. This was gently pulled out with forceps, and proved to be 2 cm long. The upper clamps were now momentarily released and blood rushed out, but no flow followed the release of the lower clamps. The vessel was therefore "milked" upwards, and a much larger piece of clot, rather whiter and more granular in appearance, was extruded. Blood was now seen to flow gently on release of the lower clamp. The wound in the artery was therefore sewn up with four fine silk stitches on a fine round bodied needle, the silk having been well soaked in liquid paraffin and the operation field drenched with the same fluid. The suture line was tested by release of the clamps and proved to be water tight. The clamps were then removed. The patient immediately said, "The pain is gone" and a few seconds later remarked that he could move his fingers and that the arm was becoming warmer. By the time the deep fascia and skin had been closed full function was restored to the arm, the radial pulse was full and free, the colour pinker than normal, and the grip strong. At first the pulsation in the left radial was not so strong as that in the right, no doubt because of the persistent main trunk constriction to which several writers have referred. In a few minutes it most it became stronger and remained so.

The relief afforded by this simple operation was dramatic in the extreme. From a condition of intense pain immediate respite was obtained. The use of local anaesthesia made it easy to corroborate objective recovery by the testimony of the patient himself, and there can be no doubt that this is the anaesthetic of choice for similar cases.

The arm made a perfect recovery without a suggestion of the most local gangrene, but on the fourth day after embolectomy he had a rigor and complained of intense pain in the right side of the chest. He was examined by my colleague Dr. Lingley, who found crepitations at the right base, where a pulmonary embolism had occurred. He found no evidence of cardiovascular disease or congenital abnormality. Blood appeared in the sputum shortly afterwards, thus confirming the diagnosis. The patient was much troubled by pain and coughing for the next week, but no further embolism occurred. A smooth convalescence followed, and he was discharged from hospital a month later.

I have recently (September 18th) had a further opportunity of examining him five months after the operation. His doctor informs me that two weeks after the man left hospital he developed a thrombosis of the left femoral vein which gave little trouble, but three weeks after that the right leg became thrombosed, and has continued swollen and painful until now, though he can get about on it. There are some enlarged venous radicles on the lower abdomen, which suggest that the thrombosis has extended perhaps as high as the inferior vena cava. His umbilical hernia and his arm remain in excellent condition. It should be remarked that his legs were frequently examined whilst he was in hospital for signs of thrombosis, but no abnormalities were at any time detected. Why he should have developed a thrombosis later is obscure.

Origin of the Embolus

The question of the origin of the embolus immediately arises. If he had some undiscovered thrombosis in the veins of the legs or pelvis (and his calves and thighs were never tender or swollen in hospital) the only route by which a portion of clot could have reached the axillary artery would be through a deficiency in the septum of the heart, for, of course, without such a means of short circuit a thrombus from the systemic or portal venous system must be filtered off by the lungs—the form of embolism with which we are more familiar. As a fact the patient did have a pulmonary embolism as well but we shall see that even that did not necessarily arise in a systemic vein. One naturally looks to the operation itself as furnishing the clot and it is a possibility that a "paradoxical embolism" occurred in the arterial tree through a patent foramen ovale. If such a deficiency were not present then the clot must have come from one of three places—from the pulmonary veins, from the chambers of the heart itself or from the intra or subclavian artery. How common is thrombosis in these sites? Fortunately we have some valuable information on that point. P. Bull has analysed 6140 necropsy records from the Ritz-Hospital at Oslo and finds that the heart has been greatly under-estimated as a source of clot for embolism. Thrombosis in the pulmonary veins was only found three

TABLE I—Embolectomy, 1922-1925

Case No	Author	Site of Embolism	Sex and Age	Cause	Duration of Signs of Arterial block before Operation	Result
1	Michaelsson (1922)	Left common femoral	M 53	Heart disease	23 hours	Amputation died ten days later
2		Bifurcation of aorta and right common iliac	F 58	Heart disease	11½	Died next day
3		Left common femoral	F 30	Heart disease	2½	Success
4	Haggstrom (1922)	Right iliac and femoral	F 41	—	16	Died next day
5		Right femoral and popliteal	F 52	—	10	Subsequent amputation, died six weeks later
6		Left iliac	F 69	Mitral stenosis	9½	Died next day
7	Senecart and Blum (1922)	Right axillary	M 53	Syphilitic aortitis	About 24 hours	Success
8	Buerger (1923)	Right brachial	M 57	Chronic endocarditis	6 hours	Died nine days later
9		Right brachial	—	Gangrenous appendicitis	3½	Success
10	Undberg (1924)	Left femoral and popliteal	F 62	Heart disease strangulated hernia	9½	Success
11	Michaelsson (1924)	Left common femoral	F 73	Aortic dissection	2½	Success
12	Perman (1924)	Left common iliac	M 46	Heart disease	3½	Success
13	Lundblad (1924)	Bifurcation of aorta	M 37	Heart disease	Next day	Died
14		Right common iliac	F 35	Heart disease paritum on two days previously	8 hours	Success
15		Bifurcation of aorta and the external iliac	F 47	Heart disease	26	Died
16	Olivecroft (1924)	Right common femoral	F 31	Mitral disease	2	Success (same patient as No 3)
17	Gejrot (1924) (operated on by Lange)	Right axillary	F 70	Arteriosclerosis	1½	Died seven days later
18	Torell (1925)	Left superficial femoral	F 32	Heart disease	23	Subsequent low amputation recovered
19		Right superficial femoral	F 22	Heart disease	5	Success
20		Left superficial and deep femoral	F 77	Heart disease	4½	Died five days later
21	Dickson (1925)	Right brachial	M 63	Uncertain	20	Subsequent amputation died thirteen days later
22	Henney Snyder and Horer (1925)	Left subclavian	F 62	Cholesterol	5	Success
23	Turettini and Gruder (1924) (operated on by Kummer)	Aortic bifurcation	F 19	Mitral disease	2	Died next day
24	Aleman (1925)	Common femoral	M 25	Heart disease	4	Success
25	Lundblad (1925)	Common iliac arteries	F 44	Heart disease	10	Success
26	Soderlund (1925)	Right popliteal	F 42	Heart disease	12	Success
27		Left brachial	F 45	Heart disease	5½	Success
28	Jefferson	Left axillo-brachial	M 42	After operation for umbilical hernia	2½	Success

times in this large series, and then only in conjunction with clotting in the heart. It was found nine times in the aorta, but only in the presence of severe atherosclerosis, and never in any other artery. But thrombi were common in the heart, occurring in 181 cases—67 times on the right, 63 times on the left, and 51 times on both sides. These facts explain the occurrence of embolism in both the systemic and pulmonary circulations, although the lungs are exposed to an additional danger of infarction by the frequency of pelvic and limb thrombosis in the post-operative period. It seems very probable, to put it no higher than that, that in the case just reported both emboli were derived from the heart. It will be noted in the classified list of published cases of embolectomy set out below how common cardiac disease has been as a cause of peripheral arterial block.

Diagnosis of Peripheral Embolism

There is no need to dwell at any length on the symptoms and signs of peripheral embolism. The sudden onset of intense pain in a limb, with loss of motor power, loss of sensation, pallor, marbling of the skin, subjective and objective coldness of the limb, and absence of pulsation in the chief arteries, form a sufficiently characteristic picture. The more difficult cases are those in which the obturation of the vessel is incomplete at first, becoming absolute later, either by secondary thrombosis or by the embolus slipping lower down into a narrower vessel. The embolus in these cases probably rides the spur at the bifurcation of a large artery or exit of a large branch. One has only to be on the look-out for embolism to make diagnosis certain within the first few hours. Early diagnosis is of paramount importance if operative treatment is to be of real service. It is interesting to notice the effects which Key's teaching

has produced in Sweden, for the practitioners are evidently sending their cases to the surgeon now the moment the relatively easy diagnosis has been made, with gratifying results. If left untreated the majority of peripheral embolisms end in amputation, usually at a high level. In one or two cases an incompletely successful operation has had the advantage of making amputation possible at a lower level than would otherwise have been necessary. The age of some of the patients (see Table I) may lead the practitioner to suspect senile gangrene rather than embolism. The sudden onset and the unilaterality of the symptoms and signs will usually make the diagnosis clear.

Technique of Operation

No special instruments are required. Novocain infiltration is the anæsthetic of choice. The incision of the vessel wall, removal of the clot, and suture of the outer coats follow the usual technique of blood-vessel surgery. Liquid paraffin or sodium citrate (1 per cent.) may be used to prevent premature clotting in the wound. The only important advance in technique over earlier methods may be that in cases of embolism at the aortic bifurcation a distal approach is better than a direct. In these exposure of both femorals, which are then lightly clamped and opened, is followed by retrograde catheterization, the clot broken up, and removed through the openings in both vessels. This method is likely to give better results than a transperitoneal operation in a patient who is probably a bad surgical risk, owing to the presence of the heart disease which has furnished the material for the arterial blockage. This method is not only one of absolute precision, but the condition of the patient may make it advisable, although much blood may be lost during the probing. Several cases are recorded in which the thrombus has slipped away when the artery was

exposed. A fresh incision should then be made lower down (for example over the popliteal vessels). Wounds in arteries are easily sown up, and one should not hesitate to make multiple incisions if occasion demands it.

The Time Factor

The only cases are those which do well, and this for very definite and precise reasons. The lodgment of a clot sets up two things which will in a few hours militate against a successful issue. These are first, endothelial changes which will cause a fresh thrombosis after the clot has been once removed, and secondly, a thrombosis slowly spreads from the original clot and may assume such dimensions as to make complete removal impossible. Within the first five or six hours these untoward effects are not likely to menace seriously the result, but after ten hours at least they become increasingly threatening so that at the end of twenty-four hours operation will usually be hopeless. It is probable that in the late successful cases already reported complete and absolute obstruction has not been present quite so long as would appear, or that a collateral circulation has in reality saved the limb. If surgery is to achieve a high percentage of successes it must be clearly understood that no cases (save perhaps haemorrhages) are more urgent than these. This lesson will be learned the more easily by reference to Table II, which I have made up from Key's collection (up to 1922), and those successes which have been published since.

TABLE II.—Time Factor. Twenty-eight Successful Embolotomies

Time	Key's Series	New Series (1922-25)	Totals
	Successes	Successes	
From 1 to 5 hours	5	10	15
From 6 to 10	4	2	6
From 11 to 15	2	1	3
From 16 to 20	1	1	2
From 21 to 24	1	1	2
Totals	13	15	28

For the sake of completeness the whole series of embolotomies which have been published since Key's paper so far as I have been able to find them are given in Table I. These new cases number 28, making, with Key's 45, a total of 73. The highest percentage of good results in the later series has been commented upon above, this improvement appears to have been due to earlier operation alone. Few of the cases abstracted in the table call for special comment. Only four operations undertaken within ten hours failed. In the nature of things a very high percentage of successes is unlikely ever to be attained, for emboli are apt to be multiple, and further infection elsewhere will sometimes carry off a patient in whom a local success has been won; moreover, the advanced age of the patient and the frequency of heart disease often make the subjects bad surgical risks.

Oliverson's case is especially deserving of comment as it bears special testimony to the value of embolotomies. A woman, aged 41, had suffered from valvular heart disease (mitral stenosis) for years. Pulmonary embolism had been observed on several occasions. In July, 1922, she was operated upon successfully by Michaelsson (Case 3 in Table I) for embolism of the left common femoral. In September, 1923, she suffered embolism of the right common femoral and again success was achieved (Oliverson, Case 16 in Table I). Six months later the patient was well and no evidences of disturbance of circulation in either leg could be detected. Soderlund's second case illustrates the old and the new methods (Case 27, Table I). A woman of 46 with chronic heart disease had an embolism of the right popliteal artery. No doctor was summoned for two days, gangrene supervened, and supracondylar amputation was performed. The patient was discharged well. Some months later embolism of the left brachial artery occurred. This

time she was sent into hospital immediately, where the embolus was removed, five and a half hours after lodging, with complete success. Two months later she was back at her work making paper flowers. These cases illustrate well the results which may at times be obtained, whilst they also remind us of the possibility or even probability of further embolism in heart cases.

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A METHOD OF NASAL PLASTIC REPAIR BY CARTILAGE GRAFT

BY

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THE method here described has proved useful in the treatment of nasal deformities, especially those types where depression extends high up, when other measures have been unsatisfactory. A typical case best exemplifies the steps necessary.

A girl aged 15½ years was brought to me late in 1923 for the deformity indicated in Fig. 1. When 4 years of age she had had a blow which crushed the nose. No special treatment had been adopted. She had a most disfiguring depression of the middle and upper parts of the nose; the nasal bones appeared to have participated in the damage and there was marked obstruction



FIG. 1

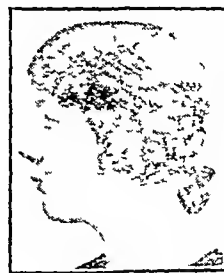


FIG. 2

from the remains of the septum. The tip of the nose had suffered from atrophy of the septal cartilage and was sharp as well as being turned right up by the depression above. The first step was to secure a satisfactory framework by collecting the shreds of cartilage embedded in fibrous tissue which represented the remains of the septum and by freeing the adhesions which had formed between this and the sides of the nose (in front) and the turbinates (behind). When healing was complete this object had been attained but the appearance was hardly altered.

Four months later under general anaesthesia a graft of rib cartilage was inserted to raise the depressed portion. The rib cartilages had crept and formed the lower support of the graft, the upper end rested on the remains of the nasal bones.

Description of Operation

An incision is made in the skin, beginning at a point half-way along the lateral margin of one nostril running forward along the margin to the anterior end being carried

across the front of the columella transversely to the corresponding point on the opposite side, and down the lateral margin of the other nostril to finish opposite the starting point (Fig 3). From this incision, dissection is carried forward to the tip of the nose, raising the skin, and over the tip upwards. The skin here is tightly bound down to the nose, and sharp dissection is necessary until one arrives about half an inch above the tip. Thence a narrow tenotome is inserted under the skin as far as the glabella, the skin being raised by a narrow elevator, and by pinching up from outside. With the same knife, and also with a blunt-ended tenotome, the skin is freed on either side of this central passage, the width to which this is carried depends on the amount of depression, there must be no tension in the skin after the graft has been inserted, and any error in this step is likely to be a too springing rather than a too wide freeing (Fig 4). This part



FIG 3—Line of incision

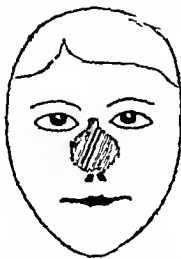


FIG 4—Area of skin raised

of the dissection is easily accomplished, but special care is needed in passing from the sides of the nose on to the cheeks, where a region of firm attachment of the skin seems to be the rule. The progress of this, the most important part of the operation, can be watched from outside. During the dissection bleeding is apt to be free. The cavity can be inspected by means of Sir StClair Thomson's speculum or a narrow Killian speculum, inserted at right angles to the usual direction so as to open into the posteriorly. When a satisfactory cavity has been prepared it is packed to arrest bleeding. A piece of rib cartilage, somewhat larger than seems necessary, is now cut and shaped roughly. The packing is removed and the final fitting and trimming of the cartilage is carried out, the graft being tried in position to ensure accuracy. The tip of the nose, if formerly raised, will be found to be brought down appreciably by this manoeuvre, hence the reason for cutting the graft at first rather large.

In this case the graft was made to take a firm support on the nasal bones, a small notch on the under surface preventing any tendency to ride up. The lower end was brought down quite to the new tip of the nose and shaped to give a round tip. Three points of horsehair suture closed the incision. Firm pads were applied on either side of the nose to prevent lateral displacement during sleep, etc. but no dressing was used over the tip of the nose.

During the next day it was seen that extravasation of blood extended as far as the globular conjunctiva on either side the whole nose was oedematous especially over the formerly most depressed part. Convalescence was uneventful. A slight rise of temperature (to 99.4°) occurred on the second and third days but there was never any anxiety as to suppuration. The sutures were removed on the fourth day. The result six months after operation is seen in Fig 2. It is remarkable how the whole face improved but part of this may be due to relief of nasal obstruction and mouth breathing. The very slight scar cannot be seen if sought for except when the head is thrown back.

Some of the advantages of this method are:—The vessel is approached to the part avoids any mucous either by secondary operation may be regarded as aseptic lower down into a narrower vein the skin of the depressed cases probably rides the spur at artery or exit of a large branch extended as high as is the look-out for embolism to make full when treating high the first few hours. Early diagnosis. Importance of operative treatment is not down even below. It is interesting to notice the effects when even there rest

against an incision, if necessary, a second graft may be inserted in a channel in the columella, to raise a depressed tip.

5 The graft may be fitted and altered before closing the incision.

6 No scar is made on the front of the face.

On the other hand, the method is not quite so simple as some other procedures, it makes also a certain demand on the patience of the subject. But this last is almost inevitable when dealing with a considerable deformity—*il faut souffrir pour être belle!*

The remaining photographs are other examples of the method. Fig 5 shows a deformity from falling against a kerbstone seven years earlier, I have, unfortunately, no



FIG 5



FIG 6

record of the profile deformity, but the full face shows it well. Fig 6 is the same face in profile, after grafting, it shows how generously one may deal with a large nose. Fig 7 shows the result of sword cut, it is not quite a true profile, and the sharply angular deformity is minimized.



FIG 7



FIG 8

In this case the ability freely to separate the skin laterally was very valuable in dealing with the scar. The treatment of the interior of the nose had been a more difficult problem. Fig 8 shows the result.

Fig 9 shows a deformity arising from being knocked



FIG 9



FIG 10

down (and perhaps trodden on) by a cow when the patient was 3 years of age. It is given for contrast with Fig 10, taken six days after operation. The scar, below the tip of the nose, can just be seen, the marks on the tip are from blood-staining. The grain in intelligent appearance is well shown. (None of the photographs have been retouched.)

ULTRA-VIOLET LIGHT AND THE ANTI-SCORBUTIC VITAMIN

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AND

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The object of this communication is to present the experimental results obtained in a preliminary investigation, carried out in the autumn of 1924, to determine the relation, if any, of vitamin C to ultra-violet light. There are several grounds for supposing that there might be some such relationship. In particular, the fact that vitamin C is so largely associated with plant life suggests its possible intimate connexion with phyto-chemical synthesis. Vitamin C had not previously been studied from this aspect when this work was planned, although of course the relation of the antirachitic vitamin (the "D" fat-soluble factor) to light rays has claimed the attention of a number of investigators during the past year or two. Our conclusions, it may be confessed, have been mainly negative—namely, that the C vitamin does not show that interrelation with light which is apparent in the case of vitamin D, we are not at the moment continuing the work, but it is thought perhaps worth while to summarize our conclusions, particularly as other workers are now interested in this field.

HISTORICAL

The known facts relating to the fat soluble vitamins are briefly as follows (1) Coward¹ has shown that "light is necessary for the formation of vitamin A in plant tissues" (2) It is now well known also that the ill effects caused by insufficiency of fat-soluble vitamins can to some extent be remedied by exposing the animal on the deficient diet to a source of ultra-violet light.^{2,3} (3) Finally, it has been shown by Steenbock and his collaborators,⁴ and independently by Hess,⁵ that it is possible to revert a ration deficient in fat-soluble vitamins by exposing it to light, thereby conferring upon it both growth-promoting and calcifying properties, cholesterol has recently been activated in this way.⁶

Light appears to have no effect upon vitamin B phenomena.

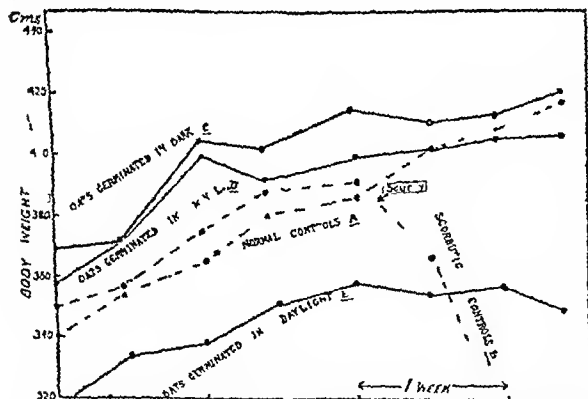


FIG 1—Effect of light on synthesis of vitamin C in germinating oats. Average growth of guinea pigs fed on—A oat ungerminated C oat only E oats only germinated in daylight. All animals received in addition daily rations of cod liver oil (1 drop) brain rock salt and water. The amount of food eaten was weighed daily (same applies to all figures).

EXPERIMENTAL

Our investigations were concerned mainly with the effect of mercury vapour or other light on

- 1 Synthesis of vitamin C in the plant
- 2 Animals kept on a scorbutic diet (attempt at prevention)
- 3 Animals already with scurvy (attempt at cure)
- 4 Rations with partly destroyed vitamin C (attempt to regenerate)
- 5 Rations rich in vitamin C (attempt to augment)

* The view (proved erroneous in this paper) that "ultraviolet light" is necessary for the synthesis of vitamin C has been taken for granted in some quarters without any scientific evidence. According to Luce and Maclean, however, yeast cells can synthesize vitamin A in the absence of sunlight.

Throughout we used a Cooper Hewitt quartz mercury vapour lamp. The power of the lamp to emit ultra-violet rays was tested by means of Webster, Hill, and Edinow's acetone methylene blue solution.¹⁰ No special precautions were taken to prevent oxidation of exposed foodstuffs. It is unlikely that our main conclusions would be affected if oxidation were to be rigorously excluded.

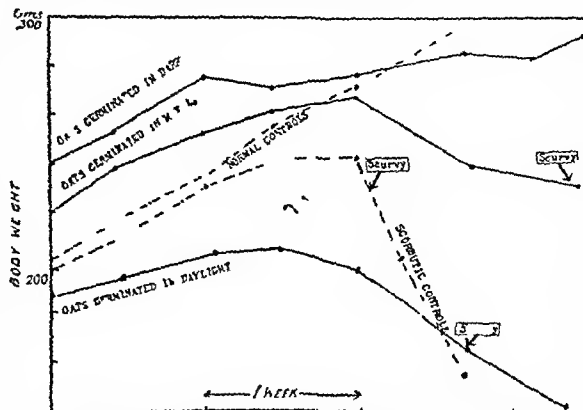


FIG 2—Relative efficiency of oats germinating in light or dark in preventing scurvy. The above are average growth curves for sets of three or more animals. All animals consumed the same weight of germinated oats (calculated in weight of original ungerminated cereal) whether germinated in the dark in light from the mercury vapour lamp, or in daylight. Oats germinated in the dark had sprouted most and were most efficient in preventing scurvy. In the experiment here represented germinated oats were approximately 50 per cent of the total food consumed. Other details as in Fig 1.

1 Synthesis of Vitamin C in the Plant

Ungerminated oats contain no vitamin C. During germination vitamin C is known to be synthesized. We carried out tests to determine whether light was necessary for this synthesis, we found it was not necessary. The diagram (Fig 1) needs no further explanation.

Relative amounts of Vitamin C Produced in Dark and in Light Respectively—Incidentally it was observed during the course of this part of our investigations that oats, germinating in the dark and producing therefore a greater

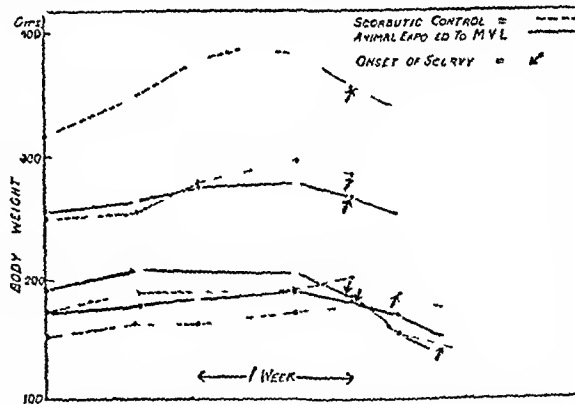


FIG 3—Effect of exposing animals on scorbutic diet to mercury vapour lamp. Broken line= scorbutic controls in dark (diet completely deficient in vitamin C). Continuous line=animal on same diet but exposed to mercury vapour lamp (few minutes to several hours daily distance from lamp averaged about 4 feet). Normal controls were also taken (not shown in chart).

length of shoot than when exposed to the light for the same length of time and under the same conditions, produce a correspondingly greater amount of vitamin C. In other words, a larger ration is required of oats germinated in light than of oats germinated in the dark, in order to prevent scurvy. This is illustrated in Fig 2.

2 Effect of Light on Animals on a Scorbutic Diet

We found that guinea pigs exposed to daylight, to mercury vapour light, or to very dull light (diffused from filament lamps) all developed scurvy equally and after the same period when fed on the same completely scorbutic diet (Fig 3). Experiments upon the effect of irradiating

on a diet only partly deficient in the anti-scurvy vitamin are still in progress

3 Effect of Light on Recovery from Scurvy

We found that animals recovered from scurvy at apparently the same rate whether exposed to the mercury vapour lamp or not, when fed on the same curative diet (Fig 4)

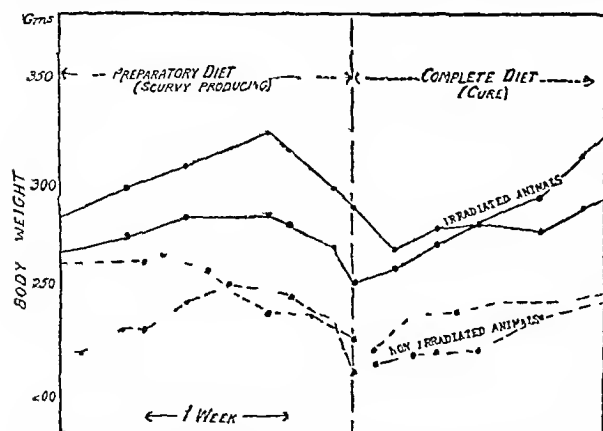


FIG 4—Effect of exposing to light of mercury vapour lamp animals recovering from scurvy. The amount of vitamin C supplied during recovery was strictly limited (24 grams of cabbage per animal in all cases, 1 gram being approximately the minimum to prevent scurvy) so that any curative action of the light might be better detected. Continuous line—animals irradiated during recovery only. Broken line—non irradiated controls. Preparatory (scurvy producing) diet was of oats, bran, cod liver oil, rock salt and water.

4 Effect of Light on Rations in which Vitamin C had been Partly Destroyed

In our earlier experiments we thought we could observe a partial regeneration of vitamin C in heated cabbage after exposure to the mercury vapour lamp. The effect, however, was so slight—a possible delay in the appearance of scurvy for a day or two—that we attach no significance to it.

The following chart (Fig 5) summarizes a typical experiment, in which exposure of previously heated cabbage to mercury vapour light was without apparent effect on its antiscorbutic potency.

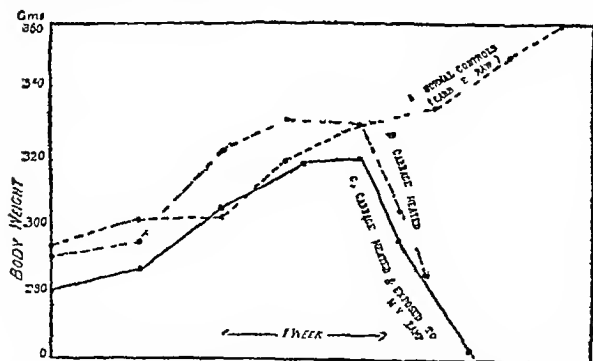


FIG 5—Animals received in addition to scorbutic diet (bran, oats, rock salt, cod liver oil, water). Animals A, 5 grams raw cabbage; animals B, 5 grams raw cabbage heated to 100° C for 1 hour; animals C, 5 grams raw cabbage heated to 100° C for 1 hour and subsequently exposed to mercury vapour lamp (at a distance of a few feet for varying periods up to 4 hours per diem).

5 Effect of Mercury Vapour Light on a Ration Rich in Vitamin C

We exposed to the light of a quartz mercury vapour lamp rations rich in vitamin C (for example, a proprietary infants' food), and compared their antiscorbutic value with that of the same unexposed foods. We were unsuccessful in finding any augmented antiscorbutic value. (See Fig 6)

Absence of Secondary Radiation Effect

The fact that vitamin C has its main source in the vegetable kingdom raises the question whether there is

any direct connexion between it and radiant energy in the form of light rays. For fat-soluble vitamin such a connexion is known to exist, and some would go further—basing then arguments on the protection against A or D avitaminosis conferred upon animals (a) by direct exposure to ultra-violet rays, or (b) by contact with other

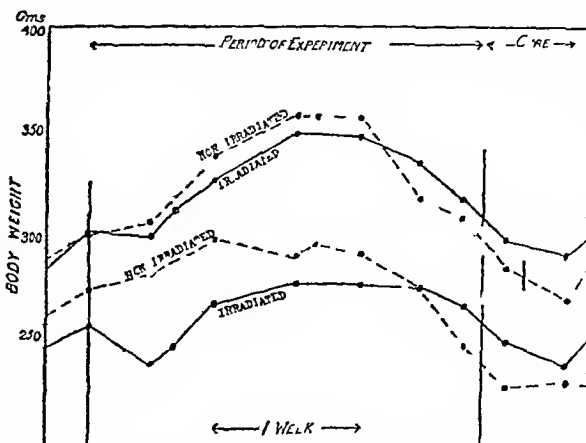


FIG 6—Effect of ultra violet light on antiscorbutic value of food stuff rich in vitamin C was mixed with the standard scorbutic diet so as to supply only 60 per cent of the minimum required to prevent scurvy in guinea pigs. No delay in onset or modification of the symptoms was found in parallel feeding tests where the foodstuff had been exposed to ultra violet light immediately prior to feeding. Continuous line—guinea pigs on irradiated diet. Broken line—guinea pigs on control (non irradiated) diet. Normal controls were also taken (complete diet).

animals which have been exposed (it is claimed),⁹ or (c) by consumption of dead food or growing plant which has been irradiated, or (d) by dwellings previously irradiated (disputed)¹⁰—and would maintain that in the prevention of avitaminosis some form of radiant energy plays its part no less than a definite chemical substance, the accessory food factor. There is little or no experimental evidence to support this contention. Our previous results make it highly improbable that the C factor is interrelated with radiation phenomena. The following experiment, yielding, as was expected, negative results, is in further agreement with this view.

We allowed ultra-violet light from the quartz mercury vapour lamp to act on various foodstuffs, some rich and some deficient in the C factor, and tested these foodstuffs immediately afterwards towards a photographic plate. No activity towards the plate was found.

It may be noted that Dr Janet Clark¹¹ has recently arrived at a conclusion similar to that reached by us in our second section. Honeywell and Steenbock¹² have separately investigated a problem similar to that dealt with in our first section and reached a similar conclusion. They used germinating barley, while we used germinating oats.

DISCUSSION ON INFANTILE SCURVY

The statement that the synthesis of vitamin C in the plant is dependent upon the action of sunlight has appeared in more than one textbook, but no experimental evidence has been produced in support of it. True, it has been urged in this connexion that infantile scurvy is (according to clinical observation) more prevalent after the darkness of winter than in summer. The explanation, however, may well be—quite apart from all questions of greater susceptibility to disease during winter conditions—that bottled infants* receive in winter milk less rich in vitamin C than in summer, owing to the fact that the cow's winter diet is relatively deficient in fresh greenstuff or other sources of vitamin C. The antiscorbutic value of milk has been shown to depend on the presence of the C factor in the

* The disease is rarely encountered in breast fed infants for the human mother's winter diet is not so seriously restricted as the cow's although such sources of vitamin C as salads and fruits are scarce in winter. Oranges and potatoes are in most cases readily obtainable and cheap. Further breast milk is received by the infant with its vitamin value unimpaired, while bottle milk may have had its value diminished by pasteurization, boiling, or drying.

dict Cow's milk is accordingly richest in this vitamin when the animals are at grass*. The lower antiscorbutic value of winter milk may therefore be attributed to the cow being put on an inferior dietary, rather than to any direct action of sunlight on the diet (or on the animal itself).

CONCLUSIONS

A noteworthy antithesis is seen to exist between the fat-soluble vitamins and the antiscorbutic vitamin. The antiscorbutic vitamin can be synthesized in complete darkness, and experiment has so far failed to connect it in any particular whatever with ultra-violet light, the fat-soluble vitamins, on the other hand, have been shown to be affected by ultra-violet light in their synthesis and activation as well as in the prevention and cure of vitaminosis. The apparent independence of vitamin C to light is in a sense surprising, in view of its special association with the plant, in the metabolism of which light plays so important a part.

The practical significance of our results is to emphasize the importance of the provision of the C factor in diets. While it is possible to replace the fat-soluble factors to some extent by light rays (acting either on the diet or the animal), the prevention of scurvy must—in the present state of knowledge—rest upon the provision of adequate supplies of vitamin C in the food. Of special interest is this in relation to infantile scurvy—Barlow's disease. It is worthy of note that of the numerous proprietary foods sold as substitutes for maternal feeding, we know of only a single one that can claim to contain in itself an adequate supply of the antiscorbutic factor, permitting one to dispense with food adjuncts.

SUMMARY

The association of vitamin C with plant life suggests its possible connexion with phyto-chemical synthesis. Yet,

- (1) Light was found not necessary for the synthesis of this vitamin (in germinating grain), contrary to former supposition and in distinction to vitamin A, which is said to require light for its formation in the plant,
- (2) The direct exposure of an animal on a scorbutic diet to ultra-violet light did not appreciably retard the onset of scurvy,
- (3) Ultra-violet light appeared to have no curative action on a scorbutic animal,
- (4) Cabbage in which the C vitamin had been largely destroyed by heat was exposed to the mercury vapour lamp and tested for regeneration of the vitamin, with doubtful results,
- (5) Exposure to ultra violet light of an infants' food already rich in vitamin C gave no evidence of an augmented antiscorbutic value.

These results indicate that while the effects of fat-soluble vitamin deficiency in, for example, an infant's diet can be remedied to some extent by exposing the infant (or the food) to sunlight, if one is to prevent scurvy one must rely on an adequate amount of vitamin C in the diet.

Cow's milk may be deficient in this vitamin in winter owing to the animal's inadequate stall diet. The observed increase of infantile scurvy in late winter probably results from this cause rather than from absence of sunlight, to which it has been attributed latterly without sufficient evidence.

We wish to express our cordial thanks to Professor Sir F G Hopkins, F R S, and Professor J C Drummond for much kind interest and encouragement.

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CYSTIC DILATATION OF THE COMMON BILE DUCT

BY

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THE following case is of interest owing to the rarity of the condition, the difficulty of making a correct diagnosis, and the pathology of this and somewhat similar conditions.

H F, female, aged 2 years and 3 months was admitted to the Belgrave Hospital for Children on January 2nd 1925. The child had been vomiting for a fortnight and a rapidly progressing enlargement of the abdomen had been noticed for the past month. The vomiting started with occasional attacks, and she vomited about four times during the first week. This became worse and during the week prior to admission she vomited every day, and sometimes three times a day. The vomit was independent of food and was chiefly nocturnal. She did not complain of any abdominal pain, and was not constipated.

She was said to have had an attack of jaundice when 9 months of age, which lasted for some weeks, but had had no other illness. She was breastfed for eight months and then given glaxo and cow's milk. She was the youngest of a family of five. Three sisters and one brother were alive and well, one sister, the fourth child, aged 4 years, had jaundice at 2½ years, which lasted four months, but is now healthy and the abdomen normal to palpation, the jaundice having apparently been of a catarrhal nature.

On admission the temperature was 97°, the pulse 116 and respirations 24. The child was fairly well nourished, there was no jaundice, but the complexion was of a rather "earthy" hue. The tongue was moist and covered with a thick white fur. The cranial nerves, heart and lungs were normal. The abdomen was large and protuberant, and the percussion note was tympanic all over, including the flanks. The liver could be felt two fingerbreadths below the costal margin, its edge was sharp and very hard, it was not tender. The spleen also could be felt about two fingerbreadths below the costal margin. On the right side of the abdomen a large mass extended from beneath the liver to just above the crest of the ilium. It did not appear to move on respiration. On bimanual examination the tumour was found to extend backwards into the right loin. It was thought to be a tensely cystic swelling in connexion with the right kidney, but owing to the distension of the abdomen it was difficult to palpate. It was not tender. The urine was faintly alkaline, and contained no albumin, sugar, or bile salts or pigments.

During the first week the child vomited nine times. She was not constipated, and the faeces were of a normal colour. She lost weight. A blood count showed red blood cells 5,095,000, white blood cells 7,200, haemoglobin 90 per cent, colour index 0.88. The various cells were in their normal proportions. The Wassermann reaction was negative. The vomiting which occurred mostly at night, improved with alkalis, and during the second week three small vomits only were recorded. They consisted of partially digested food and a small quantity of bile-stained fluid. During this week weight was regained and became the same as on admission.

During this period in hospital the temperature, pulse and respiration remained normal, but the abdomen was still very distended and the swelling in the loin was thought to have increased in size. In spite of the facts that the vomiting had stopped that she took her food fairly well, although never very hungry, and that the bowels were open she began again to lose weight and it was decided to perform an exploratory laparotomy in order to ascertain the nature of the tumour.

Operation

On January 19th one of us (R. A. R.) opened the abdomen under general anaesthesia by an incision through the right rectus muscle over the tumour. The tumour was found to be globular and cystic and about four inches in diameter. It lay below and separate from the liver, the right kidney was clearly felt behind the cyst, and the duodenum lay upon and was closely adherent to its anterior surface. The liver felt hard and its surface rough and the gall bladder slightly distended projected between the liver and the cyst. The cyst was explored with a needle and syringe, and clear mucoid pale yellow fluid was withdrawn. The cyst was sutured to the margins of the upper part of the abdominal wound, and a tube inserted into its cavity through a small incision, to the edge of which it was fixed by a stitch. Leakage was prevented by a purse-string suture inverting the edges of the incision in the cyst around the tube. The abdominal wound was closed except for the point at the upper part where the tube emerged.

Examination of the fluid aspirated from the cyst showed that it contained no albumin, no urea and no pancreatic ferments. It contained bile salts and bile pigments.

After History

The day following the operation the child seemed fairly well, there was no vomiting, the bowels were not open, but a small pale motion was passed the day following (January 21st), and on January 22nd two stools of normal colour and consistency. After this the stools were extremely pale and contained no bile salts or bile pigment. The wound drained profusely, some days more than others and in amounts varying from 10 to 20 ounces of thin greenish yellow bile.

Death

general condition of the child meanwhile became steadily worse and at no time after the operation was she in a fit state to attempt further operative measures. There was no vomiting and no special symptoms, the child simply became weaker and weaker. Bile in various forms by the mouth was tried, and also reduction of fats in the diet, but no improvement took place. She went steadily downhill and died on February 10th. During the post-operative period the wound remained clean and the temperature and pulse were not raised.

Post mortem examination revealed a cystic swelling situated in front of the right kidney and behind the second part of the duodenum which it had pushed forward. The swelling also extended behind the head and the greater part of the body of the pancreas. When injected with formalin to preserve it it held 140 ccm. and would probably have taken 20 to 40 ccm. more. On dissection this swelling was found to consist of a cystic dilatation of the common bile duct, continued into the hepatic ducts and also into the cystic duct where it joined the common bile duct. The walls of the cyst were about 2 mm. thick.

The whole of the extraduodenal portion of the common bile duct was involved in this cystic dilatation, and it was so closely adherent to the duodenum that no duct could be found between the cyst and the duodenum. The opening from the cyst into the duodenum consisted of a small slit-like orifice at the lower end of the cyst. There was no flap of mucous membrane guarding it. After the specimen had been hardened in formalin, the patency of this orifice could not be demonstrated, but the opening into the duodenum appeared to have been very oblique. The pancreatic duct was patent and appeared normal. The gall bladder was collapsed. The liver was enlarged, hard and definitely cirrhotic. The spleen was also enlarged and presented rather a mottled appearance.

Microscopical Examination—The cyst wall was composed mainly of dense fibrous tissue. The inner layer was not quite so compact, and in places flattened epithelial cells could be recognized.

The liver showed a coarse cirrhosis of portal distribution, the fibrous tissue in the portal spaces was well formed and contained bile ducts, the larger of which were dilated and all of which had thickened walls. The bile ducts were lined with normal epithelium. The smaller ducts were more numerous than usual though no actual proliferation was seen. The cirrhotic condition did not spread along the smaller bile capillaries nor between the liver cells, though here and there detached liver cells were seen in the fibroid area.

The spleen pulp was intersected by strands of fibrous tissue, many of which appeared to have been formed by thickening of the normal trabeculae of the organ. In close relation to them the larger blood vessels lay, and from them more delicate strands of fibrous tissue spread into the spleen pulp. The blood sinuses of the spleen were moderately distended. The Malpighian corpuscles were of normal appearance.

Nearly fifty cases similar to the one described have been recorded and possibly more might be included, as many observers have omitted doubtful or insufficiently described cases.

McWhorter,¹ in his excellent and comprehensive survey of the literature, states that cases in which there was a definite pathological condition explaining any obstruction, such as congenital atresia, pancreatitis, stone, or inflammatory stricture, were not included in his series, yet in his own case he describes the one as containing some "hidradenoma-like" stones, and the hepatic ducts as being partially filled with similar stones. He has, for instance, excluded Milner's case, without, it seems to us, sufficient justification.

The condition is looked on by most observers as congenital, the evidence being that Heiliger² described a similar condition in an almost mature foetus, and from the fact that most of the cases recorded have occurred in children and young subjects. The average age for the onset of symptoms would appear to be between 10 and 14 years. 12 to 14 in Walker's³ series, and rather younger in McWhorter's. Of the cases recorded 87 per cent. occurred in females.

In all the recorded cases there has been evidence of obstruction to the outflow of bile from the common duct into the duodenum. This has been shown

1. *Clinically*, by the symptoms of jaundice, which has occurred in all but three cases, the jaundice either having been present at the time the patient came under observation or a history of one or more attacks elicited.

2. *Pathologically*, by the fact that in many cases no opening from the common duct has been found at operation or autopsy, although from the patient's history an opening must have been present either at the time or very shortly before. In other cases where an opening has been found, obstruction has been demonstrated by oblique openings, valve-like folds of mucous membrane, etc.

3. *From Post-operative Recovery*—Cases in which a primary choledcho-duodenostomy has been performed have

recovered, in other words, the obstruction has been overcome by means of a short-circuit.

In cases examined *post mortem*, some observers describe a fold of mucous membrane overhanging the distal end of the common bile duct, and preventing bile from reaching the duodenum until the sac (upper portion of the bile duct) has sufficiently dilated to expose the opening. Others describe an abnormally oblique entry of the bile duct into the duodenum. Others, again, suggest that the cause of obstruction may be of the nature of an inflammatory duodenitis involving the duodenal portion of the common bile duct. Together with this obstruction it is assumed that there is a congenital weakness of the walls of the bile duct in its upper part, the cystic dilatation of the duct only involving the extraduodenal portion, and often only the upper two-thirds of the common bile duct.

It seems clear, therefore, that in all recorded cases there has been obstruction to the outflow of bile, that the obstruction is partial and intermittent, that the obstruction tends to progress—all cases not operated upon having died. While most observers take it for granted that the cyst is congenital, does it not seem far more likely that the obstruction is the congenital anomaly, and the cystic dilatation merely secondary to this, comparable to a hydronephrosis produced by chronic partial obstruction to the urinary outflow?

In no case has a diagnosis of this condition been made before operation or autopsy. This is hardly surprising since so few cases have been recorded. In nearly every case the surgeon has been unfamiliar with the condition.

In almost all the cases the symptoms have been similar, consisting of attacks of jaundice, abdominal pain, progressive enlargement of the abdomen, and a cystic swelling on the right side of the abdomen. The swelling has been variously diagnosed as a hydatid cyst of the liver, hydro-nephrosis, ovarian cyst, etc. The enlargement of the liver and spleen, such as occurred in our case, is by no means universal, although it occurred in Milner's case with very similar *post-mortem* findings. In some cases a biliary cirrhosis of the liver has been described. As regards treatment, where the cyst has been extirpated, its nature not having been realized at the time of operation, the mortality has been 100 per cent. The cases treated by drainage of the cyst alone have, with one or two exceptions, died. In some of these a subsequent choledcho-duodenostomy has been performed with success, but in most cases where it has been attempted it has failed.

The operation of choice is choledcho-duodenostomy at the first operation so as to provide internal drainage of the bile into the duodenum. From the position of the cyst, which lies just behind the duodenum, this should not prove too difficult an operation, provided the patient is not very young and is in good condition. The ease or difficulty of the operation may be determined in part by the thickness of the cyst wall, as in some cases it is quite a substantial structure, while in others it is so delicate that it has actually ruptured at the time of operation.

For a complete bibliography of the condition the reader is referred to the papers of McWhorter and Erik Waller, previously quoted.

We are indebted to Dr. T. H. G. Shore for the preparation and description of histological specimens.

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TREATMENT OF HAEMORRHOIDS BY THE GALVANO-CAUTERY

BY

W. S. WHITCOMBE, M.D.

THE objections to the ordinary surgical methods for the cure of haemorrhoids are considerable. Among these are the damage to normal tissue, the raw surfaces left and consequent exposure to faecal infection, the lengthened process of the healing of the sloughing mucosa, the prevalence of pelvic encephaloma, the loss of time and interference with occupation, the ordeal of an operation with

its very trying after-effects, the expense of the anaesthetist and nursing home charges, etc.

The method of treatment by injections of a solution of carbolic acid 10 per cent in water and glycerin—or, as preferred in America, of quinine and urea—has been in use for many years, and has probably been tried by most of us. Unfortunately it is suitable only in simple uncomplicated cases and fails in some 50 per cent, moreover, it sometimes causes very severe pain, lasting many hours, even in experienced hands.

Treatment with the galvanocautery is almost as simple, is successful in every class of case, is painless, entirely under control, leaves no raw surface, can be performed on the consulting room couch at a moment's notice, occupies only a few minutes, and does not necessitate lying up or interfere with occupation. I have used this method for over twenty years and have never seen a failure, complication, or recurrence.

The patient, who is advised to come with an empty bowel, lies on the left side with a square of waterproof material tucked under the buttock and a packing of cotton wool to catch any bleeding. The anus is first dealt with the effort of the patient, with the rubber clad finger, brought down with the rubber clad finger. Messrs Allen and Hanburys have modified the one used by the late Mr. Graeme Anderson, lipped and partially cut away at the upper end. Mine has the advantage that it will revolve, allowing any portion of the interior of the bowel wall to drop into the cut away opening without moving the handle from the posterior buttock groove, two small eyelets to attach hooks from a waist belt make the speculum self retaining.

The mucosa is swabbed with a solution of crystal violet and brilliant green (1/500 of each), or of acriflavine (1 in 500). Eight minims of a sterile local anaesthetic, such as 2 per cent novocain with adrenin and two drops of a 5 per cent solution of carbolic acid added in a minim measure glass, are injected into the submucous cellular tissue at the base of the pile. I prefer the genuine Record syringe, using an adapter with Schummel needles, these are so fine that the puncture closes at once. A minute later the pile is punctured to the depth of from one quarter to one third of an inch with a bulb pointed burner (made for me by Messrs. Allen and Hanburys), not platinum, but an iron alloy which does not bend easily when hot and has a higher caloric capacity. A small pile needs only one such puncture, a large one perhaps three or four, especially if it is tough and fibrotic. The cautery bulb point must go into the vein and be kept there, moving it in and out to prevent it sticking, until the blood is coagulated and bleeding stops. I never treat more than two piles at one sitting.

The local anaesthetic gives confidence, and I use it because, also, I have many times noticed patients flinch a little during the burning. It is advisable to blow away gently any steam or smoke which shows itself.

The speculum is then withdrawn, the interior of the bowel is lubricated (I prefer the old gall and opium ointment), and the pile mass pushed up through the sphincters. A good sized piece of cotton wool is wedged over the anus, into the buttock fold, and the patient can go back to his occupation, perfectly comfortable. He should return in a week. By that time there will be little or nothing to feel of the pile or piles so treated, and more can be done. The patient will say that, beyond a little bleeding after a motion, or a little sanious discharge, he has had no discomfort. Piles so treated rarely come down afterwards, and no slough is noticeable. The flaccid and loosened mucosa is fixed back by the cicatricial contraction which takes place and gradually shrinks all round, the sphincters regain tone and shut with a snap as they should do.

The small nodular, very painful swelling which appears suddenly during strain at the anal orifice and distresses so many of us in active life is for convenience called a pile, but it is not of the nature of the looped varicose vein which constitutes the ordinary haemorrhoid. It is a clot due to the accidental rupture of a small vessel into the subcutaneous connective tissue. It cannot be replaced, whereas the ordinary submucous pile is not painful and can be pushed back. The cautery is useless in this case. The clot can be cleared out through a half-inch incision into the skin, under infiltration anaesthesia, this gives immediate relief, and if the cavity be swabbed out with flauine the cut heals by first intention. If the cavity has previously become septic it must, of course, be drained. The alternative is rest in bed, a hypodermic injection of morphine, and hot fomentations.

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SECTION OF SURGERY

SIR BERKELEY MOYNIBAN, Bt, KCMG, CB, MS,
FRCS, President

DISCUSSION ON ACUTE INTESTINAL OBSTRUCTION

OPENING PAPERS

I—SIR WILLIAM TAYLOR, KBE, CB, MD, LL.D.,
Regius Professor of Surgery, Dublin University

THE TREATMENT OF PRIMARY ACUTE INTESTINAL OBSTRUCTION

THE surgery of the acute abdomen has advanced so satisfactorily during the past twenty-five years for every condition, with the sole exception of acute intestinal obstruction, that one is compelled to ask why the mortality attending the treatment of this condition should be not one whit better to day than it was at the beginning of the century. The reason for this appalling state of affairs is not difficult to discern.

It is solely due to what, in truth, may be described as the ignorance and carelessness, both of which are inexcusable and are indeed nothing short of criminal, of the general practitioners or physicians who see these unfortunate cases in the earlier stages of their illness. Instead of recognizing that purgation and enemata can do no good, but, on the other hand, may do an infinity of harm, apart from the delay in surgical treatment their administration produces, these practitioners are continually laying themselves open to an action at law for malpractice, or, worse still, they run the risk of being placed in the dock and charged with manslaughter.

If the truth were generally known, the mortality attending the surgical treatment of primary acute intestinal obstruction the result of intra-abdominal conditions is nearer to 60 per cent than the 35 to 40 per cent usually stated—a truly shocking state of affairs. I may say that I almost get a rigor when I receive a telephonic message to ask me to go to hospital, either public or private, to operate upon a case of acute intestinal obstruction. Physicians and general practitioners have all come to recognize that the only satisfactory treatment for all other acute intra-abdominal conditions is early surgical intervention, but why they cannot be got to come to the same conclusion with regard to the treatment of acute intestinal obstruction passes my comprehension.

For over twenty years I have been accustomed to teach that apart from acute intussusception, three stages can be recognized in these cases, and that the treatment must necessarily vary according to the stage in which one finds the patient.

The first stage is that in which the patient is seen early (within twenty-four hours). His general condition is good and there is but little intestinal distension. The second stage is that in which the patient is not seen until later—two, three, or four days. His general condition is good, but there is considerable intestinal distension and severe vomiting which may or may not be stercoraceous. The third stage is that in which the general condition of the patient is bad. His pulse is feeble and perhaps intermittent and vomiting is almost continuous and is certainly stercoraceous. The abdomen is greatly distended, and the patient presents the appearance of one profoundly poisoned by the absorption of toxins, whether the result of bacterial activity, or a proteose intoxication, or a combination of both conditions.

The treatment of the first stage consists in washing out the stomach with sodium bicarbonate solution. A general anesthetic is administered and the abdomen is freely opened. The cause of the obstruction is searched for and removed, after which the abdomen is closed. The stomach is again washed out and the patient returned to bed. Lavage of the stomach after operation is more important, in many cases, than it is before the operation.

In the second stage a similar procedure is adopted until the obstruction is discovered and removed. A separate incision should then be made through the left rectus muscle above the umbilicus, and a loop of the jejunum, as close to its origin as possible, is brought out through the wound. Into it is fastened a tube of 7 or 8 mm diameter, after the method of Senn's gastrostomy, except that only one or two purse string sutures are used, so that too much subsequent narrowing of the intestinal lumen may be avoided. The intestine is then returned within the abdomen and fixed with two catgut sutures, one on each side of the tube, to the parietal peritoneum and posterior sheath of the rectus. A lunated piece is cut out of each side of the end of the tube before it is introduced into the intestinal opening, so that if it should accidentally impinge upon the opposite wall of the bowel the intestinal contents could still escape freely. By this procedure the distended intestines will be allowed to empty themselves of their poisonous contents. The central wound is then closed. The stomach is thoroughly irrigated as before, and the patient put back into bed. An experienced nurse or a senior student is directed to continue irrigating the intestines with sodium bicarbonate solution by siphonage through the tube. In this way, without taxing the patient's strength and without producing any shock, the intestines are assisted to empty themselves. This process can be continued for several hours, at the end of which time the entire intestinal area between the stomach into which the tube has been introduced and the point at which the obstruction existed will have been emptied of its contents, and these contents replaced in large measure by a fluid containing sodium bicarbonate and glucose, the absorption of which will counteract the tendency to acidosis and help to build up the reserve carbohydrates as well as replace the fluids of which the tissues have been deprived by the continuous vomiting.

I have been so impressed by the soundness of the teaching and importance of the views of Mr Victor Bonney, as recorded in the *Middlesex Hospital Reports* and the *BRITISH MEDICAL JOURNAL*, that I have discarded all other methods of emptying the distended intestines of their poisonous contents and have followed the procedure outlined above. In the majority of these cases the tube can be removed in twenty-four or forty-eight hours under gas or local anesthetic. A single mattress suture will close the intestine. If Dr C H Mayo's suggestion of bringing the tube out through a hole in the great omentum is adopted, the necessity for a suture to close the opening into the intestine after removal of the tube will be obviated. Lactose may be given freely either by mouth or through the intestinal tube, as it has been shown that lactose can eliminate proteolytic bacteria from the intestinal flora.

In the third stage the patient is too ill to stand the administration of a general anesthetic, and he is not even removed from the bed in which he lies. The stomach is washed out as described above, after which the tissues of the abdominal wall above the umbilicus are infiltrated with a 1/2 per cent solution of novocain. An incision of 1 1/2 or 2 inches is then made through the middle line or left rectus muscle, as may be desired, into the abdomen. A finger is introduced and a loop of the jejunum, as near to its origin as possible, is withdrawn. A tube is then introduced into this fluid-containing segment of gut as before described, and siphonage similarly continued.

Should the patient survive, it may be possible at the end of a week to open the abdomen, seek out the cause of the obstruction and remove it. In the meantime nourishment can be administered through the tube directly the intestinal contents have been evacuated, or it may be given by mouth. The tube must not be removed until the

patient has recovered from the effects of the second operation.

I am convinced that in all cases of intestinal obstruction in which stercoraceous vomiting has occurred, drainage of the jejunum as close to its origin as possible should be instituted. This drainage can be assisted by repeatedly filling up with sodium bicarbonate solution and siphoning off the intestinal contents after the patient has been returned to bed.

In a paper by Dr Czar C Johnston of Lincoln, U.S., on the treatment of adynamic ileus, published in the *Nebraska State Medical Journal* in 1920, an almost identical procedure to that I have described for the treatment of patients in the third stage of acute intestinal obstruction is advocated. As has been pointed out by Dr J E Summers of Omaha, Nebraska, Bonney's method of performing a jejunostomy is the one flaw in his otherwise sound paper.

The treatment of acute obstruction engrafted upon chronic is somewhat different. The site of the chronic obstruction will almost invariably be found to be somewhere in the large intestine, and in all such cases the bowel above the obstruction should be drained at once. A caecostomy after the method of Sir Harold Stiles gives the best results so far as tiding the patient over his immediate dangers is concerned. This carries out Bonney's idea of draining the fluid-containing segment.

Of the various mechanical conditions producing primary acute intestinal obstruction within the abdomen intussusception has been by far the commonest I have myself encountered. There is no acute abdominal condition more easy to diagnose, and that, too, although the majority of such cases we met with in young infants who are unable to speak. There cannot be any excuse for failure to recognize this condition within from an hour or two to twelve hours after its onset. The condition is met with most frequently in infants between the ages of 2 1/2 months and 10 or 12 months—my youngest case occurred in an infant of 2 1/2 months. It is occasionally met with (but with diminishing frequency) at all ages up to 70 or more. My oldest case occurred in a woman of 73 years. The evidences in an infant are so typical that one has only to see one case, or hear the phenomena described, in order to be able to make a correct diagnosis—and that, too, within a few hours after the onset.

The diagnosis of intussusception once made, the only satisfactory method of treatment consists in early operation, and reduction by gentle expression from below upwards. Care should be taken to see that the least dimple at the site of commencement of the intussusception is expressed. I have not seen any case recur after operation. My own mortality has been 3 deaths in 81 cases. In two of these cases resection had to be performed, while the third death took place from convulsions on the tenth day after operation, when the abdominal wound was soundly healed, and the child was considered fit to be taken home. For some years past I have sent these cases home a few hours after they have recovered from the effects of the anesthetic. The mother reports daily to the hospital as to the infant's progress or a student visits the case and reports to me.

I believe that this condition is one which requires greater gentleness in manipulation and greater rapidity in operating, if success is to be uniformly attained, than almost any other intra-abdominal trouble. Given an average case of less than twenty-four hours' duration, I think the completed operation should not require more than ten or eleven minutes to perform. Early diagnosis and early operative intervention will reduce the mortality from the figure at which it is generally recognized to stand to-day to less than 5 per cent.

With regard to the treatment of acute intestinal obstruction of the adynamic type, Mr Sampson Handley's method and advocacy leave little to be said on the subject. I would merely suggest, with all due deference, that in bad cases drainage of the jejunum high up and siphonage of the intestines plus lavage of the stomach, combined with morphine, will sometimes tide a patient over an almost

hopeless condition for a few days, when ileo-ecceostomy or ileo colostomy or jejuno-colostomy plus crocal drainage could be performed with greater prospect of success, as the patient will be the better able to withstand this more prolonged procedure.

Until physicians and general practitioners can be educated to recognize the fact that there is but one legitimate method of treatment for acute intestinal obstruction, no matter what its cause or where situated—namely, early operation—we cannot hope for much improvement in our results.

II.—W. SAMPSON HANDLEY, M.S., F.R.C.S., Surgeon to the Middlesex Hospital

Few surgeons will deny the main thesis of Sir William Taylor's paper—that the results of treatment in acute intestinal obstruction could be greatly improved by earlier operation. Sir William declares roundly that these fatal delays are due to the ignorance and carelessness of physicians and general practitioners. I do not think that surgeons can requit themselves of blame so easily in this matter. In the first place many abdominal operations are now performed by medical practitioners whose skill and training do not qualify them for such a heavy responsibility. There are to-day too many "occasional" surgeons. Then, too, the ignorance of the subject which physicians and general practitioners often display is excusable, because their only opportunities of first-hand knowledge are derived from necropsies, where all the initial phases are lost in chaos and confusion. Surgeons, on the other hand, have opportunities at operations of tracing the early consequences of obstruction, and of educating themselves in what Sir Berkeley Moynihan has called "the pathology of the living." Has the surgeon done his duty in educating his non-surgical colleagues? Has he played his proper part in making the truth prevail? To these questions I think the answer "No" must be returned. In particular, I think the authors of surgical textbooks have failed lamentably in dealing with the symptoms of intestinal obstruction.

If diagnoses were made and operations were skilfully performed within twenty-four hours of the onset of acute obstruction it is certain that recovery would ensue in nine cases out of ten. It is here that the textbooks are so confused and deficient in the information they supply. They usually give a complete list of the signs and symptoms of obstruction, but they make little distinction between the valuable early signs and those which merely mark a lost opportunity. They do not indicate which of the signs are constant and which are inconstant. They do not explain the origin of the various signs so that the observer can form a mental picture of the critical and rapid march of events in his patient's abdomen.

This laxity of method induces the observer to wait for the development of late signs resulting from intestinal distension and early peritonitis. The early signs are few in number, and of these some are inconstant. In particular, the signs of shock and collapse may be entirely lacking if strangulation is absent. Thus, a normal pulse and temperature are frequently seen in early intestinal obstruction. There is usually no distension, and the muscle of the abdominal wall is perfectly soft, even pain and vomiting are not invariable signs.

To make an early diagnosis the observer must rely exclusively upon the presence of complete constipation—that is, cessation of the passage of flatus and faeces for a period of twenty-four hours, during which time two turpentine enemata are given. On the failure of the second enema the diagnosis must be regarded as established whatever other signs and symptoms are present or are absent. The observance of this simple rule would save many lives.

In certain forms of obstruction other early signs are present—as, for example, the local signs in strangulated hernia, or rectal haemorrhage and abdominal tumour in intussusception—but the general rule for early diagnosis is as I have stated it.

Paralytic Obstruction

The opener has dealt only with primary organic obstruction, leaving it to me to deal with a subject which has greatly interested me—namely, secondary paralytic obstruction,

which is sometimes the result of strangulation, and persists after the strangulation is relieved, or is sometimes due to the extension of peritonitis to the muscular coat of the bowel. In regard to the first variety of paralytic obstruction I would urge the importance of preventive treatment in cases where it is seen to be threatened.

Precautionary Lateral Anastomosis

There are certain cases where a loop of bowel has been released from strangulation, and where its condition appears recoverable and resection unnecessary, or forbidden by the patient's age and general condition. Unfortunately in some of these cases, though gangrene of the strangulated loop does not supervene, the loop nevertheless remains paralysed, and the patient dies of obstruction before the affected loop has recovered its peristaltic power. If in any such case it seems at all doubtful whether the bowel is paralysed I would like to urge the performance of a precautionary lateral anastomosis to short-circuit for the time being the doubtful loop. Take as a typical example the strangulation of a loop of the lower ileum by a band. Almost as a routine, except in very early cases, I would, after dividing the band, perform an ileo-ecceostomy from the ileum above the strangulated loop. I have treated thus five cases of obstruction by the appendix acting as a band, and all recovered. Of three cases of obstruction by bands or ridges crossing the ileum two recovered. The same procedure would probably often avert a fatality in cases of obstruction by a gall stone. A similar policy can be strongly recommended in cases of strangulated hernia. The intestine a few inches above the strangulated part is anastomosed to the intestine a few inches below the lower limit of strangulation. The doubtful strangulated part is left in the wound, which is not closed. In old and feeble patients I adopt this policy even if the gut is gangrenous, and I consider in such patients it is much more successful than resection and anastomosis, which may cause fatal shock. It is, of course, usually necessary to prolong the hernial incision so as to open up the abdominal cavity.

In the cases we are discussing enterostomy may prove to be a better treatment, but personally I think it can hardly improve on the results of precautionary lateral anastomosis.

Secondary Peritonitic Obstruction

We have now to consider cases of secondary peritonitic obstruction where the bowel is first acutely inflamed and then completely paralysed by the extension of the peritonitic inflammation to its muscular wall. Death in general peritonitis is usually due to obstruction, not to peritonitis as such. The obstruction is, moreover, a local one, affecting certain portions of the bowel, not a general paralysis of the whole of the bowels. "General" peritonitis is amenable to surgical treatment, even after obstruction has supervened, and the recovery rate is 75 per cent if treatment is prompt.

To understand and deal with these cases, which are most often the result of the perforation of an inflamed appendix, it is necessary to realize that unlimited peritonitis, erroneously called "general" peritonitis, almost invariably starts in the pelvis from the gravitation thither of infective fluid, and rises in the abdomen like a flood. This is true, even if the previous perforation is high in the abdomen, unless, as often happens in perforated gastric ulcers, the whole abdomen is suddenly filled with a large volume of septic material. Death generally follows before the rising flood of peritonitis has reached much above the level of the umbilicus. The peristaltic machinery of the upper half of the abdomen, though much embarrassed by distension, remains essentially intact until a very late stage.

A recognition of these facts supplies the basis of successful treatment of these cases, in which death used to be the invariable rule. The essential thing is to drain the intestine at a level above that at which its wall is paralysed. Two main methods of securing this end have emerged.

The first of these methods is that of external drainage, i.e., enterostomy, of which the pioneer was Victor Bonney, who was, I believe, the first to deal successfully with these cases, it has been largely advocated and adopted in the United States. Bonney advised the opening of the jejunum high

up, and a fortnight later, when the obstruction had subsided, he closed the fistula by resecting the jejunum and doing an end-to-end anastomosis.

The second method, which may be called the method of internal drainage, so far as the small intestine is concerned, anastomoses the upper small intestine to the large intestine. This, however, by itself is useless, for, as I have shown, the pelvic colon is also paralysed. To overcome this difficulty a temporary and self-closing caecostomy is performed.

If obstruction has come on while the peritonitis is still confined to the pelvis, the pelvic ileum and colon are the two paralysed portions of the bowel (ileus duplex), and ilico-caecostomy and caecostomy will meet the case. If obstruction comes on at a later stage, when the peritonitis has spread up to or near the level of the umbilicus, the jejunum must be anastomosed to the transverse colon, and the caecum opened as before.

It will be seen that the object aimed at in these operations is the improvisation of a complete emergency alimentary canal, providing a considerable absorptive surface, above the level of the peritoneal flood. As contrasted with an enterostomy, a considerable economy of body fluid and nutriment is achieved at a critical time. These methods were developed independently of Bonney's work as a result of my studies on the onset and spread of peritonitis, and they have proved very successful. Seven cases out of eight of ileus duplex recovered, and three out of four of apparently hopeless so-called "general" peritonitis.

It remains an unsettled question whether enterostomy or the combination of lateral anastomosis with caecostomy will be the operation of the future for these cases. The former is a simpler and quicker operation, and can be performed by an inexperienced surgeon with less strain on the patient's vital powers. The latter, with its provision for absorption and nutrition, seems a more artistic and complete solution of the problem. Recent improvements in the method of enterostomy, particularly that by which the catheter tied into the bowel is brought out through the omentum, as first practised by Dr. Wesley Long, have greatly improved the operation in that the resulting fistula is now self-closing, so that the bugbear of a second operation a fortnight later is avoided. I am inclined to think that, as thus improved, and on account of its greater simplicity, enterostomy will establish itself as the operation of choice in these cases. Personally, however, I prefer in most cases lateral anastomosis with caecostomy.

The Prevention of Peritoneal Obstruction

In any case of acute appendicitis, where more than forty-eight hours has elapsed since onset, or if pelvic involvement is suspected for any other reason, a small preliminary median incision should be made and a swab passed to the bottom of the recto-vesical pouch. If it comes up stained by pus or dirty fluid a large drainage tube should be placed in the pelvis. If, on the contrary, everything is normal, the incision should be sewn up. The appendicectomy in either event is then proceeded with in the usual way. This method ensures the detection of early pelvic infection, which would otherwise go on to a general peritonitis. I have practised it for years, and cannot too strongly urge its general adoption.

Early Diagnosis of Spreading Peritonitis

If, after an appendicectomy, vomiting returns, the pulse fails to fall to normal, flatus ceases to pass in spite of enemata and hypodermic injections of pituitrin and eserin, while the abdomen becomes distended, and perhaps rigid in its lower half, the patient's life hangs in the balance. He will not recover unless his medical adviser has sound ideas on the pathology of peritonitis, and the driving power, during the few hours of grace which remain, to insist upon the necessary operation, either an entero-colic anastomosis with caecostomy, or an enterostomy.

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III.—D P D WILKIE, M Ch, F R C S,

Professor of Surgery, University of Edinburgh

It may be safely asserted that no other surgical condition commands the same compelling interest in all who practise medicine as the one which we discuss to-day. In the case of no other malady are prompt diagnosis and treatment so clearly life-saving or hesitation and delay so disastrous. No improvements in our operative procedures, or in our pre- or post-operative treatment, will ever make good the damage done by a few hours' delay in the early management of the case. A timely operation by unskilled hands and under unfavourable conditions will in the majority of cases be preferable to a delayed operation, even if performed by a surgeon of the greatest skill and experience, and in the best environment which modern conditions can supply. We must all, therefore, be familiar with the essential factors involved in such cases, in so far as they are known, that our diagnosis may be discriminating and our treatment rational.

At the outset we will distinguish four types of obstruction: (1) simple obstruction of the lumen of the gut in its continuity, (2) closed loop obstruction, (3) strangulation, (4) adynamic ileus. While in many cases two or more of these types may be combined—as, for example, when a loop of small intestine is strangulated by a band—it is still of the greatest importance that we differentiate and distinguish the essential factors involved in each type.

Simple Obstruction of the Lumen of the Bowel in its Continuity

This type is seen in its purest form where a foreign body, such as a large gall stone, blocks the intestinal lumen, or where by compression from a band or by kinking the lumen is occluded. The changes which ensue depend on the level at which the obstruction is situated. If it be in the large intestine, apart from flatulent distension, discomfort, and peristaltic activity no great disturbance need follow, and many days and even weeks may elapse before signs of grave intoxication are manifest. If the obstruction be at the lower end of the small intestine, much the same course may be anticipated, but the period between the establishment of complete obstruction and the onset of the final toxic symptoms will be shorter.

If the obstruction be high in the jejunum or at the lower end of the duodenum symptoms of urgency and of grave toxæmia appear early, and the march towards a fatal termination is rapid and progressive. Experimental and clinical evidence combine to show that two factors are active in determining the fatal issue—the one the absorption of some highly toxic product from the upper reaches of the small intestine, the other the dehydration which results from loss of body fluid into the obstructed bowel and thence by vomiting.

In our treatment of any obstruction which is either primarily of the high small intestine type or, from being primarily a low obstruction, has gradually been carried back to the upper part of the small intestine, we must counter these two factors of toxæmia and dehydration by ensuring a rapid emptying of the upper intestinal coils and by a liberal supply of fluid to make good the great dehydration. As Dixon has recently shown experimentally, there is a chloride deficiency in these cases—a further argument for a generous administration of saline solution subcutaneously.

In cases of acute duodenal or gastro-mesenteric ileus, where the third part of the duodenum is compressed by the root of the mesentery, no operative procedure is required. The passage of a stomach tube, followed by the prone position with the foot of the bed raised high, will, if promptly undertaken, almost invariably give complete relief.

In simple mechanical obstruction of the small intestine below the duodenum operative treatment is necessary, and it should be of the simplest character possible consistent with relief. In the majority of cases of simple obstruction it is, I believe, unnecessary, and it may be dangerous, to open the gut and empty it. Provided the large distended upper coils of jejunum are emptied of their content into the bowel below and an early action of the bowels is

seemed toxaemia will not unduly threaten, and the risk of peritonitis will be avoided. In the late cases, however, where the distension is extreme, and the bowel wall is sodden and oedematous, immediate evacuation of the distended coils is imperative, and a high jejunostomy by a tube an additional safeguard. Gastric lavage in all the late cases is of the first importance.

Closed Loop Obstruction

This type is seen in its simplest form in acute obstruction of the vermiform appendix, where from an impacted concretion in a stenosed portion or at a kind of closed loop results.

The importance of distinguishing in cases of acute disease of the appendix the primarily obstructive from the essentially inflammatory type is not yet sufficiently realized. I have no hesitation in including under the heading of acute intestinal obstruction a large group of acute affections of the appendix, and these are the most important because they are the most fatal if not recognized and operated on promptly. Until it is recognized and taught that a complete obstruction of the lumen of the appendix is followed by changes which, depending on the nature of its content at the moment of obstruction, are either mild or hyperacute, and in the latter case are associated with early gangrene, we shall see no further reduction in the mortality of acute appendicitis so called.

I cannot refrain from referring once more to the fact—which I have consistently taught for the past twelve years—that the sudden locking up of faecal matter within a closed loop of intestine, be it small or large intestine or be it the appendix, is followed by rapid changes which culminate in gangrene and perforation of the loop. These changes are so rapid that an appendix may be gangrenous within six hours of being obstructed, and this without any appreciable rise in the pulse or temperature of the patient.

While seen in its simplest form in the appendix, the closed loop factor is present also in various types of intestinal obstruction, in which it plays an important if subsidiary part. In a strangulated hernia a closed loop is usually formed, and should faecal matter have been present in the loop at the moment of strangulation early gangrene will result, even though the blood supply be not wholly cut off. As the small intestine is usually more or less empty, this factor does not enter seriously into the pathology of strangulations of this part of the gut. In the case of the large intestine, however, it may play a very important role, and it accounts for the fact that, in the somewhat rare cases in which a loop of large intestine is caught in a hernial aperture and completely occluded, early gangrene is the rule.

Strangulation of Intestine

We are all familiar with the striking picture of shock and collapse which follows hard on the onset of strangulation of the intestine. Whether due to volvulus, to strangulation by a band, or to a rapid intussusception, each hour of unrelieved obstruction sensibly lessens the hope of successful surgical relief. The dominating factor in this type is shock from torsion or compression of the mesentery—a form of shock which only mechanical relief by operation can hope to diminish. In the later stages peritoneal infection plays an important part in hastening the fatal issue, and dehydration from persistent vomiting contributes to reduce the patient's chance of recovery.

Our ideal in such cases must therefore be to give relief by operation at the earliest possible moment before irreparable changes in the bowel wall have set in, to combat shock and dehydration by a generous supply of fluid subcutaneously, and, where inevitable, to resect devitalized intestine. In spite of the best management of this class of case the mortality must ever be distressingly high.

Adynamic Ileus

In this group we are wont to include all cases where the obstructive symptoms depend on a lowered vitality and functional capacity in the bowel wall, no organic obstruction of the lumen being present.

Embolism or thrombosis of the mesenteric vessels is the

typical example of this group, but the so-called paralytic ileus of peritonitis is usually included. Where a vascular occlusion is the cause of symptoms, a wide resection of intestine may be called for, and the results are often surprisingly good.

Whilst adynamic post-operative ileus may, and probably does, occur, it should never be diagnosed until an organic cause for the symptoms has been definitely excluded. Ever since it was possible, some seventeen years ago, to show experimentally that a fatal obstruction may result from recent and apparently trifling adhesions of the small intestine, an organic cause has been suspected in all these cases and has usually been found. As such post-operative obstruction, usually following operation for acute appendicitis, is associated with a healing peritonitis, it is the more important to recognize it and deal with it on rational lines. In some cases this will be by reopening the abdomen and freeing the adhesion. In the majority, however, a high jejunostomy of the abdominal tube type is the easier and safer procedure and is a truly life-saving operation.

Acute Obstruction due to Carcinoma of the Colon

When acute obstruction has finally supervened in an untreated case of carcinoma of the colon the initial surgical operation should be on the simplest lines. In an old subject with a palpable growth in the pelvic colon the two- or three-stage Miles operation has much to commend it, and offers less risk to life than any other surgical measure. I consider it unfortunate that this operation should have fallen into disuse, as its results compare very favourably with those of all other operations for carcinoma of the pelvic colon complicated by either subacute or acute obstruction.

In all other cases a preliminary "blind" cecostomy under local anaesthesia is undoubtedly the operation of choice.

GENERAL DISCUSSION

Mr. ERNEST CORWELL (Croydon) said that his contribution to the discussion was concerned with a clinical group of cases of acute intestinal obstruction of which he had had personal experience, and which seemed to be of importance—namely, acute intestinal obstruction occurring in elderly people due to causes other than carcinoma. The following table, which represents a grouping of cases met with by the speaker, was not claimed to be a complete and exhaustive list of pathological possibilities.

Acute Intestinal Obstruction

A Primary (causes arising in bowel itself)	
1 Developmental	Case 1
2 Inflammatory (local)	Case 2
3 Adenoma	Case 3
B Secondary (causes outside bowel)	
1 Appendix complications—	
Subacute	Case 4
Chronic	Case 5
2 Tuberculous disease—	
Plastic peritonitis	Case 6
Caseous glands	Cases 7 and 8
3 Latent femoral hernia	Cases 9, 10, 11

The following were briefly quoted as examples and illustrative cases.

Case 1—A man aged 72 seen in consultation with Dr. Genge at Croydon General Hospital. He showed the symptoms and signs of small intestine obstruction. On laparotomy a volvulus of ileum arising in connexion with a Meckel's diverticulum was found. The patient recovered.

Case 2—A lady aged 63 seen after several days subacute obstructive symptoms when the case had become urgent. Clinically the case resembled one of a left-sided appendicitis with obstructive symptoms. At the laparotomy a patch of scarlet peritoneum was found on the outer aspect of the iliac colon. No diverticula were apparent. Beyond removing a chronically adherent appendix nothing was done and the patient gradually recovered.

Case 3—A man aged about 50 was sent into hospital with vomiting and constipation. On laparotomy, after separating adhesions in the caecal region further search revealed a lump in the terminal portion of ileum the size of a pigeon's egg. The patient made an uneventful recovery after resection and anastomosis. Microscopically the growth proved to be a simple adenoma.

Case 4—This case of acute intestinal obstruction (first seen several years ago), which was subsequently shown to follow a mild subacute appendicitis made a great impression on the speaker. The patient a general aged nearly 80 was seen by his doctor for a fortnight because of mild colic and occasional sickness. Finally the bowels became more obstinate until caecostomy no longer operated. At the laparotomy, at which Mr Cowell assisted, an inflamed appendix was adherent to the pelvic peritoneum allowing several feet of ileum to form a volvulus. In spite of resection the patient did not long survive the operation.

Case 5—In this case Mr Cowell referred to a *post mortem* specimen in which a long appendix was adherent by a fistulous opening at its tip to the ileum. There was no record of clinical symptoms.

Case 6—A man, aged 63, had been operated on by the speaker two years previously for ileo caecal tuberculosis. At the second operation there was universal tuberculous peritonitis and in spite of a caecostomy he sank and died. Clinically the case closely resembled one of growth, and might have been mistaken for such had the previous history not been known.

In the two following cases obstruction resulted from adhesion of bowel or its mesentery to an old calcified tuberculous gland.

Case 7—A frail delicate lady, aged 76, seen in 1919 in private practice. After four days pain constipation, and vomiting it became obvious that laparotomy could no longer be avoided. Delay was sanctioned here because the patient had recovered from similar attacks over a period of many years. At operation a small stony gland was found adherent to the ileum. On one side there was rabbit's intestine" and on the other a "bicycle tyre" effect. A temporary enterostomy was performed and five days later a resection and closure. This patient was still alive and well.

Case 8—A man aged 50 regarded as a case of small intestine obstruction. Here a coil was tightly adherent to a calcified tuberculous gland. He recovered after operation.

Case 9—As a resident many years ago Mr Cowell had seen a case of latent femoral hernia with symptoms of abdominal pain, vomiting, and constipation that was withheld from the surgeon for a week because the patient's general condition remained fairly good. The abdomen was repeatedly examined but the femoral region escaped notice. When operation was finally sought it was unsuccessful.

Case 10—Recently he had seen two similar cases in elderly women. In these cases the doctors knew the patients had small femoral hernias but for some reason did not associate the symptoms with the real underlying condition.

Case 11—This case, Mr Cowell was told was probably a medical one—possibly ptomaine poisoning—and there was no urgency. However, he saw the patient at once and from the symptoms came to the conclusion that the small intestine was concerned, and on routine examination found a femoral hernia the size of a small gland. At the operation a partial lateral enterocoele was discovered. The patient recovered.

In drawing attention to this class of case and quoting from his own experience, the speaker's hope was that patients might be given the benefit of the doubt where the question of operation might be difficult to decide, remembering that carcinoma of the bowel was not the only diagnosis in old people, in cases of intestinal obstruction.

Mr R. P. ROWLANDS (London) had, with the help of his surgical registrar, Mr B. L. Laver, investigated the notes of the 304 cases which were admitted to Guy's Hospital during the five years 1920-24. The total mortality was 31.5 per cent, if the cases of intussusception and strangulated hernia were excluded the mortality would be considerably higher. He agreed that delay in diagnosis and errors in treatment were chiefly responsible for this high mortality. It was difficult, however, to assess the blame for the delay, for everyone was concerned in it—the patient and his friends, the general practitioner, the consulting physician, and the surgeon. The difficulties of diagnosis were great, especially when intestinal obstruction followed a few days after a laparotomy, it was very tempting then to wait and hope that the symptoms might be due to paralytic distension, and thus to throw away the best chance of overcoming genuine obstruction by operation. They should not add to the difficulties by giving sedatives or purgatives, which often did much harm, if two enemata failed to act when there were symptoms of intestinal obstruction, he thought it best to proceed to immediate operation. It was a mistake to waste time on refinements of diagnosis. The essential thing was to decide at once whether an operation was or was not necessary. He never used the word "exploration," for it frightened the patient and might make him defer operation. At the operation itself skill, gentleness, judgement as to what to do, speed and accuracy of work, were priceless. The early cases did extremely well without lavage of the stomach or any

drainage of the intestine, the later cases required large and drainage of the bowel, and for this purpose he preferred lateral anastomosis in most cases, reserving valvular enterostomy for the graver ones. He performed this after the manner of Witzel's gastrotomy, and brought the tube out through the great omentum after C. H. Mayo's method. He also sewed the tube into the bowel and used a slip knot so that the tube could be removed at any moment, generally forty-eight hours after the vomiting had ceased. In these circumstances, when the tube was removed, there was hardly ever any leakage and no need for an operation for closing a fistula. Some fifteen years ago he saved the life of a house-surgeon in this manner when he was very ill indeed with late intestinal obstruction. Similarly, in late cases of acute obstruction of the large intestine, he used a valvular enterostomy with a rubber tube half an inch in diameter. This was much better than a Paul's tube and could be retained several weeks without any leakage. It was not removed until about ten days after the subsequent colectomy. Saline infusions were very valuable in all these cases and should be used frequently. He mentioned an interesting case.

A small girl, operated on for acute obstruction was found to have a large hairball in her ileum, it was successfully removed. The child came into hospital again, some weeks later, suffering from a milder attack of intestinal obstruction due to the same cause. This was relieved by a purgative, a small hairball being passed. After the first operation the child had been warned not to eat her hair, but took little notice, after the second admission therefore, instructions were given to keep her hair cropped short.

Mr MACPHER (London) presented the figures from St Thomas's Hospital, which totalled 336 for the five-year period. The number of cases seemed to be small when compared with an approximate total of 33,000 patients admitted to the medical and surgical wards during the five years reviewed. He was indebted to Mr C. V. Patrick, surgical registrar to the hospital, for the collection of the particulars, he had been careful to include in the figures only those examples in which the symptoms of intestinal obstruction could properly be called acute. It was found that the separating line from cases of chronic obstruction was sometimes difficult to define. The criterion adopted to justify inclusion in the figures presented had been the presence of persistent vomiting associated with acute colicky pain in the abdomen. In considering the results as a whole, attention was drawn to the fact that they represented the work of surgeons who could only claim a moderate experience in this class of work. The greater proportion of the cases had been operated on as urgencies, and in consequence the junior staff had been responsible for most of them. On account of the diversity of the conditions dealt with it was out of the question to detail the operative procedures employed. In general they might be stated to have been on classical or old-fashioned lines. His figures did not furnish any information on the value of jejunostomy for acute obstruction, as it was performed in only one or two cases. In view of Sir William Taylor's depressing statement that the results of the treatment of intestinal obstruction had not improved during the last thirty years, he thought it might be of interest to compare some of the recent figures of St Thomas's Hospital with those published in the hospital reports over a similar period twenty years ago—namely, 1900-4. This he had done for three of the larger groups—namely, intussusception, strangulated hernia, and carcinoma of the large bowel. The results of the treatment of acute intussusception in these two periods were tabulated as follows.

Idiopathic Intussusception in Children aged 5 years or under (1900-4 and 1920-24)

	Cases	Deaths
1900-1904	67	27=40.3 per cent
1920-1924	102	9=8.9 "

For 1900-4 out of a total of 84 cases 67 occurred in children of 5 years or under, and the mortality for this group was no less than 40.3 per cent. The improvement in the results of this class of obstruction was due, he thought, to the earlier period at which operation had been undertaken, though no doubt a clearer appreciation of the operative technique had been another favouring factor.

In the other two conditions responsible for a considerable

incidence of acute obstruction there was not such a striking improvement in the results. Taking first strangulated hernia in the figures presented for inclusion in the total only those cases of strangulated hernia in which there was acute obstruction had been included, so this figure was not obtainable for 1920-4, he had taken all cases of strangulated hernia for the five-year periods in order to prepare a tabulated comparison.

Strangulated Hernia (all cases)

Class	1900-4	1920-24	1900-4		1920-24		Deaths	
			R	D	R	D	1900-4	1920-24
Intestinal	229	83	205	24	77	6	per cent 10.4	per cent 7.2
Femoral	131	95	106	25	85	11	15.6	11.4

R = Recovered D = Died

In regard to carcinoma of the large bowel as a cause of obstruction, it was noticeable how small a number of cases justified their inclusion under acute obstruction. From 1920-24 there were only 28 patients, 17 of whom were relieved and 11 died—a mortality of 39.2 per cent. During the same period 293 cases were admitted into the hospital with carcinoma of the large bowel without acute obstruction, of whom 234 patients were discharged relieved and 59 died—a mortality of 20.1 per cent. In the 1900-4 period 112 cases of carcinoma of the large bowel were operated on for obstructive symptoms with a 23.2 per cent mortality. These comparisons suggested that surgeons and general practitioners had not been quite so unprogressive during this century as Sir William Taylor would have had them believe, but it was admitted that the figures showed that there was still plenty of room for improvement. He did not think he could usefully analyse the methods and results in the smaller groups on account of the limited number that fell within them. They served to swell the tabulated table which Mr. Soutter was to present later.

Professor A. PRIMOSE (Toronto) gave some details regarding the work of his junior colleague in Toronto, Dr. Costain. He was unable to give exact figures to indicate the clinical results which had been obtained, but these were available in the literature. Dr. Costain's work consisted of a series of experiments on dogs. Peritonitis was induced by ligaturing the appendix and its mesentery and by introducing septic organisms at the seat of ligation. After peritonitis had been induced the life of the animal was saved by opening and draining the thoracic duct in the neck. Control animals, in which the thoracic duct was not drained, died. Several attempts had been made to apply this method in the treatment of peritonitis in human subjects, with varying success. In the children's hospital in Toronto he thought some seven or eight cases of pneumococcal peritonitis were submitted to the procedure. These cases were all considered hopeless in the absence of operative treatment. A certain number of these patients recovered after operation. He regretted that he was unable to give exact figures, but could state that in these cases the pneumococcus was recovered in the discharges from the thoracic duct fistula, in that respect they differed from the case reported by Mr. Wilkie, in which the discharges were sterile. The work of Dr. Costain was of very great interest. Its specific clinical value was not yet determined but it was hoped it might prove of service in certain types of general peritonitis. Mr. Wilkie had referred to the value of the administration of saline intratubally in acute obstruction, and had suggested that the beneficial results were due to the administration of chlorides where there was chloride deficiency rather than to the correction of a condition of dehydration. A considerable amount of work had been done in Toronto on the hypothesis of the diminution in chlorides, most of this investigation had been carried on in the clinic of his colleague Dr. F. N. G. Starr. The chloride was administered intravenously, about ten ounces of a 15 per cent solution of sodium chloride being given. The beneficial results of such treatment were truly remarkable. Further, it had been found that 3 drachms of ammonium chloride

administered per rectum would occasionally improve promptly the condition of a patient, so that an operation might be undertaken in cases which prior to such treatment had appeared inoperable. Lastly, he called attention to the part played by the ileo-caecal sphincter in obstruction of the large bowel. When that sphincter was competent the large bowel might become enormously distended if the obstruction was low down, as, for instance, in the sigmoid or rectum. It was astonishing how the distension might in many cases be restricted to the large bowel, which might be ballooned to large size. On the other hand, if the ileo-caecal sphincter were incompetent, as was frequently the case, the distension spread rapidly to the small bowel and as it ascended the symptoms of obstruction became more marked and much more grave.

Mr. REYNOLD M. VICK (London) presented the statistics from St. Bartholomew's Hospital for the period 1920-24 inclusive. The cases treated over that period numbered approximately 300, and showed a total mortality, under all headings, including obstruction due to malignant disease, of 28 per cent. The detailed figures under each group coincided so exactly with those of the mass statistics to be submitted later by Mr. Soutter that it would be mere waste of time to consider them very closely. They were no better, which was disappointing, and no worse, which was consoling, than any other of the statistics to be presented. Whichever way they looked at these figures, they showed a distressingly high mortality considering that acute intestinal obstruction—apart from the cases due to malignant disease—should have hardly any mortality at all. Mr. Vick then put forward one or two suggestions as to ways in which they might improve their results. First and foremost, a careful study of the details of the history of these patients showed, as Sir William Taylor had said, that the one great outstanding reason for the high mortality was that the patients arrived in the surgeon's hands too late. It was true that, among the late cases, there came across brilliant exceptions, where, as the result of one or other of the treatments described, the patient's life had been saved but they were the exceptions, whereas, among the early cases, the exceptions were the ones who died. Sir William Taylor had stated, in no uncertain manner, one explanation of the late arrival of these patients in the operating theatre, where lay their only hope of life. But surely there were many others. They must all have come across many cases in which the doctor himself was called in too late. It seemed that when this occurred the explanation lay in the very nature of the emergency itself. A patient who developed in acute intestinal obstruction—say as the result of a bad—might suffer in the early hours from intense pain of a colicky character with some initial vomiting, but if the strangulation was complete gangrene supervened and the pain abated and disappeared. Any patient judged the seriousness of his condition from the amount of pain he suffered which was but natural. When his pain disappeared he might wait two, three, or even four days until the classical signs of obstruction were present—the vomit becoming stercoraceous and profuse and the distension great before he called in the doctor. It was difficult to say who was to blame in these cases—presumably the patient, but he at any rate often paid the extreme penalty. They could not expect much improvement under this heading until, with the spread of knowledge, patients began to realize that surgeons had other interests than “to cut them up.”

Another suggestion that would seem to be of value was the establishment of a system of observation beds in hospitals—beds into which patients could be admitted, without all the formalities of admission to hospital while the diagnosis of their condition was still in doubt. It would be a great thing for practitioners to know that there were such beds into which they could send their patients before the diagnosis of obstruction, though probable, was actually made. It would be a good thing for patients to know that their admission to hospital did not mean an operation provided their symptoms could be cleared up in any other way. If a couple of enemata should relieve the obstruction the patient would find

	AGE DECADE								INCIDENCE AND MORTALITY					
	1	2	3	4	5	6	7	8	100	200	300	400	500	600
GALLSTONES														
CARCINOMA														
ADHESIONS														
INT. STRANG.														
INTUSSUSCEPT.														
VOLVULUS														
INT. HERNIA														
FEM. H.														
U. B. H.														

ACUTE INTESTINAL OBSTRUCTION. Combined statistics of 3064 cases. Left chart. Space indicated by arrow represents intussusceptions. Right chart. Black represents deaths, hatching survivors.

presented great difficulties, but considering that a large proportion of the patients were young the mortality of over 30 per cent was high. Carcinoma and gall stones on the other hand, only appeared late as causal factors, becoming most prominent in the sixth and seventh decades. The incidence of carcinoma in the left side of the colon was well shown, this side being affected more than five times as often as the right. The high mortality of gall-stone obstruction was partly accounted for by the fact that most of these cases occurred after the age of 60, but an important factor must be the delay which often took place in diagnosis shown in the fact that out of 28 cases only 3 were operated upon before the fourth day.

Mr GREY TURNER (Newcastle-on-Tyne), in presenting the statistics from Newcastle-on-Tyne, expressed his great indebtedness to the surgical registrars who had taken so much trouble in going over the notes and in getting the information required. He said that the figures indicated only too clearly that intestinal obstruction was still a very dangerous condition. This was well illustrated by a reference to those for strangulated hernia, which showed that where operation for radical cure could be performed with a mortality of considerably less than 1 per cent, the mortality in strangulated cases was still something over 20 per cent. In his experience he had seen no real improvement in the treatment of the cases which had been allowed to go on to the stage of toxemia. In this connexion he said that the picture of intestinal obstruction in the mind's eye of the practitioner was still too often that of its later stages, and he laid stress on the importance of the earlier stages, in which there were practically no physical signs. How often one was told that the vomit had only just become fecal as though its presence was necessary before a diagnosis of obstruction could be made! He was reminded of one of Mr Simpson Handley's earlier papers in which he stated very forcibly that fecal vomiting should not be looked upon as a sign of obstruction, but as a sign of impending death. The enema test had been spoken of as a

help in the diagnosis, and he would like to mention the value of the erlenmeyer test. Over twenty years ago he first became familiar with this method and was a great believer in its value. Subsequently he sometimes felt that it was perhaps rather a shabby method of diagnosis, but it the present day he recognized its great practical utility. The plan was to give 4 or 5 grains of erlenmeyer in 1/2 grain doses every half-hour, followed at the end of the course by another enema. This either succeeded in clearing away the obstruction or made the symptoms so definite that the diagnosis was perfectly plain, and treatment by operation could be commenced without the slightest hesitation. He wanted to draw attention to the cases in which vomiting was a marked feature, for in them the exhibition of a general anesthetic was so often fatal he most vividly remembered cases in which at a necropsy the fecal matter could be squeezed from the lungs like a wet sponge. Preliminary stomach washing sometimes sufficed, but, generally speaking, it was necessary to operate with some type of local or regional anesthetic, and this was one of the most useful fields for such anesthetics. As a method of treatment enterostomy had been most disappointing, though as an adjunct it was sometimes extremely useful and valuable. But the discussion had wandered into wider fields, for one of the speakers had maintained that the public should be educated with regard to the symptoms of obstruction and urged to seek advice at an earlier stage. The President the previous day expressed the same idea with regard to the symptoms which might herald malignant disease of the stomach. Personally, he was not in agreement with this plan, and indeed he thought that anything of the kind would be, so to speak, riding for a fall. Diagnosis was always difficult and even with the greatest of care and the best intentions in the world there were many pitfalls which none of them could avoid. What, for instance, must be the comment of the public who visited a surgeon complaining of symptoms which they were told were not due to any organic lesion, and yet on the day after the consultation the presence of duodenal ulcer was confirmed by severe melena or is in

another instance, when a duodenal ulcer, supposed not to exist, perforated only a day or two after the patient had left the surgeon's consulting room? Or, again, what could be their answer when patients still frequently came with advanced malignant disease and who in the earlier stages had sought medical advice, only to be told not to worry about any lump unless the lump commenced to worry them? He felt very strongly that their efforts at education should be entirely limited to themselves. From this point of view much more might be done, and he felt that some one body—possibly none better than this Association—should issue leaflets to the profession, much as used to be done in the war, giving a summary of the latest information on certain conditions. This plan was being adopted in Italy, and he heard last year in the clinic of Professor Putti, in Bologna, that since the profession had been informed by means of such leaflets of the early symptoms and signs of congenital dislocation of the hip there had been a great increase in the number of cases which had been sent to the various clinics for treatment.

Mr A H BURGESS (Manchester) presented the statistics of the cases of acute intestinal obstruction admitted to the Manchester Royal Infirmary for the five years 1920-24 inclusive, for the compilation of which he was indebted to the registrars—Mr J A Panton and Mr N L Edwards. Two years ago, at the Portsmouth meeting of the British Medical Association, in opening the discussion on the treatment of obstruction of the colon, he had presented the Manchester Royal Infirmary statistics of acute obstruction for the ten years 1913-22 inclusive (*JOURNAL*, 1923, vol II, p 547). A comparison of these two series of statistics showed a definite improvement—the total mortality of 28.79 per cent in the earlier series being reduced to 23.5 per cent in the later, that of strangulated external hernia from 23.04 to 16.05 per cent, that of intussusception from 36.9 to 24.8 per cent, that of obstruction from non-malignant causes other than intussusception from 50.04 to 29.1 per cent, and that of obstruction from malignant growths from 35.22 to 28.52 per cent. This improvement was distinctly encouraging, although the mortality was yet very much too high. It was unfortunate that no general statistics of the Dublin hospitals had been presented to them, but he heartily congratulated Sir William Taylor on the very small mortality of his personal operations for acute intussusception (3 deaths in 81 cases—that is, a mortality of 3.7 per cent). If these could be taken as a sample of the operative results of acute intestinal obstruction in general in Dublin, then it was obvious that the general practitioners and physicians of that fair city must be supplying the surgeons with cases diagnosed at an unusually early stage, and this seemed scarcely compatible with the very serious reflections cast upon them in this respect in the opening paragraphs of Sir William Taylor's remarks, certainly there seemed to be no justification for his "almost getting a rigor" when asked to operate in these cases. Only early diagnosis followed by the early application of surgical treatment could lead to any general improvement in the operative statistics, unfortunately there was a tendency, even yet, to wait for the textbook symptom of fecal vomiting to elude the diagnosis. The chief early features were the persistence of the vomiting, the cessation of passage of flatus, and the progressive abdominal distension without muscular rigidity; the importance of a steadily increasing distension of the abdomen could not be insisted upon too strongly. Distension was absent or slightly marked only when the site of obstruction was high up in the small intestine, and in these cases, fortunately for diagnosis, the vomiting was extremely persistent and very rapidly became feculent. He considered auscultation of the abdomen a much neglected diagnostic aid in obstruction cases. Having made a diagnosis of intestinal obstruction, the most important question next to decide was whether the obstruction was in the small or the large intestine. If they excluded the groups of strangulated external hernia and of intussusception, both of which were readily recognized—the former by a palpable swelling at a hernial orifice, the latter by its age of incidence and its very characteristic signs—then the chances were about equal as regards the small bowel or the colon. In the paper referred to pre-

viously he had gone fully into the diagnosis between these, which he believed could be correctly made in the majority of cases. The criterion was the condition of the cecum: if this was visibly distended, or, failing this, if it could be definitely felt to harden and soften alternately under the examining fingers ("palpable peristalsis"), then the obstruction was distal to it. Where the site of obstruction could be located in the colon but was not more exactly known, and where there was no special reason to suspect volvulus or internal strangulation, he still considered, as he had advocated at the Portsmouth meeting, that the sole immediate operative procedure should be cecostomy performed under nitrous oxide or local anaesthesia ("blind" cecostomy). For those cases where the site of obstruction could be assigned to the small intestine, or where it was uncertain whether it was in the small or large bowel, he thoroughly agreed with the treatment outlined by Sir William Taylor for each of the three stages of the general condition of the patient. He made special reference to the high mortality attending obstruction from impacted gall stones: the Manchester statistics included 7 cases with 3 deaths—a mortality of 42.86 per cent. The actual operation in these cases was technically easy and of short duration, the mortality was due partly to the age of the patient, but mainly to the delay in recognizing the existence of obstruction, which at first might be partial only. In two cases he had found two large gall stones impacted at different levels in the ileum—a condition easily overlooked unless the possibility was borne in mind. If a gall stone which ulcerated through into the duodenum succeeded in passing the ileocecal valve it was not likely to cause obstruction in the colon. But, as happened in two of the Manchester cases, a large gall stone might ulcerate from the gall bladder into the transverse colon and become impacted in the narrower sigmoid colon.

Sir WILLIAM TAYLOR, in a brief reply, said that owing to his own eldest son having suffered from an intussusception at the age of 8 months he had taken a particularly keen interest in this form of obstruction, and had used every opportunity of impressing upon the general practitioners in his neighbourhood the unmistakable symptom of this disorder. He had been rewarded by getting his cases at an earlier stage than most surgeons, and to this he attributed the low mortality in his series.

Mr A RENDLE SHORT (Bristol) said that his series called for little remark. The total number of cases, including strangulated hernia, was 277, without strangulated hernia 137. The general mortality, including the strangulated hernia cases, was 31.4 per cent, and without them it was 41 per cent. This was rather higher than the general average, which was accounted for by the remarkably small number of cases of intussusception. This only in part represented a real difference in the incidence of this disease in Bristol as compared with London, as many of the children with intussusception were treated at a children's hospital. Probably, however, there were fewer cases in proportion. Although the figures were not nearly as good as they would be if patients were operated on as soon as a diagnosis could be made, they were much better than they used to be. He had published in the *Index of Prognosis* collections of statistics from various hospitals in past years which showed a general hospital mortality, both at the Bristol Royal Infirmary and elsewhere, well over 50 per cent (for acute obstruction, not including strangulated hernia).

Mr S T IRWIN (Belfast) communicated the Belfast figures. He said that they numbered 155, and showed a gross mortality of 38.7 per cent over the whole series. They were quite impenetrable, and had been extracted from the hospital records by one of the surgical registrars. They comprised all those cases which had been admitted to hospital with the diagnosis of acute intestinal obstruction or had subsequently been so diagnosed. A few of the patients had not been operated upon. Even in cases fatal without operative treatment such a death rate was little short of appalling. Figures for acute intestinal obstruction were sought which might give a standard for comparison, but with the time at his disposal he failed to find

such. He had therefore to fall back on the figures in other abdominal diseases, and took those for acute appendicitis and for perforations of the stomach and duodenum. Taking acute appendicitis first, he found that in over 236 patients operated on in 1924 there was a mortality of 3.6 per cent, and in 1922 in over 312 cases a mortality of 3.2 per cent. He compared these with Love's, published in the *British Journal of Surgery*, which showed a mortality of 5.4 per cent over 312 cases, and with St. Thomas's Hospital cases—first a series of 214 cases with a mortality of 4.2 per cent, and secondly, with a series of 1,418 with 92 deaths, a mortality of 6.5 per cent—and found that the Belfast figures for acute appendicitis compared favourably with those of other schools. In 147 cases of perforations of the stomach and duodenum during the five years 1920-24 there was a mortality of 15.6 per cent, which agreed exactly with the figures published by Grey Turner in 1919. Judging, therefore, by these results it was fair to assume that the abdominal surgery at Belfast was at any rate average.

What mortality might reasonably be expected in cases of acute intestinal obstruction? The statistics quoted by Burgess at the Annual Meeting at Portsmouth in 1923 gave a mortality of 32.2 per cent over a series of 199 cases of acute intestinal obstruction in the colon. The Belfast mortality was markedly in excess of this, he therefore must refer to one or two general considerations which, he imagined, had had some influence on these figures. First of all, during the whole period of 1920-24 Belfast was under curfew regulations, and for a considerable part of the time active fighting was going on in the streets. This had kept the hospital working at high pressure on gunshot wounds. At times its resources in operators and in materials had been almost exhausted. The medical and municipal services had been disordered, and the arrival of many cases was postponed for at least twelve hours—a delay always serious and oftentimes decisive in a case of acute intestinal obstruction. Again, the figures given by Burgess dealt with operation cases only, whilst the figures used for the present estimation referred to the total admissions, and included cases moribund on arrival or practically hopeless so far as operation was concerned. In other words, it was the death rate among all cases "admitted" and not among those sufficiently well to undergo operation.

He wished also to bring to the notice of that Section the considerable group of unclassified cases, which numbered 17 out of a total of 155. In these cases no information was obtainable from the notes as to the actual pathological condition beyond that they were admitted as cases of obstruction. Several patients were too ill for operation and no necropsies were made. Out of these 17 patients only 3 recovered. It seemed hardly fair in an otherwise small series to include these in the figures, but they were there and could not be disregarded. It was clear that they were due to wrong diagnosis in the early stages of their illness. If these cases were excluded the Belfast results would give a mortality of 33.3 per cent over 138 cases. The Royal Victoria Hospital, Belfast, was the surgical centre for the whole of the North of Ireland, and received many cases from a radius of fifty miles and over. It was not unusual to find patients with perforation or obstruction who had been brought in by ambulance over this distance, many of these had already been ill for days. Some had even been admitted to a provincial institution in the first instance, and only transferred to Belfast later. It was notorious how readily shock and collapse were produced, how the patient's general condition deteriorated (and consequently how operation risks increased) as the result of disturbance in all cases of abdominal emergency. Another factor which must influence the result (a factor which he imagined applied to many other hospitals) was that the bulk of these operations had been performed by assistant surgeons or by surgical registrars, only a very small proportion coming under the full surgeon. Ability and technical skill counted for much in cases of acute intestinal obstruction (especially in the later stages, but judgement and experience were even more necessary). Again, many of the operations were done at night, when assistance was limited, a house-surgeon acting as anaesthetist and an unqualified resident assisting. This state of affairs denoted their failure to

appreciate the undoubted gravity of all such cases. Further, intussusceptions had been excluded from their list. They showed a percentage mortality less than the average, and their absence therefore affected his list unfavourably. Belfast could not compete with the figures of Sir William Tynor, but then figures showed a percentage mortality lying between 12 and 15. When due credit had been given, however, to all these points he could not but be disappointed to find a percentage mortality of over 30 even in cases of such undoubted gravity, one therefore wanted to examine the factors which decided for life or death of the patient. Of his cases 10 per cent were over 70 and 20 per cent over 60, probably a similar experience occurred in other hospitals also. A certain mortality must be expected in the later decades of life from that fact alone, and more especially, as in acute obstructions, where toxæmia was present. Secondly, the time factor which was probably of supreme importance in settling the result in any particular case, was important also from another viewpoint—namely, it was a factor which could and must be influenced, first by educating the public and afterwards by educating the profession.

The figures revealed that 50 per cent of all the cases had been ill for two days or more before admission to hospital. How could this delay be mitigated, and who was responsible for it?

1. The responsibility fell in the first instance upon the patient and his friends. Delay from this source could be modified only by the education of public opinion. The public must be taught to understand that abdominal pain was never normal, that it was never devoid of danger until so declared by a medical man—that it was, in fact, the danger signal of disaster whose timely recognition might mean a happy issue but whose neglect might mean the untimely death of the patient. Amongst rural populations, such is that of Northern Ireland, procreation was very prevalent. It was due to the failure of uneducated persons to recognize symptoms as serious (the pain and discomfort they could bear with equanimity), and to the long distances many of them lived from medical aid. From his experience of these cases the duration of symptoms was often considerably greater than the patient and his friends were willing to admit.

2. Practitioners must be educated to recognize abdominal disease earlier. He was told that the effect of the Insurance Act in England had been beneficial in this respect, but in Ireland this was still lacking. The question was primarily one for the schools, for the British Medical Association and its Branches, and for all medical societies. Improvement had doubtless taken place in the direction of early diagnosis both in perforations and in appendicitis, which were nowadays recognized at the doctor's first visit, and he felt that in the case of acute intestinal obstruction something, at least commendable might be attained. He believed that delay was often due to the administration by the practitioner of a hypodermic injection of morphia—a practice wholly unjustifiable until a definite diagnosis had been arrived at. Nor must he wait for vomiting to become free before making his diagnosis. He recalled being asked several years ago to see a case of acute obstruction by a doctor, who said he felt sure of his diagnosis as he had been watching the case for a week and vomiting was now free!

When the responsibility of the surgeon for these figures was considered it was only fair to say that treatment of acute intestinal obstruction was nothing but standardized, it was the exact operative technique in such diseases—cancer of the breast, gall stones, cancer of the uterus, etc. The latter diseases were much less fatal than acute intestinal obstruction, the speed of the operation counting for nothing as compared with its importance in a case of obstruction. He felt that the anxiety to do a complete operation was responsible for many of the deaths in this disease, and that the value of local or spinal anaesthesia, enterostomy, and the two-stage operation was insufficiently recognized. Why were hospital results so much worse than those treated privately? Was it not that under each of these heads, private cases showed a marked advantage? In 113 out of his series of 155 cases the small intestine had been involved—a large proportion. Delay in operation was

more serious in the small intestine generally than in obstructions of the colon. Some of these were strangulations, often meaning gangrene, and therefore resection associated with toxæmia. Some were due to bands without gangrene. In both groups the mortality was high—in the former owing to the resection, in the latter it was certainly owing to toxæmia. In both the symptoms were easy to recognize early and almost pathognomonic. Diagnosis should be correspondingly early and the results of treatment good. But such was not the case. Half the cases in both categories were ill for two days or over. Apparently they did not yet fully understand the meaning of intestinal toxæmia. They still lost patients who should live, and sometimes, though less often, patients lived who appeared to be hopeless. At present Bonney's treatment or Sampson Hindley's gave the best results. He usually performed both an anastomosis and a low enterostomy if time and the patient's condition allowed. It was not usually necessary to close the opening in a case of this sort provided the anastomosis was free. Whilst they were often too late in applying treatment in some cases, and whilst they were not in doubt as to the correct procedure in others—for example, intussusception, external hernia, malignant disease of the colon (thanks to Burgess)—they still looked for light upon the others, and especially the internal strangulations.

Finally, he referred to the fact that the value of a complete *post-mortem* examination, which showed not alone how the abdominal symptoms were caused but also disclosed that the cause of death was often not abdominal, was insufficiently recognized. It showed them the dangers of the various complications and sequelae, the recognition of which was a valuable step towards their avoidance. Whilst had already been done for them in the operative treatment of gastric and duodenal ulcer by Moynihan, and what had been done by Burgess for obstructions of the colon, it was reasonable to suppose might yet be done even for a diverse group such as the internal strangulations.

Mr GEARY GRANT said that improvements in the statistics of acute intestinal obstruction could only be achieved by early diagnosis, and for the failure to diagnose in the early stage the textbooks were responsible. He was rather surprised in this discussion to find that strangulated hernia and large intestine obstruction were included. The prognosis in the former was very much better, chiefly, perhaps, owing to early diagnosis. It was also much better, as regards immediate results, in large intestine obstruction. Intestinal obstruction had, like all other abdominal emergencies, three stages: (1) the stage of invasion, (2) the stage of remission, (3) the final stage of toxæmia. It was because the symptoms of the final stage were stressed rather than those of the stage of invasion that there was failure to diagnose. The symptoms of the first stage were definite enough in most cases—sudden colic, initial vomiting, etc., but the one essential was absolute constipation, unrelieved by enemata and with the cessation of passage of flatus. It was the failure to evaluate the last symptom which was the cause of the policy of watching these cases. As in perforated duodenal ulcer a graph showed the rapidly rising mortality rate after the first twelve hours, so with acute intestinal obstruction. The factor which determined the fatal result was the distension of the proximal bowel, which paralysed it and produced multiple kinks, so that really instead of dealing with one obstruction they were dealing with many. This could well be seen when an attempt was made to empty the bowel, it was easy to empty one loop, difficult or impossible to empty the whole. If an enterostomy were done, unless by some fortunate chance the bowel recovered, it would not drain. He did not believe that a case which had reached this stage would stand the manipulations required to empty the whole bowel. The probability was that after the bowel was emptied the kinking and distension would recur, and this was the terminal condition of ileus, whether due to a mechanical obstruction or a spreading peritonitis.

At the conclusion of the discussion Dr GREGORY EDE of New York showed cinematograph films of the stomach, and described the various normal types and the abnormalities from which it was possible to diagnose disease.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

INTestinal Obstruction on Shipboard

The following case may be of interest as illustrating a possible danger in employing persons who have had laparotomies on long voyages where no surgeon is carried.

During the last voyage of this ship a man, aged 29, who was employed in trimming coal reported to the ship surgeon suffering from constipation of five days' duration. His previous history showed that four years earlier he suffered from acute appendicitis and that his appendix had been removed. Two years ago he suffered from severe abdominal colic with constipation and vomiting of ten days' duration. He was anaesthetized with a view to operation, but no operation was performed as apparently his condition was so bad that fears were entertained as to his survival. After he recovered from the anaesthetic his bowels commenced to act and he had remained well since, taking liquid paraffin daily.

He was placed in the ship's hospital and a simple enema administered without result. The next day two turpentine enemata were administered without result. He commenced to vomit, and his pulse became more rapid. On the next day he had faecal vomiting, with a rapid pulse (104). The abdomen became distended and a diagnosis of intestinal obstruction from adhesions following appendicectomy was made. It was decided to operate, although weather conditions were unfavourable, as the patient was steadily becoming worse. An anaesthetic was administered and an incision made through the right rectus muscle. The obstruction was found to be due to adhesions binding the caecum to the site of the incision of the previous laparotomy. The adhesions were freed and a band was found the thickness of a little finger binding the caecum down. This was tied and severed and the caecum became free. The omentum was drawn down and fixed over the previous scar and the abdomen closed. The patient was making an uneventful recovery when the ship reached port.

My thanks are due to Dr Hummel, medical superintendent, Canadian Steamship Company, for permission to publish this case.

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Surgeon S.S. *Vegetaria*

London, S.E.9

OPERATION FOR EXTRAUTERINE GESTATION

In view of the case of extrauterine gestation mentioned in the report of Professor Kynoch's paper (*BRITISH MEDICAL JOURNAL*, July 4th, 1925, p. 15) the following may prove of interest.

A married woman, aged 33, was admitted to the Cumberland Infirmary on June 15th, 1925, complaining of severe spasmodic pains across the lower abdomen of two days' duration. She had had seven children, of whom only one survived. The others were still born or died soon after birth. She had had several miscarriages. In 1923 she was operated on for ruptured ectopic gestation and the right tube was removed. Since then her periods had been fairly regular until Christmas, 1924, when they ceased. In March, 1925, she reported at the hospital complaining of abdominal swelling and a history of three months' amenorrhoea. She wished to know if she were pregnant. The uterus was felt to be normal in size, but was pushed over to the right by a swelling, which seemed cystic occupying almost the whole of the pelvis. She was told to report again in a month.

When next seen, on June 15th, she was admitted to hospital. She had a large abdominal tumour extending up to the umbilicus. On palpation the abdomen was tender in both iliac fossae, especially on the left, and the tumour was felt rather more to the left side of the median plane than to the right. On auscultation the uterine souffle was heard clearly in the left iliac fossa, it could not be heard on the right side. No foetal heart was heard and no movements seen or felt. The patient would not submit to abdominal section, but consented to examination under anaesthesia. A vaginal examination was made and a large tumour found to fill the pouch of Douglas. Its nature suggested a foetal head of which the posterior fontanelle could be felt. The cervix was pushed very far upwards and forwards almost out of reach of the examining finger. A large tumour was felt in the left iliac fossa and spreading across the middle line while a smaller tumour to the right was taken to be the uterus. A diagnosis of extrauterine pregnancy, or pregnancy complicated by a large ovarian cyst, was come to. The pulse was 104, respirations 24 and the temperature 97.2°.

The patient was free from pain for the next nine days, but a recurrence of abdominal pain on June 25th made her consent to an operation, which was performed on June 26th by Mr MacLaren.

A medial suprapubic incision was made. Blood was found in the peritoneal cavity and the left tube was greatly distended. The uterus was enlarged to just above the pubes and displaced to the right. The tube was opened, and the placenta, which was adherent to the upper and anterior wall of the sac, was removed with very little bleeding. A live male child was then removed from the sac. The head was very fixed in the pouch of Douglas and gave rise to a little trouble in taking it out. The walls of the sac were adherent to the pouch of Douglas and to the transversum colon. The adhesions separated easily from the latter but not from the former,

and the pouch of Douglas had to be picked. A small piece of the picking was removed and there was a serious discharge from the wound for about three weeks. It ultimately healed perfectly, and the patient is discharged from hospital on July 25th a month after the operation.

The baby weighed 3½ lb on removal from the abdomen but steadily lost weight and died on July 8th, having lived thirteen days. The child was well developed with the exception of a marked double pes carneo-vilgus.

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ADRENALINE IN ANGIO-NEUROTIC CONDITIONS

As the utility of adrenaline in angio-neurotic conditions does not seem to be fully recognized I think the following case is worthy of record.

A woman aged 40 had partaken freely of partridge. About half an hour afterwards a very profuse urticarial eruption appeared on the chest and abdomen. Later it invaded the back and limbs. It continued for several hours then she was seized with a feeling as if she was going to burst. In consequence the patient who had retired to bed, jumped out and leaving her room endeavoured to go downstairs but immediately fell down in an unconscious state.

When seen at 3 o'clock in the morning she had recovered consciousness and declared that she felt nearly all right. A dose of castor oil and a mixture of bromide and valerian were ordered.

Three hours afterwards the eruption appeared again being characterized by wheals of great size. Later the hands became oedematous. This state of matters continued all day and at 7 p.m. the face also became oedematous the swelling becoming so large as to cause considerable alarm to the members of the family with whom she was living.

At 9 p.m. I administered a hypodermic injection of 10 minims of adrenaline. In half an hour the swelling began to subside and the patient felt much better. A dead sinking feeling which had troubled her all day having vanished. At 10.30 all the symptoms had disappeared. Apart from several slight transient attacks of urticaria no further trouble followed.

An interesting point in connexion with this case is that the patient has been subject to occasional attacks of asthma for the last six years.

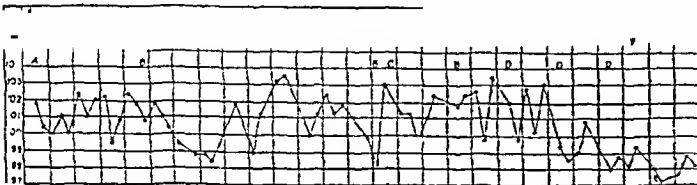
Driffild F. Yorks

JOHN R. KEITH, M.D.

COLLOSOL ARGENTUM IN THE TREATMENT OF SEPTICAEMIA FOLLOWING ABORTION

I think that the following case will be of general interest, since it illustrates the almost dramatic effect of collosol argentum on the course of a septicaemia which had been uninfluenced by treatment for fourteen days previously.

A married woman, aged 19, was admitted to the Victoria Hospital Workshop on August 13th 1925, and a diagnosis of inevitable abortion was quickly made. Severe infection was already present and the features of the case strongly suggested that criminal induction had been attempted. She was curried on admission by Mr. A. W. Kirkham and 10 ccm of anti-streptococcal serum was injected subcutaneously immediately afterwards. In spite of four hourly doses of 4 grains of quinine sulphate and occasional injections of serum the temperature showed no signs of settling. After about a week pain and tenderness over the uterus indicated progressive metritis and the question of peritoneal involvement began to cause some anxiety. Occasional retention of urine necessitated catheterization. The serum was obviously having no effect, and on August 27th Mr. Kirkham advised trying collosol argentum which he had previously found effective in a case of septicaemia following abortion. A gluteal injection of 10 ccm was given on August 28th and 10 ccm daily thereafter. Twenty-four hours after the



a Operation five days before. b anti streptococcal serum 10 ccm. c collosol argentum 10 ccm. d sleeping.

first injection there was a distinct improvement in the general condition of the patient and after the second injection the pulse respiration and temperature had become almost normal. After the third injection it was decided to discontinue its use as a decision which was justified by the subsequent appearance of the temperature chart (reproduced herewith). I think this chart bears out the remarkable efficiency of collosol argentum in a case on which so often drugs are interminably in spite of all therapeutic measures.

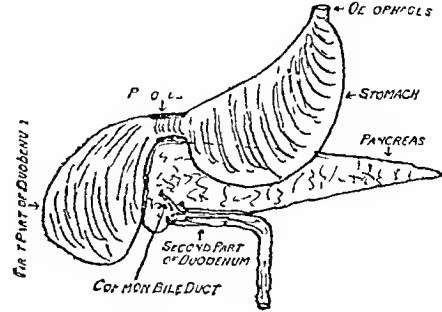
London N.W.

J. FINE, M.B., Ch.B., B.Sc.

CONGENITAL OCCLUSION OF THE FIRST PART OF THE DUODENUM

Congenital occlusion of the duodenum is a very rare condition. Of 13 cases of congenital occlusion or stenosis of the intestines collected by Barnard from the records of the London Hospital not one was of the duodenum. At Booth Hall Infirmary, with over 500 beds for children and about 4,000 admissions yearly, there had not been one case in nine years.

On September 5th I admitted to the hospital a female infant 2 days old. It had been vomiting persistently since birth although given nothing more than a few sips of water. The bowels had not been moved. The doctor who sent it in diagnosed the case as congenital pyloric stenosis. It was a full-time baby and pregnancy and labour had been normal. The weight at



birth was 6½ lb. Both parents are young and healthy. There are two other children alive, well and normal. Upon examination the infant seemed healthy.

After admission the stomach and the rectum were washed out both washings contained material like meconium. Emesis however persisted, the vomit closely resembling meconium (unfortunately no specimen was saved). The vomiting required very little effort, and was not like the projectile vomiting of infantile pyloric stenosis.

The infant died next day. I made a post mortem examination and in the accompanying diagram I have tried to show what I found. The stomach was large and distended while the pylorus was normal. The first part of the duodenum was greatly distended almost to the size of the stomach and ended blindly. Indeed the appearance of the stomach together with the duodenum was very like that of hour glass stomach. The second part of the duodenum commenced blindly at the ampulla of Vater, this end of the gut being embedded in the head of the pancreas near the uncinate process. It was joined immediately by the common bile duct. The remainder of the intestinal tract was normal, but it is interesting to note that the appendix measured over 2½ in in length had very little mesentery (and that near the base) and was freely movable. The gall bladder was rather large and distended with bile though the bile ducts were patent in their whole length. The liver was slightly enlarged. No other abnormalities were found.

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TEMPORARY BLINDNESS AFTER CONCUSSION

A case recently in St. Mary's Hospital, Paddington, showed an interesting condition of cerebral concussion.

On September 16th a boy aged 9 years was admitted to the hospital with a history of having been kicked on the head by a horse. There was a cut on the right side of the forehead just above the eyebrow.

The child was completely conscious but totally blind not even having perception to bright light. The movements of the ocular muscles were normal. The pupils were equal and reacted briskly. Two hours later perception to light returned in another two hours he had perception of moving objects and by the next morning he was completely recovered.

Owing to the ocular muscles and the pupil reflexes being intact it can reasonably be said that the lesion lay behind the anterior corpora quadrigemina and the internal capsule. It seems natural to conclude that the injury was a localized cerebral concussion due to contusion violence affecting only the visual centres in the occipital lobe.

I am indebted to Mr. D. C. L. Fitzwilliams, F.R.C.S., for permission to report the details of the case.

GEOFFREY ANDERTON, M.R.C.S., L.R.C.P.

London W.2.

Barnard H. L. Contributions to Abdominal Surgery edited by James Sherrin p. 134

South Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

SOUTH WALES AND MONMOUTHSHIRE BRANCH

A clinical meeting of the South Wales and Monmouthshire Branch was held at the Royal Infirmary, Cardiff, on November 19th, with the President, Dr R. J. COULTER, in the chair. The meeting proved to be one of the most successful yet held by the Branch, seventy members attending.

Mr T. E. HAMMOND read a paper on movable kidney, dealing with the fallacies of treatment by simple rib stitch. One of the most constant symptoms was vomiting, which might be caused by traction on the duodenum, torsion of the pedicle, Dietl's crisis, or obstruction of the ureter by kinking. Pyelograms were most instructive. A 20 per cent solution of sodium iodide was used. Skirgams were demonstrated, and showed the dilated pelvis and altered position of the kidney, and kinking of the ureter as it crossed the brim of the pelvis. Professor A. W. SHEEN, in discussing the paper, dealt with the development of the kidney and its surgical bearing.

Cases and Specimens

Mr J. W. GEARY GRANT showed two cases of tubular skin graft. The first was a youth who had received a severe comminuted fracture of the left foot in which the whole plantar skin surface of the foot had been removed. The second was a woman in whom a lamp bulb had destroyed the skin on the anterior aspect of the forearm, laying bare the tendons and muscles. A perfect functional result had been obtained. Mr Grant then gave a demonstration on cholecystitis mentioning first the anatomy of the gall bladder and ducts and Hartmann's pouch. Treatment in the past had been by medicinal and surgical means. Thirty to fifty per cent of cases of cholecystitis were he said, unassociated with gall stones, and in only a few cases was it possible to get a culture from the bile or mucous membrane of the gall bladder. The pathological changes as seen in the mucosa were mentioned. Skirgams were then shown. Importance was attached to the absence of the duodenal cap, and the marked five hours' delay. In the differential diagnosis pyloric obstruction and gastric or duodenal ulcer were to be considered. Histories of cases were quoted, in some of which gastric ulcer had been suspected, but operation showed a normal stomach, the disease being located in the gall bladder. In others appendix dyspepsia had been suggested. Mr Grant emphasized the value of an accurate history, obtained from the patient. There was often a history of flatulent dyspepsia, with itching or vomiting. He asked whether the underlying cause of certain cases of cholecystitis was a metabolic defect. The paper was illustrated with a series of beautiful coloured lantern slides, skirgams, and pathological specimens.

Dr T. G. FIELD EVANS showed a collection of interesting skirgams: (1) a case of os trigonum, (2) erythrotabes, (3) carcinoma of the oesophagus, (4) osteitis of the skull with sequestra, following frontal sinus disease, (5) hydatid cysts of the lungs, one of the cysts giving the appearance of an enlargement of the left side of the heart, (6) skirgram of an opaque meal, showing the large intestine and partly filled appendix.

Dr A. MASOV JONES demonstrated a case of lateral sinus disease following mastoid suppuration. There had been pain in the ear and over the mastoid bone, some vomiting, and marked vertigo with nystagmus. A complete left-sided hemiplegia was noticed, followed by pain and swelling in the left shoulder-joint. The mastoid was opened and found to contain cholesteatoma. The temperature remained elevated and the other symptoms persisted. The lateral sinus was then exposed and opened, and found to contain pus. The internal jugular vein was ligatured. There had been uninterrupted recovery, and the hemiplegia had largely disappeared. Dr Jones stressed the importance of examining the lateral sinus in all doubtful cases.

Dr H. A. HAIG demonstrated microscopic specimens obtained from recent necropsies: (1) Subacute military

tuberculosis, originating probably in the prostate, the liver, bladder, and kidney had been invaded, and a superadded acute cystitis had occurred. (2) Carcinoma of the oesophagus, the post mortem examination showed enlarged mediastinal glands and deposit of carcinomatous cells in the pancreas. (3) Melanotic sarcoma of the skin of the breast, with recurrence in the operation scar, amputation of the breast had been performed, but the pectoral glands and scar were again invaded. There had been only a very small deposit of melanum in the secondary growths. Dr Haig invited a discussion on these slides as to whether the nature of some of the cells would suggest carcinoma or sarcoma.

Dr G. I. FARMER showed a specimen of fibroid uterus with pregnancy. The history of the case was discussed, with differential diagnosis. There had been pain and vomiting, and an abdominal tumour was felt. Operation was performed. A twisted fibroid tumour was seen, on the surface of which a large vein had ruptured. Owing to the weak condition of the patient, due to excessive loss of blood, the only feasible procedure was hysterectomy.

Puerperal Infection

Dr E. W. MACEAN contributed some observations on puerperal infection. He began by quoting certain figures illustrating the prevalence of the most important single factor in the puerperal mortality of this and of other countries, and indicated that in the British Isles Wales was unfortunately very prominent in the mortality tables. Though disputed by some it was commonly believed that during the last twenty years there had been no substantial diminution in the number of deaths from puerperal sepsis. "It was the nature of this fell disease which, on occasion, wrought havoc in the palace and in the well equipped maternity hospital is dramatically as in the hovel and the crowded tenement? Much patient and, indeed, successful work had been achieved in regard to the bacteriology of the problem, particularly as to the role of the streptococcus. But it was possible that the seeming innocuousness of the streptococcus in one case and its virulence in another might be related not so much, if at all, to any essential difference in the attacking germ as to variation in the factors constituting resistance to infection. There was reason to believe that organized work directed to the elucidation of this aspect of the subject would result in more successful prophylaxis and treatment, and truly these were urgently needed. Reference was made to the recognized clinical types of puerperal sepsis, their prevention, and some modes of treatment. The problem of notification was dealt with in some detail, and an interesting discussion followed.

Dr E. CONSTON WILLIAMS (MOH Glamorgan) differentiated true sepsis from disease and accident, and contrasted conditions obtaining in towns with those in rural Wales. In Glamorgan about 82 per cent of births were attended by midwives, so that as far as the exogenous element was concerned it depended largely on the midwife's association with the case. There was urgent need for a midwifery service in rural parts, which might come under the local authority. In these statistics of puerperal mortality and puerperal sepsis, he said, one must always remember the proportion due to criminal interference.

BRIGHTON DIVISION

At a clinical meeting of the Brighton Division of the British Medical Association held at the Royal Alexandra Hospital for Children, Brighton, with Dr W. BROADBENT in the chair, members of the hospital staff showed an interesting series of cases.

Mr L. A. PARRY showed three cases: (1) A child who, when 3 days old, had profuse vaginal haemorrhage. Treatment with elvir calen chlorid stopped this in twenty-four hours, and there was no recurrence. He mentioned that the prognosis in haemorrhagic disease of the newborn was bad, 80 per cent of a large series of cases ending fatally, but in a series of 35 in which there was no other haemorrhage except the vaginal there was no fatal case. (2) A case of torticollis in a boy aged 9, the wry neck was the result of a sterno-mastoid haematoma at birth. There was distinct facial hemiatrophy. The general opinion of the meeting was that it was a suitable case for

operation, but as it was of so long duration it would be wiser to perform the open operation rather than the subcutaneous (3) A case of double undescended testis in a boy aged 12, the testis on one side being in the inguinal canal and on the other in the abdomen. Opinion was divided as to the advisability of operation. It was suggested, on the one hand, that to wait till puberty supervened, hoping that the descent of the testis would follow, was the proper course, on the other hand, immediate operation was advised as being likely to be of most benefit.

Dr W. BROADBENT showed (1) A case of acute endocarditis diagnosed at first as an acute abdomen on account of an infarct in the kidney. The boy had improved much by being put on the balcony to sleep in the open air. (2) Two cases of encephalitis lethargica, one of which started with much delirium, meningismus signs, and nystagmus. The other patient was brought on account of violent attacks of temper after an illness lasting three days, in which the mother reported that the child was constantly asleep. This child also had nystagmus.

Mr M. FITZMAURICE KELLY showed (1) A boy, aged 4, shown at a previous meeting (February, 1925) with extreme spasticity of the right leg, particularly of the calf muscles. Section of the grey sympathetic ram by Royle's method was performed on March 18th, the boy now walked with only a very slight limp, and the heel was well down. (2) A boy, aged 9, shown at a previous meeting (May, 1925) with severe spastic paraplegia. Stoffels' operation had been tried without benefit (November, 1925). Sympathetic ramisection was performed on the right side on June 17th, 1925, and on the left on July 22nd, 1925. The boy now walked well, with the feet several inches apart and the heels well down. (3) A child, aged 3½, with a right spastic hemiplegia affecting chiefly the right arm, the hand being practically useless. It was proposed to divide the grey ram in the neck, and to show the case again at a later date. (4) A child, aged 3, with a large fluid swelling under the left gluteus maximus. There was apparent shortening of the left leg. A skiagram was exhibited showing malformation of the lateral mass of the sacrum, and of the ilium, with absence of the sacro iliac joint and defective formation of the lateral mass of the fifth lumbar vertebra. The patient, who was regarded as a case of lateral meningocele, had recently developed a paralytic talipes varus of the right foot.

Dr FLORENCE M. EDMONDS showed a case of purpura hemorrhagica treated by atropine.

Mr J. R. GRIFFITH showed two patients with pneumococcal peritonitis who had recovered after operation and the use of Pane's serum, and also a case of depressed fracture of the skull in a baby, trephining had been performed.

Reports of Societies.

MYOMECTOMY

A MEETING of the North of England Obstetrical and Gynaecological Society was held at Manchester on October 16th, the President, Dr J. E. GEMMELL, was in the chair, and lectured in sympathetic terms to the recent death of Dr Harold Clifford, president of the society in 1922. Dr LEITH MURRAY (Liverpool) read a paper on myomectomy in the non-gravid uterus, embodying a report of sixty cases.

Dr Murray said that for several years he had made a practice in hysterectomy for fibroids of enucleating immediately after operation all the fibroids present and of studying this as a possible surgical procedure. Myomectomy in pregnancy and labour differed as regards indications and conduct, and he therefore limited the present paper to myomectomy in the non-pregnant. His sixty cases included every operation for fibroids by the abdominal route, with retention of the uterus where the fibroids were lying wholly or partly within the uterine wall, and where an enucleation from the substance of the uterus had been the essential part of the operation. All cases with complete peduncles or with twisted pedicles, and fibroids wholly within the broad ligament, had been excluded. The fibroids under consideration were "dug out" of the musculature of the uterus, and cases were only recorded where an appreciable wound of the uterus was made. Cases where small superficial fibroids were easily discovered at abdominal operation—as, for example, in association with a pedunculated fibroid causing symptoms, an apoplectic ovary or mild appendiceal disease allowing of conservative operation—had been rigidly excluded because there was no real involvement of the integrity of the uterine wall

as the result of the operation. He maintained that the term "myomectomy" was best considered as one involving a wound of the musculature of the uterus. Dr W. Cough had recently suggested that some conservative operations were more successful as surgical than as therapeutic triumphs, but Dr Murray held that the uterus, appreciably mutilated by the enucleation of multiple fibroids, had a power of recuperation and involution incredible to those who had not tested it. In a case of a multipara, married two years, he had removed twelve fibroids weighing 17 oz., varying in size from an egg to a marble, with two per-sized fibroid polyps within the cavity, the uterine wall was deeply penetrated through eight incisions, and the cavity of the uterus was opened to disclose the two small polyps. Yet sixteen and a half months later this woman delivered herself naturally and easily of a full-term child, weighing 7 lb.

Absolute contraindications for myomectomy were furnished by desperate anaemia, the woman being past the child-bearing age, unless the operation was very simple, a "big of nuts" uterus physically impossible to enucleate, and fibroids associated with serious tubal or ovarian disease. Dr Murray did not think that degenerated fibroids and those adherent to their capsules were unsuited for enucleation, nor that degeneration in any degree was a contraindication to myomectomy. More than once the preliminary incision into a fibroid had penetrated an area of liquefaction of red degeneration, and the fluid so released had escaped into the peritoneal cavity, yet in no case had this caused any trouble, nor had he had any real trouble with old grey "wash-leather" fibroids, even with areas of calcification. Infection of a fibroid was rare. He had only once met with unexpected suppuration in an intramural fibroid in a non-gravid woman, streptococcal pus was found in one fibroid alone of a mass removed by hysterectomy. If he met with such a complication in the course of an enucleation he would not hesitate to complete the operation, even when pus had escaped, provided that the whole of the supporting fibroid could be removed, and he would close the uterine and abdominal wounds with good expectation of an uninterrupted convalescence. He had had no experience of enucleation of infected fibroids. Infected fibroid polyps were in a different class, and were probably unsuited for abdominal myomectomy, a vaginal operation or an abdominal hysterectomy was necessary. The indications for myomectomy lay within the child-bearing age, provided that the anaemia was not too severe and the fibroids not so numerous or so situated that the operation was physically impossible or injudicious on account of inevitable shock. The operation was undoubtedly more tedious, more difficult, and somewhat more serious than hysterectomy, but he had found a marked willingness on the part of both married and unmarried women to submit to the conservative operation.

Bouvier's tunnel method was much less complicated than it appeared, and an attempt should be made to avoid peritoneal incisions. An anterior incision was ideal, but not always possible. An essential point before enucleation was to make a preliminary incision into each fibroid, particularly in the case of the larger ones, a thin zone of condensed musculature round a fibroid was easily mistaken for the periphery. Cutting deeply brought to view the true capsule, and the finger could then be directed to the right level. In no case had there been much haemorrhage during the operation. Each fibroid was separated mainly by the fingers, vascular bundles in the capsule were resistant, and could easily be brought so near the surface that forceps could be applied before they were severed. The cavity was closed in layers, a round-bodied needle with unchlorinized catgut being used, the suture was usually continuous, but occasionally a mattress. A Lembert suture was inserted into the superficial layer, the edges should appear white as the result of tension. Trimming of the edges was often necessary, but it was better to leave such excess of uterine wall as would give a reasonable degree of adaptability to the peritoneal edges. The shape of the conserved organ did not matter, for by three months at the latest the uterus would be smoothly rounded and

normal Myomectomy would never produce its best results if there were hesitation in opening the uterine cavity. He had never refrained from opening the cavity where there was any doubt whether the fibroids removed were the cause of the symptoms. The difficulty was greater with smaller fibroids than with the larger ones. With small fibroids, where the main symptom was bleeding, it was quite sound practice to extend an incision into the cavity and then explore with the finger, perhaps followed by the curette, especially towards the cornua.

Discussing alleged drawbacks to the operation of myomectomy, Dr Leith Murray said that subinvolution had never occurred in his series of cases. Recurrence of symptoms due to fibroids left behind had not so far caused any trouble, but as most of the patients had been operated on in the last five years he might yet have to admit such a complication. In Giles's experience recurrence was 10 per cent, with 3 per cent requiring operation. Bonney had stated that recurrence was very rare, and in any case Dr Murray believed that any seedlings left would be unlikely to interfere with physiological function. There had been no persistence of undue bleedings and no patient in his series, where an after-report was obtained, had had any real menstrual excess. He had been surprised at the rapid way in which patients operated on for haemorrhage had practically normal menstruation from the third period after operation. Myomectomy, in his opinion, was a shade more serious than hysterectomy in many cases. Without causing immediate anxiety there had been a mild degree of shock, lasting a few hours in two cases, and definitely associated with the difficulty of the operation. The main risk in his experience was intestinal obstruction from leakage of blood into the peritoneal cavity round the surface of the myomectomy wounds. It seemed to him a rational proceeding to remove an anterior incision from danger by a ventro suspension, which he had employed on several occasions. He was convinced that a uterus, though much mutilated, healed satisfactorily with a negligible risk of weakness in any future pregnancy. He believed that preservation of the uterus was worth striving for, apart from pregnancy, and the after-histories where no pregnancy resulted supported this view. As regards the possibility of pregnancy occurring after myomectomy, the majority of cases operated on were not in young women. The figures recorded by Schmid, Noble, and Giles gave a percentage varying between 10 and 40 in women who had a chance of conceiving.

Record of Cases

Age of Patients—Of the sixty cases operated on twenty seven were 34 or under and thirty three were 35 or over.

Number of Fibroids Removed—In each of twenty six cases only one fibroid had to be removed the largest number in one case was twenty three weighing 17 oz, and in another case eighteen weighing 21 lb 14 oz, were removed.

Condition of Fibroids Removed—Necrobiotic changes oedema, cystic degeneration and hyaline degeneration were encountered, and one fibroid contained areas of calcification.

Symptoms Leading to Operation—These were in thirty one cases haemorrhage or haemorrhage with pain in twenty one cases pain alone and in eight cases pain with pressure symptoms.

Previous Pregnancies—Nine of the thirty four married women had had previous children and four had had miscarriages.

Operation—All cases were abdominal. The endometrial cavity was unavoidably opened in twelve cases intentionally in eleven in practically every case where haemorrhage was the main symptom the endometrial cavity was opened or exposed to direct palpation. In seven cases the oedematous and engorged endometrium necessitated an abdominal curettage. Every effort was made to reduce the number of external incisions of the uterus. 207 fibroids were removed through 139 incisions an average of 1.5 fibroids per incision. However it was possible to remove eighteen fibroids through eight incisions in one case and ten fibroids through two incisions in another.

After Histories—Two patients showed moderate shock an hour or two after operation but were never seriously ill. In one case a slight excess of menstruation was present eighteen months after operation. In a second case an alteration of the periodicity occurred and in every other case the reply to a definite question about periods had been absolutely satisfactory. The first period after operation and sometimes the second or even the third, in cases undertaken for haemorrhage were at times rather excessive but the great majority of patients after the third period were able to report a satisfactory type of period which persisted.

Subsequent Pregnancies—None of the single women had since married but one who at the age of 32 had a large red fibroid incited thanked him for preserving her uterus as she was engaged to be married. Seven (20.6 per cent) of the thirty four married women had had nine children normally born at full term and two others had had miscarriages one as the result of a motor

collision in which her husband was killed. This made the total of pregnancies following operation 26.5 per cent. Six of the nine cases had not been previously pregnant, the ages of these ranged from 30 to 40 and 42, the last two seemed worthy of particular emphasis. In only one of these nine cases was the uterine cavity opened during operation. Three of the married women who had not become pregnant were 42, 43, and 48 respectively.

Dr Leith Murray concluded that myomectomy was less difficult and dangerous than was often supposed, that it was available in a large percentage of cases in women of child-bearing age with symptoms due to fibroids, and that in women of reasonable age it should always be considered in preference to hysterectomy. As evidence of his view in this respect, he noted that in 1922 his proportion of myomectomies to hysterectomies was 1 to 8, whereas in 1923, 1924, and 1925 up to the present it had been for each of these periods 1 to 3.3. These figures, for the purpose of comparison with other records, included eight myomectomies performed during pregnancy.

The President remarked that conservatism during the child-bearing period had to be considered, but often where the uterus presented a ragged appearance after myomectomy he had deemed it advisable to perform subtotal hysterectomy. Dr Murray's results, in freedom from haemorrhage and fatality, and the after-results of pregnancy and parturition at term, marked a very important advance. In 1897 the late Dr Alexander, at a meeting of the society, described six cases of abdominal myomectomy for fibroids varying in number from six to twenty-six, the operator left the uterus attached to the abdominal wall, the cavity packed with gauze, and thus treated extraperitoneally. The opinion was then expressed that myomectomy for multiple fibroids was not practicable. Technique had steadily improved, and reliance on the peritoneum had led to confidence in a successful issue. Dr Gemmell did not think that to miss seedling fibroids was a great error, as the patient might have had children before the necessity for further operative treatment arose.

Dr FLETCHER SHAW (Manchester) said that in a young woman who might reasonably expect to have further family myomectomy was the ideal operation, but where a woman had already had several children, and was aged 40 or more, he thought she should be allowed to choose between hysterectomy, with absolute certainty of no further trouble, or myomectomy, which preserved the uterus, but with a slight risk of recurrence of the original trouble. He had been impressed lately by the frequency with which he found a loop of intestine firmly adherent to the uterine serosa without there having been any clinical symptoms of this condition. He had previously reported to the society a case in which he had removed twenty-three fibroids from a uterus, a few years later that patient had become pregnant, and was delivered of a full-term child without any untoward symptoms.

Dr A. DONARD (Manchester) had removed a fibroid by myomectomy in 1890, using buried gut for the first time. He was not so favourably disposed towards myomectomy for two reasons: first, that many women did not want children, and secondly, the result of the operation was not so satisfactory as hysterectomy.

Professor BRIGGS (Liverpool) said that it was impossible to remove all the fibroids from the uterus on every occasion. He thought there was a considerable difference between the words "myomectomy" and "enucleation." In performing myomectomy he had always pretended "stabbing" the capsule finely to make it more evident in enucleating fibroids.

Mr W. W. KING (Sheffield) thought that the condition of the cervix ought to be considered, lest a potentially cancerous condition be left behind.

Dr W. FORDYCE (Edinburgh) had been deterred from myomectomies by the haemorrhage and shock that resulted. Cutting into the capsule of the fibroid he considered of great importance. In later life, or after the woman had had three or four children, the operation of hysterectomy, in his opinion, was preferable to myomectomy.

Dr LEITH MURRAY in his reply, suggested that the words "myomectomy" and "enucleation" were almost synonymous. He had encountered haemorrhage and shock on very few occasions, and only in one case had there been intestinal obstruction.

Malformation of Pelvic Organs

MI A GOURN (Leeds) read notes of a number of cases of malformation of the pelvic organs which he had encountered

1 *Atresia of Vagina with Menstrues retained up to the Age of 26 Years*—At the age of 15 this patient had pelvic pain frequently at intervals of a month from then there had been no discomfort till just before admission to hospital. She had been aware that the lower part of the abdomen was enlarging but she attributed this to fat. She had been married five years, but no steps had been taken to remove the obstruction. A few days before admission a black vaginal discharge had been noticed. On admission the temperature was 99° and pulse 120. Examination of the abdomen showed a medium swelling the size and shape of six months pregnancy, tense and fluctuant and rather tender. The external genitalia were small, but otherwise normal. The remains of the hymen were seen, and a finger passed beyond this for $\frac{1}{2}$ in, and was then checked by a transverse septum. The black, tarry fluid was found when the patient was anaesthetized to exude from a pinhole aperture in the transverse septum. The septum was dissected away and three to four pints of black, grumous fluid flowed out with a small characteristic of *B. coli* infection and gas escaped with it. The cavity was irrigated with lysol lotion. It was concluded that both uterus and vagina had been distended, but there had been no distension of the Fallopian tubes. The temperature fell three days after operation. Later the patient menstruated three times in a perfectly normal manner and then became pregnant. This case was noteworthy because the condition had persisted so long with trivial symptoms and without treatment until spontaneous leakage and infection occurred, and also because the uterus resumed its functions so soon.

2 *Absence of Uterus and Vagina*—This patient aged 25 sought advice because she had never menstruated. She had the general appearance of a well developed young woman with normal secondary sexual characters. Abdominal examination showed nothing unusual. The vulva and hymen were normal, but a finger was arrested an inch above the fourchette. Combined rectal and abdominal examination showed no trace of the uterus or upper part of the vagina. She was told that she was the subject of a deficiency which would in no way affect her health but would render pregnancy impossible. She was advised not to think of marriage but to be content in the exercise of her profession that of a nurse.

3 A similar absence was found in a woman, aged 22 and engaged to be married. The state of affairs was explained to her mother and the opinion given that marriage should not take place because of the grave risk of unhappiness.

4 *Uterus Didelphys with Vaginal Abnormality*—This woman, aged 27, had had one pregnancy three years previously which ended prematurely the child being stillborn. On examination the upper part of the vagina was unusually wide from side to side and a cervix felt on each side, the left one was normal but on the right side a membrane with a small aperture covered the cervix which could just be felt. Under an anaesthetic the membrane was freely incised. An exactly similar malformation had recently been described by Wiart and Surru. They very aptly compared this membrane to a perineum covering its glands.

5 *Unicorneate Uterus with Absence of the Appendages of the Left Side*—This patient on examination appeared to have a retroverted uterus deviated markedly to the right side with irregular masses on either side taken to be the uterine appendages. An operation was advised for chronic salpingitis and a large number of adhesions were separated, showing the uterus lying on the right side. It was small and conical and the right tube and ovary were badly disorganized by inflammatory disease. The left cornu of the uterus with its appendages and the left broad ligament were completely absent. The round ligament ran towards the cervix. In the left side of the pelvis an ovoid mass thought to be a cyst or disced ovary, after exposure was recognized to be the left kidney.

6 *Double Ureter discovered in the course of a Vaginal Operation*—In dissecting the structures on the left wall of the pelvis two separate ureters were found lying parallel and a quarter of an inch apart they united about 2 inches before entering the bladder. In this patient this abnormality could hardly be missed but in a patient with much extraperitoneal fat it might be. Double ureter was one of the commoner anatomical variations and ought to be remembered. After the ureter had been found the surgeon proceeded more boldly and was apt to disregard any other structure encountered so long as it did not bleed so an extravasation of urine might result.

Dr A. DOWD (Manchester) referred to a case of his wherein there was a pelvic kidney, and the organ was left in situ at operation (subtotal hysterectomy). Symptoms of a low toxic type developed within a few days, later followed by a fatal result.

Dr LEITH MURRAY (Liverpool) reported two cases of uteruloplasty for uterus bicornis unicollis (symmetrical) followed by repeated pregnancies. These cases showed the non-gravid uterus as an organ capable of maintaining its integrity during child bearing after a complete hemisection of the corpus, and confirmed Munro Kerr's and Bonney's experience of the same operation.

1 A nullipara aged 25 married six years came complaining of severe haemorrhage and a swelling of the uterus was diagnosed

as a fibroid. At the operation in 1919 a bicornuate uterus (uterus bicornis unicollis symmetrical) with normal appendages was found. A mesial wedge was removed and the two uterine flaps stitched together with catgut, without much difficulty produced a very normally shaped organ. The endometrial gutter on each side was curetted before closure she was delivered in 1922 at the thirty-fourth week of pregnancy of a baby weighing 4 lb 9 oz which was still alive. A second child was stillborn at the thirty-third week as the result of placenta praevia. A third pregnancy resulted in the delivery at full term of a child weighing 6 lb 4 oz.

2 A woman aged 34, married eleven years had had two children the second five years previously, she complained of haemorrhage pain in the back and left side. At the operation a bicornuate uterus was found, bound down by an adhesion to the pouch of Douglas. Uteruloplasty followed by ventro-suspension was performed in October, 1920 and in December 1921 the patient was delivered of a full term living child weighing 9 lb, spontaneously. A second natural delivery took place on September 3rd 1923.

TREATMENT OF BRONCHITIS IN CHILDREN

At a meeting of the Manchester Medical Society held on November 4th, with the President, Professor A. H. BURGESS, in the chair, Dr JOHN F. WARD read a paper on the treatment of bronchitis in childhood.

Dr Ward began by insisting that the successful treatment of bronchitis could only be expected when recognition of the morbid changes in the bronchial tubes was correlated with knowledge of the action of the remedies employed. In the later stages of acute bronchitis and in chronic bronchitis excessive secretion occurred in the bronchial tubes, this might cause blocking of the tubes, with consequent collapse of the corresponding portion of the lung, and a spread of infection into the alveoli. Some degree of toxæmia resulted from absorption in all cases. Efficient coughing was the only way in which the tubes could be cleared. Coughing was dependent upon two factors—reflex and muscular action. Where there was much toxæmia the reflex excitability was diminished, and also the muscles quickly became atonic, especially in children. The general method adopted to clear the tubes was the use of expectorants, their action was entirely reflex, increase of secretion in the tubes being caused but no increased power of expulsion. They all acted by irritating the gastric mucosa, and in large doses were emetics. This irritation in itself was objectionable in young children, but most cough mixtures must be inert because of the high degree of dilution, and the addition of sedatives, such as tincture of opium, which counteracted the reflex action. If these drugs did not increase the secretion but merely rendered it less viscid and easier to dislodge then use would be logical, but there were better ways of relieving this end. The three principles of treatment were to seek for and remove the cause, to increase resistance of the patient, and to relieve symptoms which needed relief. The cause of bronchitis in children as in adults, was bacterial invasion, but it was always secondary, and in a very large proportion of cases it was often secondary to unhealthy conditions of the naso-pharynx, which might be present at a very early age. In other cases the cause was to be found in a rachitic constitution which rendered the child particularly susceptible to attack of both the respiratory and gastro-intestinal tracts, and also considerably weakened the power of the cough by causing marked muscular atony. Many cases of this kind were without bony deformities. Animals experimentally fed on foods deficient in fat-soluble A were particularly liable to death from respiratory disease. Lack of exposure to sunlight was also a potent factor, and was probably more important than damp in causing the greater frequency of bronchitis in winter as compared with the summer. To increase the resistance of the patient vaccine therapy was logical especially in chronic cases, but it was difficult to obtain autogenous vaccines in children, and the results were not very satisfactory. Better results followed dietetic treatment, with abundance of fresh air and sunlight. Artificial sunlight was beneficial in bronchitis as in rickets and malnutrition, and cod-liver oil was of great value. The chief symptom calling for relief was cough but this was not always to be checked, it might serve a useful purpose, and might then be assisted by inhalations of steam, hot drinks, all this, or small doses of potassium iodide, to make the secretion less viscid. When the tubes were dry and the cough was

irritating and exhausting the diagnosis of bronchitis should be revised. A possible cause was irritation of the pharynx, and relief was then obtained by demulcents, the cause might be at a greater distance—as, for instance, otitis media or even irritation of the chest wall. Steam was very useful for relief of cough with dry tubes, also small doses of chloral, opium was always dangerous in young children, and belladonna was chiefly useful in cases associated with spasm. In the treatment of chronic bronchitis attempts might be made to disinfect the tubes by inhalations. Drugs given by mouth as antiseptics must be much too weak to be effective when excreted, if they ever were, by the bronchial mucosa. The cause of chronicity should be sought and treated, and the general condition of the child be improved by diet and sunlight. Small septic tonsils might be the cause of chronic infection of bronchial tubes they were just as important in this respect as large tonsils.

Myocardial Disease

Dr J C BRIMWELL, in a paper on recent advances in the diagnosis and prognosis of myocardial disease, said that he would confine his attention to a single group of clinical cases in which the electro-cardiogram was helpful both in diagnosis and in prognosis. The accurate quantitative estimation of myocardial damage was often difficult, especially when it had to be based almost entirely on subjective symptoms. In such circumstances any additional objective evidence obtained by special methods of examination was of considerable value. The particular group of cases to which he wished to refer were those in which the electro-cardiogram showed the condition of "bundle branch block." Willis had brought forward evidence that in angina pectoris, other things being equal, certain abnormalities of the ventricular complex added to the gravity of the prognosis. Oppenheimer and Rothchild had shown that certain abnormalities of the electro-cardiogram were frequently associated with coronary arterial disease. Cowan and Brimwell had recently studied a series of 24 patients with bundle branch block, of these 15 had died within eighteen months of the recognition of the lesion. The remaining 9 patients were still living, 4 of them now having been under observation for more than three years. There appeared, therefore, to be a small subgroup of cases exhibiting bundle branch block in which the prognosis was not unfavourable. These were probably cases in which the lesion causing the block was localized and stationary. Clinically these cases did not manifest signs of encephalopathy, and they served to illustrate the importance of correlating the electro-cardiogram with the clinical findings. A persistent electro-cardiogram of bundle branch block afforded definite objective evidence of a myocardial lesion, and was therefore of considerable value in diagnosis. The prognosis in such cases depended on whether the lesion causing the block was stationary or progressive.

STAPHYLOCOCCAL HAEMOLYSIS

At a meeting of the Section of Pathology of the Royal Academy of Medicine in Ireland held on October 30th, the President, Professor JOSEPH W BIGGER, read a paper on staphylococcal haemolysis. Professor Bigger explained that his communication was merely preliminary, since the research was by no means complete. He first drew attention to the different appearances found in blood-agar plates as the result of the growth of different strains of *Staphylococcus aureus*. With some strains no change occurred, with others good haemolytic zones were produced, while a third type gave chiefly a brownish discoloration. By means of the technique of "layered" plates it was found that haemolysis occurred first then the liberated haemoglobin diffused through the medium and finally it became altered by the action of acid and oxygen. Professor Bigger dealt next with the production of lysis in broth cultures. This lysis had no action on human cells, but acted strongly in sheep cells. It was readily produced, and in broth of pH 7.2 reached its maximum in about seven days falling subsequently, it appeared more rapidly in an acid, and

more slowly in an alkaline medium. The action of heat, filtration, and dialysis on this lysis was then considered. An interesting point was that, with many lytic broths, heat followed by cold produced better lysis than either heat or cold alone. Lastly, the method used for producing a lysis acting on human cells was described. As the methods of its production and many of its properties were different from that acting on sheep cells, Professor Bigger thought that the two lysins were quite distinct.

Dr W D O'KELLY said that the work done had opened up a large field for research, which would obviously take some years to explore. Professor J T WYCHERLEY remarked that although this research had no apparent utilitarian aims, yet such work was often followed by useful discoveries. He deplored the fact that recent books copied earlier ones without experimental verification of the statements contained in them. In this way mistakes had been handed down from one writer to another. The fact that the lysins acting on human and sheep cells were essentially different interested him very much, and he suggested that by this means the bloods of various animals might be distinguished.

Mesothelioma

Dr J D CANNON, who with Dr W D O'KELLY exhibited an abdominal tumour (mesothelioma) removed from a child 3 years of age, said that this large abdominal tumour was situated in the right upper abdomen. It passed under the ribs above, extended beyond the mid-line towards the left, and descended to a few fingerbreadths below the umbilicus. When the abdomen was opened a large growth was discovered growing high up in the mesentery of the small intestine. The tumour was successfully enucleated. Dr O'KELLY added that this was a solid tumour and measured 6 inches in diameter, it was of the nature of a terato-blastoma, and was highly malignant. From the anatomical situation and the nature of the growth, it was probably a remnant of the Wolffian body.

OPERATIVE TREATMENT OF EXOPHTHALMIC GOITRE

At a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, held on November 6th, the President, Mr R C B MURPHY, in the chair, Mr R A STONEY showed a woman of 30 who had been much benefited by surgical treatment for exophthalmic goitre. Mr Stoney said that in spite of rest in bed, sedatives, and the administration of Lugol's solution, the pulse rate, which at first fell, increased and the patient lost weight. Just before her operation the basal metabolism was increased by 46 per cent. The patient was given rectal ether, and the right lobe, isthmus, and lower half of the left lobe were removed. Now, three weeks after the operation, the basal metabolism had fallen to 27 per cent below normal, and the pulse had become slower and was steady. Tremors had almost disappeared, exophthalmos had decreased, the weight had increased, and the patient stated that she felt much better, and was now eating and sleeping well. Mr H STOKES said that he had operated on many cases of patients with exophthalmic goitre, and the results on the whole had been distinctly good. He had found that iodine acted very well, he had recently treated a patient with iodine and her pulse rate had come down, but immediately he stopped the iodine her pulse quickened again. He did not perform a lobectomy, but he removed a large portion of the centre of each lobe, after ligaturing the upper lobe. He had had about four or five such operations each year for the last few years. The incision employed by Mr Stoney gave very good access to the lobe, and in lobectomy it was necessary, but Mr Stokes thought that otherwise the operation he himself did was much easier. He had operated on about thirty-five patients. Of these two had died, one a very bad case, never recovered from the anaesthetic, and the other died from septic pneumonia. Dr G E NESBITT said it was sometimes stated that phlebotomy was reluctant to let their patients be operated upon. With this he could not agree, but they wanted more

proof that operation was the best method of dealing with these cases. He thought that most people with exophthalmic goitre would prefer to be treated by x-rays first, than to have an operation performed. Good results certainly were often obtained by x-ray treatment.

Mr H MEADE believed that surgeons seldom received patients with exophthalmic goitre early enough, if good results were to be obtained by operation. It was necessary to operate early. He had had two deaths, but one patient had a toxic goitre. He always used a transverse incision, and except in exophthalmic cases he did not cut the muscles.

Mr L G GUNN divided cases of goitre into two classes—the mild and the very severe cases. He had operated on fourteen severe cases, and two had died directly as a result of the operation. Of the other twelve, two had shown a definite return of exophthalmic symptoms—one after five years, the other after eight years. He had probably not taken a sufficient amount of thyroid gland away, but he felt that even after operation there was likely to be a certain amount of recurrence. Much depended on the patient. If a patient had only to do light work, or no work at all, then medical treatment and x-rays might be employed, but if the patient had to do hard work, then he would advise operation. He had seen many cases greatly improved after medical treatment, but very few of these patients had been fit to go back fairly soon to work, while after operation they were able to work in quite a short time. A simple operation was sometimes followed by a very severe reaction, and even death.

Mr STONEY, in reply, said that he had never operated on a patient with exophthalmic goitre who had had treatment by x-rays, but he had operated on a case of ordinary goitre, and he looked on it as one of the most difficult operations to perform. The thyroid had become hardened, and it was necessary to cut it out by dissection from the tissues of the neck with continuous bleeding all the time.

Multiple Myomata

Mr H MEADE showed a case of multiple myomata in a male.

He first operated on the patient in 1920, removing what appeared to be a scellaceous cyst in the thigh, but the pathological report showed it to be a myoma. On further examination it was discovered that the patient had four others in different parts of the body which he subsequently removed. The patient returned in 1924 with recurrences in other parts of the body, one in the liver nearly 6 inches in diameter and one in each leg which were causing him a good deal of pain. Owing to the widespread nature of the trouble Mr Meade decided not to operate, and for the same reason Dr Hayes thought deep x-ray treatment inadvisable. The patient returned again in July, 1925 requesting the removal of the tumours in his side and legs which were causing him much pain and prevented sleep. The tumours had only increased slightly in size and the general condition of the patient had not deteriorated. Mr Meade decided to operate. He removed one tumour from the calf of each leg in which the nerves were involved one from each side of the neck, two from the side of the thorax one from the side of the left arm, one from the right forearm, and one from the right buttock, but he did not remove the tumour in the abdomen or a small one in the back. Complete relief from pain followed.

Mr Meade showed the patient, who now had two further growths—one in the left arm and one in the front of the left thigh. The growth in the liver had increased perceptibly in size, being now between 10 and 11 inches. The histological report from Dr T T O'Farrell was to the following effect:

Sections taken from the largest tumour were composed mainly of spindle-shaped cells arranged in bundles some cut transversely and others longitudinally. The cell nuclei were more or less rod-shaped, and in transverse section appeared as small dots in the centre of the cells. The cells were like those of leiomyoma. Scattered through the tissues were two other types of cells—one a round cell containing a fairly large mitotic nucleus and the other fairly numerous giant cells. The giant cells varied in size and contained from one to several nuclei. In places the nuclei appeared to fill the cell. No striations were found in the protoplasm of the giant cells and they bore otherwise no resemblance to striped muscle fibres. The blood vessels on the whole were scanty, and van Gieson's stain revealed very little fibrous tissue. Sections taken from a smaller tumour exhibited many of the characters of the first specimen, but there were no cells containing mitotic figures and giant cells were scanty. The first specimen showed undoubted malignant change, but without further investigation it was uncertain whether it was myoma malignum or spindle-celled sarcoma of unusual type.

MEDICO-LEGAL SOCIETY

At a meeting of the Medico-Legal Society, held in London on November 17th, with Sir WILLIAM COLLINGS in the chair, Sir BERNARD SPILSBURY read a paper by Dr JOSEPH J. LEVIN, of the General Hospital, Johannesburg, Lecturer in Forensic Medicine to the University of Witwatersrand, upon a case of accidental wounding.

A South African Shooting Case

It appeared that while a man was extracting cartridges from a revolver, a cartridge exploded and the bullet entered the body of his wife, who was pregnant, passing through the foetus. The wife had stated that the child was alive that morning, but the next day it was delivered stillborn and the wife herself died three days after the accident. Dr Levin made a necropsy, and concluded that death had resulted from inflammation of the kidneys, upon which the coroner's court found a verdict of "Death from natural causes." The court did not find that the bullet wound accelerated death, but if there had been such finding, could the husband have been charged with murder? The child died as a result of injuries produced by the bullet, but could a child which had never breathed have been murdered? Further, could the husband have been charged with procuring abortion? Dr Levin discussed the South African legal authorities on the law of murder, and said, as the facts precluded any intention to kill, no charge of murder would lie. The coroner had found there was no culpable negligence on the part of the husband, and, in view of the medical evidence, it could not be argued that the act of the husband either caused or accelerated the death of his wife. A charge of intent to do grievous bodily harm, or even of common assault, could not lie in the circumstances. Then, as to "murder" of the foetus. South African law appeared to follow English law in requiring that the child must be "born alive," must have "completely proceeded in a living state from the body of its mother, whether in a case of suspended respiration it has breathed or not, and whether it has had an independent circulation or not, and whether the navel string is severed or not." This was a quotation from the Code of 1886, but it would be inadvisable to accept it as a final statement of South African law, as a case in the South African High Court in 1895 decided that the killing of a foetus was infanticide. The South African Criminal Procedure Code of 1917, however, laid down "On the trial of a person charged with murder or culpable homicide of a newly born child, such child shall be deemed to have been born alive if it is proved to have breathed, whether or not it has had an independent circulation, and it shall not be necessary to prove that such child was at the time of its birth entirely separated from the body of its mother." It was, however, in the discretion of the judge to impose a sentence other than death upon a conviction, and it was hardly likely, save in cases of great inhumanity or atrocity, that a sentence of death would be passed. Where the child was not born alive naturally the question of another crime, that of procuring abortion, might arise, but there could be no such question in this case. The husband, then, was guilty of no crime.

Sir BERNARD SPILSBURY, opening the discussion, said though the death of the woman was not the direct result of the injury, it might be that the injury to the child, by causing its death, accelerated the death of the mother. From the post-mortem examination it was, in his opinion, evident that the woman was in grave danger before the accident of developing puerperal eclampsia, and, as the mortality from that condition was a heavy one, the woman may have died in any event somewhat later in pregnancy. It would not be right therefore, to state that apart from the injury to the woman's life was in no danger. He had no doubt, however, that the injury, by precipitating labour, accelerated death.

At the close of the discussion in which several members took part Sir BERNARD SPILSBURY read a further paper on bullet wounds in their medico-legal aspect, in the course of which he referred to interesting cases where the markings produced on the body and clothing by the discharge of firearms at close range were of great value in deciding in what manner the wounds had been caused.

Reviews.

THE PRACTICAL
MEDICAL JOURNAL

GENETICS AND EUGENICS
Dr C C HURST has collected into a single volume, *Experiments in Genetics*, the more important papers reporting the result of his researches in the genetics of plants, animals, and man, carried out during a period of thirty years (1894 to 1924). The first four papers record experiments in the hybridization of orchids undertaken before the Mendelian classification of orchids. The following twenty papers report the results of Mendelian experiments with various genera of plants and animals, together with Mendelian researches in the horse and in man. These constitute an experimental demonstration of the Mendelian principles of heredity. The remaining papers deal mainly with the problem of the application of the principle of Mendelism and the breeding of plants and animals, and to some extent with the question of eugenics in man.

It would be impossible to find a more masterly presentation of the principle of Mendelism than is contained in this volume, conveyed in exceptionally pure and pleasant English. Naturally much of the work is outside the immediate sphere of medical interest, being of a purely technical character bearing on the Mendelian principle. But the author's observations on the relation of genetics to eugenics deserve the careful attention of those who are, perhaps, unduly enthusiastic in their efforts to introduce the latter into the outward appearance of the individual. Neither the author states, "nor a knowledge of its necessity is a safe guide to its breeding potentialities. The time mesuring of heredity is neither the somatic character of the individual nor of his ancestors, but its gametic constitution, and, in our present state of knowledge, this can only be determined by experimental breeding on Mendelian lines." Again, "in studying the inheritance of the more simple physical characters in man, it is evident that we are as yet only feeling our way towards the solution of certain larger and more complicated problems which are of vital importance to the human race. The future of eugenics depends very much on the solution of those problems. I do not wish for one moment to suggest that the art of eugenics has been born before its time, but I do feel that before we can venture to apply the scientific principles of genetics to human life we must first make our foundations sure. For this reason I am convinced that a good deal of sporadic work in human genetics will have to be done before any considerable amount of practical good can be accomplished in eugenics. Eugenics is simply applied genetics and sound eugenics can only be founded on sound genetics."

PIORRHOIA AND APICAL ABSCESS

The volume entitled *Teeth and Jaws Roentgenologically Considered*, by Dr HERMAN A. OSGOOD, is the fifth of a series of x-ray atlases projected and edited by Dr James T. Case, late president of the American Roentgen Ray Society. The object is to supply a diagnostic guide rich in the fruit of experience of leading authorities in special fields of post-graduate course from the very men whom he would seek in personal visit, and to leave him with an invaluable series of master roentgenograms which he may study and with which he may make comparisons as often as desired. The volume begins with a summary of the normal, pathological and artefact conditions which may be met with in the author expresses his views on two burning questions of dental pathology—the differentiation of apical abscess from chronic apical abscess and the nature of first point when he writes: "Where there is a small abscess without erosion of the root tips, the x-ray evidence shows that the average case clears up entirely where the canal is cleaned out and filled." This is just

Experiments in Genetics. By Charles Chamberlain Hurst. Ph.D. Cantab. 148 pp. Cambridge. The University Press. 1925. (Cr 4to pp xviii + 578. 14 figures + 1 map. 50s. net.)
Teeth and Jaws Roentgenologically Considered. By Herman A. Osgood. 148 pp. New York. P. B. Hoeber, Inc. 1925. (8 x 10, pp xviii + 293. 407 figures. 72 plates. 10 dollars net.)

what we should like to believe, but the author gives no x-ray pictures to support his statement. With the help of the x-rays he considers that three distinct types of piorrhoea can be distinguished: a form due primarily to local irritation, a form in which there is alveolar recession without pocket formation, and a form primarily of systemic origin, in which there is alveolar recession of systemic origin with or without pocket formation. This last is the "piorrhoea." However much truth there may be in this classification, we have to confess we do not see in the x-ray pictures any unequivocal proof of it. All the appearances can be equally well explained as the result of local sepsis. It is interesting to note that this observation applies with equal force to the illustrations given of "periapical abscess"—the so-called traumatic occlusion. The volume itself consists of 407 x-ray figures illustrating well the normal, abnormal, and artefact appearances of the teeth and jaws. The figures are printed in negatives for convenience of comparison with everyday work, and to make more clear the details of the finer structures around the tooth apices most of them have been enlarged two and a half times. These figures are of a high quality, and well repay the work that both author and printer must have expended on them. The most interesting one, perhaps, those showing "sepi bone," especially one showing thickening of the edge of the mental foramen from a case of persistent neuralgia, and in "artefact" in which over penetration has blotted out all the interdental bone in the centre of the film, leading to a mistaken diagnosis of advanced piorrhoea. A volume such as that before us should be a most valuable object lesson of the dangers of dental sepsis.

PHYSIOLOGY, NORMAL AND PATHOLOGICAL

The second volume, which deals with respiration, is the first portion to appear of a handbook of normal and pathological physiology, which is being edited by Professor A. BETHE, G. V. BERGMANN, G. EMMERICH, and A. ELLINGER. There are no fewer than 315 contributors, and the whole work, it is stated, will consist of 21 volumes, each summarily of the same size as the volume under review, which contains 552 pages.

The editors, in their general preface, explain that it is fifteen years since the last volume of Engel's handbook of human physiology appeared, and that in their view the time is ripe for a new encyclopaedia of this science. The scope of the present book is, however, more extensive than was that of any of its predecessors, for it includes not only the whole of normal physiology, but also pathological physiology and pharmacology, and, besides dealing with vertebrate physiology, treats also of invertebrate and plant physiology.

The book will therefore deal with most of the functional manifestations of which living tissues are capable, and may be considered as a handbook of biology, using that term in its widest sense. The contributors include the majority of the physiologists of Central Europe, together with a certain number of writers from Holland, Switzerland, Sweden, England, and America. The completed handbook, together with Abderhalden's handbook of biological methods, which is planned on a similar if not larger scale will comprise a fair-sized library. We must recognize, however, that these encyclopaedias have become so vast that no one can keep touch with it, even if it happens to be available.

The volume under review contains fifteen chapters by fourteen different authors, and the titles of the chief chapters give a good indication of the field covered. The subjects dealt with are: anatomy of the respiratory apparatus, the physiology of respiratory movements, the physiology of the respiratory tract, the chemistry of the exchange in the lungs, the regulation of respiration, the pathology of the respiratory tract and of respiration, the pharmacology of respiration, gas poisoning, dust inhalation, and respiration in plants. All the articles

Handbuch der normalen und pathologischen Physiologie. Band II. Atem- und Gasaustausch. Herausgegeben von A. Bethe, G. Bergmann, G. Emmersch und A. Ellinger. Berlin: Julius Springer. 1925. (Sup. 8vo. 8to. pp. xv + 552. 122 figs. 39 gold marks. bound 44.40 gold marks.)

give good summaries of the present state of knowledge in the subject dealt with and give full references to the recent literature

The inclusion of chapters on pathological physiology is especially to be welcomed, since this plan will help those who wish to learn the exact significance in disease of the laws established for normal respiration

TISSUE CULTURE

DR ALBERT FISCHER's book *Tissue Culture*⁴ is an important addition to the literature of the subject. Dr Fischer succeeded in obtaining the first permanent strain of epithelial cells in pure culture, and has published several other articles on tissue culture to which reference is made in the text. But the book is by no means limited to an account of the author's own researches, though naturally the problems at which he has worked himself have greatest interest for him, and to these he frequently returns.

The book begins with an historical review of the subject, which is followed by chapters on culture media and on methods of tissue cultivation. In these the author distinguishes between mere survival of tissue cells and actual growth. The fifth chapter, on pure strains of tissue cells, describes methods of obtaining pure cultures of fibroblasts, epithelial cells, cartilage cells, and lymphocytes, and contains a great deal of practical detail which laboratory workers in this field will find specially useful. To the general reader the last two chapters will make the strongest appeal, for here the author touches on many fundamental problems of biology on which tissue culture work is beginning to throw new light, and raises many other questions which in the future this new branch of biology may help to answer. The book is well illustrated and contains a fairly comprehensive bibliography.

FOOD IN INFANCY AND CHILDHOOD

THESE two volumes, the second and third, of the second edition of CZERNY and KELLER's *Des Kindes Ernährung, Ernährungsstörungen und Ernährungstherapie*,⁵ proceed methodically with their appointed task. A notice of the first volume, with an indication of the scope of the whole work, was published nearly two years ago (December 15th, 1923, p. 1163).

The second volume completes the account of nutrition (including food, digestion, and metabolism) in the healthy infant and child. It deals with food requirements, especially in infants, and with various formulae for determining them, with growth in weight and length up to and beyond puberty, as determined by many statistical investigations, gives an imposing mass of metabolic data, and concludes with a chapter on weakly children.

The third volume begins the attack on the large subject of nutritional disorders in the infant and child. In this matter the authors are deeply and personally interested, for they have themselves introduced a new classification of the dyspepsias of infancy—one that does not merely coin new names, but has brought in new and suggestive ideas. The term "nutritional disorder" is the key to the understanding of this classification. It is a deliberate enlargement of the old and narrow term "dyspepsia," and expresses disturbance not only in the digestive functions but also in that of assimilation, and in that mysterious chemistry of the assimilated materials which is called metabolism. "Nutritional disorder" is thus a term well adapted to convey the wider meaning. The causes that produce any kind of nutritional disorder are given in three main groups—"ex alimentations, ex infectione, et ex constitutione." Thus, of nutritional disorders, we have those produced by errors in the food, quantitative or qualitative, by toxic or infective agents, or by inborn weakness in the body, and these factors may act singly or in varying combination. The third volume fully details this scheme of classification.

⁴ *Tissue Culture*. By Albert Fischer, M.D. With an introduction by Alexis Carrel, L.B. B.S. M.D. Sc.D. London: W. Heinemann (Medical Books) Ltd. 1925. (Sup. rev. 8-0 pp. 310, 70 figures, 1 plate, 21s net.)
⁵ *Des Kindes Ernährung, Ernährungsstörungen und Ernährungstherapie*. Von Professor Ad. Czerny und Professor A. Keller. Zweite vollkommen umgearbeitete Auflage. I. Band 2 Teil und II. Band 1 Teil. Leipzig und Wien: F. Deuticke. 1925. (Sup. rev. 8-0. Band I pp. vii + 1078, 132 figures, 4 dollars. Band II pp. 368 G.M. 18.)

with its divisions and subdivisions, and does so with a mastery and confidence begotten by much previous exposition of the subject and by the wide support which these new ideas have already received. It brings the story to the end of the food injuries and the infections, and begins that of the constitutional disorders with an account of the exudative diathesis. It is broken off, and will no doubt be resumed in a later instalment. To enter into a critical examination of this classification of nutritional disorders in infants would therefore be out of place. It has provided a new line of approach to a difficult subject, has stimulated pathological research, and has suggested new methods of treatment.

MONUMENTA MEDICA

THE various volumes of the *Monumenta Medica*, a series of reproductions of medical works of historical interest, under the general editorship of Dr HENRY SIEGIST, are appearing with regularity. Sixteen months ago (1924, vol. II, p. 19) we had occasion to notice the reproduction of the *Fasciculus Medicinæ* of 1491, associated with the name of Johannes de Ketham, with an historical introduction by the editor of the series and a translation by Dr CHARLES SINGER. In a second volume Dr Singer, who dates his preface from the Anatomical Institute, University College, has done a like service for the Italian collection of medical treatises known as *Fascicolo di Medicina* (Venice, 1493),⁶ one of the most beautifully illustrated books of the fifteenth century. Dr Singer has carried through his task with all his accustomed learning and zeal for the history of medicine. In Part I he gives a description of the *Fascicolo*, a discussion of its editions, art, language, sources, and influence, a translation of the *Anatomia* of Mondino di Luzzi, an account of medieval anatomy and physiology, and an atlas of illustrative figures from manuscript and printed sources. The Facsimile, which occupies Part II, gives an extremely good reproduction of the beautiful Italian lettering of the age which imitated the handwriting of the humanists. The legends of the figures are in very clear Gothic type, the figures include some of the best examples of the woodcutter's art of the fifteenth and sixteenth centuries. Dr Singer's translation of Mundinus, his account of medieval anatomy and physiology, and the atlas of anatomical figures from medieval manuscripts and books, are of the greatest general interest and importance in relation with the history of anatomy. Among the illustrations reproduced from the *Fascicolo* are one from the library of Pietro de Montagna: a microscopic consultation scene and a circle of urine glasses, male figures marked to show the locality of the diseases, and then relation to the signs of the zodiac, a plague scene and most important of all, the dissection scene printed in four colours—black, yellow, green, and red—in which the young lecturer is seated at an elaborately carved desk. He is intended presumably to represent Mondino at Bologna.

NOTES ON BOOKS

THE cult of health is producing a vast literature addressed to both professional and lay readers. *Personal and Community Health*,⁷ by Mr C. E. TURNER, associate professor of biology and public health in the Massachusetts Institute of Technology, is a condensed encyclopædia on the subject. In his preface the author says that his book has been prepared for the student at the university, college, or professional school. Apparently this does not mean the medical student but students in every department, for we are told that "the public health is considered from the standpoint of what the college or professional man, who is not a sanitarian, needs to know in order to protect his family and meet his responsibility as a citizen. But, if so why should the reader be worried by the intricacies of Ehrlich's theories of immunity. On the other hand, if the book is really intended for the medical student some of the advice offered seems redundant.

⁶ *Monumenta Medica*. Under the general editorship of Henry E. Siegist. *The Fascicolo di Medicina* (Venice, 1493). Vol. II. With an introduction etc. by Charles Singer. Part I. Introduction and London. Part II. Facsimile. Florence: R. Lier and Co. London: D. Stanton. 1925. (Gr. folio pp. 165, 90 illustrations. Half linen 23 6s. half leather 44.)
⁷ *Personal and Community Health*. By Clair Elmer Turner. London: H. Kington. 1925. (Med. 8vo pp. 425, 53 figures, 12s. 6d. net.)

11 *What to do in Cases of Poisoning* By William Murrell M.D. FRCP
 Thirteenth edition revised by P. Hamill M.D. D.Sc. FRCP London
 H K Lewis and Co. Ltd 1925 (For 32mo pp vi+276 4s 6d net)
 12 *The Student's Pocket Prescriber and Guide to Prescription Writing*
 By David Mitchell Macdonald M.D. FRCP 1925 (12mo pp vi+276 4s 6d net)
 E and S Livingstone 1925 (Demy 32mo pp vi+276 4s 6d net)
 13 *The Medical Annual General Index for the Ten Years 1915 to 1924*
 Bristol J Wright and Sons Ltd London Simpkin Marshall Hamilton
 Kent and Co. Ltd 1925 (Demy 8vo pp xvi + 701 12s 6d net)

Finance

Dr J A McMANUS, the director, in his annual report dated October, 1925 said that much of the work of the investi-

A little monograph on the *Labyrinth and Equilibrium*¹⁰ will be of interest chiefly to physiologists. It is, as its author, Dr S S MAXWELL, professor of physiology in the University of California states, a purely objective and experimental study. It will hardly appeal to the clinician, who may be disappointed to find little that will help him in the elucidation

¹⁰ *Healthy Childhood* by Mary E Weston M B R S C
Faber and Gwyer (The Scientific Press) Ltd
5s net
Paris C Drouot

8 *Healthy Childhood* By Mary E Weston M B BS Lond London
 Faber and Gwyer (The Scientific Press) Ltd 1925 (Gr 8vo pp vii + 135
 4s net)
 9 (1) *La Transfusion du Sang* By Victor Panchet and Auguste Bécart
 Paris C Doin 1924 (Roy 8vo pp ii + 132 52 figures 18 fr
 France 1910 fr) (2) *La Transfusion du Sang* By P Emile Weil and
 Paul Isch Weil 18 figures 20 fr 1 Paris Masson et Cie 195 (Med 8vo pp 247
 18 figures 20 fr 1)
 10 *Labyrinth and Equilibrium* By Samuel Steen Mavrell M S Ph D
 Monographs of Experimental Biology Philadelphia and London J B
 Lippincott Company 1923 (Demj 8vo pp 163 11 figures 10-6d net)

gators had been concerned with problems raised by previous studies. Such inquiries involved tedious and long continued experiments. Of the papers published during the year two were concerned with tar, one by Dr Cramer, on the influence of innervation on tar carcinogenesis, indicated a definite retardation of the onset of cancer in skin areas deprived of their nerve supply. Nerve regeneration, however, spreads into the denervated area in the later stages of the experiment, and the exact interpretation of the result is obscure. Dr Findlay, in another paper, described the results of a single application of hot tar to the skin of the back in 150 mice. The experiment was an attempt to reproduce in animals the occurrence of epithelioma in tar workers at a short interval after accidental tar burns in sites not usually affected by this form of industrial cancer. Of the mice experimented on by Dr Findlay, in three only did typical carcinoma develop. In Dr Murray's opinion the outstanding event of the period under review had been the publication of the researches of Dr W E Gye and Mr Baird into the etiology of malignant growths (*Lancet*, 1925, vol ii, p 104, and *British Medical Journal*, 1925, vol ii, pp 174 and 189). Dr Murray pointed out that the essence of Dr Gye's conception was that malignant growth results from the occurrence of two factors—an ultramicroscopic microbe and an unstable chemical factor. The direct evidence of this dual origin had been obtained from the Rous fowl sarcoma and for a transplantable sarcoma of the mouse. For other tumours the evidence was indirect, cultures of these yielding the ultramicroscopic microbe, the unstable chemical factor being supplied by an extract from the Rous fowl sarcoma. The delicate racial and tissue specificity governing the transmission of malignant new growths must therefore, it was concluded, attach to the labile chemical factor, and not to the microbe. One of the gravest objections to previous forms of the parasitic hypothesis of cancer was therefore met. It was a legitimate source of satisfaction to the Fund that it had been able to supply for Dr Gye's experiments propagated animal tumours sufficiently exempt from ordinary bacterial contamination. The Fund's laboratory had undertaken to test the validity of the hypothesis. The new problems being susceptible of direct experimental study, speculation and anticipation should be strongly deprecated. Dr Murray expressed his indebtedness to Mr J E Baird, F.R.S., from whom he had received most valuable help and encouragement in the installation and equipment of the apparatus necessary for a repetition of his published visual observations by high-power dark-ground microscopic methods.

Adoption of Reports

Sir HUMPHRY ROLLESTON, chairman of the Executive Committee, moved the adoption of the annual report. He congratulated the director, Dr J A Murray, on his election to be a Fellow of the Royal Society, and gave a short account of the researches mentioned in the director's report. He referred also to the researches of Dr A M Begg under the Atholstan grant. His investigation on the Rous fowl sarcoma and the infective lymphosarcoma of the dog had inevitably received a new orientation since the publication of the work Dr W E Gye had done for the Medical Research Council. Since the death of Dr Russell, who took a keen interest in the work, Dr Begg had the advantage of close association with Dr Gye, and the investigations were progressing satisfactorily. Professor A E Boycott seconded the motion, which was carried unanimously.

In moving a vote of thanks to the Executive Committee, the President, the Duke of Bedford, said that the list of workers to whom material had been supplied from the Fund's laboratory showed that it was able to assist in the investigation of cancer in laboratories other than its own. Such assistance involved the staff of the Fund in very laborious work and took up a great deal of their time, it thus entailed a considerable addition to the working expenses. Such an increase in expenditure was a legitimate source of satisfaction, inasmuch as it meant furthering research throughout the Empire. On the motion of Sir GEORGE MEYERS, G.C.M.G., F.R.C.S., seconded by Mr LUDWIG NEUMANN, a vote of thanks was recorded to the Duke of Bedford for presiding at the meeting.

Nova et Vetera.

A TWELFTH CENTURY PHYSICIAN IN THE LAW COURTS

VOLUME 14 of the publications of the Pipe Roll Society contains 'the earliest plea rolls, the earliest solemn judicial records that are preserved in the National Archives'—plea rolls of the reign of Richard I. They are here printed with an introduction and notes by Professor F W Maitland.

One item only of medical interest is found in these pleas, it occurs in the fourth roll, which has been ascribed to the Bedfordshire and Buckinghamshire eyre of 1195. Extended it runs as follows:

Translation

Assisa venit recognitura et Oliverus filius Rannulphi Haki et Simon medicus disseisinerunt Willelmum filium Simonis et Sibelle uxoris sue injuste et sine iudicio de libero tenemento suo in Clifton infra assisam. Simon medicus dicit quod ipse disrationavit illud tenementum versus Oliverum in Curia Domini Regis per concordiam inter eos factam. Et inde protulit iuramentum inter eos. Et Oliverus venit et idem testatur et dicit quod disrationavit terram illam per assisam de morte antecessi versus matrem suam et juniorem fratrem suum et ipsam Sibellam sororem suam post obitum patris sui. In qua terra ipsi injuste se tenuerunt et inde producit Milites de Comitatu qui eidem assise capiendi interfuerunt. Et hoc idem testantur Willelmus et Sibella sed dicunt quod postquam idem Oliverus disrationavit illam terram dedit eis terram illam et homagium inde cepit et inde ponunt se super visnetum.

The assize comes to recognize if Oliver son of Ralph Haki and Simon the physician disseised William son of Simon and Sibella his wife unjustly and without judgement of their free tenement in Clifton within the assize. Simon the physician says that he denigned (i.e., proved) it to be his by process of law that tenement against Oliver in the Court of the Lord King by concord made between them and thereon he produces the circograph made between them. And Oliver comes and bears witness to 'the same and says that he denigned that land by assize of *mort d'ancestor* against his mother and younger brother and against this Sibella his sister after the death of his father in which land they unjustly held themselves and thereon he produces the Knights of the Shire who were present at the taking of the same assize. And William and Sibella bear witness to this but say that after the same Oliver had denigned that land he gave the land to them and took homage for it and they put themselves on the neighbourhood touching this.

The Clifton here referred to would appear to be the parish of Clifton-Reynes in Bucks, near Olney. In Lewis's *Topographical Dictionary of England* it is stated that the principal manor was given by the Conqueror to Robert de Todeni, and it later passed into the family of Revnes from which the parish takes the adjunct to its name. I have not got a copy of the Buckinghamshire Domesday to which to refer, but I suspect that Robert de Todeni should really be Ralph, who is stated to have been the Conqueror's standard-bearer at Hastings. I am not sure of this.

It is a matter for regret that I am not able to give the "concordium" made between the parties. I have searched vol 1 of Hunter's *Finis sue Pedes Finium*, which contains the Buckinghamshire final concords from 1195 to 1214, without success, and neither of the two volumes of the Pipe Roll Society's publications which deal with these final concords contains any reference to Simon the Physician. In fact very few medical men find mention in these fines perhaps they cured their clients instead of having lawsuits (real or fictitious) with them!

Maitland says that the "assize of novel disseisin is the most popular of all actions. A time is limited within which the disseised person must bring the action." "In some cases the limiting period was King Richard's coronation, but very often this period is not definitely mentioned in the record, but is implied by the phrase *infra assisam*, within the assize, i.e., within the time limited for the assize."

I have to thank Mrs Stenton for correcting my extensions of the Latin of this deed, and for the translation and for much kindly help.

R R JAMES, F.R.C.S.

CHARCOT AND THE SALPÊTRIÈRE

WHEN Professor Charcot died unexpectedly in August, 1893, we wrote of him that "in the Salpêtrière with its 4,000 beds he found a quarry of clinical material out of which he was able to raise an edifice of intellectual achievement, at once solid in structure and artistic in finish, which will form a *monumentum aere perennius* to his memory." The day of Charcot's birth was November 29th, 1825, but the centenary was commemorated by anticipation in Paris at the end of last May, and in London on June 15th at the Royal Society of Medicine. Dr. Fairclough Buzzard, President of the Section of Neurology, in the course of an address on Charcot's life and work at the centenary celebration in London, referred to the large collection of Charcot's publications which had been arranged for inspection by Mr. W. G. Spencer, the honorary librarian of the Royal Society of Medicine. The collection showed that Charcot's writings were numerous, and dealt not only with neurology but with other branches of medicine. They proved that their author was a pioneer of no ordinary qualities, and were important for the history of medicine. He was a supreme exponent of the science and art of medicine, and probably the finest teacher of modern times.

An additional centenary memorial, and one which illustrates the truth of the sentence quoted from our obituary notice of Charcot, has now been erected in a fine volume by Professor Georges Guillain and Dr. Paul Mathieu on the history of the Salpêtrière, to which Charcot was appointed medical officer in 1862. It was here that he commenced in 1866 his weekly clinical lectures on which his reputation mainly rests, sixteen years later he became the first occupant of a chair of clinical neurology at the Salpêtrière, an appointment he held until his death.

The institution, converted by Charcot into the chief neurological clinic of Europe, owes its name to the powder factory which, under the name of Le Petit Arsenal (subsequently changed to La Salpêtrière), was built on its present site in the reign of Louis XIII in what was then a suburb of Paris. Owing to the great increase in the number of beggars and unemployed following the disturbances of the 17th century, the building was handed over by a royal decree to the celebrated philanthropist Vincent de Paul, who devoted all his energies to its organization for the reception of this class of persons. Immediately after the promulgation of this royal edict in 1656 Cardinal Mazarin caused to be erected within the grounds of the institution the building still bearing his name. Mendicancy was henceforth strictly threatened with severe penalties. In 1657 the Salpêtrière contained as many as 800 inmates, the insane being prohibited, and those giving hospitality to mendicants were

isolated from the rest from the first. In 1680 another building was added, which became notorious as the prison of La Force for the reception of prostitutes and criminals of various grades. It was here that were confined the victims of convulsive hysteria who had previously thronged to the tomb of François, deacon of Paris, in the Saint-Médard cemetery, Marion Lescaut, heroine of the Abbe Prevost's celebrated romance, Madame de Valois, notorious in connexion with the diamond necklace, and Thénioigne de Mericourt, the well known figure in the revolution of 1793.

In the course of the seventeenth and eighteenth centuries the Salpêtrière became the largest almshouse in Europe, containing as it did five to eight thousand inhabitants at a time when the population of Paris did not exceed half a million. A statistical table of 1679 shows that, in addition to beggars and aged and infirm women, the institution contained 148 epileptics and 100 insane women and girls.

As is well known, the insane, until the time of Pinel, were

very badly treated at the Salpêtrière, where at first only the supposedly incurable cases were sent, the rest being kept at the Hotel-Dieu. In the course of 1791 the curable insane were admitted to the Salpêtrière, and their condition was considerably improved, thanks to Pinel, of whom the well known picture, by Tony Robert-Fleury, releasing them from their chains, adorns the present lecture room. Towards the end of the eighteenth century the charitable purpose of the institution was extended by the addition of a maternity hospital for the reception alike of the married and unmarried.

After the beginning of the nineteenth century prisoners ceased to form part of the population of the Salpêtrière. In 1848 the young female idiots were separated from the other patients,

and in 1872 the epileptics were placed in a building distinct from that of the insane.

Charcot's administrative work in the Salpêtrière included the organization of laboratories for the study of pathological anatomy and physiology, the construction of a small outpatient department, and the erection of the amphitheatre in which his celebrated lectures were given. Approaching the then existing chaos of nervous symptomatology as a skilled anatomist, physiologist, pathologist and an expert in medicine generally, he speedily replaced the mists of speculative dogmatizing by a system based on ascertained fact and logical deduction. In his earliest Sunday lectures he demonstrated his discoveries in the pathology of nervous diseases to crowded and enthusiastic audiences; later, from the chair of neurology, he enunciated in his famous Tuesday lectures the principles of the new science which he had created.

To-day the Salpêtrière, besides being the most important neurological centre, continues to be the largest almshouse in Paris, with its 2,696 beds for the aged and infirm, so that the original character of the institution as a home for the poor is still preserved. It also contains a central laundry, needle room, and ambulance department for several hospitals attached to the Assistance Publique.



CHARCOT

(After a line engraving by Paul Richer 1891)

¹ *British Medical Journal*, Aug. 12, 22nd 1893, p. 495.
² *Ibid.* June 20th 1922, p. 1134.
³ *La Salpêtrière*, par Georges Guillain et P. Mathieu, Paris, Masson et Cie, 1925. (74 x 92, pp. 87, 3 illustrations, 20 fr.)

British Medical Journal.

SATURDAY, NOVEMBER 28TH, 1925

ACUTE INTESTINAL OBSTRUCTION

THE report of the discussion on acute intestinal obstruction, in the Section of Surgery at the Annual Meeting at Bath, published in this issue (p 993) ought to make a very wide appeal. In none of the emergencies of surgery is there more urgent need for the co-operation of the general practitioner with the surgeon, whose special skill will be useless if the case is sent to him too late, and in none is it of more importance that the public should be educated to realize how imperative is the necessity for early surgical relief. Without endorsing Sir William Taylor's wholesale indictment of the general practitioner, we must all agree that no condemnation can be too strong for the man who wittingly leaves an obstruction unrelieved for an hour longer than is necessary. The real difficulty lies in the early recognition of these cases—a difficulty which even surgeons of wide experience have not always escaped—and Mr Sampson Handley carried the attack into the opposite camp by declaring that the surgeons themselves are at fault for the lamentable textbooks they have written! It is indeed true, as he said, that too much stress has been laid on the more dramatic features of the later stage, when constant vomiting and toxic absorption have lined in the shadows of impending death, and too little on the vital importance of complete constipation and of the patient's own conviction that he is obstructed—a conviction which is often the first symptom of all, and which the surgeon will neglect at his peril.

Sir William Taylor, indeed, went on to demolish his own thesis, that no improvement has taken place in the treatment of obstruction in the last quarter of a century, by producing his own splendid statistics of intussusception, in which he could show 81 cases with only 3 deaths, this is a fine tribute to his skill and to the promptness and acumen of the practitioners who sent the cases up. Later in the discussion Mr Max Page produced statistics from St Thomas's Hospital, showing that in twenty years the mortality of intussusception had dropped from 40 to 9 per cent, while cases of carcinoma of the intestine were now admitted at such an early stage that few of them came under the heading of acute obstruction at all.

Perhaps the greatest advance in the technical treatment of obstruction is the large use which is now made of drainage of the jejunum. In the hands of many surgeons, and even in the most desperate cases, this method has given very remarkable results. An incision is made through the left rectus muscle above the umbilicus, and through this a loop of the jejunum, as near to its origin as possible, is brought out. Into it is fastened a tube of 7 or 8 mm diameter, after the method of Senn's gastrostomy, except that only one or two purse string sutures are used, so as to avoid too much subsequent narrowing of the intestinal lumen. The intestine is then returned within the abdomen and fixed by two catgut sutures, one on each side of the tube, to the parietal peritoneum and posterior sheath of the rectus. By this means the distended intestines can empty themselves of their poisonous contents, while they can be readily irrigated with

sodium bicarbonate solution and glucose, counteracting acidosis and supplying carbohydrate to the patient. The tube can be removed in forty-eight hours, and if it has been brought out through the omentum, as Mayo suggests, there is no need to suture the opening. Even in secondary peritonitic obstruction the method, first used by Victor Bonney, has given brilliant results. But, as Mr Grey Turner pointed out, it must be used as an adjunct to other procedures, and not as an isolated method of treatment. Except in the most desperate cases relief of the obstruction itself must be secured by caecostomy or some other means. Where a loop of bowel has been released from strangulation Mr Sampson Handley urged the importance of a precautionary lateral anastomosis above the loop. In these cases, although the loop may retain its vitality, there is always a risk that it may remain paralysed, and that the patient may die of consequent obstruction before the loop can regain its peristaltic power. This risk is avoided by a short-circuit which Mr Handley performs, almost as a routine, with very satisfactory results. The method may be used with advantage in strangulated hernia, in obstruction by bands, in obstruction by gall stones and foreign bodies, and, in fact, in any case in which, after the relief of a mechanical obstruction, there is a possibility of paralytic ileus. Few surgeons who have been faced by this disaster will not agree that such a precautionary measure, which can be carried out rapidly and with little disturbance of viscera, is well worth while.

The discussion was remarkable for the great mass of statistics collected from various large hospitals, which were presented at the meeting by surgeons from the various hospitals. A schedule drawn up by Mr Souttar had been distributed, on which certain details of each case could be recorded with very little labour, and from these each hospital constructed a table on an identical plan. These tables were finally brought together to afford combined statistics of over 3,000 cases—a number sufficient to show with some authority the incidence and results that may be expected at the present day in this country in hospitals of the first class. In individual hospitals the variation is considerable, the admissions of intussusceptions, for example, being affected by the neighbourhood of a children's hospital, while some hospitals appear to make a specialty of strangulated hernias, and others to elude them entirely. In the combined table (p 1000) these variations are fully balanced. A glance at the table, or still more at the chart (p 1001) which is founded upon it, will reveal at once important results. Of these one of the most interesting is the extraordinary frequency of acute idiopathic intussusception in infancy, for it actually accounts for one-fifth of the total number of cases of obstruction from all causes and at all ages. Excluding external hernias, it formed 40 per cent of the total number of cases, and in actual numbers it was only surpassed by femoral hernia. When the fact is taken into account that practically the whole of these cases occur in the first year of life the importance of the condition as a disease of infancy can scarcely be overestimated. Of other causes of obstruction those due to adhesions occurred almost equally at every age, whilst carcinoma and gall stones only appeared late as causal factors, becoming most prominent in the sixth and seventh decades.

There can be no doubt of the great value to the profession of such a discussion, and of the combined work which its preparation entailed. It enables us to take stock of our position, it tells us where we are, and if we feel that we ought to be able to show better

results it stimulates us to further effort. Every hospital in the country ought to compile its own statistics with those presented here, while there are few surgeons who will not learn something from the various technical methods described by masters of their art. But the lesson which comes with reiterated force in every line is that time is the essence of the problem. It is in the hands of the general practitioner that the future hope of improvement in results really lies. It is for him to learn, as indeed he is learning, to diagnose obstruction before vomiting and distension have made the diagnosis simple and the treatment impossible, and it is for him to teach his clients that in this of all conditions the most fatal policy is to "wait and see."

ON EMBOLECTOMY

We publish on another page (985) the report of a case which appears to be the first successful embolectomy achieved in this country. An account of the cases which appeared prior to 1922 was published in that year by Key, Jefferson of Manchester in the present issue brings the literature up to date, and includes an analysis of the later cases. Sweden stands far ahead of any other nation in successes. France can claim two, the United States two, and some other countries one each. Considering the relatively small population of Sweden this state of affairs calls for some explanation. As a matter of fact the reason is simple enough. It is to be found in the interest E. Key of Stockholm has taken in the subject and the enthusiasm for this new method of treatment which appears to have been aroused in the practitioners of that country. Left to themselves most cases of peripheral arterial embolism end in gangrene of the limb. It is important to recognize the fact that an embolism is more apt to lead to gangrene than is ligation of the vessel, because in the former secondary thrombus formation soon plugs the opening of the collaterals and may be very extensive. In the case reported in this issue the thrombus was lodged in such a position as to block not only the main arterial current of the arm, but also an important collateral, the superior profunda artery. In such a condition as this the chances of survival of the limb are distinctly small if the clot is not immediately removed, as was successfully done in this case. In a few hours thrombosis progresses further and changes occur in the inner coats of the vessel, so that after twenty-four hours have elapsed very little hope seems to remain of re-establishing the circulation. Even in these late cases some good may come of the attempt, particularly in embolism of the larger vessels. For though gangrene may not be prevented it may be made to affect a smaller area than would otherwise have been the case. It is, however, probable that the vast majority of these late cases had better be left alone.

A study of Table II in Jefferson's paper shows that the majority of successes have attended operations undertaken within the first five hours. This means that embolectomy is an operation of extreme urgency. The person, therefore, who has to be interested first and foremost is the general practitioner, and he will, we think, be convinced of the advantages of the new method. Embolectomy has been attempted in England before. In 1907 Sampson Handley reported an attempt on an embolism at the aortic bifurcation, done twenty-four hours after lodging. Retrograde catheterization along branches of the femoral artery was employed, but the patient died the next day.

Moynihan then recorded a case of his own where he had removed a clot from the popliteal artery, but the patient died five days later. Gordon Watson had a partial success in 1913. Embolectomy was done six hours later. On exposing the femoral artery the clot slipped away, and was arrested again in the popliteal vessel. No more was done, and amputation had to be performed later for the usual gangrene. The patient recovered. Collective experience has since taught us that in a case like this a second exposure should be made at once over the popliteal space.

Arterial surgery is by no means as difficult as some imagine. Ordinary care, delicate handling, avoidance of tearing or bruising of the inner lining of the artery, the use of an anticoagulation fluid, and of fine silk and fine needles which take a good grip of the vessel wall without piercing the intima—these are the main essentials. It will be a surprise to all whose first experience it is how easily three or four interrupted sutures will effectively close a slit in the wall of a large artery. It is most important that these facts should be realized, since the urgency of operation means that some cases must be done in out of the way places, and perhaps by the general practitioner surgeon. The femoral and popliteal vessels are easier to open than the brachial and axillary, but fortunately the former are the commonest sites of lodgement. Operation on the aortic bifurcation and iliac artery may tax the resources of the most able and experienced surgeons, and had better be left to them. Valuable hours must not be lost pondering on the case, the possibly advanced age of the patient is no contraindication. Local anaesthesia is very advisable. Should the operation fail, even should the vessel have to be ligatured owing to some mishap in technique, the patient will be no whit worse off than he would have been had the operation not been attempted. For these reasons, because there is everything to gain and little if anything to lose by operation, it appears that the operation of embolectomy is winning a definite and valued place.

QUEEN ALEXANDRA

No one of late years in any walk of life has more impressed the heart of the country than Queen Alexandra. The impress of great minds, of doughty deeds, of daring leadership—each in its own sphere receives its due meed of fealty. But there is no character which carries with it a wider sway in any circle, whether large or small, than the possession of a gentle and kindly spirit. This spirit Queen Alexandra possessed in exceptional measure, and that sovereignty, added to the sovereignty of her position, won for her a regard in the hearts of the peoples of these lands that will not easily be forgotten. Youth, beauty, and romance assured the Danish Princess a warm welcome to these shores more than sixty years ago. Many a queen has been as warmly welcomed in this and other lands, but to few has it been given to establish themselves so firmly in the perpetual regard of the land of their adoption. The transplantation of a young girl from the quiet home life and court of a small northern kingdom into the maelstrom of the court of the capital of a great empire is attended by no small risk. The warmer the reception, the greater the attention attracted, the higher the station attained, the more is that risk increased. But never through all these years, whether as Princess, Queen, or as Queen-Mother, has there even been a breath of hostile criticism, but only a grateful acknowledgement of the kindness which every action proclaimed. To Queen Alexandra we as medical practitioners are deeply indebted. In its work for the

public and the medical profession is ever beholden to those persons of public spirit and human feelings who are ready, often at no small sacrifice of personal comfort, to take upon their shoulders the burden of carrying into effect, or of securing the public recognition and acceptance of, measures that we see are necessary but cannot unaided achieve. Queen Alexandra, by her enthusiasm for good nursing, has left an indelible mark upon the medical work of this generation. Her action at the time of the South African war, which culminated in the formation of the Queen Alexandra Imperial Nursing Service, was a bright spot in the tragedy of that campaign. Everyone who had experience of the appalling epidemic of typhoid and dysentery which ravaged our troops and filled the great military hospitals to overflowing will assert that had it not been for the excellence and amplitude of the nursing service that story would have been far darker than it was. The lightening of that page was due to Queen Alexandra. Her interest in hospitals of all kinds was never-failing. No social claims took precedence over the call of a hospital for her services. And what she did was done with a grace and thoroughness that made it invaluable. Her interest extended beyond public occasions. She would make visits, unexpected and unheralded, that were a source of inspiration to every worker in the hospital. Even in these last years of declining vigour and health she did much to make "Rosa Dry" a national tribute to the hospitals. It is but a few months since King George and Queen Mary paid the British Medical Association the signal honour of opening its new House, and thus gave one more proof of Their Majesties' warm-hearted support for all good medical work begun, continued, and ended in the service of humanity. To the King, the Patron of our Association, we would tender our respectful sympathy in his bereavement. The higher and more isolated the station of life, the dearer and more treasured must be the inner ties of family, and the greater the loss of any of those precious links.

MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

At the meeting of the Council of the Royal College of Surgeons of England held on July 30th last (as recorded in our issue of August 8th, p. 277) the terms of a petition for a Supplementary Charter were considered and approved, and it was decided that the further steps to be taken in the matter should be considered at the quarterly Council meeting in October. The main purpose of the proposed Supplementary Charter is, in general terms, to enable the Council to make improved arrangements for certain examinations. The great increase in recent years in the number of candidates for Fellowship and Membership and for the Licence in Dental Surgery has caused a heavy call to be made on the Court of Examiners, and so much time has been taken up in examining as to make it impossible for them to carry on their hospital and other duties. The Council is accordingly seeking power to increase the number of members of the Court of Examiners and to relieve them from the duty of examining for the L.D.S. As these changes cannot be made under the existing charters, a Supplementary Charter is needed to give authority for them, and also to give power to admit women Fellows and Members and Licentiates in Dental Surgery on the same terms and conditions as men, and with the same rights and privileges. The form of petition and draft Supplementary Charter appear in the current *Calendar* (1925) of the College. As might be expected, the opportunity thus arising has not been overlooked by the Society of Members of the Royal College of Surgeons of England, whose leaders have for some thirty years made the annual meetings of Fellows and Members an occasion for pressing the claims of the Members to a share in the government of

the College. We publish elsewhere this week (p. 1037) a report of this year's meeting, held on November 19th when Dr. Haden Guest, M.P., moved the customary resolution affirming the desirability of admitting Members to direct representation upon the Council of the College, and urging the Council, in its application to the Privy Council for a Supplementary Charter, to insert a provision therein for some representation of Members as such upon the Council. The motion, like so many of its predecessors, was carried. The President, in his reply, refrained from traversing any of the remarks made by the mover and seconder of the resolution. The Council, he said, intended to give the matter its very earnest consideration, and that without any delay, before the Supplementary Charter was sent in to the Privy Council. This pronouncement was received with gratification by the representatives of the Society of Members, whose speeches, it may be added, had been marked by an urbanity not too noticeable on some occasions in the past. We understand that before the Council meeting communications on the subject had already passed between the society and the Council of the College. On September 28th the society wrote to the Council asking to be received in deputation, and on November 12th a deputation of six, headed by the president of the society (Dr. Redmond Roche), was received at the College by the Council, all its twenty-four members being present. After recapitulating the history of this movement from the time of the Charter of 1843 to the present day, Dr. Roche appealed to the Council to insert into its draft petition for a Supplementary Charter such clause or clauses as would provide a reasonable representation of Members as such. At the conclusion of the annual meeting on November 19th the members of the Council present met in committee, and it is understood that at the Council meeting on December 10th the matter will be decided by the Council in full session. The question is at least as old as the Royal Charter of 1843, under which, *inter alia*, a portion of the Members of the College became Fellows, Fellows alone became eligible for membership of the Council, and the election of members of Council was placed in the hands of Fellows. Before 1843 the Council of the College was self-elected, and the College consisted merely of Members. It is a matter of historical argument as to when the rights of control inherent in membership of the pre-existing companies were abrogated, but we do not think it is in dispute that for many years before the Charter of 1843 the Members, as such, had lost whatever share they may at any time have had in the control of the institution. This aspect of the matter was argued at considerable length and with great skill by a former Editor of this *Journal*, the late Mr. Ernest Hart, in a statement made by him in 1887 as spokesman of a deputation of Members of the College to the Lord President of the Privy Council. For one reason or another, however, the movement for representation of Members of the College has never aroused widespread support among those chiefly concerned.

MEDICAL SCIENCE AND AVIATION

THE appearance of a new branch on the tree of medical science is a phenomenon worthy of attention, even in these days when the leaves and twigs of new discoveries are springing so rapidly from the older branches. The essential importance of the psychological and physiological factors in aviation has become obvious, and the new developments of medical science in this connexion, which first became manifest during the later stages of the war, are rapidly increasing both in number and complexity. One of the earliest tests introduced to assess the flying efficiency of a pilot was the measurement of his "respiratory capacity", this involved the raising of the body weight on to a chair five times in fifteen seconds. If the pulse rate increased

by thirty-six beats or more, and the time taken to return to the normal exceeded thirty seconds, then the pilot was looked upon with suspicion.¹ There followed the introduction of the "word association" test used in psycho-analysis, which, it was thought, would indicate in some degree psychological efficiency. Other methods of examination were devised in rapid sequence, and on September 18th, 1920 (p. 443), we referred to the work of the Air Medical Investigation Committee, which laid especial stress on the use of oxygen, the estimation of self-control, and the study of emotional and physiological conditions. In the next year the first International Air Congress was held in Paris to discuss these new developments, a second International Congress was held in London in 1923, and a third was held in Brussels from October 6th to 10th last. It was of exceptional medical interest, and several of the papers read have been published in the *Journal de Médecine de Bordeaux* for October 25th. Major J. Beyne, of the French Army, after a very careful study of psychological tests in relation to flying, has come to the conclusion that in testing the pilot's response to stimulation the time of his reaction is of considerably less importance than the accuracy of his response. Major Beyne states that the healthy functioning of the nervous system cannot be assessed accurately by examination of the isolated working of any elementary physiological or psychological process, and that, therefore, no one test is capable of furnishing a rational method for selecting aviators. While it is important that the pilot should react quickly, it is of even greater importance that he should have the ability to respond correctly to stimuli which do not occur one at a time, but vary in their intensity and nature. Preliminary testing must, therefore, include exposure to variously grouped stimuli. Some system should be devised of recording the results of these tests, of assessing their value, and of correlating them so as to provide a standard of efficiency. By using the number of stimuli in the test as the denominator of a fraction and the number of correct responses as its numerator, a figure is obtained which Major Beyne believes will prove to be of definite value as a measure of the proficiency of the pilot. These tests are performed in an apparatus rather similar to that described by Flight Lieutenant G. H. Reid, and referred to in our issue of March 15th, 1924 (p. 481), a model of such an apparatus was shown at the Wembley Exhibition. At the same congress Dr. G. Ferry, who was a distinguished French aviator during the war, described his sensations during an accidental spinning nose-dive, in which a disaster was only averted by a chance look at the dial registering the revolutions of his engine. As a result of this experience he advises aviators to rely more upon their instruments than upon their special senses. This seems to be rather opposed to the prevalent teaching in England, where it has been found that during a rapid descent the aneroid adjustment of the altimeter is slow to respond, and may, indeed, be registering a height of 1,000 feet above the actual. Group Captain M. Flack, R.A.F.M.S., speaking at the congress, emphasized the great value of the Reid apparatus for testing the psychomotor reactions of the pilot and his aptitude to fly. He prefers to assess an aviator's efficiency by observing the reactions brought out by this apparatus, and the effect of physical effort on the heart, pulse, and arterial pressure, combined with a test of the respiratory capacity. By examination of the circulatory system it can be discovered, moreover, which pilots will suffer from vertigo when flying especially when "stunting", which will be liable to syncope at high altitudes, and which will be unduly nervous. For this test the pilot is seated in a revolving chair, which is made to turn ten times in twenty seconds. In good pilots the pulse rate and pressure are not much affected, but in those subject to airsickness the

pulse rate quickens from 84 to 144 a minute, the systolic pressure increases from about 126 to 158-172 mm of mercury, and the diastolic pressure from 82-88 to 98-102 mm. In those pilots likely to suffer from syncope this rotation causes a characteristic fall in the diastolic pressure. In the various type the pulse rate and blood pressure increase before the test, and may or may not be affected by the rotation. Dr. C. B. Heald, the medical consultant for civil aviation in England, impressed on the congress that the general life and work of a pilot had an important bearing on his professional ability, a quiet and regular daily routine rendered him more capable of resisting fatigue and of dealing with sudden emergencies, particularly if he was shielded as far as possible from discomfort while flying. As in modern industry, so in aviation both physiology and psychology have been called upon to play a part the importance of which can hardly be exaggerated. These new openings for medical practice and medical research will doubtless attract many of those who are on the threshold of professional life, and who will welcome the opportunity of sharing in the pioneer work that still remains to be done.

POISONOUS DOMESTIC CLEANING FLUIDS

WE publish elsewhere a letter from Dr. H. R. Oswald, coroner for the Western Division of London, drawing attention to the apparent inadequacy of our poison laws in one respect. We know of no country in which the sale of poisonous substances for industrial or economic use is restricted to pharmacists, as Dr. Oswald suggests. In the United States of America the law is less restrictive than in Great Britain, extending little beyond the prohibition of the drugs comprised in the British Dangerous Drugs Act. Apart from that Act, which relates only to drugs producing addiction or craving, our legislation has been aimed at preventing the criminal use of poison and safeguarding the public from accident, but always with due regard to the convenience of legitimate users. Before the passing of the Pharmacy Act the only restriction in existence related to arsenic. It was called into being, we believe, owing to a barrel of arsenic having been mistaken for a barrel of flour. By the Pharmacy Act of 1868 the sale of certain poisons named in a schedule to the Act was restricted to registered chemists and druggists. The schedule can be enlarged in accordance with powers conferred on the Privy Council. These powers have habitually been exercised. Additions to the schedule have been made whenever a new danger appeared. The reservations made to remove difficulties of purchase in cases of legitimate requirement may appear not infrequently to be incongruous, but are quite rational when viewed with full knowledge. Carbolic acid was first scheduled as a poison when it was found that there was danger connected with its very general use as a disinfectant, but the regulations are so worded as to apply still only to liquid preparations containing more than 3 per cent of the substance. A powder containing carbolic acid or any dry mixture containing it may be bought without restriction. Even the strong liquid preparations may be sold without restriction when supplied for use as a sheep wash or for other agricultural or horticultural use, provided that they are suitably labelled. The balanced view held by the administrative authority is plainly illustrated by the form in which the dangerous products of tobacco are scheduled as poisons, it reads "Any preparations or admixtures of tobacco (other than tobacco prepared for smoking and snuff) containing the poisonous alkaloids of tobacco." Zinc chloride is similarly treated, the exceptions applying to preparations of zinc chloride intended to be used for soldering or other purely industrial purpose. It has not hitherto been deemed necessary to make the corrosive acid—nitric, sulphuric, and hydrochloric—subject to the restrictions governing scheduled poisons. They may be sold by

¹ BRITISH MEDICAL JOURNAL 1920, vol. II, p. 533.

anyone, but the bottles in which they are supplied must be distinguishable to the touch—that is, ribbed or fluted—and they must be labelled with the word "Poisonous." Dr Oswald's communication appears opportune. It was swiftly followed by a report in the *Times* of the death of a woman from inhalation of the vapours of strong nitric acid while using it to clean some brass-work and copper vases. Having regard to the many amendments of recent date to our poison regulations, we do not think it can be said that there has been lack of official attention to the subject. Nitric acid is, however, attended by an unusual danger in the effect of its fumes on the lungs. We remember several instances of death from its inhalation. It would seem that the suggestion to make nitric acid a poison under the Act presents a case for serious consideration. Dr Oswald would add hydrochloric acid (spirits of salts), and also salts of lemon—a mixture of acid potassium oxalate (or binoxalate) and potassium tetroxalate.

THE "TALKING FILM" IN MEDICAL EDUCATION

THE "chief image of truth" notes "may find himself superseded by the invention brought to the notice of the Electro-Therapeutics Section of the Royal Society of Medicine by Dr C. B. Heald last week. The De Forrest "Phonofilm" is a combination of a moving picture with a record of sounds, so that the image on the screen has its verisimilitude heightened by the accurate reproduction at the same time through "loud speakers" of the words or music or other sounds which accompanied the spectacle when the original photograph was taken. Former attempts to associate a gramophone with the cinematograph film have failed from lack of synchronism, which has sometimes given absurd results, but in this case perfect correspondence is assured because the sound record is taken actually on the moving film itself. When the picture is being exposed the sound waves are converted into minute varying electrical currents, which again are transformed, by a light-sensitive cell, into light, the actinic properties of which vary with the strength of the currents. This light is made to impress itself through a slit upon the border of the film as it winds through the camera, and gives the film the appearance of being edged by a series of horizontal lines, perhaps 500 to the inch, varying in gradation according to the incident light. On projection the same process is used backwards, the light, fluctuating according to the density of these lines, is reconverted into varying electrical currents, which are made to operate the diaphragm of a "loud speaker," and thus a perfect record of the original sound reaches the ears of the audience at the same time as the picture moves before their eyes. That, of course, is a very summary description of the process, which employs microphonic and other devices to get the registration of the sound and its reproduction in suitable volume. At the demonstration at the Royal Society of Medicine the President of the United States came into the picture, full length, and proceeded to deliver an oration—a most uninspiring performance, by the way—in which his lip movements and gestures were in perfect accord with the words he was uttering as transmitted by the "loud speaker." Dr Heald instanced the various directions in medical education in which this invention may be of value. He thought it might be applied to the reproduction of clinical lectures to students or post-graduates, the illustrative cases could be well shown on the film, thereby avoiding the transport of patients. Demonstrations in dissection by well known anatomists, experiments on animals seldom seen by the student, special or rare operations by distinguished surgeons, new techniques in diagnosis or treatment, might be described, and, of course, the record once obtained, it could be used any number of times for further reference and could be sent from place to place. Indeed, a "talking film," produced so expeditiously, might conceivably take

the place of ordinary reports of lectures and discussions. A time might come when, instead of columns of unaltered type recording the proceedings of the House of Commons, or even some other public assembly, a "talking film" will be taken and multiplied and sent into the country, where the constituents can sit in judgement, not only upon the words, but upon the style and demeanour and impressiveness of their representatives. Such a record, while more lively and human than printer's type, and impregnable to complaints of misreporting or misdescription, would have the drawback of deadly accuracy, it would show no mercy, present no kind omission or condensation, and would be powerless to dignify or clarify the phraseology. The "talking film" would render the stark reality of what the speaker said, instead of giving what he would have liked to say, or what he thought he did say (which often comes to the same thing). A less ambitious application of the cinematograph in medicine was demonstrated at the same meeting, when Dr L. D. Bailey, by the courtesy of Sir Charles Ballance and Mr. Colledge, exhibited a number of films illustrating recovery of function, as determined by electrical reactions and by voluntary movements, after nerve anastomosis. The records showed the results obtained in monkeys some months after nerve transplantation, and also in human subjects who had been treated for facial paralysis by the transplantation of the hypoglossal nerve into the facial, and the descendens noni into the distal end of the hypoglossal. Although the records did not bring out all that the producer wished, particularly in the difficult monkey subjects, they were very successful for what was believed to be the first occasion on which a cinematograph record of radiographic response has been secured.

RADIOLOGICAL DAYS

THE British Institute of Radiology has arranged to have once a month during the session a radiological day, for the benefit in particular of provincial members. The day selected is that on which in the evening the Electro-Therapeutics Section of the Royal Society of Medicine meets. On the afternoon of that day a demonstration will be given at one of the London hospitals, and in the evening of the day before there will be a meeting at the Institute (32, Welbeck Street) for informal conversation and consultation. The first of these, which was held last week (November 19th), was well attended by London and provincial members. Many interesting radiographs were shown, including a number lent by the Mayo Clinic, and others were brought for diagnosis and discussion by those present. The demonstration on the following afternoon was given at the London Hospital by Dr Gilbert Scott, whose subject was gastric radiology.

WE regret to announce the death on November 23rd, at the age of 89, of Sir R. Charles Brown, M.A., M.B., F.R.C.P., F.R.C.S., of Preston, a magnificent benefactor of medical research and medical charities. We hope to publish a memoir in our next issue.

IN accordance with a resolution of the Lambeth Conference of 1920 that much good might be done by the appointment of a permanent committee of clergy and doctors to advise the authorities of the Church on these matters, a committee has now been set up. The medical members are Dr William Brown, Wilde Reader in Mental Philosophy, University of Oxford, Dr H. C. Cameron, physician to Guy's Hospital, Dr J. Walter Carr, consulting physician to the Royal Free Hospital, Mr W. McAdam Eccles, surgeon to St Bartholomew's Hospital, Sir Percival Hartley, physician to St Bartholomew's Hospital, and Sir Maurice Craig, physician for psychological medicine Guy's Hospital. The clerical members are the Bishop of Southwark (Dr C. F. Garbett), who will act as chairman of the committee, the Dean of St Paul's (Dr W. R. Inge), Canon T. W. Pym, Head of Cambridge House, Cumberwell, the Rev. T. Underhill, the Rev. Harold Anson, and the Rev. L. W. Grensted.

An Address ON POST-GRADUATE MEDICAL EDUCATION IN ENGLAND.

DELIVERED BEFORE THE MANCHESTER MEDICAL SOCIETY
BY

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POST-GRADUATE education in England from the medical graduate's point of view is very unsatisfactory. The clinical opportunities available in London, and in some of the large provincial centres, Manchester especially, are unequalled. In London post-graduate medical education is carried on by (1) the Fellowship of Medicine and Post-Graduate Medical Association, (2) intensive and revision courses held at the undergraduate medical schools, (3) clinical assistantships, and other short period clinical posts in hospitals, either with undergraduate medical schools or non-teaching hospitals, (4) courses on tropical medicine and hygiene at the London School of Hygiene and Tropical Medicine.

1 *The Fellowship of Medicine and Post-Graduate Medical Association*

This body is in the main an association of teachers of medicine who have made arrangements with a number of the undergraduate hospitals and medical schools and a large number of the non-teaching hospitals, general and special, to give them clinical facilities.

This Fellowship of Medicine and Post-Graduate Medical Association has for its administrative quarters a small amount of accommodation—one room on the top floor—in the Royal Society of Medicine's house at 1, Wimpole Street. The permanent administrative staff, as far as I am aware, consists of (1) a lady, who devotes the whole of her time to the duties, and is assisted by a lady clerk, and (2) two honorary secretaries, medical men attached to non-teaching hospitals, who devote a small amount of time to its organization. The administrative body is a large committee or council, consisting of 112 members, and an executive committee. The executive committee down to this year consisted of twenty members, but this year the number has, I understand, been reduced to seven. Practically all the work of the Post-Graduate Association, however, as regards its administrative dealings with students, is carried on by the lady clerk or secretary and her assistant.

The constitution of the Fellowship of Medicine and the Post-Graduate Medical Association (which were originally separate bodies, but were united in 1919) is a loose one, since it is not incorporated by royal charter as a corporate institution, or by registration as a similar body under the Companies Acts. One result of this loose constitution and the exceedingly poor administrative organization, in my opinion, has been the greatly delayed further development of post-graduate medical education in London. For a considerable period I was a member of the General Council of this body as the representative of the Faculty of Medicine of the University of London, and consequently had a good opportunity of observing some aspects of the working. The inner workings of the executive committee, however, I was never intimately acquainted with, as I was never elected as a member of that body.

This Fellowship of Medicine and Post-Graduate Medical Association has been in existence in its present form for about six years. Before that there existed two bodies—(1) the London Post-Graduate Association, or School of Medicine, founded in 1917, and (2) the Fellowship of Medicine, founded in 1918. A post-graduate teaching body, at one time called the Polytechnic, existed in one form or another from its commencement by the late Sir Jonathan Hutchinson at his Clinical Museum until the early part of the war. A study of the prospectus of this Fellowship of Medicine and Post-Graduate Medical Association shows that at the present time there are seven undergraduate hospitals and schools and forty-two non-teaching general

and special hospitals taking part in its activities. The total teaching staff would appear to be several hundreds. The number of students who took advantage of the courses provided by the Fellowship of Medicine and Post-Graduate Medical Association during the past year was 399.

The facilities provided are either general or special, and consist of (a) admission to the clinical practice of the various hospitals, (b) periodical regular intensive courses in general and special subjects of limited duration, of two, three, or four weeks, as the case may be, and (c) special lectures in different branches of medicine. These latter are given at individual hospitals or schools, or at the rooms of the Royal Society of Medicine. In many cases, the lectures consist of clinical demonstrations of select and rare clinical cases.

The loose organization of this body and the large number of places available for instruction has made it difficult for a prospective post-graduate student to decide how to obtain the instruction in clinical practice which he requires. Instruction in the basic scientific subjects of medicine in the main has only been available at the undergraduate schools. One result of the large and indiscriminate number of places of post-graduate medical study available has been that, in comparison with the receipts, the expenses of carrying on the work of the Fellowship of Medicine and the Post-Graduate Medical Association are very considerable, and there have been practically no funds to remunerate those teachers who have taken part in the courses of instruction. The 1924 balance sheet shows that approximately £2,668 was received as fees from students and payment for courses. Of this amount £1,505 was paid to the hospitals as remuneration for teaching services and for expenses.

In my opinion the main causes of the comparative failure of the Fellowship of Medicine and Post-Graduate Medical Association are the non-corporate existence of the body, its non-association with a supreme medical body, such as the University of London or the Royal Colleges of Physicians and Surgeons, the lack of a centrally situated general hospital of sufficient size and entirely devoted to post-graduate medical instruction, and the absence of a central administrative building under the control of a medical post-graduate dean, with an appropriate administrative staff.

2 *Intensive and Revision Courses held at the Undergraduate Medical Schools*

Many of the undergraduate medical schools in London provide an intensive and revision course of two or three weeks' duration once a year, usually in the long vacation, for post-graduate students. In the main these courses have been intended for the old students of the school concerned, and to them has been given priority as regards entry. Within certain limits these courses have been comparatively successful. They do not, however, meet the main wants of post-graduate medical education, and are only suitable for intensive revision by general practitioners, but not for advancement of knowledge and increased experience in special subjects.

3 *Clinical Assistantships and other Short Period Clinical Posts in Hospitals*

A considerable number of these posts have been created and are available in the hospitals attached to the undergraduate schools. In the main they are open able to members of the undergraduate school or to post-graduate medical students from elsewhere when the students of the undergraduate school are insufficient to fill them. In many instances absence of regular courses of instruction, in connexion with these clinical posts or appointments has diminished their value, and post-graduate medical students also have not been attracted owing to the fact that they have to work on equal terms with undergraduate students. In practice, in my experience, it has always been found that a mixture of undergraduate and post-graduate students in medicine for teaching purposes is unsatisfactory. They do not work well together. The undergraduate distrusts the post-graduate student and looks upon him as an intruder, whilst the post-graduate student objects to working with and being classed along with the undergraduate. Until recently separate post-graduate courses of medical

instruction were carried out at certain non-teaching hospitals (a) the Seamen's Hospital, Greenwich, (b) the West London Hospital, (c) the Royal Northern Hospital, and (d) the Prince of Wales's General Hospital at Tottenham.

During the war all these courses of instruction were discontinued, and since then they have in the main become almost entirely merged in the Fellowship of Medicine and Post-Graduate Medical Association. I believe, however, that the Seamen's Hospital still gives a course of instruction in operative surgery on the dead body. This is possible for that institution, owing to the fairly large amount of material which is available for the purpose. It would appear, however, that the courses held there are open both to undergraduates and graduates, but they are mainly made use of by graduates preparing for university examinations, or by candidates for the Fellowship of the Royal College of Surgeons of England. The Prince of Wales's Hospital at Tottenham and the West London Hospital at Hammersmith have still post graduate medical schools.

The groups which I have enumerated comprise, as far as I know, all the fixed courses of post-graduate instruction in medicine in London.

As regards the success of the courses, it appears from the balance sheet of the Fellowship of Medicine and Post-Graduate Medical Association that during the year 1924 the total receipts amounted to £1,565 14s 10d in respect of fees from post-graduates, and £1,102 9s 3d in respect of courses. The total income of the Fellowship of Medicine and Post-Graduate Medical Association in 1924 was £2,872 14s, of which £2,668 was provided by fees in respect of students and for courses, £133 6s 8d by subscriptions, £3 2s by donations, and the remainder was invested on bank deposits and funding loan bonds. The total expenses apparently were £220 8s 4d less than the total receipts. The amounts which were paid for the payment of hospitals in respect of courses, and expenses in connection with them was £1,505. This amount, I assume from the statements in the balance sheet, includes the fees paid to lecturers and others who took part in the instruction.

This statement seems to prove that as at present arranged the post-graduate instruction in London is not a great success, and may be regarded as a failure, since the number of hospitals taking part in the course is forty-nine and the number of teachers apparently several hundreds.

4 Tropical Medicine and Hygiene

The London School of Tropical Medicine and Hygiene has given regular courses of instruction with clinical work for a number of years. At first these were carried on at the Branch Hospital of the Seamen's Hospital at the Albert Dock, and more recently at the School of Tropical Medicine in Endsleigh Gardens. This school has been taken over and is now carried on by the London School of Hygiene and Tropical Medicine recently constituted by Royal Charter. This was rendered possible by the munificent gift of the Rockefeller Trustees of 2,000,000 dollars and the promise of an annual grant of £25,000 from the Government towards its maintenance. This school is very flourishing, and is an example of what a post-graduate medical school ought to run at.

In the provinces some of the medical schools—Manchester, Liverpool, Newcastle, Bristol, Birmingham—give instruction in post-graduate subjects by means of lectures at stated intervals, and occasionally, I believe, by short intensive revision courses. Otherwise there does not appear to be any further systematic instruction in the provincial schools, with the exception of Liverpool, where there is an excellent school of tropical medicine. There are, however, in some of them clinical assistantships and resident posts similar to those in London. In some of the large medical centres a system of post-graduate education by means of lectures and demonstrations has been arranged by the local Branches of the British Medical Association. These, however, are limited, I understand, to members of the Association, and cannot be looked upon in any wise as regular courses of post-graduate medical instruction. The Liverpool School

of Tropical Medicine provides an excellent course of instruction and clinical facilities in tropical medicine.

At the commencement of the union of the Fellowship of Medicine and the Post-Graduate Medical Association apparently all the undergraduate schools in London took part in the combination. Since then, however, owing to the non-success of the arrangements, and the unsatisfactory results from the combination of instruction of undergraduates and post-graduates together, several of the schools, such as St. Bartholomew's, Guy's, University College Hospital, and Middlesex, now take no part in the association.

As regards fees, the fees charged by the association for courses of instruction in March, 1925, were One week, £2 2s, two weeks, £3 3s, one month, £5 5s, two months, £9 9s, three months, £12 12s, six months, £18 18s, one year, £21. These fees entitle the holder of the ticket to attendance at all the hospitals comprised within the combination, and upon most of the special courses held during the period of the validity of the ticket. Certain special courses, however, were excepted, and for attendance on these special fees were necessary.

I think I may state that without exception it is impossible to carry on satisfactorily any form of scientific instruction, such as is necessary in medicine, on fees which are paid by the student alone. It has been found in practice that in order to carry on successfully courses of instruction in medicine the minimum which can be expected for fees should not be more than 50 per cent and probably 33 per cent. This fact, in my opinion, in addition to those I have already mentioned, is one of the main causes of the failure of post-graduate medical education in London and the provinces. One result of the non payment of teachers giving instruction in medicine is that the attendance of the teachers is liable to be irregular, and also there is a great temptation for the instruction to be in the main an advertisement of the lecturer.

At the present stage I should like to refer to an aspect of post-graduate medical education which is an important one. In the past the medical department of the navy and the medical department of the army have been accustomed to make arrangements with certain metropolitan medical schools for the carrying out of a course of instruction to batches of officers in the Naval Medical Service or in the Army Medical Service. In my opinion the method of instruction given in these cases has not been of the right kind. Each batch, or class, has been allotted to one or two members of a hospital staff, who have given them instruction at stated periods. The instruction has merely been of the type of class demonstration or lecture. This is not sufficient for members of the Naval Medical Service or the Army Medical Service, who may not have had any practical dealings with patients for extended periods. Such men ought to be given definite clinical posts in hospitals, to which posts are attached the care and treatment of patients.

Post Graduate Medical Education in England as it should be

In my opinion it is essential, in the arrangement of post-graduate courses of instruction in medicine, that each centre should be first of all under the direct control of some body, such as a university, or in London the Royal Colleges of Physicians and Surgeons. Each school or faculty of post-graduate instruction should have its own organizing dean and administrative staff, with separate administrative offices and separate general and special hospitals and scientific laboratories.

In the case of London, which is a special one, I think the best course to pursue would be to create a post-graduate medical college or school, which should be a school of the University of London. This school, or college, should have (1) administrative offices, the staff of which should consist of a whole-time dean of the post-graduate medical college and requisite clerical assistance, the dean, in my opinion, should have had a medical education and also training in the administration and organization of medical education, (2) a general hospital of at least three to four hundred beds, which should be centrally situated, and, if possible, the administrative office and the school should be located in close proximity to, or in the buildings of, this hospital. If the hospital contained 400 beds the beds might be

allocated 100 to general medicine, 100 to general surgery, 50 to gynaecology, and the remainder divided between the special departments. One hundred beds allocated to general medicine and general surgery respectively would allow for the formation of two clinical units in each division, and one unit in obstetrics and gynaecology. The number of beds allocated to the other special branches might vary according to the possibilities of making use of large special hospitals. In connexion with the staff in medicine and surgery and obstetrics and gynaecology, in my opinion, one unit in medicine, one in surgery, and one in obstetrics and gynaecology, ought to be under the direction and in charge of a university professor. This university professor should have general charge of the administration of the whole of the beds allocated to his subject, but the second and possibly third units in medicine and surgery, although from an administrative point of view under his general direction as regards teaching facilities of the professor, would be otherwise quite separate and distinct.

As to whether the university professors in charge of these units should be whole-time posts or not is a matter of opinion. In London for the past five years the system of the whole-time professor in medicine and surgery, and in one case midwifery, has been on trial. In the main, I think the units have been satisfactory, perhaps more so in medicine than in surgery. They have generally increased the level of teaching and instruction in a school by first of all improving the teaching, etc., in the professorial unit and thus has reacted on the non-professional units and so brought them more or less to a similar higher level. The special type of man who is suitable for appointment to one of these posts is not easily found. Each professor of a clinical subject in medicine is expected to be (a) an authority in his special part of medicine, (b) a good teacher and lecturer in his subject, (c) a good clinician, and, in the case of surgery and gynaecology, a good operator, (d) a good organizer and administrator, (e) a good researcher or director of research, and (f) a presentable man of the world who is capable of dealing satisfactorily with and meeting on their own level all kinds of men and women authorities in his own special subject. It will be seen from this that the ideal professor in the clinical subjects requires to be an extremely capable man, well versed in every branch of his subject. In the past it has been found difficult to obtain for these posts candidates who possess all the qualities which are desirable. This in part is due to the fact that such combinations are rare to find in the same individual, and the pecuniary attractions of the posts in the past have not been sufficient to attract the most suitable candidates.

Concerning the provision of a special general hospital in London allocated for post-graduates' medical education it is essential that the hospital should be in a central position and readily accessible from all parts. At the present time there are twelve general hospitals to which undergraduate medical schools are attached. In my opinion this number is far too great, and the most sensible and practical method would be to detach one or two of these hospitals from undergraduate medical instruction and to turn them into post-graduate hospitals and schools. In theory this might sound to be quite an easy matter, in practice, however, it has been found very difficult.

During the period when I was Vice-Chancellor of the University of London I made a serious attempt to establish a post-graduate school commencing on these lines. I found, however, in discussing the matter with the authorities of the schools, that there were no schools which were willing to fall in with such a scheme. From the negotiations which took place, and in which I took part, it seemed to me that one of the main causes of the extreme reluctance of one or more of the present undergraduate schools to become entirely a post-graduate school was either the insufficient financial aid which the university could primarily offer, or the disinclination of the school to make a change. There is one factor, however, in connexion with the constitution of the medical schools in London which makes it difficult for them to deal with a matter of this kind. In the main each medical school is governed by a committee of the medical staff of the hospital, in some cases supple-

mented by additional members from the lay governing body. The individual schools in the main have no separate corporate existence, with the exception of the Medical College of St. Bartholomew's Hospital, and the Medical School of University College Hospital, and it is necessary when dealing with Government departments, or large institutions, such as the University of London or the College of Physicians and Surgeons, for negotiations to be carried through secondarily by the governing body or committee of the hospital, the composition of which is chiefly lay in character. This reluctance on the part of the present undergraduate hospitals, and the unsuitability of any of the existing non-teaching hospitals, may necessitate the establishment of a new hospital for the purpose. It does not appear to me that any of the present non-teaching hospitals in London are suitable for establishing in them a central post-graduate clinical school such as is required. This unsuitability is due in the main either to the insufficient size and accommodation of the hospital or to its inaccessible and non-central position.

When the central hospital has been established, with it there ought to be associated a number of large special hospitals. I would include amongst these the following:

Ophthalmic—Moorfields, Westminster Ophthalmic Hospital, Central London Ophthalmic Hospital, and possibly the South London Ophthalmic Hospital.

Midwifery and Gynaecology—Hospital which might be used for this purpose are the Samaritan Hospital for Women, Queen Charlotte's Maternity Hospital, York Road, Living in Hospital, Royal Waterloo Hospital for Children and Women.

Orthopaedic—Royal National Orthopaedic Hospital.

Oto Rhino Laryngology—Hospital for Diseases of the Throat, Golden Square, Hospital for Diseases of the Ear, Great Inn Field, Hospital for Diseases of the Ear, St. John's.

Children's Diseases—Hospital for Sick Children, Great Ormond Street, Hospital for Sick Children, Paddington Green, and the Evelina Hospital for Sick Children, Shadwell.

Diseases of the Nervous System—National Hospital for the Paralysed and Epileptic, Queen Square, and the Maudsley Hospital.

In order to make all these special hospitals suitable for teaching and for carrying on post-graduate medical education it would be necessary in many instances for the hospitals to improve their pathological and scientific facilities. This, however, ought not to be a difficult matter, since if a real first class post-graduate school were established on the lines indicated, all that would be necessary would be for the central governing body of the school to make it a condition for hospitals entering into such a post-graduate scheme to equip themselves in a first-class manner and bring their pathological and scientific departments up to date. In addition to provision of a general hospital with its associated special hospitals, it would be necessary to have laboratories devoted to the various branches of pathology, which would be available for post-graduate students. If one of the existing medical schools were utilized, the laboratories in connexion with the school selected might possibly, with additions, meet the case.

Public Health and Hygiene

This special subject, essentially a post-graduate one, is now on the way to a satisfactory solution in London. By the munificence of the Rockefeller Trustees the London School of Hygiene and Tropical Medicine, a school of the University of London, has been founded. A site has been obtained in a central position between University College and the British Museum, and the building will soon be erected. The site has cost a little over £50,000, and about £375,000 is to be expended on the building. From the plans of the building, which I have seen, and the plans of organization now being evolved, I have little hesitation in asserting that this School of Hygiene and Tropical Medicine will be second to none in the world.

I hear that plans are being evolved for the possible establishment of an institute of forensic medicine on extensive lines. The establishment of such an institute is essential if London is to maintain its position as one of the great centres of medical education.

In association with the central hospital it would be a great advantage to have the clinical facilities of some of the Poor Law infirmaries and hospitals of the Metropolitan Asylums Board available, since in these institutions many

varieties of disease, especially chronic diseases, can be studied, which cannot readily be met with in the ordinary general hospital. In the past it has not been an easy matter to make arrangements of this kind with the Poor Law infirmaries, since these institutions are under the control of boards of guardians, who appoint their own medical staff, and they do not like to be in any way interfered with by the authorities of a teaching school. I have no doubt, however, that if a post-graduate school were established, with a proper government and as part of a big university system, such difficulties could readily be overcome.

When a post-graduate medical school has been established on the lines which I have indicated it will be a great advantage to have in close proximity to the central hospital and the administrative offices a residential hostel where post-graduate students might live a more or less temporary collegiate life.

Such is an outline of what I suggest as the best provision for post-graduate medical teaching in London.

As regards the provinces, I think certain centres might have a post-graduate school established on the lines I have already indicated in connexion with London. I know of no other place in the provinces where a school could be established with greater advantage than in Manchester. Here you have a university in the centre of an area of population as large almost as that of the metropolis, attached to which is a complete undergraduate medical school. If a post-graduate medical school were established entirely distinct in its organization and detached administration from the undergraduate one, I think it ought to be a great success, and possibly an example of what could be done in other places. I understand that there are here two large general hospitals distinct from the general hospital attached to the undergraduate school, and also a number of special hospitals which might be utilized in a similar way.

Staffing of a Post-Graduate Hospital

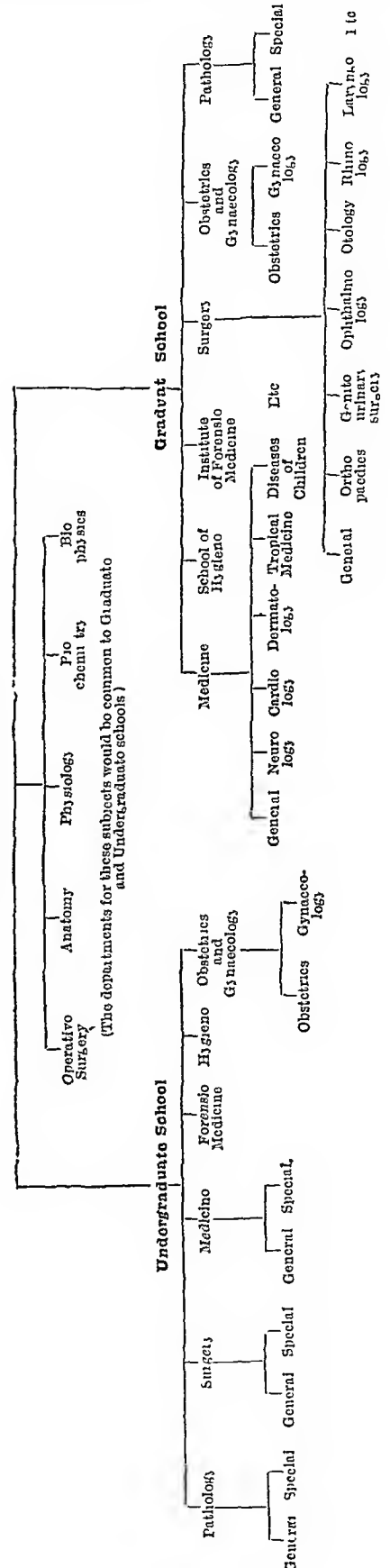
There is one point of very great importance in the establishment of a post-graduate school of medicine which still requires serious consideration, and which in my opinion will present numerous difficulties: this is the selection, arrangement, and appointment of a suitable staff for the newly established post-graduate hospital. From this point of view I have little doubt that the easiest and best method of procedure would be to erect an entirely new hospital, the staff of which could be completely organized on a definite post-graduate teaching plan. The great objection to erecting such a hospital is the question of expense. Since, however, it is so very essential for the good of the community and for the retention and improvement of the position of London as one of the important medical teaching centres of the world, I think this ought to be done if it is not possible to utilize one or more of the undergraduate schools. If such a plan is decided upon, it would not be difficult to find a central site suitable for the purpose upon which could be erected (a) a post-graduate hospital, (b) associated scientific laboratories, (c) administrative buildings, and (d) a hostel for the residence of students. A portion of the site now occupied by the Foundling Hospital, which has recently been sold, and is, I understand, available, might be considered.

In connexion with the permanent staff of the post-graduate hospital it might be an advantage to arrange that one or more units should not have a permanent clinical head allocated to them, but should be available for utilization by authorities and specialists in special subjects from other hospitals. Such teachers might be seconded for a session or period from their parent hospital in order to give advanced courses of instruction in their special subjects in the post-graduate school. An idea of this kind, I think, was in the mind of those who drafted the report of the Athlone Commission on Post-Graduate Medical Education in London. The size of a unit of this kind need not be more than twenty or twenty-five beds. Probably two units of this size—one medical and one surgical—would suffice.

SCHEME FOR A COMPLETE FACULTY OF MEDICINE

UNIVERSITY OF X

FACULTY OF MEDICINE



Finance

If a scheme of this kind is finally adopted it will be necessary that a considerable sum of money should be provided, either from public funds or from large private benefactions, for upkeep of the school and maintenance of the hospital. As regards the amount of money required, it is essential in estimating this that provision be made for the payment of a dean and administrative staff, reasonable payment for those teachers who take part in the various courses, also for the proper payment of any full-time university professorships which may be tenable in the school.

One of the constant aims in the organization of the courses of instruction in the post-graduate medical school ought to be regular courses of practical instruction associated with and followed by clinical appointments which involve the examination of patients and their treatment. This is a part of post-graduate medical education which has been very neglected in the past. This is due, to a great extent, to the lack of laboratory facilities and the personnel for teaching. The provision of courses of this kind is essential if the best type of our own graduates, and also graduates from the colonies and other countries, are to be attracted to the post-graduate schools. Some people have objected to making the post-graduate schools a source of attraction to colonial, and especially to foreign, students. With this view I strongly disagree, as I think that if our position is to be maintained, and, if possible, enhanced, is a sort of advanced medical learning, then we must have colonial and foreign students who will carry back to their countries of origin an account of our resources and our reputation.

In connexion with the medical branches of our combatant services a certain proportion of the resident staff appointments and clinical assistantships ought always to be available for members of these services. If a post-graduate school on the lines mentioned is established it ought to be the centre of post-graduate clinical medical instruction for members of the medical services of the Army, the Navy, and the Air Force. It is only by the provision of facilities such as have already been detailed that one may expect that the members of these medical services shall be able periodically to revise their knowledge and bring it up to date. No method of revision courses such as is at present practised in our general hospitals, mainly by lecture and class demonstration, is sufficient for the purpose. Full provision ought also to be made for carrying out research in the various branches of medicine.

In connexion with post-graduate medical education there is one point which, so far as I know, has not yet been touched upon. This is the post-graduate education of nurses. The nursing profession is a most important adjunct in carrying on successfully diagnosis and treatment of disease. This being so, it seems logical and natural that nurses should have facilities provided for them where they can undergo post-graduate education on the lines similar to those in connexion with the medical practitioner.

I have not yet dealt with one aspect of the problem which, in my opinion, is of considerable importance—this is, what process of "hall-marking" shall be adopted by the post-graduate medical school, or the university to which it belongs, after a satisfactory course of instruction has been attended? For students who attend special courses for short periods, say up to one year, the present diploma in special subjects of the Royal Colleges of Physicians and Surgeons and of some of the universities would probably be sufficient. If, however, a student should devote, say, three years to a continuous course of post-graduate medical education it might be advisable to give him, in the case of a university, some form of special degree. This might be either a Doctor of Philosophy, or a Doctor, or Bachelor, or Master of Medical Science. In any case, such a degree ought not to be a registrable one. On general principles I should not be in favour of the granting of a degree of this kind. There are, however, undoubtedly many instances where the granting of such a degree would be justifiable and advisable. In the case of special subjects, such as ophthalmology and oto-rhino-laryngology, diplomas are already granted.

A Post Graduate Medical Education Committee has been

appointed recently by the Minister of Health to draw up a practicable scheme of post-graduate education in London, taking account of the needs of the medical profession of this country and of the members of the profession visiting this country from overseas. The immediate questions to be answered by this Committee are:

1 Is there agreement as to the absolute necessity of a reorganization of post-graduate teaching?

2 Is there agreement on the general recommendations of the Athlone Commission?

3 Is there agreement that such recommendations can only be realized by new buildings? or could the recommendations be reasonably carried out by some method of adaptation of existing hospitals or medical schools?

It may be remembered that the Athlone recommendations suggested the following scheme:

(a) A bureau or clearing-house for all applicants for post-graduate facilities [This might suitably be at the British Medical Association offices].

(b) A residential hostel and social centre.

(c) A college, with laboratories, etc.

(d) A modern hospital, fully equipped [100 to 250 beds].

The hospital and college should be in the same building.

(e) Full co-ordination with other hospitals in London and the provinces, in order to provide for the teaching of special subjects and the accommodation of English post-graduates who cannot come up to London.

THE ROYAL SOCIETY OF MEDICINE

ANNUAL DINNER

The annual dinner of the Royal Society of Medicine took place on November 19th, when a company of close upon four hundred gathered at the Hotel Victoria, and Sir StCLAIR THOMSON presided with his customary geniality. Among the principal guests were:

The Right Hon. Neville Chamberlain (Minister of Health), Sir Arthur Robinson (First Secretary of the Ministry), Sir Robert Philip, Dr. R. A. Bolam (Chairman of Council of the British Medical Association), Sir Holburt Waring (President, Medical Society of London), Dr. Vincent Dickinson (Master, Society of Apothecaries), Dr. Howard Humphris (President, Hunterian Society), Sir John Broadbent (President, Harveian Society), Dr. P. Seymour Price (President, Chelsea Clinical Society), Dr. H. W. Aitstead (President, West London Medico-Chirurgical Society), Mr. Guy Dawber (President, Royal Institute of British Architects) and Sir Dawson Williams (Editor, *British Medical Journal*).

One of the ceremonies of the evening was the unveiling of a portrait of Sir John MacAlister, until recently secretary of the Society. The portrait, by Mr. Eric Kennington, shows Sir John in his prime, with his books and paper beside him, and the artist has not forgotten to depict the incense of tobacco smoke. The portrait is to be hung in a permanent place in the hall of the Society's house. The unveiling was performed by Miss Williamson, who was Sir John MacAlister's assistant for twenty years, and a brief acknowledgement was made by Mr. Donald MacAlister, who said that the greatest pleasure of his father's life was to be still in touch with the Society.

The MINISTER OF HEALTH, in proposing the toast of the Society, remarked on some contrasts between medical men and politicians. "Your results are based upon methods of precision, you draw your conclusions cautiously from fully proved premises, we, on the other hand, rush into any kind of rash experiment—so I am informed—with an ignorance which is only matched by our irresponsibility. You wait to give your services until they are asked for, we not only prescribe, but I read that we absolutely force our medicines down the throats of our unwilling victims. You practise what you preach, we 'try it on the dog,' and reserve our own liberty of action. You eschew advertisements, we seek the limelight. But there are similarities between us also. Both of us would agree that the public could not do without us short of irreparable disaster. Both of us would agree that the remuneration we receive for our services is totally inadequate. And I rather think that both of us would say with regret that there are members of our professions whose views and whose practices can only be called deplorable."

(Laughter) Mr Chamberlain went on to speak of the Society, which, as the Medical and Chirurgical Society, was founded in a tavern about 120 years ago. It had gone on from very small beginnings to a Society of 4,000 Fellows, 24 Sections, and an income of £20,000 a year. It was a little unfortunate that the foundation of the Ministry of Health should have coincided with a period of housing shortage which made it appear that the Ministry devoted its energies almost entirely to this one subject—a subject which, of course, had a very important bearing on health, but was not what was in the minds of those who originated the Ministry. But although the Ministry had had this "euchronia in the nest," he wanted it to be believed that the Ministry had never ceased to devote thought and energy to the problems in which the medical men around him were interested, and now that houses were being built at the rate of 160,000 a year he thought the Ministry would be able to give more attention to other great problems of health. There was a project for which he would like to bespeak the goodwill of the Society. It was only a project at present under consideration by the Ministry, but it was one which he earnestly desired, before he left his present office, to put into practical operation, or at least to see carried so far that its future success was assured. The project was the establishment of a post-graduate school in London. This was no new idea, many valiant efforts had been made in this direction in the past, but he thought that with co-operation between the profession and the Ministry of Health, and with the goodwill of colleagues overseas, it might be possible to place this matter on a new footing. The problem was bristling with difficulties, but he believed that with determination and mutual confidence the difficulties could be surmounted. He had already been able to secure the assistance of a number of very representative physicians and surgeons who had consented to serve on a committee over which he was going to preside. Preliminary meetings only had been held, and owing to the intervention of the holiday season no very great progress had been made, but the committee would soon be setting to work again, and he trusted that in the course of the next year or so they might all be able to congratulate themselves upon the fulfilment of their desires. The Ministry was responsible for the system of national health insurance, which employed the services of great numbers of medical practitioners, and he could not help thinking that if a post-graduate school were established to which practitioners could have access it would do a great deal to maintain and even to raise the standard of their practice, with consequent benefit to their patients. (Applause)

Sir St. Clair Thomson, in responding, described the Society as a guild for the diffusion of knowledge in the science and art of medicine. The gold of this guild was dug up in daily practice, in the wards, and in the laboratories, it was also garnered from the progress of many neighbouring sciences, but at the Society it was tested, minted, and put into circulation. He paid a tribute to the retired secretary, mentioning that in 1887, when Sir John MacAlister began his reign, there were 745 Fellows, and the yearly proceedings of the Society were contained in two handy volumes, produced at a cost of £400. Today the number of Fellows was 4,000, and the *Proceedings* ran to 1,200 pages, cost £4,000 a year, and were big and heavy enough to be used for pressing trousers. (Laughter) During the last session the Society and its Sections held 171 meetings, which were attended by 6,800 members, and the library was visited by more than 20,000 readers. During the interregnum consequent upon Sir John MacAlister's illness and retirement, the Society had drawn upon the services of its honorary secretaries, Mr. Girdling Ball and Dr. Lethaby Tidy (which had been given without stint), and also upon the ungrudging services of its staff. He welcomed the new secretary, Mr. Geoffrey Edwards, who had been selected by the Council from among 400 candidates, and already had gone far to justify the choice. But the Society was not prospering to such an extent that it wanted nothing more. He read in the *British Medical Journal* that the Carnegie Corporation and the Rockefeller Foundation between them had endowed the New York Academy of Medicine with £500,000. The American Academy was not

as old as the Royal Society of Medicine, and not more illustrious, it performed much the same functions, but this generous gift would now enable it to add to its undertakings a bureau of clinical information and a committee for post-graduate education. The Royal Society of Medicine was willing to take on these and similar enterprises if it was supplied with the means. If anyone had a spare half-million to invest, the Society could give good security and a guaranteed return in the advance of medicine and the promotion of public health.

Dr. R. A. BOLAN proposed the health of the guests, and in so doing with the toast the names of Sir Robert Philip and Mr. Guy Dawber referred gracefully to the work of them both—the one in the conquest of tuberculosis, and the other in the progress of domestic architecture. Sir ROBERT PHILIP, in reply, spoke of the pleasure with which Edinburgh would welcome the British Medical Association in 1927, when he hoped that members of the profession would attend in very large numbers, not on account of Edinburgh or Scotland, but because a tribute was then to be paid to Lister, the great revolutionist in surgery, and the apostle and exponent of preventive medicine, on the occasion of his centenary. Mr. GUY DAWBER added a few words, pointing out the similarities of architecture and medicine. At the present moment architecture had two distinguished "invalids"—Waterloo Bridge and St. Paul's. With regard to the latter, the doctors who had been called in entirely disagreed with those who had not. Those who had proposed a more drastic surgical operation had been turned down, and a course of manipulative treatment was being pursued in which injections were given under high pressure, and it was hoped that this would bring rest to the "patient."

Dr. JOHN C. McVAIL, President of the Epidemiological Section, introduced Dr. S. Monckton Copeman, F.R.S., epitomizing in a few happy sentences his services to scientific medicine, and the President then, on behalf of the Epidemiological Section, handed Dr. Copeman the Jenner Medal, thus adding Dr. Copeman's name to the five distinguished workers in public health—Sir W. H. Power, Professor Laveran, Sir Patrick Manson, Sir Shirley Murphy, and Dr. McVail—to whom this medal has been awarded since its institution in 1896.

THE HEALTH OF THE SCHOOL CHILD

(Continued from page 972)

THE first part of the Annual Report of the Chief Medical Officer of the Board of Education for 1924 dealt with the general aspects of the school medical service. Of this we gave an account in our last week's issue. Following thereon are a series of reports on special subjects or conditions that affect school children. The first of these deals with a subject of great importance, and it is worth while giving somewhat extended account of this section of the report.

THE HEALTH OF THE RURAL CHILD

The population of rural England and Wales accounts for one fifth of the total. Of the rural population one sixth, or 1,500,000, are children. Any scheme of national welfare must therefore include the right enjoyment of health for them equally with those who dwell in the towns. The community cannot afford to allow the country districts to be impoverished for in them is a source of national strength. The birth rate for the rural districts does not differ materially from the rate for England and Wales as a whole, nor, indeed, from the rates which obtain in urban areas. The same is roughly true of the death rate, and consequently of the rate of natural increase of population. That is to say, the countryside is providing its due proportion of increase of population. An examination of the returns from certain selected areas, however, reveals sharp differences. The natural increase per 1,000 of population in Liverpool is as high as 11.0. No county attains a figure anything near this. Some of them fall very low—for example, East Sussex 2.8, Merioneth, 2.4, whilst Cardigan is actually minus 0.1. The explanation is no doubt to be found in the migration of the more vigorous and younger elements of the country stocks to the towns, and this

presents a problem which cannot be viewed without some apprehension in regard to the upkeep of the best physical stocks in the country. An inquiry was set on foot amongst the school medical officers with a view to securing specific information on the health of the rural children. Four questions were asked, and the answers to these are given. It is found that there is much variation in different parts of the county, yet there are some lessons of a general

QUESTION 1 *What is the percentage of children in these rural schools who are physically below standard?* The replies show that of nearly 10 000 children selected at random some 20 per cent are obviously defective in general physique. In the West Riding the figure was 39 in Merioneth 47 and in Radnorshire 54 per cent. The incidence of poor physique appears to have a maximum between the years of 6 and 11, after which it begins to fall. Its maximum is later than in towns. It seems as though the effect of exposure to bad conditions had delayed results.

QUESTION 2 *Is the amount of physical defect in any school or area in 1925 greater or less than that found in previous years?* One school medical officer of experience, Dr. Coikery of Devonshire, formed the opinion that the physical condition of the children in certain of his rural schools was definitely decadent and worse in 1924 and 1925 than in 1910 and subsequent pre-war years. Criticism of these statements has tended to verify them, particularly the reports from the school teachers. One of these writes: "During the twenty years I have spent in this district the decline in the physique of the inhabitants of the outlying villages has been most apparent." Another says: "In my opinion the poor houses, the very elementary sanitary conditions and the poor feeding have a lot to do with the production of C3 children who attend my school. The farmers' children are well fed and consequently healthy but some of the labourers' children never have a really well cooked dinner, but tea and bread. When I came to X I was surprised to find a greater percentage of pale-faced children than I had observed in the schools of Liverpool and Wigan." From other parts of the county reports were variable. In Kent eight representative rural schools were inquired into: two teachers stated there was no physical deterioration among the children and the other six believed that deterioration had occurred whereas Dr. Fox, one of the assistant medical officers who had been working in the county since 1908, was unable to recognize any definite change and the returns of heights and weights of both boys and girls bore out his statement. Similar returns from the other selected areas tended to the same effect.

QUESTION 3 *Is there any difference in physical impairment between the rural and the urban children of the county?* General conclusions from the analyses obtained are not admissible as the areas are few and selected. Yet for what they are worth these routine reports of the school medical officers support the belief in general superiority of physique of the country child as compared with the town child and this conclusion has received from year to year many confirmations.

QUESTION 4 *What are the principal causes of such impairment as exists?* The general answer to this is that the physical and mental character of the child is often an expression not of medical conditions and influences so much as of the economic state. In prosperous districts the children flourish, in depressed districts they suffer. The rural labourer is not advancing relatively with the urban worker. The abolition of apprenticeship and the "literary" character of elementary education are not conducive to a sufficient supply of labourers able to earn a remunerative wage to support themselves and their families. Hence the migration of the best labourers to the towns while the worst remain and are unable satisfactorily to provide for their children. Food is the chief and most important factor in determining the health and physique of the scholars. Its insufficiency is probably the cause of degeneration in certain areas. Dr. Davies of Anglesey writes: "One constantly finds that the youngest of the impoverished household is fat and plump during the early years of his life, but begins to fall off after the age of 6 or 7 years. It is the 'baby' and the 'pet' for the first years and receives all the fat bits and extra milk. It is ousted from this favoured position on the advent of the next baby. The long journey to school has been held to be injurious by some. Inquiry shows that provided the child is well fed at home and at school that there are no arrangements for drying clothes and that allowances are made for absences in bad weather the school journey is not injurious."

But there is evidence that in some areas the school fabric and equipment are bad—for example, inadequate playground provision, absence of water supply, cold classrooms, damp walls, imperfect cloak room, accommodation, absence of drying facilities, bad ventilation and lighting, overcrowding. Unfortunately the economic conditions are not rare. Lastly there is in many schools lack of accommodation or arrangements for the comfort of the child who brings his midday meal. In some there are no arrangements at all so that the children eat their food at the desks in cloak rooms, passages, porches or the playground. No attempt is made in many schools to make the meal a valuable opportunity for teaching good manners and habits. The facilities for warming food are poor. Sometimes a teacher or neighbour helps the little ones otherwise there is nothing but cold food and drink through the day which is trying in winter.

Conclusion

The general conclusion of the inquiry is this: "The village school should take its share with the town school in being, as in the eighteenth century, the nursery of

national character and efficiency. It should be re-established in the confidence of the people. No doubt many village schools are adequately fulfilling their function but many are not. The physical wellbeing of the children lags behind their mental training, though in truth the two are interdependent. The remarkable progress which has taken place in the towns is not being shared in the rural districts."

Recommendations

Certain recommendations are made. Medical officers should search out the subnormal children. Arrangements should be made for effective treatment. School attendance of children under 6 years of age should be discouraged if the distance from school is excessive. There should be a sufficient midday meal. Parents should be guided in the choice of this meal. There should be school management where the child can take the meal. Canteens may be desirable in some areas. There must be facilities for drying, wet boots and clothes. Sanitary schools must be made sanitary. There should be an extension of women institutes and of such other bodies as teach mothercraft, "of which there is much ignorance and some neglect."

(To be continued)

RESPONSIBILITY, LEGAL AND MEDICAL

At a meeting of the British Institute of Philosophical Studies on November 19th the subject of "Responsibility, legal and medical," was debated by Sir Travers Humphreys (Senior Treasury Counsel, Central Criminal Court) and Dr. William Brown (Wilde Reader in Mental Philosophy, University of Oxford). Mr. H. J. Lusk presided.

Criminal Responsibility: A Legal View

SIR TRAVERS HUMPHREYS said that there was only one respect in which the medical and legal professions were likely to differ—namely, as to criminal responsibility. The simple and logical principle upon which the common law was based with regard to the responsibility of a person for an act contrary to the law was that no one could be convicted of a crime unless the act was done intentionally. For example, a person would not be held responsible for a crime committed in a state of somnambulism or under hypnotic influence. A person was always excused for the consequences of his act, although it might have caused injury and suffering to others, if it was not a voluntary act. But it had been realized that the detection of such an individual might be necessary to prevent the repetition of such acts, and the practice had grown up of directing juries to return the special verdict, "Guilty, but insane," and the judges, perhaps without legal sanction, ordered the person to be detained that the state of his mind might be inquired into. This had been consolidated by statute, but the Trial of Lunatics Act, 1883, did not explain what was meant by "insane so as not to be responsible for his acts." A man might be insane in the sense of being certifiable as a lunatic, and yet might be responsible to the criminal law for his actions. In the Lunacy Act a lunatic was defined as "a person of unsound mind," but that explained nothing, because most persons were of unsound mind to a greater or lesser degree. The speaker felt a good deal of sympathy for the medical man who, in border line cases, had to decide whether a fellow creature should be kept in a lunatic asylum on certificate when the medical man had no better assistance than a vague definition of lunacy, but it was almost impossible to lay down any definition of what constituted insanity. For some years past it had been suggested that there ought to be a law that the person who was supposed to be suffering from an uncontrollable impulse should not be held responsible for his crime. This was not the law at present, and never had been, although recently a very bold member of the legal profession suggested in the Court of Criminal Appeal that the judge at the trial had misdirected the jury in not telling them that his client was suffering from an uncontrollable impulse and that it was their duty to find the special verdict. Whether it ought to be the law was, in the speaker's opinion, better left

an open question. If medical and scientific men differed from the law as it stood, and wished such special defence added, he thought they should go to Parliament instead of, either in the witness-box or out of it, making suggestions to judges. At the same time, he thought they would have difficulty in convincing the House of Commons, and that in practice it would not be at all easy to get evidence that a man was suffering from an uncontrollable impulse.

The Problem of Abnormal Conduct

Dr WILLIAM BROWN, who dealt with the subject in a more general way, referred to a suggestion that the modern doctrines of psychology tended to weaken the sense of moral responsibility. The truth was that psychology is such was not concerned with the central problem of responsibility at all, its task was to trace antecedent factors. Disordered conduct might be due to excessive strength of impulses needing control, or to exceptional weakness of controlling factors. Kleptomania was a familiar instance of this, or the impulse might be of a more serious nature and the patient might feel compelled to a murder or some other deed of violence. The psychological analysis of such cases often showed that events of early childhood were responsible for these impulses. Sometimes the responsibility lay more with those concerned with the person's upbringing than with the person himself. The question of irresponsibility in law got quickly mixed with insanity because it was only those who could be shown to be insane who escaped the application of the law. Insanity was a question of the degree of abnormality of a particular individual, and an attempt to make a scientific definition of insanity in regard to responsibility led at once to the domain of metaphysics. There were two extremes of thought, one that no person was responsible for anything but that everything was determined from birth (a difficulty which Aristotle countered by declaring that if the criminal said, "I cannot help doing this," society could say, "I cannot help punishing you"), and the other, that human beings were essentially free and responsible, though the responsibility might be diminished by disease. The problem of responsibility on the practical side was a question of the relation of the normal to the abnormal. The normal body politic developed its own laws corresponding with the normal individual who was expected to obey them. But there were people abnormal in various degrees, and the question was how the law could take account of that varying abnormality. It endeavoured to do so in regard to knowledge. If the individual did not know the nature and quality of his act that fact absolved him. With regard to uncontrollable impulse, the speaker was not sure that satisfactory objective evidence could not be obtained. If a man could show that he had been driven by some abnormal impulse for some time and had consulted a doctor, and the doctor could give evidence that treatment had been given, and that analysis had shown that the circumstances of his earlier years helped to explain his impulse, that should be sufficient evidence, and the person should escape punishment on the ground of uncontrollable impulse. The question remained as to whether justice could best be done by the law as it stood at present, or whether some modification was desirable. Dr Brown believed that the majority of medical men considered that the law ought to be altered in this sense, that some provision should be allowed for uncontrollable impulse. The sort of evidence that would be needed would be that revealed by deep analyses. It might be thought that this was the thin end of the wedge to get rid of responsibility altogether, but the more one understood the more one was likely to do justice. To realize the difficulties of the criminal or the patient did not mean that one thought less seriously of the crime. The sense of responsibility in that way would not be destroyed, but redistributed. Responsibility for a particular act by a particular person could generally be spread over a wide area, and it was only by allowing for multiple responsibility that the extreme position of denying responsibility altogether could be refused.

In some brief discussion, Dr T. B. HAYLOR said that a definition of sanity and insanity could not be given, any more than a definition of responsibility and irresponsibility.

He was wanting a legal definition of responsibility, insanity was a departure from such responsibility, and that seemed to be as far as they could go for practical purposes. Each case should be tried on its merits, and as in medicine they did not look up their archives in order to influence their judgement, so should it be in law.

England and Wales.

SHEFFIELD MEDICAL DINNER

THE Sheffield annual medical dinner was held at the Royal Victoria Hotel on November 12th. Dr A. C. Turner, D.S.O., chairman of the Sheffield Division of the British Medical Association, presided, and about 100 sat down at the tables. Mr H. S. Souttar, C.B.E., F.R.C.S., was the guest of honour. The function was one of the most enjoyable of its kind that has been held in Sheffield, and the success of the occasion was largely due to the honorary secretary of the Dinner Committee, Dr J. E. Stacey. The toast of "The City of Sheffield" was proposed by Professor C. J. Patten, M.D., in a speech brimful of Irish humour. The Master Cutler (Mr T. R. Elin), in reply, pointed out that the Sheffield Corporation only dated back to 1843, up to that time the Master Cutler had been responsible for the government of the city, previously they had had no Lord Mayor and no town councillors, but they seemed to have got on very well without them! Sheffield had been a pioneer city in many things. It possessed fine townways, parks, and suburbs, the Botanical Gardens were a very fine institution, the Ruskin Museum was unique, the Edgar Allen Institute compared very favourably with such a place as the Zander Institute at Arcles-Bains, and the city might certainly be proud of its doctors. Mr Kenyon Parker (the city coroner) proposed the toast of "The Medical Profession" in an appreciatively humorous speech. Mr Souttar, after acknowledging the honour done him in inviting him to reply to this toast, dealt with the subject of hospitals. He said that without the doctor and the nurse hospitals would be merely bricks and mortar. The important thing was to preserve the spirit which pervaded the work of the medical and nursing staffs under the present voluntary system. One of the first questions asked recently by an American visitor to the London Hospital was, "What do you pay your chairman?" The question of paying the staff was of trivial importance as compared with the spirit in which the work was done. The value of the hospital was recognized—patients knew, the public knew, when they had their hand on a good thing. No nursing home could touch one of the great hospitals. Why should the hospitals be limited out of sentimentality merely to the poor? In the near future the hospitals would have to be thrown open to every class. The Labour party was now putting forward hospital treatment as one of the planks in its platform, proposing to increase the number of hospital beds from 50,000 to 100,000. They would make grants to hospitals of such dimensions that even Lord Knutsford would not be able to refuse them, and they would naturally insist on having a larger hand in their control. "We do not want our hospitals to become State institutions and sterile. If the hospitals are to be maintained by the State it is up to us to see that they remain alive. It is the doctors and nurses that are the life and soul of the hospitals. We want to develop a hospital system that will be the pride of our country, as it has been in the past. Other countries have got ahead of us in some ways, they have nothing comparable with our nursing staff, nor perhaps with our personnel, but we may learn something from them in equipment. It is the union of our profession which is going to be the salvation of the hospital system." Professor A. M. Conwell proposed the health of the visitors, and Judge Turner responded in a witty speech. Dr James Mickinon, D.S.O., in proposing the health of the chairman, referred to Dr Turner's distinguished services at the front during the whole period of the war, and to his able service in former years as secretary of the Sheffield Division of the British Medical Association. The toast was drunk with musical honours.

1030 NOV 28, 1925]

SCOTLAND

SLAUGHTER-HOUSE REFORM
The fourth annual Benjamin Wild Richardson Memorial Lecture was delivered before the Model Abattoir Society in the Bunnies Hall of the Royal Society of Medicine on November 20th by Dr. W. J. Howarth, who took as his subject the health of the City of London, who took as his subject the slaughtering of animals for human consumption. The lecturer referred to the distressing conditions which prevailed in the City of London in 1850, about the time Richardson became qualified, in 58 of the 138 known slaughter houses within the square mile of the City. The slaughter was actually carried out in cellars—places which could not be adequately lighted, ventilated, or cleaned. This state of affairs doubtless led him to found the Model Abattoir Society, which, *inter alia*, desires systematic inspection of all meat carried out by competent inspectors of a local authority. Richardson experimented with the method for the painless slaughter of animals. Dr. Howarth felt that had Richardson been alive to-day he would have devised the marking of all meat that had been subjected to official inspection, so as to enable purchasers to distinguish between inspected and uninspected meat. The lecturer thought that the arrangements required in connection with the practice of marking meat would inevitably lead to the direction of private slaughterhouses by public abattoirs. The distance between slaughterhouses made it impossible for the carcasses to be inspected by a staff of thing like reasonable in number. Even if then number were reduced, would the altered arrangements prove satisfactory if they were still under private control? He feared not the only remedy was the establishment of an established factory. Without adequate compensation the slaughterer would be unwilling to surrender what some measures were liable to private right conferring on it some measure of a public charge if they had to be transported from the abattoir. The traders' objection that the carcasses were liable to damage if they had to be transported from the abattoir to the shop had not been and could not be proved. Dr. Howarth pointed out the superiority of Scottish in regulating meat inspection local authorities there were required to carry out such inspection by adequately trained inspectors. The Scottish law was strong enough to prevent the flooding of a town by meat killed in the surrounding rural areas without adequate inspection. About 1 per cent of home-killed meat in Scotland was now derived from public abattoirs. The statistics regarding meat given from the several importing countries were fully satisfactory. Austria had an excellent record, in Holland greater care was required. Obviously, in spite of inspection by foreign States, diseased meat, although probably less in quantity, was still coming through. The marking, however, enabled the inspector to be traced, and must result in better vigilance. Experience at Smithfield with home-killed meat, and especially pork, showed the need for better inspection and point of fact imported meat was less likely to be found diseased than home-killed. The lecturer then described and discussed the various methods adopted for the slaughter of animals, prefacing his account by the statement that efficient bleeding was an essential, since on it depended the quality of the meat. Although bleeding more completely by ligatures or by the use of the carotid arteries was possible than by the carotid-spiral arteries it was possible that the carotid arteries were not so far from the heart as the carotid-spiral arteries, and by mechanical means the difference was slight, and of no importance. In a country in the temperate zone observations on carcasses killed by the poleaxe and by mechanical instruments showed no difference in this respect. As for the cruelty of the bleeding method used alone, although unconsciousness might result quickly in the case of the carotids, yet owing to the supply of blood to the brain by the carotid-spiral arteries it was possible that the head consciousness was delayed and the pain of the cut felt. The animal at any rate, should be put so that the head could be properly fixed. Even under the fastest conditions the slaughtermen had been observed to use division blades to produce unconsciousness in 100 blows, and number of ovens required 125 blows of cows 127 blows, and of pigs 155 blows. The evisceration was done with only 1,259 shots.

DINNER OF THE BRISTOL MEDICAL SCHOOL
The annual dinner of past and present students of the Bristol Medical School (to which the local practitioners are cordially invited) will be held on Thursday next, December 3rd, at the Grand Hotel, Bristol, at 7 for 7.30 p.m. The dinner will be taken by Mr. I. W. Hey Groves, M.S., F.R.C.S. The guest of the evening will be Sir Berkeley Moynihan, Bt.

WIRELESS FOR THE BRISTOL HOSPITALS
On November 6th the Lord Mayor of Bristol declared the installation of wireless apparatus in the Bristol Royal Infirmary to be completed. This is the first step in the fulfilment of a plan to equip with wireless apparatus all the leading Bristol hospitals. This scheme has been staunchly supported by the Western Daily Press, which started a "Wireless for the Hospitals Fund." The equipment at the infirmary consists of a four-tube receiving set, to which are connected 162 wall plugs, providing for the simultaneous use of 324 headphones and two loud speakers. It is hoped that by the end of December the remaining local hospitals will be similarly equipped locally. The total sum covered by the Lord Mayor's Hospital Fund for the year ending September 30th, 1925, is £8,410, this exceeds last year's total by £690. The increase is largely due to the activity of the Bristol University students on their hospital day and to the response of the public to the wireless appeal.

MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN
It was reported to the London County Council on November 17th that during the current year there has been a notable increase in the number of patients desiring to take advantage of the Council's facilities for the medical and dental treatment of their children. In the six months ending June 30th over 10,000 more children were treated at the Council's centres than in the corresponding period of 1924. In that year the school medical officers found a larger number of children requiring operations for enlarged tonsils and adenoids, in-patient centres for treatment of these conditions have become so popular that many parents now refuse immediate appointments for treatment of their children as out-patients and prefer to wait until they can secure appointments for treatment at one of the in-patient centres. Again, owing to increased dental inspection and to special efforts made by care committees and head teachers, more parents are seeking the importance of obtaining dental treatment for their children, more to meet the pressure on the treatment centres extra sessions have been authorized, but in spite of this children, more especially those requiring in-patient treatment and dental treatment, may have had to wait for as long as three months for appointments. This has an unfortunate effect on parents, and increases the administrative difficulties for the financial year beginning April 1st next is 35,130 eye cases, 14,680 ear, nose, and throat cases, 1,576 ringworm cases, 70,675 cases of minor ailment, and 125,950 dental cases. This represents an increase in every category except ringworm, in which there is a slight decrease. The cost of the arrangements will be £24,827, an increase of £3,875 on the expenditure authorized for the current year.

Scotland

ROYAL INFIRMARY, EDINBURGH
At a meeting of the board of managers of Edinburgh Royal Infirmary, on November 16th, it was intimated that the number of cases waiting admission had risen to 2,150. This is considerably more than two cases a bed. It was also reported that receipts during the past fortnight had reached £7,921, including a sum of £1,684 received in small amounts under the League of Subscribers scheme. Various substantial sums had also been received in recognition of from employees of various companies in recognition of

treatment received by members—namely, £100 from the Scottish Domestic Servants' Association, £362 from the Lochelly Iron and Coal Company, £226 from the employees of William Dickson, Limited, £220 from the Scottish Co-operative Wholesale Society, Leith. It was also stated that 1,574 patients had been treated in the institution during the past two weeks, and 2,151 new cases at the various out-patient departments.

EDINBURGH DENTAL SCHOOL

The Edinburgh Dental School is now making a special appeal for funds in aid of the extension of its premises at 31, Chambers Street, Edinburgh, now rapidly approaching completion. Since some years before the war the accommodation for the school has proved inadequate, and this defect has been in part supplied by the directors of the school leasing two flats in a neighbouring building. The school is at present located in a famous old Edinburgh house which, in the early years of the nineteenth century, was occupied by Lord Glenlee, a celebrated judge of the Court of Session, and formed a centre for much of the social life of Edinburgh in the time of Sir Walter Scott and Lord Cockburn. This building will not be demolished in making the extension, which will consist mainly of a new building in front of the present school, bringing it up to the pavement. The cost of the building, furnishing, and equipment of the extended premises is estimated at £17,000, and an appeal is now being made to the public for subscriptions. A preliminary appeal issued shortly before the war raised a sum of about £1,350, but the war put an end temporarily to extensions. The Dental Board of the United Kingdom, after inspecting the hospital in 1923, came to the conclusion that the proposed extension was not only advisable but necessary. In pursuance of its policy of rendering dental education as efficient as possible by making to dental schools grants in aid of approved extensions and equipment, the Board has intimated its intention of making a grant of £5,000 towards the cost of the new building and a further £1,000 towards the cost of equipment. For the balance of the sum required the directors must look to the generosity of the Edinburgh public and of old pupils of the Edinburgh Dental School. The city of Edinburgh has contributed £1,000 in five annual grants of £200, bringing the total subscription list up to £8,435 4s 6d. The extension, when completed, will be a handsome building of four stories and basement, and will include workshops, demonstration and tutorial rooms, lecture theatres, reading rooms, museum, laboratory, x-ray room, and various rooms for the patients, fully equipped for the various branches of dental treatment. The number of students attending the Edinburgh Dental School is still maintained, although there was a slight falling off after the increased entries of the post-war years. The students, like those attending the medical classes in Edinburgh, come from all parts of the world, and their presence in Edinburgh is of material advantage to the city. Over 800 students of the school have taken the L.D.S. diploma of the Royal College of Surgeons of Edinburgh since its institution.

Correspondence.

TETANUS FOLLOWING OPERATION FOR HÆMORRHOIDS

SIR,—The following tragic fatality after the comparatively simple operation for hæmorrhoids induces me to report it as it is not only unique in my own experience but in the experience of the several surgeons to whom I have related it.

On Sunday, November 1st, I operated on a miner, aged 57, for hæmorrhoids. He was prepared in the usual way, and, before starting, the rectum swabbed out with lysol. There were some half a dozen hæmorrhoids, the mucous membrane of each was snipped round the base, ligatured with strong silk, and allowed to slough off, which they did on the seventh day. A morphine suppository 1½ gr was inserted after the operation. He progressed satisfactorily, and on the sixth day had a dose of castor oil, followed by an enema. On the seventh day he talked of getting up as he

felt so well. On the eighth day he complained of stiffness of his throat. The next day he had well-marked tetanus. Within two hours 3,000 units of antitetanic serum were injected into his vastus externus muscles. He died early the next morning.

The chief points of interest in this case appear to me to be the following: (1) The thousands of similar cases that are done every day without any such infection. (2) That no catgut was used. (3) The tetanus bacillus is known to be a common inhabitant of the intestines of horses and cattle and other animals. (4) It has been demonstrated in the intestines of some men, and Tulloch has shown it to have been present in the stump of an appendix.

As such an occurrence is nothing short of a calamity it would be interesting to know if other surgeons have had the same experience, and whether it is preventable.—I am, etc.,

Rivton on Tyne Nov 16th

ANDREW SMITH, M.D.

SIR,—My friend Mr R. J. Willan of Newcastle-on-Tyne tells me that, at his suggestion, Dr Andrew Smith is sending you the notes of a case of tetanus following operation for hæmorrhoids.

Some years ago you were good enough to publish, and to make editorial comments upon, a paper by me on the subject of post-operative tetanus and its relation to catgut (BRITISH MEDICAL JOURNAL, August 17th, 1909, p. 948), and I understand from Mr Willan that some reference to that paper might now be appropriate. In it I put forward the following propositions and endeavoured to support them by rather scanty evidence:

1 That what we call post-operative tetanus is not true tetanus, but a closely allied condition.

2 That post-operative tetanus only follows operations performed in those parts of Great Britain in which diseases closely allied to tetanus are endemic—such as "looping-ill" in sheep.

3 That the offending microbe is not introduced during the operation, but is already an inhabitant, having gained admission in drinking water from infected pastures.

4 That post-operative tetanus only follows operations which involve the peritoneal cavity.

5 That whether or not the disease be true tetanus or looping-ill, and whether or not it be introduced during the operation, the infection is not conveyed by the catgut.

All the catgut which is used in the British Isles is obtained from a common source in Europe, and it would be strange if it were innocuous for the most part and only produced tetanus in those areas which are known to be infected with looping-ill.

The infectivity of the catgut (if it be the guilty agent) bears no relation to the amount used. Post-operative tetanus does not follow operations upon the limbs, in many of which large numbers of ligatures are left. It has occurred after abdominal operations in which a single ligature has been used, and it has followed similar operations in which catgut has not been used.

The evidence which I was able to gather appeared to exonerate catgut, and the contention that what we name post-operative tetanus is due to pre-existing infection by one of the allied sheep diseases seems to be worth support, based as it was upon the work of the late Professor D. J. Hamilton.—I am, etc.,

W. G. RICHARDSON, M.B., F.R.C.S.,
Honorary Consulting Surgeon, Royal Victoria
Infirmary, Newcastle on Tyne

Portsmouth, Ke Wick Nov 16th

THE METHODS OF INVESTIGATION OF NEO-CARDIOLOGY

SIR,—I desire to bring to notice a matter which to my thinking is of great importance. There is cleavage in the ranks of the profession concerning the investigation of the heart. It results in the main from the use of two instruments, the polygraph and the electro-cardiograph, both of comparatively recent introduction, the neo-cardiologists, on the one hand, claim that these are essential to diagnosis, the palæo cardiologists (I suppose we may thus style them), on the other hand, distrust the findings of these instruments as insufficiently established. There is

...st come
...ective claims
...ould plead for this

...as to the polygraph, that
...of certain venous pulsations
...modified (in disease), with respect to
...cardiac events, it deals with a purely
...problem and so belongs to physiology. This
...I have examined to the best of my ability and have
...come to the conclusion that the current interpretation
...of the polygraphic venous pulsations does not agree with
...the sequence of events in the cardiac cycle. But before
...publishing my conclusions I submitted them to Professor
...Stirling for criticism. He approved my argument and
...encouraged me to publish (*BRITISH MEDICAL JOURNAL*,
...April 14th, 1923, and November 8th, 1924), he also gave
...me permission to use his name, the authority of which
...puts my contentions on a different plane.

With regard to the electro-cardiograph and its claims
let another speak. In January, 1924, Sir James
Mackenzie published his views on a "New outlook in
cardiology" (*BRITISH MEDICAL JOURNAL*, January 5th,
12th, 19th). The articles are largely theoretic and philo-
sophic, but under the sectional heading "The use of instru-
ments" he says, speaking of the electro-cardiograph:

"At the outset I foresaw the limitations of the method in that
it would be of little use beyond revealing the nature of certain
disturbances of rhythm. As I have said the object which from
the outset of my investigations chiefly interested me was the
functional capacity of the heart or heart failure, and it was clear
to me that the electro-cardiograph would be of little or no help
in this matter" (p. 105).

This is indeed a serious indictment, if it be true, for
without question the one concern of the cardiologist is
heart failure.

Let me conclude with another quotation from Sir James,
it is prefatory and occurs on the first page of the article.
It reads:

It is not contended that the problems with which these
articles deal are solved, or that our interpretations are correct.
The interpretations are those which the present state of our
knowledge permits, and are intended to show the line along which
we are seeking the solution of medical problems.

The first sentence in the above is a strange profession of
doubt, on which to found a large superstructure of theory.
As to the second sentence, since the articles make special
mention of "the use of instruments," the pronouncement
that the present state of our knowledge permits the current
interpretations is and will continue to be challenged
so long as the reasoned objections which have been put
forward have not been met, or may the silence, which
my endeavours have thus far achieved, be taken as imply-
ing acceptance of those conclusions?—I am, etc.,

London W 1 Nov 12th

HARRINGTON SAINSBURY

FOCAL INFECTION

SIR,—Only after accumulating evidence to the contrary
did I abandon the view I long held myself which is so well
expressed by Dr A. Campbell Stark (*BRITISH MEDICAL
JOURNAL*, November 21st, p. 979) when he states:

What makes the general practitioner sceptical is that he sees
a very large number of people with an obvious septic focus who
enjoy good health to old age, and conversely no septic focus can
be found when it ought to be present.

Is it not that the active local suppuration localizes the
infection, whereas the infected focus unassociated with
polymorphonuclear cells—that is to say, pus—is most
liable to toxæmia? When the toxæmic symptoms are
more evident than the latent and apparently inactive
infective focus, this causal focus is ignored by the patient
and the practitioner's attention is concentrated on the
manifest toxæmic symptoms. At any rate, that was the
mistake I fell into till, now many years ago, I was driven
to seek and often find the causal focus—though too often
also I failed. The post-mortem wound that quickly suppu-
rates is analogous to the patient with profuse purulent
nasal discharge, while the same wound that is followed by
no local abscess but by a spreading of the infection up the

lymphatics of the arm frequently results in general blood
poisoning and death. The latter case with no marked local
disturbance is the analogue of the toxæmic case from a
latent or hidden focal infection.

Hitherto the causal factor of focal infection in many
diseases has been underestimated, but there seems a danger
of attributing to such causes more than is warranted by
well ascertained facts. If, as I believe, Dr Stark's
remarks are founded on an abstract of my recent Simon
Lecture, I venture to hope that he will do me the honour
of reading the lecture when published in full (in the
December number of the *Journal of Laryngology and
Otolaryngology*). Then any criticism or suggestions offered by
himself or any practitioner would be most warmly appre-
ciated and helpful in arriving at sound conclusions—
I am, etc.,

Bristol Nov. 23rd.

P. WATSON-WILLIAMS

THE GENERAL MEDICAL COUNCIL

SIR,—There is a tolerably widely spread feeling in the
medical profession that the General Medical Council
requires a good deal of overhauling. It has, in great part,
lost the confidence alike of the public and of the medical
profession. Into the general question I do not propose
to enter just now. I wish only to discuss one point, and
that is its penal functions.

I have a feeling that its present powers of pit and
gallows should be considerably reduced. As a matter of
fact, so far as I am aware, there is no member of the
General Medical Council who is a trained lawyer, is
individual members, so far as law is concerned, are
amateurs. We are told, and no doubt quite true, that
they always have their solicitor with them for purposes of
consultation, but that simply amounts to this, that the same
man who draws up the libel or indictment is the same man
who advises them as to its relevance, and is the same man
who advises them as to whether the libel or indictment has
been proved or not. There can be little objection to the
General Medical Council acting as a court of first instance,
but unquestionably on all points which have any legal
bearing before a man is deprived of the means of earning
his living he should have the right of appeal to an ordinary
legal tribunal, in England he ought probably to have an
appeal to the Criminal Appeal Court and in Scotland to
the High Court of Justiciary. I have no wish whatever to
shelter black guards, and certainly if a man has been con-
victed in any criminal court of a serious offence he ought
not to have the right of appeal. But apart from that,
there should invariably be a right of appeal, at any rate
on points of law and on the value of evidence.

One other point I think should be attended to, and it
is that cases occurring with practitioners in Scotland
should invariably be heard in Edinburgh or in Glasgow by
the Branch Council of the General Medical Council, and
ought not to go to London. A Scottish practitioner who
may be in trouble must, if his case is to be properly con-
sidered, fee lawyers both in Scotland and in London, or
else be at the enormous expense of taking his lawyer
up with him. Further, it entails considerable travelling
expenses, and probably hotel expenses for himself. The
Branch Council for Scotland is quite a large enough body
to sit as a court of first instance.

There are many other changes that ought to be made
in the General Medical Council, but one thing at a time
is quite enough—I am, etc.,

FREELAND FERGUS

Glasgow Nov. 20th

A MEDICAL MINISTER OF HEALTH

SIR,—My friend Sir Lenthal Cheate seems to hold the
original view that all the ills from which the medical pro-
fession is now suffering would vanish if the Ministry of
Health were presided over by a medical man, he is
optimistic enough to imagine that, given that "reform,"
medical teaching would improve, unqualified practice would
cease in the land, and operating surgeons would be spared
the present inconvenient competition from the pupils whom
they teach. He developed this thesis more fully in the
address (mentioned in your columns November 21st, p. 981)

which he gave to the Parliamentary Medical Committee last week, but some of it appears in Sir Lenthal Cheate's address (p 958), which provokes this letter. I would ask your permission to deal with a few of these contentions.

1 I am convinced that the first cardinal principle which we should grasp is that it would be foolish to dissipate our strength as a profession in running counter to a thoroughly entrenched public opinion. There is a significant and pertinent passage in Lord Grey's recent memoirs which to my mind states with final authority the case against a medical Minister of Health.

"The theory and practice of parliamentary government is not that of government by experts but by men of general experience and proved capacity, presiding over experts who are the civil servants in our public affairs."

The success which has attended this "theory and practice of government" is such as to give no warrant, and to produce no desire, to alter it.

Administration must inevitably form by far the greater part of the work of a Minister of Health. Sir Lenthal Cheate mentions a grievance which the directors of medical units are pressing at the present moment—namely, that their time is so largely taken up by administration. How much more must this be so in the case of the Minister of Health. A medical Minister of Health would not command the respect of the profession outside of the House of Commons unless he were also a leader in medicine. Sir Lenthal points out that no man can be a leader in medicine unless he is doing original work in his profession. It is clearly impossible that the Minister of Health should be a leader in medicine and at the same time perform the duties of the head of a great Government department. Sir Lenthal's suggestion is not practical from any point of view, and that was the predominating opinion expressed at the meeting of the Parliamentary Medical Committee last week.

2 I submit that the teaching of medicine must lie in the hands of those who are actively practising it, and it would be disastrous to have theoretical systems of teaching imposed from outside upon our schools by doctrinaires, wholly divorced from practical experience of medical education. It is, in fact, a danger inherent in the present position of the unit system in London, that it is financially dependent upon a Treasury grant, and therefore potentially at the mercy of such doctrinaires. To have the system of teaching also dictated by a Government department would immeasurably increase the peril to our medical schools.

3 I submit that it is the task of the medical profession itself to combat the spread of unqualified practice, not by legislative measures, but by wise competition with this unqualified practice. To adopt an ostrich-like policy of deluding oneself that the evil does not exist, or to wait for some *deus ex machina* from the Ministry of Health to remove it, is merely fatuous. In using the term "wise competition" I would especially emphasize the need to inquire into, and, if found valuable, to adopt and to improve upon, methods of treatment, irrespective of their origin, whether orthodox or unorthodox. If the inquiry proves that a cult, with a large vogue, nevertheless rests upon demonstrably unscientific foundations, exposure of those unscientific foundations should be undertaken by leaders of the profession competent to expose them.

4 Sir Lenthal Cheate thinks that teachers of surgery should be highly salaried officers apparently because the competition from what he calls "decentralized areas" is depriving the consulting surgeon of the handsome remuneration to which he has long looked. I submit that this competition has been successful because the operating surgeon exacted fees out of all proportion to his economic value, a reaction was bound to come, and indeed has come. Here is a concrete illustration given to me by a friend of mine in general practice in the suburbs of London of the exaggerated value put upon the services of the operating surgeon. My friend in the same week called down to his assistance a surgeon and later a physician to assist him in two different cases. Both were members of the staff of his old hospital. The surgeon performed an operation which took him exactly half an hour, and never saw the case before or after that single intervention. The

physician spent well over an hour in a very examination of the patient, and entirely revolutionized the diagnosis and treatment. The surgeon's fee was one hundred guineas, the physician's fee was ten guineas. It is this glaring disparity which more than any other circumstance has rendered possible the competition that Sir Lenthal Cheate describes.

There can be little doubt that the hospital surgeon of the future will have to be satisfied with something like the same remuneration which rewards his colleague the physician. Even if hospital teachers should become highly paid whole-time men, the salary available cannot approach the income to which operating surgeons have become accustomed. It has been the common experience at the medical schools with units that while the professorial remuneration (£2,000) allotted to the heads of units has attracted a large field on the medical side, it has been extremely difficult to fill the surgical posts. Appointments to the unit are at present made by the Senate of the University of London, and considerable dissatisfaction is already expressed in many quarters of the University at the disproportionate salaries allowed to the medical professoriate as compared with professoriates in other faculties. It is not altogether surprising that such dissatisfaction should be exhibited when one reflects that on the same agenda paper of the Senate one may find a recommendation that the salary of, for example, a professor of mathematics of European reputation should be increased to £900 after perhaps fifteen years' service in the University, and that the salary of a young medical man commencing his professorial career should begin at £2,000. It is at any rate quite certain that no public body will ever consent to establish the salary of the surgeon at a figure something like ten times as large as the salary of his colleague the physician, which is the ratio which the present scale of fees seems to warrant.—I am, etc.,

London W1 Nov 21st

E GRAHAM LITTLE

POISONOUS DOMESTIC CLEANING FLUIDS

SIR,—I am deeply interested in the problem of poisons, their uses and abuses. In my own courts I have seen only too often the fatal results that follow when such poisons as spirits of salts, salts of lemon, etc., are taken either deliberately or accidentally. I have often suggested that more stringent regulations affecting their sale should be enacted and have frequently commented on the potency of these domestic poisons and the terrible effect that they have on the human frame. Surely this evil can and should be avoided. There is, for instance, a perfectly well known and entirely non-poisonous substitute for spirits of salts, and there seems no excuse for the continued laxity in the sale of this poison.

I am open to correction, but in some foreign countries, I understand it is only from the regularly licensed druggist that poisons such as spirits of salts can be obtained by the public. It seems to me that we in our country might do something to follow this example.

These poisons are widely used, but it must not be forgotten that they are also widely abused. To restrict the sale of them would be more of an advantage than a disadvantage to the public at large, and would help to remove a real peril from our midst.—I am, etc.,

H R OSWALD,

Coroner's Court
Fulham Palace Road, Hammersmith,
W6 Nov 3rd

His Majesty's Coroner for the
Western Division of London

OSTEOPATHY AND CHIROPRACTIC

SIR,—Apropos the recent articles and correspondence on osteopaths, it may interest you to know that a London osteopath is apparently employing a lady traveller to procure patients for him. This lady called on me yesterday and asked me to send patients to the osteopath when possible. She also called on a leading masseuse in this city, and not only asked her to refer patients to her employer, but offered a commission of five guineas a case! The osteopath was said to be an ex-officer wounded in the war.—I am, etc.,

NORMAN DUGGAN, M B, F R C S.

Worcester Nov 13th

could
any general
ing and manipu-
round. The crying
number of masseurs
of this all-important branch
short of criminal. If we could
as it is done in Sweden or Japan the need
would disappear. A well trained masseur
under medical supervision would fill the gap
I am, etc.,

Long Sutton Walsby, Nov 15th.

R MURRAY BARROW

SIR,—Dr Manson courteously corrects the verbal misquotation in my description of the Warrington motion. As he writes (November 21st, p 980), the proposal was that "no unregistered person be allowed to practise medicine or surgery," not that "no unqualified person" should be so hindered. I agree that the reference ought to have been accurate in every particular, and I the more regret the error, as it now appears that Dr Manson regards a distinction between the meanings of the two terms to be important in the development of his argument. In his original letter (November 7th, p 868) he describes the motion as one "on unqualified practice," and later writes about "unqualified osteopaths" and about "checking or discouraging unqualified practice." Personally, I understood the term "unqualified," as used in these phrases, to mean, in accordance with the custom of medical discussions, a person not trained, examined, and certified according to the regulations of the General Medical Council. In this sense the difference between "unqualified" and "unregistered" is in practical affairs a minimum quantity.

But I now learn that Dr Manson's "registration" is something much larger than the present practice. He anticipates, were Parliament converted to his view, that "all manner of healers would clamour for admission to the Register, and by this means receive legal status and official recognition." In the sense of this proposition the difference between "qualification" and "registration" is, indeed, a wide one. Yet the development has a startling quality when advanced by an advocate who at Bath claimed that "the whole range of medicine should be kept for those properly trained for the job," and I confess that until his latest letter I had never suspected that Dr Manson's project of "registration" was marked by so comprehensive a charity. Whether in this respect I have been inexorably slow of understanding I cannot say, but in any event my contention that the vote at Bath cannot be held to imply "apathy" to the "unqualified osteopaths'" desire for registration remains unchallenged.

A small point, and a final one, and a question of accuracy. To "talk out" a motion means, I suggest, to speak on the motion at such length that an opportunity for a vote is denied. But this is not what happened at Bath. What brought the Warrington proposal to naught was not an individual speech but the deliberate decision of the meeting.—I am, etc.,

London, W 1 Nov 23rd.

C O HAWTHORNE

THE LEAD TREATMENT OF CANCER

SIR,—You did me the honour to invite my views regarding Professor Blair Bell's cancer research, and this, I think, justifies comment on my part upon the leading article which appeared in the same number as my letter. What impresses me, I confess unfavourably, regarding that leading article is that the writer very significantly neglected to comment upon Blair Bell's supreme achievement—namely, his discovery of a means whereby the death and absorption of the cells of malignant growths can be brought about by an agent of known composition administered in known doses. Herein, and not in the successive steps of his hypothesis, is the all-important advance. That hypothesis is of value, first, as affording evidence that this is no mere empirical discovery, even though it is based upon the long-established empirical employment of lead to

induce abortion. But, starting from this point, it is the outcome of a train of careful reasoning and experiment. Secondly, it is of value as demonstrating the use of the more recent developments in physical chemistry for the opening up of attack upon pathological problems. If a hypothesis, when acted upon and put to the test, yields the expected result it at least deserves consideration. If it does not contain the whole truth it must contain a very essential portion of that truth. That this hypothesis has led to results those of us can have no doubt who have seen superficial tumours in man and in the lower animals after intravenous injection of colloidal lead slough out in their entirety.—I am, etc.,

University of Liverpool, Nov 24th

J GEORGE ADAMI

CLOCKWORK CONTROL OF THE CARREL-DAKIN TREATMENT

SIR,—I have read with interest Professor Cathcart's article on the above subject in your issue of November 21st (p 933). It would appear from this article that Professor Cathcart is not aware that Dr Carrel adopted the clockwork magnetic control method in his hospital at Compiègne, near Paris, during the war. I had the pleasure of seeing the method working most efficiently when I visited the hospital in 1917.—I am, etc.,

London, W, Nov 23rd

C GORDON-WATSON

AN UNUSUAL ANAESTHETIC FATALITY

SIR,—In a recent case of the explosion of a mixture of ether vapour and oxygen during a dental operation in which a warmed syringe was used (reported in your issue of October 17th, p 713), the suggestion was made at the inquest that ignition had been caused by a flame some six feet away.

I would suggest that ignition may not have been caused by the flame but by the syringe. If a platinum needle were in use, the conditions would have been especially favourable for producing a catalytic action on the surface of the warm platinum, thus leading to the ignition of the mixture of ether and oxygen. Even in the absence of platinum it is not improbable that some metallic part of the syringe acted in a similar manner, nickel, iron, and even glass and porcelain being known to possess catalytic activities in a greater or a less degree.—I am, etc.,

BERNARD D BOLAS, M Sc Lond

London W 4 Nov 19th

ANAESTHETICS IN CHILDHOOD

SIR,—I do not agree with Dr Singleton when, in his paper on anaesthetics in childhood (November 14th, p 900), he states that "induction by chloroform and mixtures containing it is dangerous." It is by no means so if it is properly administered. I am rather partial to the giving of anaesthetics, and have administered chloroform and chloroform alone 2,310 times since 1900 without a fatal issue. In my experience children take it exceedingly well, be it for dental or any other operation.

The adult male alone has given me any concern, no doubt due to the influence of alcohol or nicotine, or both, upon the myocardium, but very rarely indeed was there any cause for anxiety. Two patients only (females at the close of pregnancy) died later from acidosis—surely very few out of such a total.

I consider chloroform to be the best of all anaesthetics, provided an overdose is not given. I do not believe in the so-called status lymphaticus. Such fatal cases must be due to "the little more, and how much it is." If chloroform, or any other general anaesthetic, is administered carelessly and in sufficient bulk, there will undoubtedly be engraven on the memory the recollection of a few tombstones in the neighbouring cemetery.—I am, etc.,

JOHN B PRIMER, M B, Ch B, D P

Cowdenbeath Tife Nov 19th

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

PARLIAMENT began its business this week with tributes from both Houses to the late Queen Alexandra, and decided that there should be no sitting on Friday. Thursday was devoted by the Commons to a debate on unemployment, and the preceding days to the report stage of the Rating and Valuation Bill. The Government is pressing this bill into law as a preliminary to reform of the Poor Law.

The Minister of Health is understood to have a Poor Law Reform Bill ready for introduction next session, provided the Cabinet agrees to find time for it. A draft of its proposals has recently been circulated to local authorities. Mr Neville Chamberlain proposes to abolish boards of guardians, to constitute, so far as possible, one local authority financially responsible for each area, and to avoid duplication of health services. Mr Chamberlain also proposes as an integral part of this scheme to abolish percentage grants from the Treasury to local authorities, and to fix a block grant to each authority for a term of years, this grant to be expended as the authority thinks fit, subject to the maintenance of a general standard of efficiency in local services. As the rating and valuation reforms now before Parliament do not become fully operative till 1928, the block grant system cannot be introduced till later.

The Government regards this Poor Law scheme as the complement of the National Health Insurance schemes already adopted. When the bill is submitted it will be pointed out that in every area of the country the guardians deal with destitution, while other local authorities deal with housing, water, sewerage, and roads. Hospital provision for the destitute through the boards of guardians is growing up side by side with the provision by other local authorities for other services, such as nursing or expectant mothers and the tuberculous. There is, moreover, the voluntary hospital system. When the Poor Law Bill comes before the House the Government is likely to argue that if health and hospital provision in any area is to be effective and economical it must be handled as a whole by a single health authority. The Government will also point to the danger of overlapping in public services from the fact that a person in need through old age, unemployment, sickness, or disability can at present obtain this assistance either under the National Health Insurance schemes, or in some instances from the local authorities by maternity or tuberculosis schemes, or from the guardians or from voluntary organizations. The Government is likely to propose that in each local government area a single authority shall concert these efforts and ensure that double assistance is not given. The achievement of this co-ordination, embracing apparently the voluntary hospitals, is declared to be an essential part of the Government's Poor Law reform scheme. In county boroughs the unitary health authority will be the borough or city council. Whether in counties the work will be divided between the county council and district councils is not authoritatively revealed.

Confident assertions are heard to the effect that the Royal Commission on National Health Insurance, which may report early in the new year, has decided to recommend that in the next valuation period £1,000,000 be allocated from health insurance funds for specialist services, and £2,000,000 for other optional benefits. A strong minority of the Commission is reported to favour the abolition of the approved society system and the reorganization of National Health Insurance on a regional basis.

The Medical Committee of the House of Commons held its inaugural meeting for the autumn session of Parliament on November 23rd.

Health Insurance

Sir Kingsley Wood stated that the Minister of Health was aware that a charge was sometimes made by panel doctors for a medical certificate for a patient's private employer though he had no information on the extent to which the practice prevailed. The National Health Insurance Act did not provide for the issue of such additional certificates free of charge, and to secure this would require legislation.

Answering Mr Forrest, the Minister of Health said he could make no statement of the intentions of the Government regarding the proposal to reduce the contributions under the National Health Insurance Act.

In reply to Mr Forrest, Mr Neville Chamberlain said the additional benefits now being provided by approved societies out of surpluses disclosed on a valuation included (in addition to increases of the standard rates of sickness, disablement and maternity benefits) dental benefit, ophthalmic benefit, treatment in convalescent homes, the provision of medical and surgical appliances and payments to hospitals and for nursing. Dental benefit had already been adopted in England by 794 societies and 2,662 branches, and these numbers would no doubt be increased when the whole of the schemes following the second valuation had been formulated.

Dr Shiels asked the Minister of Pensions whether the superintendent and medical officer of Edenhill Hospital, which had been replaced by English doctors and if there were any professional or other qualification possessed by the new superintendent which the late one had not. The Minister of Pensions (Major Tryon) replied that these staff changes had been necessitated by the recent conversion of this hospital from a general neurotic hospital into a neurological institution of a special and different type. The claims and qualifications of the late medical superintendent were fully considered before it was decided to replace him by a medical officer possessing more specialized neurological experience, and this decision involved no reflection upon his general professional ability or upon the efficiency of his past service with the Ministry. The question of the nationality of the officers concerned did not enter into the comparison.

Major Tryon, answering Mr G Harvey, said that in consequence of refusal by firms of limb makers hitherto under contract with the Ministry for the supply of metal artificial legs, to renew their contract except on terms which would have imposed an increased charge on public funds, he had, on the report of a committee of inquiry, reduced the number of firms with which contracts had been made for the supply and repair of metal artificial legs to two. He had received a deputation representing ten firms which had ceased to hold contracts, and had informed them that the decision could not be reconsidered. The limbs supplied by the two firms selected were of the first quality.

Lieut Colonel Stanley stated that the number of appeals by men against the termination of their pensions rejected by the appeal tribunal on the ground of being out of date was 5,000. No claims to pension for tuberculosis or any other disease have been rejected on the sole ground that the applicant was found to have suffered from the disease prior to enlistment. On the completion of the reclassification of the Midlands Region on December 5th there would remain only two regions—Northern, with headquarters at Newcastle on Tyne, and Scotland, with headquarters at Edinburgh.

Detention of Lunatics

Commander Kenworthy asked the Minister of Health whether prior to the escape of Prince Ahmed Seif ed Din from Titchmarsh Asylum, repeated efforts to have him examined by independent specialists had been refused. Mr Neville Chamberlain said Prince Ahmed was confined in an asylum in this country from July, 1900 to September, 1925. During that period he had been frequently seen by medical and legal Commissioners of the Board of Control. Within a year of his original detention a special visit was paid to him by a medical commissioner, and a similar special visit was paid as recently as July, 1924, when the commissioner was satisfied that the Prince was insane and properly detained. In September 1924, the patient was examined by three independent specialists, two being eminent alienists of this country, and one a specialist from Zurich. They also expressed the view that the Prince was definitely of unsound mind. A further application for an examination by independent specialists was made to the Board in the same month but was declined because it was considered that another medical inquisition at such short interval might be detrimental to the patient's health. Mr Chamberlain added that he had no information supporting the statement that the Prince had established his sanity since leaving this country but, judged by the standard of conduct recognized in this country, he was undoubtedly insane at the time of his escape.

Answering Mr Hayes, the Home Secretary said that J. G. Prickett, now in inmate of Broadmoor Criminal Lunatic Asylum, had not been certified sane. Applications for his discharge had been considered carefully. The Home Secretary added that he did not feel justified in ordering Prickett's release.

Salaries of Medical Officers of Health.—Sir Frederick Hall asked the Minister of Health whether seeing that the Bethnal Green Metropolitan Borough Council recently approved a proposal for the appointment of a medical officer of health at a salary of £800 rising to £900 a year and that the Ministry of Health intervened and expressed the view that the commencing salary should be not less than £1,000 and in view of the recognized need for public economy and the fact that the salary offered by the borough council was considerably more than the income earned by a number of able highly trained general practitioners he would state the general principles which had actuated the Ministry in taking this line. Mr Chamberlain replied that the salary first proposed by the borough council was considerably below the standard arrived at as appropriate to such an area after lengthy discussions between representatives of the Ministry of Health and of the British Medical Association and Society of Medical Officers of Health with the assistance of advice from gentlemen of standing in the field of local government. He felt it impossible to approve the proposal of the authority and had sanctioned a temporary appointment. Dr Shiels asked the Secretary for Scotland whether he was aware that the Scottish Board of Health recently advertised for a medical officer (woman) at a salary of £500 rising to £800 whether this was the same scale of salary as was applicable to medical officers (men), whether the salary was substantially less than that paid to medical officers of similar qualifications and discharging similar duties employed by the Ministry of Health and if so, what were the grounds on which the difference was based. Sir John Gilmour said that the salary quoted excluded the cost of living bonus. Including this bonus, the minimum accordingly was £684 and the maximum was £1,009. The same scale was applicable to men. He understood that a higher scale was payable to medical officers in the Ministry of Health. The salary scales referred to were the result of long negotiations turning on general considerations outside the scope of parliamentary questions and answers.

and Iul Winterton (Parliamentary Secretary) informed Mr Grenfell that the recommendations of the Lee Report as to the constitution of medical services in India had been accepted, subject to the need for maintaining for army requirements a reserve of medical officers in civil employ, and for providing medical attendance by British doctors for British members of the services. It had been decided to maintain the Indian Medical Services in substantially its present form to meet army requirements, and the Government of India was now considering how best to adapt the civil branch of the service to the general scheme of medical reorganization.

Royal Commission on Lunacy—On November 18th Sir Charles Oman asked the Minister of Health whether any further evidence from former inmates of asylums was to be taken by the Royal Commission on Lunacy, and whether requests for permission to give such further evidence had been received by that Commission during the last few months and refused. Mr Neville Chamberlain said he understood that the Royal Commission, having heard oral evidence from thirteen former inmates of asylums, and considered a large number of written statements, did not propose to take further evidence of this nature. During the last six months eight applications had been received from former inmates desiring to give oral evidence, but the Commission had been unable to comply with these requests.

Cancer Clinics—In answer to Mr Forrest, Mr Neville Chamberlain said he was aware that free clinics had been established in the United States whereat all persons with suspicious growths were able to attend. In this country, at numerous out-patient departments of general hospitals and other medical institutions (specialized for the treatment of cancer or otherwise), persons who suspected that they had cancer could receive the early stages of cancer could receive advice and treatment. In July 1923, the Department on Cancer made certain recommendations on the way in which local facilities for early diagnosis and treatment of this disease might be improved by local action. These recommendations were embodied in a circular issued to local authorities in August 1923, and were now being followed in several of the larger cities.

The Spahlinger Treatment—On November 20th Mr Vernon Davies asked the Minister of Pensions whether the information available in his department regarding the Spahlinger treatment was sufficient to justify him in arranging for the provision of this form of treatment for pensioners suffering from tuberculous. Lieut Colonel G F Stanley, replying for the Minister, said: "No Sir, the matter is one primarily for the Ministry of Health. The Minister of Pensions understands that the case must still for the present be considered 'not proven'."

Opium in India—Earl Winterton stated in reply to a question, that about the beginning of this year the Government of India addressed local governments, drawing attention to some evidence of abuses of opium in various directions, and asked them to examine the question and to co-ordinate with the Government of India whether this evidence made it desirable to revise the conclusions of the Royal Commission of 1893. In September last the Government of India stated that it was still awaiting the replies of local governments.

Bakers' Dermatitis—Sir W Joynson Hicks informed Mr Forrest that no legislation was contemplated to deal with the spread of dermatitis among bakers but the issue of an Order was contemplated which would require the adoption of special precautions. Dr Tremantle asked whether the administration of the Home Office should not be brought into touch with that of the Ministry of Health when dealing with such matters. The Home Secretary said he did not see how that question arose. Replying to a question on the causation of dermatitis, Mr Neville Chamberlain said the effect on the health of the consumer from the treatment of flour with improvers and other chemical substances was under investigation by a Departmental Committee, and, pending its report, he could not entertain a proposal to make restrictive regulations. So far as he was aware boric acid was never added to flour.

Kenya—On November 23rd Mr Amery (Secretary for the Dominions) informed Mr H Williams (1) that according to a return published on January 21st last, there were 76 registered medical practitioners resident in Kenya of whom 32 were European Government medical officers. (2) that 29,402 cases of yaws were treated at Government hospitals and dispensaries in Kenya during the year 1924 and in addition 16,125 cases were treated by Government medical officers while on tour in their districts either at out-dispensaries or otherwise. It was impossible to estimate the number of cases which did not come to the notice of medical officers. The need for medical research in East Africa was appreciated by the Government.

Foot and Mouth Disease—Sir Harry Burns, on replying for the Ministry of Agriculture to questions concerning foot and mouth disease, said the Government was attempting to obtain amongst other things a safe and effective method of preventive inoculation against this disease. In the work with this object was being carried out at a specially constructed cattle station at Pirbright.

Veterinary Treatment—Sir W Joynson Hicks (Home Secretary) informed Captain Gee that treatment of animals by a person not having a veterinary qualification was not an offence against the law. The Protection of Animals Act forbade, *inter alia*, any person

or unreasonable act causing unnecessary suffering and any operation "performed without due care and humanity," but he had no reason to suppose that the work of the People's Dispensary for Sick Animals, the object of which appeared to be the relief of animal suffering, was carried on otherwise than with care and humanity.

Answers in Brief

Sir S Hoare (Secretary for Air) informed Sir F Hall that the number of fatal accidents during the twelve months ended September, 1925 due to aeroplanes crashing was 42 involving 57 deaths.

The second reading of the Bethlehem Hospital Bill which has passed through the Lords, was put down for Monday, November 23rd, but objection was taken by Dr Haden Guest and other members, and the second reading was therefore postponed.

On November 23rd during the report stage of the Rating and Valuation Bill, Mr Barker moved a new clause to exempt underground sewers from rating. Mr Neville Chamberlain (Minister of Health), in replying, said he hoped next year it might be possible to introduce a bill to amend the Public Health Acts, and, if so, that might be a suitable opportunity to deal with the matter. The clause was negatived.

Mr Neville Chamberlain hopes to introduce next session a bill dealing with smoke abatement.

The population of England and Wales is estimated to have increased between the census of 1921 and the middle of 1925 by 1,003,000.

The provisions of the Public Health Act, 1925 dealing with the conditions under which meat is stored or sold in shops apply also to fish.

It is not prepared to remove the present requirement that persons to be vaccinated before enlistment in the Air Force.

The Ministry of Health has no record of any request from a medical officer of health asking that advice and instruction on birth control should be given at maternity centres to married women on the recommendation of medical men.

The Minister of Health had not received up to the end of last week a reply to the letter he addressed in May to the National Council for Combating Venereal Diseases and the Society for the Prevention of Venereal Disease regarding the alteration of the law on the sale by chemists of preventives of venereal disease.

During the current financial year a grant of £5,500 has been given by the Government to the British Social Hygiene Council, and this is being expended on educational work approved by the Ministry of Health.

Steps will be taken to set up, early next session, the proposed Select Committee to inquire whether legislation is desirable for registering and supervising nursing homes.

The Services.

DEATHS IN THE SERVICES

Surgeon General Howard James McChesney Todd, C.B., K.H.S., R.N. (ret.) died suddenly at Gosport on November 6th, aged 70. He had sat on the Bench at Gosport police court during the morning and on his way home was suddenly taken ill entered a shop to rest, and there died. He was the son of Mr M G Todd of Hove, was educated at St Thomas's, and took the M.R.C.S. and L.S.A. in 1876. He entered the navy soon afterwards. He served in medical charge in the Niger expedition in 1879, landed with the Naval Brigade, and was present in an engagement at Onitsha. His name was mentioned in dispatches. He received the thanks of the Admiralty for his services in the epidemic of yellow fever at Jamaica in 1885-86 and was recommended for promotion; he was thanked by the Foreign Office for his services as acting consular surgeon at Mapanda's kraal in 1891. He received the C.B. at the Coronation in 1911 and was appointed honorary surgeon to the King in the following year. He was also a justice of the peace for Hampshire. In 1893 he married the daughter of Mr E Haynes of Trimbleby, Yorks, and had one son and two daughters.

Lieut Colonel John Lloyd Thomas Jones, Bombay Medical Service (ret.) died in London after a long illness, on November 12th, aged 63. He was the fourth son of the late Rev Thomas Jones of Tremadoc, Carnarvon afterwards of Criccieth and was educated at St Bartholomew's Hospital and Durham University where he graduated M.B. in 1885. He took the M.R.C.S. in the same year. In 1893 he took the D.P.H. Camb. He entered the I.M.S. as surgeon in October, 1887, became lieutenant-colonel after twenty years' service and retired in April, 1918. Most of his service was spent in the Assay Department in which he held the posts of deputy assay master of the Bombay Mint, assay master of the Calcutta Mint and assay master of the Bombay Mint, successively. Before joining the Assay Department he had the ordinary experience of an I.M.S. officer after a period of military service he was in civil charge at Ratnagiri and Karwar, and was later civil surgeon at Kaira, Broach and Aden. In 1897 he was appointed on famine duty and served as sanitary commissioner and plague officer at Poona. He did much to overcome native prejudice to segregation and received the thanks of the Government of India. His funeral took place at Tabor, near Criccieth. Among those present were his brothers, Sir Robert Armstrong Jones and Mr Towden Jones, and his nephew, Sir Thomas Carey Evans.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS

ANNUAL MEETING OF FELLOWS AND MEMBERS

THE annual meeting of Fellows and Members of the Royal College of Surgeons of England was held on November 19th. The President, Sir JOHN BLAND SUTTON, Bt., was in the chair, and the attendance was much larger than in recent years.

Dr HADEN GUEST, M.P., moved the usual resolution affirming the desirability of admitting Members to direct representation upon the Council of the College, which, as at present constituted only represented those Members who held the Fellowship. The resolution went on to urge that the constitution of the Council should be in keeping with modern ideas of true representation and more in conformity with the present day requirements of Members and Fellows, and that the opportunity afforded by the application to the Privy Council for a supplementary charter to give authority for certain changes should be taken to insert a provision therein for some representation of Members, as such, upon the Council. Dr Guest said that it was remarkable that in a body which contained so large a proportion of Members to Fellows (17,361 to 1,786) the Members should have no direct voice in administration and control. He did not wish so much to criticize the method of control in the past as to suggest that it was not adequate to the present time. The situation was also remarkable because similar resolutions had been carried year after year and nothing had been done. In the House of Commons, if a resolution was passed once, it might not become operative for various reasons, but if it was passed twice there would be some threatening even in the most adamant of Governments, and he could not conceive the House of Commons or any other public body having a resolution passed thirty six times and taking no notice of it. The College had great powers of control and direction in the matter of examinations and medical and scientific education, and it would surely be advantageous to have the experience of the ordinary general practitioner brought into its councils. Again, the College owned £400,000 worth of property, but this was managed, as also was its large income, entirely by the Fellows—no doubt with exemplary correctness from the business point of view, but perhaps not in the best way possible to carry out the duties imposed upon the College by Act of Parliament. The opportunities available to the College for guiding research were not as well used as they might be if Members were added to the Council. The College might become an active body in scientific investigation, and a vast unused store of knowledge and capacity might be made available to it, if only the general body of Members, so very many of whom were general practitioners, were brought into consultation and linked in some organic way with its work.

Mr LAWSON DODD, in seconding the motion, said that the frequent argument that the Society of Members was a small body was not relevant. The size of a society had no relation to the justice of its claims. This was a demand on the part of children for a closer union with the parent—rather a refreshing thing in these days. If there was apathy in this matter it was due to want of function. The way to remove apathy was to give the Members some connexion with the Alma Mater from which they had derived their privilege to practise. The possession of great wealth and power by a section of the community, and especially by a section of the profession did not tend towards affection and good relationship, and especially was this the case when the power had been filched from the larger body and concentrated in the smaller. With a closer link between the rank and file of the profession and the Council the number of individual benefactions to the College, which in the past had been very small, would possibly be greatly multiplied. He reminded the Council that this was not the demand of an ultrate community for the extension of a franchise; it was the demand of colleagues, men whose history had been the same as those to whom they appealed, differentiated perhaps only by a year of additional training. The concession which was being asked for was not such as to weaken the Council, on the contrary, it would enormously strengthen the Council; the result would be to give the College greater authority, wider sanction, larger influence in the eyes of the public, and the granting of this request would bless not only him who received but him who gave.

The motion was supported by Dr I. G. LLOYD, Dr ARTHUR HAYDON, and other speakers, and was carried, with three dissentients.

Sir JOHN BLAND SUTTON said, in reply, that he would not attempt to traverse any of the remarks made by the mover and seconder of the resolution. The decision on this matter did not rest with the President, as some of the speakers

seemed to think, to his disparagement. The Council, of whom the President was merely the spokesman. But he would tell the Members that the Council was anxious to get a supplemental charter, and had already received a deputation from the Members with regard to the terms of the charter. The Council intended to give the matter its very serious consideration, and for this reason, that the Council was a changing body in the way of its membership, there had been great changes in the Council by death and resignation during the last few years, and he thought, and his colleagues thought, that it would be a good opportunity to ascertain the earnest wishes of some of their younger members. They intended to give this matter very earnest consideration, and that without any delay, before the supplemental charter was sent in to the Privy Council (Loud applause).

UNIVERSITY OF LONDON

A COURSE of five lectures on the physiological and pathological activities and functions of bacteria will be delivered in the theatre of the Royal College of Surgeons, Lincoln's Inn Fields, W.C., by Dr F. W. TWORT, superintendent of the Brown Institution, on December 7th, 8th, 10th, 11th, and 14th, at 4 p.m. Admission is free, without ticket.

UNIVERSITY OF BRISTOL

THE Long Fox memorial lecture will be delivered by Dr CAREY F. COOMBS in the Physiological Theatre of the University of Bristol on Wednesday, December 9th at 8 p.m. The subject selected being, the etiology of cardiac disease. Medical practitioners are cordially invited.

SOCIETY OF APOTHECARIES OF LONDON

THE following candidates have passed in the subjects indicated:

SURGERY—T. M. Beattie, N. Cohen, S. E. Henty, M. Hook, B. Horwitz, J. M. F. Whitby, D. Winstanley.

MEDICINE—V. G. Crowley, N. O. Ghose, B. D. Jau, E. Reisel, E. W. D. Long, J. Mindess.

FORENSIC MEDICINE—M. Bannounah, A. M. El Mishad, C. L. Froehlich, M. Hook, J. Mindess, S. R. G. Pimm, L. A. Rostant, F. Wladko.

PHARMACY—C. L. Froehlich, F. W. Hayward, S. L. Henty, F. G. Martin, H. A. Sack, F. Wladko.

The diploma of the Society has been granted to Messrs C. L. Froehlich, M. Hook, F. G. Martin, and D. Winstanley.

Medico-Legal.

DIAGNOSIS OF DISLOCATION

FREEBORN & LEEMING

THE Court of Appeal, consisting of Banks, Scrutton, and Atkin, L.J.J., on November 20th dismissed the appeal of Mr. George Freeborn from the decision of the Divisional Court of the King's Bench allowing the appeal of Dr. Robert Leeming, medical officer to the Kendal Board of Guardians, from a judgement of Judge Chapman in the Grimsby County Court mulcting Dr. Leeming in £1,800 damages for negligence in failing to diagnose Mr. Freeborn's dislocated hip. Previous proceedings in the county court and the Divisional Court were reported in the BRITISH MEDICAL JOURNAL on March 14th (p. 534) and June 27th (p. 1200). It was admitted that Dr. Leeming was within the protection of the Public Authorities Protection Act, 1893, which provides by Section 1 that "the action shall not lie or be instituted unless it be commenced within six months next after the act, neglect, or default complained of, or, in case of a continuance of injury or damage, within six months next after the ceasing thereof, and the question on appeal was whether the plaintiff commenced his action within the prescribed time.

The facts shortly were that on September 5th 1923 the plaintiff was run over by a motor car, his hip being dislocated, and on September 6th he was conveyed to the Kendal Workhouse Infirmary where he was treated by the defendant. Whilst no constitutional relation existed between the plaintiff and the defendant, it was not denied that the defendant was under a duty to exercise reasonable care and skill. The plaintiff left the infirmary on October 16th 1923 by his own desire and was seen by other doctors who discovered the dislocation. Owing to the lapse of time, however, its reduction had become impossible and an operation resulted in a shortening of the leg rendering the plaintiff permanently unfit for heavy work. The county court judge found as a fact that the defendant did not make any proper or sufficient examination of the plaintiff on admission to the infirmary, and did not discover the dislocation.

The plaintiff sued his writ in the High Court on April 25th,

...days after he left the defendant's care, consequently pleaded the statute. The court judge held that it was not a case of "a continuance of injury or damage" beyond October 15th, but he further held that the time limited by the statute did not begin to run until the cause of action arose, that no cause of action arose until damage resulted to the plaintiff, that no damage resulted until such time as plaintiff, if properly treated, would have been fit to return to work, which would have been less than six months before action was brought. He therefore gave judgment for the plaintiff.

The defendant appealed, and the Divisional Court (consisting of Salter and Swift, JJ.) held that the damage began to accrue from the date of the neglect or default, and that the action was out of time. The plaintiff then appealed.

Judgement of Banks, L.J.

Lord Justice Banks in his judgement, said: In this case the plaintiff brought an action against a medical man claiming damages for negligent treatment. The facts, so far as it is material to state them are that the plaintiff was knocked down by a motor car and was injured. He was removed to the hospital, where he was attended by the defendant. As found by the county court judge, the defendant was negligent in failing to diagnose what the plaintiff was suffering from. Had he done so the plaintiff would have recovered within a short period of time. As it was he remained in the hospital for some time and then, being dissatisfied with the treatment, he left, and submitted himself to other medical men, who advised an operation, which necessarily resulted in the permanent shortening of one leg. The action was not commenced within six months of the plaintiff leaving the hospital and ceasing to be attended by the defendant. The defendant pleaded the Public Authorities Protection Act, 1893. It was admitted for the plaintiff that the Act applied but it was contended that the action was not, in the circumstances, barred. It is obvious from a perusal of the schedule containing the enactments repealed, which go back as far as the reign of Queen Elizabeth that the Legislature intended in the case of actions against public authorities not only to substitute one time limit for all existing time limits, but by adopting a new definition of what constituted that limit to modify the existing law upon the subject. If it were open to this court to put its own construction on the language used, it would be necessary to consider very carefully what the construction should be and to discuss the various authorities which have been cited to day. As far as this court is concerned it must accept the construction put upon the language of the section in *Carey v. Mayor of Bermondsey* (67 J.P., 111). That was an action tried before Mr Justice Channell. The plaintiff had been injured by falling over a projection in the road which had been put there by the negligence of the defendants' servants. The fall and the injury occurred more than six months before action was brought. At the time the action was brought, the plaintiff was still suffering from the injury. The defendants pleaded the statute. The contention by the plaintiff's counsel was that the injury or damage to the plaintiff had not ceased when she brought her action, that the words of the section must be given their ordinary meaning, and that if the injury ceased immediately after the accident the damage still continued. Mr Justice Channell without calling on the counsel for the defendants, decided in their favour holding, in effect that the only case in which the time limit did not apply after the expiration of six months from the date of the neglect or default was where there was a continuing cause of action. This decision was affirmed in the Court of Appeal consisting of Lord Halsbury L.C. and Lord Alverstone L.C.J. (67 J.P., 44 and 20 T.L.R. 2). Counsel for the defendants urged that at the time of action brought the plaintiff was still suffering from the consequences of the defendants' negligence and that so long as she was suffering there was a continuance of the injury or damage. Lord Halsbury dealt with the argument as follows. He said: 'The language of the section was reasonably plain, and it was manifest that the continuance of the injury or damage meant the continuance of the act which caused the damage. It was not unreasonable to say that if there was a continuance of an act causing damage the injured person should live an action at any time within six months of the ceasing of the act complained of. But that was wholly inapplicable to such cases as the one before them where there was no continuance of the act complained of and where the only suggestion was that, in consequence of that negligent act the victim was not such a good man as he was before. Words had to receive a reasonable interpretation. The report in this case appears only in the *Justice of the Peace* and in the *Times Law Reports*. Whatever may be the proper inference to be drawn from that fact, the language used by the Lord Chancellor is unmistakably plain and this Court must accept it and apply it. I cannot distinguish the facts of this case from the facts in *Carey's* case and I am unable to agree with the view taken by the learned county court judge of a distinction which was suggested to him. The contention took this form: but for the defendants' negligence, it was said, the plaintiff would only have been laid up for so many weeks. The damage he suffered from loss of earning power during these weeks is attributable to the motor. The plaintiff's loss or damage due to the defendant's negligence only dates from the time when but for that negligence he would have regained his earning power. With every desire to assist the plaintiff I am unable to accept this contention and I think that the decision of the Divisional Court was right and this appeal must be dismissed with costs.'

Lord Justice Scrutton and Lord Justice Atkin delivered judgement to the same effect.

Obituary

We regret to record the death of Mr FRANK CROSS BARDSEY, of Wimpole Street and Salisbury, which occurred after a short illness on October 12th, at the age of 59. Mr Bardsley received his education at the University of Cambridge, where he graduated B.A. in 1888, and University College, London. He obtained the L.S.A. in 1891, and the degrees of M.A., M.B., B.Ch. Camb. in 1896. He was well known in Salisbury for his active association with the infirmary, to which he was appointed ophthalmic surgeon in 1912. He was also ophthalmic surgeon to the school clinic of the city. His London appointments included those of ophthalmic surgeon to the Willesden Hospital and the British Hospital for Incurables, chief clinical assistant to the Royal London Ophthalmic Hospital, and lecturer to the Church Missionary College, Islington. He contributed numerous articles on ophthalmological subjects to the *British Journal of Ophthalmology* and the *Transactions of the Ophthalmological Society*. Mr Bardsley was a member of the British Medical Association. He leaves a widow.

The following well known foreign laryngologists have recently died: Dr Carlo Biaggi of Milan (aged 62), Professor Capart of Brussels (aged 80), Professor Schuiffers of Liege (aged 77), and Dr Chetellier of Paris (aged 70).

Medical News.

MR HARVEY HADDEN of Berkeley Square, London, has contributed £1,000 to the endowment fund of the James Mackenzie Institute for Clinical Research, St Andrews. The county of Perth has contributed £7,500 as a tribute to the late Sir James Mackenzie, the founder of the Institute, who was born in that county.

INVITATIONS have been issued for the winter livery dinner of the Society of Apothecaries of London to be held in the Society's Hall, Blackfriars, on the evening of Tuesday, December 15th.

THE Lady Priestley Memorial Lecture before the National Health Society will be delivered by Dr Robert Hutchison at the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W., on Thursday, December 3rd, at 5 p.m. The subject of the lecture will be diet in childhood and adolescence.

ON November 30th, at 5.30 p.m., Mr Herbert Tilley will lecture for the Fellowship of Medicine on tuberculosis of the larynx in the lecture hall of the Medical Society of London, 11, Chandos Street, W.1, the lecture is free to all members of the medical profession. From November 30th to December 13th the Infants Hospital will hold a special afternoon course, with the exception of Sunday, when a morning visit will be paid to the Charles Ian Clinic. Lectures and demonstrations will be given by members of the staff, and visits made to the Nursery Training School, Hampstead Garden Suburb, and the Home for Blind Babies, Chorley Wood. The Hampstead General Hospital will hold a late afternoon course from December 7th to 19th covering medicine, surgery, and the special departments. At the Blackfriars Hospital for Diseases of the Skin a course in dermatology will be given from December 7th to 19th, instruction will be given in the out-patient department and venereal clinics twice weekly. The following special courses are announced for January: Medicine, surgery, and the specialties at the Prince of Wales's General Hospital, cardiology at the National Hospital for Diseases of the Heart, diseases of children at the Queen's Hospital, infectious fevers at the North Eastern Hospital, neurology at the West End Hospital for Nervous Diseases, and psychobiological medicine at the Bethlem Royal Hospital. A copy of each syllabus and the Fellowship general course programme will be forwarded on application to the Secretary to the Fellowship, 1, Wimpole Street, W.1.

A THREE months' course of lectures and demonstrations in hospital administration will be given by the medical superintendent (Dr E. W. Goodall) at the North Western Hospital of the Metropolitan Asylums Board, Lawn Road, Hampstead, N.W., on Mondays and Thursdays at 4.45 p.m., and alternate Saturdays at 10.30 a.m., commencing on Thursday, January 7th, 1926. The fee for the course, which complies with the requirements of the revised regulations of the General Medical Council, is £4 4s.

At a general meeting of the Röntgen Society at the British Institute of Radiology (32 Welbeck Street London, W 1), to be held on Tuesday next at 8.15 p.m., the second Röntgen Award will be made to Dr. Robert Knox for his paper on the investigation of the movements of the heart by the use of the slit diaphragm and the moving film. Papers will be read on microscopical for induction coils, by Mr. R. J. Stephenson of University College, Reading, and on oscillographic observations on induction coils and transformers, by Dr. L. A. Owen of the National Physical Laboratory.

Owing to the death of Queen Alexandra the dinner in aid of the National Association for the Prevention of Tuberculosis, which had been arranged for December 9th, has been indefinitely postponed.

AMONG the recently elected Fellows of the Royal Sanitary Institute are Dr. G. W. Neild Joseph (M.O.H. Warrington), Dr. A. B. McMaster (M.O.H. Dover), Dr. Frank Robinson (M.O.H. Crumlin, Leicestershire), Lieutenant-Colonel B. J. Singh, Director of the Medical and Sanitary Department, Hyderabad, and Dr. D. L. Thomas (M.O.H. Stepney).

THE Tolmorden Medical Society has made a donation of 10 guineas to Lpsom College.

THE Umberto I prize of the Rizzoli Orthopaedic Institute in Bologna for 1924 has been awarded to Dr. Alaziz Farhas of Budapest for his essay on the etiology and pathology of the scolioses.

DR. COLSON of Durant has been elected president of the Belgian Royal Academy of Medicine for 1926, with Professor Guillaumeaerts of Brussels and Professor Friederich of Liege as vice presidents.

THERF has recently been a great increase in the number of local outbreaks of typhoid fever in Germany. During the first thirty weeks of the year 5,903 cases were notified throughout the country, as compared with 5,356, 5,273, and 5,996 in the corresponding periods of 1922, 1923, and 1924.

THE incidence of small pox in Switzerland of recent years is shown by the following figures: 1915-20, 14 cases; 1921, 595; 1922, 1,159; 1923, 2,445; 1924, 1,245; January to May, 1925, 156.

ACCORDING to the *Deutsche medizinische Hochschrift* there has recently been an outbreak of swimming bath conjunctivitis in several schools in Germany.

THE von Graefe prize of the German Ophthalmological Society is to be divided equally between Professor Seidel of Heidelberg and Professor von Szily of Münster.

IN the Bulletin for 1925 of the Ophthalmological Society of Egypt, which was founded in 1902, a report is given of the annual meeting in Cairo on March 6th, together with the clinical papers read at it.

THE birth rate in Prussia, which was 27.7 per 1,000 inhabitants in 1913, fell to 26.1 in 1921, 23.7 in 1922, 21.7 in 1923 and 21.1 in 1924. In Bavaria 207,457 children were born in 1913, 177,943 in 1923, and 171,951 in 1924.

THE Académie de Médecine of Paris has been left a legacy of 50,000 francs by Madame Alphonsine Matilde Maure for founding a biennial prize, to be known as the "Prix Docteur Jules Brault," for the best work on exotic pathology or dermatology.

THE engineer, Dr. G. Schmaltz, has recently been made an honorary doctor of medicine at the Frankfurt Medical Faculty for his work on the physiology of the labyrinth.

DR. CHARLES MAYO has been nominated officer of the Legion of Honour.

AS a memorial to the Rev. E. H. Mosse of St. Paul's, Covent Garden, who was killed in 1918 during an air raid on London, a mission hospital was erected at Ta Tsung Lu, a city in the Shan Si Province of Northern China, inhabited by a primitive and intensely conservative population. The first outpatients were received at the end of 1922, and accommodation was provided for inpatients in December, 1923. The first annual report (issued by the S. P. G.) indicates gratifying progress in the face of great difficulties. The number of inpatients during the first year was 396, and of outpatients 2,464. Venereal disease is very rife and mixed infections of tubercle and syphilis are frequent. The commonest eye affection is trachoma, and copper sulphate has been replaced by zinc sulphate with advantage. Synechiae are rare, though in the corneal region, regions of North India they are very common. Xerophthalmia is often encountered but has rarely yielded to cod liver oil and a well balanced diet. No cases of malaria, filaria, or leprosy have been dealt with, but ticks and osteomyelitis are common and severe, possibly, it is suggested, owing to the considerable amount of oatmeal eaten in the district. Although no acute rheumatism has been reported, yet valvular disease of the heart occurs in young subjects, and many cases show lesions of the aortic valve despite freedom from syphilis.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notices to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring PEPHINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1 on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the *Journal* should be addressed to the Financial Secretary and Business Manager.

THE TELEPHONE NUMBERS of the British Medical Association and the *British Medical Journal* are: **MUSEUM 9361** (9.30 a.m. to 5 p.m.) and **9363** (internal exchange four lines).

THE TELEGRAPHIC ADDRESSES are: **EDITOR of the British Medical Journal, Antiology Westcent London**.

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc.) *Antiology Westcent London*.

MEDICAL SECRETARY *Mediscien Westcent London*.

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams: *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Drumshugh Gardens, Edinburgh (telegrams: *Associ e, Edinburgh* telephone 4361 Central).

QUERIES AND ANSWERS

"THERF"—The condition was probably due in the main to the local anaesthetic associated with malnutrition and emotional disturbance.

BAGGI ETALINS

"J. G. B." asks for information as to the pathology of "big" eyelids met with in apparently healthy individuals of middle age.

CRACKED NIPPLES

"E. K." writes: If "Medicins" (*JOURNAL* November 14th p. 927) will provide his patient with cracked nipples with Wansborough nipple shields lead to be worn continuously he will have no more trouble with this condition. No drugs are required. The shields have served me well in scores of cases.

TREATMENT OF ASTHMA

In reply to the inquiry published in the *JOURNAL* on November 14th (p. 927), Dr. J. P. FINE (Leamington Spa) writes that he has found nothing so successful as an early hypodermic injection of morphine (gr. 1 especially if it induces sickness). He also recommends a trial of euphonia. Inhalation he found usually relieved difficult breathing and oppressive headache. According to Martindale's *Extra Pharmacopoeia*, euphonia contains caffeine and iodine and it is taken by the mouth, 1 to 4 drachms daily before meals.

INCOME TAX

Expenses on Entering a Practice

"A. Y. Z." has recently entered a practice and has had to pay a considerable sum for legal agreements. Is he entitled to any allowance for this or for the cost of ledgers and similar books?

* * The broad distinction with regard to such expenditure is that between capital outlay and sums expended in the ordinary course of professional work. The legal expenses—if in connexion with the partnership agreement—are not allowable, they were incurred by "A. Y. Z." in entering the practice not in carrying on his work but we consider that the cost of the books of record should be allowed. The latter expense would, we believe, be allowed in the case of a person setting up in business and in regard such sums—which after all are expended merely in the purchase of professional stationery—as representing capital outlay seems to be an unreasonable straining of the principle.

Car Transactions

"H. F. W." bought a second hand car in March 1924 for £85, in November of the same year he sold it for £30 and bought a new car of another make for £263. How much is he entitled to deduct?

* * Of the net expenditure of £263-£50=£213 £85 was incurred in replacing the old car and that amount can be charged as a professional expense of the year in which the expenditure was incurred. The £213 forms the basis of the depreciation allowance to be claimed from the gross (average) assessment, the allowance will be £213 at 15 per cent =£32. The reply in a former issue to which "H. F. W." refers was not based directly on any particular case but was in accordance with the generally recognized principles of law.

URTICARIA
DR. CURRIE (Wokingham) writes in reply to "N. L."
 "I would refer him to Dr. Henry
 [illegible] and desensitization in skin
 [illegible] JOURNAL, October 24th 1925], where
 [illegible] injections is described. Since
 [illegible] per I have treated in this way a
 similar case of six months duration, and already after four
 injections there is remarkable improvement."

R. W. L. WAINWRIGHT (Henley on Thames) writes to advise
 "N. L." to try the intravenous injection of afebril, a calcium
 preparation sold by Knoll. Our correspondent has tested it in
 two severe cases in both instances with success. He offers to
 give "N. L." further information if asked.

R. H. M. WALKER (Harrow) writes: "I would suggest that the
 most useful treatment consists of a course of 6 to 12 injections of
 1 c.c. of colloidal calcium (Crookes). Should this fail it might be
 well to have a bacteriological examination of the throat and
 bowel made. Some cases of auto-intoxication particularly from
 a streptococcal infection appear to be marked by an instability
 of the vasomotor system and are considerably benefited by local
 treatment by alimentary antiseptics and a course of autogenous
 vaccines. Should there be any fibrositis in the subcutaneous
 tissues massage is, I think, an important means of treatment in
 addition to the above."

R. J. BARKER SMITH (London) writes: "I strongly recommend
 "N. L." to treat his patient as a potential diabetic and to
 examine the urine for so small a quantity of sugar as 2 per 1,000.
 He should take notice of the specific gravity of the sample sent,
 and examine several samples, he may possibly find also a
 diabetic in the family. Should "N. L." take 1 c.c. of L. H. King's
 solution he may even miss the yellowish red reaction of sugar,
 the contents of the tube brown. One drop of urine on a silica
 crucible lid or on a small strip of aluminium sheet held by a
 spring linen peg carefully evaporated to an extract and the
 extract then charred thoroughly or carbonized plunge the strip
 into cold water and rub with soft finger tip the sugar char
 remains. It is the best of tests. Give diaphoretics."

LEAD SALTS IN CANCER

R. GEORGE C. BELCHER (Birmingham) writes: "Some years ago,
 when using lead as a haemostatic in a case of malignant growth,
 to my surprise it had the effect of arresting the advance of the
 tumour, and from that time to this I have always used lead
 acetate internally for inoperable cases of cancer sometimes
 with very marked improvement. What the effect may be on
 the cells I cannot say, but patients diagnosed by competent
 surgeons as having inoperable growths are alive and well to day,
 whether the growth is in abeyance or entirely destroyed there
 is no symptom at the present time and this in some cases after
 several years. The salt has to be administered in heroic doses
 to get the patient under its toxic influence—one grain and a half
 daily for the first week, and then the same dose twice a day until
 the patient becomes a pasty yellow which takes some weeks
 it is then dropped entirely and no treatment applied except for
 other symptoms. It is surprising how in time if the patients
 recover they lose this condition of lead cachexia and the skin
 becomes pink and normal. Of course every case does not respond.
 Growths of the neck do not seem to be affected by it."

RHEUMATOID ARTHRITIS

MR. W. VERNER FURLONG (Dublin) writes with reference to the
 letter signed "A. Vietum" (JOURNAL, November 14th, p. 922) to
 suggest the use of iodolysin, and mentions a case of advanced
 rheumatoid arthritis in which administration of the drug
 (20 drops in water twice daily) proved very beneficial. Iodolysin,
 according to Martindale's *Letra Pharmacopoeia* contains 43 per
 cent of thiosamin and 47 per cent of iodine. It is there noted
 that Sir Thomas Horder has spoken well of the drug adminis-
 tered in pills equivalent to 7½ grains of potassium iodide, two to
 six pills are to be taken daily after food. The combination was
 found to be tolerated and to be less depressing than potassium
 iodide.

APPARENT STILLBIRTH RECOVERY

MR. W. L. BLACKFORD (Cheslyn Hay, Staffordshire) writes:
 "On August 14th 1925, I delivered a woman a different forceps
 case of a full term male child weighing 9½ lb. She had a
 small round pelvis and the presentation was occipito posterior,
 it was turned to left occipito anterior after considerable effort.
 A small perineal tear was sutured. When delivered the child was
 very blue, no respirations were present and no heart beats were
 audible to the ear placed near the child's bare chest. For
 thirty to sixty seconds I attempted artificial respiration without
 success. The heart was still silent. I took up 1½ c.c. of
 pituitrin into a 1 c.c. hypodermic syringe and having cleaned
 and sterilized the left chest with methylated spirit I plunged
 the needle through an intercostal space into where I considered
 the heart to be. The needle went in half an inch to outside of
 the left edge of the sternum and was in the fourth left intercostal
 space. I then began artificial respiration again by Marshall Hall's
 method. About one to two minutes later I again listened to the
 heart and heard it beating loudly and steadily at about forty to
 fifty beats a minute. I then placed the child in a hot bath and
 attempted Silver's method. The child still did not breathe,

so I commenced mouth to mouth respiration through a clean
 napkin. This I kept up for about thirty to forty minutes, when
 the child gave a sighing expiration voluntarily. I redoubled my
 efforts, and was rewarded by the slow onset of normal respiration
 at the end of an hour from birth. I then gave a hypodermic
 injection of strychnine, 1/100 grain, and put the infant to bed
 with hot bottles around it. When I left it the child was still
 very blue but was breathing fairly easily. The next morning it
 was pink and warm and apparently normal. I, however, con-
 tinued to give strychnine (by the mouth). The question I should
 like to ask physiologists and pharmacologists is: Do they con-
 sider that pituitrin is capable of stimulating cardiac muscle to
 commence to contract or would it be more proper to look upon
 the case as one where the heart was beating very, very faintly,
 so as to be inaudible, and that the pituitrin reinforced the heart
 contractions already present? I must express my appreciation
 of the midwife Nurse Price. Her aid was invaluable, and
 without her assistance I might not have succeeded."

PERSIAN OIL

THE Anglo Persian Oil Company dates back to 1901, when Mr
 W. K. D'Arcy obtained a concession from the Shah of Persia
 The crude oil is brought down in pipe lines across the desert to
 the coast and shipped from there to Llandarey South Wales,
 where it is refined. The British Petroleum Company which is
 the distributing organization in this country has sent us a fello
 pamphlet containing many excellent drawings of life in ancient
 Persia and primitive Persia of to day, and giving briefly
 the story of the petroleum before it becomes the "B.P." petrol
 largely used with satisfaction by motorists. Copies of the pam-
 phlet can be obtained on application to the British Petroleum
 Company Britannia House, Moorgate Street, L.C. 2

ASSISTANTS STARTING IN RIVALRY TO PRINCIPALS

A MEMBER residing in Glasgow writes to warn practitioners to
 require every assistant to sign the usual bond not to begin in-
 dependent practice within a specified distance of his own resi-
 dence. In three recent instances within his own knowledge (all
 of them women practitioners) the assistant refused to sign the
 bond after being with the principal for some time. He goes on
 far as to suggest that such cases might be brought to the notice
 of the General Medical Council on the ground of indirect
 canvassing.

CANCER AND DIET

The possible association of cancer with some irregularity of diet
 has for long been the subject of thought and inquiry. Dr M.
 Hindhede of Copenhagen has published the results of a careful
 study of cancer statistics from this point of view in the *Acta
 Medica Scandinavica* for October 24th. He finds that the death
 rate from cancer is higher in Denmark than in any other
 country and that the disease is increasing rapidly. In 1900 the
 rate was 120 per 100,000 inhabitants in Danish towns, while
 Sweden showed a death rate of 100 to 108, the corresponding
 figures in London were 112 in Paris 111, in New York 77, and in
 Calcutta 12. Comparison of different classes of the community
 seems to him to indicate some connexion between cancer and
 overfeeding during the time of war raising the cancer
 mortality in Denmark fell to the level of that in Sweden.
 Hindhede thinks that English statistics indicate a higher inci-
 dence of cancer in those callings whose members indulge in
 abundant food and alcohol, and infers from this that a high
 protein standard is not only unnecessary but actually harmful.
 He concludes that among the main causes of cancer must be
 reckoned irritation of the alimentary canal from the consumption
 of decayed, strongly salted and spiced foods the use of alcohol
 and tobacco, and over nourishment by varied savoury foods with
 an excessive protein content. It will be remembered that
 Dr Hindhede read a paper on alcohol restriction and mortality
 before the Section of Medical Sociology at the Annual Meeting of
 the British Medical Association in Glasgow in 1922 (JOURNAL,
 1922, ii p. 248).

A DISCLAIMER

SIR JAMES DUNDAS GRANT (London W.1) writes: "My attention has
 been called to the issue of a leaflet announcing a lecture which
 I was recently invited to give to members of the Young Men's
 Christian Association, at their hall in Aldersgate Street. On
 hearing of it I at once telephoned to the secretary that no further
 distribution should take place. I need hardly say it was issued
 without my knowledge."

ROAD PLANS

THE Dunlop Rubber Company Ltd. has now issued the sixth
 volume in its series of pictorial road plans, *On the Road*,
 published by Ed J. Barrow and Co. Ltd. of Cheltenham,
 price 6d. This describes for the benefit of motorists, in thirty five
 strip maps the 394 miles of the Great North Road which
 link together London and Edinburgh.

CORRECTION

We regret that in last week's issue lines 7 and 8 in column 1 of
 page 939 were by some inadvertence transposed.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges
 and of vacant resident and other appointments at hospitals
 will be found at pages 40, 41, 44 and 45 of our advertisement
 columns and advertisements as to practitioners, assistantships,
 and locum tenencies at pages 42 and 43.

A short summary of vacant posts notified in the advertisement
 columns appears in the Supplement at pages 187 and 188.

A British Medical Association Lecture ON THE SYMPTOMS AND SIGNS OF ABDOMINAL CRISES IN CHILDREN.*

BY

JOSEPH E. ADAMS, M.S., F.R.C.S.,

SENIOR SURGEON, EAST LONDON HOSPITAL FOR CHILDREN,
SURGEON TO ST. THOMAS'S HOSPITAL

My definition of an abdominal crisis is a condition which demands the mind of a physician to diagnose and the hands of a surgeon to treat. Fortunately is the man who can exercise both these faculties, and till more fortunate the patient who calls him into consultation. Moynihan has said that the abdominal surgeon is a physician who is condemned to precise surgery. The double role, then, is not an impossibility. In these days acute abdominal diseases are no less of a mystery than they were, and it is recognized that we ought, as a rule, to know the nature of the lesion before we open the abdomen. Nevertheless, the sick child will always present a particularly difficult problem, and I have the greatest sympathy with "The Doctor" in that well known picture by Sir Luke Fildes, for he obviously has not the faintest idea what is the matter with the child. It is more than half the battle to know when to open the abdomen, and the man who makes the fewest mistakes in diagnosis deserves the highest praise, for he will run the smallest risks with his patients' lives. This is, indeed, the counter with which we gamble, for abdominal exploration in sick children is a thing to be avoided. Whatever is done must be done quickly. Children are not good subjects for abdominal surgery, and much time is lost if the diagnosis is not made until the abdomen is opened.

For these reasons I propose to endeavour to put this subject before you from the purely clinical standpoint. The materials at our disposal will be the history of the illness and the patient, coupled with our book learning and our experience. These last two are perhaps the more important, for diagnosis is largely a question of assessing the odds, and from books and experience we can learn what the odds are. The history of the case and the evidence of the patient are notoriously deficient in the case of children, and in hospital cases this help is merged to a degree.

The three steps in diagnosis are suspicion, probability, certainty. If a young child is brought to hospital with a history of passing blood and mucus per anum we naturally suspect intussusception. If inquiry proves that the onset was sudden and the trouble started with a fit of screaming in which the child was doubled up, it makes intussusception the probable diagnosis. If examination reveals a sausage-shaped abdominal tumour which can be rolled up and down, and still further if the apex of the intussusceptum can be felt by the rectum, all doubt is at an end and the diagnosis becomes certain. The history consists of two parts—first, the predominant symptom or chief complaint, and secondly, the progress of events following the onset. As we are dealing to-night with acute abdominal disease, suddenness of onset is of the essence of the contract. The previous health may or may not have been good—that will be ascertained with the detailed history, but the starting point of our discussion is an acute onset suggestive of abdominal disease. What, then, are the cardinal symptoms of such disease? Abdominal pain, vomiting, alteration of the bowels from their normal phase of activity. The physical signs are alteration of abdominal contour, rigidity of abdominal muscles, and the presence of an abdominal tumour or mass. All other symptoms and signs are supplementary or complementary to these in a positive or negative sense, though I must add that many examination may by itself give the whole clue to the correct diagnosis. I may perhaps remark here

that to make a diagnosis of an abdominal crisis without knowing the state of the mind is not possible.

The child and the adult differ, but the difference is exaggerated, though it is true that the field for diagnosis in children is limited by the fact that certain lesions are almost unknown in the first decade of life. Perforation of a gastric or duodenal ulcer and acute cholecystitis will at once occur to you as belonging to this almost unknown category. There are, however, examples of diseases very rare in adults but common in children. I need only mention intussusception and tabes mesenterica. Our book learning or personal experience is of the greatest value in this connection, for when we approach the patient with an abdominal crisis we must be aware of all the possibilities and weigh them up as against the probabilities suggested by the history of the case. Another point of importance is the fact that specific fevers not infrequently have a pseudo-abdominal onset, and we must be particularly careful to bear in mind that when the history of the case is scanty we may easily mistake lesions above the diaphragm for those of the abdomen itself. Lesions which simulate acute abdominal disease must first be eliminated from the diagnosis. This may be done by instinct in many cases, but in others a conscious reasoning process is necessary, and oftentimes a very minute examination of the patient is required in order to rule them out. Perhaps we cannot do better than pass rapidly in review those extra-abdominal diseases which are likely to prove traps for the unwary diagnostician in the case of young children.

THE SPECIFIC FEVERS

1 Scarlet Fever

Vomiting is common at the onset, and if it is repeated and severe, as it sometimes is, abdominal disease, even peritonitis, may be simulated. Abdominal pain is sometimes complained of. The existence of a sore throat, high temperature, and very rapid pulse at the onset put one on the right track. If the disease is seen later the characteristic rash should solve the problem.

2 Enteric Fever

This can hardly be described as an extra-abdominal disease, and at its onset it is sometimes remarkably like an attack of appendicitis. If the abdominal pain and tenderness be almost confined to the right iliac fossa there may be the greatest difficulty, but it is important to remember that the pulse in typhoid is slow in proportion to the temperature, there is apt to be mental confusion or torpor, headache, and the abdomen is tumid without reflex rigidity. A leucopenia is present rather than a leucocytosis. Examination of the stools by culture, or of the blood in an ox-bile medium, will go far to establish the diagnosis in the days before a Widal reaction will be a reliable guide. A typhoid perforation certainly comes under the heading of an abdominal crisis, one of the most serious, but this disaster rarely occurs before the third week of the disease, and thus the diagnosis is made easier. This complication is usually associated with a sharp fall of temperature, severe abdominal pain, and acceleration of the pulse rate. Local tenderness and rigidity are the leading physical signs.

3 Mumps

Metastatic pancreatitis is well known as a complication of mumps, but as far as I am aware it rarely occurs in children, and the condition of the salivary glands is always a predominant feature of the disease.

4 Influenza

The gastro-intestinal type of influenza with colicky pains, diarrhoea, and vomiting does call for careful scrutiny. The pulse is apt to be slow and the temperature high. Pains in the back and limbs, together with orbital headache and prostration, are especial features. These are often associated with the usual symptoms of respiratory catarrh.

INTRATHORACIC DISEASES

1 Pneumonia

Of all the lesions above the diaphragm this is most likely to lead to error. Most surgeons of experience have to confess to having removed the appendix for

Let it be in the most often rises, and it has declined to operate when a surgeon or a medical colleague peritonitis nearly always have an on ratio and the *via nasi* may be active with the absence of sputum, and but little with pneumonia in children, accounts for the difficulty. It must be remembered that pneumonia in children is rarely of the true lobar variety, and the physical signs will be those of bronchopneumonia. Very rapid respiration should at once suggest the true nature of the disease, even if vomiting has occurred and abdominal pain is complained of. The temperature is a poor guide, but a high respiration pulse ratio is characteristic of pneumonia. The patient with lung disease likes to lie on his side, the peritonitic patient prefers to lie on his back with the thighs flexed on the abdomen. The flushed face, labial herpes, and very active *via nasi* are strongly suggestive of pneumonia. If there are signs of consolidation of the lung and the rigidity of the abdomen on palpation is intermittent, it is pretty certain that the real lesion is above the diaphragm, and I cannot lay too much emphasis on this absence of true and permanent rigidity, for it has enabled me to avoid laparotomy on several occasions. Such rigidity as is secondary to lung disease is voluntary rather than reflex.

It must, however, be remembered that peritonitis may be a complication of pneumonia. If it is a late one—and it most frequently is—the diagnosis is not difficult. But it may occur early in the disease, and evidence of fluid in the abdomen may be proof of a spread below the diaphragm.

2 Pleurisy and Empyema

The physical signs in cases of pleurisy, which may or may not be going on to the stage of pus formation, are sufficiently clear to enable a careful clinician to avoid mistakes, provided he thinks of such a condition. This is commonly accompanied by some voluntary rigidity of the abdominal muscles, but between the attacks of abdominal pain, which may be somewhat pronounced, there is full relaxation. The activity of the *via nasi* and rapidity of respiration should suggest a thoracic lesion. As regards fiction rub it is true that such a sound may be heard low down in the axilla as the result of peritonitis alone, whereas that due to pleural inflammation is usually audible at the base of the lung posteriorly. This is also, of course, the likely position for the dullness on percussion.

3 Pericarditis

This disease is apt to cause arrest of the movements of the diaphragm, and therefore the abdomen tends to become immobile. Such cases may easily masquerade as acute abdominal disease, since epigastric pain may be complained of and vomiting is sometimes severe. However, in cases of doubt a period of watching together with careful examination of the cardiac area, will probably make the diagnosis clear.

4 Heart Disease

Acute dilatation may be deceptive, but the urgent dyspnoea, with cyanosis and very rapid pulse, together with enlargement of the cardiac dullness should point away from the abdomen. Chronic disease of the heart is well known to cause vomiting, and abdominal pain may be complained of. Infection of the spleen or kidney may complicate matters but a careful examination of the heart will reveal signs of a positive character.

NERVOUS DISEASES

1 Intracranial Lesions

Tumour, abscess of brain, and meningitis are all causes of vomiting, and the vomiting may be incessant, even resembling that of intestinal obstruction. Tuberculous meningitis is particularly likely to be confused with abdominal disease. Vomiting, obstinate constipation, and

abdominal rigidity are its especial features. The abdominal wall, however, is likely to be retracted, a condition which is hardly ever associated with abdominal disease, except high obstruction or a very recent perforation. This is the so-called *carinate abdomen*, which in a very fretful child, who screams whenever he is touched, goes far to make up the picture of tuberculous meningitis, though the symptoms may be suggestive of abdominal disease. It is true that tuberculous peritonitis may sometimes be present, but this usually leads to a tumid abdomen. Further, perforation of a tuberculous ulcer may occur and the recognition of all these manifestations of tuberculosis would require a perfect genius to diagnose correctly. Most of these intracranial diseases lead to headache and coma in some degree, and if careful examination of the nervous system is made mistakes will rarely arise.

2 Functional Disease

Anorexia nervosa may go to such a pitch that the repeated vomiting resembles that of obstruction, but it is hardly likely to reach that stage in children.

TOXIC CONDITIONS

1 Cyclical Vomiting and Acetonaemia

The former term has rather gone out of fashion and the presence of acetone and ketones in the blood is recognized as responsible for the repeated vomiting which occurs in these cases. It is, indeed, a vicious circle disease, and children are its commonest victims. In a first attack the resemblance to an acute abdominal lesion, particularly appendicitis, is very close. The onset may be severe, with initial abdominal pain and early vomiting. There is often abdominal distension and tenderness, mostly due to the repeated vomiting. If the caecum is distended there will probably be tenderness in the right iliac fossa, and therefore the diagnosis of appendicitis will suggest itself. The appearance of the child, however, should help. The eyes are sunken, with dark rings beneath them, the face is pallid, and the lips rather bright in colour. There is lethargy, with restlessness, and true sleep is not obtained. The tongue is coated and the breath—the most characteristic sign—is heavy, with a sweetish odour. This may pervade the room, if the child is not seen in a hospital ward. Listlessness, thirst, and absence of desire for food are notable symptoms, and probably there will be a history of constipation, with lack of energy, for some days before the vomiting has occurred. As the disease progresses coma and delirium make their appearance. The diagnosis, of course, depends on a careful urinary analysis, and, if time permits, a chemical examination of the blood. It must be remembered, however, that acetonaemia is a result of repeated vomiting from any cause, and therefore one must be quite sure that there are no positive signs of the acute abdomen before resting satisfied with the diagnosis of primary acetonaemia. The question is one of degree, and if the acetone overshadows the other aspects of the case it is clear that this must receive immediate attention. Without going into the details of treatment I may remark that the response, even in grave cases, is most prompt.

2 Uræmia

It is well known that gastro-intestinal symptoms may dominate the clinical picture in uræmia, but I think this is far more likely to arise in adults than in children. Paucity of urine and its high albumin content should settle the diagnosis.

OTHER DISEASES

1 Intestinal Colic

Several times have I had difficulty in diagnosing between "green apples" and appendicitis. Many errors in diet may give rise to irregular and excessive peristalsis. Severe gripping pains with intermittent abdominal rigidity and some degree of collapse are met with, but sooner or later diarrhoea is manifest, and thus, together with a careful history, will usually prevent erroneous diagnosis. The pain of simple colic is nearly always relieved by pressure, and thus a peritoneal lesion is differentiated from it.

2 Food Poisoning

This, as distinct from unsuitable or indigestible food, is associated with vomiting and early diarrhoea, and collapse out of all proportion to the degree of abdominal pain.

3 Ilac Abscess

Many lesions may be responsible for such an abscess, and if it is situated in the right iliac fossa it may easily simulate an appendix abscess. The peritoneal physical signs, even if vomiting has occurred, will not be found to substantiate the false diagnosis, and investigation should lead to the discovery of the source of the pus, whether it be bone, joint, or glands. Probably the last is the most frequent source of doubt, but the low position of the abscess and its proximity to the pelvic brim are signs to differentiate it from an appendix abscess. Inspection of the leg will probably show a boil or septic cutaneous lesion. Flexion of the right hip is met with in appendix abscesses. Similarly a psoas abscess may resemble an appendicular one, but such symptoms as are present are rarely acute.

4 Henoch's Purpura

A haemorrhagic diathesis is easily recognized if it presents external signs, such as bleeding from the gum and petechial eruptions. The disease, however, may affect the intestine and cause severe abdominal pain, vomiting, and the passage of blood and mucus per anum, and yet no spots may be seen nor evidence of bleeding elsewhere. Obviously such cases must at first sight resemble intussusception, and it may be that the correct diagnosis can only be made by the absence of the abdominal tumour without which an intussusception cannot really be diagnosed. In purpura it is common for vomiting to precede pain, in intussusception sudden and severe abdominal pain is almost invariably the initial symptom. Passage of blood by the bowel is not constant in Henoch's purpura, and probably this depends on the site of the intramural effusion of the bowel—the lower down it occurs the more likely is there to be bleeding per anum. If bleeding from the gums is present, and especially if reddish-purple spots are seen over the body, the diagnosis becomes easy, but the disease is on the whole a rare one. Of its etiology we are woefully ignorant. Some fever is common as well as abdominal tenderness. A tumour has been observed, and there are cases where it appears that intussusception has followed on Henoch's purpura. Evidence of such a sequence should be very conclusive before abdominal exploration is carried out.

I am afraid I may have wearied you with what must be regarded as an introduction to my main thesis, but in reality the mind of the clinician must contain thoughts about all these possible conditions. Consciously or unconsciously he must weigh them up, although the chief complaint and the leading signs in the case may enable him to discard them all. He then reaches the next phase, which is that of differential diagnosis among those acute abdominal states which demand operative treatment. He is convinced that an abdominal crisis is before him, but which is it? If abdominal diagnosis were degraded to the level of a guessing competition he would, in adults at any rate, plump for the appendix every time, for he would be right in 70 per cent of the cases. In children, however, the preponderance of intussusception and the prevalence of trouble due to tuberculous glands bring down the chances of appendicitis to about even odds. Everyone seeks to be right more often than wrong, and therefore we must apply our minds carefully to the diagnosis. Much depends on its accuracy, for if we know before opening the abdomen what has to be done we can certainly do it quicker, and, above all, we can operate through the most suitable incision.

One word with regard to the attitude which is to be adopted in the elucidation of a child's illness. It is a truism that the history, which is so valuable in the case of adults, is apt to be faulty and inaccurate in the case of children. It is also usually held that a child is a bad witness and unable to locate its abdominal troubles, but personally I prefer to regard the child as an adult in miniature and oftentimes with gentle encouragement he

or she can tell you what you want. Infants almost always, and many other one off by their crying at the sight of a doctor, only hope lies in the exercise of patience. Perhaps Luke Fildes's doctor was right after all. Inspection is calculated to give most valuable information, but it must be with the clothes off.

DIAGNOSIS

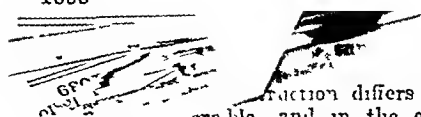
I am not going to consider abdominal injuries, and there are certain organs which can be dismissed from our minds because they so rarely figure. The stomach and duodenum interest us only from the possibility of pyloric stenosis or duodenal atresia. The liver and the bile passages need hardly be considered, and the pancreas is also ruled out by the rareness of its disease in the young. However, during the last few weeks acute cholecystitis has been operated on in a child of 3 at St. Bartholomew's Hospital.

The spleen and the female genitalia can almost be disregarded, although I have elsewhere² published a drawing from life of torsion of the broad ligament and Fallopian tube in a girl aged 11 (Cassidy and Norbury's case, *Lancet*, 1911). External hernia which has become strangulated is not likely to be overlooked if one always insists on seeing the whole child stripped. We are left, then, with varying pathological states of the peritoneum itself and the intestinal tract. The problem sounds a simple one.

The first premiss is abdominal pain, presumably acute, and of recent or sudden onset. The difficulty is the localization of the pain. I think it may be accepted that visceral pain is a referred pain, not felt in the organ itself, but in the area of distribution of those spinal nerves whose nuclei lie closest to the spinal nuclei of the afferent sympathetic nerves from the seat of disease. In the early stages abdominal pain is either diffuse or central in position and it requires an intelligent child patient to tell you where the pain is felt. If the child is old enough it is well worth asking, but not too much reliance must be placed on the reply. It may be judged by the child's behaviour whether the pain is constant or intermittent. In the latter case crying and screaming will result with quiet periods between. If the pain is constant the child is fretful and sleepless and resents all interference. The pain of obstruction is well known to be colicky in nature, and no better example can be seen than in intussusception where the onset is usually with screaming and a doubling up of the legs on the abdomen. This precedes vomiting. Other varieties of obstruction manifest this intermittent pain and the best information will be secured if the abdomen is watched and palpated when the attack is in progress. The pain due to enlarged ileo-caecal glands is also intermittent, probably from interference with regular peristaltic waves in the neighbourhood of the ileo-caecal valve.

Continuous pain is more evident in peritoneal inflammation, and the characteristic attitude—the dorsal position with the legs drawn up—is an effort on the part of the patient to secure relaxation of muscles. Movement is resented. If there is evidence as to the place where the pain is most acute, there will probably be rigidity in the same area and the causative lesion of the peritonitis may be definable. Though appendicitis in its early stages causes diffuse or central pain, sooner or later it nearly always settles in the right iliac fossa and unless there are physical signs here or hereabouts I defy the clinician to make the diagnosis with certainty. Allowance must of course be made for variability due to a high appendix, a retro-caecal appendix, or a low or pelvic one.

Vomiting may next occupy our attention. That of pyloric stenosis is so characteristic as almost to justify a diagnosis without examination. When a small infant ejects stomach contents, without bile right over the edge of the bed—the record, I believe, is seven feet—it is very suggestive. If in the same child there is a history dating from shortly after birth with visible gastric peristalsis, pyloric stenosis is almost certain. If careful palpation of the right hypochondrium reveals a small tumour, best felt by the pressure of one finger it becomes clear that the case is one of hypertrophic stenosis of the pylorus. Such children do not cry, but they writho as the peristaltic



If there may be able to

Obstruction differs from that of peritonitis, and in the early stages of the disease it often comes on shortly after taking food. It is not usual nor to talk about the progressive changes of the vomit from gastric to bilious, from bilious to stercoraceous and even faecal, because we are supposed to arrive at a diagnosis before these changes occur. Certainly it is true that stercoraceous vomiting in a child means a hopeless prognosis, but sometimes it has already occurred before the doctor is consulted. The vomiting of peritonitis and inflammatory abdominal lesions is associated with some degree of collapse. It is less forcible than that of obstruction, but nausea and retching are pronounced and quite often the vomit is bilious from the start. In the late stages of peritonitis the act of vomiting is almost effortless, and the vomited fluid is dark in colour, partly from altered blood, and offensive in odour. This is the product of the stage when paralysis of the intestine has set in, the stomach remains active almost to the end.

Abdominal pain and vomiting alone do not make a clinical picture unless we know the precise seat of the pain. If it is in the right iliac fossa the chances are strongly in favour of appendicitis, but ileo-caecal adenitis may also be responsible.

The state of the bowels is the next symptom of importance, and thus may entirely dominate the diagnosis. What comes out of a man is the lawful criterion of the state within. If a child with abdominal pain and vomiting is also passing blood per anum the odds undoubtedly favour intussusception. Piles and polypi also cause bleeding by the rectum, but there are few lesions which cause the evacuation of mixed blood and mucus resembling prune juice which is so characteristic of intussusception. If this is not mixed with faecal matter a rectal examination, which is, of course, a part of the routine abdominal examination, will go far to settle the diagnosis. Severe diarrhoea and dysentery are associated with bloody stools containing mucus, but some faecal matter is usually present. During the diarrhoeal and vomiting season in hot summers at children's hospitals cases of intussusception may be overlooked, but it is consoling to know that intussusception is not increased in frequency by such epidemics, and if an intussusception baby does turn up among the other patients it will almost certainly be the best-looking child, and most likely a boy. 70 per cent of the intussusception babies under 12 months of age are males, and nearly all of them are well nourished. The contrast in appearance with the miserable "D and V" infant is most striking. Blood may be passed in the stools in very toxic cases of peritonitis, but the blood is usually dark in colour, and it probably comes from the small intestine.

Pus passed by the rectum is a striking symptom, and a pelvic appendix abscess not infrequently evacuates itself in this way. Pus per anum, however, does not necessarily mean an intraperitoneal infection, and search must be made for the abscess, which may be connected with bone disease.

Now as to the question of diarrhoea or constipation. The latter is the commoner in acute abdominal disease because the bowel is either obstructed or the peritoneum is inflamed and both these conditions will account for peristaltic arrest. It is important to remember, however, that diarrhoea is quite common at the onset of acute appendicitis, and that it occurs also in tuberculous peritonitis, though in this disease there is often a history of alternating diarrhoea and constipation. The three symptoms, sudden abdominal pain, vomiting, and constipation at once make one think that the condition present comes under the heading of "the acute abdomen" and we may well pass on to a consideration of the physical signs whereby the differential diagnosis is made.

Physical Signs

To return to "The Doctor" first watch your child, then diagnose him. Much may be gained by sitting by the bedside observing the position and facial aspect of the

child. Note whether he cries or lies still. Most children in health are either very much awake or very deeply asleep. In apathetic or listless child is clearly ill. If by any chance there is the sweetish odour of acetone noticeable the explanation may be simple, but remember that retention of some degree is consequent on repeated vomiting from whatever cause. It may be an effect, and we are not to ascertain the cause.

The position of the patient has already been referred to, and the dorsal decubitus is preferred by nearly all children with peritoneal lesions. Occasionally, however, an appendix patient will prefer to be on the right side, and flexion of right hip and knee will be found. Restlessness is another characteristic of severe peritoneal involvement.

Pulse and temperature I shall not consider separately because they are very poor guides to the diagnosis unless the case is watched, and usually it is incumbent upon us to arrive at a diagnosis at the first examination, or very soon after. A pulse rate of 120 in a child may result from a very trivial cause. Similarly the temperature of a child may shoot up with very little to account for it. An infective lesion is rarely afebrile throughout the course of the illness and this certainly applies to appendicitis, but the onset is often associated with some collapse and the temperature may be subnormal. Intestinal obstruction does not as a rule cause fever unless the stage of secondary peritonitis be present. Rigors sometimes occur at the onset of peritonitis, and in young children they may be represented by fits. Repeated rigors with a high peaked temperature chart are suggestive of portal pyaemia. Inspection of the abdomen may reveal definite retraction of the anterior abdominal wall. As already mentioned, this is common in meningitis and after severe diarrhoea and vomiting. In simple intestinal colic also it is met with intermittently.

The most common state of the abdomen in disease is distension, and this applies equally to obstruction, unless it be very high up, and to peritonitis. It is a characteristic feature of tuberculous peritonitis. If there are also several masses to be felt in the abdomen with evidence of free fluid these signs go far to make this diagnosis clear, especially if there be a history of alternating diarrhoea and constipation. Intestinal obstruction naturally leads to abdominal distension, and if this be coupled with visible peristalsis the problem becomes a question of the cause and site of the obstruction. It is not usual, however, to find much distension, or visible peristalsis, in cases of intussusception in the early stages.

Inflammatory masses or tumours of the abdomen may cause both visible and local protuberance. This is not often seen in the right iliac fossa in connexion with disease of the appendix, if there be such a visible tumour in appendicitis it nearly always means that there is an abscess. It is important to remember that the commonest tumour in the hypogastrium is a distended bladder, and until it is quite certain that the child has passed water it is dangerous to attempt a diagnosis of any tumour in the lower abdomen. If any doubt arises a catheter should be passed.

Visible peristalsis has already been referred to, and is a most valuable diagnostic sign of organic obstruction, whether it be of the stomach or small or large intestine. Such peristalsis can often be excited in the case of the stomach by a drink, or by stroking or flicking the abdomen, and when it is seen it is commonly painful for the patient. It should be remembered that such obstruction may be due to lymph exudate, the result of peritonitis binding coils of small intestine together. Its presence, therefore, does not eliminate peritonitis from the diagnosis.

Respiration in children is normally of the abdominal type. If there is limitation of the normal respiratory excursion it suggests that the quiescence is due to inflammation of the peritoneum. Most children can be persuaded to take a big breath, particularly if the examiner shows them how it is done by opening his own mouth wide and inspiring deeply. If then respiratory movement is absent over the whole abdomen it is indicative of general peritonitis. If it is absent over part it will usually be the lower portion. Such limitation is common in appendicitis with local peritonitis, and in pelvic inflammation.

Palpation

If an abdominal surgeon is really a physician who can work with his hands there is no doubt that constant practice will almost endow him with eyes at the tips of his fingers. The hand, warm, reasonably soft, and gently applied, is the surest instrument in the diagnosis of abdominal disease. Constant inspection of the interior of the abdomen enables the surgeon to visualize the state of its contents. The ideal to aim at is to see before operating what is the other side of the abdominal wall. The method of palpation must be adapted to the patient. There must be no hurry, and there should be little guess-work. Every consideration of history, symptoms, and visible signs leads up to the final test of abdominal palpation. For this purpose the patient should be flat on the bed. The abdomen cannot be palpated with the patient in the Fowler position. The hand also should lie flat on the abdomen, and when the child ceases to resent this, gentle deep pressure should be exerted by flexion at the metacarpophalangeal joints. Unless the child can be coaxed sufficiently to lie still without crying this examination will be a failure, and it may be necessary to give an anaesthetic to get rid of voluntary contraction of the abdominal muscles. Much may be learnt by keeping the hand flat upon the abdomen, if the child is crying, and waiting for the relaxation which comes before the next inspiration, then the pressure can be increased, and thus, if otherwise unpalpable tumour may be felt. This method succeeds admirably in cases of intussusception and pyloric stenosis where the discovery of a tumour is essential to the true diagnosis. In both cases an anaesthetic is justifiable if satisfactory palpation cannot otherwise be secured. Sensitive parts of the abdomen should be palpated last, negative observations are just as valuable as positive ones.

Two hands may be required for successful palpation, and this is the only way to decide the nature of any lumbar swelling. Bimanual examination, with one finger in the rectum and the other hand flat on the abdomen, is of the greatest use in children, but this should be the last step in examination. Where intussusception is suspected this method should always be used. The apex of a large intussusception can be felt by the rectal finger, and a complete confirmation of the diagnosis may be obtained by finding an absence of the normal resistance in the right iliac fossa. Between 60 and 70 per cent of intussusceptions are of the entero-colic type and begin near the ileocecal valve, therefore if the tumour reaches the rectum it is clear that a gap must be left in the right iliac fossa. This "signe de Dance," as it is called, provides very positive evidence. A pelvic abscess, or intrapelvic tenderness, may be impossible of diagnosis except by careful rectal examination. The presence of any vaginal or rectal discharge should be looked for when this pelvic examination is made.

There are two types of hyperalgesia which can be elicited by palpation—superficial and deep. Cutaneous hyperalgesia or hyperaesthesia is best discovered by pinching up the skin, but personally I have not much faith in the accuracy of this method of diagnosis. Deep tenderness, or pain caused by firm pressure through the abdominal wall, is, of course, very suggestive of an inflammatory lesion beneath the examining hand.

Muscular rigidity is one of the most important signs to be found on palpation. It varies greatly in degree, and is well known to occur in its severest form in perforative peritonitis. In the case of perforated gastric ulcer the diagnosis may almost be made on a degree of muscular tension, which is appropriately called "board-like" rigidity, but this is not a lesion we are likely to encounter in children. I know of a case in a child of 12, and I believe it has been described several times in children under 5, but I do not suppose it was diagnosed.

Rigidity of the abdominal wall is essentially an involuntary reflex response, and usually to a subjacent peritonitis. In children, however, I have seen general peritonitis with quite a soft belly wall, and its degree of contraction depends to some extent on the normal muscularity of

PERCUSSION

the patient. Simple colic may be relieved by pressure rather than by but pressure rather relieves than obstruction, before peritonitis ensues, rigidity is absent. If oedema of the abdominal wall be found, a clear indication of a subjacent suppuration.

Abdominal Tumours

Some abdominal tumours may be seen as well as felt. It is important to remember the common physiological tumour of the child—namely, a full bladder. Tumours of an inflammatory nature may be felt in any part of the abdomen. They are usually tender, and, if near the surface, they will almost certainly be dull on percussion. It must be remembered, however, that there are such things as gas-containing abscesses, and as a matter of fact I have found them more often in children than in adults. Whilst yielding some resonance on percussion, they are definite masses and exquisitely tender.

One of the abdominal masses which is a source of error in diagnosis is a tongue-like process of the right lobe of the liver. This is Riedel's lobe, and I have known it mistaken for the tumour of an intussusception. Similarly the kidney, usually the right one, may be mistaken for a pathological tumour apart from renal disease. If the spleen is palpable it is almost certain that it is diseased.

The retinal diagnosis of an abdominal tumour which is not inflammatory depends on its position. Multiple masses are felt in tuberculous peritonitis, and these are usually omental in origin, being fibro-calcareous deposits with or without suppuration. These, again, may be mistaken for intussusception. The other common cause of multiple lumps in the abdomen is constipation, which masses of solid faeces may be arrested along the course of the colon. These have a characteristic doughy feel, and are definitely limited in position by that of the colon. Sometimes an enema is needed to differentiate them from omental masses.

Percussion

All abdominal percussion should be light. Tenderness under such examination is very suggestive of peritonitis. Dull areas should be carefully mapped out, and the flanks especially must be percussed. Shifting dullness in the flanks is the surest evidence of free fluid, unless there is enough fluid to give an obvious thrill. Where peritonitis is diagnosed dullness in both flanks means that it is general peritonitis. In appendicitis there is often dullness in the right flank only, and this is commonly associated with rigidity of the oblique muscles. When the small intestine is overloaded with fluid and gas splashing may be elicited.

Auscultation

Not sufficient use is made of the stethoscope in abdominal diagnosis. Peristalsis of unusual activity is audible without a stethoscope. Normal peristalsis can be heard with one. Entire absence of peristaltic sounds is very strong evidence of peritonitis, local or general.

CONCLUSION

In concluding my remarks I must, if I wish to make this review of abdominal crises in any way complete, forsook the purely clinical method, and for purposes of description assume the diagnosis before describing the signs of disease. I have already said that examination of the urine may point the way to the correct conclusion, and this applies, above all, to that variety of infection which is due to the *Bacillus coli*. I am confining myself to that manifestation of the disease which has an acute onset and essentially abdominal symptoms. It is quite common in children, and affects girls more often than boys. Diffuse abdominal pain, nausea, vomiting, and constipation are all present. Shivering may occur at the onset, and the temperature is high. There is a rapid pulse and headache may be complained of. The tongue is thickly coated and dry, and the face tends to be flushed. The abdomen is tumid and tender, and often this tenderness is most marked in the flanks, which may be rather rigid. It is this situation of the tenderness and rigidity which frequently puts one on the track of the right diagnosis. One or other

In 4 cases gall stones shadows by the surrounding shadows. In the other 3 the hazy shadow indicated cholecystitis. In the operation, whilst the gall bladder contracted, the sort of green pathological change in the wall was the sort of green pathological change. Cholecystectomy was performed.

GROUP IV—GOOD GALL-BLADDER SHA- At Operation Functioning Gall Bladder

In this group there were 3 cases. In one case the gall bladder contained several calculi, but the wall was not thickened and it contained clear bile (see Fig 4). In this case an ideal cholecystectomy was performed. In the other two cases the gall-bladder wall, although not functionless, showed naked-eye evidence of pathological change and cholecystectomy was performed.

GROUP V—CASES OF OBSTRUCTIVE JAUNDICE

The method was employed in 8 cases of obstructive jaundice. Contrary to the experience of Carman, we found no serious untoward effects. In 4 cases there was no reaction, in 4 slight nausea, and in 2 transient vomiting. In no case was any shadow visible in gall bladder or ducts. In 6 of these cases a stone in the common duct was the causative factor, and in 4 of these the gall bladder was shrunken and functionless. In one of the four the whole biliary duct system was distended with "white bile." In two a previous cholecystectomy had been performed. In one case of carcinoma of the head of the pancreas the biliary passages were filled with thick creamy bile which had effectually prevented further biliary excretion. In the last case a carcinoma of the hepatic ducts (already referred to) completely blocked the passage. The lesson to be learned from this group is that in jaundiced patients the method gives little, if any, help in localizing the lesion.

GROUP VI—DEFORMED GALL-BLADDER SHADOW At Operation Local Cholecystitis

In one case an hour glass-like shadow in the radiogram was found at operation to be due to a localized hard inflammatory mass in the wall of the gall bladder, the remainder of which appeared healthy (see Fig 6). A cholecystectomy was performed, and on sitting up the organ a dense fibrous mass, three quarters of an inch in diameter, was found in an otherwise healthy wall.

COMMENTARY

Our experience in this series of cases leads us to believe that in cholecystography we now possess a valuable aid in the diagnosis of gall-bladder disease. When a gall bladder shadow is visible, if it be of normal density and contour, gross disease may be excluded but mild cholecystitis may be present. Gall stones existing no shadow in the ordinary radiogram may be shown up as negative shadows. Care must, however, be exercised not to mistake gas in the overlying colon for a gall stone. Given correct technique the absence of a gall bladder shadow indicates one of three conditions:

- (1) Obstruction of the cystic duct by a stone within it or in Hartmann's pouch, or by fibrosis, catarrh, or neoplasm.
- (2) A gall bladder so filled by stones that dye-laden bile cannot enter.
- (3) A gall bladder so diseased or shrunken as to be functionless.

In cases where a preliminary radiogram has shown doubtful shadows suggestive of gall stones, the accurate localization of the gall bladder gives confirmatory evidence, the method being thus comparable to pyelography in cases of renal calculus. In such a case, under the care of Mr Henry Wade, the preliminary x-ray photograph showed what appeared to be a renal calculus as well as gall stones. The sites of the calculi were accurately defined by pyelography

and cholecystography, and both conditions successfully dealt with at one operation. When a palpable lump is present in the right hypochondriac region it is possible by cholecystography to determine whether it is a new growth in the liver or a distended gall bladder. In a case which was lately under our care the patient had recently been operated on for an endothelioma of the thigh. He developed a painless, rounded, and mobile swelling under the right costal margin associated with an intermittent rise of temperature. A cholecystogram showed that the gall bladder was functioning normally and was situated below the margin of the swelling, thus confirming the diagnosis of secondary growth in the liver.

In order to simplify the test the dye may be given by the mouth, either in capsules or in pill form. Carman has practised this method of administration extensively in the Mayo Clinic and recommends it for general use. We have used the oral method in but a few cases. The results were so inferior to those obtained by the intravenous administration of the dye and the latter so much more accurate and certain that we now practise it exclusively.

The outstanding feature of cholecystography is that it is a means, not only of demonstrating anatomico-pathological changes in the gall bladder, but also of testing the functional capacity of the organ. Whilst modifications and improvements of the method will doubtless follow further experience, we believe that it will have a permanent place as a method of physical diagnosis.

In conclusion we desire to express our thanks to Mr Henry Wade for permission to include three cases which were under his care in this series, and to Mr Leslie Stewart for his help in the investigation of these cases.

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EMBRYOMA OF THE TESTIS

SUDDEN DEATH FROM THROMBOSIS OF PULMONARY VEINS (With Special Plate)

BY

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It is not at all uncommon for a patient with a tumour of the testis to seek advice in the first instance on account of secondary deposits, either in the loin or even in the posterior triangle of the neck when metastases have travelled along the thoracic duct, but the extreme case of death occurring without any tumour having been noticed must be almost unique.

An officer, aged 31, was admitted to No. 14 General Hospital, Boulogne Base, on November 15th, 1915, as a walking case, having been sent down from the front with a diagnosis of "lumbago." He was admitted in the late evening, and went to bed. He complained of pain in the right lumbar region which he said was proving distinctly trying under the conditions of life in the front line trenches. Under other conditions he did not think the pain would have worried him. He stated that he only had it on movement and that he was quite comfortable when in bed. He first noticed it at the end of September. He remained on duty until November 5th for two or three days after reporting sick. He had a slight rise of temperature.

The morning after admission to the base hospital he was up and about, attending to his toilet and visiting some of his friends who were in neighbouring rooms. As he was talking to a brother officer he suddenly fell down and appeared to be in a dying condition. The medical officer saw him immediately and within a few moments there were several of us in attendance. In spite of every effort to resuscitate the patient it was soon obvious that he would be dead in a few minutes. His appearance was that of a man receiving no oxygen into his circulation although there was some shallow respiration. The pulse rapidly failed, and within about ten minutes of the appearance of symptoms he was dead. A post mortem examination was made and since his symptoms were suggestive of pulmonary thrombosis or embolism the thorax was examined first. The lungs and heart were removed together along with the contents of the posterior mediastinum. The pulmonary veins were opened and some anti mortem thrombus was found in them. A small soft almost gelatinous mass about



FIG 1—Normal gall bladder shadow thirteen and a half hours after injection. Duodenal tube seen not to have passed pylorus. At operation healthy gall bladder and ducts.



FIG 2—Normal gall bladder shadow fourteen and a half hours after injection. At operation healthy gall bladder and bile ducts.



FIG 3—Normal gall bladder shadow (encircled by coils of duodenal tube). Fifteen hours after injection of dye.

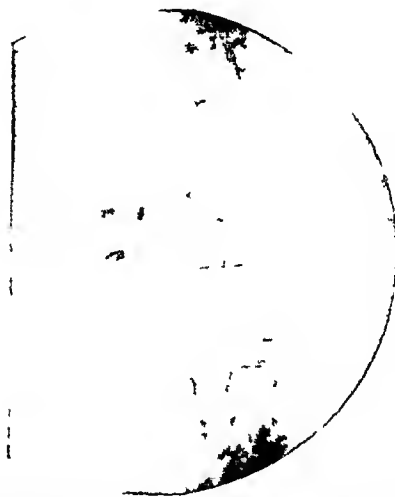


FIG 4—Gall bladder containing numerous stones. The gall bladder shadow is dense indicating little impairment of its concentrating function. At operation the gall bladder though containing stones showed little pathological change and was not removed.

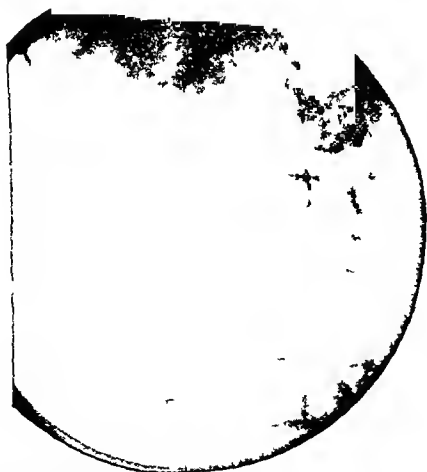


FIG 5—Gall bladder seen overlying tip of last rib and containing several large stones. The shadow is faint indicating impaired concentrating power. At operation gall bladder thickened and fibrotic containing stones.

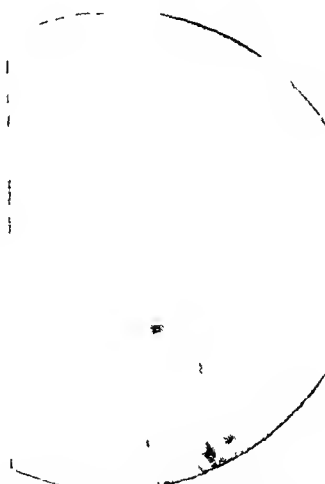


FIG 6—Gall bladder angular with slight hourglass contraction. At operation localized infiltration of wall.



FIG 1—Section of mass in the posterior mediastinum showing the involvement of the thoracic duct



FIG 2—Section of mass in the lumbar region showing the inferior vena cava running through it.



FIG 3—Testis cut across (actual size) showing primary tumour at lower pole

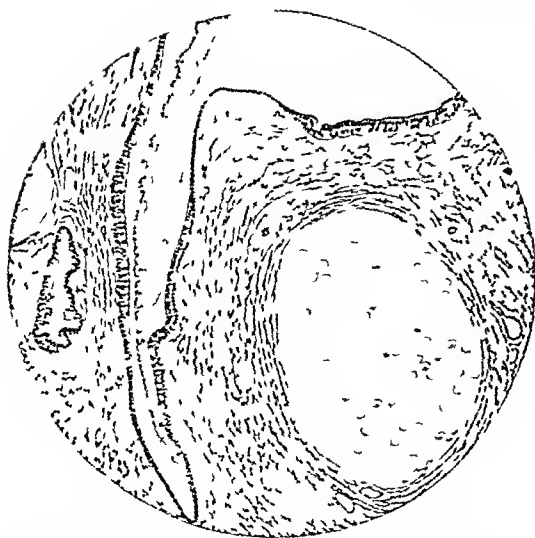


FIG 4—Microscopic appearance of section of primary tumour (low power)

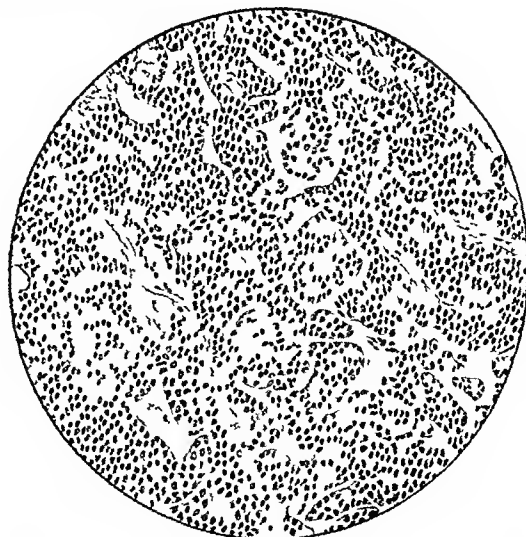


FIG 5—Microscopic appearance of section of primary tumour (high power)

BLOOD TRANSFUSION IN CARBON MONOXIDE POISONING

No 53 Casualty Clearing Station, suffering from the effects of a 59 German high-explosive shell, which set fire to their dug-out

the size of a chestnut, was found in the posterior mediastinum, with the thoracic duct running through it (Fig 1). Exploration of the abdomen revealed the presence of a mass the size of a clenched fist in the right lumbar region, with the inferior vena cava running through it (Fig 2). The kidney was healthy, and the mass in the lumbar region did not involve the adrenal body, so it was thought that it must be due to glands secondary to a primary growth elsewhere. Palpation of the testis revealed no gross abnormality, but there was a small prominence about the size of a pea on the lower part of the body of the testis near the globus minor of the epididymis. The prominence was removed, and on cutting it across, the small tumour, of the testis was seen.

Testis was removed, and on cutting it across, the small tumour, of the testis was seen. The specimen was sent to the Bland Sutton Institute of Pathology at the Middlesex Hospital where they were examined by Professor Browning. He found that the primary tumour in the testis was a small embryoma with the usual characteristics of these tumours. Its microscopic appearances are well shown in Figs 4 and 5.

The pathology of these tumours has been investigated by Nicholson, and his paper in the *Guy's Hospital Reports*, vii, 1907 (p 249), should be read by all interested in the subject. The origin of embryomata of the testis is not absolutely definitely determined, but Nicholson says "There can be no doubt that these tumours, which contain derivatives of the three blastodermic layers, must have originated in a cell which is still capable of producing the three primary layers of the embryo."

These tumours are benign at first, but a malignant stage may supervene in any or all of the component layers. The result may be a mixed tumour, a hypoblastic tumour like a columnar-celled carcinoma, a mesoblastic tumour such as a "dermoid," or a growth resembling a chorion epithelioma. And, as Nicholson says, "not only may one layer be greatly in excess of the others, but one tissue may assume this supremacy."

In the present case the lumbar glands were metastatic deposits from the tumour in the testis. The small mass in the posterior mediastinum was of a similar nature microscopically and was evidently a metastasis which had been arrested on its way along the thoracic duct and had grown in that situation.

The case presents many points of interest. In the first place, it must be extremely rare for a malignant growth of the testis to lead to death without either primary or secondary tumours having been suspected. Certain lessons are emphasized by the post-mortem findings. It is clearly shown that the size of a primary tumour is no indication of the extent of malignant disease. It is also dramatically demonstrated that the examination of the contents of the scrotum should always include an examination of the contents of the scrotum. We are accustomed to insisting on this in clinical teaching, but it is not often that the lesson is driven home so tragically in the post-mortem room.

VENESECTION AND BLOOD TRANSFUSION IN CARBON MONOXIDE POISONING

BY
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The recent tragedy in which a medical man lost his life after undue exposure to motor exhaust fumes in his garage calls attention to the value of blood transfusion in carbon monoxide poisoning.

In the *British Medical Journal* of April 25th (p 812) Dr James Holmes (Bury) writes suggesting venesection and transfusion as a possible method of treatment in these cases, which he states has not, so far as he knows, been tried. The great value of venesection and blood transfusion in carbon monoxide poisoning was brought forcibly to my notice in 1917 when I was consulting surgeon to the Second Army in France.

The following account of six cases of carbon monoxide poisoning, two of which were treated by venesection and blood transfusion, at which I assisted, is, I think, worthy of record. The men were admitted on June 20th, 1917, to

The notes of the cases were taken at the time by the medical officer in charge. Unfortunately I am unable to give him the credit which is his due, as his name has escaped me and is not attached to the notes which he very kindly made for me at a time when all the medical officers were overworked in dealing with the casualties after the battle of Messines. It seems possible that some other gas or gases besides carbon monoxide may have been responsible for the remarkable ashen hue displayed by these men. The cases, however, were regarded as carbon monoxide poisoning by the mining medical expert to the army. I feel certain that the two cases treated by venesection and transfusion would otherwise have succumbed.

Ten men were in an old German dug-out when the side was blown in by a shell. The dug-out was set on fire, due to shavings on the floor, and bedding filled with shavings strewn about. A heap of Mills's bombs, at least twelve in number, was lying near the window where the shell struck and these also exploded, together with much small arm ammunition as the fire increased. Six of the men were brought to the casualty clearing station, none of the others escaping. Four of the men were almost black as to lips and ears, with a dirty earthy colour of the skin, two were a deep dusky red. There was no marked obvious respiratory distress, except that in some of them respirations were increased. There were no bronchial symptoms, no cough, no expectoration.

It does not seem to be realized generally that the explosion of ammonal (the explosive of Mills's bombs) in a confined space, owing to deficient oxidation, gives rise to a large evolution of carbon monoxide gas. The explosion of the cordite of the small arm ammunition does so also in a lesser degree.

The cases presented certain differences, each showing some special characteristic. Little effect was produced by oxygen. Even when administered pure, without air, for prolonged periods the dark colour was not in the least changed. Artificial respiration combined with the administration of oxygen was not tried. Two of the worst cases were trans fused, with marked benefit, and they probably owe their lives to this measure being carried out.

The blood had the same characters in all—thick, black, tanny, flowing from the veins with difficulty and clotting at once. In the first case the coagulation did not take place for some time. The blood clotted solidly, and when left a dark chocolate-coloured fluid formed from which a clear straw-coloured serum separated. The blood was examined by the pathologist, who was unable to detect any definite change spectroscopically, he did not think haemolysis had taken place. Smears of blood examined showed nothing definitely abnormal.

The urine passed by all the patients was exactly the same in colour—a dark straw colour with a bilious tinge, though in all for these constituents were not detected on examination. Albumin was not present, and no sugar in any case, the urine being examined to light. None of the patients showed any nerve manifestations, the reflexes were normal, and no paralytic symptoms were observed.

All the men extricated themselves from the fire, the severe symptoms coming on later. The one case least affected states that he was dizzy and unable to stand after getting out of the dug-out and had to lie down. He vomited severely on his way to the ambulance and he was the only man of the series who vomited.

The account given deals with the cases up to the fourth day.

An effort was made to ascertain the percentage of haemoglobin, but the blood was so thick that it would not spread evenly and the light could not be seen through in the type of instrument available. Major Ellis, the pathologist, was unable to give the haemoglobin percentage, although he made various trials.

Two surprising almost startling features of the cases were (1) that these men developed so dark a colour—almost black in the mucous membranes—and yet had so little respiratory

distress, (2) that life was compatible with blood so thick (almost tanny) and black. The cherry-red colour frequently described was not a feature of any of the cases.

CASE I—Transfusion Case

Pte. H on admission had dark black lips and slaty grey skin. Pulse 100, respirations 18. Pupils widely dilated and not reacting to light. He was quite conscious and able to tell what had happened. He was so sensible and apparently improving that bleeding was not considered necessary. Oxygen was administered continuously. He vomited slightly shortly after admission.

June 21st. Next morning he was much worse, not quite conscious, resented interference, complained of headache, very blue as to ears, lips, and nose. Pulse 112 respirations 22. A pint of blood was extracted when the patient began to sigh and bleeding was stopped. His condition improved, but he remained only semi-conscious. Oxygen was then given pure by inhaler. At 2.15 p.m. he was still a very dark colour and was again bled, during bleeding the pulse at first improved, but later became quicker and weaker, so bleeding was stopped after 15 oz. had been extracted. The blood was very dark in colour, thick and tanny, and clotted at once. Pure oxygen was then administered through a nitrous oxide inhaler, but this did not affect his colour in any way. Pulse 130, respirations 20. He was then transfused by Colonel Gordon Watson and Major Robertson with blood by the Record syringe method, 1,000 c.c.m. of blood being given. After transfusion the pulse was 126, respirations 28. He then had a rigor lasting fifteen minutes, the pulse became full and bounding, and he perspired freely. He had become more cyanotic, but a red tinge was noticeable in the mucous membranes which was absent before. He was able to speak when roused. Morphine, 1/4 grain, was given as he was a little restless.

June 22nd. The patient had a good night, was much improved, quite conscious, but quiet. Still blue as to lips and ears. Complained of brow headache. Pulse 80 respirations 18. During the night the respirations were reduced to 14. There was incontinence of urine all night, but he stated he had always had some difficulty.

June 23rd. Much improved but very quiet and depressed. Speaks when spoken to and is able to remember what happened. Very sleepy, but clear mentally. (This man was the last to leave the burning dug out.)

June 24th. Jaundiced but not deeply, otherwise improved. Mental condition quite clear and cheerful.

He continued to improve, the jaundice becoming less, and he was evacuated on June 30th.

CASE II—Transfusion Case

Cpl. B. On admission his lips and ears were pale grey in colour, almost bloodless, with a slaty grey skin. He was only partially conscious, was restless, and delirious from time to time. Pulse 138 and full respirations 40, but very shallow. The pupils were widely dilated and did not react to light. Oxygen was administered. He quickly became worse fighting for breath, the oxygen being thrust away every time, and crying out, "I want to breathe." A pint of blood was then removed, and the change was most marked, the restlessness ceased, and he became quiet and slept. As the restlessness returned a little, 1/4 grain of morphine was given.

June 21st. Still a very bad colour and inclined to be restless. Respirations 25 pulse 104. The pupils were not dilated and reacted to light. Colour still a pale grey almost waxy and deathlike. He was unable to pass water and a catheter was passed. Owing to want of improvement he was first bled, about three quarters of a pint being removed, and then transfused 1,000 c.c.m. of blood being given and about 500 c.c.m. of normal saline by the Record syringe method. During the transfusion he was very restless, thirsty and vomited once. Pulse 80. On returning to bed he had a rigor lasting twenty minutes. Pulse 120 and very full respirations 18. He again became very restless and morphine was given twice during the night. There was no immediate change in colour noticed.

June 22nd. Had rather a restless night. Pulse 24 respirations 18. Has passed urine naturally. Colour of lips very much improved, a pink tinge on lips and ears being noticeable. No restlessness. Says he feels well but mentally is quite abnormal, wandering in speech, repeating himself over and over again and sometimes returning stupid answers. Temperature last night 100° this morning 98°.

June 23rd. Improvement most marked. Lips and ears a pale pink skin still grey more rational but still somewhat lazy, can tell and answer questions does not remember being transfused. Pulse 60, respirations 16. Able to take his food.

CASE III

Pte. M. was almost unconscious on admission becoming unconscious later, restless delirious, throwing himself about dark black lips and ears and dark fingers skin almost slate colour. Pulse 126 respirations 40. The pupils were widely dilated and did not react to light. Oxygen was continuously administered, but

seemed to have no effect on the colour nor on the breathing. Shortly after admission one pint of blood was removed, after which he at once became quiet and slept. This man on admission was by far the worst of the six cases, but recovered more quickly than the others. During the first night the pulse rate was 138, gradually settling down to 100.

June 21st. Next morning he was much improved, but the lips were still decidedly dark and the skin grey. He was very quiet speaking only when roused. Pulse 100 respirations 22. Felt weak and had a frontal headache. Pupils normal and reacted to light. The mental condition improved during day.

June 22nd. Had a good night and was much improved. Colour better, and definite red tinge observable in mucous membranes, ears a dark red. Pulse 60 respirations 15.

June 23rd. Much improved mentally—began to observe more, the lips were still a dusky red. Was very quiet.

Subsequently he improved daily and was evacuated on June 30th.

CASE IV

Lieut. Cpl. G. was on admission a very dark red as to lips, ears and finger tips, with a grey skin. He was breathing easily, the pupils were widely dilated, not reacting to light and accommodation, he was quite conscious and able to talk, but was very quiet. Pulse 90 respirations 18.

June 21st. Pulse 85 respirations 18. Lips still more than a dusky red, the pupils were normal and reacted to light. He slept well but had severe headache and feeling of tiredness and weakness apparently very sleepy.

June 22nd. Still a dusky red somewhat depressed no headache only speaks when spoken to.

June 23rd. Had not yet resumed a natural colour. He was brighter but very quiet, quite clear headed and able to describe clearly all that had happened previously. Oxygen was administered at intervals to this man during the first day and night.

His condition improved rapidly, and he was evacuated on June 30th.

CASE V

Pte. C. was very quiet and depressed on admission, but was able to talk when roused. His lips were dark blue and no tinge of red was visible. The skin was ashen grey in colour. Shortly after admission he became restless and later lapsed into unconsciousness with marked twitching of the right arm and leg, and right side of face. Although unconscious he resented interference. Pulse 150 respirations 40. Morphine 1/4 grain was given for restlessness. He was then bled, which he slightly resented, about a pint being removed. The breathing became easier, muscular twitchings altogether ceased and did not return, but he still remained unconscious. Oxygen was continuously administered throughout the evening and at intervals during the night.

June 21st. Next morning he was much improved—conscious but heavy mentally. He complained of headache. Was still very grey, and lips a dark blue. Pulse 120 respirations 25 temperature 100°. Later in the day his colour gradually improved. Pulse 120 temperature 100.8°.

June 22nd. Great improvement mentally, and colour better but still dusky. Pulse 90 respirations 18 temperature 98°. No headache heavy mentally but conscious and able to talk.

June 23rd. Mucous membranes still dusky tongue pale and furred very heavy and inclined to sleep all day. He was unable to pass his water early in the day, and as he was in distress it was drawn off. Later in the day he passed water naturally. His general condition was very much better.

He made a rapid recovery, and was evacuated on June 30th.

CASE VI

Pte. W. was the least affected. He was a dusky red on admission and his pupils were widely dilated and did not react to light. His breathing was quite easy. Pulse 70. He had vomited severely in the ambulance coming down. On the following morning he complained of a severe headache and was still dusky, remaining very quiet all day.

June 22nd. Almost normal except for dark red colour of lips and ears very sleepy no headache.

June 23rd. The mucous membranes were still a dark red tongue pale, otherwise normal. He was bright and took an interest in the patients in the ward. This man received no special treatment. He was in the burning dug out about four minutes and was the last but one to get out. However he was not near the window where the bombs were exploding.

June 24th. Improvement maintained. Colour more nearly approaching normal but still somewhat dusky. Intelligence clearer. Had a copious crop of herpes labialis. A peculiar coincidence was the appearance of a similar crop in the donor of the blood transfused.

June 25th. Slightly jaundiced, otherwise improving in all respects.

His condition continued to improve and became nearly normal. He was evacuated on June 30th.

British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BATH, 1925

SECTION OF MEDICINE

The Right Hon Lord Dawson of PENNYCOCK, KCMG, CB, MD, FRCP, President

DISCUSSION ON
THE USES AND ABUSES OF ENDOCRINE
THERAPY

OPENING PAPERS

I—W LANGDON BROWN, M D Cantab, FRCP,
Physician St Bartholomew's Hospital

I SHALL deal mainly with the uses of endocrine therapy, feeling sure that Professor Sale Vincent will deal faithfully with the abuses.

I would define the basis of a rational endocrine therapy as follows. Certain glands are known, others are assumed, to pour into the blood stream secretions which produce pharmacodynamical effects on other tissues of the body. As Starling pointed out twenty years ago, whenever we give a drug we imply thereby a belief that the functions of the body can be influenced by chemical means, and nothing would appear more reasonable than to use intelligently in disease those very drugs by which the body is enabled to do its own work in health. We may use an endocrine preparation such as thyroid extract or insulin to replace a deficient internal secretion, or we may use it simply for its pharmacological action, such as adrenaline, for one or other of its stimulant effects on the sympathetic nervous system. But it must be observed that before endocrine therapy can claim a rational basis it must be shown that—

- (1) The gland in question forms an internal secretion.
- (2) The active principle or principles of this secretion can be extracted.
- (3) A method of administration of this extract can be found which will admit of its utilization by the body.

Now it must be admitted that the instances in which these criteria are all satisfied are few. So few, indeed, that clinicians confronted with urgent problems, have, not unnaturally, had recourse to more empirical methods. No objection can be made to this, empiricism has often won therapeutic success which had to wait long for scientific explanation (such as quinine for malaria and mercury for syphilis), and which in some cases has not yet received it (such as salicylates for rheumatism and colchicum for gout). The empirical method has always been suspect by the laboratory, although it is a procedure by trial and error just as the experimental method is, I think I may add, unfairly suspect, when one remembers that cod-liver oil was used for many years to the scorn of the experimentalist—until vitamins were discovered, and he scoffed no more. On this very subject of endocrine glands the pioneer observations were made at the bedside, Gull and Ord discovered the functions of the thyroid when the laboratory had made no more helpful suggestion than that it was merely to improve the contour of the neck, Addison was the first to point to the function of the adrenals, while the role of the pituitary was recognized clinically from the symptoms of the pituitary and Frohlich's syndrome. We have no need to apologize for using the empirical method, but we have need to employ it critically, realizing the fallacies to which its lack of controls exposes us. Of recent years two biochemical methods have been used to confirm the effects of an extract—the study of the basal metabolic rate and of the blood sugar curve. Of more limited application is the estimation of the calcium content of the blood. But I look forward to the formulation of other such tests which will prove valuable aids to our treatment and checks on our results.

I will now deal briefly with the evidence for the use of the principal extracts employed.

Thyroid Extract

Here all my three criteria are satisfied. The ease with which it is absorbed from the alimentary tract is probably due to the fact that the secretion of the gland entered this tract originally by the thyroglossal duct. Since no one disputes the efficacy of thyroid medication I shall content myself by saying that the active principle of the thyroid, which is presumably thyroxine, is a general quickener of metabolism—"the draught to the fire"—and is the sole secretion providing iodine to the body. Thanks to Leonard Williams, we know that the doses formerly prescribed were too large. A total daily dose of 6 grains of the extract of fresh gland seldom needs to be exceeded, and it is wise to start with not more than 1/2 grain three times a day. It is important to remember that the extract of the fresh gland is five times as strong as that of the fresh gland. It is worth while in children who fail to grow, who suffer persistently from nocturnal enuresis, who have night terrors, or who suffer from relaxation of the articular ligaments, causing knock-knee, painful heel, flat-foot, or lordosis, to look for stigmata of hypothyroidism, and if they are present to give thyroid extract. Whereas in children the thyroid is the great stimulant to growth, when this is complete its great function is a katabolic agent. When it is in defect there is an accumulation of the products of incomplete combustion which consequently infiltrate many tissues, including those of the central nervous system, the nasal annexes, the heart, the intestinal musculature, and the ligaments, besides the well recognized instance of the subcutaneous tissues.

Parathyroid Extract

Most authorities are now agreed that the functions of the parathyroid are distinct from, and in some respects antagonistic to, the thyroid. It increases the calcium content of the blood, thereby having a sedative effect on nervous tissues, and promoting healing from the effects of chronic sepsis (Vines). For its former action I believe it to be useful in tetany, and sometimes in petit mal. It is worth trying for fibrillary twitchings and in eclampsia. I have not been favourably impressed with its effect in paralytic agitations and other lesions of the basal ganglia. For its latter action I believe it is sometimes useful in chronic gastric ulcer, and others have found it useful in sprue and varicose ulcers. I have used it to try to check calcium drainage in diabetic ketosis, but we now have a more effective agent for this in insulin. It is apparently capable of absorption when administered by the mouth, since I have seen a rise in the calcium content of the blood following its use. It is given in doses of one-tenth of a grain once to thrice a day. There is the more justification for its use now that Collip appears to have isolated the active principle.

Adrenal Extract

There is no doubt that the medulla of the adrenals yields an intensely active extract. Although this medulla is formed from sympathetic ganglia and adrenaline produces just the same effect on any part as if its post-ganglionic sympathetic fibres have been stimulated, it has been urged that these two facts are not connected, and throw no light on the function of the adrenals. But this is pushing scientific agnosticism rather far when one remembers that the sympathetic is designed to produce widespread effects, and that these widespread effects would be assisted by the simultaneous liberation of a chemical stimulant such as adrenaline. I prefer to accept the mass of evidence which points to adrenaline as a general sympathetic stimulant which can be drawn on in an emergency. Take the case of asthma. Here is a paroxysmal spasm of plain muscle, resulting from vagal overaction, anything which stimulates the antagonist sympathetic relieves the spasm, so does adrenaline. Surely this is not merely a coincidence. There is no satisfactory evidence that adrenaline is absorbed from the alimentary tract, possibly the local vaso-constriction it excites prevents this. Thus limits its usefulness for oral administration to oesophageal spasm, gastrostasis, and the relief of vomiting in each of which it can act locally on the appropriate sympathetic endings. It can act also as a local vaso-constrictor on mucous membranes such as the

conjunctiva and the nose, and, indeed, appears to be absorbed sometimes from the latter. Injected subcutaneously or intravenously it can have a powerful effect in raising the blood pressure, augmenting the heart, relaxing the bronchial muscles, and converting glycogen into sugar. But all of these are emergency measures, and the drug is of little, if any, use in substitution therapy for the chronic adrenal lack of Addison's disease. For injection I give 3 to 5 minims for its local effects, by the mouth 10 to 30 minims of the 1 in 1,000 solution.

Although we know there is a close association between the cortex of the adrenals and the gonads, I have not seen any definite results from cortical extracts.

Pituitary Extracts

Here again we have to distinguish between two parts of the gland. The anterior lobe is concerned with growth, particularly of the skeleton, and sexual development. The clinical evidence as to this seems to me decisive, but the relative principle has not been isolated. It is usual, however, to administer extracts of the anterior lobe by the mouth for conditions of insufficiency of this portion of the gland, and it certainly appears to me to have given results. Recent observations by Gardner-Hill set off by me that anterior lobe extracts can promote growth either with or without simultaneous administration of thyroid extract, and that combined administration is more effective than that of either given separately. Posterior lobe extract has no effect on growth, but has a marked effect on stimulating uterine muscle and on the excretion of water by the kidney. Now I want to put this question forward for discussion—When we use pituitrin are we merely using a drug with known pharmacological effects, or are we, in addition, attempting to replace or reinforce the normal functions of the posterior lobe? For this question goes to the root of the controversy about endocrine therapy. Professor Swale Vincent believes we are simply doing the former. The clinician, on the other hand, believes that the pituitary has an important association with the reproductive processes, and he finds support for that belief both from clinical and experimental observations. As this is an important example of the kind of evidence we often have to rely upon in constructing a working hypothesis of endocrine therapy, I will mention some recent observations which seem to me to support the clinical contention.

Fishback's syndrome is always associated with undeveloped sexual organs. At one time I had five cases of hypopituitarism in my out-patient department associated with gross gonadal defects, either congenital or as the result of operations. Dixon showed that ovarian extract injected into the circulation produced an immediate secretion of pituitrin into the cerebro-spinal fluid. Later, in conjunction with Marshall, he showed that the presence of a corpus luteum in the ovary greatly diminished this action on the pituitary, and that, indeed, the corpus luteum of pregnancy could completely inhibit it, until just before parturition, when suddenly ovarian extract had a profoundly stimulating effect on the production of pituitrin, leading to uterine contractions and starting the secretion of milk. Mayer has confirmed these observations in human beings. Lesho Pugh has found that pituitrin will prevent a cow from holding up her milk, as she is apt to do with a strange milkman. He says "The act of milking evidently requires some sort of unconscious co-operation from the cow. This co-operation can apparently be made to be forthcoming by the use of pituitrin." He does not attempt an explanation, but it would fit in very well with an inhibition of the pituitary secretion through the sympathetic nervous system, and the replacement of the missing secretion by the pituitrin injected. Pugh also found that the failure of the corpus luteum of the cow to atrophy led to subinvolution of the uterus and disturbance of the oestral cycle. These could be rectified if the corpus luteum were extruded by manipulation per rectum. The same procedure would enable the cow to expel a mummified foetus.

Compare these observations with some clinical facts. Recently at St Bartholomew's Hospital we had a case of pituitary tumour which was associated with continuous

lactation for seven years. I have at present under observation a lady, aged 38, who was married at 21½, after this she had only twelve periods in thirteen years. She then became pregnant, and soon developed bitemporal hemianopsia. A skiagram showed an enlarged pituitary fossa. Labour had to be induced because of a contracted pelvis, but she was delivered of a healthy child and her eyesight soon became normal. She, however, continued to secrete milk for two years, although she was never able to suckle the child on account of painful nipples. The secretion stopped very soon after she was put on an extract of corpus luteum.

The most reasonable interpretation of such observations seems to be that there is a close association between the gonads and the pituitary, that the internal secretion of the ovary stimulates the secretion of pituitrin, and that the development of a corpus luteum in pregnancy checks this process, in the interests of the foetus until the time comes for the uterus to contract and the milk to flow, then this inhibition is suddenly withdrawn. Persistence of the corpus luteum prevents the proper contraction of the uterus, and an overstimulated pituitary may excite continuous activity of the mammary gland.

Then, again, the blood sugar curve of pituitary glycosuria and the glycosuria of pregnancy is the same (Wackenroth Willis), while J. H. Burn has shown that pituitrin directly inhibits the action of insulin. It suggests that the normal hold-up of pituitrin during pregnancy allows sugar to be stored more readily in the interests of the offspring through the unchecked action of insulin, failure of this hold-up to occur leads to glycosuria. By another path we come again to the conclusion that the pituitary is associated with reproduction.

Diabetes insipidus is believed to be associated with deficiency of the posterior lobe of the pituitary. I recently had a case of tuberculoma of the pituitary of which the first sign was polyuria. It is urged that this symptom is really due to disease of the overlying hypothalamus. It is extraordinary in this case that pituitrin should have such a profound antidiuretic effect even on the denervated kidney, unless one regards the hypothalamus as exerting its effect on the kidney threshold through the agency of the pituitary. I am quite prepared to agree with those who regard the hypothalamus as the head ganglion of the sympathetic system, but I should postulate that it was, like other part of the sympathetic, closely associated with the endocrine system. For this would explain Lesho Pugh's observations and would afford a close parallel with the medulla of the adrenals. But in view of the evidence I have adduced I am not prepared to agree with Professor Swale Vincent that because one can squeeze out of the posterior pituitary a juice which has certain definite actions, this throws no light on the functions of the gland. As I have said before that would be scientific nihilism. When he tells us that results of endocrine therapy are chiefly due to the influence of a credulous physician on a still more credulous patient, it is at any rate, interesting to find that similar effects have been obtained with the incredulous cow.

In passing it is interesting to note the influence of the pituitary gland over both reproductive and renal functions, in view of their close anatomical relations in the genito-urinary system.

As to methods of administration of pituitary extracts, Gardner-Hill's results justify our giving the anterior lobe extract by mouth. When there is no contraindication for posterior lobe extract I usually employ 2 grains thrice daily of the whole gland as it is cheaper. Otherwise I give only the anterior lobe extract. That the posterior lobe extract can sometimes be absorbed from the stomach is shown by Hamill's observation that uterine contractions can be produced in the cat by administration of pituitrin through the stomach tube after ligation of the pylorus. I believe that intestinal atony can sometimes be relieved by oral administration of the posterior lobe. Blumgart suggested that as the pituitary is an outgrowth of the nasal mucosa, its extracts might be absorbed by spraying into the nose or from plugs of cotton-wool soaked in a solution of the extract and inserted high up into the nasal cavity. This method has met with a fair degree of success in the

treatment of diabetes insipidus by pituitin. That intra-muscular injections of 1/2 to 1 c m of pituitin will stimulate the muscles of the heart, intestine, and uterus, and will control polyuria, is of course generally admitted.

Pancreatic Extracts

The efficacy of insulin injections is beyond doubt, but that of any pancreatic extract orally administered is quite uncertain, to say the least. Insulin is apparently contained in other animal and vegetable tissues. Its value in diabetes is generally admitted in the profession, though unfortunately much prejudice against it has been roused among the general public by the statement that if a patient once starts insulin he must take it for the rest of his life. They take this to mean that if he stops it his last state is worse than his first. This is emphatically untrue, though it is obvious that if he ceases to have it his carbohydrate intake must be more strictly controlled. It is, of course, too soon to talk of the cure of diabetes, but I have a considerable number of patients who have had a course of insulin and who are now keeping free from glycosuria and with a normal blood sugar, although they have had no insulin for periods up to a year or more. Allen has shown that persistent hyperglycaemia damages the cell islets, so that every case of diabetes must ultimately become pancreatic in character. But this does not prove then pancreatic origin, rather the reverse. I believe that our aim should be to restore a normal blood sugar early enough to prevent permanent damage to the islets, and it is therefore important to use insulin as soon as the blood sugar fails to respond to dieting. I wish to protest most strongly against irresponsible statements which lead patients to deprive themselves of the most valuable remedy which has yet been discovered for this dangerous disease.

Insulin is also being used in a tentative way for other conditions, such as hyperthyroidism, in which the carbohydrate tolerance is always lowered and the blood sugar curve rises to an abnormal height. Cramer has shown that insulin can prevent death in the experimental hypopyrexia produced by tetrahydrophthylamine, which excites metabolism certainly suggests its use, together with dextrose, in hepatic toxæmias with ketosis. For in this way we can assist in the complete oxidation of the fats which are producing the toxic anabolic bodies.

Other Extracts

Of other extracts I need say little. I am hopeful about ovarian extract now that it has been shown experimentally to produce definite effects, and that Allen and Doisy have prepared an extract which will produce oestral phenomena in oophorectomized animals. It ought, therefore, to be possible to place an active extract on the market, and the unreliable character of many of the commercial products may be due to their preparation from ovaries containing a corpus luteum. Even as it is I believe I have seen benefits following administration of ovarian extract, though it happens that all my positive results have been obtained with one particular preparation. If we could do something to alleviate the misery which the climacteric woman suffers herself and inflicts upon others we might bring peace into many households. But my best results have hitherto been obtained in cases of ovarian inadequacy in earlier life. Successes have been reported with extract of corpus luteum, for the use of which there seems to be some rational basis.

I am sceptical about the efficacy of any orchitic extract given by the mouth. Here the grafting method offers a better chance.

Although the thymus appears to have a real retarding effect on sexual maturity, it does not appear to do so by virtue of an endocrine secretion as ordinarily understood. So there is no rational basis for the administration of thymic extract.

The pineal body would appear to produce its effect through the nervous system and not as an endocrine gland, so little is to be expected from pineal extract in sexual precocity and muscular dystrophies.

I am entirely sceptical as to the value of extracts other than those I have mentioned.

II—SWALE VINCENT, LL.D., D.Sc., M.D., FRS ED., FRSC SV

Professor of Physiology, University of London (Middlesex Hospital Medical School)

I HAVE, on previous occasions, attacked the wholesale uncritical employment of animal products as drugs. But the enemy's line is not yet broken and the sale of worthless preparations goes on apace.

The history of organotherapy has now been recorded several times, and, amusing as it might be, I do not think it would serve any useful purpose to recapitulate this chapter on the present occasion.

The word "endocrine" has come into use as a synonym for "internally secretory," so that it is now customary to refer to "endocrine glands" and "endocrine therapy." It follows that in the latter case we are not concerned with treatment by animal tissues in general or even by glandular extracts as such. It is only when we are able to institute a true substitution therapy—artificially to replace the internal secretion of some ductless gland—that we have a right to use the expression "endocrine therapy."

In the advertisement pages of our journals we find a long list of "endocrines," singly or in mixtures. It is assumed by the advertisers, and is apparently accepted as an axiom by the physicians who prescribe these products, that they will bring about their beneficial results when they are given by the mouth. It is on this point that there is the greatest difference of opinion. It is universally recognized that thyroid gland and its various preparations are effective when given by the mouth. It is also generally admitted that insulin is not of any therapeutic use when orally administered. In regard to all the rest, a score or so of much-puffed preparations, there is very considerable doubt. Preparations of parathyroid, pituitary, and others are believed by many to be effective when given by the mouth, while the rest are only prescribed in this manner by the most optimistic and uncritical. It is to be noted, however, that this group includes a very large number of individuals.

Some recent reports by responsible writers express considerable doubt as to the value of parathyroid extracts when given by the mouth. According to the statements of numerous writers the preparations given in this way are useful in parathyroid deficiency, nervous disorders, calcium deficiency, chronic toxæmias, etc. Many physicians prescribe small doses of adrenin to be taken by the mouth, though others express doubt as to the efficiency of this proceeding. The pituitary substance, various pancreatic preparations, extracts of ovary, corpus luteum, and mammary gland, are frequently given by the mouth and good results are reported by some observers. Oral administration of orchitic extracts is generally admitted to be useless. Among other organs and tissues extracts of which are administered by the mouth, we need only mention thymus, pineal body, liver, spleen, kidneys. There is not the slightest reason to believe that these have any action in health or disease, and the same applies to still other substances which are advertised by the manufacturers of endocrine products.

The difficulties surrounding the subject of endocrine therapy are of two kinds. In the first place, there is the difficulty, common to all branches of therapeutics, of deciding for or against the value of a drug. It is useless to claim that a drug has done good unless we have a moderately clear idea of what was going to happen if nothing had been done. This very obvious consideration is almost universally overlooked even by medical men. The public has not yet even begun to grow suspicious. It swallows gillons of medicine in blind faith, trusting either to the blatant advertisement of the drug vendor or to the trust-inspiring manner of the practitioner. Many of the patent medicines are devised for spasmotic conditions which usually only last for a limited period, after which the patient may be fairly well until the next attack. Such conditions as asthma and epilepsy. It is obviously very easy to establish a reputation for any remedy in these disorders, and I suppose there are more "cures" for these than for any other diseases, if we exclude coughs and colds. It is clear that we must make great efforts to distinguish between *post hoc* and *propter hoc*. Some sort of experiment

must be carried out. Rigid and adequate controls must be instituted.

But there is another kind of difficulty connected with endocrine therapy. This depends on the fact that treatment by gland extracts is based so largely on *a priori* or on theoretical considerations. The widespread employment of endocrine therapy is based upon the theory that all organs and tissues in the body manufacture and pour into the circulation some kind of internal secretion whose function it is to influence some special or the general metabolic activities of the body. If there be a deficiency in any one of these, what could be easier than to replace it by the administration of extracts of the appropriate gland? This, the generalized theory, has many ramifications. The whole story of vagotonia and sympathetotonia and the division of glands into "sympathetotropic" and "parasympathetotropic" is based upon the assumption that the secretion of the chromophil tissues maintains the tone of the sympathetically innervated tissues. The argument put forward is that, since adrenin acts as a tonic continuous stimulus to the sympathetic system, there must be some substance which performs an analogous function for the cranial and sacral autonomic fibres. Now it is difficult to adduce any satisfactory evidence that the chromophil tissue has the function alleged, or, indeed, that it is of any service whatever in the normal state of the animal. The discharge of adrenin from the adrenal body is not indispensable for life or health, and there is, indeed, no reliable evidence that under normal conditions the circulating blood contains any adrenin at all. It follows, then, that the argument for the existence of "autonomin" or "hormone X" by analogy with the function of adrenin, falls to the ground. It is not clear why it should be necessary to assume that "there is some substance which exerts a continuous stimulating action upon the autonomic nervous system." Why do we not make the same assumption for the tonic influence of the spinal cord upon the skeletal nerves? Why not assume that the inhibitory and other influences of the cerebium upon the lower centres are controlled by a special hormone?

But many physicians have not claimed, or have ceased to claim, that their endocrine practice is based on sound physiological data. They insist, however, on the value of endocrine extracts, urging that, although they may contain no physiologically active principles, they are found empirically to do much good in various diseases and disorders. There can be no objection to this attitude, but it is only reasonable to urge in the strongest possible terms that the *a posteriori* evidence of relief or cure must be satisfactory. In many instances this is far from being the case. All the old stumbling blocks trip up the unsuspecting physician, all the fallacies effectually deceive him. He tumbles into all the "pitfalls." The difficulties referred to above are not realized and so are not circumvented, and the scientific value of any conclusions which may be drawn is nil.

As we have already seen in regard to the great majority of endocrine products (in fact all except one) as sold by the manufacturing druggists, there is no satisfactory evidence that any effects whatever are produced in healthy animals when they are given in the ordinary way by the mouth, unless they are given in such quantities as to serve as foods. On previous occasions I have expressed the opinion that "it would be difficult to mention a drug which is clearly and beyond doubt of value in the treatment of disease and yet which produces no recognizable pharmacodynamical effects upon a healthy animal." I suppose that in the case of the majority of drugs of mineral or vegetable origin it would not nowdays be expected that a substance incapable of inducing any changes in the condition of a normal animal would still be of value in the treatment of disease. But if non or substances yielding vitamins be given with the object of replacing these substances which are lacking in the diet, I suppose it might be expected that little or no effect would be produced by their administration to a normal individual. The same kind of argument might be used in the case of the active principles of the internally secreting glands, when they are administered in accordance with the theory of "substitution therapy." In animals or in human beings suffering from insufficiency of secretion of a gland good results might accrue from an extract of the gland in

question, while in a normal individual little or no effect might be observed. It is said that parathyroid grafts will not "take" unless a parathyroid deficiency has been induced either by disease or operation, and that parathyroid feeding diminishes the guanidine and increases the calcium in the blood in certain diseased conditions. The most recent preparations of parathyroid gland are stated to have a powerful effect upon the normal animal—when subcutaneous injections are employed.

It must, however, be remembered that insulin, adrenin, and thyroid extract have a powerful effect upon the normal animal. It will, then, not be unreasonable to regard with considerable suspicion the report that a pharmacologically inactive substance is of therapeutic value. But it must be admitted that one ought to exercise considerable caution in procuring any substance to be pharmacodynamically inactive. The action of such materials as meat extracts is often as pronounced as that of tea and coffee, yet no one even regards the former as drugs, while the latter are universally placed in this category. Again, we must not lose sight of the fact that we have no right to affirm that a drug has no physiological action simply and solely because, when a dose is injected into the vein of an animal, there is no noticeable effect on the blood pressure, respiratory movements, or flow of urine. There are several other kinds of pharmacodynamical actions which the researches of recent years have made it necessary for us to take into consideration. Possible effects on the blood sugar and on the basal metabolism should not be forgotten.

Although extracts made from the majority of organs and tissues produce no noticeable physiological effects when they are given by the mouth, yet when they are injected beneath the skin, or especially into the blood stream, some influence on the organism may be produced. Thus, tissue extracts in general, when injected beneath the skin of animals such as dogs and cats, have a slight but quite recognizable stimulant or irritant action. When the extracts are injected into the blood stream there may be distinct physiological effects, such as, and in particular, lowering of the blood pressure. It cannot be urged too strongly that these effects are not specific, and have nothing to do with any internal secretion on the part of the tissue in question. To argue that because extracts of the cerebral cortex lower the blood pressure, it is therefore one of the functions of the cerebral cortex to manufacture and pour into the circulation a "hormone" whose duty it is to keep down the blood pressure, would be absurd. Yet an assumption almost as unjustifiable has been made in respect of those few tissues whose extracts contain a substance which raises the blood pressure. But every few months articles appear which show that it is still necessary to point out what I showed for the first time many years ago, that tissues generally contain a depressor substance, and that there is no reason to believe that this fact has any bearing on the subject of internal secretion. The substance in these extracts which lowers the blood pressure has by some been supposed to be choline, by others histamine. It appears to be neither of these, though its real nature is yet unknown. There may, of course, be several such substances, some or all of them are soluble in water, alcohol, and ether. There is, of course, no proof that these substances are not the active principles of the glands, the point is that it is not by virtue of their action on the blood pressure that they may be recognized. These physiological actions, although they are sometimes ascribed to a specific "hormone," are not generally correlated with a therapeutic action, for they are usually not known to the "clinical endocrinologist."

The method by which extracts are prepared is a matter of supreme importance. In the first instance it was customary in laboratory work to cut up the tissue into small pieces or press it through a mincing machine, and then pound it up with sand and normal saline solution. The extract could then be used after filtering, or it might be boiled with a trace of acetic acid and then filtered. In the former case we had a "protein extract" in the latter a "protein free" extract. Sometimes alcohol or ether or some other extrahent is used but the final product should, of course, be dissolved in normal saline solution before being injected into an animal. This condition is of course, not essential if the preparation is to be administered by the mouth. Many

commercial preparations, if not the majority, are made by simple drying and powdering the tissues, either in their natural state or after removal of the fats (and lipoids?). By such means it is certainly possible to get active extracts of thyroid, adrenal, and the pituitary, but it appears from recent work on the pancreas (vide infra), the ovary, and the parathyroid, that in the case of other organs and tissues special modes of preparation may be necessary. There is great danger that, in the attempt to prepare a clean, "elegant" preparation, whatever active principles are present may be destroyed.

Thyroid Medication

Thyroid preparations are universally recognized as ranking with our most valuable drugs, and it is not an insignificant circumstance that they are potent when given by the mouth. According to Kendall, the active principle, thyroxin, is 4,5,6-hydro-4,5,6-iodo-2-oxy-beta-indol propionic acid. It is not quite certain that thyroxin represents the whole of the active material of the thyroid gland.

Various thyroid preparations are in regular use in medicine. Dried thyroid substance is perhaps the surest and most popular. The best indication for thyroid treatment is a low basal metabolism. When this is found we have an intelligent reason for the thyroid administration, and every hope of success. But a drug which increases the total metabolism of the body may be useful in a great variety of disorders. It is advertised as good for asthma, constipation, enuresis, epilepsy, defective development, haemorrhage, infectious diseases, obesity, rheumatism, senility, skin diseases, toxæmia, and in so far as any of these, notably obesity, may be due to a sluggish metabolism the treatment may be beneficial. Thyroid substance is present in many of the combinations of "endocrines" on the market, and most often is the only ingredient which has any effect at all when given by the mouth.

Parathyroid Medications

We do not yet know what is the function, or what are the functions, of the parathyroid glandules. The intoxication theory of Koch, Paton, and others, and the calcium regulation theory of McCallum and Voegtlin, do not appear to stand in any relation to each other. The guanidine intoxication theory is opposed by Greenwald on chemical grounds. Most of the recent work has been devoted to the relation of the parathyroids to calcium metabolism. The results of parathyroid medication are still very uncertain. It is difficult to state in exactly what morbid conditions one would expect it to be of use. Tetany, the result of disease or damage to the glandules, is, of course, one such condition, but there has been too great a hurry to assume that all kinds of "tetanic" disorders are due to parathyroid lesion or dysfunction. It is by no means certain that any form of tetany is connected with the parathyroids except, indeed, that which sometimes occurs when the glandules are injured or removed during operations upon the thyroid. Other forms of tetany are due to a great variety of causes. Thus we have the idiopathic tetany of workmen, maternity tetany, gastric tetany, tetany in infection and intoxication, post-operative tetany, and tetany after forced respiration. It is not to be assumed without further evidence that all these forms are due to disease of the parathyroids. It seems reasonable to suppose that a great many different conditions may give rise to the phenomena of "tetany." It has recently been shown that administration of thyroid substance to animals will frequently produce this condition. Parathyroid insufficiency has also been suspected to be the essential pathological condition in paralysis agitans. But hyperfunction has also been alleged to occur in this disease, and the majority of observers fail to find any connexion between the parathyroid glandules and the disease in question.

It is exceedingly doubtful whether any parathyroid preparations at present on the market will, when given by the mouth, even relieve the symptoms due to injury to or extirpation of the parathyroid bodies. The majority of competent observers find these preparations to be physiologically inactive and useless as therapeutic agents. In the case of the parathyroid, the ovary and the pancreas, some special method of extraction is required in order

to obtain preparations which display any physiological activity. According to current views, all the internal secretions must be soluble in or extractable by water. But some of them seem to occur in the glands in combination with lipid substances, and it is necessary to break up this combination in order to get the substance into watery solution.

Collip claims that he has extracted from the parathyroid a principle which, on injection, prevents tetany for thirty hours in parathyroidectomized animals. This substance also produces a very marked increase in the blood calcium. One of the most interesting items in Collip's communication is the statement that his extract is effective when administered by the mouth. He states most emphatically that he obtained negative results from all the commercial preparations he was able to test. These results have been in the main confirmed by Cameron.¹ It would seem that this work marks a distinct step in advance, but the problem of the parathyroids is not yet solved, and it is by no means clear in what cases the administration of a calcium-increasing drug is indicated. The estimation of the blood calcium is by no means an easy matter as a routine practice, and the pathological conditions in which the calcium is below par are not yet known with any degree of certainty.

Parathyroid treatment has recently been recommended for the treatment of sprue. Scott reports excellent results after administration of parathyroid and calcium lactate. The blood calcium increased in accordance with the general improvement of the patients, but there is no statement that the author has tried the effects of calcium lactate without the parathyroid. It is, at any rate, not surprising to find that the administration of a salt of calcium may lead to an increase in the calcium content of the blood.

Returning for a moment to the subject of tetany, it is reasonable to hope that any cases of tetany in the human subject which may be due to parathyroid deficiency may be treated with success by the substance of Collip. We must, however, bear in mind that tetany in animals due to extirpation of parathyroids frequently disappears and leaves no traces even when no active treatment is carried out. This frequently occurs in monkeys, especially if they are kept on a milk diet. Tetany is probably due to many different causes, and many different modes of treatment have been found to be beneficial.

Pituitary Medication

It is not yet possible to say what is the function of the pituitary body. The structure is composed of several parts, differing in origin, in structure, and presumably in function. It is, perhaps, in the case of this organ that the greatest confusion has arisen between pharmacodynamical action and the evidences for internal secretion and the basis for a true "substitution therapy." There is no doubt that posterior lobe preparations contain principles which will raise the blood pressure and increase the flow of urine and produce other effects when injected into the circulation of an animal. There is also no doubt that posterior lobe preparations are useful as drugs (when injected subcutaneously) in the treatment of diabetes insipidus and to aid the contraction of the uterus. They are also valuable in meteorism. But it is very doubtful whether these actions and these uses have any relation to any known functions of the organ. We have, in all probability, no right to regard them as instances of "substitution therapy."

Adrenal Medication

Adrenin, the active substance obtained from the chromophil tissues, sold under various names, has pronounced physiological activities (when injected into the circulation, or applied to mucous membranes) and is a very useful drug. But at the present time it is difficult to correlate this action and this usefulness with anything we know about the functions either of the adrenal body or of the chromophil tissues. Here, as in the case of the pituitary extracts just referred to, there is in all probability no question of a "substitution therapy." A study of the chemical nature of the active substance of the chromophil

tissues has led to the employment of certain amines as drugs. It is generally conceded that adrenal preparations have no effect of any kind in health or disease when they are given by the mouth.

Several years ago I fed a hungry dog with the adrenal bodies of a whole flock of sheep, and no effects could be observed except those of repletion. Further, I administered to an adult male human volunteer huge doses of dried adrenal medulla without the slightest effect on blood pressure, respiration, urino, etc. It is, of course, possible that there might have been slight changes in metabolism which could be detected in more modern times.

A possible exception may be admitted owing to the local action of adrenin on the lining membrane of the stomach. But Leyton states that adrenal extract given by the mouth will raise the blood pressure in cases of Addison's disease, and Hitchcock has recently affirmed that adrenin given by the mouth raises the metabolic rate. These statements, however, have not been confirmed by other observers.

Testicular and Ovarian Medication

Extracts made from testis and ovary have not been found to produce any effects either in health or disease when given by the mouth. But in 1914 Heilmann and Frenkel prepared an active substance, sold by a firm in Basle, and Allen, Doisy, and others claim that they have, by practically the same method, extracted "the principal ovarian hormone." The residue from an ether extract is treated with acetone, which throws down an inactive precipitate. The filtrate contains the active substance, and after being once more taken up in alcohol and evaporated to dryness the minute yield of oily residue is dissolved in corn oil for injection. The extracts are tested by noting the effects on spayed animals. In 1917 Stockard and Papanicolaou described a method for following the oestral changes in the living animal. During the anabolic phase of the cycle in the guinea-pig, the rat, and the mouse, the vaginal epithelium grows and a cornified layer appears. During the katabolic phase the outer layers of the epithelium degenerate and are removed by leucocytic action. These changes show a regular succession of cell types in the vagina, each one characteristic of a certain phase of the cycle. In this way the microscopical examination of vaginal smears becomes an indication of the oestral condition of the animal.

According to Allen and his co-workers, injections of the extract into animals from which the ovaries have been extirpated produce not only the typical hyperaemia of oestrus, but also hypersecretion in the genital tract and growth of the mammary glands. There is the thickening and cornification of the vaginal walls and subsequent degeneration. Moreover, the animals will admit the male during the artificial oestrus. No positive results were obtained with commercial extracts nor were there any effects from oral administration. Several years ago Marshall and I made extracts from oestrous ovaries and injected into a bitch at a period remote from the oestrous one. In some instances a swelling of the vulva and other slight signs of the oestrous condition were induced. The results obtained by Allen and Doisy have been fully confirmed by Wright, Dodds, and Dickens, working in the physiological and biochemical laboratories of the Middlesex Hospital. They find that no active substance can be extracted from any of the commercial preparations which they have examined. The yield of active material is exceedingly minute. No effects are observed when the material is given by the mouth. Testicular extracts do not appear to be of any value when administered by the mouth. The only possible method of instituting a true substitution therapy in the case of the testis appears to be by grafting, and it cannot be said that this proceeding has proved itself entirely satisfactory.

Pancreatic Medication

For a long time physiologists and physicians have been firm in their belief that the pancreas has, in addition to its work as a digestive gland, the function of pouring into the blood stream some substance the absence or deficiency of which produces diabetes in animals (and most probably

also in human beings). Many attempts have been made to remedy the deficiency by administration of pancreatic substance. The majority of those working at problems of internal secretion must have tried the effects of treating diabetic patients with minced raw pancreas (a method which is being revived at the present moment), and most have come to the conclusion that the method is impracticable, although in a few cases some benefit would seem to have accrued. It is only within the last three years that a preparation has been made from the pancreas by Banting and Best which can be relied upon to reduce the blood sugar in normal and depancreatized animals and in human beings suffering from diabetes. There are now several different ways of preparing insulin, and it (or a substance having an identical or very similar pharmacodynamical action) may be obtained from many organs and tissues, animal and vegetable, although in greatest amounts from the islets of Langerhans in those species in which islet tissue can be procured separate from the rest of the pancreas, as in some teleostean fishes. The substance, whatever may be discovered as to its chemical nature, appears to originate in the body chiefly from the modified pancreatic tissue which forms the islets of Langerhans.

Insulin ranks with thyroid substance as a means of employing a very valuable substitution therapy. Although the best known and most reliable preparations have to be given by subcutaneous injection, several observers claim that their special substances are effective when given by the mouth.

Summary

The present summary is only slightly modified from that given in March of this year.³

There are yet only two clear cases where we can employ a true substitution therapy—those of the thyroid and the pancreas, of these only one, the thyroid, is known to produce any effects when given by the mouth. Some observers claim that certain pancreatic extracts may be efficacious when given in this way.

It may be that sooner or later we shall be able to include the parathyroid and the ovary in the same category, though, according to the best evidence, the preparations of these organs which are commonly employed are inactive, and the recent products made by special methods must be given by hypodermic injection.

The internal secretion of the testis may possibly be restored or reinforced by grafting.

There are, however, two striking instances in which substances obtained from organs usually supposed to furnish internal secretions are valuable as drugs, apart altogether from the question of internal secretion and substitution therapy. These are adrenin and preparations made from the posterior lobe of the pituitary body. And it is very doubtful whether any of these have any effects when administered by the mouth.

Thus out of the long list of organs and tissues advertised by the manufacturing druggists and prescribed by the clinical endocrinologists to be administered in the ordinary way by the mouth, only one—the thyroid—is of proven value.

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- ¹ Personal communication. ² BRITISH MEDICAL JOURNAL August 23rd 1924. ³ Royal Society of Medicine March 31st 1925 (*Lancet* *Phys. Soc. Med.* June 1925 p. 29).

III—H GARDINER-HILL, M.B., M.R.C.P.,
Medical Unit St Thomas's Hospital

As my contribution to the discussion I would like to give a brief account of some of our experiences with endocrine therapy in the Medical Unit at St Thomas's Hospital. Our attention has been chiefly directed to the uses of thyroid, pituitary, ovarian, and orchic extracts, and we have attempted to control our clinical observations by the metabolic tests to which Dr. Langdon Brown and Professor Swale Vincent have already referred.

In the first place, I would like to discuss the value of thyroid extract in obesity, and to call attention to the way its action can be augmented in certain cases by the simultaneous administration of whole-gland pituitary extract. We have found this method of treatment especially useful.

* Be t Smith and Scott have however shown that insulin can be obtained from the tissues of a dog which had been depancreatized some weeks previously, and Baler Dickens and Dodds report an abundant amount of insulin in the tissues and pancreas of a patient who had died in diabetic coma.

not only in the obesity of adolescence of the so called pituitary type, but also in adults, and especially in females where obesity developed after childbirth or at the menopause. In some of these patients thyroid extract is quite effective when given by itself, but in others thyroid intolerance soon develops. It is in these circumstances that pituitary extract is useful, though in the present state of our knowledge it is difficult to offer an explanation of its action. We have found, however, that estimations of the sugar tolerance in patients under treatment throw some light on this question, and enable a distinction to be drawn between the two groups of cases.

In the normal person, after 50 grams of glucose the blood sugar rises from a fasting level of 0.1 per cent to about 0.175 per cent at the end of half an hour, and then falls again to the fasting level by the end of an hour and a half. In patients with obesity the response to sugar is different—two types of curve are found. In the cases of recent origin there is an inability to deal with sugar, the curve is high and prolonged, and the sugar tolerance decreased, in the later cases sugar is dealt with too quickly, the curve is low, and the sugar tolerance increased. It is in the latter group that thyroid extract is effective when given alone, and these patients show little tendency to thyroid intolerance. In the earlier cases, however, with decreased tolerance, thyroid extract appears to reactivate the delay in the curve and cause hyperglycemia. Whole-gland pituitary extract, given by itself, has an opposite effect on the blood sugar tolerance curves of these patients to that of thyroid extract, the carbohydrate metabolism is improved and the sugar tolerance increased, but this is not accompanied by loss of weight. It may be recollected that this agrees with Burn's observations that pituitary extracts have a stabilizing effect on the blood sugar.

Now the point I particularly wish to call attention to is this: by administration of thyroid and whole-gland pituitary extracts simultaneously the beneficial effects of thyroid extract can be obtained without its attendant disadvantages, and a considerable improvement in metabolism and loss of weight occurs. This improvement in metabolism, however, is not maintained for any length of time when treatment is discontinued, sooner or later it reverts to its former state and the patients again gain weight. It does, however, seem possible, when once the weight has been reduced, to maintain the new level of metabolism on decreased doses, and by on and off treatment to help these.

This seems to be a point well worth taking into consideration when the tendency of obese people to become diabetic is remembered, and I have drawn attention to the fact that sugar tolerance estimations in these patients show that many of them must be regarded as potentially diabetic.

The details of these investigations are being published in full elsewhere in conjunction with Dr Forest Smith and Dr Isaac Jones. It will suffice here to point out that desiccated extracts of thyroid and whole-gland pituitary are used and given in doses gradually increased at fortnightly intervals, starting with half a grain of each a day and working up to a point where the patient loses one or two pounds a week. Estimations of the sugar tolerance are made at frequent intervals to control the dosage.

This method of administering thyroid and pituitary extracts simultaneously we have also made use of in certain cases of adolescent goitre. Pituitary extract by itself has no apparent effect on these goitres, if given with thyroid extract the beneficial effect of the latter seems to be enhanced. Marine and others are of the opinion that they can be prevented by the prophylactic administration of iodine to school children, this is now generally accepted, but it is a different proposition when the goitre has actually developed. In these circumstances, in our experience, iodine administration does not appear to be very effective, either in reducing the goitre or in regulating the metabolic disturbance which is sometimes associated with it. Many of these goitres are unaccompanied by any other sign of disturbed thyroid function, and they disappear in time entirely of their own accord. This seems to be especially true of those developing before the onset of menstruation, but in a series of 100 cases we have recently investigated

a considerable proportion of those developing subsequently to the onset of menstruation showed evidence both clinically and by metabolic tests of disturbed thyroid function. In 32 per cent there appeared to be a tendency to hyperthyroidism, and in 26 per cent a tendency to hypothyroidism, and it is particularly in the latter group that thyroid extract, given in conjunction with pituitary extract, is valuable in reducing the goitre and in regulating the associated metabolic disturbances. This method of treatment appears to be equally successful in reducing many of the physiological goitres first mentioned.

I would like to refer next to the value of thyroid and pituitary extracts in the treatment of undergrown children, and particularly to mention the results we have obtained by giving anterior lobe pituitary extracts by themselves. The effect of thyroid extract on the rate of growth of thyroid-deficient children is well known, the rate of growth can be considerably increased. As an instance, I will cite the case of a girl with juvenile myxoedema, whom we have been treating for the past three years. Her rate of growth on thyroid extract is more than five times as great as her rate of growth when this treatment is discontinued. Thyroid extract is equally effective in increasing the rate of growth of less obviously thyroid deficient children, and in this connection metabolic tests are valuable in picking out the cases which are suitable for treatment.

The value of anterior lobe pituitary extract given by the mouth is not generally appreciated. Dr Langdon Brown has already referred to our observations on two infantile children whose rate of growth and carbohydrate metabolism have been considerably increased by this means alone. These children have now been under treatment for a year, and their rate of growth has been accelerated from 3.5 and 3.6 cm per annum to 6.4 and 7.5 cm per annum respectively—then rate of growth has been doubled. We have at the present moment a series of seven children under treatment with anterior lobe pituitary extracts in whom sugar tolerance estimations have been carried out at repeated intervals during treatment. Before treatment they all showed an inability to deal with sugar, the sugar tolerance was decreased. Feeding with anterior lobe pituitary extracts has greatly increased the sugar tolerance in every case. The average blood sugar figure of the seven at the end of one and a half hours after 50 grams of glucose before treatment was 0.159 per cent, representing a considerable delay in the curve. The average figure of the seven at the same stage after treatment was 0.104 per cent, this represents a normal curve. This is difficult to explain, except on the assumption that the extracts are active. We have also several children under treatment with combined thyroid and anterior lobe pituitary extracts, and the resulting increase in growth is greater than in the cases where either of these extracts have been given alone. Estimations of the sugar tolerance again show that in these children also the carbohydrate metabolism is considerably improved by treatment.

Finally, I would like to refer to our experiences with the at present available ovarian and orchic extracts. The results have been entirely negative, except, possibly, in the case of extracts of the corpus luteum, but we have had a number of cases, about twelve in all, of primary and secondary amenorrhoea under regular treatment with various extracts of ovarian substance and ovarian residue for some four to six months. In some of these patients the dose has been worked up to as much as 45 grains of ovarian extract a day, but in no case could any effect be attributed to this treatment—there was no alteration in weight and menstruation was not influenced in any way. Orchic extracts have been equally unsuccessful in influencing the metabolism of male eunuchs.

In conclusion I would suggest that thyroid and pituitary extracts have proved extremely useful in certain cases of obesity, adolescent goitre, and defective growth, especially when given simultaneously. Our results also show that anterior lobe pituitary extract, when given by itself, has an influence both on growth and carbohydrate metabolism. On the other hand, the at present available ovarian and orchic extracts have in our experience proved entirely useless.

IV—KENNETH M WALKER, FRCS,

Lecturer in Venereal Diseases, St Bartholomew's Hospital

I SHALL confine my remarks to what I may call the surgical aspect of endocrine therapy—that is to say, to attempt to remedy deficiencies in the endocrine system by means of grafts. These attempts have been rendered necessary through the failure, except in the case of the thyroid and the pancreas, to obtain an effective extract.

Before discussing the matter in detail it will be useful to formulate certain general principles underlying the use of transplants of any living tissue. The first of these is that the more closely related the donor of a graft is to the host the more likely is the graft to survive. Indeed, it may be said that at the present day the only way in which grafting can be accomplished with anything like constant success is by the use of "auto grafts"—that is to say, of material taken from the host's own body. As an example of this may be quoted the general failure to avoid symptoms of the menopause, in patients in whom an oophorectomy has been performed, by the use of "hetero grafts," but the success that attends the use in such cases of auto-transplants. Even when we confine our attention to "homo grafts"—that is to say, grafts taken from a member of the same species—the same rule concerning the relationship of the donor to the host holds good. Thus it has been found in animal experiments that better results are obtained with transplants from a brother or sister born in the same litter than with grafts derived from a less closely related donor. When donors of a different subspecies or species are employed the absorption of the graft is so rapid that the operation is useless. Indeed, it is probable that in human surgery the use of grafts obtained from such animals as a sheep or a goat is no more effective than the employment of injections of emulsified gland. This being so, if tissue from the lower animals is to be used it is better to follow the technique of Stanley and Keller and inject fragments of solid gland through a large calibre needle rather than to perform an open operation. The action of a hetero-graft is, in my opinion, entirely due to the absorption of a certain amount of active principle during the process of disintegration. Voronoff has, of course, in his work on testicular grafts, made extensive use of monkeys, and has justified his choice on the ground that man and the anthropoids are very closely allied in their serum reactions (both agglutination and precipitation). But while I agree with him that it is better to obtain grafts from the higher than from the lower branches of the monkey family, I am convinced that in any case a rapid absorption of such grafts must occur. It is, indeed, my belief that the only hope of effective work in endocrine transplants lies in the obtaining of material from a human source. This, of course, is a matter of difficulty. Perhaps I may appeal to those who have cases of ectopia testis in which orchidectomy is contemplated to allow me the use of this material, for at present my work is entirely held up for lack of grafts.

This question of the absorption of grafts is of such importance that it must be discussed in greater detail. In this connexion Loeb's intensive study of the reaction of a host to a graft is of special interest. By removing grafts at different intervals after transplantation into animals Loeb showed that in their disappearance two distinct processes are at work. The more important of these consists in the development of connective tissue within the graft, causing a gradual strangulation of the blood supply. The second process is an invasion of the graft by leucocytes. The leucocyte in this case apparently acts as a primary destructive agent, and not merely as a scavenger of disintegrating tissue. Loeb considers that the connective tissue proliferation and leucocyte invasion are due to changes that have occurred in the metabolism of the graft cells, and that they are not the result of any primary hostile reaction on the part of the host. The altered metabolism in the graft gives rise to toxins, which in their turn attract leucocytes and bring about a change in the activity of the connective tissue cells of the host. The more distantly related the donor to the host the more active is this formation of toxins, and the more energetic the subsequent invasion by leucocytes and connective tissue cells.

It must, however, be remembered that there are other

factors besides the relationship of the donor to the host that determine the rate of disappearance of a graft. It has been found that different tissues vary greatly in the rapidity with which they are absorbed. As an example of this may be quoted Christmann's experiments on suprarenal grafts in rats. These experiments showed conclusively that whilst the cortical layer of the suprarenal may survive in a transplant for a considerable period, the medulla rapidly disappears. In his experiments Christmann removed one of the two suprarenals of a rat, and after dividing it into several pieces placed it within the peritoneum. In from one to six days the grafts had become enveloped by omentum and a penetration of the periphery of the graft by new blood vessels had occurred. *Pari passu* with this vascularization there took place a regeneration of the cortical layers and an entire disappearance of the medulla. While, therefore, it is possible to transplant the cortex of a suprarenal, it is not possible to graft the medulla, even if the graft be an auto graft.

It will be seen that the factors hitherto mentioned as influencing the survival or disappearance of a graft are factors depending on the graft rather than on the host. In other words, it is the metabolism of the invading cells, rather than a hostile reaction on the part of the host that brings about the disappearance of the engrafted tissue. There remain, however, to be considered other factors that are dependent on the host. Halstead has stated that grafts do not ordinarily survive unless there is a pre-existing physiological deficiency in the host of the gland in question. For example, transplants of testis will only succeed in cases of eunuchoidism. Should the animal be fully sexed the grafts will not survive. Still less is a graft capable of surviving when it is exposed to the action of an opposing gland. Thus Steinach found in his masculinization and feminization experiments that it was impossible to engraft an ovary on a male rat or a testis on a female unless the animals had previously been castrated.

Summarizing the foregoing we see that the rapidity with which a graft is absorbed depends partly on the nature of the graft and partly on the state of the host. The factors connected with the graft are the type of tissue employed, and the age and relationship of the donor to the host. The factors depending on the host are the existence or non-existence of a deficiency in the gland engrafted, and the absence of any antagonistic force exerted by an opposing endocrine gland.

The actual technique of grafting is a surgical question which need not be considered here in detail. The essential for success is that the graft should be favourably placed for the earliest possible vascularization. The sites that have been employed are in the rectus sheath, in the spleen, within the bony medulla, and in various positions within and beneath the peritoneum. In the case of testicular grafts I have always, where possible, employed the cavity of the tunica vaginalis. The advantage of using a serous cavity of this nature is that subsequent to the operation the graft becomes bathed in an inflammatory exudate which is highly nutritive in nature, and provides nourishment for the graft until vascularization has occurred. Asepsis and haemostasis are, of course, essential to success.

In interpreting the results obtained from grafts it is necessary to maintain a strictly critical attitude. In my own work on testicular grafts I have supplemented clinical observations by sugar tolerance and basal metabolism tests carried out before and after operation. Only where definite changes were found, not only in the clinical condition of the patient, but also in his laboratory tests, have I assumed that the graft had exerted any effect. And even when an effect has been demonstrated, it must be remembered that the life of the graft, except possibly in the case of an auto-graft, is a limited one, and that sooner or later, and almost certainly within the space of three years, all the transplanted tissue will have disappeared. And what is true of testicular grafts is equally true of transplants of other endocrine glands. Kocher, a pioneer in thyroid grafting, gave it as his belief that it is not possible to obtain permanent relief by such methods.

Turning to glands other than the thyroid and the gonads, the results of transplantation will be found to be still less favourable. In the case of parathyroids, whilst

auto-transplantation, in dogs in whom a definite parathyroid deficiency had been occasioned, is successful, the results of homo transplantations in the same animals are very unreliable. I have found no cases recorded of successful grafting of parathyroids in the human being. Suprarenal grafts, whilst they have succeeded in prolonging life in animals, have invariably been unsuccessful in man. Nor have any permanent results been obtained from the use in human surgery of pancreatic or renal transplants, although in both cases temporary benefit may have been noted during the period of disintegration.

Yet it is difficult to feel that grafting has no future. Progress in the culture of tissue *in vitro* and in the knowledge of the laws governing the growth of cells, further information concerning the action and retention of engrafted tissue and host, and of one member of the endocrine circle on its neighbour—these are the lines along which an advance must be made. Then when these difficulties depending on the interaction of the transplanted cells and the host's tissues are understood, and the factors that contribute to the rapid absorption of grafts reduced or eliminated, there is no limit to the aid that the surgeon may lend to the endocrine therapist.

V—H W C VINES, M D, Cambridge

WE have before us two papers of considerable interest, not so much perhaps as regards the matter they contain, as the outlook of the two writers upon the matter under discussion. The paper by Dr Langdon Brown is an account largely of the experiences of the writer in the clinical usage of endocrine substances, that by Professor Vincent suggests rather the statement of a preconceived dogma, unalterable by the progress of the investigations of others, and unsupported by recorded experiences of the writer, nor does there appear to have been any effort to test experimentally the validity of the theme which runs through it, that all endocrine therapy is useless with the exception of thyroid and perhaps pancreatic extracts.

This meeting has before it the consideration of the uses and abuses of endocrine therapy. We are, I think, discussing a science which is undeveloped, and we are attempting to discuss it as though it were fully matured. Let us suppose that this meeting is being held thirty years ago, and that the subject is the possibility of aerial flight. There would be a small band of enthusiasts who would insist that flight is much easier than air is a possibility, there would be a large band of destructive critics who would dismiss the matter as a fantastic absurdity. The parallel I leave to you, destructive criticism is not going to help us solve the problems of endocrinology, and though enthusiasms equally have their dangers, they tend to progress rather than the complacency of inaction.

Of the sections into which these papers are divided I am only prepared to say a little in regard to the parathyroid glands. I am quite prepared to admit that there is much empiricism connected with endocrine therapy; we rarely know the active substance we are dealing with, and still less do we know its mode of action. Yet with vitamins and light therapy we are as ignorant—even as with such homely compounds as the preparations of quill. It is generally stated that all endocrine glands secrete hormones or substances which accelerate or retard the velocity of biochemical reactions which are already in existence in living cells. Probably in the case of the thyroid gland this is true, possibly so in the case of the pancreas, the one may accelerate oxidative processes and the other retard it. But I am not at all sure that the hormone theory is applicable to all endocrine glands indiscriminately. I have recently obtained some evidence *in vitro* that the governing influence of the parathyroid glands upon the calcium content of the plasma may be due to the action of a substance in the nature of a protective colloid, the effect of which is to keep certain organic complexes of calcium and lecithin from precipitation. I have found that without parathyroid substance the calcium equilibrium of the solution I use occurs just below the tetany limit of 7 mg. calcium per cent. The addition of 2 mg. of parathyroid substance per 100 c.c. makes an appreciable difference, and raises the calcium

content. It is, however, impossible to go into the details of these experiments now. It is, I think, probable that a quantitative relationship may be found between the amount of parathyroid substance used and the calcium content of these experimental solutions. Such a result would explain why oral parathyroid therapy is usually a failure in tetany, while grafts or injected extracts may cure the condition. It is a question of the maintenance in the blood of a definite quantity of this protective substance. As Professor Vincent points out, it is interesting to note that Collip has found the oral administration of his concentrated extract is effective, while the ordinary dried gland is not effective.

I note that Professor Vincent has referred to the work of Dr. Scott on spinae, and has favoured it with an exclamation mark as though the results Scott claims pass all bounds of sane credulity. I would, however, point out four things: first, that calcium salts alone, either by injection or by mouth, have been tried by Scott without very much success; secondly, that Scott has obtained almost equally good results in spinae without calcium at all, using only the despoiled commercial parathyroid extracts; thirdly, that thyroid administration invariably causes a relapse, and fourthly, that a good many other people beside Scott, both at home and abroad, have had equally good results.

We are all fully aware that endocrine therapy has its uses, and equally that certain types of unscrupulous manufacturers may trade upon the ease with which purposely valueless preparations can be put upon the market at high prices. Yet is not this position common to all classes of saleable goods known, and is the puff advertisement peculiar only to endocrine products? There is, I think, a grave responsibility resting upon us as clinicians and laboratory workers, by observation and experiment we must endeavour to make these endocrine substances of greater value, if we can produce clear and definite evidence either of the action or of the preparation of these endocrine products, we shall not find, as Professor Vincent would seem to suggest, that the manufacturers of endocrine preparations are merely the capitalists of purposely useless "patent medicines."

Endocrine therapy has undoubtedly a big future before it, if we are not too eager to make it run before it can walk. Development may be slow, but, if considered effort is made, it must come. We may be quite certain, however, that development is not possible if we forsake the arena of the clinic and the laboratory, and rest upon the belief that investigation and confirmation of the work of others are valueless.

VI—F S LANGMEAD, M D, F R C P, Professor of Medicine St Mary's Hospital Medical School, University of London

PREVIOUS speakers have dealt so faithfully with the subject that there is not much left for me to say unless I draw upon the panegyrics of the vendors of endocrine products. Dr. Langdon Brown has spoken of the value of "trial and error" in clinical medicine as in the laboratory, but he will acknowledge, I am sure, that the trial must be a real one. We must know, on embarking on such a trial, more than appears on the label. At present, I am afraid, such trials, as far as endocrine products are concerned, are too often the employment of a substance of unknown constitution and variable strength, by a way by which it cannot act, for conditions which we fail to understand. For a trial to be valid the other components must be known. We cannot solve a problem where the components all equal the unknown quantity. I can do no more with the time at my disposal than touch upon the various extracts mentioned in the opening paper seriously.

Thyroid—Thyroid medication is little open to discussion. In cases where there is a lack of thyroid secretion its action is, of course, indubitable. In cretinism, for instance, I think its good effects are greater than some alienists (who see only the failures) would have us suppose. I have at present several cases of cretins whom I have watched from infancy, who have passed through puberty, and may now be regarded as normal, except that they are somewhat younger than their years. In so-called cretinoid children and those with here and there a possible cretin stigma my experience does not lead me to be so hopeful, nor have I seen much good effect in emmesis. There are two uses for

thyroid extract that is not mentioned in the opening paper—early rheumatoid arthritis and the enlarged thyroid of puberty. I am convinced that it is sometimes useful in both these conditions. I remember twenty years ago treating a case of rheumatoid arthritis with thyroid extract, and to my surprise the patient appeared to recover completely, since then I have met with many failures, but still with sufficient success to retain it in my armamentarium against this disorder. A point of interest, and one I think which points to a general rule in replacement hormone therapy, is the large quantities of thyroid extract which can be taken without result when the gland is not at fault.

Parathyroid—The only point I will make concerning parathyroid medication is this: if the calcium content of the blood is to be used as a gauge we must be sure of the accuracy of the findings. Dr A. C. Alport, working in the unit at St. Mary's Hospital, has shown, indubitably I think, that many of the figures regarding calcium content of the blood are quite erroneous, and that reliable estimations are very hard to come by.

Adrenaline—I have in passing a little criticism to make on intragastric administration of adrenaline. In the doses suggested its dilution in the stomach must be about 1 in 18,000, and in this strength, even in the stomach, it is hard to believe that it can stop gastrostasis when one remembers the difficulty sometimes encountered with 1 in 1,000 on a visible bleeding point.

Pituitary—I am not sure that one can separate out distinctly the functions of different lobes of the pituitary gland. Cases of so-called dyspituitarism form a mixed group, while fat children are too readily labelled dyspituitarism. Obesity with overgrowth and precocious sex development appear to be as common as or commoner than the original syndrome of Frohlich. Puberty, with or without thyroid or pituitary administration, often changes the picture completely. I can agree that extract of pituitary gland produces results by the mouth as judged by the blood sugar curves. In two cases worked out by Dr E. G. B. Calvert of the Medical Unit at St. Mary's Hospital, in which there was want of sex gland development, the blood sugar curve was made normal by the administration of posterior lobe extract, in another two without gonadal defect a similar result followed administration of extract of anterior lobe, in both the extract was taken by the oral route.

Gonadal—I have seen little effect from gonadal extract, as advertised, but by a special method of extraction from bull's testicles, on the lines of the preparation of insulin, Dr Calvert appears to have isolated a substance which had an effect in causing rapid loss of weight in a case of severe dyspituitarism with gross obesity and want of development of the testicles. The weight had previously remained unchanged by thyroid and combined thyroid and pituitary administration.

In conclusion, I would point out that Dr. Langdon Brown speaks of some six or seven ductless gland preparations only as being of value, yet the number on the market is more nearly sixty or seventy. This can only mean that a profitable market exists for a large number of extracts which are valueless. I think that clinicians, whether workers in laboratories or not, should welcome the cold douche which Professor Swale Vincent administers in his endeavour to stop such gross abuse of scientific investigation.

GENERAL DISCUSSION

Dr. Woods Hutchinson (U.S.A.) reminded the meeting of the widespread occurrence of endemic goitre in the United States of America, and of the striking results obtained by adding traces of iodine to the diet. Table salt was too pure, and in some places iodine was added to the salt prepared for table use. Elsewhere other measures, such as the addition of iodine to the drinking water, had had most beneficial results.

Sir James Berry (London) said that in this controversy he was wholeheartedly on the side of Professor Swale Vincent. From his clinical experience as a surgeon he thought that, with the important exception of the thyroid, there was very little, if any, therapeutic value in most of

the so-called "endocrine" preparations when administered by the mouth. He had grave doubts whether the parathyroid glands in themselves had really anything to do with the production of tetany, and whether any preparation made from parathyroids did anything for the alleviation of this condition. The thyroid, parathyroid, and thymic tissues were so intimately connected with each other in their anatomical relations that, as regards conclusions to be drawn from their functions, it was preferable to consider these organs together as one organic whole. The so-called parathyroid glands had no constant anatomical position, but might be found almost anywhere about the back of the thyroid, or even within the gland itself. He had examined over fifty parathyroids from animals whose parathyroids were used in the manufacture of commercial parathyroid preparations, and found that most of these "parathyroids" contained a considerable quantity of thymic tissue as well. Conclusions drawn by physiologists as to the functions of the parathyroids, based upon experiments upon animals, should be received with caution. A year or two ago, on the public invitation of the distinguished director of a well-known pathological institute, he had attended forty operations for the removal of parathyroids from rats, which experiments, he had been assured would afford him complete proof that removal of the parathyroids in rats certainly produced tetany. These experiments, although performed by a physiologist of great skill, were, in such small animals, necessarily somewhat crude. He could not help thinking that if he (the speaker) performed his operations upon the human thyroid in an analogous manner almost any complication, including tetany, might easily follow. The condition of the rats in the period following the operations bore but a faint resemblance to that of tetany in the human subject. His scepticism of the reality of the supposed "proof" was more than justified by what he had witnessed. In the human subject it was quite impossible to remove the whole or even much of the parathyroid tissue without seriously damaging the thyroid itself, and consequently interfering greatly with the function of the thyroid apparatus as a whole. He had himself removed a portion of the human (goitrous) thyroid gland more than fifteen hundred times, commonly for pressure symptoms, and knew that he had often removed a good deal of parathyroid tissue. Nevertheless, he had never yet seen or heard of tetany following any of his operations, although he had been in the habit of following up the results of his operations, and knew, in nearly all cases, what the condition of the patients had been for at least one year after the operations. He thought that the doctrine taught by some, that every portion of a thyroid lobe should be removed, even for exophthalmic goitre, was unwise. He also thought that bilateral operative intervention with the lumen of the thyroid was a most dangerous proceeding, and he never did this in any of his operations. He had seen a good many distressing cases of tetany that had followed operations by others, and thought that this complication was generally due to disregard of the above principles and possibly also to other reasons as well. A few post-mortem observations had been made on the pathological condition of the parathyroid glands in the idiopathic tetany that occurred in connexion with dilatation of the stomach or of the large intestine. These did not seem to support the view that disease of the parathyroids was the cause of these forms of tetany. He was glad to hear that Dr. Vines, if he had understood him rightly, was now prepared to admit that parathyroid preparations seemed to have little or no beneficial effect on tetany.

A term that was used much too loosely by many clinicians was "hyperthyroidism." It appeared to the speaker, judging by the number of patients that were sent to him by physicians or general practitioners with a ready-made diagnosis of "hyperthyroidism," that many enlarged thyroids, if accompanied by tachycardia, were too readily supposed to be in a condition of "hyperthyroidism." In many, indeed in most, of the common enlargements of the thyroid which constituted simple endemic goitre, the gland was certainly not overactive, but degenerated, and presumably less able to perform its normal functions, whatever these might be. Yet such goitres were often associated with tachycardia. He had frequently removed old fibrotic adenomata, cysts, and other tumours from the thyroid glands of

patients with tachycardia, often with much benefit as regards this condition. Yet these thyroid glands, although much enlarged, were certainly not hypertrophic. In many of such cases there was doubtless some ill understood dysthyroidism. This was a better term than "hyperthyroidism," which implied a theory that was, as yet, by no means proved.

Clinically there were many cases of tachycardia in which the patient also had a goitre. But the goitre was not necessarily the cause of the tachycardia. Also there were many cases in which the tachycardia was apparently caused by the goitre, and in which nevertheless there was no pathological evidence that the thyroid was overactive. He had, although rarely, seen cases in which so much of the gland had been removed by operation, or by disease, that the patients were obviously suffering from loss of thyroid function (true hypothyroidism), and yet at the same time these patients continued to have the tachycardia of so-called "hyperthyroidism." It was very difficult to explain such cases except on the assumption that the tachycardia was caused by some form of dysthyroidism rather than by hyperthyroidism. He would venture to urge upon physicians and general practitioners the importance of a more careful study of the morbid anatomy of goitre. Abundant opportunities for study were afforded by our museums and, now and then, by operating theatres as well. In reference to a remark by a previous speaker about the "new" discovery of the value of iodine as a cure for goitre, Sir James Bell characterized the recent theory that endemic goitre was due to "lack of iodine" as absurd and contrary to the observed facts of the distribution of this disease. Anyone who would take the trouble to investigate endemic goitre "in the field" (to borrow a geological term), and especially in many different parts of the world, would quickly be convinced that whatever the essential cause of endemic goitre was, it was not due to "lack" of anything, but to something present in the drinking water. What that something was, whether organic or inorganic, had not yet been satisfactorily proved. It was quite certain that the purer drinking water was, the less likely it was to produce goitre. That iodine was an excellent remedy for certain forms of goitre, especially for the softer and earlier forms, had been known for centuries. The speaker himself had used it for such cases for many years, as had doubtless many of those among his audience. To say that because iodine was a good remedy for many forms of goitre, therefore these forms were caused by a "lack of iodine," was, to say the least, illogical. It would be but little more absurd to say that because quinine was a good remedy for the enlarged spleen caused by malaria, therefore enlargement of the spleen was caused by a lack of quinine. Although it was quite true that endemic goitre was far more common in mountainous regions than at the sea coast, it was quite incorrect to assert that goitre did not occur as an endemic disease in any seaside districts. A great deal of what he could only term ridiculous nonsense had been appearing of late in the lay papers, and not a little, he was sorry to say, in medical papers, on the subject of the causation of endemic goitre by lack of iodine and even lack of vitamins! Much of this literature came from the pens of those who had seldom or never seen the inside of a goitre, or taken any trouble to study it in the field.

Dr L. J. PICTON (Holmes Chapel) said it had been mentioned by Dr Woods Hutchinson that in the United States table salt was prepared with a trace of iodine and was used there in some districts as a prophylactic against goitre. Iodized table salt was also prepared in the salt reworking works of Winsford in Cheshire. Dr Langdon Brown in his paper had not referred to the great influence of the thyroid upon the liver, but in his book on the principles of physiology applied to medicine he had done so, and had indicated its use in jaundice. Dr Picton had been impressed, in practice, by the relief afforded by the administration of thyroid extract in the itching and malaise that often accompanied jaundice. The association of thyroid function and hepatic disorders had been discovered by the observation that ligation of the common bile duct in a dog was followed by swelling of the thyroid. Conversely he had observed that a dog suffering severely with symptoms of obstructive jaundice was rapidly relieved by the administration of thyroid extract. The association of

the activities of the liver and thyroid seemed to him to be pregnant with interest.

Professor J. A. NIXON (Bristol) asked who demanded the various products on the market. He thought that among the large audience present there must be some who used them and would be willing to give their results.

Dr LANGDON BROWN and Professor SWALE VINCENT replied briefly to the discussion.

LANTERN DEMONSTRATION

INTESTINAL DIVERTICULA

Dr E. I. SARGENT said that diverticula of the intestine were frequently found. He had seen over 200 cases. In 1,000 consecutive examinations of the alimentary tract at Ruthin Castle (Duff House) diverticula were noted by his radiological colleague, Mr. Marver, in 145 patients—that is, 14.5 per cent., in 38 there were duodenal pouches, jejunal in 6, ileal in 7, appendical in 6, and multiple diverticula of the colon in 100—that is, precisely 10 per cent. When jejunal pouches were seen they were generally associated with duodenal ones. [Each point was illustrated by lantern slides.]

He had formerly proposed the term "diverticulosis" for the condition described, reserving the term "diverticulitis" for the later stage in which inflammation, involving surrounding structures, and particularly the peritoneum, occurred in and around diverticula.

DUODENAL DIVERTICULA

The development of these in middle age had been watched in some of the patients over four to seven years. In a number of cases the pouches appeared to do no harm, but there was often great delay in them, varying with the width and position of the mouth, and in a considerable proportion symptoms attributable to the diverticula were present. Thus in 18 out of 38 patients with duodenal pouches symptoms were, after careful investigation, ascribed to irritation from the pouch or pouches, in 10 others the relation of the complaint to the pouch was indefinite and in the remaining 10 there were no attributable symptoms. The symptoms simulated roughly those of duodenal ulcer: flatulence, fullness or discomfort at some time after food, pain, vomiting, or diarrhoea might be complained of. The symptoms were amenable to treatment in 13 out of the 18, consisting of (1) instructing the patient to lie for half an hour about three hours after food, in the position which had been shown on the x-ray table to aid best the emptying of the pouch, (2) lubrication of the pouch by paraffin, (3) disinfection by such an antiseptic as boric acid, (4) calomel, plain food, and general treatment. In one case, of multiple duodenal and jejunal pouches, gastro-enterostomy had been successful. In two others excision or irrigation of the pouch seemed desirable, but advanced age and other infirmities were against it.

MULTIPLE COECIC DIVERTICULOSIS

The speaker then described a prediverticular state of colon diverticulosis. This had been discovered by O. A. Marver and was first mentioned in 1923 in Volume I of the *Duff House Papers*. Radiograms were thrown on the screen. The prediverticular state appeared in patches in the large intestine: these showed a ragged outline of the bowel with partial contraction, which did not dilate in any position. It had been observed in 20 out of the 100 cases of colic diverticula, and, in 16 of these, incipient or established diverticula were seen in or near the affected area. It was best shown with the butter-milk and barium meal or enemata. With cereal mixtures the same area might show inhibition. The patches were often small but sometimes the whole circumference was involved giving an appearance of constipation. Over 10 inches of bowel had been seen in this state. The muscular wall was irritated and contracted, but there was no evidence of obstruction. It was at this stage that the mucus herniae began to be pushed through the wall. The prediverticular area might be tender.

This new observation altered the conception of the disease, the formation of herniae being preceded by inflammatory and not purely mechanical causes.

An infective origin was suspected and was supported by the findings that haemolytic streptococci in the faeces were

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MEMORANDA

more often present in patients with diverticulosis, and especially with the pyoderma state, than in others. Strong support was also given to the infective view by the observation that diverticulosis was very frequently associated with spondylitis deformans and with infected teeth. To test this the records of 100 control patients were examined, of the same age (58) and sex (71 males and 29 females) as the 100 diverticular patients. In the controls 20 per cent had radiological evidence of spondylitis, in the diverticular 72 per cent. The figures for abscesses at the roots of the teeth were 38 per cent and 65 per cent respectively. It was suggested, therefore, that multiple diverticulosis of the colon was a disease of infective and inflammatory origin, its first stage being the pyoderma state. The second stage, of formed diverticula, might be quiescent for years, but was not infrequently associated with symptoms such as constipation, flatulence, discomfort, pain, or diarrhoea. These symptoms in nearly all cases were amenable to treatment, comprising especially the use of purgatives, intestinal lavage given at low pressure, and removal of other sources of infection such as diseased teeth. The third stage of diverticulitis, with peritoneal involvement, well described by Telling and Guener in 1917 in the *British Journal of Surgery*, was relatively uncommon. In its definite form it occurred in 5 only of the 100 patients with multiple diverticulosis of the colon.

Memoranda: MEDICAL, SURGICAL, OBSTETRICAL.

QUININE AMAUROSIS

The infrequency of the occurrence of quinine amblyopia is the excuse for publishing this note.

A ship's steward presented himself at St Paul's Eye Hospital, Liverpool on September 3rd 1924 complaining of defective vision. It was elicited that up to August 1924, his sight had been very good. One night in August, while off the West Coast of Africa, he did not feel very well and swallowed 30 grains of quinine sulphate in tablet form as he had been accustomed to do. He had had malaria on four occasions and had been accustomed for years to take prophylactic doses of quinine (5 grains) frequently. On waking up on the morning following the dose of 30 grains he discovered that he was deaf and had lost all perception of light. Five days elapsed before his hearing improved or perception of light returned.

The examination at St Paul's on September 3rd 1924, revealed the following conditions. Vision in each eye was 6/36. Not improved with glasses. The refraction was emmetropic. The pupils were equal but rather dilated and sluggish in their reaction to light and accommodation. There was a central scotoma to red and green. The fields of vision were contracted down to the 100 line. The discs were intensely white and all the retinal arteries markedly constricted. The patient was admitted to hospital and treated with strychnine purgatives etc.

The discs were intensely white and all the retinal arteries markedly constricted. The patient was admitted to hospital and treated with strychnine purgatives etc. On September 11th the vision had improved to R.V. 6/12. The central scotoma to red and green had disappeared. The visual fields remained as before. The edges of the discs were now beginning to show slight atrophic cupping. The retinal vessels were still constricted.

The condition now (over twelve months) shows no change from the examination on September 11th, 1924.
F C PLUMMER,
Honorary Surgeon St Paul's Eye Hospital,
Liverpool

ERYSIPELAS TREATED BY FOREIGN BLOOD INJECTION

The following case of successful treatment of severe erysipelas of the face in a baby, aged 12 months, by intramuscular injections of the father's blood seems to be worthy of publication.

On October 11th I was called to see a male baby. Two days previously two nodular swellings had been discovered under the left ear. Hot fomentations were applied and a rash appeared the next day. This rash extended and on October 10th the child had become seriously ill. By the next day it was clearly a case of erysipelas of the left ear. The rash involving also the eye and the scalp. The rectal temperature was 105° there was sickness and the child looked very ill. The local application of combined ichthylol ointment was associated with the oral administration of the tincture of iron perchloride. By the next day the rash had spread further over the scalp, and the upper lid of the

left eye became involved. The child was very drowsy and the rash assumed the type of erysipelas bullosa. Albumin was found in the urine. To relieve the severe headache and an ice bag to the head were advised. On the morning of October 11th I withdrew 15 ccm of blood from a vein of the father who was young and strong, and injected it into the buttocks of the baby. There was no need to dilute the blood as there was no delay in injecting it. The rash had now spread to the forehead to the right eye, and covered most of the scalp. The same evening the rectal temperature fell to 102°, but on the following day both eyes were closed by the swelling of the lids, and only the occipital part of the scalp had escaped. The rectal temperature was 105°. A further 20 ccm of the father's blood was injected in the evening the temperature fell to 104°. On October 16th it was 102°, the bullae were disappearing, and the child could open the left eye. The rash had apparently ceased to spread and the lower part of the face the neck and the occipital part of the scalp were not involved. A further injection of 20 ccm of the father's blood was given and in the evening the temperature was 99°. From that time the rash diminished steadily, and it disappeared completely in two or three days, the child making a quick and uninterrupted recovery. On October 21st there was a mild urticarial rash all over the body, but the rectal temperature was 98.5°.

The technique I employed was very simple with the ordinary aseptic precautions I withdrew the blood from the cephalic vein of the father in a room adjoining the sick-room, and immediately injected it with a fresh needle into the child's buttock, the blood having no time to clot. I thought that an intravenous injection of the blood would be rather risky in a baby with erysipelas, and would, moreover, have necessitated preliminary tests of the suitability of the blood of the donor. I chose, therefore, the intramuscular route as the safest. In cases of erysipelas in adults I would suggest a dose of 40 to 60 ccm of fresh human blood. I think the curative effect of the blood transfusion in this case depended upon the combined action of parenteral protein injections and the general antitoxins of the normal blood—"para specific" action.
N PILES, L M S S A, M B Kieff
London E 1

AN EARLY SYMPTOM OF PREGNANCY

I draw attention to a very early and constant symptom of gestation which, so far as I am aware, is not mentioned in any of the standard textbooks on obstetrics.

In almost every case of pregnancy, as early as the first week after the first intermitted monthly period, it can be elicited from the patient on inquiry that the labia majora feel tense and swollen, especially when she walks or sits down on a firm seat, the sensation of fullness being accompanied by occasional dull aching pains in the labia. This phenomenon is doubtless due to the venous congestion of the parts, to which also are due the cyanotic colour of the macron membranes of the vulva and vagina, and the venous arborizations on the inner surfaces of the thighs—both well known early signs of pregnancy. These signs are, however, often obscure or wanting, particularly in brunettes and in dark skinned races, whereas the subjective feeling of tension and swelling in the labia is in all cases constant and unequal.

The symptom described persists until about the end of the third month, when the uterus ceases to be a purely pelvic organ and rises into the abdomen.
J W TOMES, O B E, M D
Asansol, Bengal

MALARIAL TREATMENT OF TABES DORSALIS

Tabes dorsalis and general paralysis of the insane are so closely related, the two diseases being frequently found in the same patient, that a method of treatment which has given quite good results in the latter disease seemed worth trying in the former. Unfortunately, the case now recorded had not been diagnosed till it was too far developed, and once degeneration has occurred it is not possible for nervous tissue to be restored, so that we could only hope that the disease might be arrested. This point was carefully explained to the patient.

Although tabes dorsalis shortens life very little, it is, to say the least, a great disability, and optic atrophy may well be called a catastrophe, the result of treatment in this case should encourage others to try this method in the earlier stages of the disease before these symptoms have developed.

The patient is a single man, aged 30 who gave no history of syphilitic infection but had suffered from septic ulcers of the legs in 1915. Severe pruritis in the legs commenced in 1916. When examined in September, 1924

pruritis causing sleepless nights. In November, 1924 he had severe neuritis of the legs and a moderate amount of ataxia. The right pupil was larger than the left. Both pupils reacted to accommodation but very slightly. Light Rombergism was marked, the knee-jerks and Achilles tendon reflex were absent. The Wassermann reaction of the blood was positive. In March 1925 after three courses of silver salvarsan and a short course of bismuth there was very little change in the clinical condition. The Wassermann reaction in the blood showed a 'trace of fixation' in the cerebro spinal fluid it was positive. On April 25th the patient was inoculated with benign tertian malaria intravenously and the temperature went up on April 29th. The rises of temperature were of very moderate amount for the first two weeks (mostly 100° to 101°), but on May 13th 104° was registered. The patient was allowed to have twelve rigors they occurred regularly on alternate days and the temperature reached 104° or over on nine occasions, quinine sulphate (30 grains) in solution was then given daily for three days. This sufficed to cure the malaria. In July a course of silver salvarsan was administered in amount on June 30th 1925. Ataxia improvement moderate. Pupil light but definite. Rombergism marked improvement. Deep tendon reflexes no change. Lightning pains marked improvement. Weight 3 lb. Sleeps well. Appetite good. Increase. Cerebro spinal fluid Wassermann, negative. Cell count normal. Excess of globulin sugar normal.

NOEL F. ROWSTON, M.D. Durh.,
Honorary Physician, Skio Department,
Royal Infirmary, Sunderland.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS

WEST BROMWICH DIVISION

Surgery in General Practice
A MEETING of the West Bromwich Division of the British Medical Association was held on October 6th, when Mr. R. T. Rose, assistant surgeon to the Birmingham General Hospital, read a paper on surgery in general practice.

Mr. Rose gave an account of various associated surgical conditions approaching them chiefly from the practical standpoint of diagnosis and treatment.

Tonsils and Adenoids.—The tonsils were not effete organs, but protected against infection especially in the young. It was probable that they were too often sacrificed unnecessarily, many cases of mild degrees of sepsis or hypertrophy that could have responded to conservative treatment being operated upon. There were two indications for operative treatment: gross hypertrophy which was injurious by mechanical obstruction and interference with breathing and the development of the child, and, secondly, deeply buried tonsils, though often quite small and great tonsillar glands and were also liable to damage the lymph glands into which they drained. Glands so damaged were especially liable to invasion by the tubercle bacillus. Cervical adenitis doubtless sometimes tuberculous, so damaged were usually in general practice, and was satisfactory in most cases and removed the glands completely with their capsules. Shaving of the glands by a sharp guillotine was worse than useless, since it left a raw area to become infected. Small, buried tonsils required dissection because they were usually adherent from peritonsillar inflammation. All tonsils in patients over the age of 10 years were best dissected out rather than removed by the guillotine. Tonsillectomy was regarded too lightly by the public the anaesthetic and haemorrhage risks were high.

Treatment of Haemorrhoids by Injection.—This was a very old method recently brought to the fore again, the technique was simple and the results encouraging. The method was admirably suited to general practice and depended for its success on the production of fibrosis in the pile by the injection into it of an irritant fluid. The method was painless if properly performed, and it could be used in cases in which an operation was inadvisable on account of age or physical infirmity. Careful selection of cases was essential, and any complication rendered the case unsuitable for the method.

Blood transfusion was useful in secondary anaemias, pernicious anaemia, septicaemia and other blood diseases besides severe post-operative haemorrhage. It might be used more widely in practice. The danger of giving an incompatible blood must be noted, and the easy method of testing the serum

of the patient directly against the blood of the prospective donor afforded a rapid means of selecting a suitable donor. The citrate method of transfusion is easy, it required only simple apparatus, and appeared to be almost as efficient as whole blood transfusion.

The 'acute abdomen' was an ever present problem in general practice, acute appendicitis perforated peptic ulcer and intestinal obstruction—the three commonest conditions—were briefly considered.

Acute appendicitis was easy to diagnose when the classical signs and symptoms were present, difficulty arose when the appendix was abnormally situated in the pelvis beneath the liver, or retrocaecally. Pelvic appendicitis was especially liable to be confused with tubal conditions. The symptoms were always less pronounced than when the inflamed organ was in the abdomen because it was not related to the muscular abdominal wall, and hence came the absence or lessened degree of abdominal rigidity. Further, the absorptive powers of the pelvic peritoneum were less than the abdominal and therefore the constitutional symptoms were less marked. The condition was, as a result, often advanced before the diagnosis was made. The chief evidences were some degree of lower abdominal pain, with mild pyrexia and general symptoms, on examination there was a varying degree of tenderness and slight rigidity in the lower abdomen. A rectal examination should always be made and would reveal tenderness and slight rigidity swelling to the right of the rectum or in Douglas's pouch. A distinction from tubal conditions was always difficult, but a shrewd guess could usually be made. In tubal disease menstruation had always been irregular and variable in amount and painful, while a certain degree of vaginal discharge was common. On abdominal palpation both iliac fossae were tender and the rigidity was slight. It was possible as a rule to make out per vaginam that both tubes were enlarged or tender, for it was uncommon for only one tube to be affected. The differential diagnosis was important, for it was best in most cases to operate on tubal inflammations in the quiescent condition. The subhepatic appendix appeared to occur in about 15 per cent of cases. In adults it was liable to be confused with acute cholecystitis, which was of little moment, since both conditions required operative treatment. In children confusion with a right-sided pleuropneumonia might occur which was a serious error. In right-sided basal pleuropneumonia referred right-sided abdominal pain and rigidity might be present. The chief difference lay in the greatly increased respiration rate in pneumonia and the respiratory distress. The illness also commenced not infrequently with a rigor and the temperature was higher than in appendicitis. It had to be admitted that little reliance could be placed on the temperature in appendicitis since some of the worst cases of gangrene might be afebrile. The pulse was the best danger signal. In early stages it was rare to get signs in the chest, the first to appear was the friction rub. Should any doubt exist as to the diagnosis a few hours delay would clear matters up. Retrocaecal appendicitis was most often confused with renal conditions especially acute pyelitis in children and renal colic in adults. A careful examination of the centrifugized urinary deposit should prevent error, as blood cells or pus and organisms would be found.

Perforated Gastric or Duodenal Ulcer.—The chief danger of overlooking this condition lay in the fact that the practitioner might be called in when the patient was in the period of recovery after the shock of a small perforation was over. The history and the continued rigidity, with a rising pulse rate, should sound the warning note.

Acute Intestinal Obstruction.—When the obstruction was low down the condition was usually obvious. Difficulty occurred in cases of high obstruction where there was no distension of the abdomen and the vomit never became truly faeculent. More over the bowel below the obstruction might respond once or twice to enemata before it was quite empty. Such cases of high obstruction occurred most frequently in young adults and were the result of tuberculous adhesions. Repeated attacks of intestinal colic associated with intractable vomiting, called for laparotomy.

The chronic abdomen was less well recognized as a clinical entity than the acute abdomen but it was very common and important. The condition was most frequent in the female sex. A single woman or else one who had had repeated pregnancies. She was usually sallow of complexion and grapt of frame with many symptoms: constipation, flatulence, dyspepsia, nerves, and gastritis figuring prominently. By physical examination two types could be distinguished: the virginal type, with a long narrow scaphoid abdomen and the maternal type, with a sagging flabby paunch. The kidneys were mobile and easily palpable, the stomach low and splashy and the caecum voluminous distended with flatus that gurgled freely under the finger. This last condition caused some discomfort and local tenderness, and often a scar revealed the fact that a diagnosis of

chronic appendicitis had been made and acted upon. In old standing cases scars might show that such operations as nephropexy and hysteropexy had been performed, often with temporary but never with permanent relief. The malady was as much mental as physical, physically there was a varying degree of visceroptosis and atonicity of the organs, and mentally a morbid introspection and self analysis which exaggerated and distorted the slightest ache or pain. Treatment was difficult and often unsatisfactory. Daily cases might respond to a careful fattening cure, together with an efficient abdominal support, abdominal massage, and suitable mild aperients. But question of operation could inevitably arise in most cases, but no operation should be undertaken except after prolonged investigation and observation. It should then take the form of a thorough investigation of the whole of the abdominal viscera through an adequate incision. Fixation operations on the colon, stomach, or kidneys were of little value and seldom required. A thorough exploration should help to put the mind of the patient at rest, as it eliminated the possibility of any organic lesion being overlooked. The mental state of a patient was the difficult problem, and all efforts must be made to divert her mind from her condition.

Early Diagnosis of Malignant Disease.—Two reasons existed for the late stage at which cancer patients came for treatment until advanced, the late always associated cancer with pain. Any lump in the breast of a patient over 40 years of age should be regarded as cancer until definitely proved to be otherwise. The factors upon which they were chiefly dependent for a positive diagnosis were the hardness of the tumour, fixation to skin or pectoral fascia, and the extent of the glandular enlargement. If any of these were present there could be little doubt, but in early cancer, in the stage when it should be their aim to recognize it, none of these were present. Chronic interstitial mastitis of the lobular type involving only a portion of the breast was the most difficult condition to distinguish from early cancer. Here a wedge shaped sector of the organ was diffusely thickened and lumpy rather than presenting a definite tumour, though sometimes a tense cyst stood out as a firm elastic swelling in the inflamed gland tissue. The glands might be slightly enlarged, the nipple was not retracted, and there was no skin fixation. In such a case the diagnosis of mastitis was easy, especially if the opposite breast was involved, but many cases were not so clear cut as this, and the diagnosis of malignancy or otherwise could only be made on a balance of probabilities. Exploration of these doubtful tumours should be insisted upon. If at the operation the naked eye appearance suggested malignancy, then there was some doubt as to the procedure. Even when there was some doubt as to the question of malignancy on naked eye examination, for though every radical operation should still be performed, for though every severe procedure, this occasional error would be more than counterbalanced. Exploration with removal of a piece for section was liable to disseminate the infection, but it was sometimes necessary in cases where naked eye examination should be growth was indecisive. In such cases the radical operation, widely removed locally at the time, and the radical operation proceeded with as soon as possible afterwards. All breasts which were the seat of severe mastitis should be locally removed, since carcinoma followed in an appreciable percentage of cases. Cancer of the rectum was a form of cancer which generally came at the most hopeless stage to the surgeon. This was due to the fact that, apart from haemorrhage, which was always attributed to piles, the early symptoms were so slight that even an intelligent patient rarely regarded them seriously. Every patient complaining of rectal or colonic symptoms should be examined digitally with the proctoscope, and, if there was the slightest doubt, with the sigmoidoscope as well. Piles were the only conception of rectal disease and on examining patients complaining of piles all forms of rectal disease were encountered. Unfortunately it was still common to meet with laxity in the examination of rectal cases than the preceding stomach was even more difficult of diagnosis than the stomach. Any patient, especially after the age of 40, who developed a slight but persistent dyspepsia was open to grave suspicion, particularly when this was associated with slight loss of weight and failure of appetite. The dyspepsia associated with gastric and duodenal ulcers, with gall stones, and with appendicitis were periodic and not persistent, at any rate in the early stages of the diseases. Radiograph, and test meals were of great value in the early stages, but when a palpable tumour was present the case had nearly always passed beyond the limits of operation. No definite means of making a diagnosis existed in the early stages, and operation should often be advised on suspicion after a careful weighing up of the case, even if this had to be done in the face of negative x-ray and biochemical findings. When a diagnosis of carcinoma of the stomach could be made with certainty it was usually beyond surgical relief.

Reports of Societies.

INSANITY AND CRIME

At a meeting of the Royal Medico Psychological Association, held in the rooms of the Medical Society of London on November 17th, with the President, Sir FREDERICK MORR, KBE, in the chair, sympathetic reference was made by the President and Dr R. H. COLE to the death of Dr Percival Langdon-Down, and to his long continued work in connexion with mental deficiency.

Dr JOHN CARSWELL read a paper entitled "Insanity and crime: some suggestions arising out of the Athin report." He said it could be taken that, at least in form, the M'Naghten rules had received such fresh support as to preserve them in being for another generation. Yet the medical profession would not admit that the controversy was ended, indeed, there seemed a desire for adjustment of the medical and legal points of view. The rule recommended by the Athin Committee read "It should be recognized that a person charged criminally with an offence is irresponsible for his act when the act is committed under an impulse which the person was by mental disease in substance deprived of the power to resist." The Committee added, "It may require legislation to bring this rule into effect," and, later, "We have no doubt that if this matter were settled most of the criticisms from the medical point of view would disappear." Dr Carswell said that members of that association would acquit themselves, as medical men acquainted with the clinical aspects of disorders of mind, of expressing their ideas as to what they might regard as the test of criminal irresponsibility in these terms, which were lawyers' terms, and, indeed, all the trouble had arisen in that way. Did the accused know what he was doing? And if he knew, did he know that it was wrong? These were the formulae framed by lawyers, and the psychiatrist had no responsibility for them. Fitzjames Stephen, in his *History of the Criminal Law* (vol. II, p. 174), after considering Maudsley's observations, said "I understand by the power of self-control the power of attending to general principles of conduct and distant motives and of comparing them calmly and steadily with immediate motives. Diseases of the brain and the nervous system may cause definite intellectual error and if they do so their legal effect is that of the innocent mistakes of fact. Far more frequently they affect the will by either destroying altogether or weakening to a greater or less extent, the power of steady, calm attention to any train of thought."

Dr Carswell went on to say that a series of cases in recent years were available to show that judges had charged juries in the sense indicated, and even in the much debated Ronald Truoc case Mr Justice McCarty left three questions to the jury, two first two were in the terms of the M'Naghten rules, and the last was expressed in the following terms:

Even if the prisoner knew the physical nature of the act and that it was morally wrong and punishable by law, yet was he through mental disease deprived of the power of controlling his actions at the same time? If yes then in my view of the law the verdict should be Guilty but inane.

The point Dr Carswell wished to make was that all the judges who delivered charges in the sense he had quoted agreed that uncontrollable impulse could be read into the M'Naghten rules—that was to say, the rules were logically insufficient unless some such idea could be incorporated with them. The recommendation was not based upon any unproved or doubtful category of mental disorder, nor upon any principle of criminal responsibility not already recognized. His object in this communication had been to start a fresh discussion of the problem of insanity and crime from what he understood to be the point of view of the Athin Committee, with the hope of reaching some points at which medical men could agree that the legal conception of responsibility of the insane was more in accordance with the clinical facts as the case known to psychiatrists than at present was the case. Dr BARKER SMITH said people were responsible in various degrees for what they did, and that was largely proportional to their education and culture. Many men acted with the same quick unreflective impulse as lower animals. This question of responsibility in a particular

person was a question for the medical man, not for the lawyers.

Sir BRUCE DOUGLAS said Dr Carswell seemed to think that the conception of irresistible impulse was implicit in the M'Naghten rules, a very strong statement to make in his, the speaker's, view, and he did not see that any practical result could arise on this idea.

Dr G. HENDERSON said that in medico-legal cases the question of responsibility constantly came up, and if this question of "irresistible impulse" (a term never yet properly defined) was likely to be brought into them, the issue would be more complicated than at present. Another important kind of case was that in which a prisoner's state of mind was questioned, and the man sent to a criminal asylum without having been tried—in other words, without the question having been decided whether he was guilty or not. He suggested it would be well to try cases in which there was a certain amount of doubt as to the facts of commission.

Dr G. D. McRAE said a very important question arising out of this discussion was, "Is an insane man a criminal, whatever he does?" To him, it was cruel to say that a man ruling mentally was guilty for anything he did, and he regarded the expression "criminal lunatic" as archaic. An individual should be tried to prove whether he committed the act, or not. If he did commit the act but was found to be insane, the verdict should be "Proven but insane," for "guilty" in this relation was out of place. The question of responsibility should be left to the legal people. It had been said that medical superintendents of mental hospitals acknowledged the principle of partial responsibility by placing patients on parole, but the actual fact was that until the patient was certified cured the responsibility for him while out on parole attached still to the medical superintendent.

Dr T. B. HAZEL said that until the medical profession awakened to the fact that in these cases it gave evidence on a question which was not at issue—namely, that of insanity—and the judge charged the jury on the question of responsibility, they would always be playing at cross-purposes, and working under that absurd M'Naghten rule, which had caused grave injustice. Medical witnesses should see to it that they were examined and cross-examined on the real question at issue in the case.

Dr W. C. STALLAN (Broomfield) said the M'Naghten rules were really founded on a contradictory and unjustifiable view of the jury. The rules assumed a degree of stupidity on the part of the jury which required that they should be instructed by the judge, and there was the further requirement that the medical evidence should be filtered through the strainer of the M'Naghten rules. The doctor giving evidence had no opportunity of expressing his views in full and in clinical terms, because the assumption was that the jury could not understand them. Yet that same jury were supposed to be gifted to the much greater degree required to distinguish between an irresistible act and one which was unresisted. The present state of things resulted from excluding the jury from having a fair issue placed before them, hence the question was placed in the hands of the judge. It must always be borne in mind that there were very few murderers in whom something abnormal could not be found, and that abnormality could be magnified by medical witnesses to produce a verdict of "Guilty but insane", but if the matter were left to the jury they would form their own opinion of the facts and on the history and the various episodes brought out.

Dr J. M. MACKENZIE asked whether irresistible impulse was supposed to operate in persons who were sane as well as the insane. If so, where could the line of demarcation be drawn? Much might be learned on that from the late Dr W. H. R. Rivers's book *Instinct and the Unconscious*.

Mr DONALD CARSWELL spoke from the legal standpoint. He agreed that some of the hard things which had been said about the M'Naghten rules were justified, but asked how medical men proposed to get rid of them, as they were operative. He therefore advocated attempts being made to arrive at a concordant with the legal profession on the matter. He knew at least three senses in which the phrase "irresistible impulse" was used by lawyers.

Dr J. G. SOUTAR remarked that even after all this argument he had never yet seen a case in which he could say that irresistible impulse was the only evidence of mental disorder in a person. When such a plea was advanced investigation showed that a definite idea had preceded the particular act, perhaps for a long time. Impulsive acts were known to occur in perfectly sane people, and in them it was well known that the acts did not indicate insanity. If the M'Naghten rules could be wiped out members of that association would be in a much better position as medical witnesses. The medical man had to testify to the facts, and leave it to the judge and jury to say whether the facts testified to by skilled observers were indicative of that degree of unsoundness of mind which rendered a person irresponsible for his acts.

Dr PERCY SMITH said the association had done its best to show that the M'Naghten rules should be done away with, and that every case should be tried on its merits, with the fullest possible evidence. But the profession had been saddled with the rules by the verdict of the Court of Appeal in the True case, when Lord Birkenhead said they were the law of the land.

Dr CARSWELL, in a brief reply, said he recognized that the association had remained steadfast to its attitude, that the business of the medical man was to testify to the state of mind of the accused. That was the only logically sound position.

NEPHRITIS

At a meeting of the Section of Medicine of the Royal Society of Medicine held on November 24th, with the President, Dr HUGH THURSFIELD, in the chair, a discussion was held on the clinical aspects, treatment, and prognosis of nephritis.

Professor HUGH MACLEOD, in opening, said that there was really nothing new to bring forward except a few small points which required emphasis. From the clinical aspect nephritis was best divided into acute and chronic types, and all the chronic forms tended eventually to present the same picture. In the acute form all the renal functions were, temporarily at any rate, "knocked out," while in the chronic forms, the chronic interstitial nephritis of the textbooks, it was the elimination of the nitrogenous substances which was principally disturbed. He emphasized that there was no such disease as "chronic parenchymatous nephritis", this was really a subacute stage, and in the course of time patients suffering from this either got better, died, or passed into the chronic interstitial type, and this was confirmed by histological evidence. In the typical subacute stage waterlogging was the most striking clinical feature, and as far as the nitrogenous waste products were concerned the kidney was found to be doing its work well. It was a curious fact that as soon as chronic interstitial changes commenced the kidney again assumed its work of water excretion in a satisfactory manner and all oedema disappeared. With regard to the various tests for the diagnosis of nephritis, Professor Macleod urged that the simple tests gave all the information necessary and elaborate experiments were quite superfluous. Blood urea determinations and estimations of the concentration of urea in the urine were the two most satisfactory procedures. For the general practitioner the second of these was the more useful in ordinary circumstances, and this test was particularly important when it was realized that high blood urea figures might be found in conditions which were not strictly renal in origin. The presence and amount of albumin in the urine merely indicated the possibility of nephritis and gave no help as to the severity of the disease nor as to its prognosis. A simple estimation of the concentration of urea in any specimen of urine gave quite enough information, and if this was found to be between say, 25 and 3 per cent, any serious damage to the kidney could be excluded. As far as treatment was concerned, Professor Macleod stated that there was nothing new to discuss. He thought it rather absurd to give large amounts of salt to cases of acute nephritis if the object was to reduce the amount of protein in the diet, but recent work had shown that protein in moderate amounts was not harmful to the kidney. Giving excess of water to wash out the kidneys was a useless

procedure With regard to the treatment of oedema in the subacute cases, physical means were probably more useful than drugs, but large doses of urea were often helpful, and recent work in America went to show that calcium chloride and ammonium chloride might sometimes be successful For prognosis the estimations of blood urea and urea concentration in the urine give most help In cases of hyperpiesis the outlook largely depended on whether the kidneys were affected or not, and, generally speaking, the longer obvious kidney damage was delayed the better the prognosis

Dr W LANGDON BROWN expressed his complete agreement with Professor Macleay, and welcomed particularly the indicated release from the tyranny of tests He recalled that he had opened a discussion on a similar subject fifteen years ago, and had then stated that the conventional views with regard to restricted protein intake, a knowledge of the total urea output, flushing out the kidneys, and elimination of metabolic products by the skin were all based upon erroneous ideas Modern work had confirmed these views In acute cases he believed in giving fruit juice and sugar for the first few days, and in subacute cases he thought urea more useful in getting rid of oedema than a high protein diet He thought diaphoresis was very useful as long as the patient was not exhausted by it, and referred to the treatment of one case of uraemia by hydrochloric acid With regard to nephritis in general, Dr Langdon Brown thought that the patient's lot would be greatly improved when it was more widely recognized that many of the routine procedures adopted were futile

Dr LEWIS SMITH agreed as to the usefulness of the simple chemical tests, but pointed out that the kidney was not the same as a test tube, and there were many things about kidney disease which were not understood It was possible that the kidney possessed an internal secretion fifteen years ago he had treated oedema of renal origin in children with kidney sandwiches

Dr A BOUSFIELD said that in general practice acute nephritis was very rare, and pyelitis and cystitis were much commoner causes of albuminuria He thought the treatment of nephritis was largely preventive

Dr R S ALLISON described certain modifications in the urea concentration test used at Ruthin Castle The modifications, which had been found very satisfactory, were those proposed by Calvert in the BRITISH MEDICAL JOURNAL of January 10th, 1925 (p 64) He inquired as to the prognosis in the haemorrhagic type of nephritis in children The PRESIDENT answered this question, and said that in his experience in children the type of nephritis with massive haematuria completely cleared up

Professor MACLEAY said that his experience in adults was the same with regard to these haemorrhagic cases He replied briefly to several of the points raised by other speakers

PYLORIC STENOSIS IN INFANTS

At a pathological meeting of the Liverpool Medical Institution on November 19th Mr W A THOMPSON read a paper on pyloric stenosis in infants

Mr Thompson summarized the various opinions about the pathology of the affection and explained how even when the condition was present at birth it failed to give rise to symptoms immediately because the pylorus was still unobstructed Later, under the influence of feeding, retention occurred, this caused enlargement of the mucosa, which further closed the pylorus and induced a muscular spasm The spasm increased the hypertrophy, and the vicious cycle thus created brought about pyloric obstruction The time required for this sequence of events varied from a fortnight to a month The symptoms varied with the degree of obstruction The mild cases should be treated medically, the severe cases operated upon at once He advocated early operation on all moderately severe cases, since by this means an anxious period from six to sixteen weeks was eliminated and the child was operated on when it was in the best physical condition He was convinced that if this were done the mortality from this affection would be infinitely small, as the majority of medical and surgical deaths came from this group in which there had been delay He described Rammstedt's operation, and emphasized the importance of giving saline solution intraperitoneally Either was

the anaesthetic used at his operations He had performed Rammstedt's operation on twenty-one occasions with nineteen recoveries, the two deaths occurred in greatly debilitated children

PATHOLOGICAL NEW GROWTHS

A MEETING of the Pathological Society of Manchester was held on November 11th, with Professor E D TELFORD in the chair

Professor SHAW DUNN showed a specimen of carcinoma of a bronchus associated with a large pulmonary abscess The tumour involved the main bronchus to the lower lobe of the left lung and had produced narrowing or occlusion of the airway The abscess, which contained about two ounces of pus, had developed in the portion of lung supplied by the obstructed bronchus, no doubt as a result of locking up of secretion with infection Professor Shaw Dunn remarked that it was not very uncommon to find a malignant growth of the bronchus or the bronchial glands underlying a septic pulmonary or pleural lesion in the adult

Mr P G McLEVEDY showed a specimen of adenoma of the common bile duct, removed from a man aged 62 There had been jaundice for three months, at first intermittent and then progressive After the first attack the jaundice completely disappeared Six days after the operation death occurred from haemorrhage from an acute duodenal ulcer The specimen showed marked dilatation of the common bile duct above the tumour, which on microscopic examination showed a simple adenoma Mr McLevedy also showed a large branched gall stone, two of the branches being over half an inch long There were several small branched gall stones in the same gall bladder, which was thickened and sclerosed Chemical examination of the stones showed a large proportion of cholesterol

Mr J ARNOLD JOYNS exhibited a microscope specimen of a section through bone removed from a case of chronic hyperplasia of the upper jaw He stated that the pathology of this condition was uncertain, it was termed a cancellous osteitis by some and osteitis fibrosa by others It had no connexion with tubercle, syphilis, or malignant disease It was distinguished from other bony tumours of the face and head such as acromegaly, leontiasis ossis, and osteitis deformans in being unilateral, affecting the upper jaw mainly on the alveolar margin and canine fossa, invading the maxillary antrum until it quite or almost disappeared, but leaving unaffected the nasal and orbital cavities Guthrie had pointed out the remarkable resemblance between the microscopic appearances of this condition and those of sections through the bony labyrinth in oto sclerosis It was unnecessary to sacrifice the upper jaw in treating this condition, removal of the tumour by the gouge relieved the symptoms and in most cases reduced the deformity to vanishing point

Specimens were demonstrated also by Mr JOHN MORRIS and Dr G D DAWSON

PYLOROPLASTY

At a clinical meeting of the Devon and Exeter Medical-Chirurgical Society at the Royal Devon and Exeter Hospital on November 19th, Dr R V SOLLY being in the chair, Mr NORMAN LOCK, in association with Dr N LOVELL, showed an infant in whom pyloroplasty had been successfully performed for congenital hypertrophic stenosis of the stomach

Mr Lock said that the operation performed was that commonly known as Rammstedt's, the hypertrophied and prominent pylorus being incised down to, but not through the mucous membrane The mucous membrane was then freed laterally from the musculature of the wall so as to come up into the incision, no attempt being made to suture Mr Lock added that the case would be of special interest to the meeting in that the operation had been suggested in the first instance and twice performed successfully by Mr Russell Coombe of Exeter, to whom acknowledgement had been made by Mr Tyrrell Gray in Carson's Surgery

Mr RUSSELL COOMBE said that in his first case of operation for pyloric stenosis in the infant he incised the

mucous membrane, but although the case was successful he wrote at the time to the *Annals of Surgery* saying that he would not go deeper than the muscle if called upon to perform further operations of that nature.

Dr N. LOFFET said the case was typical, the infant weighed 12 lb. at birth, there was early vomiting of the projectile character, and constipation with a clean tongue.

Dr W. GORDON advocated early transfer to the surgeon, when the typical vomiting and history suggested stenosis, and even if no tumour could be felt, which was often the case. He also showed a man in whom the physical signs suggested a congenital heart affection, the most probable diagnosis being latent ductus arteriosus. Dr Gordon illustrated the case with clinical notes, diagrams, and x-rays.

Mr A. L. CANDLER showed a youth on whom he had performed an extensive plastic operation after severe laceration and sloughing of the tissues of the palm of the right hand and ulnar aspect of the wrist. A "tubular graft" had been obtained from the abdominal wall, with excellent good union and vascularity. All the fingers had been saved with the exception of the little finger, and the new palm allowed excellent grip with full movements of all the flexor tendons. Mr Candler also showed the specimen and gave particulars of a tumour removed from a uterus. The growth was attached by a stalk to one corner, the stalk being formed of normal muscle, the lower part of the tumour being a sarcoma and the upper part formed of cysts of undetermined nature.

Dr R. V. SORRIS read a short paper on melanotic sarcoma illustrated by slides obtained from a recent case in the Royal Devon and Exeter Hospital.

THE SPAHLINGER TREATMENT FOR TUBERCULOSIS

At a general meeting of the Newport Medical Society held at the Royal Gwent Hospital on December 25th, with the President, Dr S. HAMILTON, in the chair, Professor S. LYNE CUMMINS, Cardiff, gave an address on recent treatments of tuberculosis. He described the work carried out in recent years by the medical staff of the Welsh National Memorial Association in the clinical testing of suggested remedies for tuberculosis. At the suggestion of the Medical Research Council and with the co-operation of Professor C. DREYER, F.R.S., the dihydrate vaccine had been carefully tried in about a hundred selected cases. In spite of the promising results claimed for the vaccine in the preliminary tests on guinea-pigs, the results of a year's clinical trials had been disappointing. Although a proportion of the treated cases had done well, the majority had shown no such degree of amelioration as could be claimed as a success for the dihydrate vaccine. A still more extensive trial of sodium nitrothiote, as suggested by Sir Leonard Rogers, F.R.S., had so far led only to inconclusive results, although several of the tuberculosis physicians had been so favourably impressed by its effects that they were continuing to use it. Moellgaard's smocrysin, a gold salt, a supply of which had been placed at the disposal of Professor Cummins by the Medical Research Council for clinical trials in Wales was now undergoing systematic investigation by several workers. The number of patients so far treated was but small owing to the fact that it had been found necessary to exercise great care in the selection of cases, but results of the highest interest had already been obtained and it was hoped to apply the treatment to a wider group of cases during the coming year. Professor Cummins illustrated by lantern slides certain aspects of treatment with smocrysin. In concluding his review of these experiments in the treatment of tuberculosis, Professor Cummins pointed out that, in every instance, the nature of the remedies under test had been fully and freely disclosed and that supplies had been provided free of charge in order that the truth might be brought to light. In every case, the authors of the treatment method at test had given their friendly co-operation and had loyally and frankly accepted the results.

Turning to the question of the Spahlinger remedies, the situation was, he said, unhappily quite different. Without desiring in any way to prejudice the ultimate decision as

to the value of these preparations, Professor Cummins pointed out that no clinical trial could be conclusive unless accurate information as to the strength of each serum and each vaccine were placed at the disposal of the medical profession. This information had so far been withheld. In none of the published case records was the dose stated, an omission which was fatal to any real weighing of the value of the records in question. Inquiries addressed by him to the best known of the British doctors who had tried the Spahlinger remedies had elicited the curious fact that not one of them had known the strength of the preparations they had employed, the doses having been arranged by M. Spahlinger on a system known to him alone. Professor Cummins illustrated the difficulty by asking how a pharmacologist could test the effects of tincture of digitalis if he were merely given solutions of this drug without any indication as to their strength.

A discussion followed in which Dr ROBERT JONES (M.O.H. Monmouthshire) said that he did not regret nor apologise for the fact that he was one of the chief protagonists for the trial of the Spahlinger remedies within the area of influence of the Welsh National Memorial Association, and that he would always welcome the opportunity of examining any treatment that would give relief and perhaps cure to the sufferers from tuberculosis. There were very good reasons why M. Spahlinger had not disclosed the technique of his remedies and the dosage of partial and complete serums in terms of antitoxic units, etc., as demanded by Professor Cummins. He had been strongly advised not to do so at this juncture by men who were clinicians of first rate importance who had so advised undoubtedly in the best interests of the tuberculous patient and of Spahlinger himself. It was to be regretted that there were instances on record where bacteriologists who had been privileged to see the workings of Spahlinger's laboratory not long afterwards let it be known to patients that they were going to prepare them a vaccine by Spahlinger's methods—an utterly impossible proposition. There was also on record Spahlinger's own reason why he had not published every detail of his process, it was that he was anxious that clinical proof of the value of his methods should first be conclusively demonstrated by more extensive clinical trials, because he felt that if other workers for any reason were unable to produce the results which he had obtained it would react disastrously on the future general application of his treatment. He stated that when these demonstrations had proved beyond doubt the efficacy of his system of treatment he was prepared to make known his methods and technique so that the treatment might be available in every country. As regards the clinical results, Dr Robert Jones differed from Professor Cummins in his interpretation of the records, and preferred trusting the clinician rather than the bacteriologist in this aspect of the matter. He was glad to note that the cases cited had been authenticated by consultants and physicians of repute, and in the large majority, whether of medical or of surgical tuberculosis, the treatment gave results in many cases striking and generally most favourable and very encouraging. Moreover, quite a number had been recorded as having had no relapse during a period of over six years. He had it on the highest authority that it was not the fact, as had been stated at the meeting, that the details of the technique of these remedies had been lost. The attitude of the Ministry of Health to these remedies was disclosed in its 1922 report. Dr MacNalty, a medical officer of the Ministry, visited the bacteriotherapeutic institute at Carouge, Geneva, in 1922, and as far as he was in a position to judge the clinical results of treatment, both by the serum and the vaccine were in some cases striking. It was intimated to M. Spahlinger through unofficial channels that, with his consent, the Ministry would be prepared to appoint a committee of recognized medical experts who would assess the results of his method in a number of cases to be selected by a physician nominated by him and after due trial, report on the value of the treatment. M. Spahlinger was informed that he would not be required to divulge the technique by which the serum and vaccine were prepared. What was now asked for in Wales was that the Welsh National Memorial Association should conduct a similar clinical test in some of its institutions, but this request Professor Cummins declined to concede until the

technique of the remedies, etc., had been disclosed to him. He demanded for Wales conditions which the Ministry had waived, or did not insist on at the outset, for the country generally.

Other speakers in the discussion were the CHAIRMAN, Drs H. W. Catto, W. K. BEAMAN, J. Frost, T. I. Candi, L. E. ACOMB, A. C. JOHNSON, and J. McGINN.

Professor CUMMINS replied to the main points raised regarding sinu-auricular, and, referring to Dr. ROGER JONES's criticism of his attitude towards the Sprahnger remedies, said that he and his colleagues of the medical staff of the Welsh National Memorial Association would gladly give to the Sprahnger remedies the same fair trial which had been given to other suggested treatments provided that adequate supplies of the serums and vaccines, together with the necessary information as to their nature and strengths, were placed at his disposal.

A vote of thanks to Professor Cummins, proposed by the CHAIRMAN and seconded by Dr. ROGER JONES, for his illuminating address was carried by acclamation.

Reviews.

MACKENZIE'S "DISEASES OF THE HEART"

THE new edition of Sir JAMES MACKENZIE'S *Diseases of the Heart* calls for more than passing notice because it is entirely rewritten, and because there is more in it than a book on diseases of the heart. The author desired in addition to secure other objects, which he enumerates as follows: (1) to recognize the position of medicine amongst the sciences, (2) to show the need for a new outlook in medicine, (3) to indicate the highest object of investigation—namely, the assessment of symptoms—and (4) to simplify medicine by rendering the phenomena of all health easy of comprehension through rigid adherence to fundamental principles. With this purpose in view he evolved a number of laws or principles governing the production of vital phenomena and pathological changes which must be grasped before the normal and the abnormal functioning of the heart can be appreciated. These principles include a study of the reflex arc, of vital processes and activities in the human body, of the laws of stimulation, contraction, conduction, inhibition, and control of cell impulses, and of the law of fluctuation. The principles are described and discussed very fully in the earlier chapters, and their application is illustrated in connexion with the various disorders and diseases of the heart later on.

The book consists of sixty-nine chapters. Their mere headings show how great a change has come over the outlook on the heart and its diseases. Twenty years ago the chief subject dealt with was valvular disease. In this book of 500 large quarto pages fifteen are devoted to the consideration of valvular defects. It might have been thought that the author had said all there was to be said about auricular fibrillation in the last edition, where the subject was dealt with in twenty-five pages. In the new edition it occupies fifty-six pages. Further experience has only confirmed the author in his well-known views that instruments (the polygraph and electrocardiograph) are means to an end, and should be used as such. Within recent years the tendency has been to lay stress on the value of electrocardiographic records as a measure of muscular contraction, myocardial disease, and cardiac functional power. Mackenzie would have none of this and characterized as vain and futile many of the interpretations of the records taken from the human heart. He seeks all through the book, which is fully illustrated by graphic records to show how far they can be correctly interpreted, and how the information thus gained can also be required by ordinary clinical examination. A new feature in this edition is the insertion of clinical records of individual cases to illustrate the various points which are being dealt with. Many of these had formerly been grouped in an appendix, but they

are much more valuable to the reader when used to illustrate certain main points in the text.

Mackenzie was a great believer in the scrap heap. When ever any view of his was found by himself or by others to be erroneous he scrapped it. During his lifetime he made a big scrap heap out of much of the traditional teaching on heart disease. There is a good deal of further scrapping in this book. The "all or nothing" law of Bowditch, from which it was deduced that when the ventricle contracted it did so with all the energy it possessed, is scrapped as merely an experimental and unnatural result. It is replaced by the law of fluctuation, which means that the functions of organs are so regulated and controlled that their response is always graded to suit the circumstances of the moment. Within recent years a somewhat popular test of the functional capacity of the heart has been the increase of the pulse rate after exercise and the time of its return to normal. This Mackenzie promptly scrapped, for all that it did was, he said, to demonstrate the excitability of the sino-auricular node, which varies much in individuals and in the same individual under varying conditions.

The name of James Mackenzie is specially associated with the condition known as auricular fibrillation and the proper use of digitalis in that disturbance. His earlier (and temporary) view was that auricular fibrillation was due to paralysis of the valve, and it is interesting to find that he returned to this view, although his explanation of it is entirely different. He did not regard the "circus movement" theory of auricular fibrillation as either illuminating or satisfactory. His final explanation of fibrillation was that there is a loss of the controlling influence of the sino-auricular node owing to disease, and that fibrillation of the valve results from this, as it does in all muscles cut off from the controlling influence of their nervous supply. Another interesting effect of the loss of control by the sino-auricular node is to be seen in the altered condition of the auriculo-ventricular node, which has now to resume the control of the heart beat. The a-v node "(1) becomes more susceptible to stimulation by the sympathetic and vagus nerves, (2) is subjected to a shower of impulses from the valve, and (3) does not meet the requirements of the body like the s-a node." These points are very fully discussed and their clinical importance indicated, as is also their relation to the wise use of digitalis in auricular fibrillation.

In the chapters on angina pectoris we have the result of profound study and personal experience. He has to deal with one of his favourite studies—pain—and he tells much of that subject, probably as much as is known, but he admits freely how much is unknown. He is writing specially for the general practitioner who has to deal with the patient, and he wishes first of all to impress on him the importance of a clear recognition of the pathology of the disease—that it is due to myocardial degeneration, the result of vascular disease. No drug or other treatment can be expected to alter this degeneration, but much can be done to prolong life by regulating the patient's activities in accordance with the functional powers of the heart. A careful distinction must always be made between true or primary angina and secondary angina, as he terms it, which is common in women as the result of nervous strain. The latter is a temporary condition which yields to treatment and is quite curable. There is no dogmatism in the statement of his views, and the difficulties which still exist about the pathology of angina pectoris are fully recognized, as the following sentence shows: "Although one can thus trace angina pectoris to the heart muscle, and although we can recognize from the various illustrations given that the voluntary muscles made to contract when deprived of blood give rise to pain, and although it can be demonstrated in many cases of angina pectoris that the heart muscle was deprived of blood, and that pain resulted when there was a demand for more blood, as on effort, yet it is not quite clear how these impulses which could not arise from a greatly increased number of muscle cells contracting gave rise to pain. The matter is left there for further consideration."

There is much that is left by the author for further consideration by the medical profession—left finally, for

this is his last contribution to medical progress. This pioneer has put on record the experiences of a lifetime in connexion with the study of diseases of the heart, and although much of Mackenzie's teaching is now universally accepted there are many fresh ideas of the same practical nature in this book. Having found that further progress as regards the heart was impossible by a study of the heart alone, he set himself in his later years to find out some general principles which would serve to explain the symptoms of diseased processes in the body. He expounded them and showed how far they apply in the explanation of cardiac problems. It is not easy to understand the principles or to follow their application, where so much is new. All careful readers will probably agree that no one save Sir James Mackenzie could have written such a book, which will stand for long as the best textbook on diseases of the heart, and for ever as marking a stage in the progress of medical science.

OPERATIVE CYSTOSCOPY

In his *Operative Cystoscopy*² Mr CANNY RYALL has incorporated results obtained during many years of study, and has presented them in an atlas with the hope that the reproductions of cystoscopic views and cystoscopic methods may stimulate others to obtain mastery in a branch of surgery that is becoming of greater importance each year. There are 528 illustrations in colour, and 670 in all. The great majority are from original paintings by Mr Thornton Shiels, and their reproduction in colour shows a very high level of workmanship. A feature of the work is the representation of successive stages during treatment, and particularly of treatment by means of diathermy. For example, Plates 67 to 76 consist entirely of drawings of a patient suffering from an unusual form of cyst, who was treated by means of diathermy applied through an operating cystoscope. The drawings, over fifty in number, represent the appearance of different portions of the bladder during and after the treatment of this patient. In many cases the representations of cycles of appearances in the bladder is instructive, but perhaps the author, in his relish for his subject, has been overlavish in his plates. Some criticisms may also be directed against some of the operative measures of which Mr Canny Ryall is a strong advocate. It is indeed doubtful whether an open operation is not preferable to some of the intrascopic methods illustrated in this atlas. But Mr Ryall is an enthusiast for operative cystoscopy, and his strong reaction against unnecessary cystotomies is easily understood. The majority of the plates illustrate conditions well known to cystoscopists, but a few, such as No. 105, show conditions that are very rare. In a work, however, that aims at completeness there is much to be said in favour of the inclusion of rarities.

The preliminary text is quite overshadowed by the plates. In it a simple description is given of the methods portrayed in the illustrations. Many of the instruments described have been modified by the author and bear his name. Some of them we know from experience to be excellent, but some will not find general favour amongst urologists. However, these are questions of individual preference, and it is outside the province of the reviewer to discuss the merits or demerits of any particular instrument or method advocated by Mr Ryall. It may, however, be interpolated as a criticism that Mr Ryall's manner of presenting his subject is somewhat reminiscent of certain Continental authors, with a strong individualistic flavour, and a dramatic touch that is seldom found in English writers. Nevertheless, Mr Ryall's industry and experience command respect, and as his faults are the result of extreme enthusiasm for his work they are readily pardoned.

The chief value of *Operative Cystoscopy* will be in familiarizing those who have a limited knowledge of the subject with the various appearances of the bladder in disease and during the course of cystoscopic treatment. The cost of the book will prevent its finding a place on the bookshelves of many individuals, but as a method of education in post-

graduate study it should be of the greatest use. The author, the artist, and the publishers are to be congratulated—the first on his industry and enthusiasm, the second on the skill with which he has portrayed what he has been shown, and the third on the quality of the reproductions.

THOMSON'S "CLINICAL STUDY AND TREATMENT OF SICK CHILDREN"

THE fourth edition of Dr JOHN THOMSON's well known book, *The Clinical Study and Treatment of Sick Children*,³ has appeared. The third edition was published in 1921, and contained 877 pages. The present volume contains 912 pages, and space has been found in it for a great deal of new matter. In the chapters upon infantile scurvy, rickets, encephalitis lethargica, purpura, spastic paralysis, sporadic cretinism, and the early treatment of mental defect, much that is new has been incorporated, and articles upon the exudative diathesis, erythroderma, cephalic bruises, arachno-dactyly, pyknolepsy, and hypertelism, subjects not previously treated, have been introduced.

It is not difficult to understand the reasons that have given this book its wide and rapidly growing circulation at home and abroad. Among physicians in this country who have devoted their life exclusively, or almost exclusively, to this branch of medicine, its author occupies a unique position. By his original contributions he has done a great deal to disprove a charge that is sometimes made against us as a nation—that we have been slow to develop an interest in or to further the remarkable advances in the study of diseases of childhood achieved in the last thirty years. Among workers in all nations he is recognized as a leader. To Dr Thomson the literature of the subject is well known, and a great part of the success of the earlier editions of his book was due to the way in which he placed his own observations and views in their proper relation to the observations of others or to views which obtain elsewhere. Throughout the book there are very many references which will help the student to make himself acquainted with many aspects of the subject in greater detail.

Yet all this is achieved without diminishing the great practical value of the book. It is a true clinical study, and for the most part a study of things that are common. The author's interest in the unusual has not diminished his understanding of matters of everyday occurrence.

EUGENICS

WE know of a case in which a man wittingly continued to propagate mentally defective children from an insane wife. Such cases are rare, and should properly come under the cognizance of the criminal courts. Probably, however, much more harm is done to society in the long run by the thoughtless and inconsiderate mating of individuals who are to all appearance perfectly sound. It is well known, at any rate by the majority of experienced people, that certain unions are apt to lead to disastrous results in the progeny, yet it may be doubted whether the consciousness of this fact acts as a deterrent in ninety-nine cases out of a hundred. It is part of the function of eugenics to correct this defect, and an indispensable preliminary to this end is to trace out, with such definiteness as is possible, the points where the strata of disease crop out in the succession of related generations. By this means material can be accumulated which would afford the means of making at least a rough estimate of the chances of a given disease reappearing in the offspring, and it is possible that definite laws would ultimately be discovered for our guidance.

Considering the importance of the subject, all work that enlarges our knowledge in this direction should be welcomed, and regarded as having something more than a merely academic interest. The recently published work of

³ *The Clinical Study and Treatment of Sick Children*. By John Thomson M.D. LL.D. F.R.C.P. Fourth edition rewritten and enlarged. Edinburgh and London: Oliver and Boyd, 1925. (Demy 8vo, pp. xxxii + 912. 258 figures. 50 net.)

Operative Cystoscopy. By E. Canny Ryall F.R.C.S. London: H. Kimpton, 1925. (Fcap folio. pp. xiii + 47. 670 figures. 115 plates. 70 net.)

Dr Stocks on *Hereditary Disorders of Bone Development*⁴ is a good example of such contributions to our knowledge. He has chosen two diseases, multiple exostoses and cleidocranial dysostosis, and on a basis of more than a thousand references has made a searching analysis of the hereditary influences at work in them. The former disease is characterized by the presence of abnormal thickenings and projections on the bones, often occurring in great numbers and affecting almost any part of the skeleton, although most frequently the long bones. Apart from the resulting deformity, symptoms may arise through pressure of the excrescences on neighbouring nerves. In cleidocranial dysostosis various deformities of the skull are met with, associated with a variable degree of aplasia of the clavicles. The disease gives rise to no serious functional disability, but it exhibits the curious physical sign that the two shoulders can be brought together into contact in front of the chest. Hereditary influence is strongly marked in these two instances of disordered growth, and they therefore form very suitable material for the study of the subject.

Although Dr Stocks has, naturally, adopted the standpoint of heredity throughout his work, and has traced the hereditary influence from every point of view, his book is by no means a collection of statistical tables and genealogical diagrams. The diseases are graphically described and well illustrated in a number of plates, and the reader gains an intimate acquaintance with conditions that are interesting in themselves, apart from any statistical deductions derived from them.

It is only by researches of this nature that we are enabled to obtain guidance in the important matter referred to, and the medical profession might profitably give somewhat more recognition to such work than appears to be the case. Dr Stocks's book is a monument of painstaking research, but we think it is somewhat disfigured by the quotation he has placed in the forefront of his book, which runs as follows: "If the same pains were taken in breeding mankind that gentlemen have bestowed upon the breeding of horses and dogs, human nature might, as it were, be new-modelled, hereditary diseases banished, and such a race might people the country as we can form no conception of. Instead of a nation of mongrels there would in time appear a nation of admirable Crichtons." Effort directed towards eradicating the recrudescence of disease is one thing, an endeavour to remodel the type of perfectly healthy individuals is another and quite different matter. However great the pains expended in the breeding of mankind, the attempt to emulate the results obtained in animals would be futile, since the same methods cannot be employed in the two cases. In animals the results are reached through experiments in mating, and we have not yet reached a stage of civilization in which analogous experiments in man are feasible. And however admirable the characteristics of parents or ancestors may be, we have no means of predicting that they will be transmitted in the offspring, experiment alone can decide that point. Should, however, eugenicists ever undertake the remodelling of our countrymen it is to be hoped they will not choose the celebrated Scotsman as a type, who do not want to be converted into a nation of bores.

NOTES ON BOOKS

MEDICAL men who were students at Cambridge between the years 1886 and 1918 will read with interest Mr J. R. M. BUTLER's memoir of his father's mastership at Trinity College. The volume is a mosaic of excerpts from Dr Butler's letters commented in commentary by his son. The chapters deal with the master's relations to college politics, university interests, religion, politics, and so on. The book is illustrated with portraits of Dr Butler at various stages of his mastership, and of these none will revive recollections more vividly than that which depicts the master with Sir

A. W. Ward, Master of Peterhouse, outside the Senate House. It is a tribute, no doubt to the health as well as the longevity of the master that amidst the numbers of distinguished men mentioned throughout the book hardly a single medical name occurs.

The *Synopsis of Special Subjects*,⁵ for the use of practitioners, is really four books bound in one. The first quarter, dealing with diseases of the skin, is written by Dr H. C. Semmon, the second, on obstetrics and diseases of women, by Dr Malcolm Donaldson, the third, on the ear, nose, and throat, by Mr Archer Ryland, and the fourth, on the eye, by Mr J. F. Cunningham. The preface modestly admits that the book cannot be commended from the literary or educational point of view, and with this we agree, for it is merely an extended list of causes, signs, symptoms, and remedies. The practical objective of the authors has been to set out specialized knowledge in synoptic form so that it may be quickly consulted.

We have received three volumes of the *Practical Medicine Series*,⁷ 1924—Vol. II, on *General Surgery*, edited by Dr Albert J. Ochsner, Vol. III, on *The Eye, Ear, Nose, and Throat*, edited by Drs Wood, Small, Andrews, and Sham-baugh, and Vol. V, on *Gynecology and Obstetrics*, edited by Drs Watkins and De Lee. These are concise practical books, of which eight volumes are published to cover the progress of medicine and surgery each year. They are well illustrated and indexed, and should be useful when a busy practitioner seeks for the most modern teaching on any of the special subjects with which these books deal.

*Health in Childhood*⁸ is a collection of five lectures selected from a series delivered at the Institute of Hygiene. The first lecture is on the care of the eyes in childhood, and is by Lieut. Colonel R. H. Elliot, M.D., F.R.C.S. (late I.M.S.). The second, on the care of the primary teeth, is by George Thomson, L.D.S., lecturer on dental surgery, Royal Hospital for Diseases of the Chest. The third is entitled "The prevention of infectious diseases in childhood," and is by Dr R. King Brown, lecturer on public health, Guy's Hospital Medical School. The fourth, on the prevention of physical deformities in children, is by the late Mr H. Græme Anderson. The last lecture is on the mental and moral education of the child, by Dr Charles S. Thomson, M.D., Deptford. The lectures are as interesting as their titles, and as good as the names of the lecturers would lead one to expect.

Dr JAMES S. VAN TESSLAAR, Brookline, Massachusetts, has published a translation into English of a book by Dr WILHELM STEKEL, one of the first disciples of Professor Freud. He is a very voluminous writer, and has now, as Dr Van Tessaar states in his preface, separated from Freud. The work is entitled *Peculiarities of Behavior*,⁹ and is concerned with Dr Stekel's views on wandering mania, dipsomania, kleptomania, pyromania, and allied impulsive acts. The book, he has published in German, are so exceedingly copious that even those who read German fluently and are interested in the subject may be glad to have this English version of his opinions on the subjects enumerated, in two easily handled volumes.

Lectures to Nurses, by MARGARET S. RIDDELL, is the second edition¹⁰ of a small manual containing a series of lectures to probationary nurses. The information given is intended to cover the field of instruction required by the General Nursing Councils for the State registration examinations. In addition to the routine lectures, there are notes on snaphography, insulin treatment, and diseases of ductless glands. The book opens with a few necessary and helpful remarks on hospital etiquette and personal hygiene. The author has had wide experience, and knows how to impart information in an interesting way. There is an index, and the chapters are clearly grouped and headed. The book should be of use to sister tutors, and all who lecture to probationary nurses.

⁴ University of London. Francis Galton Laboratory for National Eugenic. Eugenic Laboratory Memoir XXII. The Treasury of Human Inheritance. Edited by Karl Pearson. F.R.S. Vol. III. *Hereditary Disorders of Bone Development*. Part I. Diaphyseal Aclasia (Multiple Exostoses) and Enchondroma. A Cleidocranial Dysostosis. By Percy Noel M.D. D.Sc. With the assistance of Amy Harrington. Cambridge: The University Press, 1925. (Roy. 4to pp. v + 182 illustrated 45s net.)
⁵ Henry Montagu Butler. *Master of Trinity College Cambridge 1836-1918*. A memoir by his son J. R. M. Butler. London and New York: Longman, Green and Co. 1925. (Demy 8vo pp. xiii + 305 8 plates 12s 6d net.)

⁶ *Synopsis of Special Subjects*. For Practitioners. London: Williams and Wilkins, 1925. (Roy. 8vo pp. 376 18s net.)
⁷ *Practical Medicine Series*. Vol. II. *General Surgery*. Edited by Dr Albert J. Ochsner. Vol. III. *The Eye, Ear, Nose, and Throat*. Edited by Drs Wood, Small, Andrews, and Sham-baugh. Vol. V. *Gynecology and Obstetrics*. Edited by Drs Watkins and De Lee. London: Williams and Wilkins, 1924. (Roy. 8vo pp. 376 18s net.)

⁸ *Health in Childhood*. Five lectures delivered at the Institute of Hygiene. With a Foreword by A. Middleton Howat M.D. D.P.H. London: G. Bell and Sons Ltd. 1925. (Cr. 8vo pp. x + 91 2s 6d net.)
⁹ *Peculiarities of Behavior*. Wandering Mania. Dipsomania. Kleptomania. Pyromania. and allied impulsive acts. By Wilhelm Stekel. In two volumes. Vol. I. pp. vi + 378.

Second edition. + 452 49s net.

THE CENTENARY OF THE BIRMINGHAM MEDICAL SCHOOL

THE University of Birmingham will celebrate the centenary of the foundation of the Birmingham Medical School on Tuesday next, December 8th. The school dates from the establishment by Mr William Sands Cox of a course of anatomy, physiological, and surgical lectures, the first of which was given on December 1st, 1825.

The University will hold a congregation at 2.30 p.m. on Tuesday, when, in the unavoidable absence of the Chancellor (Viscount Cecil), the Vice-Chancellor (Sir Gilbert Bailing, Bt, C.B., F.R.C.S.) will preside. Honorary degrees will be conferred on the Right Hon. Neville Chamberlain, M.P., Minister of Health, Sir Donald MacAlister, Bt., President of the General Medical Council, Sir Humphry Rolleston, Bt., President of the Royal College of Physicians of London, and Emeritus Professor Priestley Smith, M.Sc., F.R.C.S. Eng., late Professor of Ophthalmology in the University. Mr Neville Chamberlain will then give an address. On the evening of the same day a reception will be held at the University buildings, Edgbaston.

HISTORY OF THE BIRMINGHAM MEDICAL SCHOOL

The first record of any teaching of medical subjects in Birmingham goes back to the year 1768, when Mr John Tomlinson, surgeon to the Town Infirmary, conceived the idea of publishing a quarterly journal of medicine. In this journal he states that there were a number of medical students apprenticed to the practitioners of the town and to the surgeon to the infirmary, and that, actuated by a desire for instructing these young gentlemen of the faculty, he attempted a course of anatomical lectures during the winter season. His whole scheme was included in twenty-eight lectures, given weekly, but he had to alter the course as the opportunity for procuring bodies occurred.

There is no record to show how long these lectures continued, but we know that Tomlinson continued his teaching after his appointment to the staff of the General Hospital in 1779. It is only right that Tomlinson's name should be handed down to posterity, for he was the first provincial surgeon to give regular anatomical lectures. That spasmodic lectures were given even before Tomlinson's course is obvious from this advertisement in *Aris's Birmingham Gazette*:

"October 23rd 1762.—The body of the malefactor who is ordered to be executed at Lichfield on Monday 25th instant will be afterwards conveyed to the house of Dr Darwin who will begin a course of anatomical lectures at four o'clock on Tuesday evening and will continue them every day as long as the body can be preserved and shall be glad to be favoured with the company of any who profess Medicine or Surgery or whom the love of science may induce.

This was Erasmus Darwin the grandfather of Charles Darwin. In November, 1765, at a meeting held at the Swan Inn, it was decided that—

A building for the reception of proper objects be erected within a mile of the Town of Birmingham with all convenient speed this building to be known as The General Hospital at Birmingham in the County of Warwick, for the relief of the Sick and lame poor.

Dr John Ash had initiated the idea of a hospital, and was largely responsible for its ultimate formation, but for some years such great financial difficulties were encountered that the building could not be completed, and it was not until 1779 that the hospital was opened. Dr John Ash (whose features are well known to us from the great picture by Sir Joshua Reynolds, which hangs in the hospital board room, and the famous engraving from this by Bartolozzi, which is reproduced here) was born in Coventry, took the M.A. at Oxford in 1746 and the M.D. in 1754. He settled in Birmingham in 1755, and soon became one of its most prominent citizens and a popular physician.

In 1787 he resigned his hospital appointment and moved to London. He became a Fellow of the Royal College of Physicians in this year, Censor in 1789-93, Harveian Orator in 1790, Goulstonian Lecturer in 1791, and Croonian Lecturer in 1793. He was also a Fellow of the Royal and Antiquarian Societies. He died in 1788, aged 75 years.

Another of the first four physicians appointed to the staff of the General Hospital was William Withering, who discovered the medicinal use of digitalis, and is known to fame as a great botanist, while the youngest of the four was Dr Edward Johnstone, who became the first president of the Birmingham School of Medicine, and who, before his death in 1851 at the age of 84, had seen the school firmly established.

The foundation of the Medical School was due to William Sands Cox, who was born in 1801. He was the second son of a local practitioner, Edward Townsend Cox, and after serving his apprenticeship locally, studied at Guy's and St Thomas's in London and various schools in Paris. *Aris's Birmingham Gazette* of November 7th, 1825, contained the following advertisement:

A course of anatomical lectures with physiological and surgical observations will be commenced on Wednesday 1st of December, 1825 at 12 o'clock. The course will be continued during the ensuing winter on Mondays, Thursdays and Fridays, at 24 Temple Row. This plan is made with the approbation of Dr John Bone, Dr Pearson the physicians and surgeons of the General Hospital, the Dispensary and the Town Infirmary and other distinguished practitioners.

Early in 1826 Mr Sands Cox received official recognition from the Society of Apothecaries as a teacher of anatomy, and for three years he taught some twenty students. Then, in 1828, the school was definitely established and a series of lectures in a number of subjects was begun, but for a year longer there was only one room for all the purposes of the school. Early in 1830, after a successful appeal for financial support to the "local patrons of science," a set of rooms was built in Snow Hill, and a library and an anatomical museum were provided. Then the building of the Great Western Railway forced the school to remove



Hotel

(H. J. Whitlock and Sons Birmingham)

DR JOHN ASH (After the portrait by Sir Joshua Reynolds)

British Medical Journal.

SATURDAY, DECEMBER 5TH, 1925

ENDOCRINE THERAPY

THERE are few fields of therapeutics in which such important recent advances have been made as in endocrine therapy, and therefore the discussion on this subject in the Section of Medicine of the Annual Meeting of the British Medical Association, which is reported in this issue (p. 1051), is of particular interest, because it gives an opportunity of learning the prevailing expert opinion regarding our present knowledge of this rapidly changing subject. The progress of endocrine therapy has been marked by several brilliant discoveries of the greatest clinical importance, but it must not be forgotten that interspersed with these successes have been almost innumerable failures. Nothing illustrates the special difficulties of the subject better than the fact that the relation between the pancreas and diabetes mellitus was discovered more than forty years ago, that continuous research on the subject has proceeded ever since, and yet that only recently has a method of isolating the active principle been devised.

The successes of endocrine therapy encourage the clinician who is faced with the urgent necessity of curing sick persons to press forward along any line of treatment that appears at all promising, but the memory of the endless disappointments and mistakes of the past make the laboratory scientist working in this field particularly cautious and critical. Dr. Langdon Brown and Professor Swale Vincent, the two openers of the discussion, represented these two points of view very ably, and at first sight there may appear to be a serious divergence of opinion between them. The differences, however, have not quite as great a practical importance as might at first appear. Two separate problems were in reality under discussion: first, the question as to what substances of therapeutic importance can be extracted from endocrine glands, and secondly, whether the therapeutic actions produced are true substitution effects—that is to say, effects due to the endocrine extract replacing the secretion of some gland that is not functioning normally. The second of these problems is by far the more difficult, because our knowledge regarding the normal functions of the endocrine glands is only fragmentary, and it is extraordinarily difficult in many cases to prove with certainty that a given clinical condition is really due to the insufficient action of an endocrine organ. Fortunately, however, the first problem is of the greater practical importance, since, if it can be shown that an endocrine extract relieves or cures a recognizable clinical condition, then the preparation can be used in therapeutics and its exact mode of action left to be determined in the future. This point was well illustrated by Professor Swale Vincent when he pointed out how imperfect our knowledge still is regarding the mode of action of insulin. The fact that we do not know the exact relation between the activity of the islets of Langerhans and the occurrence of diabetes mellitus does not however, seriously interfere with the use of insulin in the treatment of this disease.

The chief differences of opinion between the two openers concerned the real nature of the effects pro-

duced by the administration of endocrine extracts, but in view of our present imperfect knowledge of the whole subject it would seem more profitable to concentrate on the simpler problem, and to try to determine what definite therapeutic effects can be produced by endocrine therapy. This knowledge is of outstanding practical importance; moreover, its acquisition offers one of the best avenues for the approach of the more complex problem of the exact mode of action of endocrine organs. As regards this more modest problem of the therapeutic activity of endocrine extracts there was a very firm unanimity of opinion among the speakers in the discussion. All speakers, of course, agreed on the powerful and obvious therapeutic actions that can be produced by thyroid extract, insulin, adrenaline, and the extract of the posterior lobe of the pituitary body. Moreover, it was agreed that the recent work of Collip on the parathyroid, and of Doisy and Allen on the ovary, promised to bring the extracts of these two organs into the same category. These workers have devised methods of preparing relatively pure preparations of the active principles of these glands, and have shown that the activity of the extracts can be demonstrated by definite biological tests. Past experience has proved that when once satisfactory methods have been devised for extracting the active principle of an endocrine organ and for testing the activity of the extract, it is usually not very difficult to ascertain the therapeutic value of the preparation. The actions of extracts of the anterior lobe of the pituitary gland also are becoming established with some certainty, in this case the activity of preparations can be tested by their action on amphibian metamorphosis, and Dr. Gardiner Hill has reported that the preparation produces definite and measurable therapeutic effects on metabolism in certain abnormal conditions.

The importance of sure tests for the activity of endocrine preparations needs to be emphasized, for unfortunately nearly all the active endocrine principles are extremely unstable. Even with such preparations as insulin and extracts of the posterior lobe of the pituitary, for which methods of extraction have been thoroughly worked out, it is still impossible to prepare extracts that can be relied on for clinical use without routine biological standardization of the products. Experience with the better known extracts suggests that in the case of other extracts, unless there is some method for testing the activity, it is a mere chance if any commercial preparation contains the active principle. This view is supported by the fact that Collip obtained negative results with all the commercial preparations of parathyroid that he tested, and Doisy and Allen had similar experiences with ovarian extracts; moreover, workers who have tested preparations of the anterior lobe of the pituitary have found a large proportion to be inactive. These facts are quite sufficient to account for the wide divergence of results that has attended the therapeutic application of these endocrine preparations. There seems, therefore, to be a very general agreement that active principles with recognizable pharmacological actions and definite therapeutic activity can be obtained from at least seven different endocrine organs—namely, from the thyroid, the parathyroids, the two lobes of the pituitary, the islets of Langerhans, the medulla of the suprarenal glands, and the ovaries. The important rider must be added, however, that most of these active principles are very readily destroyed, and that unless their preparation is controlled by some test for their activity, commercial

extracts of the endocrine glands will often be found to be inactive

The use of endocrine preparations is attended with a further difficulty in that a suitable means of administration must be discovered. There seems to be good evidence that the active principles of the thyroid, parathyroid, and anterior lobe of the pituitary can all be absorbed from the gut, that insulin is not absorbed from the gut, and that at most only traces of adrenaline and posterior pituitary lobe extract are thus absorbed. The available evidence seems to show that the active principle of the ovary also is not absorbed from the gut.

As regards orchitic extracts, there appears to be a very general agreement that ordinary commercial extracts produce no therapeutic action, although results quoted by Professor Langmead suggest that a method of producing an active extract may soon be available. Testicular grafts or injections of emulsions of freshly excised testicles can, however, produce temporarily beneficial therapeutic actions. The evidence regarding testicular grafting was reviewed by Mr. Kenneth Walker, who concluded that such grafts do not grow, but, on the contrary, rather rapidly disappear, and that the beneficial effects observed are due to the absorption of the active principles present in the graft.

Perhaps the most instructive feature of the whole discussion was that no one advanced any evidence that any endocrine preparations except those enumerated above produced any therapeutic effect whatever. The discussion showed that extracts with therapeutic actions could be obtained from the seven endocrine organs already mentioned, but that in only three instances was the active principle absorbed from the gut in significant quantities. Furthermore the evidence quoted showed that the majority of commercial preparations of ovaries and parathyroids do not contain any active principle, and there is also evidence that the same is true of preparations of the anterior lobe of the pituitary. In the light of these facts it is an instructive exercise to go through the list of preparations of any of the more enterprising advertisers of endocrine preparations and to calculate what percentage of them are likely to produce any therapeutic effect whatever. This unfortunate background of irresponsible commercial exploitation cannot be wholly ignored in any discussion on endocrine therapy for the mass suggestion exercised by intensive and skilful advertisement tends to swing public opinion towards undue credulity, and therefore drastic criticism is particularly necessary in this field of therapeutics. The task of the critic is always an ungrateful one, and it is satisfactory to note that most of Professor Swale Vincent's audience appreciated the useful function he was performing in applying rigorous criticism to the difficult problems of endocrine therapy.

MACKENZIE'S LAST WORK

Two books have appeared this year containing the last teachings of two great pioneers in medicine. The one is *Neurological Fragments*, in which the scattered articles published by Dr. Hughlings Jackson have been collected by Dr. James Taylor into a single volume. The other is *Diseases of the Heart*, by Sir James Mackenzie, which is reviewed this week at page 1068. He was occupied with the correction of the proofs of this book on the day of his final seizure. In it will be found described all those researches into cardiac

disease which have added so much to our knowledge and made Mackenzie's reputation world wide. But there is much more than this. Twelve years have passed since the last edition of his textbook was published. During those years he did not rest content with his previous discoveries, to him they had seemed only to lead on to deeper problems. As he expressed it, doubts began to arise in his mind during those years with regard to the sufficiency of the researches that had been made, and were still being made, by himself and others.

Although recognizing that physiological laws and facts must be the key to pathological problems, Mackenzie failed to find in physiological textbooks information sufficiently explanatory of the changes met with in disease, and he found much which he considered to be directly opposed to the facts of clinical medicine. For the elucidation of many cardiac problems he required some fresh guiding principles of a general character—that is to say, applicable to the whole body and to all forms of disease. In his later years he was concerned to set out those principles which he regarded as physiological laws and to apply them more especially to the work of the heart in health and in disease. Thus when he came to write the new edition of his book he in a sense, produced two books blended into one. He was a general physician expounding many new principles of normal and diseased function in the human body which he had evolved as the result of his own thought and experience. But he was also a heart specialist applying those principles to the study of disorders and diseases of the heart. He may have been right or he may have been wrong about his new principles, but Mackenzie had in the past an uncanny knack of being right. His earlier work was ignored for many years and it is to be hoped that English workers will not ignore this later work and will not leave it to be appreciated first of all in other countries.

The heart used to be regarded as a simple single organ at which when it went wrong the physician discharged a drug known as a cardiac tonic and all was expected to go well. In his previous writings, so many of which this *Journal* had the privilege to publish, Mackenzie had disposed very thoroughly of this view of the heart but in the new edition of his volume he enlarged and altered all views as to the various functions and activities described as cardiac action. Much of his previous work had dealt with the disorders of the so-called "conducting tissues," a term he discarded and replaced by "the genetic system." This system extends from the sino auricular node to the terminal filaments of the auriculo-ventricular bundle in the wall of the ventricle. It was formerly regarded merely as a conducting system, transmitting impulses from the sino auricular node as a telegraph wire conveys electrical messages or a nerve fibril conducts an impulse. Mackenzie established the fact that the genetic system is much more than this. It is a wonderful piece of vital mechanism capable of regulating itself and the muscular contraction of the ventricles capable of being affected by nervous influences and altered blood conditions, and when disordered giving rise to definite signs. The genetic and the muscular (contracting) systems of the heart are associated in their working and the one must not be considered apart from the other. He compared the relation between these two systems to that between a voluntary muscle and its motor nerve, and said that a movement of the heart could not be understood without a knowledge of the genetic system, or the function

a garden, now a lawn of rest in a busy world, here will be found an old half-timbered house disguised with later accretions until it has lost all trace of its antiquity.

Nottingham has always been famous for its gardens, and the fame of Nottingham rose growers is world-wide, to day on all sides can be seen large areas of land laid out in small gardens in which every variety of fruit, vegetable, and flower is to be found growing, and growing well. The open spaces of Nottingham are more extensive than those of any other town, the beautiful Forest, now a large recreation ground, was once the town racecourse, before that it was part of the common land of the town, and along the top of its steep slope was a line of picturesque windmills which have now disappeared. Then there is the Arboretum, laid out in formal beds and pleasant grass slopes, with ponds and avenues—a pleasant spot within five minutes' walk of the centre of the town.

A quarter of a century ago lace making was the staple industry of the town, and a district of large warehouses is known as the Lace Market. Now, however, fickle Fashion has turned her face against lace and a cloud is over this once flourishing industry. Other trades have come. There are Player's vast cigarette and tobacco factories, Boots Pure Drug Company direct from Nottingham a great trade which now covers almost the whole of England, and in the eye and motor world there is the Raleigh Company. I and R Morley's hosiery works find a home in Nottingham, and there are other great businesses too numerous to mention.

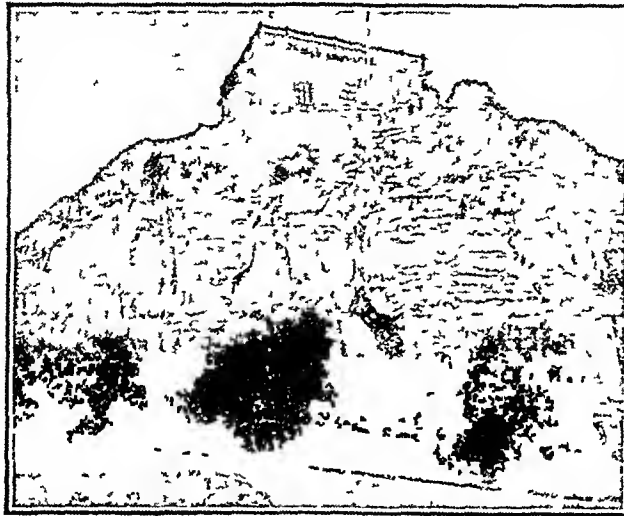
Nottingham is exceptionally well provided with railways. Her two main stations are served by the London, Midland and Scottish, and the London and North-Eastern railway systems, and from both there is a splendid service of express trains. London is reached in two and a quarter hours, Manchester in two hours, Leeds in just under two hours—in fact, there can be few towns with a better service of trains to all parts of the country.

Since the war a great deal of building has taken place on all sides of the town, and large areas which were formerly waste are now covered with good modern houses. The problem of providing arterial roads is being tackled, and soon it will be possible to avoid the centre of the town by those who wish to do so.

Education is much to the front. There is the University College, which is hoping in the near future to become the East Midlands University. Through the munificence of Sir Jesse Boot a magnificent site has been provided between Nottingham and Beeston, and here university buildings are being erected, which will be second to none in the country. Sir Jesse Boot has also laid out large recreation grounds, tennis courts, football and hockey fields, a boating lake, and

has provided the town with the largest open air swimming bath in the country.

Nottingham possesses a cemetery of more than ordinary interest. Standing on the top of the hill adjacent to the Forest, the Church or Rock Cemetery is a very picturesque with its curves and steep slopes. It is, in fact, as beautiful as a cemetery can well be.



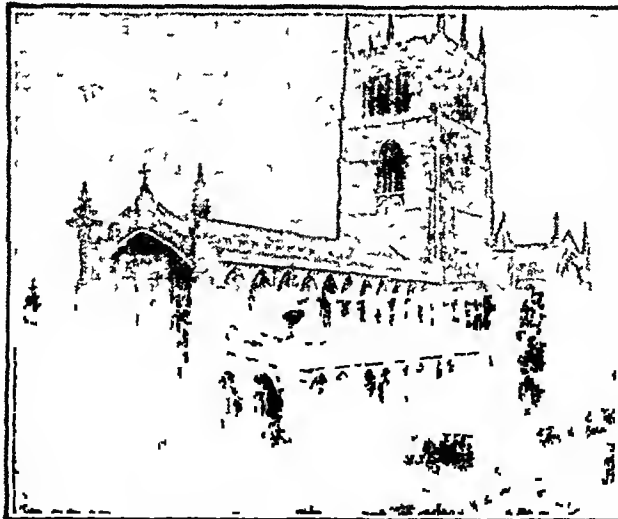
Castle Rock, Nottingham

show, colt-nut-shy, and menagerie. For three days pandemonium reigns, and day and night are made horrible with the raucous voices of organs blasting forth their tunes in loud-toned rivalry. But Nottingham enjoys it, though it often pretends that it does not. Before the war excursions used to bring visitors from all parts of England, and even now crowds come in from distant places and give themselves up to thorough, if rowdy, enjoyment. The fair is opened formally by the Mayor, according to the ancient charter, on the first Thursday in October, and continues until midnight

on Saturday. By Sunday all is clear. The caravan has folded up its tents and silently stolen away, and peace reigns once more.

In the field of sport few towns and counties can show such a record as Nottingham. On the cricket field Notts has won for herself an honoured place, which the present members of the county eleven are doing their best to maintain. The past contains names known wherever cricket is played: Arthur Shrewsbury, William Gunn, Alfred Shaw, Richard Drift, Mordecai Sherwin, William Barnes, Wilfred Flowers, William Attewell, J. A. Dixon, and A. O. Jones, to mention a few. We are rather prone to think that the men of the present are lesser figures

than the giants of the past, but Notts occupies a high place among the counties in the championship table, and among her team are men who, we hope, will be seen in the England eleven against Australia next year. At football, too, Nottingham has a record any town or county could be proud of. Association football of the first class is now mainly a game for professionals, and the length of a club's purse rather than local genius is the deciding factor. Rugby football is, comparatively, a new game in this district, but here, as elsewhere, we are forging to the front.



St. Mary's Church, Nottingham

Nottingham is exceptionally well supplied in the matter of hospitals. The General Hospital has, since the war, been very hard put to it to make both ends meet. Thanks, however, to the generosity of the citizens of Nottingham, it has been able to carry on its good work with undiminished energy. The present premises have been all too small for some years, and the site at the corner of Park Row and the Ropewalk, formerly a reservoir, has been secured and a new out-patients' wing, with complete orthopaedic and x-ray departments, together with a thorax and nose block for both out- and in-patients, is being erected, and will probably be opened by the middle of next year. When this is finished Nottingham will have a hospital of which any town would be proud.

The Children's Hospital occupies a fine site overlooking the Forest, and here again lack of space has been a trouble, but this is being remedied by a rebuilding on the old site, when finished there will be room for sixty beds. Until recent years there were two women's hospitals in the town. These two—the one in Castle Gate and the Samaritan—have now amalgamated, and great efforts are being made to equip the Women's Hospital fully, so that it may be in a position to meet the heavy demands put upon it. A fine site has been secured in Peel Street, and next spring building operations will begin, when finished the hospital will contain sixty beds. The Eve Infirmary, on the Ropewalk, is a new building with an absolutely up-to-date equipment, and the Thorax and Nose Hospital also, in Goldsmith Street, is exceptionally well fitted up.

At Bagthorpe, on the north of the city, is the Bagthorpe Infirmary attached to the workhouse, where every care and attention is given to those who are taken there. It is a modern building with everything that can be desired in the way of equipment. Near by is the Isolation Fever Hospital.

In addition to the above there is a Home for Surgical Tuberculosis at Bulwell, and a small Venereal Diseases Hospital for Women on Gregory Boulevard. Early next year it is expected that the new Clinic of the Cripples' Guild will be opened in Park Row. No trouble or expense has been spared in making this as up to date as possible, and when finished it will be a very valuable addition to this side of the city's medical and surgical amenities.

Such, then, is the modern city of Nottingham. Visitors to it are always impressed by its cleanliness and beauty, for the billiness of its streets gives it an air of variety which so many modern towns lack owing to their flatness. The next article will deal with the history of the town.

TREATMENT OF RHEUMATISM IN INDUSTRY

LONDON CONFERENCE OF THE INTERNATIONAL SOCIETY OF
MEDICAL HYDROLOGY

A SPECIAL meeting of the International Society of Medical Hydrology was held at the house of the Royal Society of Medicine on November 27th, jointly with the Section of Balneology and Climatology of that body, to discuss the treatment of rheumatism in industry.

Dr GUSTAVE MONOD, M.R.C.P. Lond (Vichy, France), who presided, referred to the widening scope of the International Society, which was a federation of the societies interested in medical hydrology in the various countries. He added that in France it was the view that as soon as Germany joined the League of Nations German bodies should be admitted to affiliation with all the learned societies, and it was now proposed to open the door of this International Society to their German colleagues (Applause). Dr Monod added that, with regard to the subject before the present conference, in France the question of rheumatism had not the national importance which it possessed in other countries. In the French working class as a whole chronic rheumatism was not prevalent, the large hospitals in Paris and elsewhere did not publish statistics with regard to this disability, nor provide special accommodation. He attributed the relative immunity to the fact that France was blessed with sunshine.

The Problem in Great Britain

Sir GEORGE NICHOLSON conveyed the congratulations of the Ministry of Health to the International Society on its

efforts to grapple with this formidable and protean disorder. The Ministry had prepared some kind of survey of the incidence of rheumatic disease among the insured population of Great Britain. In this country they were losing—or were spending on sick benefit, which must be regarded as equivalent to loss—not less than £2,000,000 a year on this group of diseases, and the annual loss of time involved was three million weeks, or 60,000 years. This represented quite a serious burden upon the State as the more definitely recognized scourges like cancer and tuberculosis, but it was only in recent times that the dimensions of the problem had been appreciated, and therefore the measures taken to solve it were as yet inadequate. It was because of this inadequacy that so many of the cases found their way into Poor Law hospitals. It was necessary to apply much more careful and accurate methods both in the discovery of the cause, whether it be infection or metabolic change or anything else, and in the measures to be taken for its removal. It was not enough to make a frontal attack, dealing with the palpable and obvious manifestations of the condition, the foci of infection must be sought, and the disorder grappled with in a scientific and effective way. This necessitated team work, the association of men engaged in different branches of study and practice, some of whom would concentrate on the teeth and oral conditions, others on the abdomen, others again on the genito-urinary tract, and so forth. The raising of the powers of resistance against the cause of the malady, whether infective or metabolic, had to be considered. In treatment as well as in diagnosis co-operative effort was necessary. The group of measures for the alleviation of pain, the increase of absorption, the re-education of muscles, thermal, electrical, hydrological treatment, every kind of treatment likely to place the body in a position to make its own resistance to the causal conditions predisposing to this disease, called again for team work. The evidence of this morbid process as it appeared in childhood must be studied, for the principles of preventive medicine should be applied in the earliest years of life. All this seemed to point to some special kind of institution which would meet this national problem. There were already available a few large spa hospitals, of all of which good use might be made in combating this disease, but he looked for some concrete suggestions from the conference, the deliberations of which would receive earnest consideration from the Ministry.

Reports from Northern European Countries

Dr J. VAN BRFEMEN (director of the Instituto for Physical Treatment, Amsterdam) said that in Holland official statistical data with regard to rheumatism were unknown. Although the number of rheumatic patients was very great, the scientific and social study of this condition was in his infancy. In his institution at Amsterdam both private and insured patients were received, and the principal successes were obtained with the latter. Private patients mostly came at a late stage of the disease, and did not always finish their cure, but panel patients, as the result of an arrangement with their sick funds, obtained free medical treatment by physical methods, and so came early, with quite excellent results. Every year about 1,000 patients with chronic rheumatic diseases were treated at the institute, and another 1,000 sent to spas or treated in their own homes. The general treatment was by heat and electric light baths, douche massage, and the mercury lamp, and local treatment by massage, diathermy, local baths, and exercises. The establishment of clinics and laboratories for methodical research in rheumatism was most desirable. In his experience every occupation had its distinctive rheumatism.

Dr HANS JENSEN (Bispebjerg Hospital, Copenhagen) said that in Denmark also there had not yet been set on foot a really systematic movement to combat chronic rheumatism. Among those receiving sickness benefits in a large industrial insurance scheme 12 per cent of the males had this disease. Of the persons declared to be permanently invalided from whatever cause, 14 per cent were disabled by chronic arthritis, while pulmonary affections accounted only for 13.5 per cent. No public hospitals in Denmark were devoted specially to this disability, but

TREATMENT OF RHEUMATISM IN INDUSTRY

interest in the question was being aroused, and the study was being followed up in many directions.

Dr. G. KALLMÄR (consultant, Pensions Hospital, Stockholm) said that chronic articular rheumatism held the dominating position in Sweden as a cause of disability, exceeding even pulmonary tuberculosis. Every year about 1,500 persons in Sweden were treated under the auspices of the Board of Pensions for articular rheumatism. Sweden had many small spas, but these were neither big enough nor good enough for the purpose. There were also four institutions for medical treatment established by the Board of Pensions, in these between 700 and 800 cases of chronic articular rheumatism and about 100 cases of sciatica were treated annually. Only those patients who had a chance of becoming self-supporting were admitted, and about 60 per cent were discharged cured. The general hospitals, which were community-owned, were generally so overcrowded with other cases as to be able to make only a small contribution to meet this need. The urgent necessity was for special hospitals. A committee for combating rheumatism had been established in Sweden, and the question of providing a central hospital for rheumatic diseases in Stockholm, in immediate connexion with the university clinics, was being considered.

The Case for Clinics
Dr. FORTESQUE FOX (London) said that sufferers from chronic rheumatism were in very many cases instances not suitable for in-patient hospital treatment, they came up for treatment in out-patient departments, or special clinics, or they went to spas. Rheumatic cases had to be treated from many sides, in a large number, for instance, there was an infective element which ought to be removed, and vaccine or drug treatment was of the greatest benefit in many cases. But those who treated these cases were constantly aware of the underlying fact that rheumatism was a climatic disease, that it was induced by damp and cold, and that a great deal could be done to counteract the effects of climate by the right use of waters and baths. He was of opinion that all the British spas could be criticized, but after a long experience he was convinced that it was true. The fact was that all these places, however much they might differ in the quality of their waters, had one method of treatment in common in their well appointed bathing establishments. For a certain number of cases recourse to the spas was desirable and important, but in a large proportion the provision of clinics, under skilled medical direction, to which some of the features of spa establishments might be adapted, would meet the case. In this country the campaign against rheumatism could proceed with a double aimment—there was something that could be done at the spas and something outside the spas. The external methods of treatment should be made available in towns, apart from spas, by means of rheumatism clinics. The advantages of clinics had already been tested in connexion with various forms of disablement. At a clinic an intensive study of a group of maladies could be carried out, and the cases would sort themselves almost automatically into categories. The necessary conditions for the success of such clinics, which acted to advantage not singly but in combination, (2) facilities for records and measurements, (3) the services of a skilled medical director, and (4) liaison with research establishments.

Dr. L. J. LLEWELLYN (President of the Section of Balneology and Climatology) also spoke in favour of clinics. The climate of this country would not adapt itself to the rheumatic subject, and therefore he must adapt himself to it. There was nothing which could so raise the resistance to this malady as discriminating hydrotherapeutic procedures. A campaign similar to that already undertaken in the case of tuberculosis should be organized for the purpose of dealing with rheumatic disorders, for the report of the Ministry of Health furnished an index to the magnitude of this invalidity. He gave some interesting statistics obtained from the United States, and mentioned that in New York there were 48 "cardiac clinics," as they were

called, 20 in Philadelphia, and 142 in the whole of the United States. The results obtained showed that not only the earning capacity of adults but the school attendance of children had increased to such an extent as to represent a monetary gain far exceeding the cost of supervision. The elucidation and treatment of rheumatic disorders was a public health problem of the first magnitude, and a national scourge must be dealt with by a national policy. He favoured the establishment of hydrotherapeutic centres in all the great cities.

Dr. M. B. RAY (London) said that the insured population of Greater London and its environs was 2,400,000, on the basis of the Ministry of Health's report, the number of these people who were likely to seek advice each year for one or other forms of rheumatic disorder was about 60,000. In London and district there were nearly 4,500 cases of rheumatoid arthritis of varying severity, and it would be quite safe to suppose that the number of sufferers from the non-articular forms of rheumatism tickled the number of those suffering from chronic arthritis, and provision must also be made for osteoarthritides. He estimated that there were about 22,000 insured persons in the London district alone who could be regarded as likely to benefit from a more enlightened treatment, for, of course, it must be remembered that a large proportion of the total number of sufferers were beyond praying for, a living reproach to the policy of *laissez-faire* which had been adopted in the past. A certain number of the cases required definite in-patient hospital treatment. No comprehensive scheme could possibly neglect that side of the question. Another important point was that satisfactory research into the causation of many of these cases could only be carried out on patients who were constantly under observation. It was neither possible nor desirable to afford in-patient treatment to anything like all that they needed in a properly equipped clinic, in close relation to an out-patient department, and with a research department available. Dr. Ray then gave a detailed sketch of such a clinic and its equipment. Under the arrangement which he showed, forty-four treatments of various kinds—douches, vapour and slipper baths, packs, manipulations, and ionization therapy—could be given in an hour. Such a clinic in a large centre of population would be a clearing house from which suitable cases could be drafted to the spas. Dr. FRANK KORNLIANN (Riez, Switzerland) gave some account of the clinics in Switzerland, which had proved quite satisfactory. The treatment provided took the form of baths, electricity, ionization, and massage. The light and early cases were often entirely cured, the chronic cases were sometimes cured, but more often proved intractable. Of the cases treated at one such clinic, about 20 per cent were of chronic articular rheumatism.

Spa Treatment
Dr. KERR PRINGLE (Harrogate) described the facilities available at the several hospitals in Great Britain entirely devoted to hydrotherapeutic treatment, where 93 per cent of the cases treated were rheumatic cases.

	Beds	Patients (annual)
Bath, Royal Mineral Water Hospital	136	1,200
Buxton Devonshire Water Hospital	10	—
Belmont's Mineral Water Hospital	300	Nearly 4,000
Droitwich, St. John's	40	630
Harrogate Royal Bath Hospital	150	2,500
Stratcliffe	15	80 or 90
Woodhall Spa, Alexandra Hospital	30	188

At all these hospitals there were waiting lists, and a large number of cases every year had to be refused admission. In addition there was a hydrotherapeutic hospital at Southport, with 80 beds, dealing with 715 cases annually, but he had not particulars of the treatment given. He proceeded to an analysis of the cases treated at Bath, Buxton, and Harrogate on the lines of the groups of rheumatic conditions given in the Ministry of Health's classification. In Bath it was noteworthy that the proportion of osteo-arthritis to the other cases was 12 per cent in men and 6.9 per cent in women, in Buxton the figures for the sexes were respectively 6.6 and 8 per cent, and those given by the Ministry of Health respectively 8 and 9 per

cent. The Ministry drew attention to the larger proportion of female cases, but the Bath figures, apparently, were not in accord with this, no case should be labelled osteoarthritis unless verified by x-rays. On the general question of spa treatment, the importance of environment had to be taken into consideration. To take a patient from a manufacturing town and put him in a place like Bath, Buxton, or Harrogate was itself very advantageous. Practically all cases of fibrositis benefited from the employment of immersion baths given slightly above the point of thermal indifference. At the spas cases of fibrositis and neuritis in general gave good results within a few weeks, in chronic joint cases it might be a matter of months, and even then it was often only a question of degree.

Dr C. W. BUCKLEY (Buxton) said that rheumatic cases might be divided into four groups: (1) cases of rheumatic fever and its sequelae, these could be dealt with in any well equipped institution; (2) fibrositis of muscles, nerves, or joints, a group which reacted better to spa treatment than any other; (3) rheumatoid and osteoarthritis, for which spa treatment was not specific in itself, but was chiefly limited to the treatment of stiffened and disabled joints, and (4) gout, which reacted more effectively to the course of treatment at a suitable spa than to any other method. The methods of treatment might be grouped under three principal heads: (1) measures directed to the cause of the disease, which might be infective, metabolic, or traumatic; (2) measures directed to increasing the patient's powers of resistance and general health by tonics, diet, and improvement of home conditions; (3) measures directed to the removal of associated disabilities and pain. These could only be satisfactorily obtained at the present time for the industrial classes at spa hospitals, but much might be done in this respect elsewhere, given a well organized scheme. The resources of the great spa hospitals were not used to the best advantage, partly because of the method of selection of patients, for the most part on subscribers' recommendations, partly because of the limited period for which patients could be admitted, and partly again because no system existed in the majority of cases for ensuring the continuance of treatment at home on right lines. In every town of any size centres should be established to some extent on the lines at present adopted for tuberculosis. These centres might be developed in connexion with existing hospitals, and they should be able to command the services of a doctor of special experience for consultation with the patients' doctors, also facilities for special examination and investigation, and the provision of various physical methods of treatment, including electricity and massage. Such centres would be clearing-houses from which patients could be sent to spas for courses of treatment. The centres would also be able to exercise some supervision over patients at home, as was done in the case of tuberculosis centres, and to arrange for general hospital treatment where required.

Professor A. TILGHMAN (Rumania) furnished a brief account of the various Rumanian spas which receive cases of arthritis and so-called secondary rheumatism. At the principal spas necessary treatments in the shape of diathermy, electric light baths and mechanotherapy were provided. Some form of public assistance enabling spa treatment to be procured was given to certain classes of the community. Civil servants could be treated at the three State-owned spas at greatly reduced fees. Insured working people could apply for treatment at a marine sanatorium, with 300 beds. Provision was made at three spas for the treatment of soldiers. The uninsured poor were treated in Red Cross sanatoriums and at one of the State spas.

In the course of some desultory discussion, Dr MAX BÉRE (Germany) cordially reciprocated the kind words spoken by the President at the beginning of the conference. Medicine, he said, was an international concern, and he hoped that Germany, which had many workers in the science of hydrology, would shortly be able to co-operate with other nations in this particular field.

Mr W. A. APPLETON (Secretary of the General Federation of Trade Unions) said that according to the certificates from 6 to 10 per cent—varying with occupation and locality—of industrial sickness was due to this class of disorders, but he believed the certificates did not reveal

the full dimensions of the problem. He had hoped that Sir George Newman that morning would have indicated some practical means of which the approved societies could take advantage. The approved societies would not mind whether any movement was of a State or a voluntary character so long as something was done towards easing the heavy burden on their funds.

The President (Dr Monod) said that the suggestions made in the discussion would be considered later in the day by the council of the International Society and afterwards by the various national committees.

France.

[FROM OUR SPECIAL CORRESPONDENT.]

Economic Conditions of Life of French Doctors

AN inquiry made quite recently has thrown a melancholy light on the economic position of practitioners in this country. In agricultural districts, which alone are living on real values—that is to say, on the fruits of the soil—the easier situation of the peasant since the war enables him to pay his doctor at something like a reasonable rate. While the cost of living has increased six times, medical fees have increased four times. Though the doctor is impoverished, he can live. His average income is equivalent to £660 a year. In industrial areas where expenses are out of all comparison higher, and eat up half the receipts, the situation has become very much more difficult. From motives of economy the sick do without medical treatment. Yet fees have not been more than doubled. It is calculated that a practitioner who before the war had an income of £1,400 now has the equivalent of £550 only. On such an income he cannot bring up a family. The situation is particularly difficult in Paris, as must be the case since it has one doctor to every 660 inhabitants. Some of the figures are eloquent, for example, in the department of the Pas de Calais the midwifery fee is 30 francs (5s.), and in Corsica 10 francs (1s. 8d.). The effect of the social insurance law will be to render the practice of our profession still more difficult and less remunerative, and the State will gain nothing by having thus created a new proletariat.

A Strange Lecture

It is a pity that a more suitable place than the hall of the Faculty of Medicine could not have been found for the lecture given by Dr Semachko, professor of social hygiene in the Moscow Faculty. Let me, however, hasten to say that admission was by invitation only, and that the doors were closed to students. The subject on which the eminent professor spoke was artificial abortion, and the guardianship laws which favour it in the Soviet paradise. The audience piqued itself on being well educated, and the teaching of this new gospel did not provoke any protests, only, when Dr Semachko had finished, the dean of the faculty did not make his customary little speech, and the lecture ended amid icy silence. We shall have a warmer welcome for M. Roubakine, who is being sent to us by Russia as a sort of sanitary ambassador. His task will be to set going arrangements for holding sanitary conventions, to organize scientific congresses, and to supply to institutions concerned with medicine and pharmacy information with regard to these subjects. Russia announces also that it intends shortly to rejoin the Office International d'Hygiène Publique in Paris, with which it has not been connected since the revolution of 1917.

The Electric Stethoscope

A new and interesting piece of apparatus was presented recently to the Faculty of Medicine. It is a loud speaker stethoscope, which amplifies the sounds of the heart and lungs, separates them, and by means of "filters" eliminates all other sounds than that to which the observer wishes to listen. It was brought to France from America by Dr Lo Mee and Dr Helle, and seems to be less a medical invention than a contrivance perfected by telephone engineers. The audience which crowded the amphitheatre saw a patient, stated to be suffering from Bright's disease, while the din of the loud speaker filled the hall with the sound as of a charge of cavalry. It is easy to conceive the value such

an invention may have for teaching, but imagination can look forward to a time when the specialist shall sit at his fireside, pipe in mouth, and telephone receiver at ear, examining patient after patient with whom he is successively connected by the telephone exchange. Better still, we can suppose the auscultatory sounds registered on photographic discs and collected to form a cardiopathic library. The doctor of to-day must be a chemist, to-morrow he will have to be an expert in physics also. It will not be easy for our successors to obtain their medical qualifications!

Wine and Gout

Ever since anaphylactic phenomena became known the idea that they might have something to do with the acute attack of gout has seemed not without probability, and Professor Chrouff has assimilated the attack to shock. A rather entertaining experiment, one which would have delighted Sydenham, has just been made by Vidal and his pupils. They have used the skin reaction to test the sensibility of gouty persons to wine. It is known that certain wines will set an attack of gout going, and that subjects sufficiently courageous, or sufficiently greedy, to try the experiment a typical haemoclastic crisis (leucopenia, inversion of the leucocytic formula) has been produced again and again by small doses of burgundy, whereas medoc has no effect. The skin reaction has the advantage that while its result is clear, it is harmless, so that it can be repeated with all the different vintages. Out of 19 tests, the reaction was slight in 13, absent in 3 and very intense in 3. One of these was a woman in whom at every trial burgundy determined a violent attack of gout. Two circumstances lent particular interest to the experiment: first that the skin reaction is observed only in gouty persons and secondly, that the reaction does not follow all wines, but only some, and these always the same. The red wines of Burgundy (Chateaufort du Pape) give positive results whereas negatived results are yielded by the white wines of Burgundy, the red wines of the Medoc—except St. Emilion—the wines of Champagne and Madeira, and, surprising fact remembering its sinister reputation in England, the wine of Oporto. In 33 control cases, healthy persons or patients suffering from non-gouty affections, a positive result was given in only 5 instances. What the noxious substance is was not determined, it is not alcohol, nor is it tannin. On this head ignorance is complete. It may be asked whether it is some chemical property common to certain wines of differing geographical origin. It is tempting to answer in the affirmative since the skin reaction classifies wines in the same order as the palate. Every expert in wine will say that there is no basal similarity in flavour between the red and white wines of Burgundy, while the wine of St. Emilion (Medoc) is, in bouquet, first cousin to Pommard (burgundy). It would seem that the palate is a more delicate instrument of chemical analysis than the most refined laboratory procedures.

Canada.

[FROM OUR SPECIAL CORRESPONDENT]

Dr. V. T. MacEachern
The honorary degree of Doctor of Science has recently been conferred by Marquette University, Michigan, on Dr. M. T. MacEachern, who is a Canadian, and graduated in medicine at McGill University. The granting of this degree is of special interest because it is the first time that an honour of this kind has been conferred for hospital administration. At present Dr. MacEachern is director of hospital activities and associate director of the American College of Surgeons, with headquarters in Chicago.

Tuberculosis Sanatorium

After a prolonged delay the tuberculosis sanatorium at Ste. Agathe Quebec, has been again opened for the reception of patients. Originally under the administration of the military authorities, this institution has now been taken over by an association formed for the purpose—the Laurentian Sanatorium Association, Incorporated. The repairs, which were considerable, however, were undertaken by the Quebec Provincial Government. This sanatorium will accommodate several hundred patients, but will be

devoted mainly to the care of Protestant patients. A large sanatorium is to be built in the neighbourhood of Montreal, which will take care of the needs of the Catholic portion of the community.

The Criminal Insane

Steps are being taken to remedy certain conditions affecting the handling of the criminal insane in Quebec Province. At present the insane criminals are either kept in confinement jails, where they have special quarters or they are placed in ordinary asylums under special care. Much objection—not unreasonably—has been made to the latter plan, it is estimated that there are in the various asylums of the province at present some 300 criminal insane. The Provincial Government, therefore, has under consideration a scheme for completing two unfinished wings of the provincial jail at Bouchard. This will provide accommodation for about 400 criminal insane.

Hospitals in the Middle West

The following details are of interest as showing the rapid growth of hospital activities in Winnipeg. During the year 1924 the Winnipeg General Hospital treated 21,000 patients, over 12,000 of whom were admitted to the ward, the remainder being cared for in the out-patients' department. Analysis shows that in the last twenty years of this hospital's existence the average period spent by a patient in hospital has been reduced from nineteen to fifteen days, and that the mortality rate has been cut in two. The trend of the hospital's service has to some extent been a reflection of the condition of the community. The ratio of private and semi-private patients to public patients has been almost reversed in the last four years, the demand now being much more heavy for the public wards. The total cost of maintenance for the year was 718,000 dollars.

Private Hospitals

The Provincial Legislature of Alberta has passed a bill which is designed to correct certain abuses existing in several private institutions. Private hospitals must now possess a licence, there must be a resident superintendent, and a register is to be kept and inspections allowed. Operations are not permitted in places where accommodation can be obtained in approved hospitals, unless and until the consent of the Department of Health has been obtained. An approved hospital is one approved of by the Minister of Public Health, but this does not imply that it becomes a public hospital.

Alberta

The Chiropractic Board of Alberta will hold the first examinations for licence to practise towards the end of this year. All applicants must have a preliminary education equal to that required for entrance into medicine in Alberta. Chiropractors in this province must be licensed before they are allowed to practise. The Alberta Medical Association is to take up with the Provincial Department of Health the question of an amendment to the marriage laws, whereby it is suggested that some restrictions will be placed on the marriage of physically and mentally unfit persons.

Cancer

Some interesting statistics are now available regarding the incidence of cancer in Canada. They have become available owing to the great improvements effected of late years in the methods of notification, classification, and analysis of vital statistics. The figures deal with sixteen Canadian cities, which in 1921 had a combined census population of 2,220,000, the returns from these cities are limited to the last fifteen years. In the twenty years down to 1924 the deaths from cancer increased in the first decade at the rate of 14.5 per 100,000, whilst in the last decade the increase was 60.1, and for the second decade for the first decade was 60.1, and for the second decade 80.1. It has been shown before that in the United States the annual increase in the cancer death rate is about 2.1 per cent, and this corresponds very closely with the 3.1 annual increase shown by the Province of Ontario, for example.

It has been conclusively established that the number of cancer deaths annually for the whole of Canada is about 6,000. The best measure available at the moment of the

"cancer tiend" in Canada is a consolidated return of certain Canadian cities, beginning with ten cities in 1910, it included sixteen in 1923, but diminished to fourteen in 1924. The total increase is impressive: in 1911 the rate was 58.6 per 100,000, in 1924 it was 98.1, and this for all practical purposes corresponds to the combined cancer death rate of the United States. There is a striking difference between the rates: Montreal, Ottawa, and Quebec showed relatively low rates in a period in which other Canadian cities showed huge increases. This is held by some to be because the French Canadian population are less liable to cancer than the population of British origin, a view which is worthy of investigation. Amongst the Indian population there is an even more striking comparative absence of cancer, this has been borne out by investigations made in North, Central, and South America, and by the result of extensive correspondence with physicians working on the Indian reserves.

Ontario

The Banting Research Foundation has recently been established in Toronto with a view to discovering means for the prevention and also for the cure of diseases at present regarded as incurable. This foundation is a corporate body separate from the University of Toronto, the funds of the latter, largely supplied as they are by the Province of Ontario, are distinctly for the purpose of training students and developing the members of the university staff. The university has no means available with which to investigate problems brought to it by independent workers, or to aid workers in other universities or colleges. The funds for the support of the foundation are to be raised by a special committee, headed by the Right Hon. Sir William Mulock, the response to the appeal has so far been most encouraging. It is thought that the income from 500,000 dollars will suffice for some years to come, it is proposed to make the money available for the aid of medical men who have reasonable problems, who will either work independently or in any other university in Canada. For the work of the foundation space is available in the laboratories of the University of Toronto, and also in some of the other Canadian universities. Neither Dr Banting nor Dr Best will receive anything from this foundation. It may be added that both of these gentlemen have renounced all rights to any income from royalties or patent rights from the sale of insulin.

Certain amendments have been made in the legislation on medical affairs in the Province of Ontario, due largely to suggestions from the Premier of the province and the Hon. W. F. Nickle. The old Ontario Medical Act of 1923 is repealed, the definition of the practice of medicine is removed from the new Act of 1925, all drugless healers are placed in a class by themselves, and the use of the terms "doctor," "physician," and "surgeon" is forbidden to them, unless, of course, they are properly qualified practitioners according to the Ontario Medical Act.

Certain changes have also been made regarding the relations of practitioners to the Ontario Temperance Act. The number of prescriptions for alcohol which may be issued by any medical man in one month has been reduced from fifty to thirty, and it is now a statutory offence, punishable by fine, to exceed this number. Previously the breaching of the regulation only brought the offender into conflict with the License Commission Board and the Discipline Committee of the College of Physicians.

South Africa.

HEALTH PROGRESS IN JOHANNESBURG

THE report on the health of Johannesburg for the years 1922-23 and 1923-24 contains also a review of the public health conditions and progress in the city from 1902 to 1925. In this Dr Charles Porter, who has been its medical officer of health during that period, and is terminating his connection with the municipal council, takes the opportunity

of presenting what may be called a valedictory account of his work. With praiseworthy pride he records the fact that with its exceptionally low death rate and splendid climate, Johannesburg is entitled to rank among the healthiest cities in the world. It has a mixed population, estimated in 1922-24 as 162,000 whites, 121,344 natives, 10,904 Europeans, and 5,355 Asiatics. The death rate of the white population has fallen from 17.5 per 1,000 in 1905 to 9.76 in 1923-24, and of the natives from 33.6 in 1910-11, the highest recorded, to 19.06. The European and Asiatic populations do not, however, show the same progressive improvement, their death rates have remained high, and were 29.43 and 26.70 respectively in 1923-24. Nevertheless, the decrease for the whole population is marked, for in 1903-04 it was 23.9, and in 1923-24 had fallen to 14.61. The birth rate among whites is comparatively high, although slightly decreasing in recent years, and the infantile mortality—81 per 1,000 births—low. On the other hand, the mortality of mothers in childbirth is unsatisfactory. It reached 3.47 per 1,000 births in 1923-24—a high mortality rate, which is attributed to the lack of any district midwifery and training organization. A phenomenal decrease is shown in the incidence of enteric fever from 6.26 per 1,000 of white population with a death rate of 0.64 for the five years ending June 30th, 1908, to 0.81 case and 0.11 death per 1,000 in the five years ending June 30th, 1924. For many years before and during the South African war enteric fever had its home in South African cities. The Johannesburg statistics are therefore convincing proof of the value of the extensive sanitary measures instituted by the health authorities. Full and detailed accounts of these are given in the report. While other diseases show decrease, there has been a steady increase in deaths from cancer, among whites the mortality rates in each of the five-year periods from 1903 to 1923 was 0.43, 0.42, 0.62, and 0.70 per 1,000. In 1923-24 it had risen to 0.78. Nearly half of 1,252 recorded deaths from this disease were due to cancer of the stomach. The natives are mostly young adults, and the cancer death rate among them—0.08 per 1,000—was consequently small, but it is interesting to note that more than half of 171 of the deaths were due to cancer of the liver. Dr Porter includes in his report a valuable review of the measures taken during the last sixty years to combat miner's phthisis and pneumonia among native mine workers. For the first time in mining history a special course of training for mining officials in mining hygiene was recently instituted by the Witwatersrand University in conjunction with the mining industry. Another interesting section of the report deals with venereal disease, its notification and prophylaxis. An extraordinary outbreak of gonorrhoeal ulcers and vaginitis among girls of 6 to 10 years of age is recorded as having taken place in an exceptionally well administered children's home. The infection was traced to a girl of 11 years of age who had "run wild" with men.

CARDIAC MORTALITY IN SOUTH AFRICA

Dr Eustace Cluver, professor of physiology in the University of the Witwatersrand, in a paper read recently to the Witwatersrand Branch of the British Medical Association, challenged the prevalent view that the altitude of Johannesburg predisposed to an increase in the death rate from heart disease. As the result of careful statistical inquiry he found that the cardiac mortality was higher both at Capetown and Durban than in Johannesburg, and that, moreover, the Johannesburg mortality compared very favourably with that of England and Wales. During the last five years the Capetown rate had not altered very much, but in Durban, and even more so in Johannesburg, there had been a relative and absolute improvement in this respect. Allowance had to be made for the fact that the population of Capetown included more elderly people than that of Johannesburg, and it was also possible that differences in the relative distribution of the sexes might affect the cardiac mortality. It appeared certain, however, that altitude could not fairly be considered an important factor in the cardiac death rate.

INFANTILE MORTALITY IN KIMBERLEY

The annual report of the medical officer of health for Kimberley for the year ending June 30th, 1925, draws

¹ Report of the Medical Officer of Health for the years 1922-23 and 1923-24, and Review (1925) of the Public Health Conditions and Progress of Johannesburg. By Charles Porter, M.D., LL.D., D.P.H., Johannesburg. Radford Adlington Ltd., July, 1925. (Folio pp. 39, 1 chart.)

attention to the infantile mortality rate, which is still unsatisfactory. In urban areas the European ratio is 89.3, as compared with 17.8 in the rural, but the coloured infantile mortality was 194.1 in the urban areas and 166.1 in the rural. Conditions are still worse in the native population, the figures being 330.9 in the urban districts and 298.1 in the rural. The very difficult economic conditions in Kimberley during the year prevented much attention being paid to maternity and child welfare work, although special efforts were made to assist expectant mothers. Voluntary assistance is asked for, but it is pointed out that the maternal mortality is very low, and it is unlikely that pre-natal influences play a prominent part in causing the infantile mortality. The birth rate in the urban area is 22.4 in the case of Europeans, 41.0 for the coloured, and 22.0 for pure natives. Plague broke out in November, 1924, and between then and June there were eight cases with five deaths. Active measures were taken in the threatened area until the epidemic was stamped out.

Scotland.

THE SCOTTISH BOARD OF HEALTH AND EXTENDED MEDICAL BENEFIT

THE official evidence of the Scottish Board of Health before the Royal Commission on National Health Insurance has recently been issued. It contains proposals with regard to alterations in the scope of the scheme as it concerns Scotland, and the evidence of the representatives of the Scottish Board, Sir James Leishman and Mr. G. W. Wight. In connexion with the possibility of increasing the present insurance contribution, it was pointed out that a recent Act, which will come into operation at the beginning of 1926, added in effect to the insurance contribution, and accordingly the Board could not put forward any proposition involving an extra contribution just now, because the condition in Scotland was, from an industrial and economic point of view, serious, involving very heavy public burdens. It was believed that the present insurance service, so far as it related to health, was defective, and that the present medical service was merely a general practitioner service. In order to get the full benefit of the scheme for the health and efficiency of workers it was imperative at the earliest possible moment to extend the service so as to include, not only general practitioner treatment, but also all proper aids to diagnosis and second opinions in the way of specialists, physicians, and surgeons, as well as certain services which might be broadly described as curative, in that they were related to such methods as electrical treatment, light treatment, and similar special methods. In Scotland it was hoped that it would be possible to secure a certain measure of institutional treatment, including operative treatment. A complete scheme would also include dental treatment and convalescent treatment, but these things had had to be dropped, because it was not considered that the money available would provide them just now. It would be very valuable could the finance of the national health insurance scheme permit help to be granted to the voluntary hospitals in Scotland, if they were to continue to be an integral part of the medical machine. The estimates available had been founded on certain assumptions and certain figures, and in particular it had been assumed that the people concerned would be willing to realize that the country, generally speaking, was not too well off, and that there was not a bottomless purse into which everyone could dip his hand and extract as much as he could take out. In other words, it would be necessary to arrive at reasonable arrangements with everyone concerned on a fair basis. The real position in Scotland was that, so far as secondary services were concerned, co-operation with the voluntary hospitals was involved. While voluntary hospitals were in a position to finance the present commitments and the present services, they were not in a position meantime to finance the addition of what was really required. There were large waiting lists and a great inadequacy of beds. If the insurance side could make a substantial contribution towards its share of the use in beds, this would go a long way towards helping

the voluntary hospitals to provide such a service as would adequately meet the needs of Scotland. With regard to paying wards, if moderate charges were made to cover the fairly reasonable cost of first-class services, this would certainly meet a great want of the middle classes. It was believed that, in order to supply the deficiency of hospital beds in Scotland, something like £1,750,000 or £2,000,000 would be needed as capital expenditure, and a similar amount would afterwards be required for maintenance. The estimate of the cost of a complete dental benefit available to the whole insured population was something like 7s. 6d. per insured person per annum. The estimates, however, varied very much, and 7s. 6d. a head, which would mean something like £600,000 in Scotland, would probably be the rate for the first year and a half, after which the cost would tend to fall.

PUBLIC HEALTH ARRANGEMENTS IN EDINBURGH

Owing to a heavy incidence of scarlet fever among the population of Edinburgh the medical officer of health has sent out a notice to practitioners advising home treatment of cases of scarlet fever in every suitable instance in order to prevent overcrowding of the wards in the Municipal Infectious Diseases Hospital. Inunction of the skin with eucalyptus oil is advised among cases treated at home, and attention is drawn to the fact that, in the meantime, "observation cases" of scarlet fever cannot be accommodated in the Infectious Diseases Hospital. No common source of infection in the present epidemic, such as milk supply, has been discovered.

Attention is drawn in another circular to extensive outbreaks of food poisoning which have taken place during the past year in Aberdeen, Dundee and other places. To enable the public health department to locate the source of mischief in possible future outbreaks in Edinburgh, notification of suspected cases of food poisoning to the medical officer of health is requested. It is pointed out that recent experience has shown that delayed notification in suspected cases of food poisoning has created difficulties, both in tracing the actual source of infection and in dealing satisfactorily with "carriers." It is also pointed out that food poisoning is not, at the present day, regarded from the standpoint of the action of ptomaines and that such outbreaks are usually provoked by special micro-organisms. While a particular form of food, such as milk, cream, cheese, or flesh, may show evidences of decomposition, infection is due to the special organism associated with the decomposition, and early notification is of special importance so that agglutination tests may be carried out with the blood of affected persons in order to determine the special food-poisoning organism responsible. The Public Health Committee of the Edinburgh Town Council has agreed to pay a fee of 2s. 6d. for immediate notification by medical practitioners, and has promised to exert every effort to render assistance in collecting suspected material for bacteriological investigation.

HOUSING AND INFECTIOUS DISEASE

At a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on November 27th, with the President, Dr. J. C. McVail, in the chair, Dr. A. K. Chalmers read a paper entitled "National death rates in relation to national differences in housing." Dr. Chalmers pointed out that while the urban housing of Scotland was mainly of the tenement type, that of England was mainly of the cottage type and recalled the late Dr. Niven's remark that Manchester was, broadly speaking, a city of cottages. Dr. Chalmers exhibited a series of statistical tables contrasting the death rates of Scotland for various causes with those of the main subdivisions of England and Wales. He pointed out the consistently higher death rates of Scotland for most infectious diseases, and emphasized the contrast with respect to measles, which, in Scotland, was almost wholly a disease of cities. Dr. Chalmers also called attention to the difficulties of comparison introduced by the fact that the rules of tabulation when joint causes were stated on the death certificate were not the same in the two countries. The paper was discussed by Dr. Major Greenwood, Dr. Janet Lane-Claydon, Dr. J. A. Glover, Dr. K. E. Tappin, Dr. T. Crumwath and the President.

England and Wales.

VITAL STATISTICS FOR 1924

THE Registrar-General's *Statistical Review of England and Wales for 1924*, Part I, Medical, was issued on December 1st. It is an octavo volume containing 500 pages, and can be obtained from the Stationery Office, price 15s net. The birth rate, which since 1920 has shown a continuous decrease, was 18.8 per 1,000 persons living in the year 1924, being 0.9 per 1,000 below that of the previous year, and with the exception of the war years 1917 to 1919 the lowest birth rate on record. The death rate reached the lowest point hitherto recorded in 1923, last year it rose by 0.6 to 12.2 per 1,000 persons living, the increase being general at all stages of life. This increased rate was due entirely to high mortality during the first quarter of the year, when the death rate was 16.6, as compared with 13.2 in the corresponding period of 1923, the rate for the remainder of the year was below even the low record for the previous years. Infant mortality also showed a slight increase over that in 1923, which was 69 per 1,000 births and the lowest on record, the rate last year was 75 per 1,000 births. The death rates from diphtheria and from all forms of tuberculosis were the lowest, and those from cancer and from encephalitis lethargica were the highest, on record. The mortality from influenza was more than twice as high in 1924 as in 1923, but the changes in the mortality of other epidemic diseases were comparatively small. measles, scarlet fever, whooping-cough, and diphtheria all showed small decreases, the death rate from enteric fever rose from 12 to 13 per million persons living.

MEDICAL CARE AT WEMBLEY EXHIBITION

Statistics are now available regarding the first-aid work at the British Empire Exhibition, which was carried on by the St. John Ambulance Brigade and the British Red Cross Society in alternate months. During the past year 16,134 cases of illness were dealt with, of which 194 were serious, as compared with 23,388 cases in 1924, of which 400 were classed as serious. The dispensary, for which the British Red Cross Society was entirely responsible, took charge of 5,125 children this year, as compared with 11,091 last year. Ambulance cars were at work by day and night throughout the exhibition, and a medical officer and first-aid attendants were always at hand in the arena during all ceremonies and performances. The general arrangements for the year were similar to those in 1924, which were described in our columns of May 24th (p. 927) and August 9th, 1924 (p. 242).

Correspondence.

INFLAMMABLE TOYS

SIR,—I have recently been interested in the subject of the large number of inflammable toys and other articles which are being sold in toyshops and stores in London.

As a member of the council of the Institute of Hygiene, I invited their attention to the subject, and a number of tests were made. Each article was laid on a metal sheet and a lighted match was brought in direct contact with it, within three seconds the article was in every instance alight. Some of the experiments are recorded in the accompanying table.

Spontaneous Ignition Tests

In addition to the contact ignition tests, a test for spontaneous ignition was conducted.

A doll (3 in high costing 3d) was advanced towards an open gas radiator. At a distance of 3 in dense white fumes were evolved. At 2 in these ignited in a burst of flame and the doll was consumed in a few seconds.

I am indebted to Mr. Seymour Harding, the secretary of the Institute of Hygiene, for much valuable help in the matter of these experiments.

It is a good many years since I have bought toys, and the matter would never have come to my attention but for the fact that my interest in them was revived on behalf of my grandchildren. The appalling damage that could be done to a small child by the intense white heat evolved by these semi-explosive toys can easily be imagined.

Cont. of Ignition Tests

Article	Length	Cost	Height of Flame	Time of Combustion
1 Pocket comb	3 ¹ / ₂ inches	6d	18 inches	35 seconds
2 Dressing comb	7 ¹ / ₂	6d	over 20	33
3 Swinging parrot	6 ¹ / ₂	1s	18	45
4 Floating duck	1 ³ / ₄	2d	10	15
5 Infant's rattle	7 ¹ / ₂	9d	3 ¹ / ₄	50
6 Soap box		6d	24	30*
7 Doll	4	4 ¹ / ₂ d	15	25
8 Ball	2 ¹ / ₂	3d	15	10†

* Remained smouldering, 80 seconds.

† Remained smouldering, 10 seconds.

Note.—The rattle (item 5) consisted of a 2 in ball suspended in a hollow tubular loop intended to be fastened to the infant or its cot by a ribbon or cord.

On the occasion of my bringing this matter before the council of the Institute of Hygiene, a member informed us of a patient who had suffered severely owing to one of these inflammable combs having taken fire in her hand, with the result that the outer table of her skull was charred.

I would ask that other medical men would be kind enough to make known any instance illustrative of the danger of these inflammable toys and other articles. The volume of business done in them is very large. The shops are full of them, and the assistants make no secret of their inflammability. When I have asked what material they are made of I have been told "celluloid" or "vulcanite." I do not know how far these answers are correct, but probably they are substantially so. In any case the almost explosive inflammability of these toys is beyond dispute.

I understand they come from abroad, and there will be considerable opposition to any measures destined to do away with the danger. If, however, the case is as strong as it appears to me to be, I feel sure that the medical profession can do a great deal in the matter.—I am, etc.,

R. H. Elliot, M.D.,
Lieut. Colonel R.F.S. (ret.)

London, W 1 Nov. 20th.

PREHISTORIC TREPHINING

SIR,—Before Dr. Wolfel published his paper in *Anthropos* (in German) he wrote me a private letter in English (November 25th, 1923) giving me the lines he intended to follow and the objects he had in mind when placing this paper before ethnologists. As Dr. L. A. Parry, in his letter to the *British Medical Journal* (November 21st, p. 977), has rather misunderstood Dr. Wolfel's aims and meaning from, I fear, the manner in which this was presented by your annotator (November 7th, p. 857), I would wish that Dr. Wolfel should be fully and rightly appreciated. When a fifty-page article in one language has to be read and reviewed in another, discrepancies sometimes occur, and I think I can clarify the misunderstanding, as I have for many years taken special interest in this fascinating subject. In the course of his letter to me Dr. Wolfel says:

"The object of my own paper is to fix the cultural relations of trephining in accordance with the methods of modern ethnology. I carefully investigate all the elements of material and mental culture that accompany trephination all the world round. For I think this the very method to decide the origin and meaning of this curious practice."

These, of course, are the soundest principles to follow in antiquarian research. He goes on to say:

"Prehistoric Europe of course is the greatest difficulty as it has left us only the skulls, the stone implements and nothing more. As yet I cannot say anything decisive regarding it as I am very careful in concluding. The result reached by me is only that there is nothing to speak against the prehistoric European trephination to have been of other origin and of other cultural relations than trephination in Oceania and America. It is beyond my modest abilities to settle finally the question of European Stone Age trephination, but I hope some enlightened prehistorian will take advantage of my work to try the solving of the question with regard to Europe."

The reasons for the practice of trephination of the living human skull during the age of stone culture are so

varied in different countries and at different periods that great care has to be taken in any attempt to summarise by sweeping statements.¹ In South America, notably Peru, a large number of trephined skulls have been discovered. By far the larger number of these had been treated with surgical intent for fractures, no doubt produced by clubs in brittle contest. Photographs of some of the best of these can be seen at the Wellcome Historical Medical Museum. The skulls are supposed to be of Incan or pre-Incan origin. These races knew no metals beyond copper, gold, and silver, and they sometimes used a mixture of these three which was known as *champi*. That the implements used in these operations were made of stone is unquestionable. Small fractures which only needed a small quadrilateral piece of bone removed exhibit a diagram on the skull such as one observes in a child's game of "noughts and crosses."² The larger fractures—and there are some extremely large ones—have been heroically dealt with by sawing away the fractured portions in quadrilaterals and trimming up the edges. These cases invariably died. But there are other ancient Peruvian specimens which show no sign of fracture. They present a totally different appearance. The holes are rounded for the most part and are bevelled at the exposure of the outer table of the skull, downwards and inwards towards the lunum. These have been done by scraping the bone either with sharp flint or obsidian flakes. In some skulls there are two such holes, in others three, and in one case no fewer than five.

What was the reason for these latter daring and skilful, though usually successful, operations on the living skull of man? It is difficult to say, far more so indeed than to decide the reason for the similar specimens discovered in Neolithic France. The whole point seems to hinge upon the presence or absence of any human amulet in the interment. While large numbers are frequently found associated with burials containing Neolithic trephined specimens in French dolmens, none are found among the remains of the ancient Peruvians. I have written somewhat fully about this subject elsewhere.³ There is no doubt about the fact that epilepsy, severe chronic headache, and one might add vertigo, noises in the head, and Meniere's complex of symptoms (if such there were in those distant days), must have been decisive indications to the Neolithic savage that a devil was present in his head and clamoured for freedom. A hole was scraped with a flint flake through the cranium by the tribe's witch doctor, and I dare say, as often as not, some relief was obtained. There are reasons for believing that special prestige was associated with an epileptic, as also a lunatic. Were they not individuals out of the common and therefore should they not be venerated? If such a man were successfully trephined a greater prestige awaited him. Immense value appears to have been put upon a trephined skull in France, and we find that portions of such a skull bearing a fragment of the healed trephined ring of bone were abstracted from the skulls in the dolmens after death and were used as amulets. A hole or a groove in these amulets bears witness to the fact that they had probably been suspended from the neck of another who had likely enough suffered from the same affliction as the dead man had. In time this practice developed—or shall we say deteriorated?—into a fetish. There is no doubt it became most fashionable, as sometimes the larger portion of a tribe gave proof of having had such operative interference. Certainly the nature of this kind of prehistoric trephination was of ethical and not of surgical origin.

I think, therefore, we may conclude that the scraping method when employed in ancient Peru (when not associated with fractures) was done with surgical motives for a medico-physical complaint, while the operation upon those men whose skulls were found in the megalithic dolmens in France was performed for religious and spiritual reasons

on account of, presumably, ethical disorders. Therefore it would follow that both Dr Wolfel and Dr L. A. Parry are right, but each is dealing with different primitive methods of trephination in different parts of the world.—I am, etc,

T WILSON PARRY, M A,
M D Cantab, F S A

London, N 8 Nov 22nd.

SIR,—Mr L. A. Parry's surmise (BRITISH MEDICAL JOURNAL, November 21st, p 977) that this operation was performed by our Neolithic ancestors for reasons other than medical or surgical ones is probably correct, otherwise how are we to account for those instances where the operation has been performed in prehistoric times after death has occurred?—a fact which has been recognised. Trephining possibly was done to alleviate the symptoms of a depressed fracture—a very probable injury in those days when the end of every individual, like that of most wild animals of to-day, was a tragedy, and when belief in a natural death did not exist, or, again, to relieve those symptoms of nervous complaints which were supposed to be due to the influence of evil spirits. But it is most likely that in many instances the operation was a piece of religious ritual, comparable to the curious crosswise mutilation along the lines of the sagittal and coronal sutures which was noticed within recent times amongst the Loyalty Islanders, and is similar to the "sincipital T" described by Manouvrier in Neolithic female crania from the district of Sanno-et-Oise. This would account for the removed portions of bone being used as amulets.—I am, etc,

Bexhill on Sea, Nov 24th

G LOWELL WEBB, M D

SIR,—I agree with Mr L. A. Parry (November 21st, p 977) that there may have been other reasons for trephining in ancient times besides depressed fracture. In a mediaeval Dutch oil painting a quack is shown as operating on the head of a dupe, and being surreptitiously supplied with stones (by a roguishly smiling boy) which the operator is professing to extract from the wound. The demand for such an operation must have been very considerable at that period to suggest such a painting. I had a patient who persistently demanded an operation for the removal of a growth, which he believed to be the source of a sensation referred to the vortex. The same sensations may possibly have been experienced by both mediæval and prehistoric men, with the same idea of obtaining relief.—I am, etc,

November 25th.

SENA

PREVENTION OF THE COMMON COLD

SIR,—I consider that the crux of the matter was stated by Dr Dobbie (BRITISH MEDICAL JOURNAL, November 14th, p 902) when she pointed out the great value of personal cleanliness.

The pocket-handkerchief is, in my opinion, the greatest cause of the spread and recurrence of the common cold. The handkerchief gets soaked, a clean one is not immediately available, so it gets rough-dried in front of a fire and so re-used unthinkingly over a prolonged period. In this way do we get reinfection.

For many years I have advised the sufferer from a "cold" to provide himself, at the onset of the disorder, with squares of common lint, small, but of useful size, which must be thrown on the fire and destroyed when used and soiled. On this being carried out with scrupulous care I have found a total absence of recurrences, and also a marked freedom from infection by other members of the sufferer's family.—I am, etc,

FORDS J STUART, M B, Ch B, D P H

Carnoustie N B, Nov 23rd

FOCAL INFECTION

SIR,—Dr Campbell Stark (BRITISH MEDICAL JOURNAL, November 21st, p 979) asks a question which one finds troubles many others. As he points out, the general practitioner frequently sees people with obvious "optic foci" enjoying good health, and others in whom no evidence

¹ The Art of Trephining among Prehistoric and Primitive Peoples. *Brit. Archaeol. Journ.* March 1916. Prehistoric Man and his Early Efforts to Combat Disease. *Lancet* June 13th 1914 and *Med. Press* July 8th and 15th 1914.

² and The Collective Evidence of Trephination of the Human Skull in Great Britain during Prehistoric Times. *Proc. Third Internat. Cong. Prehist. Hist.* Med. July 1922. The Prehistoric Trephined Skulls of Great Britain, etc. *Proc. Roy. Soc. Med.* vol. xiv, No 10 August 1921.

³ Trephination of the Living Human Skull in Prehistoric Times. *BRITISH JOUR. A* March 17th 1923.

of such can be found, although they are obviously suffering from some toxic absorption.

Frequently when asked to seek for the evidence of such foci in the chronically unwell patient one is able to verify what Wright and others have demonstrated—that it is not only the focus of infection or the infective organism that matters in any individual case, but rather the patient's tissue resistance to infective agents. One patient with a gall bladder full of pathogenic *B. typhosus* enjoys good health, while another, with a few comparatively mildly pathogenic *B. coli* in the pelvis of her kidney, is having rigors and every evidence of toxic infection.

Bacterial data alone are not always sufficient evidence, but such details lead in the light of cytological, serological, and biochemical blood findings will frequently indicate, not only whether the bacteriological data are of pathogenic importance to the case, but also which of the many isolated bacteria are particularly infective to the patient concerned. For instance, by thorough examination an asthmatic case may be found to depend upon an intestinal derangement or infectiveness as its main cause, while in a rheumatic case the infective focus is proved quite unexpectedly to be respiratory, in spite of suggestive dental, genito-urinary, or intestinal findings, while in many and varied clinical conditions the discovery of deficiency in essential gastro-intestinal function, with its train of subsequent metabolic derangements, will give the clue, not only to the hypersusceptibility of such cases to infection of low virulence, but also may suggest the means for effectively correcting the deficiency.

The apparently healthy people who are obviously displaying septic conditions have their good natural resistance to think for their immunity but they nevertheless carry a constant source of latent danger to themselves and others.

Health means that immunity to infection is greater than present infective risks. Ill health as regards infectiveness means the reverse, and the problem in regard to chronic focal infection is so to arrange by local, and more often general, means that the patient who has lost the knack of living happily with his germs should be helped to regain that gift—I am, etc.,

Southport Nov. 25th

E. CROFT LOWE

THE METHODS OF INVESTIGATION OF NEO-CARDIOLOGY

SIR,—I was much interested in the letter from Dr. Huntington Sunbury (November 28th, p. 1031). There is no doubt that a certain school of cardiology actually discourages the examination of the heart by auscultation and percussion, and places its faith almost entirely upon the deductions made from the polygraph or the electrocardiograph. Such teaching can only lead to disaster in many cases, and it encourages the idea that any medical man who installs an electrocardiograph in his consulting room is immediately converted into a heart specialist.

In my book upon *The Naheim Treatment* I stated my views upon this subject as follows:

There is a danger amongst a certain school of cardiologists to rely almost entirely upon the new methods of diagnosis and thereby to underestimate such valuable signs as the character of the heart sounds and the extent of the area of the cardiac dullness. If, however, this method is adopted it will lead neither to a complete diagnosis nor to a satisfactory treatment. To come to a true and accurate diagnosis in a case of cardiac trouble one must not only take advantage of the information obtainable from the newest and best scientific methods of investigation such as the polygraph and the sphygmomanometer but one must also make a careful study of the character of the cardiac sounds, the area of the cardiac dullness, and all other physical signs in any way connected with the heart and vessels.

—I am, etc.,

London W 1 Nov. 27th

LESLIE THORNE THORNE

NASAL PLASTIC REPAIR BY CARTILAGE GRAFT

SIR,—Permit me to congratulate Mr. E. Watson-Williams on his results with cartilage grafts in nasal plastic surgery (*BRITISH MEDICAL JOURNAL*, November 28th, p. 987). I can fully endorse his views of the excellence and simplicity of

this method, as I have been practising an identical procedure since 1916, the only difference in technique being that I insert a tenotomy knife in the central point, below the nasal tip, and extend the incision laterally to the extent required for the insertion of the cartilage graft. The preparation of the graft bed is also similar, but after the preliminary freeing by the tenotomy I use a small mastoid chisel, as being less likely to wound the skin than a knife and more likely to ensure a capacious gutter for the reception of the new cartilage, otherwise the latter may fit so tightly as to stretch the overlying skin and undesirable telangiectatic changes may result. For this reason also it is most important to make the graft bed in the subcutaneous tissues, leaving the whole true skin intact. Apart from continually placed deformities of the nasal ridge, cartilage grafts are also valuable, in a type so frequently seen in pugilists, in which the tip of the nose is depressed and the alae flattened out. The quadrilateral cartilage is broken and bent laterally into the nasal passages, causing obstruction to respiration, the columella end is sticking into one or the other nares, and owing to the absence of central support the nasal tip can be flattened out on the upper lip.

In all such cases, to relieve the nasal obstruction and restore the external contour of the nose, I resect the quadrilateral cartilage completely, except a small bowsprit above, and utilize a portion of what has been removed to implant in a columella gutter to raise the nasal tip. Another portion is inserted under the skin of the ridge as described above, the upper end of this graft resting on the nasal bones and the lower on the columella prop.

If this double implantation of cartilage is omitted the nasal tip remains depressed and the lateral alar cartilages collapsed, so that a simple resection of the septum will fail to relieve the nasal obstruction or the external deformity—I am, etc.,

London W 1, Nov. 27th

JOHN F. O'MALLEY, F.R.C.S.

ANAESTHETICS IN CHILDHOOD

SIR,—Dr. Primmer, in his criticism (November 28th, p. 1034) of Dr. Singleton's paper, states that he has "administered chloroform and chloroform alone" upon 2,310 occasions since 1900, that he considers it to be "the best of all anaesthetics", and that status lymphaticus does not exist.

Might I respectfully suggest to Dr. Primmer that he acquaint himself, both in theory and practice, with the various anaesthetics and apparatus in use at the present time before expressing a definite opinion on the subject? A perusal of the most recent literature would, I feel sure, convince him that his views are directly antagonistic to those of the leading authorities.

The adherents of the "chloroform school" have always held the view that the danger of chloroform lay in lack of knowledge of the drug's action and consequent faulty administration. From personal experience of 2,000 cases of "chloroform and chloroform alone" administered during 1920-22, and other anaesthetic agents since, I have been forced to the conclusion that chloroform, except as a supplementary agent to other anaesthetics at our disposal, does not justify its use.

Dr. Primmer would be well advised to obtain some experience with such apparatus as the Gwathmey warm nitrous oxide-oxygen inhaler and the Shipway ether-oxygen set, when, I trust, the thoughts of tombstones would, like chloroform, gradually pass into oblivion—I am, etc.,

Rotherham Nov. 30th

DOUGLAS C. SCOTLAND

SPIRITUAL HEALING

SIR,—There are to day a number of people who call themselves spiritual healers. Their slogan is "Believe in the Spirit and you will be cured. He will cure you where ordinary methods have failed." A great many people respond to this appeal, and when they are cured are loud in their protestations "I believed in the Spirit and I was cured." I would ask "What proof have we that the Deity directly intervened? Was it the Deity or the belief

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CORRESPONDENCE.

in the Dory that cured?" It is my opinion that these cures are in fact the result of natural mental processes. How does the spiritual healer work? He says by appealing to the Spirit. I say by appealing to the mind. He asks the patient to believe in God and cure will follow. He appeals to the patient's belief. Belief is the real factor, and belief is an attribute of the mind. I have myself cured many diseases by getting the patients to believe in themselves alone. By telling them, "Your mind can cure you here, and it is only a question of shock, scintilla, the result of gunshot wound of the scintilla nerve, by fever, and insomnia, to mention only a few. And often the patient has said to me, "This is uncanny, supernatural, a miracle!"

There is a tendency to call that supernatural which we cannot understand. To-day we understand a good deal more than we used to about the natural forces of the mind, and many so-called supernatural cures can be proved to be the result of belief in the mind concerned. Most of us believe that man is possessed of a body, a mind, and a soul. There is abundant proof that the first two definitely exist. But, despite the hope inherent in most of us, I doubt if any educated man can produce proof of the existence of the soul as distinct from the mind. I do not wish to be misunderstood. I feel that belief in God and a life hereafter is a good thing for humanity helps many of us here below to bear the troubles and vicissitudes of this life. I so believe myself, and because it works for good I should be sorry to see such a belief brushed aside. But instead of realizing that we have got a would it not be more sensible for us, thank God for giving us mind which can do much for us, and belief is such a mind, and then develop it?

The basic factor in all these cures is belief, and belief is the patient to believe he will be cured, without any appeal to the spiritual side. If cure can be proved to be the result of an impression made on the mind alone, why complicate the situation by assuming the necessity for spiritual intervention? With respect I submit that all this talk of spiritual healing puts real religion in a false light amongst educated men. Cures effected by obviously mental forces are claimed as spiritual because they appear to be so wonderful.

Let us not forget that the spiritual healer makes his appeal through the mind of the patient concerned. Let us use the correct labels, and recognize that mental healing is a fact—spiritual healing not yet proven.—I am, etc.,
M P LEAHY
London, W1 Nov 24th

FOOD PRESERVATIVES AND DUODENAL ULCER

SIR,—The influence preservatives have upon digestion is so little appreciated that I feel impelled to report my own experience. The digestive troubles to which I became a martyr were ascribed to duodenal ulcer, but, by a process of exclusion, the malfactor has been definitely traced to preservatives. Prior to joining the army, at the age of 40, I had not experienced indigestion, and in the selection of food I merely consulted my desires. But a few weeks after enlistment digestive disturbances obtruded themselves and became so persistent that eventually I was compelled to report sick. My chief symptom was a dull pain in the epigastrium which, though worse a few hours after meals, was relieved by food. Rigidity of the overlying abdominal wall was present and tenderness could be elicited on deep pressure. Variations in the severity of the attacks were a feature, but dietary measures had no influence. After admission to hospital I was transferred to England for the operation of short circuit, the surgeons being convinced that I had a duodenal ulcer. Bismuth meals and chemical analyses of my gastric contents strengthened the diagnosis but as examination of the faeces never disclosed any haemorrhage I refused an operation. Two years later, at the conclusion of the armistice, I left the army a chronic dyspeptic, but I was resolved to give diet a thorough trial before submitting to surgical procedures.

At one time or another all kinds of dietetic measures were adopted, and though towards the end of each week I had a respite, the symptoms regularly recurred every Monday. Upon the advice of medical friends I renounced my habit of dining out on Sunday evenings, and supped at home, though the restaurants I had patronized were the most expensive of places and I ate but the simplest of food. At once my attacks were lessened, and by a gradual process of exclusion the symptoms were definitely traced to preservatives. The most indigestible of food now holds no terror, and, my tastes being epicurean, I persevere my private and rejoice in dinners my friends look upon as a crime, and cream containing preservatives, bought early, jam, or tinned food, an omelette or suco made from liquid eggs and cream for two days, a digestive week, wherever, when pure, the foods induce no symptoms. To demonstrate that the effect was not merely an obsession, I arranged at home that adulterated food should, unobtrusively, be served, and in every instance an attack followed.

Whatever the food, the symptoms are identical and consist of a dull pain localized to the epigastrium. The sensation is as if the deeper contents of the region were held in a tight grip, and, though it is difficult to portray in words an adequate description of the symptoms, the sensation is very distinctive and always of the same type. Beginning about twelve hours after adulterated food has been taken, the pain reaches its height in another day, it then gradually diminishes until at the end of the third day the serious have gone. Whilst food brings relief, the pain recurs about an hour after a meal, and though temporary relief is obtained from bismuth and other sedatives the attack always lasts about three days, whatever the treatment adopted. But if adulterated food be put down of only once every second or third day no intermission intervenes, and I again become a chronic dyspeptic. Pure food, however indigestible, never occasions an attack, but the simplest articles of diet, containing preservatives brings on the symptoms. And as the food of hotels and restaurants contains preservatives they are now beyond my patronage, and for the same reason I hazard no opinion, but the similarity of the symptoms is very suggestive, and I suspect that many cases labelled duodenal ulcer are merely the consequence of preservatives.

The addition of preservatives to food, by allowing of the marketing in this country of eatables garnered where the cost of production is low, has reduced prices. To an industrious nation cheap food is very desirable, but, however low the cost, the price is too high when part of the bill has to be met by indigestion.—I am, etc.,
JAMES TORRIST
London W1 Nov 7th

MALARIAL TREATMENT

SIR,—In connexion with the malaria treatment of general paralysis I find *Mercure de France*, May 15th, 1925, P 197, according to Dr Cabanes, that in the Middle Ages it was believed that quinine cured epilepsy. He quotes Louis XI as begging the Prior of Notre-Dame de Salles, at Bonnes, to pray "incessamment Dieu et Notre-Dame de Salles pour moy, car j'ay une maladie dont do m'enoyer la fièvre quarte, car j'ay une guery sans Pavyon." les physicians disent que je ne puis estre guery sans Pavyon. Cabanes states that Louis XI was an epileptic. More over, it appears he also suffered from leprosy. This throws a good deal of light on the King's strange behaviour, though notwithstanding such drawbacks he managed to weld a disunited country into a kingdom.—I am, etc.,
GEORGE PENNY
London W1 Nov 24th.

Obituary

SIR CHARLES BROWN, M A, M B, F R C P, F R C S,
Consulting Medical Officer, Preston Royal Infirmary

We announced briefly last week the death, on November 23rd, of Sir Charles Brown of Preston, a veteran member of our profession, and a munificent friend to medical research and medical charities.

Robert Charles Brown was born on October 2nd, 1836, in the house in Winkley Square, Preston, where he died. His father was Alderman Robert Brown, F R C S, for thirty-five years a leading practitioner in that town and the country district around it. On leaving Preston Grammar School, at the age of 17, Charles Brown became a pupil of his father's colleague, Thomas Dixon, and in 1855 entered as a medical student at King's College, London. He obtained the diplomas of M R C S Eng and L S A in 1858, graduated M B Lond in 1861, and in the following year passed the examination for the Fellowship of the Royal College of Surgeons of England. In 1865 he became M R C P Lond, and many years later, in 1908, the Royal College of Physicians honoured him by election into its Fellowship.

The death of his father in 1858, shortly before he had obtained his first qualifications, compelled him to earn his own living without delay, and he became house surgeon to the old Preston Dispensary, he held that post, with intervals of study in London, Edinburgh, and Dublin for higher examinations, until 1863, when he began private practice and was appointed an honorary medical officer to the dispensary. When the Preston and County of Lancashire Royal Infirmary was opened in 1870 he was transferred to the staff of that institution and identified himself with its fortunes, he had long been the only survivor of the original members of its medical staff. During his many years of practice in Preston he held a number of appointments outside the infirmary, including those of certifying factory surgeon, medical officer to the Lancashire County Constabulary, local medical officer for fifty years to the London and North-Western and Lancashire and Yorkshire Railway Companies, and consulting medical officer to the local orphanage and deaf and dumb school. In the sixties he held a commission as assistant surgeon to the 3rd Royal Lancashire Militia.

He often had it in mind to proceed to the M D degree and worked hard in preparing for it, once when he was 27 and again at the age of 64. On the first occasion he failed in logic and moral philosophy, then obligatory subjects, on the second, although I had put down my name and paid the fee, I took flight and returned to Preston two days before the examination commenced, intending to go up in 1901, but I could never muster courage to do so. He consoled himself, however, for this "stupidity" by recalling in after years the distinctions he had received from other

sources. These were the Associateship of King's College, London, the office of Esquire in the Order of St John of Jerusalem, Fellowship of the Royal College of Physicians, freedom of the Borough of Preston (conferred in recognition of his professional services and munificence to the Royal Infirmary and other institutions), an honorary degree at Cambridge, and the knighthood conferred in 1919. Another cause for legitimate pride was the honour paid him by his local colleagues in thrice electing him president of the Lancashire and Cheshire Branch of the British Medical Association, and re-electing him chairman of the Preston Division for thirteen years in succession. He became a member as long ago as 1859, and continued in membership after his retirement from active work. In 1902, when the Association met in Manchester, he was vice-president of the Section of Medicine.

Beyond many benefactions to the town of his birth, Sir Charles Brown was ever ready to help in what he felt to be good causes elsewhere. One instance was his generous support of the Cambridge Research Hospital. From the first he had been intimately concerned in the work of the Cambridge Committee for the Study of Special Diseases, and his personal services to the hospital established by that committee in Hill's Road, Cambridge, under the direction of Dr Strange ways, were unemitting. Besides a very complete x-ray installation, he provided a microphotographic apparatus of the latest type, and founded a studentship for pathological research. It was in recognition of these gifts that the University of Cambridge, on May 23rd, 1912, conferred on him the degree of Master of Arts, *honoris causa*. The Public Orator, in presenting him for the degree, aptly described him as "mediocris modestum, medicum munificum." This honour from the University of which his two brothers were members gave him particular pleasure. On the following day the newly built Research Hospital was opened by him in the presence of a distinguished assembly of nearly five hundred people. After speaking



[Photo]

[Hills and Saunders Cambridge]

SIR CHARLES BROWN, HON. M A CANTAB

with pride of the progress in the field of medicine which he had been privileged to see in his own lifetime, he said:

"The future depends on research, and research into special diseases is not only important in itself for those diseases, but may throw new light and open new vistas everywhere."

The honours that came to him were felt by his colleagues to be thoroughly well deserved, for no man better earned the esteem and affectionate regard of friends within and without the profession. His influence though quiet and modest was wide, and was always exerted for the betterment of medicine and the maintenance of a high standard of professional conduct. His mind continued active up to the last, and from time to time little notes on invalid and kindred matters would come to us from his bedside in Preston. At the age of 86 he published his reminiscences under the title *Sixty-four Years a Doctor*. In this he briefly outlined his own career, covering a most interesting period of national and local history and reviewed some of the social

phases he had passed through, with special reference to the immenso advances made during this period in medical science and practice. Characteristically he gave the profits from this unpunctuated book to the hospital with which he had been connected since its foundation. He dedicated it, "with a feeling of the most profound respect and admiration," to Sir Clifford Allbutt, who also was born in 1836 and died in 1925, and often corresponded with him in later years on research and other matters new to both their hearts.

Sir Charles Brown was an ardent musician and a firm believer in the therapeutic value of music. As a boy he saw the disappearance of the old stage-coach, and for the rest of his life he took the greatest interest in railways and everything associated with them. He never married.

Dr T S P STRANDEWYK, Lecturer in Special Pathology, University of Cambridge, and Director of the Cambridge Research Hospital, writes:

I appreciate the privilege of being allowed to express my feelings of high admiration and respect for the late Sir Robert Charles Brown, and of acknowledging my deep personal gratitude for his never-flagging interest in the Cambridge Research Hospital and his generosity to it. It was my good fortune to know him intimately for many years, and I always greatly enjoyed my visits to 27, Winkley Square. All those who have experienced his delightful hospitality must recall after-dinner chats full of reminiscences of his student days and early life, and the pleasure with which he entertained them with his simple recitals on his organ. Many will doubtless remember being awakened in the early morning by the dissonant notes of the same instrument. Of his generosity to Preston Infirmary and other charities I need not speak, but I must pay my tribute to the great help and encouragement I received from him ever since the Cambridge Research Hospital was founded. In the early days, when encouragement was most needed, he never refused any request for help I made to him. He showed a great interest in all medical research, and the following extract from his will shows how deep this interest was:

"I bequeath my body to the Directors of the Research Hospital Cambridge, and authorize them to retain such parts of it as they consider may be suitable additions to their Pathological Museum."

He was a simple, kindly, generous soul, full of love for his fellow beings, and he will be greatly missed by his many friends.

Dr F W COLLINSON, Honorary Consulting Surgeon, Preston Royal Infirmary, writes:

The general public, and especially the medical profession, of Preston and neighbourhood will feel the great loss of Sir Charles Brown. He lived in the town all his long life. He was greatly esteemed by us all, and many members of his profession are indebted to him for the encouragement and help he gave them in their early practice. He was untiring in his industry and perseverance, and his instinctive tact and power of sympathy endeared him to all. An optimistic outlook upon life was natural to him. His self-discipline and denial, which arose from a religious conviction, was greatly to be admired. His association with the Preston Royal Infirmary dated from its inception. He assisted in the collection of money for the erection of the original building, and was on the staff from the time the infirmary was opened in 1870 to his death, first as house-surgeon, then as honorary physician, and for a number of years, as consulting physician. The institution has received numerous benefactions at his hands. After inspecting various operating theatres, he built, entirely at his own expense, a most up-to-date operating theatre, with all the necessary appointments. He also provided isolation wards, conservatories, and many other things for the comfort and welfare of the patients. When a rays was first introduced he defrayed the cost of an outfit, which was the best at that time. From the year 1889 to the date of his death his gifts to the infirmary amounted to more than £10,000. His great benevolence also showed itself in many other charitable organizations

in the town. The Preston Town Council in September, 1910, conferred upon him the great honour of the freedom of the borough.

All his life he found great joy in music, and for many years was honorary organist at one of the town's churches. The operas of Gilbert and Sullivan afforded him great delight, and many of the nights performing at the theatres were hospitably entertained by him. He was a man of simple tastes, and had no desire to spend money upon himself, but frequently denied himself that he might have more to bestow on others. In his later years he often said he found the value of money now that he was giving it away. Although from physical disabilities he was unable to go out, except rarely in a bath chair, during the last two or three years, his mental powers remained singularly available. He had an almost uncanny memory, and up to his last illness his ability to memorize new data was astonishing. He always took a keen interest in the progress of his profession, and often delighted in recounting the amazing improvements, in surgery especially, whereby such great relief could be given. Happily, his illness was a very brief one, lasting only a fortnight, and he passed peacefully away.

CAROLINE KEITH, L.R.C.P. and S.E.D.,

Formerly Anaesthetist to the Chelsea Hospital for Women and to the New Hospital for Women

On Tuesday, November 24th, died at Southsea Dr Caroline Keith, one of the most loyal colleagues and conscientious practitioners among the long list of women who have qualified from the London (Royal Free Hospital) School of Medicine for Women.

She was appointed anaesthetist to the New Hospital for Women some thirty-five years ago, about the same time that Mrs Garrett Anderson's influence made me surgeon there. From that time until I went to the Royal Free Hospital in 1902, Mrs Keith, Mrs Stanley Bord, and I were very happy colleagues. In moments of emergency and trial the surgeon's greatest support and comfort is in the reliability and skill of the anaesthetist and of the chief assistant. Both my friends have obtained promotion, and I am thankful to be able once more to record my deep indebtedness to them.

Caroline Keith was a curious mixture of French and English characteristics. She came of an Alsatian family and was French to the backbone in all that concerned her country and its fortunes, but she married Surgeon Captain Keith when she was very young and as yet knew no English. In after-years she used to dwell with her delightful sense of humour on the strange courtship between the reticent Scottish man who knew no French and the impulsive French maiden who knew no variety of English. The time came when the medical officer had to leave his young wife for service up-country in India. She had by this time acquired some English, and he entreated her to enter the London School of Medicine for Women and to qualify, thinking thereby to secure both her happiness and her independence in case of need.

Caroline Keith was very successful in the exercise of her profession. She chiefly excelled in anaesthetics and obstetrics, and in these capacities she is still held in grateful remembrance by colleagues and pupils, patients and friends. For many years Mrs Keith was anaesthetist to the Chelsea Hospital for Women, and was a real friend and much appreciated colleague to the medical men for whom she worked.

It was thoroughly characteristic of my old friend that when she had saved enough to bear her share of house-keeping expenses she resolutely retired, and no prospect of riches, no love of professional work, sufficed to keep her in harness when she felt that she deserved freedom and leisure. Consequently she retired many years ago in the very prime of life and when her professional usefulness was at its height.

After the death of her husband Mrs Keith spent much of her time with her son and his wife in India, paying occasional visits home and maintaining in all their freshness her old and valued friendships. She lived much beloved, and she died greatly regretted.

MARY SCHAPLIER

- DECIMUS CURME, M R C S, L S A,
LIEUT COLONEL R A M C, T F,
Child Okeford

LIEUT-COLONEL DECIMUS CURME, R A M C, T F (ret), of Child Okeford, Blandford, Dorset, died at Bournemouth on November 25th, aged 86. He was educated at King's College Hospital and at Paris, and took the M R C S and L S A in 1861. He served for some years as surgeon superintendent in the Chinese Emigration Service, and was afterwards in practice in Chester, where he was visiting surgeon of the Chester General Infirmary, but more than half a century ago settled at Child Okeford, where he was medical officer and public vaccinator of the Child Okeford district of Sturminster Union.

He joined the Dorsetshire Militia as assistant surgeon in the sixties of last century, and retired as surgeon lieutenant-colonel of the third battalion (militia) of the Dorsetshire Regiment. He served in the South African war of 1899-1902, taking part in operations in Natal, including the relief of Ladysmith, and the action of Tugela Heights, in the Transvaal, and in Cape Colony, and received the Queen's medal with four clasps and the King's medal with two clasps.

He joined the British Medical Association in 1877, he was Vice-President of the Dorset and West Hants Branch in 1889 and President in 1899. He was a member of the Branch Council in 1906-7, 1911, and from 1915 to 1921, and for fifteen years was the representative of the West Dorset Division on the Representative Body. He was also a member of the Naval and Military Committee, 1904-9.

The death occurred suddenly, on November 24th, of Dr CHARLES EDWARD LANSDOWN, a well known practitioner in Cheltenham and district. He was a native of Plymouth, and was educated at St Mary's Hospital Medical School, Paddington, where he won a science scholarship. After taking the diplomas of the English Conjoint Board in 1891 he served as house-surgeon to St Mary's Hospital, resident medical officer to the Horton Infirmary, Brimbury, and senior resident medical officer to the London Lock Hospital. He subsequently began practice at Cheltenham, and was appointed surgeon to the Children's Hospital, Cheltenham. Dr Lansdown had practised in Cheltenham for more than a quarter of a century, and was for many years a member of the Gloucestershire Branch of the British Medical Association. During the war he was one of the medical officers in charge of the New Court Red Cross Hospital, and he received the O B E decoration in 1920. He was a very keen Freemason, and for some years was churchwarden in the parish of St John's. He leaves a widow, one daughter, and two sons.

Dr JAMES FULTON MUIR of Whitehaven died suddenly from heart failure on November 15th, aged 67. He was a native of Glasgow, and was educated at Glasgow University, where he graduated M B, C M in 1880, and M D in 1892. After serving as house surgeon to the Royal Infirmary, Glasgow, and to the Dumfries and Galloway Royal Infirmary he became assistant to the late Dr Bateman Wilson of Whitehaven, and subsequently commenced practice there on his own account. From 1886 to 1905 he was a member of the honorary surgical staff of the Whitehaven and West Cumberland Infirmary. He also held the appointment of certifying factory surgeon. Dr Muir was a prominent Freemason, and was for some years president of the Whitehaven Burns Club. He was a member of the English Division of the Border Counties Branch of the British Medical Association.

Professor PAUL HEGER, honorary president of the free University of Brussels and formerly president of the Belgian Royal Academy of Medicine, has recently died at Brussels at the age of 76. His father, Professor Constantin Heger, was the friend and instructor of Charlotte Brontë.

Professor J GUTERAS Y GENSER, professor of general pathology and tropical diseases in the University of Havana, president of the Cuban National Board of Health, and founder of the *Revista de medicina tropical*, has recently died.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

THE House of Commons has this week taken the concluding stages of the Rating and Valuation Bill, discussed the recent prosecutions of Communists, and considered resolutions proposed by the Government for duties on leather and fabric gloves, gas mantles, packing paper, and certain kinds of cutlery, including knives other than surgical knives, scissors, and razors, including safety razors. The duties are proposed for a term of five years, and those on cutlery are at 33½ per cent *ad valorem*.

On December 1st the Home Secretary introduced without exposition a Coroners (Amendment) Bill. This is described as non-controversial, but the Government has little hope of getting it through this session.

Dr Salter, on the same day, presented a Public Health (Smoke Abatement) Bill. This cannot be debated the Government has taken all the time of the House, but the Ministry of Health hopes to deal with the subject next session.

In the House of Lords, on December 1st, the Public Health (Scotland) Bill, which will enable local authorities to supply insulin free to certain classes of persons not at present entitled to it, was read a second time after a short discussion. The third stage was also taken. The bill has already passed through the House of Commons.

The Medical Committee of the House of Commons will meet early next week, and proposes to discuss informally the constitution and powers of the General Medical Council. This discussion was not arranged as a result of recent disciplinary action by the Council.

Colonial Medical Director—On November 30th Lieut Colonel Angus McDonnell asked the Colonial Secretary whether the Government had come to any decision as to the appointment of a medical director as a permanent member of the Colonial Office staff for the purpose of co-ordinating medical research work in the different Crown Colonies. Mr Amery said that the matter was still under consideration.

Increase of Beds in Voluntary Hospitals—In reply to Major Glyn, Mr Neville Chamberlain said he had considered the report of the Voluntary Hospitals Committee. While he appreciated the strength of the case for additional beds he regretted that in the present urgent need for public economy he could not recommend the provision of public funds even for so laudable an object.

Vaccination—On November 26th Mr Groves asked the Minister of Health whether he was aware that, in circumstances where adults were persuaded to be vaccinated or revaccinated and unexpected results ensued necessitating abstention from work, no provision was made for compensation for loss of wages other than the national health insurance scheme and whether as many workers were not covered by such scheme he would consider a scheme for compensation in the cases referred to. Mr Neville Chamberlain said that as regarded the first part of the question there was no statutory provision for the payment of compensation for loss of wages in the circumstances mentioned. As regarded the second part he did not think it necessary as at present advised to consider any general scheme for compensation in such cases. Mr Groves further asked the Minister of Health whether he was aware that many private medical practitioners still employed the arm to arm method of vaccination and whether in view of the serious risks attending such practice, he would consider the desirability of making representation to the medical profession on the matter. Mr Neville Chamberlain said that the answer to the first part of the question was in the negative. His information was that comparatively few medical practitioners now employed this method and he scarcely thought it necessary to make representations to the medical profession on the matter. Mr Neville Chamberlain said he would consider in connection with other questions relating to sleep sickness which were at present engaging his attention the suggestion that he should give instructions to all medical officers to inquire whether cases of sleep sickness had at any time undergone vaccination and if so to note the date and the result of the last vaccination.

Small pox—On November 26th Mr Groves asked the Minister of Health whether he could present statistics showing the total number of small pox cases notified by the various boroughs and urban districts from 1891 to 1924 and the percentage of births vaccinated for each of these years. Mr Neville Chamberlain said that statistics showing the total number of small pox cases notified in the various boroughs and urban districts in England and Wales would be found in the annual volumes of Statistics of the Incidence of Notifiable Infectious Diseases in each Sanitary District in England and Wales which were published by the Local Government Board and the Ministry of Health for the years 1911 to 1920 and in the Registrar General's statistical review for the years 1921 onwards. Similar statistics were not available for the years prior to 1911, nor were figures as to the percentage of births vaccinated in boroughs or urban districts.

Medical Attendance on Families Army and Air Force—In answer to Mr. H. Morrison, Mr. Bridgeman (First Lord of the Admiralty) said that wives and families of officers and men of the Army and Royal Air Force were entitled to receive treatment as outpatients at Royal Naval hospitals at home and abroad, if they were entitled to treatment under existing regulations from their own medical officers and if treatment by those officers was not readily and conveniently available. Asked further whether he would consider the desirability of equality of treatment of the wives and families of officers and men in the three services, Mr. Bridgeman said the Admiralty was satisfied that, owing to the varying conditions of the services, a complete assimilation of the conditions and regulations governing medical treatment in the services would not be desirable.

Health of Merchant Seamen—On November 24th Mr. B. Smith asked the President of the Board of Trade whether he would arrange for an annual report to be issued regarding the health of merchant seamen, giving a scientific analysis of diseases in the statistics published in the return of the shipping casualties to and deaths on vessels registered in the United Kingdom, giving information as to the total number of men serving amongst whom the deaths occurred and in view of the apparent absence of medical advisers in the department, if he would consider whether the health of seamen was a responsibility which might with advantage be transferred to the Ministry of Health. Sir Philip Cunliffe-Lyster said he would consider whether the statistics for which the hon. member asked could be prepared.

Lead Poisoning—Answering Mr. Duckworth, Mr. G. Locker-Lampson (Under Secretary Home Office) said there had been a small increase during the last few years in the deaths from lead poisoning in the pottery trade, but this could not be taken as any indication of present conditions. In the great majority of cases the deceased had been employed in the industry for many years before the regulations of 1913 came into force. There could be no doubt that these regulations had been effective. In the fatal cases there had been a substantial rise in the average age of the deceased, and the statement that potters between 35 and 45 had the highest death rate in Great Britain was, he believed, incorrect.

The Spallinger Treatment—On November 30th Captain Bowyer asked what steps the Minister of Agriculture was taking to test M. Spallinger's reputed cure for bovine and human tuberculosis or whether the Ministry was already satisfied as to the efficacy of M. Spallinger's serum. Sir H. Barnston said that the Ministry had not itself made any test of M. Spallinger's serum, or of any other specific of which the basis was kept secret and not submitted to scientific inquiry. It understood however that an investigation into bovine tuberculosis was being undertaken by a committee representative of certain agricultural and professional interests in Cheshire, where tests were being conducted with the co-operation of M. Spallinger. It was intimated that the matter would be raised on the adjournment of the House at the first available opportunity.

Experiments on Animals—Commander Kenworthy asked the Home Secretary how many of the 177,815 experiments on animals reported by the Home Office as having been performed during the year 1924 were actually witnessed by the inspectors appointed for that purpose where such experiments took place, and under what certificate or certificates those experiments were performed, or if under licence alone. The Home Secretary replied that all the places at which experiments were permitted were visited frequently by the inspectors during the year and the animals under experiment at the time of the visit were inspected, but he could not give the number of these animals. The great majority of the experiments were continuing experiments—for example, the inoculation experiments on the experiments under Certificate B in which the animal was kept alive after the initial operation under anaesthesia had been carried out. If the question was intended to refer to the return operative procedures witnessed the answer was: Experiments witnessed in 1924—327 performed under licence alone 18 under Certificate A 302, under Certificate B 6 under Certificates B and LL 1.

Secret Remedies—Mr. Neville Chamberlain informed Sir John Marriott that he had not received any recent representations urging him to introduce legislation to deal with advertisements for cancer cures but the matter had been fully discussed in the report of the Select Committee on Patent Medicines. Asked further as to what action it was proposed to take Mr. Chamberlain said the question would be carefully considered in connexion with any legislation for the control of the traffic in secret remedies.

Red Crescent and the Riffs—Mr. Austen Chamberlain stated, on November 24th that no formal application by the Red Crescent Society for permission to transmit medical necessities to the Riffs had been received but certain private persons had made inquiries on the society's behalf. They had been informed that the French and Spanish Governments were alone competent to sanction the importation of medical stores into the Rif, and that application should be made to these Governments.

Notes in Brief

There were nine deaths from insect bites in Great Britain during the six months ended September 30th 1920. The corresponding figure for 1925 is not available.

The Home Secretary considers that legislation prohibiting the sale of inflammable toys would be impracticable.

The Ministry of Health is working with the Ministry of Agriculture for improvement in the conditions of hop-pickers' camps, and is circulating a report by a medical officer of the Ministry on hopfields in Kent and Sussex.

A draft Milk and Dairies Order under the Act of 1915 will be ready for publication about the end of the year.

The Departmental Committee on Child Assault hopes to publish its report early this month.

In consequence of the recommendations of the committee appointed to consider the employment of pharmacists in the army an army school of dispensing has been established and a reserve of pharmacists for war formed, it is not proposed to take any further action.

The special treatment of insured persons for rheumatism will be considered after the report of the Royal Commission has been received.

Universities and Colleges

UNIVERSITY OF OXFORD

Convocation has approved the appointment of Dr. P. N. B. Odgers of Lincoln College as Demonstrator in the Department of Anatomy.

The appointment of Dr. E. W. Ainley Waller Fellow of University College, as University Lecturer in Pathology has been renewed for a further period of five years.

UNIVERSITY OF CAMBRIDGE

The Raymond Horton Smith Prize for the best M.D. thesis submitted during the past academic year has been awarded jointly to J. H. Barn of Emmanuel and G. A. Harrison of Gonville and Caius whose theses are adjudged of equal merit.

At a congregation held on November 28th the following medical degrees were conferred:

M.B. B.Chir.—V. W. Dix, J. H. T. Davies, B. D. Hendy.
M.B.—J. L. D. Crozier, P. N. D. Hart.

UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated:

DIPLOMA IN PSYCHOLOGICAL MEDICINE (with special knowledge of Psychiatry)—E. W. Anderson, G. Brown.

The degree of D.Sc. (Entomology) has been awarded to Henry Pollard Jaeger, M.D., of the London School of Hygiene and Tropical Medicine.

Medico-Legal.

AN OVERLOOKED SWAB

IN the course of an inquest at the Manchester City Coroner's Court, on November 27th, concerning the death of Miss Florence Halkyard, aged 29, an allegation was made that a swab had been left in the woman's body after one operation and had been found in the body during a further operation. A verdict of "Death from misadventure" was returned.

It appeared that the deceased entered St. Mary's Hospital, Manchester, on July 11th 1925 as a private patient. She was operated upon and returned to her home, where she was confined to her bed for nine weeks. Upon readmission to the hospital a further operation was performed in the course of which a swab was found to have been left in the body after the first operation. An abscess had set up, and death ensued from peritonitis.

A sister at the hospital said she was present when the first operation was performed. The method followed at operations was to serve out swabs in packets of ten, one packet being used at each operation. The number was checked at the beginning, checked again at the conclusion and signed for in a special book. This process was followed at the first operation on the deceased and she signed for ten swabs at its conclusion. She could not account for the swab since found in the body of the deceased. Another sister at the hospital said she made up the packets of swabs the day before the operations. In reply to Mr. Judson (representing the husband), she agreed that there might have been eleven swabs in the packet.

Dr. Hunter, resident obstetric surgeon at St. Mary's Hospital, stated that he assisted Dr. Bude at the first operation. A most careful examination was made at the close, and there was no sign of any swab having been left in the patient's body. He was present at the second operation when the swab was found. There was an abscess in the abdomen and in the centre was a swab, presumably left at the first operation. The deceased's husband was informed of the fact.

In answer to the coroner Dr. Hunter said that the ultimate cause of death was peritonitis.

The coroner (Mr. C. W. W. Surridge) in returning a verdict of "Death from misadventure" said there was no doubt as to the cause of death. At the same time, the publication of this case might cause a wrong impression in people's minds. Operations were constantly being performed in hospitals and patients were

restored to health. This was one of those cases when a person became accustomed to performing a certain duty a great many times and occasionally a mistake occurred. So far as his recollection went he had never had an unfortunate occurrence of this kind before. He was quite satisfied that nothing in the nature of criminal negligence had taken place. The hospital regulations were such as would be expected in an institution of that character and he was certain that in any inquiry they might make anything they decided to do that would still further ensure safety from any possible mistake would be done. One further objection he would like to make, and it was that everybody concerned had been perfectly frank. There had been no attempt to shelter anybody in what had been an unfortunate mistake.

Mr James Fox expressed the deepest sympathy with everybody connected with St Mary's Hospital at what had occurred.

Medical News.

THE meeting of the Society of Medical Officers of Health at the Medical Institute Newcastle on Tyne, will be held on Friday next, December 11th, and not on the date previously announced. The President (Dr G F Buchanan) will be in the chair, and there will be a discussion on "Industrial Hygiene" from the point of view of Public Health Administration (Professor Harold Kerr, M.O.H. Newcastle on Tyne), the Physician (Sir Thomas Oliver, M.D., F.R.C.P.), the Works Director (Mr Angus Watson, chairman of Messrs Angus Watson and Co.), and the Welfare Supervisor (Mr B L Lelchott, welfare supervisor, Messrs Sir James Laing and Sons, Sunderland). The dinner of the Northern Branch will be held at the close of the meeting, and members of other branches are invited to notify Professor H Kerr, Town Hall, Newcastle on Tyne if they are able to attend. As branches have often expressed the wish that meetings of the whole society should be held from time to time in the provinces, it is hoped that there will be a large attendance, especially of members from the North of England and Scotland, at the Newcastle meeting.

PROFESSOR J C G LEDINGHAM, F.R.S., will give the Huxley Lectures of the Royal Institute of Public Health next week. The subject chosen is current problems in bacteriology and immunology, and their bearing on public health effort. The lectures will be given at the house of the Institute (37, Russell Square, London, W.C.1) on December 9th, 10th, and 11th, at 5 p.m.

SIR C GORDON WATSON will lecture for the Fellowship of Medicine on the prevention and correction of deformity in tuberculous joints in the lecture hall of the Medical Society of London, 11, Chandos Street, W., on December 7th at 5.30 p.m. The lecture is free to members of the medical profession. The Hampstead General Hospital will hold a late afternoon course from December 7th to 19th, covering all branches of medicine and surgery. On December 7th also a two weeks' afternoon course in dermatology begins at the Hospital for Diseases of the Skin, Blackfriars, in which will be given in the out-patient department, and venereal clinics will be held twice weekly. The following special courses for January are announced: medicine, surgery, and the specialties at the Prince of Wales's General Hospital, cardiology at the National Hospital for Diseases of the Heart, diseases of children at the Queen's Hospital, infectious fevers at the North Eastern Hospital, neurology at the West End Hospital for Nervous Diseases and psychological medicine at the Bethlem Royal Hospital. A copy of each syllabus and the Fellowship general course programme may be had from the Secretary, 1, Wimpole Street, W.1.

On December 11th Dr Otto May will lecture before the Tuberculosis Society on his assurance and tuberculosis. Professor Lytle Cummings will address the January meeting on clinical types of pulmonary tuberculosis in Wales, and Dr C Nicory will speak in February on tuberculosis in Japan. The provincial meeting will be held from March 25th to 27th at Cambridge in conjunction with the Society of Medical Superintendents of Tuberculosis Institutions.

A FURTHER series of lectures will be given by the medical staff at Queen Charlotte's Maternity Hospital, Marylebone Road, N.W.1, on Thursdays, at 5 p.m., commencing January 14th, 1926 when Mr A W Bonine will speak on maternal mortality. On January 21st Mr J Bright Banister will deal with late manifestations of puerperal sepsis. The other lectures in the series to be given on successive Thursdays include addresses by Mr T B Davies on ante partum hemorrhage, Mr L C Rivett on infant feeding, Mr L G Phillips on management of contracted pelvis, Mr C S Lane Roberts on ectopic pregnancy and Mr L H W Williams on acute abdominal pain in pregnancy.

THE next meetings of the Royal Commission on Lunacy and Mental Disorder will be held at 5 Old Palace Yard, on December 10th at 2 p.m. and December 11th at 10.30 a.m.

THE annual general meeting of the Old Epsomian Club will be held on Thursday next, December 10th, at 6.30 p.m., at the Trocadero Restaurant, London. It will be followed by the annual dinner at 7.30.

WE regret to record the death of Mr R G Blackall, an early worker with x-rays at the London Hospital. He had been suffering from x-ray dermatitis for many years and epithelioma developed, necessitating the amputation of both his hands. He retired in 1920, after eighteen years' service at the hospital, and went to live at Leigh-on-Sea. The Cringle Hero Fund Trustees awarded him in December, 1923, a certificate of honour and a grant of £75 a year. In the following March Lord Kintford presented the framed testimonial of the Hero Fund to him, and announced that the London Hospital had awarded him a pension of £285 a year and was insuring his life for a substantial sum on behalf of his wife and family.

WE are asked to state that the Wellcome Historical Medical Museum was closed on December 1st and will not be reopened until the end of May. The growth of the collection has been so great that extensive alterations have become necessary. Communications should be addressed to the Secretary of the Museum, 54A, Wigmore Street, London, W.1.

THE KING has confirmed the appointment of Dr Ernest Shawe Corse, Chief Medical Officer, Cyprus, to be nominated as an official member of the Legislative Council of Cyprus.

WE have received the first issue, which appeared in October, of *Archivos Argentinos de enfermedades del aparato digestivo y de la Nutricion*, a bi-monthly journal dealing with alimentary diseases and published at Buenos Aires under the editorship of Professor Carlos Bonorino Udaondo. The issue contains original articles by Pierre Duval and J C Ronx on congenital peridnadenitis, by C B Udrondo, J L Cynlla, and H Zunino on basal metabolism in cancer of the stomach, by M R Castex and J C Galan on guardians of the bile ducts, by Delfor del Valle on duodenal ulcer, by P Escudero and E U Merlo on retractile mesenteritis, by T Martini on essential stenosing peridnadenitis, and by M R Castex, N Romano, and J J Beretervide on insufficiency of the ilio caecal valve, a review of the subject of infected gastric or duodenal ulcer, by A Ceballos, and abstracts from current literature.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **BRITISH MEDICAL JOURNAL** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

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THE TELEPHONE NUMBERS of the **British Medical Association** and the **BRITISH MEDICAL JOURNAL** are **MUSEUM 9561, 9562, 9563**, and **9564** (internal exchange four lines).

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QUERIES AND ANSWERS

BAGGY EYELIDS

MR. BISHOP HANMAN (London) writes in reply to the inquiry of J G B (November 28th p 1039) as to the pathology of "baggy" eyelids met with in apparently healthy individuals of middle age. The limitation to the healthy excludes puffiness due to renal disease, myxoedema, angio-neurotic oedema, and local inflammatory changes. The ordinary baggy eyelids are not pathological but a feature of the physiognomy of certain types. They occur mostly in those who in youth possessed fine prominent eyes, in which the absorption of orbital fat and connective tissue of the lids renders the skin of the lids

redundant These persons are very liable to suffer from entropion after an attack of conjunctivitis The treatment where the deformity is serious is the same as that for entropion A slip of skin of the biggy lid about 4 mm wide and 15 mm long is excised parallel to the lid border and about 5 mm below it A corresponding strip of the underlying orbicularis palpebrarum is excised Then the cut edges of skin and muscle and the deeper connective tissue are included in sutures Three or four fine horsehair sutures suffice It is essential that the skin and muscle should be sewn to the deeper tissue The operation may be done under local anaesthesia The wound heals in three days, when the stitches are removed The scar cannot be seen at the end of one month The results are excellent and permanent Warning may be given that such cases are sometimes treated by 'beauty specialists' with paraffin wax injections I have seen most unfortunate consequences

INTERMITTENT CLAUDICATION

M D " asks for information about this condition, of which he is a victim He is 65 years of age and has always been of active habits His activities however have been gradually restricted during the last six years owing to dyspnoea on effort and a ginal pain in the precordial region on slight exercise About two years ago, while walking, he was suddenly seized with sharp pain in the right calf This was quickly relieved by rest—that is to say, by standing for a minute or two—but it was apt to recur when he resumed his walking Later the pain in the calf muscles became a constant and troublesome hindrance to locomotion, the muscle mass was very tender, and massage seemed to do good It was suggested to him that the condition might be intermittent claudication, due to arterial spasm, or possibly to arteritis he therefore had the blood pressures taken at different levels of the legs, with the following results

Right Leg			Left Leg		
	Max	Min		Max	Min
Thigh	200 mm	90 mm	Thigh	200 mm	70 mm
Just below knee	190	90	Just below knee	190	70
Ankle	120	90	Ankle	170	70

The pressure in the arm was at that time maximum 150 mm, minimum 90 mm The drop of the pressure in the right leg towards the lower part is very striking (this was measured with a Fauchon instrument) Our correspondent is inclined to attribute the pain to arterial spasm and not to structural changes The leg has not been radiographed to see whether there is any arterial calcification Three or four months ago, when tying his bootlace at an inconvenient angle something seemed to give way with a sharp pain on the inner side of the right ankle, which became slightly distended with fluid and rendered walking uncomfortable The whole leg became subsequently oedematous, especially over the lower third readily pitting on finger pressure Over the inner aspect of the lower fourth of the tibia there was a fluctuating swelling, which was not painful or tender although there was at times obscure smarting On puncture a few drachmas of clear citron coloured albuminous fluid were removed this was held to indicate that the condition was albuminous periostitis He had not heard of this before, but he finds it mentioned in various French surgical works he has discovered no reference to it in the English works at his disposal Syphilis and tuber

He is told that the prognosis is favourable but in his own case two partial unsuccessful, the swelling though it became smaller persisted He does not suspect any connexion between the intermittent claudication and the albuminous periostitis though both occur in the same limb within a few inches of each other

*. Brief references to intermittent claudication appear in Allbutt and Rolleston's *System of Medicine* and in that of Osler and McCrae In *Taylor's Practice of Medicine* (thirteenth edition, p 382) it is stated that intermittent limping, or claudication may be considered under functional disorders of the vessels, although in most cases there is an underlying structural change The symptoms generally subside after a period of rest but in most cases there is evidence of sclerosis of the arteries or veins or of obliterative arteritis atheroma, or thrombo angitis obliterans The symptoms are said to be due to the affected arteries being unable to carry the increased flow of blood required by the limb during muscular exercise In some cases slight muscular wasting and degeneration of the peripheral nerves (peripheral neuritis) have been observed In many instances the complaint has resulted in dry gangrene of the limb, and in a few cases it has been associated with Raynaud's disease of the upper extremities In cases which do not present any evidence of arterio-sclerosis or obliterative arteritis it is assumed that the condition is due to arterial spasm The attacks may go on for years The treatment recommended is limitation of exercise and avoidance of quelling the circulation up to the point when the vascular obstruction begins to operate Frequent rests in bed may be advisable The local remedies used in Raynaud's disease may be employed and also the constant current electric baths warm baths high frequency currents and gentle massage The condition of the arteries may be ascertained by radiography which will help to determine the extent of the disease Sympathectomy has also been recommended, and the injection of alcohol round the artery

INCOME TAX

"COLONIAL" married and with three children inquires what income tax would be payable in this country on an income of £1,800 per annum derived from investments in South Africa

*. The calculation is as follows

	£	£
	225	1 800
	90	
	—	315
Income taxable		1 485
Of which £225 is chargeable at 2s		£ 22 10 0
And £1 60 is chargeable at 4s		2 2 0
Total tax		£24 10 0

It should perhaps be added that an allowance is also made for South African tax paid, up to a maximum of one half 'Colonial's' appropriate United Kingdom rate

LETTERS, NOTES, ETC

HIGH BAROMETRE AND SUDDEN DEATHS

"A. O. W." writes About forty years ago I began to notice that three elderly women with 'heart trouble' used to send for me to visit them almost on the same day, they had no knowledge of each other I next observed that their messengers used to arrive when the barometer was unusually high Ever since then I have been interested in similar observations On November 19th, a friend told me he had had word that morning of three deaths within his circle, two certainly from 'heart failure' The same day I saw in the *Times* announcements of several sudden deaths 'from heart failure,' definitely so stated, in two cases The attention of the whole world has been riveted on the death of Queen Alexandra from 'sudden heart attacks,' to-day (Monday, November 23rd) the *Times* death column contains notices of five cases of sudden death, three of which are stated to be due to 'heart failure' For the past week the barometer has stood remarkably high over England particularly the south and east I feel convinced that there is more than coincidence here but I cannot advance any satisfactory explanation Obviously one ought to know whether the 'heart trouble' was myocardial or valvular only and if valvular, which valve especially before enunciating any definite view Still it seems worth while to call attention to facts in the hope that some day the explanation forthcoming may assist preventive medicine

RASHES PRODUCED BY VERONAL AND ITS CONGENERS

DR. I. SACKS (Zastron South Africa) reports a dermatosis following the administration of luminal in which the rash differed from those mentioned in the *Lipitone* of October 3rd (paras 271 and 272) A girl, aged 18, who had had epileptiform seizures from birth and was mentally deficient, was treated by luminal in doses of 1 grain twice a day for over two weeks She then suddenly developed a typical scarlatiniform rash which covered the body Her face was brightly flushed and so oedematous that the eyes could not be opened for some days The pulse was fairly quick but there was no rise of temperature One or two attacks of vomiting occurred and the breathing was laboured The urine contained some albumin Under treatment with calcium lactate and magnesium sulphate the rash disappeared in a few days The patient was subsequently treated again with luminal with no ill results but with decidedly beneficial effect on the epileptic attacks and the mental condition

ELDERLY NURSES IN DISTRESS

The trained nurse of to-day, with her easier hours, better pay, and her status assured by State registration is reaping the harvest sown by the early pioneers many of whom struggled through an incomplete training worked for a mere pittance for many years and now find themselves forgotten and in poverty The Nurses' Fund for Nurses has been started to raise enough to allow the older women to spend their declining years with at least enough to eat and a roof over their heads Some of the cases are pitiful—all are elderly or in poor health many have only dimblement benefit of 7s 6d a week or the old age pension of 10s If enough money can be collected it is hoped to buy one or two houses where some of them could have a room at a nominal rent The address of the Fund, which is managed by a committee of nurses is—Care of the *Nursing Times*, St Martin's Street London, W.C.2

MOTOR CYCLE LICENCE HOLDERS

THE Automobile Association informs us that the police have received instructions to enforce the law regarding the position of licence holders on motor cycle combinations Medical motor cyclists should note that by carrying licence holders attached to their number plates they are liable to prosecution

VACANCIES

NOTIFICATIONS of offices vacant in universities medical colleges and of vacant resident and other appointments at hospitals will be found at pages 69 70 71 74 and 75 of our advertisement columns and advertisements as to partnerships assistantships and locumtenencies at pages 72 and 73 A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 196

DIAGNOSIS AND TREATMENT OF SPLENIC ENLARGEMENT IN CHILDREN*

BY

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PEGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE

INTRODUCTORY

ENLARGEMENT of the spleen is a physical sign, like jaundice, due to many causes, which in the vast majority of cases are infective, though in many instances, such as in von Jaksch's anaemia and aplastic anaemia, it may be impossible to go further than to assume such an origin. The more unstable condition, as regards response to stimulation, of the blood-forming organs in early life as compared with that in adult life makes the significance of the blood picture a difficult and therefore an interesting problem.

The spleen and the lymphadenoid tissues generally are more prone to active response and enlargement in childhood than in later life, and the spleen in particular is more distensible than in adults. In considering the subject it will be well to take conditions in which the spleen is very definitely enlarged, and not to include cases in early infancy in which the edge can be felt just below the ribs, this is of less significance in early infancy than in subsequent years. In G. Carpenter's series of 348 cases of enlarged spleen in children under 12 years of age, 94 occurred in the first six months of life and 220 under 18 months of age, it is probable that some of these were due to rickets deformity displacing the spleen downwards rather than to real splenomegaly.

A special point of interest in connexion with splenic enlargement is in the early stages of the chronic diseases in which it is recognized as occurring, when the other manifestations characteristic of the fully developed disease have not appeared. In some instances splenomegaly may constitute the chief or only clinical sign of an incomplete or fruste form of a disease—for example, in chronic haemolytic jaundice and Hämot's cirrhosis. A palpable spleen has been found as the only physical sign in a family in which other members had Hämot's hypertrophic biliary cirrhosis (Boinet).

A question deserving discussion is the probability that in some cases splenic enlargement is due to more than one factor—for example, syphilis complicated by a low grade streptococcal infection or by tuberculosis. Syphilis may well favour a secondary infection, and then (vide infra) anti-syphilitic treatment may fail to be curative.

It would no doubt be convenient to group the forms of splenomegaly under a number of inclusive headings, such as (1) those that may be familial (chronic splenomegalic haemolytic jaundice, Gaucher's disease, and congenital syphilis), (2) those associated with changes in the blood picture (anaemia, haemolysis, erythraemia, leukaemia), (3) those definitely infective, whether acute, as in enteric fever, or chronic, as in congenital syphilis and tuberculosis, (4) those of tropical origin (malaria, kala-azar), (5) mechanical (growths, cysts, infarcts), (6) associated with hepatic enlargement or cirrhosis. But though this arrangement is attempted, there is obviously such an amount of overlapping as to render it of little value, except as a means of arranging the various conditions in some order or other.

1 FAMILIAL SPLENOMEGALY

Familial splenomegaly may be due to chronic splenomegalic haemolytic jaundice, Gaucher's disease, and congenital syphilis. In addition, it is well to bear in mind the possibility that familial splenomegaly may occur in other and undetermined conditions. De Lange and Schippers recorded a family of seven in which four children had enlarged spleens, one died from haematemesis and two others underwent splenectomy.

In chronic splenomegalic haemolytic jaundice the diagnosis depends on the examination of the blood for fragility

of the red cells, and the treatment, in cases with symptoms demanding it, is splenectomy. After splenectomy the symptoms of chronic haemolytic jaundice disappear, but the red blood cells hardly ever become normal as regards fragility, thus suggesting that the fragility is an inherent peculiarity. So far this fits in with Naegeli's suggestion that the microcytosis of the condition is evidence that these patients belong to a different type of human species. But against this interesting conception are the observations that microcytosis is confined to those members of a family with chronic haemolytic jaundice (Meulengracht), and that after splenectomy microcytosis diminishes (Whitehead).

The cholesterol content of the blood rises after splenectomy, and this might suggest that the fragility and haemolysis depend on the low cholesterol content, but an equally low content is found in some anaemias without fragility (Campbell and Warner), and it has been thought to depend on the relative proportions of cholesterol and lecithin. Thus the medicinal administration of cholesterol in chronic haemolytic jaundice does not rest on such a logical basis as might have appeared at first. Liver exposures were recommended by Parisot and Heully as the result of benefit in two cases of the congenital form, but subsequent experience does not appear to have been confirmatory.

Gaucher's Disease

This condition (*epithelioma primitif*), first described in 1882 as a neoplasm, is now considered to be a special change in the reticulo-endothelial system, and from its racial (Jewish), familial, sexual, and congenital characters has been regarded as a constitutional anomaly, a mutation in the human species (Naegeli, Waugh and McIntosh). It is a striking but rare disease, in 1924 Conner referred to 24 recorded cases. It is familial, but this has not always been established—for instance the sixth recorded case in France was the first shown to be familial (Harrier and Lebeecq). Though the condition involves the spleen, lymphatic glands, liver, and bone marrow probably simultaneously, it is most obvious, both in point of its chronological appearance and objectively, in the spleen, which may be larger than in any other disease suitable for splenectomy, the superficial lymphatic glands are very seldom enlarged. From the distribution of the lesion splenectomy cannot be expected to bring about a real cure, but it gives relief. In Harrier and Lebeecq's 13 collected cases of splenectomy (9 adults, 4 children) there were 3 deaths after operation, and among 51 collected splenectomies in patients under the age of 14 years 4 were for this condition (Bartlett). It is characterized by a peculiar yellowish wedge-shaped thickening of the conjunctivae, commonly seen on both sides of the corner. According to Brill and Mandelbaum, the skin, though showing a peculiar brownish-yellow discoloration in areas exposed to the light, is never jaundiced. Now as the reticulo-endothelial system is concerned with the formation of bilirubin out of haemoglobin, the interesting question arises whether jaundice can occur in Gaucher's disease, observations with Hijmans van den Bergh's test should throw light on this point. It is noteworthy that in Willmoet and Meckenzie Douglas's case of an adenoid tumour with extensive degeneration of the reticulo-endothelial system anaemia and jaundice were absent.

Splenic Enlargement in Congenital Syphilis

This was first pointed out, at any rate in this country by Gee in a paper read before, but not deemed worthy of inclusion in the *Transactions* of the Royal Medical and Chirurgical Society. Gee found it in 25 per cent of his cases, Still in 45 per cent. Mufin in 50 per cent, and Conitts in 63 per cent. It is an index of the severity and activity of the infection in infants born with syphilitic manifestations it is almost always enlarged, in cases in which they appear later the spleen may enlarge before they become obvious, but usually this sequence is reversed, hence the variations in statistics may be explained.

In older children splenic enlargement associated with anaemia should always suggest syphilitic infection and the Wassermann or the therapeutic test. The imitation of

*Being the opening paper of a discussion on this subject in the Section for the Study of Disease in Children of the Royal Society of Medicine on November 27th.

splenic anaemia and the further stage of Banti's disease by delayed congenital syphilis is well known.

In children with an enlarged spleen and a positive Wassermann reaction antisyphilitic treatment may be disappointing, and there may not be any improvement until splenectomy has been performed. Farley has collected seven cases, not including Weil's, but all except French and Turner's were in adults. In such a case, reported by Osman, failure of salvarsan led to splenectomy, when the liver was seen to be cirrhotic, this was followed by apparent cure with a negative Wassermann reaction for six years, when haematemesis and cerebral symptoms proved fatal. The patient of French and Turner, a boy aged 5 years, in whom the blood picture had previously been that of von Jaksch's anaemia pseudo leukaemica infantum, was very similar, except that cirrhosis was not recorded and that a younger sister also had splenomegaly.

The interesting question arises why antisyphilitic treatment fails to exert a curative action, Weil, indeed, suggested that the Wassermann reaction was due to an unknown parasite, but perhaps the more probable view is that syphilitic infection had been complicated by a secondary infection in the spleen, like that presumed to be responsible for the chronic splenic anaemia of adults.

2 CASES ASSOCIATED WITH CHANGES IN THE BLOOD PICTURE

Acute Leukaemia

In early life acute leukaemia is probably more often of the myeloid or myeloblastic than of the lymphoid type, it should be recognized by the blood examination. If acute progress occurs in cases previously latent the spleen may reach a large size. Except in the rare cases, such as Cabot, Michaud, and Arthur Hall's, which turn out to be examples of the lymphocytosis of acute infection,¹ and thus imitate acute lymphoid leukaemia, the prognosis is hopeless, and treatment with benzol, radium, x-rays, and arsenic fails even to retard the inevitable end. Splenectomy, which W. J. Mayo carried out after preliminary x-ray exposures in 31 cases, with beneficial results in more than a third of the patients, does not appear to be suited to the acute cases in early life.

Murray H. Bass has recorded unusual eosinophilia with splenomegaly in a girl aged 6 years belonging to the small group of cases in the adult called eosinophilic leukaemia, the white count (25,600) showed 37 to 64 per cent of eosinophils, with 6 per cent of eosinophil myelocytes.

Pernicious Anaemia

Pernicious anaemia is very rare in early life, but aplastic anaemia occurs, and from examination of a blood film only may suggest acute lymphoid leukaemia or the existence of the rather discredited entity leukaemia.

Thrombocytopenic Purpura Haemorrhagica

This may be (a) primary and constitutional, or (b) secondary to infection, such as by *Streptococcus haemolyticus*, drug poisoning (such as by benzol), and such morbid conditions as nephritis, hepatic cirrhosis, and leukaemia. It may be acute and even fulminating, or chronic and recur for years. It is characterized by a diminution in the number of the blood platelets, from the normal 250,000 to 40,000, 5,000, or lower, a normal coagulation time and a prolonged bleeding time often exceeding two hours (Dukes), and in the active stage by some enlargement of the spleen. There are various views as to the evil influence of the spleen in this condition, and as to the mechanism of the good results of splenectomy introduced by Frank of Breslau in 1915, and followed by Kazanek of Prague (1917), Bull and Rosenthal (1923) in New York, B. Vincent (1925) in Boston, Cowen (1925) in Australia, and Sutherland and Williamson (1925) in London. Ricardo and Albo report cures by splenectomy of chronic haemorrhagic purpura without splenomegaly. Frank suggested that the spleen inhibited the activity of the bone marrow, Kazanek that it removed platelets from the blood, and Bull and Rosenthal that it produced a toxin.

As to the

et al.

acute lymphocytosis is due to

distinguished from acute lymphoid leukaemia and aplastic anaemia by the blood count, from the haemorrhagic forms of diphtheria and the exanthemata by careful examination, from scurvy by the history, the spongy gums, and the reaction to antiscorbutic remedies. The chronic form can be differentiated from haemophilia by the absence of superficial haemorrhages, the normal platelet count, and the normal bleeding time in the hereditary disease.

In the past the chief form of treatment was transfusion, which had sometimes to be repeated. Splenectomy can now be employed as an emergency measure in acute cases when other means have failed to arrest the bleeding, and in the chronic form is regarded as the best remedy by Vincent who found five fatal cases in almost fifty collected cases of the disease treated by splenectomy.

Infantile Splenic Anaemia

Infantile splenic anaemia, meaning thereby von Jaksch's anaemia pseudo leukaemica infantum (1889), also described by Luzet (1891), whose name is bracketed with von Jaksch's by the French, and also called splenomegaly with anaemia and myelæmia, should be definitely separated from the juvenile form of chronic splenic anaemia of adults, and for this reason von Jaksch's more cumbersome title perhaps has an advantage. It appears, like chlorosis, to have become rare in recent years (Thomson). It is confined to the first three years of life, its maximum incidence falling in the middle of this period, and is characterized by great splenic enlargement, secondary anaemia with leucocytosis (30,000), some relative lymphocytic increase, the presence of nucleated reds, a constant myelæmia (up to 6 per cent), and tendency to spontaneous recovery. It is often associated with rickets, but except for Bereterride and Branchi modern writers do not consider that congenital syphilis, which certainly is found in a proportion (less than half) of the cases, is responsible except by diminishing the resistance to the as yet unknown cause. Marquand recorded the disease in twins, and suggested that some congenital factor is responsible, but the tendency to spontaneous recovery is rather against this view. Thursfield, who has paid special attention to this disease during this century, puts the recovery rate at 65 to 70 per cent, and doubts the suggestion that it is specially frequent in Jews. It is familial, the twins figuring in the frontispiece of Hutchinson's *Lectures on Children's Diseases* when seen at the age of 12 years had recovered and their spleens were no longer palpable, but splenic enlargement may persist after the blood picture has become normal. Bereterride and Branchi of Buenos Aires also differ from the general opinion in taking a gloomy prognostic view, and state that in ten years' experience they have not seen a cure, the possibility that the disease they describe is different from the British form in some respects, etiological or environmentally, naturally arises. In the absence of any definite knowledge of its real cause reliance has chiefly been placed on hygienic measures, splenectomy, which would seem rather unnecessary in the light of the recovery rate, has, according to Bartlett, been carried out in five cases.

Chronic Splenic Anaemia

That chronic splenic anaemia of the form seen in adults may occur in older children I have no doubt. There is rightly some scepticism about the existence of such a condition, and it may fairly be said that it is only cases of unknown origin which can be so labelled. But there are such cases which cannot in the presence of a negative Wassermann reaction, be regarded as syphilitic, unless the view be taken that the splenomegaly is the legacy of a spirochaetral infection which has died out. Some young adults with chronic splenic anaemia have had an enlarged spleen from childhood, I have recorded such a case, and Leech reported a case fatal after splenectomy (spleen 425 grams, or 13 oz.) in a boy aged 9 years with a negative Wassermann reaction. It has been suggested that von Jaksch's anaemia is the infantile form of the chronic splenic anaemia of adults, and that the blood picture depends on the more active response of the blood-forming organs, but the difference in the prognosis—von Jaksch's anaemia often undergoing spontaneous cure, while chronic

splenic anaemia of adults does not—makes this an improbable assumption. I have not any reference to splenic anaemia due to thrombosis of the splenic vein in a child.

Banti's Disease

In Banti's disease and portal cirrhosis with splenomegaly removal of the spleen has sometimes been beneficial (Osman), but the general opinion is that splenectomy is most successful in cases before the liver has become cirrhotic—namely, in the stage corresponding to splenic anaemia and before Banti's disease has supervened. Among 69 collected cases of splenectomy for chronic splenic anaemia—mainly in adults—is shown by the average age of 33 years, the extremes being 2½ and 69 years. Clancy found that 23·3 per cent of the 30 cases showing hepatic cirrhosis proved fatal within forty days of the operation, whereas in cases without hepatic cirrhosis the corresponding mortality was 13 per cent. Richards and Day found that in Egyptian splenomegaly, in which hepatic cirrhosis is an early accompaniment, splenectomy was beneficial if performed before the appearance of ascites.

Erythraemia

The spleen is nearly always enlarged in this condition, which, however, is rare in childhood. In his monograph on the subject Parkes Weber refers to about six cases in early life, two of which were probably associated with congenital syphilis. Poynton, Thursfield, and Paterson recorded a case in a girl aged 3½ years. Splenectomy is inadvisable as the spleen serves as an overflow for the excess of blood. Benzol by the mouth and x-ray exposures of the long bones may be tried, and the question of intestinal infection and toxæmia should be considered.

3 CASES OF INFECTIVE ORIGIN

Infective Splenomegaly

Infective splenomegaly as part of an acute general affection of the haemopoietic system is very rare. I have seen a mixed infection of the glands, which in places were breaking down, due to *B. coli* and streptococci. Osman reported a case of anaemia with splenomegaly associated with tonsillitis in a boy aged 6½ years who was in good health eight years later. Infarcts and enlargement of the spleen in malignant endocarditis, and the spleen of enteric fever, should be recognized by the special features of the causal disease.

As regards chronic infections, the field is large. Perhaps the palpable spleen sometimes present in status lymphaticus may, like that condition, be due to a low grade infection, as suggested by H. C. Cameron. In Still's disease, or the juvenile form of rheumatoid (chronic infective) arthritis, the spleen and lymphatic glands are enlarged, and amyloid change has been reported.

Tuberculosis of the Spleen

Tuberculosis may give rise to very considerable enlargement, both in acute miliary tuberculosis and in the chronic form. In chronic tuberculosis the organ may contain comparatively large caseous masses, resembling to the naked eye lymphadenoma. There may be adhesion to the diaphragm so that the organ, though increased in size, cannot be felt. Owing to the perisplenitis there may be pain and tenderness, and Thursfield considers that tuberculosis is the only condition of the organ in which it is often distinctly tender.

Lymphadenoma

This is not uncommon in older children, but it is very rare to find it predominantly splenic as in a boy aged 11 years, recorded by Poynton, Thursfield, and Paterson, in this case the spleen weighed 25 oz, the liver 44 oz, both being invaded with the growth, the cervical glands are practically unaffected. Among five cases of lymphadenoma recorded by these writers two had jaundice.

Hyperplastic Lymphatic Splenomegaly

The relative value of splenectomy and x-ray exposures in disease accompanied by splenomegaly is obviously a matter of practical importance. In spite of the tendency to produce adhesions, and so render subsequent operation

more difficult, x-ray treatment would appear to be worth a trial in cases of splenomegaly of doubtful origin, as they may be examples of the condition called by Bull, Bachr, and Rosenthal "splenomegalia lymphatica hyperplastica." They record three cases, none in children, in two, one of which proved fatal, splenectomy was performed, and then it was found that radiotherapy caused complete disappearance of the general lymphatic gland enlargement and reduction of the spleen to its normal size. The condition, which may sometimes pass unrecognized, is characterized by a normal blood count, general enlargement of the lymphatic glands, and great splenomegaly. The microscopic appearances are enormous enlargement of the Malpighian bodies, which are almost entirely composed of endothelial or reticular cells, and of the follicles of the lymphatic glands which show a similar structure. The condition is not influenced by aise, but is rapidly cured by exposures to the x rays.

4 TROPICAL SPLENOMEGALY

Kala-azar

The infantile form of kala-azar may be seen in children who have come from countries where it is endemic, and the diagnosis depends on the detection of the Leishman-Donovan parasite by splenic puncture. The liver and the spleen are enlarged, but as compared with other conditions are soft to the palpating hand. It occurs in the Mediterranean littoral, Malta, Egypt, and elsewhere, and probably many cases of typical splenomegaly are due to kala-azar. The ponos* of the Greek islands Spetsi and Hydra is of this nature. This febrile splenomegaly has been reported in children in the South of France (D'Oelsnitz, Daumas, Liotard, and Puech), and Wyllie has recorded one in a child who came from Malta to England. The treatment is the intravenous injection of tartar emetic and sodium antimonyl tartrate solutions (Rogers). After failing with medical treatment Talbot and Lyon obtained a cure from splenectomy in the first reported cases of infantile kala-azar in America.

5 MECHANICAL CAUSES

Enlargement of the spleen due to primary new growth, hydatid and simple cysts, angiomas, and abscess are very rare. Among 57 collected cases of abscess in children 14 only were recognized clinically (La Ferla).

Reference has already been made to the cases with hepatic enlargement or cirrhosis.

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*I am indebted to Dr A. Cwadia of Athens for the following information. *ponos* τοι *Sperosa* (the pain of Spetsi) is in the neighbouring island of Hydra known by the name of *poraka*, meaning a sort of large plate from the form of the abdomen and in Cephalonia as *Α-α-α-α-α* with the same meaning. The *α* have all been proved to be kala-azar by Gabbi (1910). The disease is relatively common, and the results of treatment by tartar emetic are very good.

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THE STRENGTH OF INSULIN PREPARATIONS

A COMPARISON BETWEEN LABORATORY AND CLINICAL MEASUREMENTS

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WITH AN INTRODUCTORY NOTE BY

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I—INTRODUCTORY

The decision of the discoverers of insulin and their colleagues in Toronto to indicate the strength of the preparation in "units" of activity was undoubtedly sound, and has led to a highly satisfactory precision in its dosage. So far as this country is concerned, experience may be divided roughly into three periods.

In the first no final definition of the unit had been given, and only rough methods were available for its measurement in the laboratory. On the other hand, physicians had yet to learn what regularity of effect could be obtained with a really constant preparation, so that comparatively few complaints were heard of the differences in strength between similarly labelled batches of the solution, though it can hardly be doubted that such occurred.

In the second period, though the unit had received its final physiological definition, and a representative batch of solution had been received in this country to serve as a standard of comparison, a trustworthy method for its measurement on normal animals was still being sought. Physicians, on the other hand, with time and opportunity, had found that a patient whose diet and activities were under complete control was a very constant reagent for insulin. The effect of each daily dose on such a patient, if followed with sufficient care, provided a reasonably accurate measure of the activity of the preparation. Clinical observation, for the time being, had attained a greater accuracy than laboratory methods of assay, and it was to be expected that discrepancies would be observed, such as those collected below by Drs Harrison and Lawrence in Table III. The suggestion naturally arose that a clinical assay of each batch of insulin should supplement that made in the laboratory before the final adjustment of its strength for issue. The Insulin Committee of the Medical Research Council decided first to organize a careful and deliberate comparison between the results of laboratory and clinical assays, on a selected series of samples.

By the time this decision was taken, however, the third period had been reached. There was reason now for hope that the laboratory test had again overtaken clinical observation in accuracy. The method devised and described

below by Mr Marks had aimed at eliminating the effect of the wide individual differences of response shown by different animals, as thoroughly as such differences were eliminated in the clinical tests on patients of known reaction. It had endeavoured to go further, and to neutralize even the day-to-day variations of sensitiveness to insulin shown by the same animals. The comparative trials now undertaken had, moreover, the advantage that clinical and laboratory measurements were to be made at the same time, whereas many of the discrepancies earlier apparent had resulted from clinical trials made many months after the laboratory assay, at a time when the preparations of insulin were less stable than the highly purified products now available. The results of this organized comparison, as shown in Table IV of the report of Drs Harrison and Lawrence, fully realized the expectation that the laboratory method of assay, now for some time in use at the National Institute, would be able to hold its own with the most careful clinical measurements. The correspondence is so good, indeed, as to justify the conclusion that the assay on rabbits here described by Mr Marks, if conscientiously carried out, can fix the activity of a preparation with an accuracy that no clinical test is likely to improve.

It should be added that experience in this department with preparations standardized by other methods suggests that these also are capable of an accuracy well within the range of clinical needs, when carefully carried out in comparison with the stable standard now adopted for international use.

H H D

II—THE BIOLOGICAL ASSAY OF INSULIN PREPARATIONS IN COMPARISON WITH A STABLE STANDARD

BY

H P MARKS

The original physiological unit of insulin was defined as the smallest dose which would lower the blood sugar of a 2 kilogram rabbit, starved for twenty-four hours previously, to the convulsant level of 0.045 per cent, and this unit, with the clinical unit later based on it (1 rabbit unit = 3 clinical units), has been generally accepted. The word "unit" is here used throughout to mean such a "clinical" unit, the original or "physiological" unit being now only of historical interest.

All the earlier methods of assay based on this definition, whether they involved the observation of actual convulsions or of the fall in blood sugar produced by a subconvulsive dose, aimed at determining the potency of a sample of insulin absolutely in terms of an animal reaction.

THE STANDARD OF REFERENCE

As it became evident that such a reaction could not furnish an invariable standard, an attempt was made in this laboratory to standardize rabbits by determining their response to a given dose of a stable reference sample whose potency had been verified at Toronto. The response of these rabbits to the sample under test was then compared with their response to the standard sample, so that, in effect, the potency of the unknown sample was expressed in terms of that of the standard preparation. Such was the state of affairs at the time when the laboratory tests were performed on the batches in Table III of the clinical report. Effort was directed to improvement of the laboratory test, so as to take full advantage of direct comparison with a standard sample of constant potency. Meanwhile we had replaced the original reference sample of insulin solution by a purified, dry preparation which could be relied upon to retain its potency unchanged. A similar preparation, made at the request of the International Conference on Biological Standards, has now been accepted for international use, and the unit of insulin has been defined by the Insulin Committee of Toronto in terms of that standard preparation.

THE METHOD OF COMPARISON

In the experience of this laboratory, as also in that of Macleod and Orr, it has been found repeatedly that, for either of two reasons, convulsions may fail to occur in a

rabbit injected with a dose which produces them in others. The rabbit may be abnormally insensitive to the action of insulin on the blood sugar, so that this only falls to a small extent, or, on the other hand, the rabbit may be quite normally sensitive, according to the indication of the effect on its blood sugar, but show practically no symptoms.

We might distinguish these two types of insensitiveness to the convulsant action of insulin as "metabolic insensitiveness" and "neurotic insensitiveness." The latter condition, in which the rabbit may exhibit no overt abnormality, though its blood sugar fall as low as 0.05 per cent, can apparently be developed to some extent by habituation. It is certainly much commoner in rabbits which have been used for many tests with these larger doses than in those which have been so treated a few times only.

In view of these facts, it is obvious that no reasonably accurate estimate of the activity of a sample can be made from the proportion of convulsions observed on a small number of rabbits, and, indeed, we are informed that those who have used this method with success have found it necessary to use relatively enormous numbers in order to obtain consistent results. Attention has therefore been directed to determining as accurately as possible the hypoglycaemic response to a subconvulsive dose, as involving fewer factors of possible variation than those which must complicate the tests based on observation of convulsions or death. Thus direct determination of hypoglycaemic effect is the basis of Macleod and Orr's method, as now used by the Insulin Committee of Toronto. But, in that form of the test, individual differences and periodic fluctuations of metabolic sensitiveness remain, and have to be eliminated as far as possible by many repetitions. Our aim has been to make the test based on blood sugar determinations strictly comparative, and to eliminate individual variations altogether, by using the same animals for the test on the unknown sample and on the standard.

The matter would be simple if the animals, though differing widely among themselves, exhibited an individual constancy of reaction. It would only be necessary to standardize each rabbit by determining its reaction to a given dose of the standard, with which the reaction to a dose of the sample could then be compared. For some time we experimented with this method of comparison, but control experiments, in which the same group of rabbits received the same dose of the same preparation once a week, brought to light the fact that each rabbit showed, in varying degree, fluctuations of response on either side of its characteristic average. It might be supposed that, if a sufficient number of animals were used, these fluctuations would tend to cancel one another, but we found pronounced tendency to a simultaneous rise or fall from the characteristic averages affecting all the rabbits together.

No increase in the number of animals used could eliminate a variation affecting the whole stock. On the other hand, if the variations were really simultaneous and equal, we could eliminate their effect entirely by dividing the rabbits used for the test into two equal groups—one receiving the sample under test and the other the standard preparation—and then repeating the test a few days later with reversal of the groups. This method has been used here for some time, and was employed in that later part of the present comparison which was officially organized.

It is not suggested that the periodic fluctuations really show the strict parallelism required to make the method perfect. Different animals would appear to vary in their tendency to these fluctuations. All that is claimed is that the method, by ensuring that each rabbit receives both the sample under test and the standard, and that the effect of day-to-day variations is spread as evenly as possible over the whole series, eliminates the effect of permanent individual differences altogether, and that of periodic variations as far as is practicable.

DETAILS OF METHOD

The details of the method employed were as follows:

1. Choice and Care of Stock

There is no restriction on the breed of rabbits used, but greater uniformity in response is aimed at by eliminating from the stock all rabbits in which a dose of 1 unit per kilogram produces convulsions (usually about 15 per cent of the rabbits), and all those

which prove to be abnormally insensitive. Their weight should be between 2 and 3 kilograms.

The temperature of the animal room and of the room in which the tests are carried out, is maintained as nearly as possible at 65° F. throughout the year. The diet consists mainly of oats (about 100 grams a day for a rabbit of 2 kilos) with cabbage leaves and fresh grass when obtainable. A diet containing sweet turnips was discontinued owing to the rapid decrease in sensitiveness which followed.

Twenty-four hours before a test all food and litter is removed from the cages of the rabbits to be used, but water is left till just before the commencement of the test. Rabbits should not be used more than twice a week and the stock should be large enough to enable each rabbit to have a frequent rest.

2. General Procedure

A batch of not less than six rabbits having been prepared for test by withholding food as above, samples of blood for the estimation of blood sugar are obtained by puncture from the lateral ear vein, a vigorous circulation being promoted by warming the ear over a carbon filament lamp and by friction if necessary. Slightly more than 1 ccm of blood is collected in a small glass vessel containing a trace of powdered potassium oxalate and the estimation of blood sugar carried out according to the method of Shaffer and Hartmann (1920). This method lends itself well to a large number of estimations, but any other suitable method may be used.

A sample of blood for the estimation of the normal fasting blood sugar is taken immediately before the injection and further samples at every hour subsequently over a period of five hours. It is felt that by this means a more accurate picture of the hypoglycaemia following the injection is obtained than by determining the blood sugar level at only three intervals after injection as in Macleod and Orr's method. The period of five hours as used by Macleod and Orr for the duration of the experiment, is adhered to as in our experience the blood sugar usually returns to about the normal level at the end of five hours.

The injection is given subcutaneously. To obtain a suitable volume for injection, commercial samples of the usual strength—namely 20 units per cubic centimetre—should be diluted ten times with distilled water and the appropriate volume injected with a syringe graduated to 0.01 ccm (tuberculin syringe).

Half the rabbits are injected with a dose of the standard preparation (diluted as above said) adjusted to the weight of the rabbit, and representing 1 unit per 2 kilograms while the other half are given a theoretically corresponding dose of the sample under test (see 3 below). After an interval of at least three days the test is repeated on the same batch of rabbits with the difference that the rabbits which previously received the standard are now injected with the unknown sample and vice versa.

3. Choice of Dose

Consideration must be given to the fact that the effect on blood sugar does not increase in direct proportion to the dose but reaches a limit as the convulsant dose is approached. Equal hypoglycaemic effect does not necessarily imply equality of dosage when the doses employed fall near the region of the convulsant dose. It is desirable therefore to choose a dose as far below the convulsant limit as is consistent with obtaining a reaction of sufficient magnitude to be reasonably free from experimental error. A dose of 1 unit (one third of the generally convulsant dose) per 2 kilogram rabbit is found to fulfil these requirements especially when abnormally sensitive and insensitive rabbits from the stock are eliminated as recommended above. Where the general level of sensitiveness of the rabbits is high a smaller dose should be employed—for example 0.8 unit per 2 kilograms.

It has been our custom to adjust the dose to the weight of the rabbit, but there seems to be no reason why body weight should not be regarded as an individual characteristic for the short period occupied by the test and the simpler plan adopted of giving all the rabbits the same amount of injection regardless of their weight. In this case, however, it would seem desirable to set narrower limits on the weights of the animals used.

Although by reference to Table B it may be possible to compare unequal doses with a fair degree of accuracy the most reliable results are obtained when the dosage of the unknown preparation is adjusted so as to be reasonably near the dose of standard used—namely 1 unit per 2 kilogram rabbit.

4. Calculation of Hypoglycaemic Effect

If the test is used in this way as it is primarily intended to be used—namely to compare the effects of two approximately equal doses—the exact relation between hypoglycaemic effect and dose is of little moment and so long as we can arrive at a figure truly representing the hypoglycaemic effect it is unnecessary to bring it into relation with any absolute unit of reaction such as the convulsant dose. For this reason we were led to abandon the Macleod and Orr formula and to adopt the more convenient percentage blood sugar reduction.

This figure—namely the average reduction in the blood sugar over a period of five hours following the injection expressed as a percentage of the initial blood sugar—is arrived at by subtracting the mean of the five hourly blood sugar estimates following the injection from the initial estimate and expressing this difference as a percentage of the initial blood sugar. The following example will make this clear. Initial blood sugar 105 mg per 100 ccm. Blood sugar at 1 2 3 4 and 5 hours after the injection = 65, 61, 83, 88 and 99 mg per 100 ccm respectively. The mean of the figures for the five hours following the injection is 80 so that the figure for the hypoglycaemic effect is

$$\frac{105 - 80}{105} \times 100 = 24.5 \text{ per cent}$$

STRENGTH OF INSULIN PREPARATIONS

Having calculated the percentage blood sugar reduction in this way for each injection we now find the sum of all the figures relating to the injections of the sample, and of all those relating to injections of the standard. A comparison of these two totals will then indicate whether the particular dose of the standard under test is more or less active than that of the standard preparation and approximately the extent of the difference.

TRIAL OF THE METHOD

The essential requirements for the validity of the method, applied in this manner, are that equally active doses should give equality of effect and that differences in dosage should be made manifest by roughly proportional differences in effect. To what extent these requirements are satisfied may be gathered from a consideration of the following results of experiments, in which (1) the standard preparation was simply substituted for the unknown sample, so that, in effect, the activity of the standard preparation was compared against itself, and (2) the effects of various proportional doses of the standard were compared with that of the standard dose of 1 unit per 2 kilograms.

1. Comparison of Equal Doses of the Standard Preparation

The results of a typical experiment are set out in the following table

TABLE A

Rabbits receiving Standard Preparation (1 unit per 2 kilos)	Percentage Blood Sugar Reduction	Rabbits receiving Sample (in this Case Standard Preparation—1 unit per 2 kilos)	Percentage Blood Sugar Reduction
First day—			
No 7	52.2	No 43	37.0
No 8	49.3	No 44	40.6
No 9	35.8	No 45	41.7
	117.3		119.3
Second day—			
No 43	49.6	No 7	39.1
No 44	44.5	No 8	53.1
No 45	41.8	No 9	48.6
	136.0		140.8
Total for both days	253.3		260.1

It will be seen that although the rabbits as a whole gave a greater response on the second day than on the first, the totals for the whole test differed by only 2.7 per cent. Theoretically they should be identical. This is the type of variation which the cross over test particularly aims at eliminating. In addition to this however, erratic responses in single rabbits are occasionally encountered. In order to minimize the effect of these it seems desirable to employ more than six rabbits for a test. The percentage differences between totals in ten such tests were 1.4, 0.2, 2.7, 13.4, 15.8, 3.9, 1.9, 5.0, 2.5, 1.2 and indicate the degree of accuracy to be expected. The standard error for the series is 7.0. Two of the above differences are unusually great and if full data had been available concerning the normal response of the rabbits concerned, might have been eliminated. They have been included to show the method at its worst as well as at its best. If these are eliminated the standard error is only 2.5.

2. Comparison of Unequal Doses of the Standard Preparation

As already pointed out it is not sufficient merely that equal doses should produce equal effects; a significant difference in dosage must further give rise to an unmistakable difference in effect. In order to determine what difference in effect was produced by a difference of 10 per cent in the dose further tests were carried out on the lines of those already described with the difference that a dose of nine tenths of a unit was compared with the standard dose of 1 unit per 2 kilogram rabbit. The results were 92.5, 93.6, 91.4, 96.0, 89.0, 97.9, 97.2, 98.5, 91.5. The mean of all the tests gives a figure of 94 per cent effect of 1 unit, while the variation from the mean is 3.1. Similar series of tests were carried out on other proportional doses. The results of all the tests are summarized in the following table from which the potency of a sample giving a total hypoglycaemic effect different from that given by the standard may be roughly estimated.

TABLE B—Effect of Unequal Doses

No of Tests	Dose, as Percentage of Standard Dose	Effect as Percentage of Effect of Standard Dose	Standard Error
7	110	106	3.7
10	100	100	7.0 (2.5)
10	90	94	3.1
7	80	83	6.3
7	75	78	10.7

A Simplified Procedure

The desirability of using more than six rabbits for a test has already been indicated. With a view to enabling this to be done, by reducing to a minimum the labour involved in taking samples of blood and estimating the blood sugars, trials have recently been made in which the mean value of the blood sugars for the five hours following the injection has been determined directly on a pooled sample. It is then only necessary to collect 0.2 c.c. of blood at each hour, the five-hourly samples for a particular rabbit being delivered into the same tube containing 8 c.c. of N/12 sulphuric acid. It is better, however, to take all samples in duplicate, so that 0.4 c.c. of blood is taken at each bleeding. At the end of the experiment the whole is defecated by the addition of 1 c.c. of 10 per cent sodium tungstate. This simplified procedure is found to give results agreeing closely with those based on separate 1 c.c. samples, taken at the same times, estimated separately, and arithmetically averaged.

Using this method, it is quite practicable to conduct a test on ten or twenty rabbits, and so minimize the error introduced by occasional erratic responses.

III—CLINICAL ASSAYS OF INSULIN PREPARATIONS

BY G. A. HARRISON AND R. D. LAWRENCE
Commercially manufactured insulin became generally available in Great Britain in 1923. In those early days it was obvious clinically that batches from different sources varied widely in strength (Table I). It was necessary, however, in order to save the lives and relieve the sufferings of diabetics, to place insulin on the market as quickly as possible.

TABLE I—Comparison between Two Batches of Insulin under Identical Conditions and in a Single Day (G. A. H.)

Period after Insulin	Blood Sugar Mg per 100 c.c.	
	Batch A (10 Units)	Batch B (40 Units)
Immediately before		220
One and a half hours	05	223
Two and a half hours	164	174
Four hours	113	110

It will be seen that 20 units of Batch B was not so efficacious as 10 units of Batch A. This comparison was made in early days (1923) before the methods of standardization were satisfactorily established. Batch A was made by a different firm from Batch B. Such gross differences are probably never to be met with nowadays. Certainly two batches made by the same firm would never exhibit such wide differences now.

Complaints from clinical workers as to variations in the potency of different batches were very few and then some times contradictory. This no doubt, was mainly due to two reasons. First, very few physicians maintained the blood sugars of their patients for long periods close to the level at which hypoglycaemic symptoms occur, and most therefore failed to observe variations in the strength of different batches. Secondly, all physicians were intent on learning how to use the drug to the best effect, and were trying different doses and methods of treatment, and therefore

TABLE II—Clinical Comparison of Different Batches of Insulin which had been passed as of Uniform Strength as a Result of Rabbit Tests (R D L)

Hours after First Dose of Insulin	April 15th 1924		April 16th		April 17th		April 18th		April 19th		April 20th		April 21st	
	Batch C 18 and 14 units		Batch D 18 and 8 units		Batch E 18 and 14 units		Batch F 18 and 12 units		Batch E 18 and 12 units		Batch D 14 units and Batch F 12 units		Batch G 18 units and Batch I 12 units	
	Glycos- uria	Glyc aemia	Glycos uria	Glyc aemia	Glycos -uria	Glyc aemia	Glycos uria	Glyc aemia	Glycos uria	Glyc aemia	Glycos uria	Glyc aemia	Glycos uria	Glyc aemia
0	0	150	0	165	v sl tr	182	0	165	0	167	0	0	0	157
1	+	—	0	—	++	—	0	—	v sl tr	—	—	0	—	—
2	+++	—	0	92*	+++	—	sl tr	—	+	—	0	traco	—	—
3	++	—	0	—	—	—	0	—	trace	—	—	+	—	—
4	trace	160	0	105	trace	157	0	92	0	146	0	sl tr	171	—
5	v sl tr	—	—	—	0	—	—	81*	—	—	—	0	—	—
6	—	—	0	—	0	—	0	—	—	—	—	0	—	—
7	sl tr	165	—	—	—	—	0	145	—	—	—	v sl tr	137	—
8	—	—	0	—	—	—	0	—	—	—	—	—	—	—
9	v sl tr	—	—	—	—	177	—	—	v sl tr	—	trace	0	—	—

Note—Breakfast half an hour and lunch four and a half hours after insulin. Second dose of insulin given eleven hours after first. Glycaemia 85 mg per 100 c cm blood.

* Hypoglycaemic symptoms. 5 grams of sugar given April 16th but no sugar on April 18th.

described observed changes to factors other than insulin. It was only later that constant methods and refinements in handling patients led to the detection of small variations in the strength of different batches.

Early in 1924 a few workers, whose plan was to keep the blood sugars of their patients fairly normal (between 180 and 80 mg per cent), and who were employing large doses of insulin to do so in severe cases, reported that the variation in the potency of insulin was sometimes very noticeable. A typical experiment by one of us (R D L) is given in Table II, and the conclusions in Table III are based on such experiments. It was further noted that the results of assay on rabbits and of clinical tests on human patients occasionally showed marked discrepancies.

Early in 1925 we began the clinical assay of the specially selected series of samples, under the conditions mentioned above by Dr Dale. We always worked independently of each other, and on different patients. At the end of the inquiry the results from the three sources—the National Institute, the Hospital for Sick Children, and King's College Hospital—were compared. A summary is given in Table IV. It will be seen that, considering the many incompletely controllable factors (such as a variable glycogen store, etc.) inherent in such experiments, the three sets of results are exceedingly close to one another.

TABLE III—Comparison between Rabbit Tests and Clinical Tests in 1924

Results Expressed as Percentages of a Common Standard

Batch No	Rabbit Tests (H P M)	Clinical Tests (R D L)	Batch No	Rabbit Tests (H P M)	Clinical Tests (R D L)
D	67	100	I	100	100
H	100	100	N	95	70
C	83	63	J	100	100
G	120	70	K	93	145
E	95	63	L	87	70
F	120	90	M	100	100

It will be noted that Batch I is 100 per cent in Table III and 80 per cent in Table IV. In the summer of 1924 it was 100 per cent according to both rabbit and clinical tests. Six months later it was 80 per cent according to clinical tests. As a result of repeated clinical tests its potency appeared constant at 80 per cent for the next five months. At the end of eleven months the total rabbit tests resulted in a figure of 80 per cent of the standard. It would appear,

TABLE IV—Comparisons between Rabbit Tests (Marks's Method) and Clinical Tests in 1925

Results Expressed as Percentages of a Common Standard

Batch No	Rabbit Tests (H P M)	Clinical Tests		Batch No	Rabbit Tests (H P M)	Clinical Tests	
		R D L	G A H			R D L	G A H
I	80	71	80	S	112	104	112
O	75	80	80	T	106	100	103
P	124	127	119	H	100	100	94
Q	100	100	100	U	120	125	133
R	95	90	80				

therefore, that some solutions of insulin may deteriorate with long keeping.

We have been led by this comparative experiment to the following conclusions:

1. Rabbit tests by Mr Marks's method are quite satisfactory for the control of the potency of different batches of insulin for clinical use.

2. Clinical tests, if carefully carried out, are quite as delicate as the best of rabbit tests. Owing to the practical difficulties of clinical testing it is fortunate that they are not essential for the final adjustment of the strength of batches of insulin for clinical use.

3. There would appear to be no evidence of any fundamental difference in the results of tests performed on normal rabbits and on diabetic patients.

4. To exclude variations in potency which might be inconvenient in the clinical use of insulin, it would appear sufficient to recommend that only variations exceeding 10 per cent from the standard need be corrected before issue. The method of assay described by Mr Marks appears to be adequate to secure this.

5. Some solutions of insulin may deteriorate when kept for several months.

METHOD OF PERFORMING CLINICAL TESTS

The five selected patients had been on a fixed daily intake of carbohydrate, protein, fat, and calories for many weeks or months before the period of the tests. The insulin (two doses daily) had been carefully adjusted so that there was no glycosuria (or at most occasional traces) at any time. The blood sugars usually varied between 60 and 200 mg in each twenty-four hours. In the intervals between tests the patients were continuously on the same batch of insulin (Batch I at first, and Batch Q later in the period under review). They were all out-patients and arranged and weighed their own diet.

On the day before each test and on each of the test days the diet was identical, not only in its total food values, but also as regards the articles of food taken. Likewise every detail of the patients' daily routine (the amount of exercise, etc.) was made as exactly alike as possible on each of these days. Charts 1 and 2 show how almost identical curves can be obtained on different days under standard conditions with the same dose of the same batch of insulin.

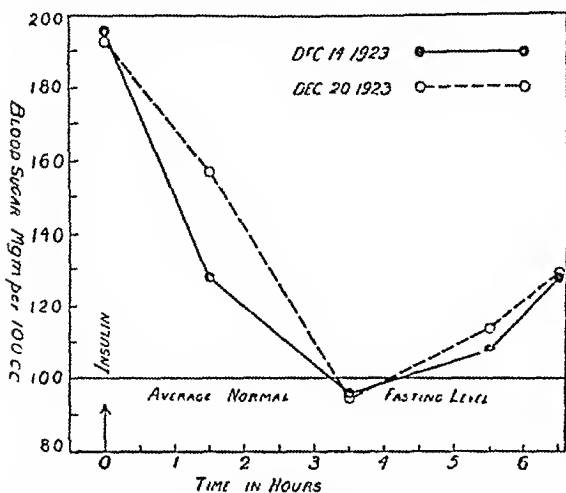


CHART 1—Blood sugar curves with an interval of six days after the same dose of the same batch of insulin, and on the same diet

Under these conditions it is fair to conclude that differences in the blood sugar curves are due to variations in insulin alone.

On the first test day the usual dose of the standard batch (I or Q) was administered half an hour before breakfast. The sugar content of the blood was estimated before and at hourly intervals after the insulin for five or six hours. The blood sugar results were then plotted. On the second

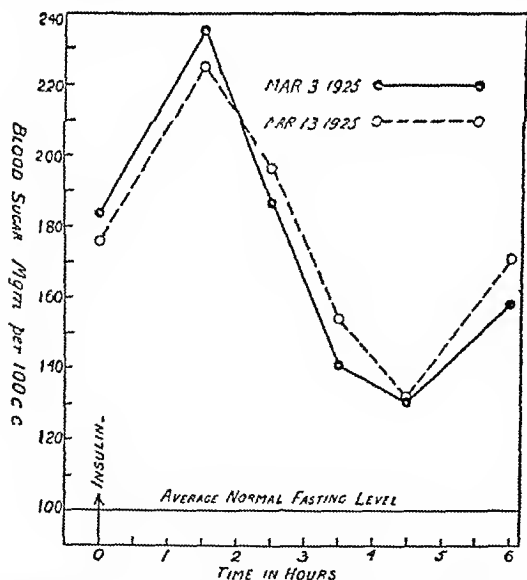


CHART 2—Blood sugar curves with an interval of ten days after the same dose of the same batch of insulin, and on the same diet

day what was judged to be the equivalent dose of the second batch of insulin (usually the same dose, unless we had obtained previous evidence to the contrary) was injected instead of the standard batch. The second curve so obtained was plotted beside the first. When the curves practically coincided, the doses of the two batches were regarded as equivalent. If the curves did not coincide the test was repeated, making a suitable alteration in the dose of the second batch of insulin. Sometimes the standard was given on the second and the unknown on the first test day. The tests were confined to the five selected patients, who had

much experience in tests of this kind, involving accurate quantitative dieting. Three of the cases were severe and

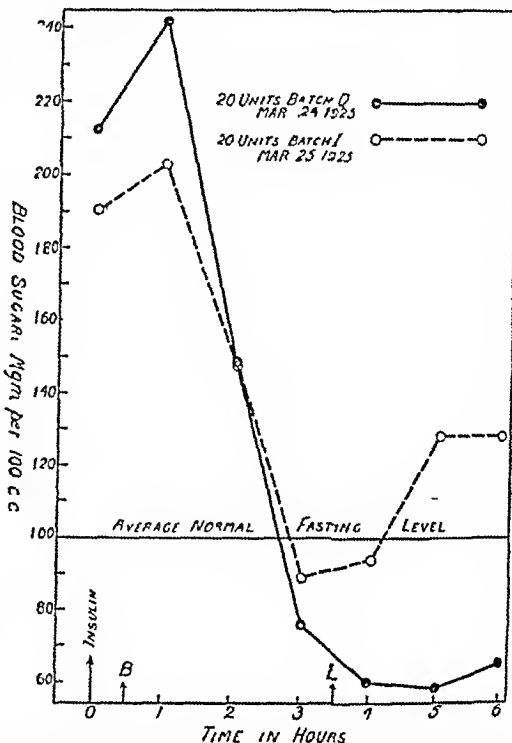


CHART 3—Comparison of Batch Q and Batch I (first test). B=Breakfast (half an hour after insulin) of carbohydrate 15 grams, protein 15 grams, fat 45 grams. L=Lunch (three and a half hours after insulin) of carbohydrate 15 grams, protein 20 grams, fat 35 grams. Batch Q is obviously stronger than Batch I. It was estimated from the curves in Chart 1 that about 16 units of Batch Q would be the equivalent of 20 units of Batch I. The test was therefore repeated a week later (See Chart 4).

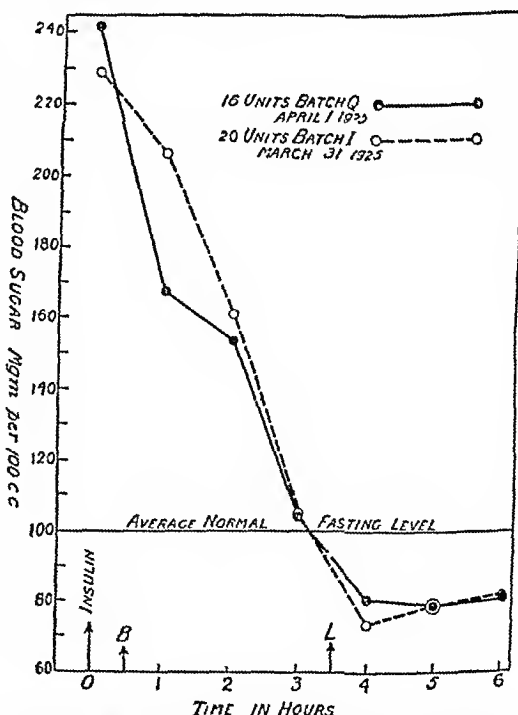


CHART 4—Comparison of Batch Q and Batch I (second test). B=Breakfast (half an hour after insulin) of carbohydrate 15 grams, protein 20 grams, fat 45 grams. L=Lunch (three and a half hours after insulin) of carbohydrate 15 grams, protein 20 grams, fat 35 grams. Sixteen units of Batch Q are equivalent to 20 units of Batch I or, taking Batch Q as 100 per cent, Batch I is 80 per cent.

two moderately severe, thus differing in their power to produce endogenous insulin. But in spite of this the results

obtained in these five individuals were remarkably constant, and in some fifty tests rarely differed more than 10 per cent from the average results given in Table IV. The results are expressed as percentages of the standard Batch Q. Charts 3 and 4 illustrate the manner in which the tests were performed.

It was soon found that certain conditions, apart from the standard conditions mentioned above, had to be observed if the tests were to be trustworthy. Hypoglycaemic symptoms had to be avoided to obtain comparable curves. When an excess of insulin was given, the second half of the curve tended to be flattened out at a level of about 70 to 90 mg per cent, the blood sugar falling but slightly although the action of insulin was still potent (Chart 5). The next dose—that is, the evening dose—of insulin also appeared unusually efficient. Presumably the failure of the curve to continue its fall was due to the extra call to mobilize glycogen as a response to hypoglycaemia, and the unusually good response to the next dose of insulin was due to the fact that there was less glycogen upon which to draw. The best comparisons were obtained when the fasting levels on the two days were approximately the same. Comparisons between standards and unknowns were invariably made on consecutive days. It was of little value to make comparisons when marked hyperglycaemia and glycosuria were present. This would be expected owing to the difficulty of ensuring that the same quantity of dextrose “escaped” the action of insulin in tests lasting for relatively short periods.

All determinations of blood sugar were made in duplicate

and the mean taken. Maclean's method of estimation was used throughout. The dose of insulin was measured in a 1 c.c. syringe graduated in hundredths. Subcutaneous injections were given by the same person in one limb one day and in the corresponding site in the opposite limb on the next day.

An attempt was made to work out an arithmetical method

of comparing different batches. The one which gave the most uniform results was a comparison of the totals of the blood sugar figures obtained on the different test days. For example, if with the same dose of different batches the totals were 500 and 750 mg, the second batch was taken as 50 per cent weaker than the first, the standard batch. This gave results closely similar to the plotted curves. When the initial fasting level were different by 10 or 20 mg, an adjustment was made by subtracting 10 or 20 mg from all the figures, and in most cases this gave very satisfactory results. Thus, if one fasting level was 10 mg higher than the other, and six blood sugar estimations were made, before making the arithmetical comparison 60 mg were subtracted from the higher fasting level total. Sometimes these corrections

gave results which were manifestly inaccurate, especially when the fasting levels were 30 or more milligrams apart. Other arithmetical calculations based on the fall of the blood sugar—either total or over various parts of the curves—were still more inaccurate, and the comparison of the general appearance and range of the plotted curves was found to be far the most consistent mode of comparison.

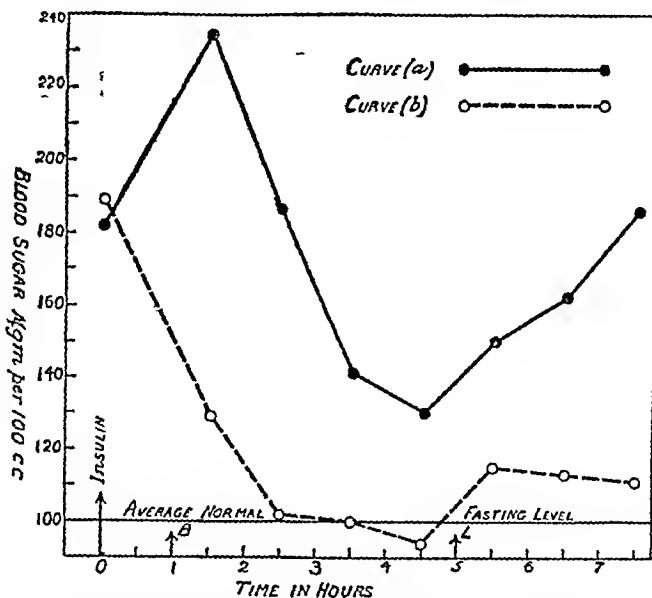


CHART 5.—Effect of hypoglycaemia on the shape of the curve. Curve (a). Insulin was not given in doses sufficient to produce hypoglycaemia. It will be noted that the blood sugar was falling rapidly between the tests at two and a half and at four and a half hours. Curve (b). A larger dose of insulin was given, hypoglycaemic symptoms started at the end of three and a half hours and continued until lunch (four hours forty minutes). It will be noted that Curve (b) is flattened out between two and a half and four and a half hours whereas Curve (a) is falling steeply at this period. B=Breakfast L=Lunch.

RIGHT-AND LEFT-HANDEDNESS IN PRIMITIVE MEN*

BY

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THE statement that the fossilized skull recently found in London was that of a left-handed woman has given rise to widespread incredulity, which in some cases has found expression even in derision. This has not been entirely allayed by the statement published in the *BRITISH MEDICAL JOURNAL* of November 7th, in which I called attention to the very definite evidence provided by the fossilized skull of the reversal of the normal asymmetry of the brain case, and the reasons for associating this reversal with the condition of left-handedness. In that communication (as well as in the *BRITISH MEDICAL JOURNAL* of August 29th, 1908, p. 596) I called attention to the fact that in the winter of 1907-8 Professor Wood Jones and I investigated the significance of this reversal of the asymmetry of the brain case, accepting as the criterion of right- or left-handedness respectively the observation whether the right or the left humerus was the longer and stronger. In the *cranium* I found that the asymmetrical impressions upon the occipital bone were reversed in those cases where the left humerus was longer and more robust than the right.

The question has been raised by several critics as to the validity of these inferences from the size of the humeri as indications of right- or left-handedness. Since 1845, when Arnold raised this problem for consideration, an extensive literature has accumulated from the repeated discussions of the asymmetry of the human body and the difference in the length of the right and left arms. An admirable summary of these discussions is given by the late Professor Grupp in two small books published at Jena in 1909†. On page 7 of the former he summarizes the researches of Arnold, Rollet, Matiegka, Hasse, Dehner, and Guldberg on the question of the excess in length of the left or right arm, and shows that these differences are usually associated with left- and right-handedness respectively. However, he calls attention to the fact that at the time of birth the length of the bones in the two arms is identical. In other words the asymmetry manifests itself in the course of post-embryonic life. Grupp further points out that occasionally it happens (in people whose occupation compels them to exercise the left arm more than the right) that a person with a congenital tendency to right-handedness may have longer and stronger bones in the left arm. This state of affairs, however, is altogether exceptional, and should not be allowed to discredit the clear inference from a large mass of evidence that the length of the arm bone in the great majority of cases is a safe indication of right- or left-handedness.

* Address to the Westminster and Holborn Division at the Social Evening on December 2nd.

† *Über die Rechtshändigkeit des Menschen und die normalen Asymmetrien des menschlichen Körpers*.

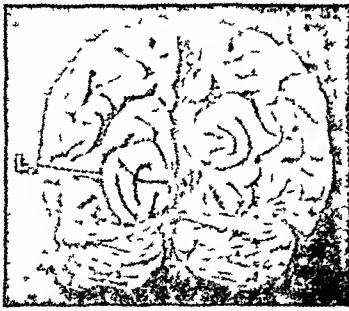


FIG. 1.—The posterior aspect of the brain of an Englishman with large lunatic sulcus (L) on the left hemisphere



FIG. 2.—Similar view of the endocranial cast of the London skull with the large lunatic sulcus (L) on the right



FIG. 3.—Similar view of the endocranial cast of *Pithecanthropus* with large lunatic sulcus (L) on the right hemisphere and a small and smaller sulcus (S) on the left

[Drawings by A. K. Maxwell]

During the course of his work in Nubia in 1907 Professor Wood Jones attempted to correlate his observations on the skeletons of the ancient inhabitants of Nubia with the conditions found in living Egyptians, and he discovered that in right-handed living people the left clavicle was longer and thinner than the right. Then, proceeding to examine the bones in the skeletons, he found in those cases where the right humerus was longer and stronger than the left that the left clavicle was longer and thinner than the right. Moreover, he found that when the clavicular condition was reversed (and the right one was longer and slenderer than the left) the left humerus was then the bigger bone. He regarded this as a confirmation of the use we had made of the humerus as an indication of right- or left-handedness.*

Looking through any extensive collection of measurements of human skeletons, it will be found that the means of the lengths of the right humerus are definitely greater than those of the left.

The asymmetry of the brain (Fig. 1) that is associated with this asymmetry of the limbs is not restricted to modern man. It is characteristic of the human family as a whole, and it seems to be one of the distinctively human traits revealed in most of the known fossil material. For instance, in the cast of the brain case of the La Chapelle man, which has been described by Professors Boule and Anthony, a large lunatic sulcus is shown upon the left hemisphere, and in this skeleton the right humerus is longer than the left. In the Neanderthal group as a whole, however, the asymmetry of the posterior ends of the cerebral hemispheres is much less obtrusive than it is in most of the other groups. But in the cast of the brain case of the Rhodesian man the lunatic sulci are as nearly symmetrical as they are in the anthropoid apes. In the London skull, as I have already pointed out (this JOURNAL, November 7th, p. 854), the asymmetry is reversed (Fig. 2). In the course of the discussions this statement has excited I realized the fact, which had escaped my attention before, that the same type of reversal is found in the cast of the most primitive human brain case available for examination—that of *Pithecanthropus* (Fig. 3). In examining this cast a very large and distinct lunatic sulcus (L) is found upon the right hemisphere. On the left (S) it is so indistinct that its identity is doubtful, but the area behind it is much smaller and especially less prominent than that of the right side. As in the London skull, the superior longitudinal sinus turns in the normal way to the right side, but for the reasons which have already been given in the case of the London skull, there can be no doubt that this earliest known human being was also left-handed. The asymmetry of the occipital end of the brain affords corroboration of the view that *Pithecanthropus* was definitely a member of the human family. In other words, the asymmetry of the brain is as old as the human family itself, and is a fundamental character distinguishing man from all other members of the order Primates.

Attempts have been made in the past to determine whether extinct members of the human family were right- or left-

handed by a study of the implements made by these people. But so far as I am aware no one has attempted to solve the problem directly by a consideration of the fossil remains of man himself. The evidence of asymmetry of the brain to which I have called attention throws a light on this problem that is much more reliable than any inference which can be made from man's handiwork.

The question naturally suggests itself whether there is any trace of asymmetry in the anthropoid apes. It can be seen at a glance that although the two cerebral hemispheres in the anthropoid apes are approximately symmetrical and do not reveal the obtrusive asymmetry found in most human beings, the superior longitudinal sinus does not always split into branches of equal size as so frequently happens in the lower apes. In the gorilla, in particular, the sinus often turns to one or the other side, and there seems to be a slight preference for the right side, as in the case of the human sinus. Although there is no definite asymmetry in the brain, some interesting facts, collected by Graup from the writings of Mollison, von Bardeleben, and others, suggest the remarkable conclusion that the bones of the right arm are longer than those of the left arm in the gibbons and orangs (as in man), but the bones of the left arm are the longer in the chimpanzees and gorillas. These writers contrast this asymmetry in the anthropoid apes with the symmetrical condition found in the monkeys. Though there is no obvious asymmetry of the brain, there seems to be in the (apparently ambidextrous) anthropoid apes an instability that affects the symmetry of the limbs, although neither the right nor the left is so definitely selected as in the case of the vast majority of human beings.

Taking into consideration the fact that the cortical territory concerned in the causation of the lunatic sulcus is the visual area, it is of some interest to note that B. S. Parson, in his book *Left-handedness* (1924), came to the conclusion that the ocular dominance—that is, the use of one eye for fixation—determines both cerebral dominance and the "handedness" of the individual.

The apparent asymmetry of the visual cortex, that of the left side associated with the right field of vision appearing to be considerably bigger than the right, at one time deceived me into believing that the area striata was actually bigger on the left than on the right side. But careful measurement of this region in the two hemispheres ultimately convinced me that appearances were illusory, the apparent differences being due, not to the contrast between the visual areas of the two hemispheres, but to the mode of packing. The larger parietal area on the right hemisphere usually pushes back the area striata further than happens on the left†.

In all these discussions it must be remembered that even if the right- or left-handedness does not make its appearance until well on in the first year of life, it is due to congenital tendencies that manifest themselves at this relatively late time. It must also be remembered that these congenital tendencies may in many cases be overcome to a considerable extent by training, so that it is possible to get a brain showing the asymmetry distinctive of left-handedness with limbs which show the conditions usually associated with right-handedness.

* The reference to this observation is found in the Report on the Human Remains (p. 25) in the First Annual Report of the Archaeological Survey of Nubia for 1907-8, which was published at Cairo in 1910.

† See my memoir in *Anat. Anzeiger*, 1907, Bd xxx p. 574.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL
MEETING, BATH, 1925SECTION OF LARYNGOLOGY, OTOTOLOGY,
AND RHINOLOGY.

ARTHUR H. CHEATLE, C.B.E., F.R.C.S., President

DISCUSSION ON
OPERATIVE TREATMENT OF CHRONIC
MIDDLE-EAR SUPPURATION

OPENING PAPERS

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It will be my endeavour briefly to put before you certain of my own experiences, and to suggest for the following discussion certain points which arise from them and from my study of the work of others on this subject.

In considering the operative treatment of chronic otorrhoea I understand that we have to regard the lesion causing the chronic discharge as one which cannot be affected by treatment of the nose, nasopharynx, or Eustachian tube, and which must be dealt with by operative treatment of the posterior part of the middle-ear tract. Operations in cases of chronic suppurative disease of the middle ear are undertaken primarily for the removal of the conditions which are potentially dangerous, and secondarily in order to get rid of an offensive state which often necessitates a good deal of care and daily attention, also, in some instances, with the possibility of improving the hearing.

It may be as well to review the whole situation in order that we may be clear as to the points of discussion. For many years the radical mastoid operation was considered the only one for cases of chronic otorrhoea, though Schwartz employed his method for chronic as well as for acute cases, no doubt with a certain amount of success. There were instances of chronic discharge in which the perforation was in the outer attic wall, the hearing being still good, and in these operation was delayed until there was evidence of danger in waiting any longer. In recent years many otologists in all parts of the world have been experimenting with methods that are something between the Schwartz and the radical mastoid and which have been termed "conservative mastoid" or "modified radical mastoid" operations. This endeavour to find something better than the radical mastoid operation must have arisen because the latter has been found to be insufficient or defective in some respects.

There can be no doubt that the ordinary procedure does effect the complete removal of the disease, and so puts the patient in a safe position, thus attaining the primary object. When the result is completely successful the ear is dry and comfortable, the hearing is maintained or even improved, and the ear requires no further attention, except that which in some cases arises from the recurrent accumulation of cerumen, etc.

In what, then, does the radical operation fail? The result is not always satisfactory. Sometimes the Eustachian tube in a patient, no matter how carefully this has been provided against. Often the hearing is damaged, and sometimes the ear requires careful attention for years, even when epithelialization has been quite satisfactory. If done for certain attic affections, the resulting loss of hearing may be very marked. Perhaps some members may discuss the possibilities of eliminating some of these defects, but it has been my experience that, even after taking all care, now and again I have been disappointed in some respect with the result in cases demanding this form of procedure.

The conservative or modified radical operation is an endeavour to improve the result of the radical mastoid, and I understand that the object of this discussion is to estimate the values of these various methods of dealing with chronic suppurative middle-ear disease, when the lesion

is primarily in the middle-ear tract behind the Eustachian tube. Whatever operation is done, the objects should be (1) to remove all foci of potential danger, (2) to retain the maximum hearing, and (3) to leave a state of affairs that will necessitate the least possible after-attention. Rapidity of healing should be a secondary consideration.

Any form of modified radical mastoid operation must satisfy these conditions, and in some direction give a result superior to the ordinary radical mastoid, or at any rate cause less disturbance to the patient as regards after-treatment. The ordinary radical mastoid operation removes possibly more than is necessary, in the modified operation our endeavour is to remove only as much as is necessary to attain our objects. To remove only what is necessary requires an accurate knowledge of the pathological condition and of the regional anatomy. The exact nature and situation of the disease are not, however, clear in every case. If we could be quite clear on these points, a good deal of doubt as to the correct procedure would disappear.

We all agree that, when investigating a case of chronic otorrhoea, we should try to discover the nature and situation of the lesion. It may be possible to do this in but a minority of cases, yet there is a broad classification which has been a help in the past in guiding us as to treatment and which still forms the main basis of the modified operation. It is as follows:

There is one group in which the hearing is good, almost as good as in a normal ear, in which, apparently, the mechanism of the middle ear has not been damaged. This group may be subdivided into three: (1) That in which the disease is more or less confined to the attic, though often the antrum is also involved, in these cases the perforation will be in the outer attic wall and in Shrapnell's membrane. (2) That in which the disease is mainly in the antrum and rudus, sometimes the posterior part of the tympanic cavity is involved, especially in the outer wall immediately behind the line of attachment of the tympanic membrane. In this the perforation is usually in the posterior segment and is at times entirely surrounded by membrane, though much more often part of the margin is bony, sometimes, however, it involves the whole drum, often the descending process of the malleus can be seen articulating in an apparently normal manner with the head of the stapes. (3) That in which there is a combination of the two conditions just mentioned. We are all familiar with this group, in which the middle ear deafness signs are very slight and yet the potentiality of danger is present. Often such patients apply for treatment because of some loss of hearing, which frequently can be corrected by inflation.

The second group includes those cases in which the middle-ear conducting apparatus has been involved. The hearing may be very bad, although at times, even with destruction of the descending process of the malleus, whisper may be heard at 18 feet. The perforation is similar to that found in subdivision (2) of the first group. In the cases there is usually no improvement with inflation, and the patient often volunteers the information that the hearing is better after syringing. At times the wool wick gives marked improvement. In the majority of these cases the descending process of the malleus has been partially destroyed and is commonly in a state of active caries. If the perforation is happily situated it may be possible to recognize the diseased condition of the malleus, although in a considerable number of instances there is no positive clinical evidence of this prior to operation. In the great majority of cases, however, in which a radical mastoid operation has been done for clinical reasons, disease of the malleus has been discovered.

A third group includes those cases in which there is evidence of a gross lesion of the wall of the labyrinth or of the labyrinth itself.

Granulations, polypi, and cholesteatomata may, of course, be found in any of these groups. It has been my practice when granulations and polypi are present not to attempt to classify the case until they have been removed or sufficiently reduced to enable me to come to a decision.

Without going into further detail of the clinical features and without considering the variations I think this rough classification, which has been of great use in the past, will

serve for the discussion of the problem before us. Before the modified operation had been considered all cases of the second group would have been dealt with by a complete radical mastoid operation, and perhaps it would be as well first of all to compare the results of this old and tried procedure with those of the modified operation about which there is so much discussion at the present time. It is in this group, in which the conducting apparatus has been damaged, that I have tried the modified radical mastoid operation about to be described, whenever a case presented itself which I thought was suitable. The special clinical features which constitute suitability are the presence of a small perforation entirely or almost entirely surrounded by membrane, and evidence that the incus has been damaged.

Altogether I have operated on 38 such cases in which I diagnosed that the incus had been partially destroyed. In two of these I found that I had removed a sound incus. In a great majority of the others the incus was in a state of active disease. When the hearing was very good I was naturally influenced in favour of an operation which should interfere with the middle-ear region less than would the radical mastoid, but otherwise hearing and hearing tests have not been a deciding factor.

I have preferred the radical operation when there were evidences of a gross lesion of the labyrinthine wall or indications that the labyrinth had been definitely involved, also when there was a large perforation of the tympanic membrane extending to the bony wall, and when cholesteatoma was present. Granulations have not been considered in absolute contradiction to the operation about to be described, but when present I have more commonly tried other forms of modified operation or the radical mastoid.

While considering how to remove the disease completely without interfering more than necessary with normal anatomical formation, I deemed to be present on one occasion when the incus was accidentally removed at a Schwartz operation for acute mastoiditis. The result following this operation was good, the membrane healed and the hearing was satisfactory. This led me to consider the application of the operation to cases of chronic otitis in which I thought the disease was confined to the antrum, aditus, and incus. It seemed probable that it would be a further improvement to obliterate the antrum and mastoid cavity by means of a flap of periosteum. By this procedure I hoped to follow the principles indicated above, believing that all the disease could be removed, that the perforation in the membrane would afford sufficient drainage until healing had occurred, and that the malleus would be only very slightly altered in form. The method is as follows.

A skin-deep incision is made a little behind the line for that of the radical operation, and extending a little lower. The skin is then undermined to the posterior margin of the mastoid and well forward as far as the anterior margin. A vertical incision is now made through the periosteum, almost on the anterior surface of the mastoid process, extending upwards to the supramental triangle. This should not be carried higher than necessary, as an important artery enters the base of the flap at this point. Another vertical incision is made through the periosteum at the posterior margin of the mastoid. A thin periosteum elevator is then passed under the flap from the posterior to the anterior incision, then the flap is separated upwards and downwards. Near the tip of the mastoid it is necessary to cut it away by means of a blunt tenotome. The posterior incision is extended upwards, curving somewhat forwards, and the separation of the flap completed. The flap can then be held upwards and forwards with a blunt-pointed retractor, care being taken to avoid bruising as much as possible. The next step is to open the antrum, and in such a case one has to go through dense bone (Cheatle's diploetic type) such as is always found in this class of case. I now proceed up to a certain point as in a radical mastoid operation, removing the bony external auditory meatus, and thoroughly cleaning out the antrum and aditus, but leaving a fine bridge and then I remove the incus through the aditus. The latter can often be done by a fine pair of forceps or by means of a small scoop. The upper edge of the mastoid cavity is neatly

rounded off so that the periosteal flap may not be in any way compressed when placed in position. The wound is now carefully cleaned, the ragged edges of the flap cut away, and all surfaces are smeared with a mixture of sterilized bismuth subnitrate and iodoform. The flap is carefully placed in the antrum, so that no part of it is in any way crushed, the wound being then closed except in the lower part, where a small wick impregnated with bismuth and iodoform is placed as a drain for forty-eight hours.

In many cases the wound has consolidated in a fortnight, though often the lower part has taken longer to heal. The principal difficulty I have encountered has been a fairly common forward lateral sinus, and I think that the defective healing of the lower part of the wound can be largely got over by removing a little of the outer surface of the lower part of the mastoid. You will see as an exhibit the incuses of these cases, and will note the disense of the descending process.

My object in removing the incus was, first, to eliminate what I considered to be an important focus of disease, which I did not think likely to clear up spontaneously, secondly, by its removal I thought that ample drainage would be provided for the antral region until healing had occurred. Many otologists have used a flap of periosteum in mastoid operations, my object was to occlude the antrum and mastoid cavity as soon as possible.

The results have not been quite so satisfactory as I expected. In many the perforation has persisted and in some remained moist, though the hearing has been good, often so much improved that the patient has been more than satisfied. The moist, or even dry, perforation implies a certain defect which must be regarded as a partial failure, and in some a radical operation has had to be done later. In all cases seen six months or more after the operation the posterior superior wall of the malleus was retracted as if the flap had shrunk, and the eardrum tissue had pulled the membranous meatal wall into the mastoid cavity.

Taking into account the consistent success in acute cases of the Schwartz operation, and having in mind the good result seen to follow accidental removal of the incus, I have been somewhat surprised that the method I have just described has not been more uniformly successful. In a few cases, however, the result has been perfect, the perforation in the tympanic membrane has closed, the malleus has returned in almost normal form, and the hearing has often been much improved.

It is remarkable how good the hearing may be after the extended Schwartz operation with removal of the incus, suggesting indeed, a further study of the function of the ossicles. The following is an example.

A man aged 56, underwent this operation on the left ear in May, 1924, and in April this year the condition was as follows: Perforation in left tympanic membrane closed by cicatrix adherent to the inner wall of tympanic cavity. Weber's test to the left side. Rinne's test right positive to all tones left negative to low tones—to about 256 d.v. Bone conduction (Fischmann fork) diminished in both ears about five seconds. Low tone limit right good left up to about 50 d.v. High tone limit (monochord) right by air 18 cm, by bone 17 cm left by air 22 cm, by bone 17 cm. Conversational voice left and right 24 ft +. Whisper right 24 ft +, left 21 ft +.

The extremely satisfactory results in some cases have led me to try this procedure a little too widely, but in those in which the margin of the perforation is formed entirely or almost entirely by membrane I certainly think that it ought to be tried. In cases unsuitable for this particular operation I have tried intratympanic drainage, with and without removal of the bridge and outer attic wall. In two instances where bone has formed a considerable margin of the perforation, indicating that probably the part of the outer wall of the tympanic cavity behind the line of attachment to the drum was diseased, I have employed a method similar to that described by Bunney. I used a periosteal flap, removed the bridge and outer attic wall, and also the bone forming the margin of the perforation, and the incus. In one case the ear ultimately dried up, in the other the ordinary radical operation had to be done. Later I came to the conclusion that these two cases did not show any advantage over the ordinary radical operation.

My experience of intrameatal drainage has been that, though the hearing in some cases has been well maintained or even improved, there has often been persistence of discharge which necessitated a radical mastoid operation. So often has this occurred that I have rather preferred the radical mastoid operation when the extended Schwartz operation with removal of the incus seemed unsuitable. If I had tried some form of meatal drainage operation in those cases in which I did the extended Schwartz it is probable that I should have had more satisfactory general results from this method, but it is my impression that I should not have obtained any results so perfect as those in some cases treated by the other method. The obvious difficulty in estimating the value of a given procedure is the absence of any control.

With regard to the operative treatment of the first group of cases, I endeavoured at a meeting of the British Medical Association in 1912 to show the value of the Schwartz operation in selected cases of chronic otorrhoea with good hearing and intact incus. Schwartz and others have employed this procedure when the disease seemed to be confined to the antrum and aditus. The operation I have adopted proceeds up to a certain point as described for cases in the second group.

When it has been diagnosed that the disease affects only the antrum and aditus, the operation terminates as a simple Schwartz, or, in one or two cases, has been extended so as to remove the outer wall of the aditus. This, of course, is the operation for acute mastoiditis, and it is also done in cases of persistent discharge following an acute middle-ear condition, and when the clinical features are such as indicated in group 1, subdivision (2). It is not common to find this type of case as a chronic otorrhoea of many years' standing, but when it does occur I do not think there can be any dispute as to the selection of the operation, as we should all agree that the simple Schwartz ought to be tried.

When the disease is in the attic the problem before us is obvious. Here we have a localized disease which frequently causes but slight disturbance of hearing, and it is clear that treatment for the removal of such disease must be carried out in such a way as to endanger the middle-ear apparatus as little as possible. We have all seen cases in which there has been considerable loss of the attic wall from disease, and yet the user involved has completely healed without operation. We have, moreover, seen perforations of the outer attic wall, with long standing discharge, heal soundly after no further interference than removal of a polypus. In all cases of this type in which healing occurs after local treatment only, it is my belief that the disease is confined to the outer part of the attic cavity. Where intrameatal treatment fails it is probable that the whole attic cavity and the antrum are affected. In the latter class of cases there is undoubtedly an element of potential danger which it is obviously the duty of the surgeon to endeavour to forestall. The practice of waiting for indications of danger and then performing a radical mastoid operation is open to criticism. It is clear that an operation that would ensure the same measure of safety as a radical mastoid, without at the same time endangering the hearing mechanism, would be one greatly to be preferred. In the paper read at the British Medical Association meeting in 1912 referred to above I described the extension of the Schwartz operation to include the removal of the outer wall of the aditus and attic in these cases. At that time I had done this on two patients. One of these I had under observation for about two years, and the result was completely satisfactory, the other was satisfactory whilst under observation, about six months. There is no doubt in my mind that this procedure ought to be adopted in this group of cases.

In group 3, where there is evidence of gross drainage to the outer wall of the labyrinth or to the labyrinth itself, I have preferred the old radical mastoid operation, and have not attempted any modification, as I have considered the free drainage afforded by this form of operation important for attaining the primary object of placing the patient out of danger. When I undertook to write this paper I had hopes that I should be able to describe to you the results of operations done some years ago, but I was dis-

appointed that out of the 38 cases in group 2 I had operated on only 15 have responded to my request to come to be examined. Of these only 4 were completely satisfactory in that the perforation in the membrana had closed. The remainder all had perforations persisting, with or without discharge. With regard to the remaining patients, I think it would be safe to say that many probably drifted into other hospitals for treatment, whilst others are probably so far satisfied with the result that they have not thought it necessary to come for treatment at all.

Having put before you as briefly as I could the details of my own experience and practice in the operative treatment of chronic otorrhoea, it now remains for me to fulfil the second object of my paper, and to indicate for your consideration certain points which have appeared to me important in the operative treatment of chronic middle-ear suppuration.

In the first place, perhaps, we ought to consider the clinical features that influence us in deciding on the type of operation in any given case. When the disease does not affect the ossicles, and the hearing is very good, as in group 1, there must be a strong leaning towards a Schwartz or extended Schwartz operation, though there may be doubt as to whether meatal or mastoid drainage should be adopted. It is when the disease has seriously affected the tympanic cavity and caused a certain damage to hearing that there will be a difference of opinion as to choice of operation. You are all familiar with the work of Hertz, Fraser, Barany, and others, and have, no doubt, tried the operative procedures described by them.

With many of us use of the modified operation has been directed by no definite governing principle. It has been a haphazard process, a series of experiments with different operative procedures of which the ultimate result has been, and still is, a matter of uncertainty. For example, some surgeons advocate simple drainage of the antrum by the meatal route in cases in which there is obvious disease in the tympanic cavity, whilst others in similar cases consider it advisable to remove the outer wall of the aditus or more.

What I have said in this paper will serve to indicate the principles that have guided me in the more or less experimental measures I have used for certain cases of chronic otorrhoea. I think it is on this matter that discussion is especially needed. We know that we cannot always diagnose the exact cause of the chronic otorrhoea, nor can we always be certain of the situation of a gross lesion. If we could say definitely that it was necessary or not to remove all gross disease in a given case, then we should have advanced a great deal. I personally attacked the problem with the idea that it was advisable on principle to remove all areas actively diseased. It is an important point to settle, because on this depends the question whether or no we should remove the outer wall of the aditus and the incus, or at any rate the incus. As I have said, it has been my practice to regard a partially destroyed incus as a probable retic focus, and I have usually removed it. That a dry ear may be obtained without removal of the incus we all know, but if the removal of the diseased incus does not jeopardize sound hearing, then I can not see why it should not be removed.

Another point for discussion is the importance of maintaining a more or less normal anatomical form of the external auditory meatus. Though it is as well to aim at maintaining the normal form as far as possible, yet I think that I, at any rate, have attached an undue value to this object. A very large mastoid cavity is certainly a disability and may be a constant source of trouble, it is, however, rarely necessary, seeing that this class of case, as pointed out by Mr. Cheate, always occurs in a dense mastoid.

Again, we ought to consider the importance of the persistence, after a modified radical operation, of any form of external communication with the middle-ear tract. We all know instances of a dry perforation of the tympanic membrana in patients who have not known that they have had ear trouble at all. We certainly should not think of interfering in such an ear, in which it is probable that the middle-ear tract is otherwise healthy. There is no doubt that a dry perforation of this type after a modified radical

operation may be looked upon in the same light. A persistent discharge of any kind, however, must be regarded as indicating an unhealthy condition and potential danger.

There may be some difference of opinion as to the effects of various surgical measures on the hearing. Some maintain that the hearing after the radical mastoid operation is rarely altered in a marked degree for the worse, and that it is often very much improved. In the absence of control it is difficult to decide one way or the other, but my impression is that the hearing is usually considerably better in a modified radical operation when it is completely successful, though it must be remembered that after a radical mastoid with the aid of a wool wick hearing is often all that can be desired.

The position at present seems to me to be as follows. In cases in group 1 where the tympanic cavity is not primarily affected some form of extended Schwartz operation should be adopted. Further experience is needed to enable us to decide which drainage route is the more satisfactory, though I am inclined to adopt the meatal flap and meatal drainage when the outer attic wall is removed, and post-meatal drainage when a simple Schwartz operation is done. When there is a serious affection of the tympanic cavity, and especially when the tympanic membrane is extensively destroyed, I do not think the results from any form of conservative operation are equal to or as good as those of the radical mastoid operation. Between these extremes there are cases in which the region of the tympanic cavity is affected to some extent, and many of these I consider suitable for some form of modified mastoid operation.

At present we cannot define the limits of any particular operation, but as our experience increases we shall probably be able to select cases with more certainty for this or that procedure. In the meantime, when we propose a modified operation we should be sure that the patient understands that the procedure may be unsatisfactory, and that the radical mastoid may have to be done after all.

When describing the treatment of the wound I mentioned that it was my custom to smear the surface with a mixture of sterilized bismuth and iodoform. I should like to add that care should be taken not to leave masses of this mixture in pockets—that the smear should be really a very thin layer over the various surfaces.

The thirty-eight incuses that I have put out for your inspection are from the cases from group 2 which I have operated on since 1920, and which form the basis of this paper. A diagnosis of damaged incus was made in these thirty-eight cases, in two a sound incus was removed. I should have stated definitely that the incus was removed by way of the antrum and aditus.

II—SYDNEY R. SCOTT, M.S., F.R.C.S.,

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AN interchange of ideas based upon individual experiences should lead to the elucidation of at least some of the problems we have to face in endeavouring to save our patients from the disabilities caused by diseases of the ear. My own contribution is necessarily brief.

Let us first consider what are the features of chronic otitis media which affect the principles of treatment. Is measure of time—the duration of the disease—alone the special feature of chronic otitis media? No doubt we meet with suppurative otitis media of many months' duration where the changes in the tympanum and mastoid cells are indistinguishable from those met with in cases of otitis media of a very few weeks' duration. In the past we have been prompted by the dangers of otitis media to adopt operative treatment.

The immediate results of otitis media, both the intracranial complications, extracranial and intracranial, are common to acute cases of short duration as well as to cases of very long duration. The same is true of the cerebral complications, lepto meningitis and brain abscess, as well as infection of the lateral sinus. These complications are liable to arise at any stage of the disease—almost from the outset in some, and only after the disease has existed very many years in others. I myself have

removed an infected thrombus from the sigmoid sinus scarcely six days after the onset of a first attack of otitis media. Again, one has also had to open and drain a temporo-sphenoidal abscess within sixteen days of the onset of otitis media.

On the other hand, the dangers of fatal intracranial complications are not removed by the fact that no ear effects have been noticed in the course of the first few weeks, or during many years. Gray mentioned death from meningitis long after the patient believed himself immune to danger from middle-ear suppuration which had lasted for fifty years. No doubt many of us have seen parallel cases. Surgical technique has so far advanced that we are justified in the opinion that it is not fear of death from local complications alone that calls for operative measure. Loss of hearing, interference with social pleasures and duties, the remote ill effects on general health caused by ear suppuration, may necessitate operative treatment.

We now know that the sooner the onset of otitis media is recognized, and the earlier we incise the tympanic membrane and effectively drain the tympanum, the more frequently does normal resolution take place. Similarly, it is now accepted practice that where there are signs of retention in the mastoid we must open and drain the cells and antrum without awaiting evidence of the development of further mischief.

But what are we to do in those cases of tympanic discharge—chronic otitis media uncomplicated by pain or pyrexia or superficial signs of mastoid disease—that is, with no signs of retention? The acute symptoms of the first three or four weeks have passed off, the general health has recovered from the initial febrile disturbances, but the discharge does not cease for four, five, or six weeks, or as long as we care to wait. How long can we afford to wait for the discharge to cease, and hearing to return to normal, and what should be done? We have been taught never to forget Sir William Wilde's dictum, which referred, of course, to cases which had not been operated upon. Is his observation still true? "As long as discharge from the ear is present we can never know how, when, and where it may terminate, and to what it may lead." This truism dates back to the time of Hippocrates. Can we modify it, save only in those cases treated by the radical mastoid operation?

Personally I think it is impossible to lay down a constant time limit beyond which the continuation of otitis media, at first acute, must be called chronic, but it is certainly true that cases of otitis media where defective hearing and otorrhoea persist from the onset for more than four or six weeks up to periods of over nine months or longer should still be regarded as acute cases, and treated as such by what we call Schwartz's operation. In other words, chronicity of discharge alone does not necessitate any departure from our rule to perform Schwartz's operation and preserve the tympanum and ossicles—a principle of treatment laid down over a generation ago.

It is our experience that hearing returns to normal after Schwartz's operation in nearly every case operated upon early enough. If an operator finds that the hearing does not recover in a series of cases, he might inquire whether he has not unwittingly displaced the incus by inserting a seeker into the aditus to ascertain his bearings. It is certainly worth while paying special attention to this detail in technique in order to avoid risk of displacing the incus.

But between the earlier chronic cases of otitis media and those of long standing is a wide range of time during which destructive changes to the ossicles are more certain to take place. In an analysis of over 1,500 cases operated upon for middle ear disease at St. Bartholomew's Hospital we find that approximately in two out of three cases of very chronic middle ear disease no incus can be discovered at all, and the head of the malleus is then generally eroded. Not very rarely the malleus also has completely disappeared. In these cases of disorganised ossicles the surgeon has no cause for regret at having performed the radical operation, but it occasionally happens in chronic cases that the incus and malleus, after extraction, are found to be absolutely normal in themselves, though surrounded by granulations or swollen mucosa. As there appear to be no certain means of dis-

tinguishing these latter cases, a conservative course has been practised for many years. We have felt concerned that nothing short of removal had enabled us to discover the absence of destructive osteitis or arthritis, and it is certainly a matter worthy of the closest attention to endeavour to find some definite evidence of ossicular destruction before exposing or removing the auditory ossicles, or running the risk of breaking an intact ossicular chain. Where there is a definite cholesteatomatous formation in the antrum and aditus, the incus has almost certainly become disintegrated.

In a case open to doubt as to the necessity for extirpation of the tympanum, when there is no cholesteatoma and no labyrinth disease, even where hearing is very defective, it is certainly permissible to watch the effect of Schwartz's operation as modified by Kuster before advising recourse to the epitympanic operation or to the radical operation. Where it is definitely found that the tympanic suppuration persists in spite of satisfactory mastoid drainage and freedom of the nose and pharynx from infection, and that hope of recovering hearing must be given up, there are very few advocates of conservation of the tympanum.

Of our list of mastoid operations, Schwartz's operation, Kuster's operation, the "epi-tympano-mastoid" operation, and the "convection" operation, are far commoner than the original radical mastoid operation—perhaps because we operate earlier, but certainly because we attempt to discriminate among chronic cases, and endeavour to preserve the tympanum whenever feasible. For many years at St Bartholomew's Hospital we have recognized the advantages in operating *a deux temps*, on conservative principles. When, therefore, Mr Jenkins advocated removal of the incus, it seemed as if the teaching at King's College and St Bartholomew's Hospitals must be at variance, but Mr Jenkins has made it quite clear in his address that his procedure is not so much concerned with removing the incus as with conserving the malleus, tympanic membrane, and annulus tympanicus. His procedure is only applicable to certain chronic cases which otherwise might have submitted to the epi-tympano-mastoid, or perhaps to the radical mastoid operation. He has therefore systematized a new stage of conservatism, not a new stage of eradication, and I feel happy to say our doctrines are not at variance.

As regards the method of drainage in the radical operation, whether modified or not, complete closure of the posterior meatus is the general rule, after dividing the posterior meatal wall, and throwing the mastoid and tympanic cavities and external meatus into one common compartment, free from any subdivisions. We should, however, point out that this enlargement of the meatus is in no sense an essential part of the radical operation. Section of the posterior meatal wall, with consequent expansion of the meatus, is a recognized modification of Schwartz's operation. Such an expedient has been adopted to render the mastoid operation cavity accessible to inspection from the external auditory meatus. It is obvious that no flap can be fashioned from the meatus or concha alone to clothe the entire tympano-mastoid cavity, an up- or down-turned flap will cover only a portion of the surface of the operation cavity, the rest must heal by second intention—the formation of granulations followed by epidermization. This is often a slow process, which can be hastened by skin grafts applied at the same time—a procedure which we have practised for the last fifteen years.

salutary precautions which experience has taught us would prevent him from falling off the wall.

I imply that the best treatment of chronic suppurative otitis media is the thorough and courageous treatment of its almost invariable progenitor, acute suppurative otitis media, be the cause of this latter what it may. The ancient surgical principle, "*ubi pus ibi evacua*," applies here with more than its usual force owing to the intricate regional anatomy and to the serious loss of function and the vital risks which are countenanced by delay. The acutely inflamed middle-ear tract, which, in whole or in part, still suppurates at the end of from four to six weeks and in which oral, nasal, and nasopharyngeal sepsis has been adequately treated, is a middle ear which requires transanal drainage. I am convinced with McKenzie that when this fact is not only widely appreciated, but given practical recognition, and that when courage takes the place of procrastination in the treatment of the acute or subacute suppurating ear, the eventual necessity for the more mutilating and never quite satisfactory forms of aural surgery which are embraced by the term "radical mastoid operation" should rarely, if ever, arise.

We must constantly bear in mind that the absence of the classical clinical signs of mastoiditis in these acute cases serves in no wise to controvert the wisdom of early retro-auricular drainage. Their non-appearance should rather remind us of the probable existence of a sclerotic temporal bone—the infantile type of Chertle—and that in the absence of early and adequate drainage the likelihood of ultimate chronicity is increased.

Beyond the occasional successful application of the Schwartz operation to cases of questionable chronicity which appeared to justify this procedure, my experience of the conservative type of radical operation has been very limited. The fact that this experience was required whilst acting as Mr Heath's house-surgeon at the Golden Square Throat Hospital sixteen years ago may to some extent account for the scepticism with which I have since viewed all efforts to modify the classical operation of Zaufel. Mr Jenkins has impressed me by his thoughtful classification of the various pathological conditions which have to be differentiated in these cases, and by the ingenuity of his periotomy flap operation, but he has failed to satisfy me as to the *raison d'être* for a conservative operation in the vast majority of those cases requiring a radical operation. The older operation does, in fact, enable us to eliminate conditions which are potentially dangerous and an offensive state, and if the result is not always quite satisfactory, Mr Jenkins has been candid enough to admit that this also applies to the methods he has described. His contention that the modified operation is superior from the viewpoint of auditory function is the only attribute of this procedure which I consider worthy of serious consideration. But here again we lack definite comparative evidence with which to control results.

We are all aware of the occasional brilliant functional improvement which follows the complete radical operation. In my own practice I find there is an improvement in at least 75 per cent of cases, and that an actual deterioration in hearing is a very rare occurrence. I make a very determined effort to destroy the lining of the tube ostium and to open up any peritubal cells, but, apart from the removal of the ossicle remnants and any visible fungosities, I do not interfere with the tympanic mucosa. I strive to get as open and regular a bone cavity as possible. In carrying out the plastic operation I adopt the Y or T couched incision, the stem of the latter extending far into the concha, and I remove all the redundant cartilage and soft tissue. I invariably employ a primary skin graft in my uncomplicated cases, and am of opinion that this procedure (for which we are indebted to Billance, and after him to Marriage) marks the most decisive advance in the modern radical mastoid operation. The graft must be of sufficient length, breadth, and thinness. The art of obtaining such a graft will only come from much practical experience with a razor which is both sharp and heavy. I feel confident that those who have derived the manifold advantages of primary skin grafting the mastoid wound cannot have mastered the technical difficulties of cutting and applying

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I regret that I would not have the courage of a very strong conviction if I failed to preface the few remarks which I have to make upon the subject under discussion by a statement of my belief that in the overwhelming majority of cases the aural calamity which we designate by the name of "chronic suppurative otitis media" is a preventable calamity, and that the necessity of our devising a means of putting Humpty Dumpty together again could best be obviated by ruling ourselves of the timely and

then grafts. Marriage has claimed the following advantages for the primary graft:

- That the wound heals quicker
- That constriction and pouch formation do not occur
- That there is less after pain
- That it saves time and trouble
- That it shortens the period of the patient's absence from work
- That there is more probability of obtaining a closed tubal ostium

From an extended application of his method, with minor modifications, I am pleased to signify my whole-hearted concurrence in the reality of these advantages. I reckon upon a convalescent period of from six to eight weeks, and of a period of from two to three weeks' physical disability. In my shortest case the ear was dry on the eighteenth day, and I almost invariably find that, apart from the tube ostium, epidermization is complete between the fourth and the sixth weeks. The bugbear of the Eustachian orifice, though it still exists, does so in a much more amenable manner. As regards auditory function, I find that there is an improvement in at least 75 per cent of cases, and that a deterioration in hearing is so rare as hardly to merit recognition. I graft over an exposed lateral sinus or dura mater, but the loss of one case in which there existed a fistula of the external semicircular canal, from delayed suppurative labyrinthitis, would deter me from the future application of a graft in such cases.

I nick the graft in a dozen or more places with fine-pointed scissors after it has been transferred to the Ballance lifter. This has the advantage of permitting a ready exit to any air or fluid which lies beneath the transposed graft after it has been tamponaded home. I clean the cavity with salino and hydrogen peroxide, and temporarily apply fly artery forceps to any bleeding or oozing points in the soft tissues. Hemostasis and unimpaired vision are further secured by passing a thick length of ribbon gauze through the mental wound, the approximated ends of which are used by an assistant to pull the amide well forwards after the retractors are removed.

The graft having been floated on to the saline solution which fills the wound I carefully but forcibly repose it on to the bone surface with small pieces of gauze which have been squeezed out of saline solution. Three or four of these are sufficient. After they have been firmly pressed home with the finger for a minute or two they are picked out singly, a suitable probe being used to repose any part of the graft which tends to curl up or adhere to the gauze, if it has been properly pressed home this tendency is surprisingly slight. If the graft has been cut on what are necessarily extravagant lines, it will now be found that every part of the bone cavity is covered and that an ample tongue of graft is still available behind the wound. The gauze holding the amide forwards is now divided, and, working through a nasal speculum in the external meatus, the cavity is rapidly and completely filled with one-inch self-edged iodiform ribbon gauze, the redundant portion of the graft being brought forwards through the meatus so as to contain the gauze, pudding bag fashion, and to form a protective covering for the cut surface of the mental wound. Anybody who has performed the first post-operative dressing on a non-grafted and on a grafted case can appreciate the beneficence of this small manoeuvre.

I close the wound with Michel clips, taking special precautions to obliterate or, if this is not possible, to drain temporarily, the small cul-de-sac which is apt to remain between the graft and the posterior lip of the wound at its lower end. Failure to attend to this detail may lead to retention and wound sepsis after an initial and apparently satisfactory primary union.

The dressing which is applied to the thigh is of primary importance if the period of retention in hospital is not to be prolonged owing to a painful or unsatisfactory condition of the graft wound. After trying many forms of protective dressing I now cover the wounded surface with gauze saturated with final's balsam. This is retained securely by a bandage in which, to prevent the possibility of slipping strips of adhesive plaster are incorporated. This dressing is not removed for from two to three weeks,

by which time it will be found to have become loose and that re-epidermization is complete.

The first ear-dressing is performed on the fourth day, half the clips being then removed. In lightly refilling the cavity with ribbon gauze care is taken not to disturb the graft. The second and final dressing, with the removal of the remaining clips, takes place on the sixth or seventh day, and the patient is discharged from hospital using poroxido drops, to which spuit is subsequently added, on the ninth or tenth day. He is instructed to syringe the ear gently with sterilized salino solution at infrequent intervals, and to report for inspection every two weeks, but the wound cavity is in no way interfered with until at least six weeks have elapsed. All traumatism, however slight, tends to arrest epidermization. The repeated applications of gauze dressings, however aseptically made, are not only painful, but by their adherence to the raw surfaces must be looked upon as a source of trauma and of microbial dissemination, and, in consequence, as a retarding factor in the process of cicatrization.

Of the difficulties attending the pre-grafting methods of after-treatment, Luc has truly written: "Les plus beaux résultats appartiennent, non pas aux plus brillants opérateurs, mais à ceux qui ont apporté le plus de soin, de méthode, de patience et de précautions antiseptiques dans leurs pansements consécutifs."

By the successful application of the primary skin graft we virtually hand over to Nature this most difficult part of the surgical treatment of these cases, which, therefore, need no longer be a menace to the skill of the aurist or to the endurance of his patient.

GENERAL DISCUSSION

Mr J. ALDINGTON GINN (Maidstone) said he did not intend to discuss the papers of the openers of the subject under debate. His point was that, having discovered that a form of chronicity was present and that local treatment had failed, it was necessary to decide upon an operation which was conservative of hearing and would at the same time put out of court any area of potential trouble. His hospital supplied him with fifty or sixty mastoid operations a year. Recently he had adopted as a conservative measure the transmastoid atticotomy of Bondy, as practised by Sourdis and others in France. The outer wall of the attic was removed, and the roof of the bony meatus also to the tympanic ring. The mastoid antrum, with removal of the bridge, being at the same time freely opened, the ossicles were exposed and could be inspected. A large flap was cut, including the superior and posterior wall, and all dressings were done through the meatus. He was glad to have so experienced an authority as Mr Sydney Scott in agreement, and so far he was satisfied with his results. His object was to elicit the opinion of others who might have had more experience of this method. The hearing was retained and usually improved, it was certainly never worse.

Sir JAMES DUNDAS GRANT (London) said that among the operations for chronic suppurative disease of the middle ear the claims of the operation of ossiculectomy had been generally overlooked. Apart from other considerations, the ossicles often acted as a barrier, damming up the discharges and desquamative accumulations which might form in quantity in the attic even when the antrum and mastoid cells were only very slightly involved. He could quote cases of this nature presenting the most violent symptoms, in the form of headache, giddiness, and even epileptiform seizures, in which a radical mastoid operation appeared to be called for, but in which the symptoms entirely subsided after the removal of the ossicles and without further surgical intervention. The patients had lived and were enjoying good health, many with most useful hearing. For the extraction of the incus he found Hoffmann's curette (procureable from Meyer and Phelps) the most reliable instrument for this the most delicate part of the operation. Another principle worthy of application in the case of post-suppurative "cholesteatoma" was the wide exposure of the cavity by free removal of the overlying bone and the retention of the living membrane if found to be smooth,

shiny, homogeneous, and fairly adherent. It did not penetrate, as was once supposed, into the Eustachian canals. He had found the after-treatment greatly shortened by allowing this matrix to act as "skin graft." He would like to lay stress on the fact that persistence of discharge after the radical operation was due to catarrhal processes in the Eustachian tube. A closure of the tube was desirable, but in the absence of this much might be done by means of treatment of the nasopharynx and the injection of astringents through the tube. The timely adoption of this method of treatment had even brought about a cure in a patient for whom the radical operation had been considered indispensable.

Dr W S SYME (Glasgow) said that the first essential in dealing with chronic middle-ear suppuration—and by "chronic" he understood not necessarily a suppuration of long standing, but one which had passed beyond the acute stage—was, as Mr Jenkins had so well discussed, a very thorough examination so as to define the actual limit of the disease in the middle ear, bearing in mind that they now had other operative measures less severe than the radical mastoid procedure, and yet applicable to certain cases. Another point was that they could now recommend the performance of a conservative operation at a much earlier period in well defined cases where previously they had hesitated to advise the radical mastoid operation, always with the condition, as both Mr Jenkins and Mr Scott had insisted on, that they should give the patient to understand that a more extensive operation might later be required.

Mr H NORMAN BARNETT (Bath) believed that a conservative method of operating on the mastoid region was strongly indicated, he was doubtful if complete obliteration of all the hearing apparatus of the middle ear was justified, except in rare cases. It was, he conceived, the duty of the aurist to preserve hearing, and the danger arising from leaving the structures of the middle ear was, he thought, greatly exaggerated. The mastoid antrum was, in his experience, involved at an early date. Acute middle ear disease was an eminently curable condition, and if under observation and careful treatment it had not been cured in four to six weeks the case had become one in which, he believed, the mastoid area was involved. It had been his rule to advise operation and to open up the mastoid antrum if such treatment had proved ineffective. In no case had he found the antrum unaffected, and in many cases the disease had been far advanced, involving a large amount of bone. The procedure he now adopted was to make an incision immediately behind the ear, rather than further back, to make a periosteal flap, and clear out the antrum and all the mastoid cells down to the tip, to remove the bridge, except a small portion at the bottom, and leave intact the tympanic ring. The middle ear was then washed out from the antrum, with drainage through the meatus. A large opening was made in the posterior soft wall of the meatus, and the periosteal flap was attached to the junction of the opening. Drainage was effected through a large tube passed into the antrum, resting on the remains of the posterior bony wall. The posterior wound was entirely closed, and the subsequent treatment, which aimed at curing the diseased condition of the middle ear which might remain, was carried out through the antrum. The antrum gradually healed up with granulation tissue, and, the tube being removed, the incision in the posterior soft wall became obliterated and the meatus more or less normal. The result of many of these cases had been entirely satisfactory, but in others the result had not been so good. In his opinion, the question of whether the tympanic membrane healed was largely a matter of age rather than disease, and in many cases where it did not heal no trouble seemed to supervene, except that the hearing was not so good as it might be. He believed that when the attitude of the aurist was towards conservative methods of treatment the public would consent to a much earlier operation as they could be informed that the hearing could be improved, and in most cases very largely so, or even made normal. It was not his experience that the hearing, after a radical opera-

tion, was good, being in many cases entirely absent. In addition to this the condition of many cases after the complete operation was often unsatisfactory from the surgical standpoint, and also from recreation of cerumen and debris, and he had been frequently asked to see cases in which there was a septic condition underlying this accumulation. He supposed all of them had a string of such cases that came to them periodically. In his opinion, removal of the middle-ear hearing apparatus was unsatisfactory, frequently from the surgical standpoint, always from the functional standpoint, and hence was not to be advised. Lines of investigation by undoubtedly along those of modification of such an operation, with a view to leaving the person undeformed and with the function improved, or perhaps restored. He would plead very earnestly for an early exploration of the mastoid antrum in any case, as it was quite useless ordering drops to a person with chronic discharge. That in itself was bad, and it was high time that the textbooks reformed their methods of describing the indications for opening up the mastoid. With the exception of acute mastoiditis, no satisfactory indication was given. The fact that was placed in drops for long standing middle ear suppuration was deplorable, and there was no question that there were a very large number of persons in the community who were being given drops for disease of the mastoid. He hoped the general members of the profession would realize more and more that middle-ear disease with discharge from the ears was a very serious condition, and should not be treated on lines that they would never dream of applying to general surgical conditions.

Mr G J JENKINS, replying, said that he should have mentioned that Staacke described an operation in 1911, which included the removal of the meus, followed by sound healing of the tympanic membrane. When he started this communication he was tempted to make an historical survey of the works of men who had directed their attention more particularly to modified radical operation, but he had come to the conclusion that his audience would probably be more interested in a procedure that had been tried sporadically in 1913-14 and more seriously since 1920. It was impossible in the time allowed to deal with both. He was sorry also, that time did not permit a more detailed description of the clinical features which had influenced him in deciding what operative procedure to adopt in any particular class of case.

DISCUSSION ON CHRONIC NON-SUPPURATIVE MIDDLE-EAR DEAFNESS (EXCLUDING OTO-SCLEROSIS)

OPENING PAPERS

I.—SIR WILLIAM MILLIGAN, M.D.,
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TREATMENT OF CHRONIC CATARRHAL OTITIS MEDIA

How to treat chronic catarrhal otitis media in its advanced stages with any degree of success is a problem still unsolved. Like the hardy annual, this subject crops up year by year at one or other society or assembly of otologists, and, like the hardy annual, little or no change is to be noted as years roll on. While otology has made great strides during the past quarter of a century, more especially in the treatment of suppurative disease in and around the middle and internal ears, the treatment of chronic catarrhal and oto-sclerotic lesions remains practically at a standstill. The object of today's discussion is to ask ourselves why this is so, and, if possible, to hear suggestions as to new avenues of investigation which may lead to some definite advance in the treatment of this affection, the *bête noire* of otologists.

To be perfectly candid and to lay all my cards on the table at once, I must acknowledge that, so far as my experience goes, advanced chronic catarrhal otitis media is an incurable disease, and one in which all we can hope to do in our present state of knowledge is to endeavour to stem its

progress and to prepare the patient for the advent of a severe degree of loss of hearing.

If we admit that in advanced chronic catarrhal otitis media anything approaching a cure is out of the question, our aim should be to endeavor (1) to prevent the onset of the disease, and (2) to treat it energetically in its early stages, so as to prevent, if possible, the advent of incurable fibroid changes. To what are catarrhal changes in the middle ear due? In a large percentage of cases it will be found on close investigation that the commencement of the disease dates back to childhood or early adult life as the result of some such ailment as measles, scarlet fever, or purulent nasal catarrh. It is extraordinarily how frequently, on *post-mortem* examination, a glairy yellowish fluid is found in the middle ears of young children dying from various diseases, a fluid comparable to and containing the same organisms as those found in mucopurulent nasal catarrh. My contention is that this minor sepsis in the middle ears, in extremely frequent and often unnoticed complication—in a sense a latent otitis—is the starting point of many, if not most, of the genuinely chronic cases of middle ear catarrh we see in later life.

Sepsis is in many cases, I believe, the underlying element in the production of those pathological changes which ultimately lead to the connective tissue and atrophic alterations we associate with chronic catarrhal otitis media. In a purely catarrhal or inflammatory condition the natural resisting powers of our tissues are able to deal with the situation, and to induce a *restitutio ad integrum*, whereas in cases with a septic basis submucous changes ensue which lead to atrophic alterations in the mucous glands and to the ultimate formation of fibrous tissue in the tubo-tympanic axis, changes which tend to become progressive and permanent. The deduction I draw is that all cases of catarrhal otitis media accompanied by sepsis require a much longer supervision than is usually accorded if the disastrous effects of subsequent pathological changes are to be nullified.

To an audience such as this it is quite unnecessary to recapitulate the importance and the necessity of the removal of tonsils and adenoids and other forms of nasal obstruction and nasal sepsis. What is necessary to emphasize, however, is the necessity of keeping up, in cases of otitis media, for varying periods a careful toilet of the mucosa. It is the lurking sepsis from small foci of infection which keeps the fire aglow, which lights up with every catarrhal attack, and which induces the deposition of fresh fibrous tissue. Between what we recognize as a strictly catarrhal lesion and what we recognize as a mild septic lesion there is a very thin line of demarcation. Given certain extraneous conditions, the one almost imperceptibly slides off into the other. For this reason I hold that any exudation into the tympanic cavity should be got rid of at once by paracentesis and inflation. It is the exudation which is likely to get infected—infected, it is true, often with organisms of slight virulence, but infected sufficiently to be the means of inducing deeper-seated changes. To drain the tympanic cavity is doing nothing more than obeying one of the first rules of surgery. Exudation into the pleural or peritoneal cavity is removed by tapping; why not drain a middle ear, a far more delicate part of the human frame? The exudation it is true, is only the objective indication of an existing catarrhal infection and if removed promptly enables resolution to take place rapidly. If left, as in my experience it so often is, it hopes that it will absorb, it is irritative, liable to become infected and to act as a mechanical block clogging the ossicular joints and leading to subsequent adhesions.

The researches of George and Chads Dick go to show that in cases of scarlet fever an antitoxin is obtained, as the result of subcutaneously injecting horses with a sterile scarlet fever toxin, and injected on the first day of the appearance of the rash no ear complications are found to take place. Should this observation be confirmed by other workers an important advance in prophylactic treatment will be accomplished. Possibly also a similar antitoxin will be found to be of use in measles, a prolific factor in the production of chronic catarrhal deafness.

As main that sepsis does play an important part in the production of chronic catarrhal changes, it may be that our

attention should be more riveted on the bacteriological aspects of the initial phases of the disease.

The sheet anchor of treatment is unquestionably inflation, either by means of the bag or the Eustachian catheter, repeated as frequently as the particular case demands. The more the improvement after inflation and the longer it lasts, the better the prognosis, because the more superficial are the pathological changes. Conversely the less the improvement and the shorter the period of improvement, the deeper and more organized are the changes. The existence, however, of a genuinely stenosed Eustachian tube calls for a preliminary course of bougieing. I have little belief in the efficacy of bougieing through the pharyngeal orifice of the tube in cases of severe stenosis, it is manipulative surgery in the dark. To be effective it should be done through the tympanic orifice after a preliminary paracentesis, and preferably under a general anesthetic. For this purpose fine silver bougies are very convenient. The bougie, smeared with bipp, should be retained *in situ* for an hour or two or even longer in order that the mechanical effect of its presence may have time to assert itself. The irritation produced is practically nil, and even a slight reaction appears to have no prejudicial effect, rather the reverse. The injection of vapours or fluids—oil, alkali, or digestive—into the middle ear through a tube, even if any reasonable quantity ever reaches its destination, is, I believe, practically useless, any beneficial effect appearing to me to be due rather to the column of air entering the middle ear than to the effects of the fluid employed. Intimympanic operations, once so popular and highly acclaimed, have been tried and have been found wanting, and rightly so, because their performance was based on an imperfect appreciation of pathological facts.

The crux of the problem is that we have to deal with a slowly organizing sclerosis of the connective tissue of the middle ear cleft and with a destruction of its normal lymphoid tissue, due, I believe, originally to a septic infection not sufficient to produce suppuration, but sufficient to produce hyperplastic changes in its mesoblastic elements, progressive in character and mechanically destructive to the normal physiological function of the organ. Much of existing treatment is, to my mind, provocative rather than curative, and not in the best interests of the patient, while no known treatment has more than a temporary effect. It is true that the progress of the disease may become arrested for varying periods, if not altogether, but, speaking generally, the loss of hearing, gradual in most cases, is slow but certain.

The fact that the membrane is more or less opaque or more or less retracted has little to do with the amount of the existing deafness. High grades of obstructive deafness are found where the membrane is hardly altered in appearance, and where there is little, if any, retraction. The vulnerable area is the inner wall of the middle ear, the region of the stapedio-vestibular articulation and the region of the round window, and perhaps more especially of the latter. That this is so is proved not only by microscopic examination of the middle ear in chronic cases, but also as the result of experimental surgery. On microscopic examination the mucosa of the inner wall will be found to be more infiltrated by newly formed connective tissue than any other portion of the middle ear, with corresponding interference with the function of the all important fenestrae.

Many years ago I tried in several cases the effect of performing a radical mastoid operation in cases of advanced chronic otitis media. The thickened membrane, the malleus, and the incus were removed, sometimes ankylosed, but more frequently not, and the inner tympanic wall freely exposed. For a few days, sometimes for a few weeks, and in a few cases, there was undoubtedly some slight improvement, but it was in all cases of short duration, and the final result eminently disappointing. At the same time, mobilization of the stapes was attempted, but also without benefit. To keep the cavity in anything approaching an aseptic condition is naturally difficult, and whether it was due to a slight superadded sepsis or to the post-operative disorganization of the middle ear, the results were so discouraging, as not to warrant repetition.

One of the first effects of the sclerosing process in the middle ear is the destruction of the mucous glands, which are found almost entirely in and around the tympanic orifice of the tube. When the droplets of secretion which normally lie in the fossula rotunda are not forthcoming as the result of this atrophy, an important aid to sound conduction is at once missing.

Investigation leads me to regard with great respect the region of the round window. It is in this neighbourhood that connective tissue changes are not only most active, but are also of most importance, for as the round window becomes more and more obliterated so does the sense of hearing become less acute. Middle-ear deafness with paracusis means that the principal pathological changes are going on in and around the foot-plate of the stapes, middle-ear deafness without paracusis that similar changes are going on in the region of the round window.

A blocked round window is inimical to good hearing. Whatever may be the function of the saccus endolymphaticus, whether it acts as a safety-valve or not, I am of opinion that the membrane covering the round window responds to every sound stimulus transmitted through the stapedio-vestibular articulation, and that its free mobility is essential to good hearing.

An important factor in chronic middle ear deafness is the subconscious loss of acuity of the cortical centres of hearing. We are all familiar with the statements made by patients of periods—transient it is true—of good hearing, and we are equally aware that sounds in one's own immediate neighbourhood have often no effect upon our auditory centres if we are otherwise mentally engaged. In cases of chronic catarrhal otitis media where the lower tones of the scale are gradually becoming less and less appreciated a condition of auditory lethargy is induced which results in a general atony of the cortical centres for hearing. That these centres are capable of some amount of re-education, I think, made clear by the work recently carried out by Dr Cathcart, and whether more attention should not be given to re-education as a matter of routine treatment, whether by means of the electrophonoide method or some other method, is, I think, at least worthy of discussion.

The tinnitus which is so often present in these cases is sometimes even more distressing to the patient than the actual deafness. Very severe and persistent tinnitus indicates probably a superadded oto-sclerotic process. Unfortunately, we have no means of diagnosing a peripheral from a central tinnitus, and as it is often toxic in origin the prospects of getting rid of it are by no means bright. Large doses of hydriobromic acid appear at times to have some effect. In very severe cases I have from time to time attempted to remove the stapes, but it is just in these cases that the stapes refuses to be removed on account of its fixation to the margins of the oval window. When very persistent and the cause of severe mental depression, and if accompanied by a high grade of deafness, a complete removal of the cochlea, although not free from risk, is justifiable, but very seldom entirely successful. Attention to the state of the general health is, of course, essential, and residence in a dry, bracing, and high district is advisable if it is possible.

To sum up my experience I venture to say

- 1 That clinically two types of catarrhal deafness should be recognized—the one a purely evanescent catarrhal process, the other a catarrhal process, with an accompanying mild and creeping sepsis.
- 2 That the presence of creeping sepsis is the underlying factor in the establishment of chronicity.
- 3 That maintenance of the patency of the Eustachian tube is the most important factor in treatment.
- 4 That to effect this all obstructive or septic lesions in the throat, nose, and nasopharynx should be carefully eliminated.
- 5 That repeated examination and short courses of treatment are essential if the best results are to be obtained.
- 6 That re-education of the auditory centres should be systematized, and if possible, simplified.
- 7 That the main hope of preventing the onset of chronic

middle-ear deafness lies in the early recognition and treatment of catarrhal and septic changes in the upper respiratory tract.

II—J KERR LOVE, M.D., FRF.P.S.,

Consulting Aural Surgeon, Glasgow Royal Infirmary.

THE treatment of chronic non-suppurative middle-ear deafness may be made as broad as the Atlantic or as narrow as the Avon at Bristol. Were I to catalogue the forms of treatment which have been tried and discarded during the past fifty years you would be as anxious to reach port as any of you have ever been to see the tall buildings of New York. Were I to name those on which otologists are agreed to be valuable I could do it in the time you would take to cross the Avon. That means that we are dealing with an affection in which the prognosis is bad, the treatment generally futile, or, at least, that cure is very rare. I am speaking of chronic middle-ear deafness as including two groups of cases—the cicatricial or adhesive group and the oto-sclerosis group, in which both changes predominate. Strictly speaking, as I see from the reference, it is the deafness arising from these conditions we are to discuss, and it is because I have something to say on this strict respect of the subject that I accepted your invitation to come here at all. I have also something to say about the prevention of this nearly incurable condition. The mechanical and operative treatment of chronic adhesive deafness has been, and no doubt will be, dealt with by other speakers, personally I have not had great success with these cases.

We are dealing with cicatricial tissue which tends to contract and cause fixation of mobile structures. We cannot remove it by operation without great risk of doing more harm than good. By ventilation of the middle ear and by massage through the external auditory canal we may stretch it and get slight improvement, but the contraction tends to recur. By laryngo and operation in the nose we may remove a cause which has been too long in operation to permit removal of the effects—namely, the deafness, and we may arrest the progress of the deafness, but we cannot cure in a really chronic case. Whether we like it or not, therefore, we otologists have to confess that we are seldom able to cure. Apart from treating tinnitus and attending to the nose, about all there is left for us is to make the most of residual hearing. Putting aside in the meantime the older "aids," such as ear trumpets and hearing tubes, and the most important "aid" of all, I mean lip reading, is there any movement in progress which holds out any hope that the otologist, aided by the physicist, may in time do for the ear what the ophthalmologist and the optician do for the eye?

Here let me draw an analogy or a parallel. An optician succeeds in correcting, by the help of a lens, almost any refraction error so long as the latter is not complicated by a disease of the optic nerve or its expression in the retina. He is able to influence rays of light before they enter the eye so that the distorted media in the eye focus the object on the retina. Why should the reconstruction not do the same with sound waves—say, of those of the human voice? The latter, like a light beam, is compound, consisting of a prime and upper partials. Do not carry the analogy too far. Sound can be reflected and refracted, I do not want to do either, but I ought to be able to reinforce the whole or any part of it. Physicists can do this, and it is in this direction that hope for the case of middle-ear deafness seems greatest. By a series of tubes and condensers, such as are used in wireless apparatus, one is able to reinforce the prime or lower tone of a human voice and leave the upper partials untouched, and, conversely, one may reinforce the upper partials and leave the prime untouched. The former is known as low-pass and the latter as high-pass amplification. The instrument by which this is done is made by the Western Electric Company of New York and the most recent form of it with which I am acquainted is called the "audio amplifier," and is described by Dr Isaac Jones and Professor Knudsen of Los Angeles. I cannot show you this instrument, but I can show you the wiring diagram, and you should be able to make it. All this looks very well on paper. With a

sound auditory nerve one should be able to do for a case of middle ear deafness what the optician does for a refraction error in which the optic nerves are intact, and yet it does not work out in practice. We cannot fit our patients with auditory spectacles—a term you may permit me to use for want of a better—as the optician does with lenses in refraction errors. Why is this? Let me give you Professor Kuudsen's answer.

Our experience with hard of hearing patients indicates that selective amplification does not fulfil our initial high anticipations. It is possible that through a process of adaptation the individual has become accustomed to associating various images of his real world in terms of the distorted sounds he has perceived. Therefore when selective amplification is provided to restore hearing to the normal or approximately normal condition these sounds really seem distorted to the individual.

I venture on another explanation of the difficulty. It is well known to otologists that, in a given case, whilst the signs of middle-ear deafness predominate—namely, the nose is out of order, the membrane is retracted or thickened—the patient perhaps hears better in a noise, Rinne's test is negative, and yet the tuning forks do not come out quite right. We have no difficulty, in the main, in saying that the case is one of middle ear deafness, and yet we cannot acquit the cochlea. We are dealing, in short, with a case of mixed deafness, and there are more cases of mixed deafness than we are accustomed to suppose. Our attempts to fit auditory spectacles are like the optician's when he tries to deal with a refraction error in which a retinal defect exists.

The following table illustrates the present-day position with regard to aids to hearing (electric).

No.	Division of Cochlea Stimulated	Type of Amplification	Result of Stimulation
8102 4690 2018	Area of very high voices and higher overtones	High pass amplification	A few successes in internal ear deafness
1024 512	Area of high voices and medium overtones	Equal amplification throughout the scale gives increased loudness with out greater distinctness	
512 256 128	Ordinary speech area	Low pass amplification	A good many successes in middle ear deafness

Shall we ever be able to write a prescription for what I have called, for want of a better word, "auditory spectacles"? Will the aurist send the patient to the acoustician with specific directions such as the ophthalmologist sends to the optician? If we do not it will not be the acoustician's fault. He can refract and reflect sound, reinforce it at any pitch to almost any extent, transmute it into electrical movement and retransmute it into sound. We aurists should therefore know the acoustical side of the problem, a knowledge which few of us have bothered about. It is not enough to send the patient to a salesman of "aids to hearing," hoping that the latter will do something. The real difficulty is that the acoustician waits on the aurist. The latter does not know enough of the pathology of the different types of deafness, the acoustician, of course, knows less. It is possible that because of the mixture of types the fitting of auditory spectacles may never be the success which the lens is in the hands of the optician. It is too early in the inquiry to say, but we shall not give up without further trial. When success comes the early instruments will be heavy and clumsy. But that need not worry us, the expert will get over that just as he got over heavy spectacles, bulky clinical thermometers, and ponderous motor cars. One consideration should encourage us—the acoustician need not be so accurate as the optician. The latter must focus accurately, because any inaccuracy means a blurred image and failure, the former has only to reinforce a particular zone of sound, usually the lower zone, and let the rest alone. If he succeeds he will get some success in middle-ear cases and he must be a bold man who, in view of recent progress in electrophonics, would set a limit to this.

I cannot conclude without saying something about the prevention of deafness. If it be true, and I think it is, that most of the chronic deafness of adult life is due to

neglected nasal and post-nasal disease in childhood, the next generation should be a better hearing people than we are. I am heartily in sympathy with all that is being done for the nose and throat as well as for the ear during the school period.

With regard to operations on the nose and throat for the cure of chronic non-suppurative deafness, I am always reminded of a remark by our Swiss colleague, the late Professor Rohrer of Zurich, who attended the Manchester meeting in the nineties of last century. Speaking of the restoration of hearing by such operations he said, "Gentlemen, you should always do these operations with a grain of salt." The faulty English gave force to the remark. The remark is still true, but great strides have been made since then in nasal surgery, and it is generally worth doing these operations for the benefit they confer on the nose itself and on the general health of the patient. Further, it is not unreasonable to believe that by them we may arrest a deafness which we cannot cure.

III—NEIL MACLAY, M.B., C.M.,

Honorary Surgeon, Throat and Ear Hospital, Newcastle-on-Tyne. After the exhaustive and lucid exposition which has been given by Sir William Milligan there seems little to add, and, indeed, little to say which might not be considered as reiteration. The subject, however, is of such importance, and is beset with so much that is difficult and obscure, that even a slightly different point of view or method of exposition may prove suggestive or helpful.

The treatment of chronic non-suppurative middle-ear deafness may with advantage be considered from two standpoints—preventive and curative—and the former must of necessity be regarded as the more important.

Preventive treatment implies an enlightened public opinion in the first place. People must be taught to give as much care and consideration to their ears as they mostly give to their eyes. There must be an end to the haphazard dropping of oils, etc., into the ears, as well as the purposeless syringing of the eus. It cannot be too widely known that such treatment may be harmful as well as useless, and that no treatment should precede intelligent aural examination.

The history of many deaf cases too often reveals intervals of months or years when symptoms have been slight and during which no attempt has been made at investigation, nothing, indeed, has been done save some ill advised efforts to remove non-existent cerumen. Instructional propaganda should reach the public through the medium of the practitioners of medicine. If the patient finds that his doctor makes a careful examination before giving advice, he will not as a rule be slow to grasp the importance of being in earnest about the condition of his ears.

Chronic middle ear deafness not infrequently owes its origin to the inflammatory changes which take place in early life and are associated with the presence of tonsils and post-nasal adenoids. Operative removal of the tonsils and adenoids in a certain proportion of cases restores the middle ear to a normal condition, but it must be admitted that there are a considerable number of cases in which this happy issue is not achieved, and a certain amount of deafness persists and becomes aggravated later in life. In some of these cases operation has been too long delayed, and in most of them the restoration of the middle-ear function should have been assisted by Politzer inflation as well as general or systemic treatment.

One would therefore include the efficient treatment of catarrhal deafness in early life among the more important means of preventing chronic non-suppurative middle-ear deafness. To be efficient, this treatment should be carried out as early as possible, and it should, as a rule, mean more than the removal of tonsils and adenoids. Many of these young people who are gradually, and it may be rapidly, laying down the foundations of chronic deafness need more than local or direct treatment.

It is generally admitted that the condition of the mucous membrane determines the conducting activity of the middle ear, and for this reason most of our routine treatment is planned with a view to improving the health and function of the mucosa of the middle-ear cleft. Unhappily, this treatment is for the most part purely local and direct,

and makes no provision for dealing with those systemic influences which we know disturb the mucosa and cause catarrhal attack, which is not amenable to local treatment.

That the health of the middle ear depends very largely upon the condition of the nose and throat as well as the mouth no one will readily deny. If, therefore, we can keep the mouth clean and entirely free from dental sepsis, and at the same time maintain normal conditions in the nose and throat, we have gone a long way towards the prevention of middle-ear changes likely to produce deafness.

When we come to consider the scope of the curative treatment of middle-ear deafness we so readily become conscious of our limitations and failures that we hesitate to employ the term "cure" in this connection. The means at our disposal which we may describe as belonging to the curative category suggest measures which are direct and indirect in their action.

Of the many remedies which are to be found in the direct classification the following are probably the most important: (1) inflation, (2) tympanic massage, (3) re-educative exercises.

Inflation, particularly with the aid of the Eustachian catheter, is a valuable remedial agent when used with discretion, it not only ventilates the tympanum and thus promotes healthier action of the mucosa, it also combats to some extent the formation of intra-tympanic adhesions. The introduction of medicaments into the Eustachian tube and middle-ear cavity is of very doubtful value, and, indeed, may prove distinctly harmful by causing reactionary swelling of the mucous membrane. A similar criticism may be levelled at the operative treatment and topical applications made to the pharyngeal end of the Eustachian tube. The Eustachian bougie is of questionable value unless we regard a very temporary improvement in hearing as a desirable achievement.

Pneumatic massage may prove helpful as an adjunct to other measures, particularly in those cases in which chronic inflammatory changes have given rise to the formation of adhesions in the middle-ear cavity.

Methods of re-education can fairly claim a certain amount of success. This line of treatment not only reawakens functionally dormant hearing, it also presumably fulfils the purposes of a massage. Re-education may be carried out by the Zund-Burguet apparatus, in which an electrical current operating upon an artificial larynx produces sounds which closely imitate the human voice in its entire range. This intricate electrical mechanism is unfortunately too costly to make its general use practicable, and a very large number of deaf people must, I fear, be content with less ambitious measures.

It seems possible to convey the human voice itself to the deaf ear by a less costly and complicated method, by employing an ordinary conversation tube, amplified, if necessary, by a receiver of large dimensions. With such an instrument the patient can read aloud to himself or be spoken to at intervals during each day, and the duration of the exercises can be arranged to suit the individual case.

The indirect treatment of chronic middle-ear deafness embraces all those measures, operative and non-operative, which aim at restoring the mouth, nose, and throat to a healthy condition. It may mean the removal of an unsuspected mass of adenoid tissue in the adult or tonsils which have hitherto been regarded as harmless. In like manner the diseased nasal accessory sinus or the structural deformity in the nose may call for surgical intervention, and the result justify the means adopted. Unfortunately there are cases which do not respond to those operations, and one must guard against undue optimism in regard to the prognosis.

The importance of dental sepsis, however trivial it may seem, cannot be exaggerated, and its efficient treatment should never be omitted.

In a proportion of cases thyroid insufficiency should be considered, and treated if necessary, if this defect proves to be the root cause of the deafness the administration of thyroid extract will invariably bring about a satisfactory result.

That the mucous membrane of the nasopharynx may be affected by systemic or blood-borne agents there can be no reasonable doubt. Toxic elements from the intestinal canal

or elsewhere, as well as a variety of biochemical products, may play an important part in the production of catarrhal changes which must inevitably influence the condition of the middle ear and impair its function.

For this reason no treatment planned for the relief of chronic middle-ear deafness should be considered complete which has not been preceded by a general survey of the patient. Above all things, intestinal toxæmia merits the most careful consideration. Treatment of this all too prevalent condition of the bowel will not infrequently mitigate or arrest the distressing tinnitus, and, in the earlier stages of the ear disease, it may materially assist in retarding the progress of deafness.

IV—H. NORMAN BARNETT, F.R.C.S. Ed., Surgeon to the Bath Ear, Nose, and Throat Hospital

I was much interested in one point of Sir William Milligan's paper, and that was his statement upon the re-education of the higher centres in deaf people, and his reference to the fact that they do not appreciate and interpret sounds which they actually hear. This is my experience, and I think it is an important point, although I do not think it is by any means a main point in the treatment of these cases.

I was sorry to learn from the paper of the pessimism of Sir William Milligan with regard to the treatment of the cases, I am glad to say I do not share this feeling. I believe that there is a distinct entity which we may call chronic dry middle-ear catarrh, perhaps for lack of a better designation, and this condition is, in my opinion, quite distinct from oto-sclerosis. The main sign of such cases is, I think, the pronounced lack of hearing all air borne sounds, though there may in certain cases be an admixture of nerve deafness or of oto-sclerosis. The Eustachian tubes are, as a rule, quite clear, although in some cases the condition may have spread to them from the middle ear, or vice versa. The appearance of the tympanic membrane differs—in some cases being perfectly normal, in some cases being retracted or thickened, and in other cases thinned. In such cases there is frequently a septic focus or a deformity in the nose and throat, such as septo tonsils, deflected septum, or enlarged or degenerated turbinates. Such conditions should, of course, be remedied before other treatment is employed, and in many cases the improvement is fairly marked, but in no circumstances should the case be left at that juncture and the patient dismissed from supervision. It is now, when the road has been cleared, that the treatment will be most effective.

My main lines of such treatment are the vaporization of the middle ear, through the Eustachian catheter, with a mixture of warm iodine and camphor vapour. Here I may say that I do not agree with Sir William Milligan that it is doubtful if the vapour reaches the middle ear, results, I think, contraindicate this view. The other main line is ionization, which is of vast importance in obtaining good results. I believe it is essential that the dose should be small to begin with, and the time limited. The following are the details of this part of the treatment.

The current must be from the main batteries or useless. Electromagnets tell us there is distinct difference in the two. The negative electrode (size about 3 by 2½ inches) is applied behind the ears over the mastoid area on a pad of but sixteen layers thick, soaked in a 2 to 4 per cent solution of potassium iodide. The positive electrode (size about 7 by 5 inches) is placed over a pad of the same thickness soaked in sodium chloride and placed under the hands. The electrodes and pads should be bandaged firmly. The current started very gradually, indication of tolerance being reached when the patient feels something—perhaps giddiness or a prickling heat behind the ears or a salt taste in the mouth.

The current used will vary with the individual. Some patients I find, never get beyond 5 ma. but 10 ma. is about the average. Exceptional pronounced cases may go up to 20 ma. with advantage but on the whole I am in favour of the current being fairly low as better results are usually obtained.

With regard to time, if there is no contraindication in the patient's condition the application should be made for fifteen minutes. It is very important that the time should not be long as in most cases where it is giddiness is experienced.

At times in very obstinate cases the electrodes are reversed, the positive pole being put behind the ear and the negative in the hand. In this case sodium salicylate is used in stead of potassium iodide.

The negative pole stimulates and excites and promotes vasomotor dilatation, the positive pole depletes and soothes irritable nerve endings.

The number of applications should be ten, administered every other day in the patient's skin can stand it. After that I give a little rest and go on for another ten, administered every other day.

It is difficult to assign relative importance to either of the lines of treatment. In some cases one has found that ionization alone has produced marked results when efficiently carried out, in other cases the treatment by means of the iodine and camphor vapour through the Eustachian catheter has been successful to a point without the ionization. I have no doubt, however, that in the majority of cases the combined treatment gives the best results.

A subsidiary point of treatment, but of importance, is the application of otomassage to the tympanic membranes where there is any suspicion of there being adhesions between the ossicles owing to the exudate in the middle ear.

The length of treatment should be a minimum of twenty consecutive treatments given daily, the ionization, as already stated, being given every other day. Some will take longer than this, some shorter, but as a rule it is not worth carrying out this type of treatment unless the patient submits himself or herself to it for a prolonged course. Even where the case is one of otosclerosis it has been my experience that there is combined with it middle-ear catarrh which if it is relieved will help the patient considerably.

The result of such treatment has been very satisfactory in my hands cases varying in age from 95 to 9 years having been seen. In all cases benefit has resulted, and in many restoration to normal, or nearly normal, hearing. I hope this afternoon to show some results of treatment on varying types as to age and as to intensity.

There are certain patients who, while not showing any signs of otosclerosis, yet do not seem to react as well as others. I take it that what happens here is that there are some structural alterations in the middle ear which are too advanced for regeneration, but such patients can be markedly relieved—to such an extent that they may be able to carry on their occupation in life in comparative comfort. To give one example. A schoolmaster was dismissed on account of his hearing interfering with his efficiency. He came to me, and, after treatment, he was reinstated by the Board of Education and has carried on ever since. This case, amongst others, I hope to show in order to emphasize the fact that such cases are capable of improvement and therefore should be treated, even if they still remain rather deaf.

It is very important that we should give a pronouncement to the public about deafness. They complain that they are met with the assertion that nothing can be done. They are drifting into the hands of the quacks, who are extremely active in our midst, both being no exception. That deafness can be cured is flamboyantly set before us on all occasions by those who prey upon the public.

I believe this to be true of the majority of cases, excluding otosclerosis and nerve deafness, which are, in my opinion and experience, rare as compared with dry middle-ear catarrhal deafness, and I would entreat the profession generally to believe that such deafness can be cured, and not to allow patients to drift on into the tragic condition in which they are walled in by the terrible affliction of almost total deafness. I would also urge the aural surgeon to labour at such cases with faith in the methods that he adopts and with an optimistic attitude towards the cure that will be effected.

Finally, in this meeting of the Section does nothing else than ventilate the fact that we do not regard deafness as a hopeless malady, but are determined that those afflicted shall be rescued from the hands of the quacks, who batten upon their ill-gotten gains—very often received from those wholly unable to afford the expenditure—then we shall not have met in vain.

GENERAL DISCUSSION

DR C. C. CATHART (London) mentioned a method of treatment of chronic middle-ear deafness which, undescribedly he thought, had not yet gained the favour of the medical profession in general. This method of so-called re-education of the hearing was carried out by the electrophonoids of Zund Burguet. He was aware that some eminent otologists as Dr Albert Gray, Dr Dan M. Kerrin and Mr Muscke had pronounced against it, though without much experience or it, and the profession did not seem content to follow their lead. His personal experience did not coincide with theirs, and in his opinion the electrophonoid treatment was one of the greatest recent advances in otological therapeutics, although it had the

disadvantage of being rather a troublesome one for the aurist to carry out properly. The treatment consisted in vibration of the tympanic membrane, vaso-dilatation of the vessels of the tympanic membrane and the middle ear, and stimulation of the nerve endings in the internal ear, the vibrations being conveyed to the ear by vibrating ear-pieces reproducing the sound vibrations of the whole range of the human voice. He did not profess to be able to understand the precise process of repair in the ear which occurred after treatment. He attributed the improvement mainly to stimulation of the organ of Corti and of the cochlear auditory centres, though there might be some local vaso-dilatation as well. But he did not think he was alone in not fully understanding the pathology of chronic otitis media. In order to find out the value of this treatment and also to obviate the fallacy that might exist by using other methods of treatment at the same time, he took 100 patients and treated them by the Zund Burguet method only. He felt justified, therefore, in stating that any benefit that had accrued to them must be due to that method, and that method alone. Every one of these 100 patients before coming to him had consulted two or more otologists of recognized standing, and many had consulted four or five, not only in Harley Street and the suburbs thereof, but in the provinces and abroad, in every case the deafness had been pronounced to be impossible of alleviation. As the deafness was chronic and progressive, the improvement obtained after a full course of the treatment lasted only six to nine months, and in order to keep up the improvement another course was required later. Sometimes, however, he had known the improvement to continue for one or two years without further treatment. The usual course of treatment consisted of thirty sittings, but as, unfortunately, one could not say beforehand whether it would be successful or not, it was necessary to give a preliminary course of twelve treatments. If considerable improvement occurred it was worth while giving a full course, if there was no improvement it was not.

His group of 100 patients came under three headings—namely, (1) 33 suffering from chronic otitis media, (2) 34 from nerve deafness, and (3) 33 from otosclerosis. He proposed to deal only with those suffering from chronic otitis media. In this group of 33 patients, 22 improved, comprising 10 males, whose ages ranged from 7 to 63, and 12 females, whose ages ranged from 22 to 60, 11, consisting of 5 males of ages 29 to 58, and 6 females, aged from 25 to 60, did not improve, and the treatment was not continued. One case had been advised to go to a school for the deaf and dumb, but after treatment he was able to go to an ordinary public school. Three cases were sent to him by Sir Charles Brillance, some years before he had performed a radical mastoid operation, with grafting, on the right ear in one and on the left ear in the others. The first and second could hear better in the operated ear, after treatment, than in the other ear. Of the total number of his published cases, 68 per cent definitely improved after treatment, and this included 67 per cent of the cases of chronic otitis media. He submitted that his results showed that the electrophonoid method of treatment, when properly carried out, afforded the most substantial advance in the treatment of chronic progressive deafness of recent years, and that it deserved more serious consideration from otologists than it had hitherto received.

SIR JAMES DUNDAS-GRANT (London) pointed out that in cases of non-suppurative middle-ear deafness the chief abnormalities were narrowing of the Eustachian tube with its results and the adhesive or proliferative processes caused by acute inflammatory conditions, often forgotten, in very early life, and—as Sir William Milligan had pointed out—very probably latent. Treatment through the Eustachian tube, therefore, took the first place, Sir James was in the habit of using a long-beaked catheter, through which he passed a fairly large gum-elastic intratympanic tube to act as a bougie as far as it would penetrate and as a catheter for the injection of an oil or drop of paroline or colloidal argemum. He was convinced that many cases escaped benefit through the imperfect introduction of the Eustachian catheter, among the chief difficulties was that of circumventing an oblique ascending spur or deflection

with the catheter introduced in the usual way. To meet this difficulty the catheter had to be inverted so that its beak lay on the floor of the meatus under the deflection, in a position analogous to that of the head of a golf-club. It was first pushed backwards into the nasopharynx and then turned downwards. From the striking improvement and from the sound suggesting the separation of adhesions, it was sometimes quite obvious that the tympanum was fully inflated for the first time, even in a long-standing case. In the intervals the patient might keep up the treatment for himself by the use of some form of self-inflator containing a few drops of diluted chloroform. It was an old observation that an charged with chloroform vapour passed through the Eustachian tubes much more easily than simple air. Intiatympanic operations were seldom of any value, but occasionally it was possible to break down adhesions by suction with a very powerful Siegel speculum or by severing the bands resulting from former acute inflammation. In a recent case in which there was a band uniting the short process of the malleus with the head of the stapes, division of this band was followed by astounding improvement in the hearing, so that the patient, who was previously so deaf that her family hardly took the trouble of speaking to her, became able to control and guide the family conversation. Such a case was, however, most exceptional. Sir William Milligan's observation that paracusis was present with immobility of the stapes while it was absent in rigidity of the membrane of the fenestra rotunda was most interesting, and might be explained by the fact that the fenestra ovalis was associated with the middle ear and so interfered with the hearing of deep tones, such as those in a railway carriage, which were inaudible to the sufferer from chronic middle-ear disease, while the hearing speaker raised his voice. On the other hand, the fenestra rotunda was in close relation with the delicate structures of the base of the cochlea and interfered with the hearing of the high-pitched tones rather than the lower ones. In looking over 100 consecutive cases of chronic catarrh of the middle ear and serositis he found

Simple chronic middle ear catarrh (uncomplicated)	49
Chronic middle ear catarrh (combined with serositis)	14
Chronic middle ear catarrh (combined with nerve deafness)	23
Chronic middle-ear catarrh (combined with identity of suppurative inflammation)	5
Serositis (uncomplicated)	6
Serositis (complicated with nerve deafness)	3

Improvement after inflation occurred in 92 cases, and in 21 of these it was very marked, showing the incidence of narrowing of the Eustachian tubes. Marked relaxation of the membrane was noted in 5 uncomplicated cases, and Sir James Dundas-Grant considered this as one of the results of long-standing Eustachian obstruction. He thought it was often overlooked. He had frequently encouraged patients' friends to re-educate them by repeating to them sounds, vowels, syllables, and words, but it was difficult to get them to keep this up. He had not felt encouraged to give much trial to galvanism, but at the present time he had a case of most extreme deafness in which, under treatment by galvanism, the capacity for hearing shouted sounds had been recovered.

Dr W. S. Sime (Glasgow) said that the prevention of adhesive processes in the tympanum was a more important matter than the treatment of these changes when they had occurred. That meant, as Sir William Milligan had pointed out, the careful elimination of conditions of obstruction and sepsis in the nose and throat, and especially, he was convinced, of sepsis. He was of opinion, in this connection, that nasal accessory sinus disease was much more common than is generally supposed, and, moreover, that tonsillar disease was still too frequently overlooked, because a thorough examination was so often neglected. Regarding the treatment of established cases of so-called dry catarrh of the middle ear pathological conditions in the mouth, throat and nose should be dealt with, though they could not in most instances, promise the patient that this would result in improvement to the hearing. In some cases,

however, there would be a quicker perception of sound, though the usual tests usually employed might not show it. He had been in the habit of making an application of silver nitrate solution to the Eustachian tube, sometimes with the aid of Yarnier's speculum. He asked Sir William Milligan if he had had no bad effects from paracentesis and downward bougienage. It seemed to him that there was a danger of stirring up a septic condition in the tympanum.

Mr HERBERT TILLEY (London) was of the opinion that the early stages of chronic adhesive otitis were frequently overlooked, and even by otologists. Possibly this was because the deafness was slight and varied much in its degree, and was often temporarily relieved by auto-inflation of the tympanum. Not infrequently the chief symptoms were a "woolly" feeling in the ear and an occasional "crackling noise." If the suture employed in ventilation tube at the same time as the tympanum was inflated the serious exudation could be detected by moist crackling sounds similar to those heard when advanced emphysema was present in pulmonary tuberculosis. Paracentesis should be carried out in such circumstances, and repeated if necessary—namely, if the incision healed and the fluid collected again. If the exudate was allowed to remain it tended to become gummy, and possibly later on it favoured the organization of connective tissue bands and adhesions. He could assure Mr Sime that no septic intratympanic complications need be feared if the meatus were carefully sterilized before making the tympanic membrane. If and when the serous fluid repeatedly recurred after paracentesis, the surgeon should be careful to exclude the presence of a new growth in the lateral wall of the nasopharynx. Of this type of antral complication he had seen eleven cases, and all of them in adult males. In the usual type of serous exudation into the tympanum it was his practice to inject through the Eustachian catheter a few drops of aigrol (10 per cent) after having removed the catarrhal fluid by inflation and aspiration by means of a Siegel's speculum. The fact that the silver preparation often passed into the meatus through the incision in the membrane amply proved that fluids could be injected into the tympanum by way of the Eustachian tube. He had satisfied himself that there was a definite, although limited, field for the useful employment of endocrine therapy in certain cases of chronic otitis media, and more particularly in females about the time of the menopause.

Mr SYDNEY SCOTT (London) said that he had never seen any real improvement in hearing that could be attributed to the Zund-Bugnet method alone. He had stress on Dr Neil MacLay's suggestion that where re-education methods were sought for the speaking tube and the patient's own voice possessed obvious advantages over any electrical method of producing artificial sounds. Another point in relation to deafness was dental sepsis, but he found that many dentists and patients and medical advisers regarded the examination of the buccal cavity and teeth margin as sufficient to decide whether there was evidence of dental sepsis. Mr Scott considered x-ray examination could not be dispensed with in discovering most cases. Those who insisted on trying electrical treatment could avoid giddiness by stimulating both sides equally with anode and cathode.

Sir WILLIAM MILLIGAN replying to the various points raised, said that he had endeavoured to avoid details and to take a broad and comprehensive outlook. Despite all that had been said he still maintained that preventive treatment was the main essential, and that when chronic catarrhal otitis media was in full bloom little or nothing could be done for it. He agreed with Sir James Dundas-Grant that the maintenance of the patency of the Eustachian tube was all-important and that the normal physiological functions of the middle ear were dependent on its efficient ventilation. The method of bougienage, he had suggested although more complicated, was much more effective than bougienage in the drill, and, moreover, had the merit of not damaging the lining of the Eustachian tube. He considered re-education of the sense of hearing of value, but thought that more might be done by re-education with the human voice.

DEMONSTRATION

[illegible]

Mr Barnett then showed a group of cases of chronic middle ear suppuration

Mr Barnett then showed a group of

middle ear suppuration

The first case was that of a highly skilled woman teacher who had a history of a very old standing discharge with pain, discomfort, and marked deafness going back into early childhood, she had had various treatments and had been ordered within a comparatively recent date to use drops. At an operation, however, extensive bone disease was found extending in all directions, She durly mator and the lateral sinus both having to be stripped, made an uninterrupted recovery though it was extended period tured, the hearing began to improve, and after function This of five years ago and there had been no untoward event since. The left side was also operated upon as active disease was but the double mastoid operation was not considered necessary. On treatment this ear cleared up so far as the child concerned, though the patient still largely depended on the right of operation for her hearing which required to be good for her work. Had a radical operation been performed her career would have been ruined and there would have been destruction of the function.

The next case was that of a highly specialized school teacher who in April 1924 for erratic and ill defined but not limited to the mastoid region. There was no discharge with temporary benefit but with tympany symptomage.

[illegible]

in spite of his diabetic history the membrane healed, his hearing was very fair, and he was relieved of all his symptoms.

The fourth patient had undergone a modified radical operation on both sides with extensive trouble was found, both tympanic membranes healed soundly. All symptoms were immediately relieved by the operation. Her tonsils were removed subsequent to as they were giving rise to special interest owing to long standing mastoid trouble, and the much done, and extensive bone disease.

The fifth case was of an ordinary sign of any particular pressure pain without any of the impaired health of the patient. The conservative operation was done, and the tympanic membrane found with considerable destruction of the tympanic membrane. After operation everything proceeded satisfactorily, though the patient was not a good one constitutionally.

Patients 6 and 7 were two boys with long standing otitis from the ear, marked deafness, considerable pain and other symptoms. In both cases the modified operation was done with treatment. No trouble had occurred in these cases since the operation.

No 8 represented a common type at the hospital—a persistent discharge from the ear—in this case a short period of treatment and a short recovery was slow and prolonged. Four years after operation.

[illegible]

Mr Norman Barnett added that these ten cases of turning
ago, circumstance, mentality, and length of onset were
instructive, and in his view presented a fairly complete
picture of the advantage of the modified operation. So he
were not quite so satisfactory, but those he had shown
emphasized (1) the absence frequently of any symptom but
persistent discharge, (2) the extensive trouble found, (3) the
futility of any treatment but operation, (4) the preservation
of function

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL

MEDICAL, SURGICAL, OBSTETRIC

ASCARIS IN THE BILE DUCTS

A FULL account of the case here described was forwarded to the BRITISH MEDICAL JOURNAL early this year, but was unfortunately lost in the post. As I feel that such a case should be placed on record, I am writing these short notes from memory.

The patient, a male, aged about 40, was admitted to the St. Peter's Hospital, London, on 15th July 1901, complaining of intestinal obstruction. He was jaundiced and had a very bad general condition. No history could be obtained from him. He was constructed by Dr. Theobald, and was found to be very large. The bladder was very large and contained a large amount of urine. The rectum was empty. The small intestine was found to be obstructed. The obstruction was found to be due to the presence of a large mass of Ascaris in the bile ducts. The mass was found to be composed of many small, white, thread-like worms. The mass was removed by the use of a large syringe. The patient recovered and was discharged on 1st August 1901.

A Chittagonian male aged about 40, was admitted to the
 Hospital suffering from intestinal obstruction. He was jaundiced
 and his condition extremely bad. No history could be obtained
 At the operation the colon was found to be constricted by the
 adhesions in the neighbourhood of the gall bladder very large
 toneum was deeply bile stained, and the adhesions when the
 I had just freed the colon stopping the operation, and he
 patient's condition necessitated theatre I made a post mortem
 died shortly after leaving The gall bladder common bile duct
 examination and hepatic duct were full of large ascariides. The
 cystic duct was greatly dilated the ducts slightly so. On making
 gall bladder was found numerous large ascariides an extraordinary
 a section through the liver numerous large ascariides but only
 in the bile ducts. The cut liver presented an appearance
 appearance two or three worms were peeping out from the cut end of the
 six or eight worms were seen in the gall bladder. Unfortunately, the
 bile ducts on each side of the incision or *statu quo* failed, as the
 There was no fistula in the specimen when the liver was pu
 attempt to preserve the specimen in formalin
 worms crawled out of the ducts when the liver was pu
 previously seen a number of cases of intestinal
 found in Chittagonians, but I have h
 post mortem whether the majority
 The majority

I had previously seen a number of cases of intestinal obstruction with jaundice in Chittagonians, but I have had no opportunity of ascertaining post mortem whether the were due to the same condition or not. The majority of the cases cleared up with purgation and enemata and gave a history or previous similar attacks from which they had recovered, they invariably refused operation.

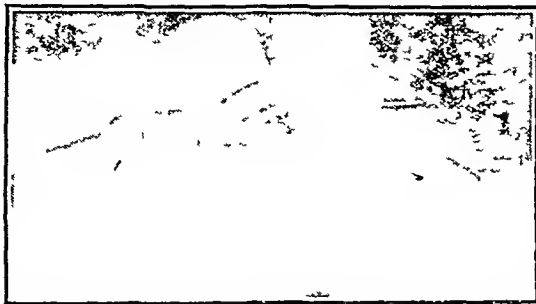
W. F. BRAYNE, M.B., Ch.B.,
Lieutenant Colonel I.M.S.

Ed aburg

CONGENITAL MALFORMATION OF SPINE

THE photograph reproduced herewith illustrates a case of considerable interest. The mother fell downstairs at the fifth month of a normal gestation, and although bruised and severely shaken was quite well again in two or three days. No doctor was called in. Labour came on in due course at full time, it commenced at 11 p.m. on one day and terminated at 2 p.m. on the next day. There was no difficulty in birth, and forceps and chloroform were not needed.

I was called in after the birth of the child as the back appeared to be malformed. I found that about the middle of the back there was a wound $1\frac{1}{2}$ in long and $\frac{3}{4}$ in wide on the right side of the spinal processes, no bone



could be felt in this wound, where it seemed to be entirely absent. Below the wound was a raised lump, which was hard, and felt like fused bone. It extended for about $1\frac{1}{2}$ in below the wound, and was about $1\frac{1}{2}$ in wide. There was a complete cleft palate also, but no hare-lip. The left parietal bone was about half as well developed as the right, and the right side of the frontal bone was half as well developed as the left. All the sutures were very wide, and there was a haematoma over the left parietal bone. There was practically no neck, it appeared to have been telescoped into the chest, which in front showed no marked abnormality.

The child, a girl, lived for fourteen days, and the photograph was taken after death. During life the baby never closed its eyes by night or day. The needles in the photograph were placed to show the upper and lower margins of the wound. A post-mortem examination was refused.

E F W BUCKELL, M.R.C.S., L.R.C.P.

Newport Isle of Wight

RECTAL ANAESTHESIA

IN the issue of September 19th (p. 518) Mr. Gianville Chapman and Mr. McLellan reported a case of rectal etherization. During the past two years I have operated on 125 cases in a home under rectal etherization. This represents 75 per cent. of the total surgical cases during that period, and I am convinced of the many advantages it offers over administration by inhalation. Amongst these are the ease of administration, the absence of apprehension on the part of the patient, the absence of coughing, itching, and staining, so frequent when the anaesthetist is not expert, the reduction of shock, and the absence of post-operative vomiting. The method I now employ is as follows.

If the patient be at all nervous she is given bromide for a day or two before operation, an enema is administered the night before operating, and the bowel is washed out three or four hours before operation, one and a quarter hours prior to operation a hypodermic injection of hyosine compound B is given, and half an hour afterwards a mixture of 51 oz. of ether and 2 oz. of olive oil is introduced into the rectum with catheter and funnel, immediately before introducing this mixture 1 oz. of olive oil is run into the rectum, this prevents the burning sensation of which most patients complain. The catheter is then pushed in a little further and the ether and olive oil mixture run in slowly, the administration taking about twenty minutes. The patient is then allowed to lie quietly for half an hour. In a few cases (those in which the amount of ether had been reduced to 4 oz.) it was necessary to supplement the anaesthesia for a short time with warm ether given by Shipway's

apparatus. After the operation the bowel is freely irrigated with warm saline, and 2 to 4 oz. of olive oil left in the rectum.

It is interesting to note the wide field of utility for this form of anaesthesia. The series of 125 cases includes hysterectomy, gastro-enterostomy, gall stones, fixation of kidney, tonsils and adenoids, resection of nasal septum, dental extraction, perineorrhaphy, operation for haemorrhoids.

In three elderly people, who were so frightened that it was deemed advisable not to let them know when the operation was to take place, the administration has been carried out without the slightest knowledge on the part of the patient.

Port Elizabeth South Africa

R D LAURIE

SEROUS SUTURE MATERIAL AND PEPTIC
ULCER

RECENTLY it has been stated that diminution in the incidence of jejunal ulcer following gastro-enterostomy may be obtained by the sole employment of catgut in suture of the mucous and serous coats. In thirty years' personal experience of this particular operation, in which catgut has been exclusively used for suture of mucous layer and silk for serous, I have not had, to my knowledge, a single case of peptic ulcer to record. Such an occurrence can only be attributed to maladroit introduction of the external (serous) continuous silk suture, if any unabsorbable suture material is allowed to embrace the mucous coat an ulcer must follow.

The object of this note is to draw attention to the fact that while absorbable catgut is essential for approximation of divided mucous membrane, its employment for any serous closure is fraught with danger of dehiscence. Having had two deaths after enterectomy from such use of catgut, I have no compunction in warning surgeons as to the tragedy which, sooner or later, will attend the use of such unreliable material for serous union.

In gastro-enterostomy, as in eutelectomy, the employment of Lembert (serous) silk stays to guide the introduction of the continuous Lembert (serous) silk suture is, to my mind, the only certain method of avoiding a mucous lesion. I have found that the durability of catgut based on superficial tests is a false index when it is exposed to the action of the peritoneal juice.

Many years ago Professor Kocher said that "silk is the only reliable material for suture of any serous wound," and my experience dictates that the teaching of that distinguished surgeon is correct. I have never used clamping lions,² as I have always considered them inappropriate.

Buenos Aires

JOHN O'CONNOR, K.B.E., M.D.

British Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

EAST YORK DIVISION

A CLINICAL meeting of the East York Division was held in the Hull Royal Infirmary on November 20th, with Dr S E DENYER in the chair, when a series of interesting cases were shown.

Dr R J BARLEE showed

- (1) A case of large double inguinal hernia with hydrocele in a man aged 35. It had developed shortly after the onset of venereal disease and had been ascribed by the patient to this disease.
- (2) A case of tumour of the testis. The patient had an injury to the testis when he was a boy and the swelling increased in size while he was in the army. This he ascribed to riding.

In the discussion Mr J F GILL described a case he had seen which had been diagnosed as haematoma, but which at the operation was found to be sarcoma. This, he thought, should make one look with suspicion on a haematoma in this situation.

Dr DENYER showed two cases

The first was a case of gastric infection secondary to abscess of the teeth in a woman, aged 35, with chronic epigastric pain coming

¹ Lancet, October 2th 1912.

² BRIT. MEDICAL JOURN., 1 February 25th, 1922.

on two hours after food, nausea, vomiting which relieved pain, and slight haematemesis three months ago. The teeth and gums were pale, and x-ray examination of the jaw showed septic roots in both upper and lower jaws and a root abscess in upper jaw. Nothing abnormal was found in the stomach by the x-rays and the blood films were normal. After the teeth had been extracted the patient improved markedly and put on 3 lb in one week.

The second was a case of narcolepsy. A girl, aged 19, of good physique and previously healthy, when 16 years of age began to have attacks of sleepiness from four to nine times a day. At a meal or other time she would fall forward asleep would sleep for a few minutes and then awake quite fresh and without headache. All her systems were healthy, but she was emotionally contentious and after sleeping at work would work harder than before so that her employer should not suffer loss. The points in diagnosing her condition were from (1) Epilepsy—the sleep was too long and there was no after headache. (2) France—the sleep was too short. (3) Cataplexy—no flexibilitas cerea. (4) Encephalitis lethargica—no diplopia and no moral change or Parkinsonism. (5) African sleeping sickness—she had never been abroad. (6) Catatonic form of dementia praecox—there was no mental change and no flexibilitas cerea. The treatment was nitroglycerin and caffeine.

In the discussion on this case, Dr F. C. EVE described a case he had seen of a similar nature, and commented on the functional element of Dr Denyer's case, which contrasted with his own case where the patient, who was a man, developed the condition after overwork.

Dr RICHARD ROBERTS showed a case of cancer of the left tonsil, and a case of sarcoma of the posterior pillar of the fauces. These two cases brought out the contrast between the typical ulcerated cancer and the round smooth swelling of sarcoma.

Dr TURRO showed a case of Addison's disease which had been treated by small doses of suprarenal extract. There had been marked pigmentation, but it had all disappeared except a slight amount on the back and a patch on the roof of the mouth.

In the discussion, Dr J. NELSON, raising the question of diagnosis between tuberculosis and tumour of the suprarenals, recalled two cases of malignant disease of the gland. Dr EVE mentioned that pigmentation was not an invariable symptom of Addison's disease, and mentioned a case he had seen where there was only very low blood pressure but no pigmentation anywhere. At the post-mortem examination typical tuberculosis of the suprarenals was found.

Dr TURRO showed also a case of lymphadenoma treated by x-rays.

The patient had been admitted a month before with discrete enlarged glands on the left side of the neck, and a mass of glands in the axillae and groins. The right leg was swollen and the left leg had commenced to swell several times. Nothing abnormal was found in the abdomen. The blood picture was normal except for an eosinophilia of 6 per cent. Diagnosis was confirmed by the histological picture of one of the glands. After great decrease in size of the glands, one of them was removed for examination but no special changes were made out. The fibrosis was no more marked than in the original gland examined. It was suggested by Dr Adam that the increase in size of the glands was largely due to proliferation of the lymphocytes and consequent infiltration of the glands by them. Presumably the x-rays caused these to be absorbed again without any essential change in the gland tissue.

Dr SIMPSON remarked that glands in the posterior triangle of the neck were more important than those in the anterior triangle, as the latter were often enlarged from some septic condition of the mouth. Dr BROWN pointed out that good results could also be obtained by treatment with roentgen.

Mr H. URCOTT showed five cases

1. A man with a calculus in Wharton's duct. Eleven years ago he began to have temporary swelling of the submaxillary gland at meals. Latterly the swelling had become permanent.

2. A woman aged 53 with a large fungating tumour of the cheek. Her upper jaw had been excised thirty-four years ago for sarcoma. A part of this was removed nine years ago, and since then she had had several minor operations on the cheek.

3. A child from whom a finger had been removed. In one aged 52 some small nodules had been removed to that all white bodies could be examined. These were found to be calcified nodules and degenerative in type, apparently not being due to an inflammatory process.

4. A woman aged 33 with metastases of the fibrous tissue of the breast. X-rays showed the whole bone to be very extensively eroded. A similar erosion was present in the condyle of the lower jaw. Four years ago she had total hip trephomy for squamous carcinoma of the cervix. No primary growth could be detected in the breasts or elsewhere.

Reports of Societies.

SPLENIC ENLARGEMENT IN CHILDREN

At a meeting of the Section for the Study of Disease in Children of the Royal Society of Medicine on November 27th, with the President, Mr PHILIP TURNER, in the chair, a discussion on the diagnosis and treatment of splenic enlargement in children was opened by Sir HUMPHRY ROLLESTON, whose paper will be found in full at page 1099.

Dr G. A. SUTHERLAND, continuing the discussion, dealt in some detail with the condition of thrombocytopenic purpura haemorrhagica. This disease was characterized by an enlargement of the spleen and a decrease in the number of platelets in the blood, these two conditions seemed to be related pathologically. Splenectomy appeared to offer the only certain chance of cure. The observed increase in the size of the spleen was not great; it was usually just palpable, although this probably represented two or three times the normal size. There was often some difficulty in diagnosing minor degrees of splenic enlargement, but in children over 2 years of age at any rate a spleen which could be felt was definitely pathological. Two negative findings in this disease were important. There was no change in the blood count except that produced by the anaemia following repeated attacks of haemorrhage, and apart from these haemorrhages and the anaemia they produced there was no disturbance of health. Dr Sutherland emphasized certain points in diagnosis, especially with regard to the decrease in platelets, increase in the bleeding time, and the fact that the clot was non-retractile. He analysed fifty-eight cases in detail by means of tables, and with regard to treatment showed that splenectomy was a real advance. Of these fifty-eight collected cases, fifty patients were in perfect health, and two were improved, while six had died.

Dr L. G. PARSONS dealt with splenic enlargements due to Banti's disease, acholuric jaundice, and lymphadenoma. He pointed out that the existence of the first of these in children was denied by some authorities, and while the full symptom-complex of Banti's disease might be rare, there occurred cases of splenic enlargement of doubtful origin characterized by anaemia and leucopenia with negative Wassermann reaction and normal fragility of the red cells. He described three cases presenting such a syndrome, one of which, however, had shown a leucocytosis. Dealing with acholuric jaundice, Dr Parsons described a method for estimating the fragility of the red cells. In one case of this disease an accessory spleen had been found at operation, and he wondered whether if this were left behind after splenectomy it would hypertrophy and cause recurrence of the disease. In both these groups of cases splenectomy gave excellent results. Syphilis might present a picture almost identical with Banti's disease, and if such a case resisted antisyphilitic treatment splenectomy should be performed. Even if the liver were found to be involved at operation removal of the spleen was not contraindicated, since if cirrhosis was not too far advanced recovery appeared to be a possibility. Lymphadenoma presented some difficulties in diagnosis, but there was usually some glandular enlargement. Pain in the limb might occur and was some help in diagnosis. His experience of the x-ray treatment of this disease was that invariably made the condition worse.

Dr HUGH FULFORD said that he disagreed with much that had been brought forward. He thought that splenic enlargements in early childhood were very important. Under about 4 months the two main causes were syphilis and tuberculosis, and such enlargements were valuable confirmatory evidence if either disease was suspected. From 4 months up to about the third or fourth year enlargement of the spleen was comparatively uncommon. At about 5 or 6 years of age there occurred splenic enlargement of unknown etiology associated with iron anaemia and enlargement of the liver. The whole condition quickly improved without any special treatment and was probably due to some infection. From 6 years onwards splenic enlargement in children was almost always

due to tuberculosis, syphilis, or lymphadenoma. Tuberculosis sometimes occurred in the spleen as the main site in the body, and in such cases splenectomy was justifiable. If none of these three causes were present Dr Thursfield was strongly opposed to calling the condition Banti's disease, which represented a rubbish heap. This diagnosis ought to be reserved for the type of case actually described by Banti. He pointed out that considerable enlargement of the spleen might occur in almost any of the acute specific fevers and this enlargement might persist into convalescence.

Dr CRAMHAM FORBES described some cases of spleno-medullary leukaemia in children.

Dr F. J. POYNTER said that there was much still to be discovered about the spleen. The question of the influence of infection on this organ required further elucidation, and possibly some individuals presented a peculiar blood reaction to infection. He thought that much more investigation of the reticulo-endothelial system was necessary. He pointed out that in some cases of undoubted icteric jaundice in families fragility of the red cells might be normal.

Dr P. PARKES WEBER pointed out that since leucopenia was a common feature of almost any chronic enlargement of the spleen it should not be accepted as evidence of Banti's disease. He agreed that in familial cases of icteric jaundice certain members of the family might have normal fragility of the red cells, and he was strongly opposed to splenectomy in these mild cases.

The PRESIDENT described a case already referred to by Sir Humphry Rolleston where a very large spleen in a boy of 6 with a positive Wassermann reaction resisted treatment over a period of years, and the boy's condition actually made worse by other treatment was cured completely by splenectomy.

Dr L. G. PARSONS, in reply, stressed the fact that the cases of Banti's disease which he had described all showed the microscopic appearances in the spleen associated with this disease.

PUERPERAL SEPSIS

At a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on December 3rd, with Mr T. G. STEVENS in the chair, papers on the subject of puerperal sepsis were read by Dr H. J. PHILLIPS (Oldham) and Dr L. COLEBROOK (London), the former speaking on the rational treatment of puerperal infection, and the latter on some laboratory investigations in connexion with the subject.

Dr PHILLIPS placed before the Section the results he had obtained at the Monsall Fever Hospital, Manchester, in the treatment of a series of cases of puerperal infection along certain constant lines. In that hospital twenty-two beds were set apart for puerperal cases, and the annual admissions varied from 90 to 120. Though no cases were refused, it still happened that many patients were not brought until their condition was distinctly grave. He had been impressed by the great amount of extra-uterine injury which these women had sustained, and their very septic state when they came to hospital (he was not speaking of toxic peritonium). He had tried to devise a means of assisting the uterus to drain itself by promoting a flow of lymph through it into the cavity. He believed glycerin promised well for the purpose, as it was a powerful tissue dehydrant, and its viscous nature enabled it to remain long in contact with the damaged tissues, moreover, it could be distributed slowly and evenly over the interior of the uterus. A good trial of this had left him pleased with the results. Most of his cases were thus drained once daily, the more severe cases twice a day. The first 100 cases were treated, on the average, seven times each, the course being stopped only when all signs of active inflammation had ceased. The passage of the catheter and injection of the glycerin helped to reveal the presence or absence of pus in the uterus. Pus was present in 50 per cent of his severe cases, in one there was a total of 6 drachms. A profuse purulent vaginal discharge had often been taken by the medical man as an indication that the uterus was draining well, when in fact none of the discharge was

coming from the uterus, the source being high up in the vagina. He gave a comparison of two series of cases which had received. The first was a table of 87 cases which were treated by lymph drainage of the uterus, with iodine added to promote uterine contraction, and the second a series of 110 cases treated immediately before instituting the glycerin treatment. The cases before the new procedure had been treated along three main lines. The milder ones had vaginal douching, Fowler's solution, quinine, and so forth, and the more severe had been treated with antistreptococcal serum or curetting. Of the 110 cases, 88 were treated expectantly, 17 with antistreptococcal serum, and 5 by curetting. Of these 29 per cent developed complications after coming for treatment, 11 of the patients producing pus so as to require operation. Of the 87 cases treated by lymph drainage only 13.7 per cent had complications, or half the proportion in the other series, while only one patient of the series developed pus. He showed on the screen detailed tables of cases. The percentage mortality in the first 100 cases treated by the new method was 13, the lowest figure in the institution for many years. All the 13 cases who died in this series succumbed to a condition which had become definitely established before the patient's admission to hospital. The stay in hospital also had now been much reduced. In former days patients who recovered stayed in the hospital an average of 38 days, now the period was 26.2 days. Concerning the acute blood infections, Dr PHILLIPS had, on the suggestion of Dr Colebrook, adopted two lines of treatment: first, the intravenous injection of arsenical drugs as a bactericidal agent, secondly, the transfusion of immunized blood to aid the patient's own defensive mechanism. The arsenical preparation preferred was novarsenobillon, and the results were best after giving large doses. The improvement following the use of this preparation was remarkable, in some cases dramatic. The results of the transfusions were not so striking.

Dr L. COLEBROOK, in the course of his paper, set out some results of laboratory investigations in connexion with puerperal sepsis. It was necessary, he said, to ascertain what was the chief microbial agent in the production of puerperal sepsis, and his own view was that it was the haemolytic streptococcus which caused 90 per cent of the trouble in septicæmic cases and perhaps of localized infections. As to the manner in which the streptococcus got into the genital tract generally, it was taught that the organism was not normally in the vagina, but might it not be that in these conditions the non-haemolytic form of the streptococcus was transformed? The non-haemolytic were more easily killed by leucocytes than were the haemolytic. Was there any evidence that the woman's resistance to the streptococcus was lowered by the conditions obtaining in labour and the puerperium? Experiments had shown that there was no general tendency in these states for the killing power of the blood to be decreased, and if a few streptococci got through, the woman's blood being normal, they had little chance of surviving in the capillaries. In septicaemia the patient's killing power was enormously reduced, in some cases to only 40 per cent of the normal. In severe streptococcal septicaemia the leucocytes were not the normal ones, hence the defective bactericidal power. The significance of the fact of streptococci found circulating in the blood stream was largely a question of numbers, and he advocated that the report of the pathologist in these matters should include the numbers seen per cubic centimetre. He had never seen a woman recover whose blood had more than 100 streptococci per c.c.m. The war experiences had taught the lesson that wounds infected with haemolytic streptococci and containing damaged tissue could not safely be left to themselves, as Sir Almroth Wright had abundantly shown. The worst cases of puerperal fever were those in which the lochia were suppressed and those in which the use of instruments had resulted in bruising. The great point about the treatment of these conditions was to cause an outward flow, and this was well secured by the use of glycerin, which Dr PHILLIPS had just described, perhaps its value was due to its viscosity. He did not believe a real case had been made out for the use of antistreptococcal serum, when mixed with the blood no additional killing power could be demonstrated in it as a

handicapped, a kidney which had been obstructed for four weeks would assume complete function. These experiments showed that the medulla was compressed by pelvic distension and the arteriae rectae showed preshortening. When the pressure was directed to the cortex there was congestion, followed by atrophy, especially in the sub-cortical glomeruli. Lastly, the peripical glomeruli atrophied.

SIR DAVID WALLACE thanked the officials of the society for their help, and referred to the change of meeting place. He drew attention to the number of papers relating to tuberculosis read during his term of office, papers dealing with the subject from the clinical, bacteriological, veterinary, and research standpoints. In January, 1913, Mr John Fraser had read a paper on bone tuberculosis, and a committee of the society was formed to inquire into the relation of the milk supply and the prevalence of tuberculosis in Edinburgh. Again, during the session 1924-25, the society had returned to the subject, approaching it from a different angle but with the same object in view. Among many interesting subjects discussed was erythroedema, the use of the bronchoscope in chest diseases, as described by Dr Ewart Martin. The many interesting discussions, communications, and demonstrations merited a large attendance of members. The special discussions had been on congenital or inherited syphilis, opened by Mr David Lees, on viscerotoposis, by Dr Robert Hutchison, on the milk supply of the country and its bearings on health, by Professor Sir Robert Philip, on the pituitary gland, by Professor Sir L. Sharpey-Schafer.

DIATHERMY IN CARDIO-VASCULAR DISEASE

At a meeting of the Liverpool Medical Institution on November 26th Dr J HAY and Dr PHOEBE LACE read a short paper dealing with the uses of diathermy in the treatment of patients suffering from cardio vascular disease, more particularly in patients with major and minor angina, in cases of high blood pressure with various manifestations of distress, and in one case of intermittent claudication. Some of the patients had been kept under observation for many years, and the effects of the diathermy had been noted for the last two years. Weekly records had been kept of the variations in blood pressure, both systolic and diastolic, in the heart rate, and in the clinical findings, showing the response to treatment. In most instances there was definite benefit, and in some cases dramatic improvement. Not only were the pressures reduced as the immediate result of treatment, but when the course of treatment terminated the improvement was maintained. In nearly every case, whatever the variations in blood pressure, there was marked subjective improvement. The response to treatment was much more satisfactory in the males than in the females. In considering these results there appeared to be no doubt as to the benefit derived from this line of treatment.

Grafts

Mr R E KELLY read a paper on grafts and grafting. After a brief historical survey, he considered the various methods of skin grafting. He said that the essential features in a successful Thierch graft on a granulating area were as follows:

1 The area must have a flat instead of a heaped up edge. This could be obtained by Beck's method of protecting the growing epithelial margin by strips of half inch zinc oxide eye-trapping for a few days. By this means the exuberant granulations were flattened out and the marginal cranny of pus obliterated. Further it saved the delicate new epithelial edge from being pulled off with the dressing. The last dressing should consist of 50 per cent alcohol.

2 The granulating area must neither bleed nor seep. It should have no other drainage nor drain.

3 The operation should be performed with absolute dryness. As one showed there were disadvantages in moistening the area with saline, glycerin or antiseptic. No dressing was needed. Around the area a nest of gauze was placed and cut up of this but not touching the graft a piece of celluloid was pressed down with taping.

In immediate grafting Mr Kelly mentioned the value of a "cut" or distal wax case, over the graft so as to apply even pressure and prevent the exudation of serum

between the bed and the graft. He then referred to the many grafts of Lescr, Gillies, and Pickarill, and showed examples of eyelid grafting for ectropion and whole skin grafts for the deformity following lupus of the face. Photographs of the tubed or jug-handle graft were shown, illustrating the restoration of a lower lip lost by cancer of the oris in infancy. He described Gillies's work on the tibia-fasciae femoris and its multifarious uses as a grafting material. He showed cases in which he had used it for uniting a fractured patella, for repairing an extensive post-operative hernia, and even for repairing an inch gap in the extensor secundus internodii pollicis tendon. This had been one of Mr Kelly's most successful fascial grafts. The result after a year was complete and strong movement of the terminal phalanx in absolute contradistinction to a similar operation on the flexor tendons of the palm, where, despite primary union, the palmar operations had failed. There appeared to be too much fibrosis, and the grafts had stuck to the palmar fascia. Cartilage grafts for nasal deformities were next considered. They were extremely useful in accidental depressions, but were apt to be disappointing for cases of congenital syphilis. Finally, Mr Kelly described his method of wedge-shaped bone graft. He had used this for the fibula to prevent the slipping of the peroneal tendons and in the tibia to bridge a gap of an inch or so. The paper was illustrated by lantern slide, and there was a preliminary exhibition of the patient.

INSULIN TREATMENT

At a meeting of the Chelsea Clinical Society held in the Board Room of St George's Hospital on November 17th, Dr SERVORN PRIOR, the President, in the chair, Dr E P POULTON introduced the subject of insulin treatment.

Dr Poulton said that his plan of giving insulin was to increase it up to such a dose, twice in the day (three times if necessary), that the urine remained permanently sugar-free, while the patient did not get any signs of an insulin reaction, in the ordinary circumstances of his life, but he thought it important that the patient should experience a reaction during the preliminary test period, so that he would know what it felt like. Mild cases of diabetes might be dieted, if after a period the blood sugar became approximately normal, and the patient lost all his symptoms, and in particular his sense of fatigue, then insulin was not required. Dr Poulton showed results of Dr Payne's researches at Guy's Hospital—namely, that toast produced a smaller rise in the blood sugar of a diabetic patient than a similar quantity of bread, and that artichokes, which contained insulin, were tolerated better than almost any other vegetable. In rather more than half his cases treated on these lines it was necessary to reduce the dose of insulin after the treatment had been in progress for two years.

Dr GEORGE GRAHAM said that while insulin would have to be given continuously to all cases of severe diabetes, and, of course, to all cases which had been restored from coma, this was not so in the mild cases. If the dose of insulin was small it was always possible to give up insulin provided the carbohydrate was reduced at the same time. Most patients preferred to take insulin, partly to keep their extra carbohydrate, and partly because they felt so well. The chief danger for the diabetic patient lay in the occurrence of other diseases, both major and minor. The major infections always put the patient in danger of coma, and of nine cases of coma no fewer than eight had a severe secondary infection of some sort. The minor infections might lower the sugar tolerance considerably, and it was not possible to measure this in terms of insulin. A very mild attack of German measles had increased the insulin requirements of a child of 8 by twelve units. It seemed advisable to increase the dose of insulin by two or four units, as soon as the infection started, irrespective of whether sugar was present in the urine or not. In severe infections the dose of insulin might have to be increased up to 100 or 200 units. A scheme of gauging the safe dose of insulin was described. He had not known any case of renal glycosuria which had developed into true diabetes, but he pointed out that such a person was as

likely, but no more likely, to suffer from true diabetes as anyone else

Dr P J CAMBRIDGE said insulin was no longer looked upon as a cure for diabetes. It was only necessary to give it, on the average, in about one-third of the cases, these were mainly children or adults suffering from complications, such as acidosis or gangrene. In cases of true pancreatic diabetes insulin acted as a substitute for the missing internal secretions. In other forms it was a means by which physiological rest could be obtained for the exhausted gland. In this connexion it was necessary to bear in mind the relation found to exist between the internal secretion of the pancreas, adrenals, parathyroid, thyroid, and pituitary. The last named, although not taking part in carbohydrate metabolism directly, was capable of indirectly influencing the process by the property it possessed of combining with the insulin—a property which accounted for some of the puzzling effects of insulin constantly met with.

Dr F G CROOKSHANK, who said that he spoke from the standpoint of the general physician, which approached that of the general practitioner, rather than that of the specialist in diabetes, wished to emphasize that apart from its great and unquestioned value in early life, and in coma and gangrene, the role of insulin therapy seemed to be increasingly the paradoxical one of trying to enable patients to do without it. Before the introduction of insulin therapy it was difficult to interest either practitioner or patient in the various "fasting" and graduated dietetic methods. Now the practitioner who desired admission to the hospital for a case to "see what insulin can do for it" was at once interested when he found how much could sometimes be done without insulin. Too early recourse to insulin occasionally prevented a patient receiving the benefit, sometimes remarkable, that might in early cases attend the removal of oral sepsis. The remarkable change brought about sometimes in glycosuria by removal of oral sepsis gave point to a suggestion of the late Dr Vivian Poore, that possibly the part played by the parotid secretion in carbohydrate metabolism and in diabetes was undervalued. Oral sepsis affected the parotid secretion, by ascending infection and occlusion of Stenson's duct, the point was perhaps worthy of investigation.

Dr HILDBRED CARLILL related a case of diabetes in a young child in whom a portion of pancreas had been grafted. The case so far was very encouraging.

PATENCY OF THE TUBES IN STERILITY

At a meeting of the Brighton and Sussex Medical-Chirurgical Society on December 3rd with Mr H J WALKER, the President, in the chair, Mr HAROLD F SEYMOUR read a paper on some recent methods of investigating the patency of the Fallopian tubes in sterility. He said it was only within the last two or three years that a technique had been worked out which showed satisfactorily whether the tubes were blocked or not. After mentioning the various contraindications he described certain methods. Rubin of New York injected carbon dioxide through a uterine cannula, the pressure of the gas being indicated by a manometer. The apparatus was fully described and shown. The advantage of carbon dioxide over air was that the former was absorbed so much more rapidly, and consequently it was more comfortable for the patient. Mr Seymour thought the water displacement meter used by Rubin was excellent, since it allowed the gas to flow gently. Victor Bonney's simple method of using air was referred to, and Forsdike's method of injecting air through a hollow uterine dilator was described. By any of these means it was easy to determine if there was a free passage through the tubes, and the test had now become a recognized gynaecological procedure. That insufflation of the tubes had a therapeutic effect as well as a diagnostic side was illustrated by one of Mr Seymour's cases. When the tubes were shown to be blocked the next procedure was to localize the block in collaboration with the radiologist. The methods were as follows: (1) The process originated by Forsdike, where lipiodol was used as the opaque substance. (2) The other method involved the introduction of barium sulphate emulsion into the body of the uterus, it was recommended by some gynaecologists. Mr Seymour preferred Rubin's apparatus for diagnosing the block, and Forsdike's lipiodol method for locating the position of the block. Mr Seymour then read a short paper on the possibilities of endoscopy of the uterus, and described his own hysteroscope.

Reviews.

HIP DISEASE

In his small book entitled *The Diagnosis and Treatment of Tuberculosis of the Hip* Mr GIRDLESTONE has placed before the public the fruits of his experience at the Wingfield Orthopaedic Hospital. Its subject, as he says, is purely clinical. It follows cases from the preliminary consultation and diagnosis through the three stages of treatment in an open-air hospital. Finally, "end-results" are classified and operations described.

In a small space every aspect of the disease is discussed and the differential diagnosis between it and transient synovitis, coxa vara, arthritis (chronic and septic), and syphilis is set forth. With all the means at our disposal and all the experience gained at such a hospital as the Wingfield, diagnosis will in some cases remain doubtful and must be treated as though positively tuberculous. There is, as Mr Girdlestone says, great need of a test for tuberculosis as trustworthy as the Wassermann or Sigma test is for syphilis.

For treatment in the early stages he relies upon the Jones abduction frame. It is scarcely necessary to state that throughout the treatment heliotherapy in an open-air hospital is assumed. When, as most often happens, ankylosis is the end-result to be expected, the question of the best functional position arises. Some degree of abduction and flexion is recommended, varying according to the age of the patient. All authorities are now agreed that excision of the joint has no place in the treatment of children, but in adults it may often be advisable as a stage in the production of arthrodesis.

The Thomas hip splint is only recommended for the third and last stage of the disease, when ankylosis is occurring or being consolidated. In cases of bad sepsis with sinuses and hectic fever Mr Girdlestone has recourse to drastic measures to procure radical drainage. Through transverse incisions he excises parts of the pectineus and long and short adductors on the inner side and of the gluteus medius and minimus upon the outer, suturing the skin down over the cut edges.

The various operations for the corrections of deformity after active disease has ceased and ankylosis is firm are described, including that devised by the author for pseudoarthrosis, in which the transplanted trochanter takes the place of the destroyed head of the femur. There is a useful note on the mechanics of the hip-joint.

The book is likely to be of value to anyone who has charge of a case of hip disease and would treat it in the most satisfactory manner. The advice is given in clear language and the directions are explicit. The clear illustrations enhance its value.

LECTURES ON DYSPEPSIA

Dr ROBERT HUTCHISON, in his *Lectures on Dyspepsia*, does not confine himself to disorders of the stomach, he includes also chronic constipation, chronic diarrhoea, and mucomembranous colitis, and ends up gracefully and with humour on the "chronic abdomen." Though in the introduction he expressly states that the book is intended solely to help the practitioner in a common but difficult department of medicine, we cannot help thinking that it may appeal to a wider circle.

The lectures are the fruit of years of experience, they are filled with helpful and suggestive advice, and if the author has not adopted the language of aphorism it is probably because he knows too well the dangers of this mode of expression. One of his main endeavours is to render assistance in the diagnosis between organic and functional disease, pointing out that most organic dyspepsias require surgical treatment, and most functional dyspepsias are of nervous origin. But we must not anticipate its contents, we will

The Diagnosis and Treatment of Tuberculosis of the Hip By G R Girdlestone. B.M.O. on F.R.C.S. Oxford Medical Publication. London Humphrey Milford Oxford University Press 1925 (Demy 8vo pp 2+34 60 figures 8s 6d net).
Lectures on Dyspepsia By Robert Hutchison M.D. F.R.C.P. London Edward Arnold and Co 1925 (Cr 8vo pp 176 5s. net.)

leave the joy of consuming them to the practitioner, trusting that his patients will benefit to the same extent that he himself is sure to do

IMMUNOLOGICAL WORK OF THE GLASGOW SCHOOL

Immunochemical Studies,³ edited by Dr. CARL BROWNING, is a book dedicated to Professor Robert Muir on the occasion of the completion of the twenty-fifth year of his work at the pathological department of the University and Western Infirmary, Glasgow. Six of his former pupils, who now occupy responsible pathological posts, have contributed to it—namely, Dr. Browning of Glasgow, Dr. Mackie of Edinburgh, Dr. Wilson of Birmingham, and Drs. Kosaki, Taniuchi, and Yoshinara of Japan. Nearly all the material of the book consists of reprints of articles contributed to scientific journals, principally the *Journal of Pathology and Bacteriology*, these have been arranged in order, which gives continuity to the story, and some alterations made where necessary. Dr. Browning has written an introductory chapter on antibody action in general, in order to give readers not personally engaged in immunological investigations an indication of the relation between what one may call the Glasgow school and other schools of thought.

The detailed table of contents at the beginning of the book gives a good plan of the ground which is covered and is designed to serve instead of an index. Because of its general design the book is naturally not a complete exposition of current ideas about immunity, but it is a convenient collection of the views of a number of workers who have given special study to immunity problems.

PITFALLS OF SURGERY

Mr. HAROLD BURROWS's book, of which the first edition fell unfortunately into the hands of lay newspaper writers has now appeared in a second edition under the less provocative title *Pitfalls of Surgery*.⁴ As Mr. Burrows says, textbooks and teachers have been so much concerned with constructive information that relatively little has been said about the difficulties and dangers of surgery. Therefore his book is filled with a collection of mischances garnered from experience, and flavoured with some of the author's private convictions. The collection is very complete, and its gathering must have cost Mr. Burrows much time and labour. He has compiled it from his own mistakes, from the recorded errors of other surgeons, and from disastrous incidents which have occurred in general practice. Withal the book is written in a spirit of charity, as when appreciation is shown of the difficulties of the general practitioner in cases of acute abdominal disease, by the remark that "his trial has been hard, while criticism is very easy." Moreover, if the general practitioner is often guilty of unnecessary delay, Mr. Burrows adds that the surgeon frequently fails through excessive haste. Thus a list is given of general disorders in which the symptoms of vomiting and abdominal pain have been the insecure foundations on which a diagnosis of appendicitis has been built.

Mr. Burrows emphasizes the value of an accurate history, the absolute necessity for a thorough and not merely a local examination of the patient, and the fallacy of relying upon individual symptoms. He divides the main tributary streams of error into ignorance, carelessness, misjudgement, and defective technique. He deplores the neglect of post-graduation study and the small need that exists, so far as success in practice goes, for keeping abreast of modern progress. He deals gently with the surgeon who overrates his own capacity, but looks on the occasional operator as dangerous. It is possible to disagree with Mr. Burrows, as when he says that a new source of diagnostic error lies in "a to which he give the name 'the fallacy of collective responsibility' in the group clinics. The plan is said to be 'to rail because a medicine is an art and no work of art can reach a high level when it is the product of a group

of individuals each of whom has a controlling interest. It is quite possible that the group clinic may be most useful, where the clinic is perhaps liable to fail is in not recognizing the value of the balanced judgement of the good general practitioner who ought to be attending, and who knows, the patient.

Mr. Burrows's book is fascinating if only for its new and delicate method of handling a subject which must have caused remorse to many surgeons and practitioners. And if in our earlier review we felt called upon to criticize adversely the title and some of the contents of the book, we are glad to recognize that in both matters Mr. Burrows has shown appreciation of the criticism.

HEREDITY AND MENTAL DISEASE

PROFESSOR ABRAHAM MYERSON has written a suggestive and interesting volume on *The Inheritance of Mental Diseases*.⁵ Its special value may perhaps be said to depend upon its insistence on the view that the hereditary transmission of mental disease is essentially a medical problem to be attacked in the main by clinical experimental methods such as have been found effective in the study of other diseases. The author takes the view that when we have data sufficiently accurate and representing the facts of a more intensive study of individual cases it will be possible to call on statisticians and biometrists to help formulate laws, but that the time for this has not yet arrived. In approaching the problem of mental disease it is encouraging to remind ourselves that as our knowledge of certain diseases has increased, heredity, in the sense used by biologists, is tending to recede more and more into the background as a causal factor. The author illustrates his point by observing that down to the time of the discovery of the tubercle bacillus by Koch the main factor in the causation of tuberculosis was held to be heredity. Just as to-day we speak of the psychopathic inheritance, so our predecessors of past medical generations spoke of the "scrofulous type," which was made to include everything from slenderness to flunting, including rickets (which we now know to be dietetic in origin), catarrhal affections of the throat and nose (usually due to tonsillitis and adenoid hypertrophy), tetany (a defect in calcium metabolism), and so on. With the discovery of the infecting organism as a cause of tuberculosis, heredity, Professor Myerson says, received a knock out blow, we now know that the human being easily acquires this disease under bad conditions of living, that good conditions of living ward it off, that it is treatable by diet, rest, and hygiene, that the environment causes it, in short, and that by control of the environment the disease can be controlled in a remarkably successful way, as is now being done.

The polymorphic theory of the heredity of mental diseases, by which it is held that there is a unitary something in the psychopathic inheritance which makes itself manifest under many forms, is submitted to vigorous criticism. In the excessive development of this theory all manner of mental diseases, including the organic diseases, all psychoses, epilepsies, feeble-mindedness, crime, alcoholism, eccentricity, and even headache in an ancestor, are given hereditary value in relation to the mental disease of his descendant. It is obvious that statistics based on the assumption that conditions so diverse and due to such a variety of causes have a unitary quality which can be transmitted must lay themselves open to serious criticism. The author himself regards Forel's theory of blastophoria (germ-plasm injury) as the most useful working hypothesis for the study of family mental disease, and he brings forward many arguments in support of the view that transmissible mental diseases may not be true hereditary characters, in the sense that stature and blue eyes are hereditary characters, but that they represent diseases, caused by unknown agents having effects which may persist over two or more generations and from which a stock may die or recover. He feels that it is more logical to search the environment for the causes of family mental disease than

³ *Immunochemical Studies*. Edited by Carl H. Browning. London: C. & A. L. 1925. (D my 8vo pp xiii + 29, 12, 6d net.)
⁴ *Pitfalls of Surgery*. By Harold Burrows. CBE, MB, BS, Lond. London: T. & A. L. 1925. (D my 8vo pp x + 25, 1s 6d net.)
⁵ *The Inheritance of Mental Diseases*. By Abraham Myerson. Baltimore: Williams and Wilkins Company. London: Baillière Tindall and Cox. 1925. (D my 8vo pp 356, 2s net.)

to fall back on "pure heredity." The environment offers a more hopeful prognosis, for it will be easier to alter the environment than to induce the genius, the queer, the nervous, the criminal, the alcoholic, the migrainous, and the gouty to refrain from sexual life and parenthood. If we too readily assume heredity of an inevitable kind as a cause, the result is to cause paralysis of investigation, for any fundamentally fatalistic doctrine inhibits research, it, on the other hand, we say that the environment, in some of its forms, as toxins, infection, and lowerer of vitality, acts in a blastophonic way, we are stirred to research and results will follow.

The book includes an account of the various clinical groups of mental disease, the marriage rate of these groups, the relation of sex to family mental disease, the way diseases go from generation to generation, and the path they take in the same generation. The volume may be recommended as a stimulating and helpful contribution to psychiatry.

SAVILL'S "CLINICAL MEDICINE"

THE high reputation SAVILL'S *System of Clinical Medicine* has earned throughout its successive appearances is fully maintained in its latest edition, the seventh.* Dr Agnes Savill, who has so ably edited the four editions issued since her husband's death, has been constrained to enlarge the present by some fifty pages at the cost of very considerable rewriting. The whole work has been thoroughly revised and brought up to date, and in this task Dr Savill has had the co-operation of a number of experts. Dr J Strickland Goodall has revised and in many parts rewritten the chapter on diseases of the heart. Revision of the chapter on diseases of the nervous system has been again carried out by Dr Harry Campbell. The chapter on diseases of the stomach has been revised by Dr S W Patterson, that on diseases of the eye by Dr Angus MacGillivray, and that dealing with fevers by Dr J D Rolleston. Others to whose assistance the editor expresses her indebtedness are Dr Robert Cole, Sir James Dundas-Graham, Mr Philip Fraulini, Colonel W S Byam, Professor Louise McIlroy, Dr Skene Keith, Dr Leonard Williams, Dr Langdon Brown, Dr Gordon Ward, Dr Scarpure, and Dr Reginald Hilton.

This process of revision has in no wise affected the plan of the work, which has made so successful an appeal because of its eminently practical character. It deals with the various diseases from the standpoint of symptomatology, the principle being first to describe the symptoms and then to trace these back to their causes. The introductory chapter in which the author explained his method and his reasons for adopting it, is reproduced unaltered in this as in every previous edition. We can again cordially recommend Dr Savill's book to students and practitioners.

NOTES ON BOOKS

AT the 1925 Congress of the Health Association of Australia the presidential address was delivered by Sir JAMES BARRETT, M D, who took as his subject "The birth and growth of the conception of the prevention of disease." The address has now been printed in a pamphlet. At the outset Sir James Barrett explained how the Health Association had originated at the eleventh session of the Australasian Medical Congress at Brisbane in 1920. It had been established by the initiative of several American public health officers who were employed in Australia on the hookworm campaign. At first it was modelled on the lines of an American Health Association, but later had become considerably modified in its constitution. He traced the gradual growth of the conception of preventive medicine from ancient times up to the present day. He showed how the peoples of the Middle Ages were faced with the urgent problems of the control of epidemic disease. The development of the practice of isolation in medieval times foreshadowed the modern public health movement. Coming to later days, Sir James Barrett referred to the extinction of scurvy in the navy made possible by the work of two naval surgeons, Dr James Lind and Sir Gilbert Blane, and to the prevention of small pox by reason of Jenner's epoch making discovery in 1798. Later the work of Pasteur, of Lister, and of Koch was to change the entire outlook on the possibility of the prevention of disease. In conclusion the president laid particular stress on the need for public education in health in all sections and conditions of society.

* *System of Clinical Medicine*. By Thomas Dixon Savill M D Lond. Seventh edition. London: Edward Arnold and Co. 1925. (Med 8vo, pp. xxviii + 1094, 176 figures, 4 plates, 28s net.)
H. Bourne, Brown Prior and Co.

We have received the thirteenth edition of *The American Illustrated Medical Dictionary* by Dr NEWMAN DORLAND.* It is stated that about 2,500 new words have been introduced, and the work has been carefully revised throughout. An unusual feature of this dictionary is the amount of space occupied by special tables. Thus, no fewer than thirteen pages are devoted to stains and staining methods, and twenty eight pages to different kinds of tests, a tabulated list of treatments occupies three pages. Other tables are provided for the nerves, including their function, origin, distribution, and branches, and the muscles, their origin, insertion, nerve supply, and action. Numerous illustrations—many of them coloured—add to the value of this dictionary as a work of reference. Though it makes no claim to be an encyclopaedia, "Dorland" has gone some way in that direction, while retaining a convenient size and commendable clearness of type. It is a matter for some regret that the British profession should nowadays be dependent on the United States for its medical dictionaries, if only because spelling and usage vary in the two countries, but we must, none the less, be grateful for the accuracy and comprehensiveness of the work undertaken by such painstaking editors and compilers as Dr Dorland.

Among the artists drawn upon for pictures to illustrate the *Medical Art Calendar* for 1926 are Rembrandt, Jan Steen, David Teniers, and Gerard Don, but it contains reproductions of many less known artists, nearly all Dutch, and also some engravings. Most of the pictures are character groups of doctors visiting or operating on patients, but there are a certain number of portraits. The first picture is by Rembrandt depicting the Apocryphal story of an operation being performed by Tobias under the direction of the angel. This year there are only a few alchemists, but there are several dentists, both regular and quack. There is a delightful character picture by Cornelis Troost (1697-1750), who has been called the Dutch Hogarth, it shows an elaborately furnished lying-in chamber, with the nurse, grandmother, and most of the family assembled. The present calendar is quite up to the standard of its predecessors, and will be an interesting ornament for a corner of the consulting or waiting room. The calendar is published by Mr J Philip Kruseman at the Hague, and will be supplied by him in this country post free on receipt of 6s.

* *The American Illustrated Medical Dictionary*. By W A Newman Dorland A M M D F A C S. Thirteenth edition revised and enlarged. Philadelphia and London: W B Saunders Company, 1925. (Med 8vo, pp. 1344 illustrated, 35 net with thumb index 37 6d net.)

PREPARATIONS AND APPLIANCES

A Laxative Paraffin Mixture

ACAROL Brand Compound is a mixture of mineral oil and agar agar with 3/4 gram of phenolphthalein to the teaspoonful. Mixtures of this type which produce a mild laxative action slightly greater than that of liquid paraffin alone, are deservedly popular in the treatment of chronic constipation. We are informed by the agents, Messrs Newbery (31 Banner Street, London, E.C.1), that it is not proposed to extend advertising in any form to the general public.

The I W C Feeding Bottle

An expert subcommittee of the Association of Infant Welfare Centres (which is a constituent section of the National League for Health, Maternity and Child Welfare) has recently brought out an infant's feeding bottle, claimed to be the best and the cheapest yet produced. We have examined a sample and have formed the opinion that feeding an infant by means of this bottle approximates as nearly as is possible to the natural method. It has a teat moulded in a substance resembling thin India rubber in appearance for which it is claimed that it will not get out of shape nor split nor perish in any climate. In shape it is modelled on a well developed human nipple and is readily everted for cleaning. At the top of the teat there is one hole in the centre of a small thickened area which is intended to supply a greater resistance to the infant's gums. At the base of the teat is a thickened collar with a small rim which fits below the rim on the neck of the bottle. This contrivance effectually prevents the infant from pulling off the teat. Just above this collar is a new feature—a small valve—which allows air to enter as the milk is sucked out, and does away with the necessity of a valve in the bottle.

The bottle is made of strong white glass which will stand heat. It is flat bottomed so that it stands quite steadily, but the inner corners are rounded. The shoulders slope very gradually from the wide mouth to the greatest width of the bottle so that the whole of the interior is easily accessible for cleaning. The outer markings are completely round the bottle and the half-ounce marks only half way round. Both bottle and teat are marked I W C. The complete feeder (bottle and teat) can be obtained from the National League (117 Piccadilly) price 9d, one dozen for 8s 3d, one gross for £4 5 (packing and carriage extra). This feeder has, it is stated, been tested by experts on well and ailing babies over a considerable period, and the reports have been quite satisfactory. The National League is to be congratulated on adequately fulfilling a want.

MEDICAL INSURANCE AGENCY

A MEETING of the Medical Insurance Agency was held at the House of the British Medical Association on December 2nd, when the chairman, Sir HUMPHRY ROLLESTON, Bart, presided. Mr Bishop Harman and Dr R. A. Bolam were elected members of the Committee of Management. The Chairman presented two reports, one for the year 1924 and the other for the nine months ending September, 1925.

REPORT AND FINANCIAL STATEMENT FOR 1924

The report for 1924 stated that there had been a steady increase in practically every branch of insurance negotiated by the Agency on behalf of members of the profession, and it was satisfactory to note that an ever-increasing number of medical men were taking advantage of the various services which the Agency can now offer. The report continued as follows:

Income

During the year under review the Agency maintained the very high standard of former years in the volume of new life business transacted, and for the fifth year in succession placed on behalf of members life and endowment assurances, etc., totalling over £100,000 in sums assured. In addition, annuity bonds, showing a very good return, were purchased to the extent of £6,031 8s. It will be realized that to keep up the standard previously attained, not only has the Agency to secure life proposals equalling the amount in former years, but to increase it very considerably, in order to meet increasing expenditure.

In motor car insurance there was a steady increase principally due to the special policy which the Agency was able to secure on behalf of medical men, and which is only obtainable through its medium. The full effects of this special motor insurance would not be felt for some time, but the policies were being largely taken up. The Agency had secured very good service in the matter of claims settlements, etc., at the same time being able to keep the premiums on a moderate scale.

Workmen's compensation insurances showed a small decrease but this was looked for from year to year, as it was seldom that separate policies were taken to cover servants, etc., the insurances being mostly combined with other household risks. This was reflected in the increase shown for combined household, fire, and burglary insurances.

In accident and sickness there was an increase but this was hardly likely to be a large increase as most of the sickness and accident business was sent to the Medical Sickness, Annuity and Life Assurance Society, Ltd., which paid no commission on introductions.

Owing to the increased premium income the Agency had been able to keep a somewhat larger average amount on deposit than in the previous year. The total income from all sources amounted to £7,192 12s 9d, which was an increase of £1,784 12s 9d over the previous year, and reflected the steady work of the Agency.

Expenditure

Substantial increases in rebates in all branches except employers' liability had been paid, this was a direct benefit to the medical men and women insuring through the Agency.

In employers' liability (accident) business there was a small decrease, accounted for principally by the fact that under a new system the commissions payable in respect of employers' liability insurances had been reduced to 10 per cent and 5 per cent, as against 15 per cent and 10 per cent previously.

Office expenses and clerical staff salaries had increased, but not to any large extent.

After allowance had been made for all increases in expenditure, the surplus for the year carried to the medical benevolent account was some £251 more than in the previous year, and the amount unallotted was £2,419 11s 2d.

The report of the chairman and the balance sheet and accounts for the year 1924 duly audited by Messrs Price Waterhouse and Co., were approved and entered on the minutes.

Interim Report for 1925

The interim report, covering the period January 1st to September 30th, 1925, presented by the secretary, Mr Ferris-Scott, showed that substantial progress had been made. It was as follows:

Life Assurance—It will be remembered that the outstanding features of the Agency's work since the year 1920 has been the securing of life insurances to total £100,000 or over in each year. This rate has been maintained and all records have been broken during 1925 when the Agency introduced on behalf of members of the medical profession over £106,000 during the first half year, and increased this figure to £134,400 for the nine months. These insurances had been spread over a number of first-class companies and the greatest care was taken in the selection of policies. There was reason to believe that investments made

through the Agency on behalf of the assured will show good results. During the nine months under review the actual proposals received numbered 155, covering sums assured of £148,174. Of these, 138 policies, amounting to £134,394, were actually completed. The other seventeen proposals were for sums assured of £13,780, which were either declined by the companies concerned or not taken up by the proposers for various reasons. This low percentage of non-completions (under 10 per cent) compared favourably with the general records of all the leading companies.

In order to bring this information up to the date of the meeting it was reported that proposals had been received totalling £162,785 since the beginning of 1925. The Agency had justifiable cause for pride in the fact that since its inception in 1907 it has placed on behalf of members of the medical profession life, endowment, and other assurances totalling over £1,000,000 (one million pounds).

Many members of the medical profession upon retirement invest in annuity bonds, and the Agency, which is frequently consulted in regard to this class of business, has been able to secure bonds giving good returns to the annuitants. This purchase of annuities requires very careful watching.

Motor Car Insurance continued to engage the serious attention of the Agency, but there seemed to be no prospect for the time being of lower rates. Motor car insurance premiums were admittedly heavy and were likely to remain so in view of the claims experience, the high cost of repairs, and the heavy payments that have to be made to third parties involved in accidents. The doctors' special policy, obtainable only through the Medical Insurance Agency and written by one of the leading groups of underwriters at Lloyd's, did, however, give adequate cover at a moderate cost, and the service received was excellent. During the period under review every claim had been settled to the satisfaction of the parties concerned. Since September, 1924, 333 claims had been settled by the underwriters, the amounts ranging from £83 0 4d in one claim, £315 7s 1d in another, to sums of £1. There had been two fatal accident claims in the last two months. No further proof would seem to be needed of the necessity for medical men to be properly and safely insured. Starting in January last the doctors' special policy had been brought to the notice of every medical man insured through the Agency for motor car insurances with the tariff and other companies. The Agency was fully aware that if these contracts were taken up in any large numbers the premium income and consequently the commission earned would be seriously affected, as the premiums for the special policy are on the whole about 10 per cent lower than those ruling elsewhere. Renewals of policies were, however, maintained at a high percentage, and some 200 new policies have been placed. With new policies being taken up at the rate of one a day, progress in motor car insurance, despite the reduced premiums, could be reported.

Household, Fire and Burglary, Accident, Sickness, and Workmen's Compensation Insurance had all continued to increase steadily.

During the nine months the premiums debited to the Agency totalled £44,790, as against £41,072.

Technical Advice on Purchase, etc., of Motor Cars—It is now possible to see the result of two full years' working of the scheme existing between the consulting engineers Messrs Mann, Egerton and Co., and the Agency. Verbal as well as written evidence had been received that the engineers had spared no effort to give satisfaction to members of the medical profession and to render the service offered of very real use and value.

Although the business introduced through the Agency is now reaching large proportions, it must be remembered that it is only by the purchase of motor cars, spare parts, etc., by members through this firm that the engineers can be rewarded for the helpful advice and ungrudging assistance they give.

Grants to Medical Charities—Out of the balance standing to the credit of the Medical Benevolent Account, the following grants were made by the Committee of Management:

	£	s	d
Royal Medical Benevolent Fund	525	0	0
Royal Medical Benevolent Fund Guild	525	0	0
Uxbridge College Benevolent Fund	525	0	0
Educational Grants (Girls) Subcommittee	210	0	0
British Medical Association Charities Fund	157	10	0
Royal Medical Benevolent Fund Christmas Appeal	52	10	0
Royal Home for Incurables, Putney	52	10	0
Birmingham Medical Benevolent Society	26	5	0
Lancet, Editor's Discretionary Fund	26	5	0
	£2,100	0	0

As a result of this distribution the total sum subscribed to medical charities by the Medical Insurance Agency since 1910 has exceeded £14,350.

Some time ago the Committee of Management established a Girls' Education Fund, which has been allowed to accumulate. A subcommittee was appointed to report upon the suggestions for the use of the fund, and it was resolved to elect one of the members of the committee of the Royal Medical Benevolent Fund Guild to be a member of the subcommittee.

British Medical Journal.

SATURDAY, DECEMBER 12TH, 1925

CONCENTRATED PREPARATIONS OF VITAMINS

THE study of vitamins is passing out of the purely descriptive stage in which the aim of workers was to discover what foodstuffs contain vitamins, and all over the world work is proceeding with the object of isolating these elusive principles in a pure form.

The first successes in this direction were obtained with vitamin B, and some years ago preparations were obtained from yeast of which the vitamin B content was thousands of times greater than that of the original yeast, a few milligrams of these preparations sufficed, for example, to cure pigeons of polyneuritis. Similar successes are now reported with vitamin C, de Zilva¹ and his fellow workers have succeeded in isolating from a litre of lemon juice 0.3 gram of material which they believe contains practically all the vitamin C present in the original lemon juice. This is a three thousandfold concentration, and since a daily dose of about 2 c.c.m. of fresh lemon juice suffices to protect a guinea pig from scurvy, it follows that the guinea pig dose of concentrated principle is less than a milligram. Still more remarkable results have been obtained with vitamin A. Drummond and Coward² have shown that the vitamin A present in cod liver oil can be concentrated into a residue weighing only about 0.5 per cent of the original oil. It is certain that the vitamin only represents a fraction of this residue, and since less than 10 mg. of cod liver oil suffices to promote growth in rats the amount of vitamin A needed as a daily dose by a rat must be of the order of less than 0.01 mg. This is confirmed by the observation of Drummond, Rosenheim, and Coward, who found that 1 mg. daily of irradiated cholesterol was sufficient to promote growth in rats, and that the fraction of the cholesterol altered by radiation was too small to be detected by chemical means.

This concentration of vitamins is of importance in several ways. In the first place, it is of some therapeutic importance, because relatively enormous quantities of vitamins can be given in a single dose. For example, the vitamin C content of twenty or more lemons could be given, if this were thought advisable, to an infant in a single dose in the form of the concentrated preparation. Intensive treatment of this kind may prove valuable as an emergency measure in the treatment of deficiency diseases.

Prevention, however, is much more important than cure in deficiency diseases, and it is to be hoped that spread of knowledge regarding vitamins will soon make deficiency diseases medical curiosities. At present there is no evidence to show that a luxury supply of vitamins is superior to an adequate supply, and hence for routine use as protectives the concentrated vitamin preparations have no outstanding superiority over the ordinary crude sources, and the latter have, of course, the great advantage of being cheaper. The purification of vitamins, which is proceeding step by step, should in time, however, lead to the discovery of their chemical nature, which would be the first step towards their artificial production.

Curiously enough, the biochemists have discovered how to produce vitamin A by means of ultra violet light before they have learnt its chemical nature.

Finally, a knowledge of the quantities of vitamins needed by the body should throw some light on their mode of action. In the case of the rat and vitamin A, for instance, we know that the vitamin need of the animal is proportional to its rate of growth, and that the daily requirement is of the order of one hundredth of a milligram. This quantity appears to be impossibly small, but it can be paralleled among the internal secretions, for example, the amount of adrenaline secreted daily by the suprarenals of a rat would probably be of a similar order. If it should be discovered that the vitamins are some essential precursors of internal secretions which most animals cannot synthesize, just as a supply of iodine is an essential for the production of thyroid secretion, then the smallness of the amounts necessary would at once be explained. This is, of course, a mere speculation, but the minute quantities of the vitamins which are required does suggest that their action is more likely to be associated with the repair of protoplasm than with the metabolism of food.

THE CARE AND CURE OF CRIPPLED CHILDREN

SOME eighteen months ago, in a leading article, we commented on the cripple problem in this country and the efforts made to solve it.¹ We noted that, according to statements in a pamphlet published by the Central Committee for the Care of Cripples, there were only 5,000 beds available for an estimated number of 10,000 cripples who ought to be receiving hospital treatment. Since that time the scheme started in Shropshire by Miss Hunt, and later under Mr. G. R. Girdlestone in Oxfordshire, Berkshire, and Buckinghamshire, has been adopted in other counties, so that at present orthopaedic clinics are at work in twenty out of the forty English counties.

As we then stated, the committee hopes that in the near future every county or group of counties may be equipped with a central-orthopaedic hospital for active treatment, situated in a large town, and with a number of clinics in smaller places which would be visited from time to time by surgeons from the central hospital and by orthopaedic nurses. These clinics are not only to undertake the after care of patients discharged from hospital and the care and maintenance of their instruments and other appliances, but are also to serve as centres to which cases would go for early diagnosis, with a view to their treatment in hospital at as early a stage as possible. The scheme postulates and requires the hearty co-operation of the medical men of the district round each clinic, and this has been freely forthcoming. keen interest and local patriotism in all philanthropic people have been aroused.

After care, however, means more than this. It means help in the education of the cripple in the ordinary schools, and also in the schools for physically defective children, where these exist, and the encouragement of their establishment where needed. The industrial education of the cripple also comes into its purview—the finding out of such work as he or she is fitted for, and the bringing together of the work and the would-be worker. It is manifest that the committee has no small task, already much has been done, but more remains to do.

¹ Dr. Zilva. *Journ. Soc. Chem. Industries* 1925, 44, 445.

² Drummond, Rosenheim, and Coward. *Ibid.*, 1925, 44, 123.

In a new edition of the pamphlet which has just appeared² Mr Girdlestone once more sets forth the projects of the Central Committee, the work so far achieved, and the means by which further progress may be aided. A way in which the scheme could be applied to a county is outlined, and the problem of the teaching of students, with which Sir Robert Jones dealt in his address to the British Orthopaedic Association at Manchester,³ is discussed. The importance and difficulty of the problem of the provision of industrial training for the cripple is considered in a separate chapter. Judging from questions which reach us from time to time, a knowledge of the existing possibilities of teaching a cripple a trade is much desired by medical practitioners. In the County of London every child who has attended a school for physically defective children can obtain such industrial training as he is fit for through the agency of the after care committee connected with that school, but, unfortunately, outside London, schools for the physically defective are few and far between. Of the 62 day schools for physically defective children in England 35 are in London, 7 in Lancashire (of which 4 are in Liverpool), 6 in Yorkshire (of which 3 are in Sheffield), 4 in Essex, 3 in Middlesex, 2 in Warwickshire (Birmingham), and 1 each in Surrey, Reading, Cheshire, Bristol, and Hampshire. In this connection it is worth noting that, under improved treatment and after care, the necessity for schools for the physically defective will probably diminish, for it has been found that 94 per cent of those attending the clinics are able to attend an ordinary school, thanks to efficient hospital and after treatment.

Mr Girdlestone gives also a short account of the methods by which orthopaedic hospitals and clinics can obtain assistance from public bodies, we recommend a study of this to all who are thinking of starting orthopaedic open air hospitals. "Parliament has decreed," he says, "that State funds from rates and from taxes shall be used for the treatment of crippled children and of persons of any age crippled by non pulmonary tuberculosis." This enactment enables help to be given by public bodies to any institution for the treatment of cripples.

In default doubtless of the existence throughout the country of such bodies as the Invalid Children's Aid Association and after care committees attached to schools for the physically defective, the Central Committee has suggested that it might be possible to set up in each area with a central hospital school a committee for the whole area for training and employment. Such a local committee would include representatives from the central hospital, the clinic committees, the juvenile employment exchange, local employers of labour, and the local trade unions. Representatives from each would be able to speak with knowledge of the child, its physical disabilities, its special aptitudes, home conditions, and so on, and the other representatives would supply the knowledge of local trades which the committees might otherwise lack. The Central Committee asked the Ministry of Health if the proposal to set up such local committees experimentally would have its approval and that of the local exchanges. The Ministry replied sympathetically, and as an outcome a conference was held at the Wingfield Orthopaedic Hospital, near Oxford, to discuss plans. It was decided that the City and County of

Oxford Advisory Committee for Juvenile Employment should be asked to appoint a subcommittee on which the Wingfield Hospital was to be fully represented. This subcommittee was instructed to collect information as to the occupations different kinds of cripples could follow, and to take steps to interest employers in finding openings for cripples when discharged from hospital. It is hoped to extend this arrangement to other counties. In the meanwhile the Central Committee for the Care of Cripples⁴ has been making great efforts to deal with such cases as are referred to it from different localities, by giving advice and information about training, and by putting the cripples in touch with the various associations and local agencies which may be able to help them.

It will thus be seen that the problem above referred to, of the provision of industrial training for the cripple, is in a fair way to be dealt with, as has to some extent already been done in London by the After care Association for Blind, Deaf, and Crippled Children.

REFORM OF THE CORONER'S COURT

Reform in the law of the coroner and the coroner's inquest has long been overdue. As it stands to-day it is inadequate to achieve the objects at which it aims, and even within its scope is inefficient, wasteful, and in certain cases inequitable. These facts have long been recognized, but the subject has never attracted public attention commensurate with its importance, and until the last two years the efforts of the British Medical Association to secure reform have found little support. As early as 1905 the Association drafted a Coroners Bill, and in 1909 gave evidence before a departmental committee which had been appointed in the previous year to inquire into the law relating to coroners and coroners' inquests and to the practice in coroners' courts. The committee reported in 1910, and a bill was introduced in April of that year, but was not proceeded with, and the law embodied in the Acts of 1887 and 1892 has remained substantially unmodified, except by certain temporary war legislation which, in the absence of a permanent Act, has been continued from year to year.

After the war the Association resumed its efforts to secure reform, and in 1923 a Death Certification and Registration and Coroners Law (Amendment) Bill was presented on its behalf by Major Molloy. The bill, which lapsed with the session, was not altogether satisfactory, and it was felt desirable to subject a policy, which in all its essential points dated from 1909, to a scrutiny and revision in the light of the experience of intervening years. The result was the adoption this year at Bath of a modified policy. Meanwhile the question had been given much consideration by the Labour party. Private members' bills had been presented by Dr Salter and a group of Labour members, and by Dr Fremantle for the Federation of Medical and Allied Services, neither bill completely covered the ground staked out by the Association, though both dealt with the matter logically as a special section of the law of death registration and certification.

The Government bill introduced by the Home Secretary on December 1st embodies the main recommendations of the departmental committee, supersedes the temporary war legislation, and introduces certain new features of definite value. Hitherto there has been no statutory regulation of the qualifications

² *The Care and Cure of Crippled Children. The Scheme of the Central Committee for the Care of Cripples.* By G. R. Girdlestone. 1925. Bristol: John Wright and Sons Ltd. London: Simpkin, Marshall and Co. Ltd. Price 6d.

³ *BRITISH MEDICAL JOURNAL* October 31st 1925 p. 739.

⁴ The address of the Central Committee for the Care of Cripples is Carnegie House, 117, Piccadilly, London, W. 1.

required for the office of coroner. The general custom in this respect is to be legalized by the provision that in future county or borough coroners and their deputies shall be either barristers, solicitors, or legally qualified medical practitioners of not less than five years' standing in then profession. The franchise coronerships, which have long been a source of waste and inconsistency in administration, are to be abolished as they become vacant, with the exception of those for the King's Household, the Admiralty of England, and the Isles of Scilly, and the only appointing authorities are to be henceforward county and borough councils. The necessary provision is made for the first time for the appointment of assistant deputy as well as of deputy coroners, and for the creation of new coroners districts at the discretion and on the order of the Secretary of State. The rate of salary is to be settled by agreement between the coroner and the appointing authority, or, failing such agreement, by the Secretary of State. Superannuation is to be payable in certain circumstances after not less than five years' whole time service as county or borough coroner, and the appointing authority is empowered to require the resignation of a coroner after not less than fifteen years' service if he has attained the age of 65. The power to dispense with a jury, first conferred by the Juries Act of 1918, is perpetuated, but the exceptions contained in that Act are elaborated and extended, and a jury is in future to be required in all cases where it seems possible that the death has occurred in circumstances the continuance or recurrence of which is prejudicial to the public safety. When any person is charged before the examining justices with murder, manslaughter, or infanticide, before the coroner's jury has given its verdict, the inquest is to be adjourned pending the completion of criminal proceedings. The view of the body by the jury is made optional, and provision is made for holding an inquest in cases of death where circumstances preclude recovery of the body. It is also made possible to secure a rehearing in some cases in which there has formerly been a doubt as to the competence of the High Court under the Act of 1887.

As regards medical witnesses and *post mortem* examinations, the coroner is at last to be empowered to direct and to pay for a *post mortem* examination as a preliminary to deciding upon holding an inquest and irrespective of the subsequent holding of that inquest. He may also call such medical evidence as he thinks desirable, but by a strange anomaly, while the Secretary of State is empowered to make adequate provision for fees payable for certain services rendered under the Acts, this power is not extended to the fees payable under Section 22 of the Act of 1887 in respect of *post mortem* examinations and medical evidence, which are to remain unmodified. As against this piece of economy, the profession will welcome the repeal of the section debarring medical officers of public institutions from receiving remuneration for attending inquests upon persons dying in the institutions they serve. Finally, the Lord Chancellor is empowered, with the concurrence of the Secretary of State, to make rules regarding the procedure in the coroners court—a safeguard which will be particularly appreciated by medical practitioners, who have often suffered from the absence of any such rules.

Those familiar with the policy of the British Medical Association will gather from this brief review that, except at one point, the present bill is in general accord with the principles it lays down. Unfortunately that one point is fundamental. In the view of the Association the confusion of the judicial and

administrative functions of the coroner is unsound, for a judicial inquiry presided over by a person who may have no knowledge of medical science is not an adequate method of ascertaining the cause of death for the purpose of registration. Apart from this, and from those points of criticism proper to a more detailed survey of its provisions, the bill may be welcomed as conferring a generous measure of reform and one which is urgently needed. It is unfortunate that its introduction at so late a date precludes any possibility of adequate discussion in Parliament this session.

THE STANDARDIZATION OF INSULIN

THE fact that the pancreas produces an internal secretion essential for normal carbohydrate metabolism was known for forty years before Banting discovered a method by which this hormone could be extracted. This discovery was the first great step forward, but another fundamental piece of work of almost equal importance was done when it was ascertained that the action of insulin could be determined quantitatively by measuring its action in lowering the blood sugar of rabbits. These two discoveries opened the field for biochemical research, and the rapidity with which this has proceeded is indicated by the fact that in early experiments in 1922 from a kilo of pancreas about 10 rabbit units were obtained, and the product contained only one rabbit unit in 5 to 10 mg of solids, whereas to-day yields up to 4,000 rabbit units per kilo of pancreas are to be got, and Professor Abol of the California Institute of Technology has recently described a new concentrated preparation giving 40 rabbit units per milligram. Moreover, he and Geiling have prepared a product of sufficient purity to enable them to make certain statements regarding its composition. Insulin, they say, does not contain phosphorus, its activity is associated with the presence of sulphur in a highly labile form. This labile sulphur is easily removed by weak alkalis, and when this happens insulin loses its activity. "It is now," the authors say, "only a matter of time, we believe, when this unstable hormone must yield to the investigator the secrets of its composition and the rationale of its operations within the body." Knowledge of insulin will, of course, only be complete when its chemical composition has been ascertained and when it can be estimated quantitatively by chemical methods. Meanwhile, however, what has been learnt about insulin, though limited in certain directions, is proving of inestimable practical value in the treatment of diabetes mellitus. Insulin, however, is far too potent a drug to allow of its use in full therapeutic doses unless a method of reliable standardization is available. The workers at the National Institute for Medical Research at Hampstead have done great service to the medical profession in perfecting the methods of insulin standardization. All methods of biological standardization are difficult, because unfortunately there is no such thing as a standard animal. It will, however, be seen from the accounts published at page 1102 how this difficulty has been surmounted by various refinements of method. It is interesting to learn that at first clinical workers had to rely entirely upon the biological standardization for estimating the activity of the insulin preparations they used. Very soon, however, the clinicians learned the properties of insulin, and were able to estimate the strength of preparations more accurately from clinical observations than could be done in the laboratory. The recent improvements introduced into biological standardizations and described by the workers at the Hampstead institution have removed this reproach from the laboratory, and the laboratory method of assay can now hold its own with the most careful clinical measurements.

This will be a boon to clinicians, since it is of greatest advantage to them to know that the estimated strength of the insulin they use is accurate within the limits of difference that can be observed from therapeutic results

THE LONDON SCHOOL OF MEDICINE FOR WOMEN

THE annual dinner of the London (Royal Free Hospital) School of Medicine for Women was held at the Savoy Hotel on December 3rd, when a company of 400 sat down under the chairmanship of Dr J Walter Carr, consulting physician to the hospital. The principal toast, that of the school and hospital, was in the hands of Lord Riddell, who said that the affairs of the hospital were at present in a sound condition, although, like all such institutions, it was hard up, and needed funds for the better carrying on of its work. He mentioned the splendid service that was being done by the school in turning out so many trained women year after year to show the world what women could do when given the opportunity. Dr Carr, in responding, expressed the general regret at the absence of the dean, Dame Louise Aldrich-Blake, from whom a telegram conveying thanks and good wishes was read. He also spoke of the resignation of Dr May Thorne from the post of honorary secretary of the school. Dr Thorne had followed her mother in this post, and their joint service covered practically the whole period of the school's existence. She was, however, resigning only in order to devote herself entirely to the welfare of the hospital. The number of students graduating from the school during the past year had been 100, by some this might not be regarded as a matter for congratulation in view of the overcrowding in the profession, but he himself considered that the work these women had been trained to do was more needed all over the world now than at any former time. He looked forward to the day when the admission of women to all positions on the staff would be the policy of every one of the London hospitals. The health of the guests was proposed by Mr C A Joll, and a response was made by Miss Ellen Wilkinson, M.P., who said that the school had every reason to be proud of its record of close on fifty years, and that it had done much to assist the change in the general attitude towards the entrance of women upon public and professional careers. While women made the claim of equality with men—a very modest claim, after all—they had no desire to claim similarity, and women had their own special contribution to make to the life of humanity. A response was made also by Professor Yandell Henderson of Yale University, who declared that England still took the lead in respect to the quality and efficiency of the work of her hospitals, and that so far as maternal prosperity was concerned her professors were just as well off as those of America. Dr Chodak Gregory, in proposing the chairman's health, referred to the severity of the school regime at the time when she was a student, and contrasted it with the weak-kneed gentleness of the teachers of to day, but she made it plain that she considered the old Spartan methods the more effectual. Dr Carr, as an old teacher, pleaded guilty to Dr Gregory's "indictment" of the severer methods of other days, and expressed his pleasure at meeting again many of those with whom he had spent the happiest working hours of his life. A very pleasant evening was brought to a close with a dance.

POOR LAW REFORM

THE Ministry of Health recently circulated to associations of local authorities, to county councils, county boroughs, and others concerned the proposals for Poor Law reform which will be incorporated in a bill next session. It will be remembered that the whole question of the Poor Law was exhaustively considered by the Royal Commission which

was appointed in 1905 and reported in 1909. Majority and minority reports were made, differing on various points of considerable substance. A committee known as the Maclean Committee was appointed in July, 1917, and succeeded to a great extent in reconciling the majority and minority reports of the Royal Commission. It recommended the abolition of the boards of guardians and the transfer of their functions to local authorities—normally county and county borough councils—on certain stated lines. The report of this committee was accepted by the Government of 1919. On May 27th last the House of Commons adopted without a division a resolution to the effect that legislation on the lines of the Maclean report should be passed, including "a complete absorption of the existing Poor Law authorities and their functions in the county, borough, and district councils." On that occasion the Minister of Health made it clear that, while the principle of the resolution was approved, he must not be understood as accepting the whole of the proposals of the Maclean report. He added that it was the Government's intention to consider the whole question anew, and, following the precedent set in rating and valuation, to discuss it fully with all the local authorities concerned. Provisional proposals have now been circulated by the Ministry of Health to the authorities concerned as the first step in the process of discussion above promised. Generally they are drawn on the lines proposed by the Maclean Committee, but variations are introduced, especially in the direction of giving greater freedom to local authorities in arranging for the performance of the functions to be transferred. Certain new provisions, aimed at securing the same object, are included with respect to the financial relations between the Ministry of Health and local authorities. The proposals, it is said, are to be regarded as purely provisional, devised to enable local authorities to offer constructive suggestions of a definite and concrete kind. It is proposed to make provision for the co-ordinating of all health services and other forms of public assistance, and for bringing Poor Law relief into closer relation with unemployment benefit. The registration of births, deaths, and marriages will be transferred to electoral registration officers, and vaccination to county councils and county borough councils. There is to be a reform and simplification of the present system of grants to local authorities and of assigned revenues. Health services will be aided by a block grant. A supplementary bill is to modernize the provisions of the Poor Law before its administration is transformed. Under the new scheme county boroughs and counties will be less subject to Whitehall supervision. In London the London County Council is to supervise and control the health services of the metropolitan borough councils, and the duties of the Metropolitan Asylums Board will pass to the London County Council, the staff and property being transferred. The health work of the London County Council is to be assisted by local subcommittees, which may include representatives of the borough councils.

DEVELOPMENT OF THE HOME AMBULANCE SERVICE

THE Home Ambulance Service set up by the Order of St John and the British Red Cross Society has now 384 ambulance stations in the country, and the number of patients carried amounts to some 1,500 a week. The work, as the latest report of the committee shows, is well distributed throughout the country. The demand for the cars is naturally greater in the thickly populated areas, but the returns from the more rural areas which it is specially intended to assist show that the ambulances are serving a very useful purpose. The increasing demand on the service to deal with road accidents has emphasized the need

for skill in first aid on the part of the attendants serving with the ambulances. The handling of patients in the course of their removal from their homes to the hospitals, and vice versa, calls for skill, but doctors or nurses are generally at hand to supervise this work. In road accidents, involving perhaps several persons, it often falls to the lot of the attendants to handle difficult cases without professional supervision. A good deal of harm may be done by unskilful handling. For this reason the committee is now making it a condition of the grant of an ambulance, or the replacing of an existing ambulance when it is worn out, that the working of the car shall be in the hands of members of the order or the society who have received a training in first aid under medical supervision. This not only promotes efficiency in regard to the transport of patients, but serves to extend the number of those who voluntarily undertake to make themselves proficient in the practice of first aid. Both the order and the society state that the grant of an ambulance proves a valuable stimulus to the recruitment of new members, and thus enables them more readily to meet the demand for voluntary workers, not only for attendance at great public gatherings and similar work in time of peace, but for the more serious purpose of preparation for the needs of the country in time of war. Besides the ambulances, the committee also controls an x-ray car, which is available for private patients and cottage hospitals within a reasonable radius of London. The car is well equipped, and the apparatus is so constructed that it can be taken to the home of the patient, erected in the bedroom, and connected by means of a cable with the dynamo in the car. In this work the committee has the advantage of the co-operation of the British Institute of Radiology. The condition, strictly adhered to, that a consulting radiologist shall be responsible for the examination in all cases ensures skilled interpretation of the radiogram. In addition to providing thereby that aid to differential diagnosis which is so important an element in the value of the work, special terms are offered to cottage hospitals which it is hoped will make it economically advantageous to make use of the x-ray car. A number of these institutions already avail themselves of the service of this mobile unit in preference to setting up their own plant, and a considerable extension of this branch of the work is hoped for.

THE MEANING AND PURPOSE OF EVOLUTION

SIR OLIVER LODGE, F.R.S., who was for a short time one of Huxley's students, delivered the Huxley Lecture at Charing Cross Hospital Medical School on December 3rd. Sir Frederick Mott was in the chair, and the subject chosen for the lecture was the meaning and purpose of evolution. Sir Oliver Lodge deprecated the employment of the term "evolution" as the opposite of "creation." The attempt to explain evolution as a self-acting process had some elements of truth, as an intermediary stage in this vast study it was helpful and invigorating, and enlightened the science of biology with a useful working hypothesis, but it had many weaknesses, omissions, and crudities which were now becoming manifest. However rational the recent proceedings in Tennessee, the absurdity did not seem to the lecturer to have been all on one side, and if the old ideas of creation were evoked, so were some of the new ideas of evolution. But the mistake of the "fundamentalists" was in proclaiming that they had an infallible guide, whereas the very documents on which they relied, however rich in inspiration, were very human documents after all. Sir Oliver Lodge's own thesis was that there was no essential opposition between creation and evolution, the one was the method of the other. He proceeded to give, from his own point of view as a physicist, the conception of cosmic evolution which presented itself as the result of

the amazing discoveries in physics during the last twenty-five years. It was necessary first to postulate an all-extensive substance, the ether of space, which here and there, so to speak, was gathered up into knots, the so-called protons or electrons carrying a positive or negative electrical charge. No one could say how the "knotting" of the ether was accomplished, and he had failed abjectly to imitate it in the laboratory, but the attractions and repulsions of these specialized points in the ether were familiar to the first-year student in electricity, they accounted for chemical affinity, for the formation of liquids and solids, for the strength of materials, and for most natural phenomena. The electrons grouped themselves into ninety-two different patterns, and so constituted the atoms of matter, and the atoms joined together to form molecules. Most of the lines of force inside the atom had only a limited power of attraction, and beyond those limits electrical forces were superseded by another force, that of gravitation—a force exhibited slightly in the neighbourhood of bodies of small mass, but in a high degree in the neighbourhood of bodies of large mass such as the earth. In the recently discovered star, the companion of Sirius, which had a similar mass to the sun, but was compressed to about the size of Uranus, the force of gravity was 200,000 times greater than it was upon the earth, and there a gold sovereign would weigh a ton! It was mutual gravitation alone which held together the nebulae, the raw material of worlds, and made them assume an oblate form, so that the solar system had the shape of a spindle, with the larger planets like Jupiter in the middle. The nebula from which the sun arose was proceeding on its course of stellar evolution, and the remains of it were seen in the Milky Way. From the sun proceeded a radiant energy, not perceptibly diminishing, due to the destruction of solar matter consequent upon the clash of positive and negative electricities. At some inconceivably remote period the sun had been a larger and hotter body than now. The radiant energy issued from the sun at the cost of four million tons of matter destroyed every second, and yet in spite of this colossal expenditure the sun's mass was so enormous that this process of destruction could continue for 150,000 million years before the sun lost 1 per cent of its total substance. By the side of the process whereby matter was continually being converted into energy human existence was a flash in the pan. The human race was still in its childhood, but it had risen to consciousness. Apparently the universe must have had a beginning in the formation of nebulae 200 billion years ago, and it must ultimately have an end in the disappearance of matter and the existence once more of pure ether, filled with a perpetual radiation travelling in all directions at the speed of light. Yet it might be doubted whether there need have been a beginning or would be an end. There might be a recuperative process at work even in the physical universe, a formation of matter as well as its destruction. The pressure of light had swept out to the confines of space the cosmic dust which came between one planet and the stars. What if the light might be acting upon that dust in the same energizing way as it was known to act upon vegetation, upon the skin, upon the retina, upon the photographic plate, stimulating the elections in the atom to jump from one stable orbit to another and so begin again the formation of nebulae and the growth of worlds? Creation might well be a continuing process, without beginning or end. It was not to be inferred that there was no progress, that what had been would always be. It was only of the physical universe that he had been postulating this cyclical change and reappearance, there remained the universe of the mind, the soul, and the spirit. The physical universe might follow a cyclical round, energy first taking the potential form, then the kinetic, then the potential again, but in the moral universe there was

growth, development, increase of values, the lower organisms reaching up to man, and for man infinite progress in store

THE FIRST LONDONERS

PROFESSOR F. G. PARSONS, F.R.C.S., was fortunate in his local colour for the lecture which he gave at St Thomas's Hospital on December 4th on the earlier inhabitants of London, for, as he reminded the audience, St Thomas's stands by the site of an ancient ford which crossed from Lambeth to Westminster in the very earliest times, and decided more than anything else the locality of the future metropolis. This ford was probably the most important in all Britain, for it was the lowest point at which the Thames could be crossed otherwise than by boat, and although Caesar did not use it in his conquest—or, rather, his punitive expedition—preferring to cross at places further up the river, it was in existence before Caesar, and was used by the early peoples who made their way from the mainland of Europe and across Kent. Between two and three thousand years ago, said Professor Parsons, the country around what is now London was inhabited by the Long Barrow race, who worked their way up to Britain from the Mediterranean. These were short, dark, slightly built, long-headed people. Only two skulls representative of this race were to be seen in London, one at the Royal College of Surgeons and the other at Guy's Hospital, and he was fortunate enough to be able to show his audience both. These people received their name from the fact that they buried their dead in long barrows, they erected monoliths also, and Stonehenge was regarded as their handiwork. Probably the purest examples of this type of people remaining in these islands to-day were to be found among the miners in the Forest of Dean. Later there came another race into Southern Britain, known as the Round Barrow men, or the Beaker folk. They were of the Alpine stock which covered all Central Europe to-day. He exhibited two of their skulls, one of which he had himself dug up at Broadstairs. These people evidently settled in the neighbourhood of London, for a number of round barrows had been found in Greenwich Park, which was on the site of Watling Street, though, of course, the Roman road was of later date. Apparently the long barrow people lived on terms of fair amity with the round barrow, and intermarried with them. The next people who came into Britain were the Celts, men of the great Nordic race, the third and last of the three great races of Europe, who, up in the Baltic, had become bleached, then hair reddish, their eyes blue or steel-grey, and their skin markedly fair, with the blue veins showing, which gave rise to the expression "blue blood." The first of these Celts to come were the Gaels, who were believed to have passed rapidly to Ireland, Scotland, and the Isle of Man, so that they might be dismissed from the story so far as London was concerned. The Britons came next, reaching this country about 600 B.C., in the later Iron Age, probably they called themselves Cymry, the name still used by the Welsh. Then, fifty years before Caesar, came the Belgæ, who were also of the Nordic race but with some Alpine infusion, and settled in the country north and south of the Thames. The first Londoners, therefore, were a mixture of a Mediterranean race and a Nordic element, with a dash of Alpine blood, they were too Mediterranean and not sufficiently Nordic to make an ideal race, but time was to remedy that disadvantage. The Mediterraneans were a volatile, suspicious, and revengeful people, horn blower and musicians, and fierce though perhaps not stubborn fighters. The Nordics were slower and less gifted, poor at learning speech other than their own, but their qualities were more lasting and they triumphed by reason of their adaptability. They were tribal individualists, whose unit

was the homestead, the Mediterraneans, on the other hand, were communists. The origin of London as a city dated from the early part of the first century, when Cymbeline, who reigned at what is now Colchester, was the outstanding British king. His choice of London was dictated by several good reasons, mostly commercial. In the wake of the Romans came other Continental people—the Franks and Jutes from North Germany, the Frisians from the Netherlands, and the Saxons, in huge numbers, from the mouth of the Weser and the Elbe. The modern Londoner owes something to them all, but which is chief creditor who can tell?

MILK AND HEALTH

THE December number of the *English Review* contains an article entitled "Milk and health" by "A London Physician." The author states that he was inspired to write the paper because he recognized the need for education on the subject, and he quotes Roserum as saying that "Education is one of the principal spokes in the wheel of the milk wagon." After pointing out the importance of milk as a food, noting that too little is consumed in this country, and describing the dangers of contamination with the germs of disease, he discusses the question of pasteurization, and quotes Dr. Eric Pritchard's remarks at the Annual Meeting of the British Medical Association at Bath in July in favour of this procedure, and he sets against them statements made at the National Milk Conference at the London Guildhall. At that conference Professor J. M. Beattie of Liverpool said: "Conn and Hamel admit that *B. tuberculosis* may remain alive even in carefully pasteurized milk. Consequently pasteurized milk, as commercially produced in this country, is often an infective milk." Dr. S. R. Douglas said: "The pasteurization of milk as carried out by the trade in this country is, from the consumer's point of view, absolutely useless." The author favours the use of dried milk, and suggests that future generations may buy their milk in powder from the grocer instead of in can or bottle from the dairyman. At the same time he thinks it certain that, if the public insists, the milkman could supply a much cleaner milk, while boiling would render the present supply comparatively safe. For purposes of education it is, perhaps, unfortunate that the public should have to be told that experts disagree on the methods to be used for producing a safe milk. At the present time it is probably better to tell such members of the public as yearn for clean milk to get their supply from the best source available, to be prepared to pay a good price for it, to put up with pasteurization as an additional, if not complete, safeguard, to be careful about the milk after delivery at their houses, and to leave the experts to thrash out the question of obtaining as clean a supply as possible. Drying milk may be very effective as a cleaning process, but, whatever its merits or demerits in other respects, few will regard it as producing so palatable a fluid as raw milk.

THE PROBLEM OF IMMUNITY

ACCORDING to present-day conceptions the problem of immunity is a cell problem, and no humoral theory in fact exists, yet many of the explanations that are advanced are of a purely humoral character. A reasoned protest against what he considers to be the undue influence that "humoral" phenomena are allowed to exercise in discussions on immunity has been made by Dr. F. M. Lehmann in a recent work on this subject.¹ Ehlich recognized the primary importance of the cell, and considered that our object should be to obtain an insight into cell life by analysing its activities into a number of partial functions.

¹ *Die Lösung des Immunitätsproblems*. Gedanken von Dr. Fritz Michael Lehmann. Berlin: S. Karger, 1924. (Roy. 8vo pp. 208. 8. 10d.)

Thus he endeavoured to do by means of the chemical method, but it was, strictly speaking, merely a tentative experiment, and he would have been the last to adhere tenaciously to a chemical theory, as have some of his followers, who are still trying to isolate antibodies. This deviation into the backwaters of pure chemistry was due, in Lehmann's view, to the fact that the serum reaction was discovered after, instead of before, the reaction to bacteria. The latter reaction was regarded as a defensive movement on the part of the body to an attack by bacteria. With the study of the serum reaction, however, it was found that the organism was as active against its own defensive weapon, the antibody, as against its enemies, the bacteria, and elaborated substances of an anti antibody type, the absurdity of the notions of attack and defence thus became evident. Research has now regained its proper direction, for the problem of immunity is regarded as one of cell life and cell metabolism. Thus, Lehmann considers, as a return to Virchow, whose conception of the cell as a "person" he pushes to its extreme. We are asked to contemplate, not merely the properties of the cell as taught by physiologists, but also to consider its psychology, its free will, its habits, its memory, and so forth. This may appear to be introducing fancy rather than the imagination into scientific matters, but the book is interesting and suggestive, and it also contains much information on the more recent progress that has been made in the subject of immunology. It contains no new facts, and claims merely to point out the direction in which the solution of the problem is to be found, not to furnish the solution itself.

OLD MEDICAL BOOKS

THE many medical men who are interested in the history of medicine may be glad to have their attention directed to a very rare old book which will appear for sale at Messrs Sotheby's, in Bond Street, on December 14th. It is by John Cotta, and is entitled "A Short Discoverie of the Unobserved Dangers of severall sorts of ignorant and inconsiderate Practisers of Physicke in England. London. Imprinted for William Iones, and Richard Boyle 1612." In the same sale is included also a copy of Sir T. Elyot's "Castel of Helthe," which unfortunately lacks the title-page and cannot be dated, as the colophon on the last page is reticent, but the auctioneers aver that this must be a hitherto unrecorded edition, as it does not correspond with the issues of 1541 and 1547. Another volume to be sold the same day contains the 1572 edition of Elyot's book, and three other works on health ranging from 1557 to 1576.

DENTAL DISEASE IN CHILDREN

THE Medical Research Council has issued this week a report by the committee it appointed in 1921 for the investigation of dental disease. The first, by Mr J. Howard Mumme, on the structure of teeth in relation to dental disease, was published in 1923, and was noticed in our columns at the time (1923, vol. ii, p. 388). The new report is on the incidence of dental disease in children, and is founded on the result of the dental inspection of 4,000 children in public elementary schools. It is mainly statistical and is designed to supply data which will be reliable from an etiological standpoint. It was thought that if a number of investigators were employed, although a large amount of information could thus be obtained, the personal equation of each investigator might render difficult the satisfactory comparison of the results. The inquiry was therefore entrusted to one investigator, Mr N. J. Ainsworth, L.R.C.P., M.R.C.S., L.D.S., and the statistical reduction of the data collected was carried out by Dr. Matthew Young, a member of the staff of the Medical Research Council's Department of Statistics. The medical profession is

indebted to both these gentlemen for the careful way they have carried out their laborious task.

The points of inquiry scheduled by the committee comprised (1) The age and period of eruption of the permanent teeth, (2) the most common sites of caries, (3) age of commencement and rate of progress of caries, (4) teeth most frequently attacked, (5) frequency of "arrested caries", (6) frequency of hypoplasia and its relation to caries, (7) incidence of chronic marginal gingivitis, (8) frequency of antero posterior mal-occlusion.

That a very large amount of material can be collected by a single observer is shown by the fact that Table II, a summary of the incidence of caries in permanent teeth, is compiled from observations on 55,000 teeth. Yet the committee has to acknowledge that on some, and by no means unimportant, points the material is insufficient to allow of definite deductions. Such points are the possible influence of race on caries, the relative incidence of caries in town and country schools, and a comparison between the various schools examined.

In regard to the main issues, the committee thinks that "the replies to the original questions are definite, and may on the whole be considered reliable." The data on eruption confirm previous conclusions. Those on the incidence of caries in permanent teeth show no sex difference and confirm the bad reputation of the first permanent molar as showing the highest percentage of caries. If, however, the incidence of caries is calculated for each tooth at one year after the average date of eruption, then the lower second molar has the highest incidence, and the lower first molar, upper first molar, upper second molar, upper first premolar, upper central, and upper lateral follow in a descending scale, giving a valuable indication of the relative liability of these teeth to caries. "Arrested caries" is very rare among permanent, but comparatively common among temporary teeth. Hypoplasia increases the incidence of caries.

The slighter forms of gingivitis occur in about one-third of the children examined, and there is a steady rise, with increasing age, in the numbers with the severer forms of the disease. Some degree of antero posterior mal-occlusion was found in 23.2 per cent of all children examined. The occlusal surface is the most frequent site of incidence of caries especially among the molar teeth.

Such are, shortly, the committee's conclusions, but there are many other points of interest on which light is thrown in the report. We may note, as two such points, the infrequency of syphilitic hypoplasia, and the very slight indication that softness or hardness of water has an influence on dental caries. That no conclusion could be reached in regard to the time of onset and rate of progress of caries is not to be wondered at, but figures on the matter given in Table V point to a possible elucidation of the problem.

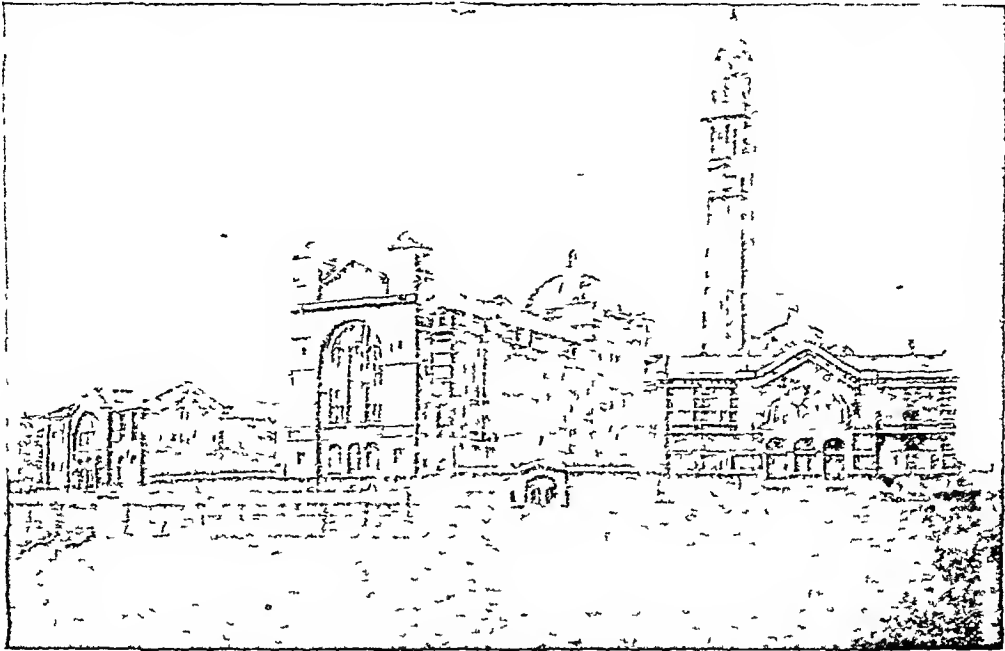
The report will make a strong appeal to statisticians on account of the accuracy of its figures and the explanatory notes accompanying the diagrams.

We may be allowed to ask whether in actual fact as the specimen chart indicates, only "anterior marginal gingivitis" was considered. If we add that in one or two places the train of thought in the minds of the framers of the report is not quite clear we have expressed our worst criticism. The report is a valuable record of accurate and carefully considered observation, none the less valuable for the fact that its whole tenor confirms the prevalent views of the etiology of dental caries.

SUBSCRIPTIONS FOR 1926

MEMBERS of the British Medical Association are reminded that subscriptions fall due on January 1st in each year, and that if each member who receives an application for his or her subscription from the Head Office will send the amount to the Financial Secretary within the first week of the new year the work of the office will be very considerably lightened. Members are also reminded of the claims of charity. The amounts at the disposal of those concerned in the administration of medical benevolence are altogether insufficient to meet the appeals that are received, and the British Medical Association Charities Fund was formed in order to assist. Subscriptions or donations are urgently needed, and every member of the Association is asked to add to his next payment a sum for the credit of the Medical Benevolent Account.

¹ H. The Incidence of Dental Disease in Children. Reports of the Committee for the Investigation of Dental Disease. Medical Research Council Special Report Series No. 97. 1925. H.M. Stationery Office. (610 pp. 4s. 6d. net.)



THE BUILDINGS OF THE UNIVERSITY OF BIRMINGHAM AT EDGBASTON

THE CENTENARY OF THE BIRMINGHAM MEDICAL SCHOOL

THE centenary of the foundation of the Birmingham Medical School was celebrated on Tuesday, December 8th in accordance with the programme sketched in the article published last week (p. 1071) when an account was given of the history of the school. In declaring the congregation open the Vice-Chancellor, Sir GILBERT BARLOR, Bt. C.B., F.R.C.S., expressed the regret of the Chancellor Viscount Cecil, that he could not preside owing to his being required to attend a meeting of the League of Nations at Geneva.

Honorary Degrees

The Principal of the University, Mr. C. GRANT ROBERTSON, in a short address, said it was a happy circumstance that the twenty-fifth anniversary of the foundation of the University of Birmingham should have coincided with the centenary of the Medical School, which was now the Faculty of Medicine. It was appropriate that the ceremony should be taking place in the University Hall, which was both a testimony to, and a memorial of, the first chancellor, Mr. Joseph Chamberlain, and of those who had worked with him. The munificent gift of £100,000 made to the University by Sir Charles Hyde, proprietor of the *Birmingham Post* and the *Birmingham Mail*, would make possible the realization of some ideals it was urgently desired to carry out. The donor, while leaving the University free in its disposal of the gift, had made certain suggestions, including the establishment of a Students' Union, the extension of the men's hostel, Chancellor's Hall, the improvement of the library, and research work.

Honorary degrees of Doctor of Laws were then conferred by the Vice-Chancellor. In presenting Mr. Neville Chamberlain the Principal said that he was one whose services to the University and the nation justified the heritage and traditions of his name and family. In presenting Sir Donald MacAlister, President of the General Medical Council since 1902, and Principal of the University of Glasgow since 1907, the Principal said that he had required a knowledge of almost as many languages as there were names in the *Pharmacopoeia*. Sir Humphry Rolleston's position was indicated by the two offices he held—President of the Royal College of Physicians and Regius Professor of Physic at Cambridge. In presenting Emeritus Professor Priestley Smith it was said that he had three claims to recognition—first as an educationist and teacher of ophthalmology, secondly as an ophthalmic surgeon, and thirdly as a man of science, who by his

original researches, particularly on glaucoma, had earned a world-wide reputation.

Mr Chamberlain's Address

Mr. CHAMBERLAIN began by saying that it was nearly forty years since he entered the Mason Science College, and twenty-five since he became a member of the first council of the University in which that college was now merged. The University was about to make extensions which would carry it a step further toward the completion of the original design of the buildings at Edgbaston. Each addition to the building necessitated extensions in other directions—in staff and equipment, and increased annual expenditure. In the Medical School he was bound, as Minister of Health, to take particular interest. It was one of the duties of the Minister of Health to survey the medical needs of the country, to consider what means were available to meet them, and to fill in any gaps which might exist in the organization for the protection of public health. The value of that vast organization, coupled with the private services that completed the country's system of curative and preventive measures, was not a fixed, unchanging quantity, it depended upon the personality of those engaged, upon the power of the whole organization to attract the best material, and upon the training and influences that acted upon that material. If the stream of new candidates was allowed to wither in quality or dry up in quantity, if the profession was to get rusty and out of touch with modern ideas, then the whole value of the health organization would disappear. To prevent such a catastrophe it was necessary to provide and maintain medical schools adequately equipped and efficiently managed. Such a city and centre as Birmingham must have its own medical school, it provided a training ground for students which was within their reach, a fact of importance from economic as well as other points of view, and the presence of teachers and students in the hospitals, had a beneficial effect upon them. Further, the existence of a medical school afforded in the hospitals, in the laboratories of the university, and in the medical societies, an opportunity of post-graduate work. Last, but not least, was the research work done in the laboratories of the medical school. These researches were concerned with a large number of different subjects, there was in Birmingham a board of research in cancer, composed of representatives of all the hospitals, together with some of the professors of the University. In this inquiry team work was necessary, and the more places in which such researches

were carried on the greater was the probability of arriving at a speedy solution. A second line of investigation in Birmingham was into the relation between diet and dental caries, and there was also a Birmingham Board of Mental Research, working to bring the treatment of mental disease into the general field of medicine. Birmingham was fortunate in having a medical school of considerable antiquity and distinguished history. It was only on the threshold of its career, for there lay before it new work in directions which could hardly be foreseen.

In the evening a reception and entertainment in the University buildings at Edgbaston was attended by some 2,000 guests, who were received by the Vice-Chancellor and Miss Billing, by the Principal, and by the Dean of the Faculty of Medicine, Mr. W. F. Haslam, F.R.C.S.

THE HEALTH OF THE SCHOOL CHILD

(Concluded from page 1028) -

DENTAL DISEASE

An important section of the Annual Report of the Chief Medical Officer of the Board of Education is that dealing with the prevention of dental disease. Of 1,766,325 children examined by the school dentists last year, no fewer than 1,187,335, or 67 per cent, were found to require immediate treatment, and half of them received treatment. The variety of work done is shown in a table. There has been an increase of nearly 35 per cent as compared with the two previous years, but it is estimated that to cope with the work that should be done the number of school dentists ought to be the lowest estimate to be tied. Besides the permanent clinics, there are now a number of temporary ones which are set up as conditions require.

An investigation has been carried out, under the auspices of the Medical Research Council, on the incidence of dental disease in school children which reveals some interesting facts as to the origin and course of caries. It was found that generally disease arises in fissures or pits, or on the surfaces where teeth come into contact with each other—places, in fact, where cleansing is difficult. Of the importance of the prevention of caries there can be no question. An approved society which provides dental treatment for its members obtained a reduction of over 40 per cent in the number of sickness claims for anaemia, gastritis, dyspepsia, and rheumatism. The first step in prevention must be the dispelling of ignorance. Parents should be instructed. They should learn that the permanent teeth are worth preserving, that neglect of the milk teeth endangers the permanent, that decay once started will mean loss of the tooth unless it be treated. The popular view that extraction is better than mending is to be combated. Many districts are undertaking educational work. In London the dental inspection is the occasion of a short address to the assembled parents and a personal explanation of what should be done for each child. At the dental clinics the same procedure is adopted.

DEFECTIVE CHILDREN

The number of children with special defects returned by the local authorities last year showed an increase from 148,602 to 170,167. This does not necessarily mean an increase in defectives, but that the authorities were more intent on their duties. So far as blind and deaf are concerned, it would appear that the tails of these children are known. But there are large numbers of physically and mentally defective children who are not known to the authorities. There is need for a speedy increase in the provision for orthopaedic cases, early attention would be in the highest degree profitable, and there would follow a material diminution in the need for cripple schools. Arrangements between school authorities and voluntary hospitals for this purpose are being increased all over the country with the best results.

Mental defectives are a serious problem. The number of these children, the high cost of special forms of education required by them, the poor results that are to be obtained from such poor material, all lead to the question: Why not bank our limited resources of money on the child whose education is more remunerative? The reply to this ques-

tion is given somewhat in this fashion. Neglect of these children means that they will either be left in the ordinary schools where they will act as a dead weight upon the work of the normal children, and eventually become a heavier charge upon the State. There is no way of avoiding these results save by the provision of such training as they are able to receive. The blind, deaf, and physically defective respond in an exceptional degree and become good and useful citizens, able to compete with the normal, and even one third to one half of the mentally defective are so much improved that they subsequently become contributors to their own maintenance and are safeguarded from most of the evils inherent in their condition.

INFECTIOUS DISEASES

Infectious diseases are the principal cause of the child's absence from school. Of all infectious diseases, except tuberculosis, diphtheria is the most deadly at school age, measles comes next, followed by scarlet fever, then whooping-cough. Tuberculosis has a mortality rate twice as heavy as diphtheria. The notifications of diphtheria at all ages in 1924 numbered 41,980, as compared with 66,500 in 1921. It is thought that the time is ripe for considering the question of the desirability or otherwise of making the Schick method of protection against diphtheria more generally available to the child population of this country. Its value is fairly assured, details may be improved, but experience at Edinburgh clearly showed that a large proportion of parents, when properly approached, were not only willing but eager to permit the application of such methods of protection to their children.

HEALTH EDUCATION

It is roundly stated that much of the teaching in hygiene is comparatively barren and unprofitable. The first reason is that it is devised without sufficient regard to the fundamental principles of education. To be effective it must be a continual process in the whole school life so that it becomes an habitual right outlook—a health conscience. It must be concrete and obvious, a personal affair involving the child, the home, and finally the community. The school premises must reinforce the lesson by good example. Hygiene can never be taught in a dirty, ill-ventilated, and ill-lighted school. The foundation of the teaching should not be a set lesson in "hygiene" fixed in the curriculum. It should be interwoven with the regular teaching of elementary science, whether nature study, biology, gardening, chemistry or physics, history and geography, physical training, and the teaching of civics. Biology should be less the teaching of dissections and the study of "types," and more the study of living matter and life processes, so that the oneness of physical life may be shown in the common processes of respiration, excretion, reproduction, and the like. This union of biological and health teaching would provide a sound foundation for natural, wholesome, and progressive education in sex. Teaching in regard to foods and food values should be linked with simple teaching in citizenship, including marketing of provisions, the working of allotments, and milk supply, with visits to dairies, farms, and markets. Even geography may be made to serve in the study of the foodstuffs of other countries and the dietaries of other races. Vitamins can be realized better in a history lesson on Captain Cook and his sailors than by the mere statement of fact. Further, there is need to create a public health conscience which regards as "bad form" the spreading of influenza at a cinema, the wasting of water, the unnecessary picking of other people's nerves by noise, the indiscriminate disposal of rubbish. In this connexion too little appeal is made to the schoolboy in his plastic years. Excellent work is done in this regard by the Boy Scouts and similar organizations. In some parts of the country it has been arranged to teach household matters to boys, and the example set by Essex in the provision of the "handyman" course is one that might be widely followed. In that course boys are taught practical house repairs, model making, and the like. Under water supply they learn how to clean a cistern, repair taps, clean gullies, and remedy defective ball-valves. They are taught how heating and ventilation of rooms is arranged, and the use of coal, gas, electricity, and oil in cooking,

* Articles dealing with this subject were published in the JOURNAL for November 21 (pp. 964 and 971) and in that for November 28 (p. 1077).

They repair sash cords, whitewash and distemper walls, and set up the domestic clothes-lines.

It is suggested that the elder children should be brought to know something of the work of local bodies. To begin with, they might be told the part played by school doctor, sanitary inspector, school nurse, and health visitor, and the relation of these to the public body their parents help to elect. But to get all this excellent work done satisfactorily the training must begin with the students in training colleges.

The report concludes with a chapter on investigation and research. Many school medical officers find time to carry out some special inquiry as a part of their regular work. This practice is commended. "It is of great benefit to the preservation of keenness and efficiency in the medical officer if he arranges always to keep on the stocks some piece of special work of this kind." And the hope is expressed that the local education authorities will consider the advantage of encouraging their medical staff to do this work as a necessary and integral part of their duties. Last year many such pieces of work were done, and of these a list is given. There is also a most useful appendix, giving a list of references to the more important paragraphs and chapters that have appeared in this connexion in the reports between the years 1908 and 1923.

England and Wales.

THE LANCASHIRE AND CHESHIRE SOCIETY FOR THE FEEBLE-MINDED

THE report for 1924 of the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded contains a note of a speech made at the annual meeting in which Miss Mary Dendy, the president, whose pioneer work on behalf of the feeble-minded is well known, gave an interesting retrospect of her experiences in connexion with the establishment and development of this society. She was co-opted to the Manchester School Board in 1897, and spent a good deal of time in the schools and playgrounds, where she was struck by the number of children who were unable to hold their own either at work or play. With the help of Dr Henry Ashby, to whom Dr Woodcock, well known to many old members of the British Medical Association, gave her an introduction, an examination of all the children under the Manchester School Board was made, and a report later presented. This inquiry had proved the absolute necessity of a permanent home for defective children. A committee was got together and the society formed. In 1902 the first house of Sandlebridge was opened, since when the work had kept on extending. Miss Dendy rejoiced that the board had been strengthened by the addition of young and vigorous people. There was no work, she could assure them, to which they could give themselves that was better worth doing. It was hard work, difficult, and harassing, and not attracting public sympathy as did work for the blind and crippled, but there was no work so absolutely essential for the salvation of the nation. Miss Dendy appealed for voluntary gifts for the upkeep of the buildings and for the necessary extensions. Week by week admission had to be refused to children urgently needing care. The institution now provides for life for 320 persons—212 men and women who have been there from an early age, and 108 children. The work at Sandlebridge was one of the pioneer movements which led to the legislation of 1913. It is conducted under the certificates of two Government departments—the Board of Control and the Board of Education. The Board of Control deals with mentally defective children under 7 years of age, non-educable mentally defective children between 7 and 16 years of age, and all mentally defective persons over 16. The Board of Education, through local education authorities, deals with the ascertainment of mental defect, the determination of educability, the provision of educational facilities, and the notification of custodial cases to the local authorities under the Mental Deficiency Act. Subscriptions and donations may be forwarded to the honorary treasurer of the society, 72 Bridge Street, Manchester.

TUBERCULOSIS ARRANGEMENTS IN LONDON

At the meeting of the London County Council on December 1st the Public Health Committee reported that, after a careful review of the arrangement for the assessment of contributions towards the residential treatment of tuberculosis under the Council's scheme, it was of opinion that the principle of contribution, where the circumstances of the case justified it, should be adhered to, and was satisfied that the existing arrangements were equitable in their operation and worked smoothly and satisfactorily. Dr Stella Churchill moved an amendment that no contribution should be required by the Council in respect of residential cases of tuberculosis under the Council's scheme, whether of children or adults, but the amendment was defeated, and the proposal of the committee to retain the principle of contribution was agreed to by a large majority. The chairman of the Public Health Committee pointed out that under the Act of 1920 sanatorium benefit ceased, and the position of insured persons with regard to the institutional treatment of tuberculosis then became the same as that of non-insured. Family circumstances would be taken into account in determining the amount of the contribution, if any, to be asked for, and he was satisfied that the assessment as carried out under the Council's scheme would not conflict with the interests of public health.

Scotland.

CLINICAL CLUB FOR GENERAL PRACTITIONERS

At a meeting of the Edinburgh and Leith Division of the British Medical Association, held on November 24th, it was decided to form, under the auspices of the British Medical Association, a clinical club for general practitioners. It was pointed out that while numerous societies existed at which special branches of medicine were discussed, and at which scientific papers were read, there were, at the present time, no societies in Edinburgh at which general practitioners could discuss subjects which interested them from a practical rather than from a scientific aspect. It was suggested by one speaker that such a society should be one of the general practitioner, for the general practitioner, and by the general practitioner, although the specialist might be invited to come and give his views on matters affecting general practice, and, it might be, to receive instruction from hearing the views of the general practitioner. The proposal, after discussion, was unanimously adopted, and a committee of general practitioners was appointed to make the necessary arrangements for the formation of this society, under the auspices of the Association, and to call an inaugural meeting at an early date.

LIGHT TREATMENT

A report on artificial light and x-ray therapy, prepared by Dr Lewis D. Cruickshank and Dr Ernest Watt, two of the medical officers of the Scottish Board of Health, has just been issued. It is mainly concerned with the experience gained in Scotland in regard to treatment with ultra-violet radiation and x-rays. It is pointed out that the use of ultra-violet rays in treatment was introduced by Finsen in 1893 for lupus. Finsen began by using solar rays, but the irregularity of bright sunlight led him to resort to artificial sources. On clear days, at an altitude of 8,000 metres, about 75 per cent of the ultra-violet rays penetrate the atmosphere, at sea level some 50 per cent, and in smoky cities the reduction is still greater. In the High Alps heliotherapy has been more successful than is possible in Scotland, and this appears to be due both to the greater amount of ultra-violet rays available and to the fact that these are reflected from the snow. Treatment by the sun's rays has advantages over artificial light, although the latter is in practice more readily obtainable. Experience seems to have shown that the value of ultra-violet radiation is mainly limited to conditions of growth and of function below normal. It increases body weight, and the rate of growth improves the functional activity of the endocrine glands and augments the bactericidal power of

the blood where these are below normal, although it has no corresponding effect on normal individuals. Good results have also been obtained by irradiation of foods, including dried milk. The reporters state that the simple carbon arc and the mercury vapour arc are still the two main sources of ultra-violet radiation. The apparatus is cooled in some instances by air and in others by enclosing the quartz burner in a metal jacket through which water slowly circulates, the rays pass through a quartz window which absorbs them only to a very slight extent. For general clinical work the report recommends an unenclosed lamp of the mercury vapour type, which costs £40 or less and requires a current of 3 to 5 amperes. The unenclosed lamp makes it possible to treat a number of patients at one time. The tungsten arc does not appear to be so popular in Scotland as those already mentioned, partly on account of its expense, and partly on account of the fumes given off in use. In certain cases—in lupus, for instance—local treatment is used, the rays being focused on a desired spot by means of a quartz lens, but general irradiation is much commoner. Part of the patient's body is exposed at first, and the area and duration of the exposure are steadily increased until occasionally the whole body is exposed for a maximum of four hours at one sitting, the patients wearing only a loincloth and tinted spectacles to protect the eyes, and turning round every fifteen minutes or thereabouts, 3 feet is a common distance. The number of exposures given depends on individual judgement, and difficulty in determining the dose arises from the fact that the skin reaction varies greatly in different individuals. Fair persons develop erythema specially readily from exposure either to bright sunlight or to ultra-violet rays, and the degree of pigmentation is a valuable index of the good resulting from irradiation. The report mentions some clinics in which an occasional dose of x rays is given in place of one of ultra-violet rays, and the results of these combined treatments are said to be good in certain cases—for example, lupus, psoriasis, and scabies. Ultra-violet radiation has been found particularly useful in non-pulmonary tuberculosis, especially where there are open lesions or discharging sinuses. In rickets irradiation has been found to be the most valuable single remedy at command, malnutrition in children is also benefited by irradiation. The field of child welfare, in the opinion of the writers of the report, is a very promising one for the use of ultra-violet radiation, and it is recommended that direct encouragement should be given to all the larger child welfare clinics to provide this form of treatment for children suffering from debility, anaemia, delayed convalescence, and the like. It is suggested that some of the larger education authorities might install light treatment in one of their special schools under direct medical control and supervision. An air-cooled mercury vapour lamp with atmospheric burner and without any enclosing metal case is suggested as most suitable for this purpose. Attention is drawn to the good results that have been obtained in Aberdeen from sunlight baths by taking groups of mothers and children to the sea beach and to four of the public parks during the month of June, and it is suggested that in the winter months an arrangement might be made for artificial sun baths. Attention is also drawn to the excellent results which have been obtained at the Motherwell child welfare clinic in cases of rickets treated by carbon arc and mercury vapour lamps combined with the administration of cod liver oil. The changes produced in the bones of the children have been confirmed by repeated x-ray examination, and good results were in most cases noted in so short a space of time as a fortnight. With regard to the clinical uses of x rays, the report states that excellent results have been obtained in the treatment of skin diseases, such as ringworm, psoriasis, eczema, warts, corns, pruritis, acne, and dermatitis, as well as in tuberculous conditions such as lupus and glands in the neck, and in Hodgkin's disease, leukaemia, exophthalmic goitre, and uterine fibroids, while deep x-ray therapy is much used in the treatment of deep-seated malignant growths. The reporters do not, however, consider it necessary to recommend any new installations for therapeutic purposes so far as x-ray work is concerned.

EDINBURGH INFIRMARY LEAGUE OF SUBSCRIBERS

The seventh annual general meeting of the League of Subscribers to the Royal Infirmary of Edinburgh was held on December 1st. Mr James Campbell presided, and Mr Russell Paton, organizing secretary, in his report, stated that the returns for the financial year to October 1st last showed subscriptions amounting to £21,356, received from employees engaged in public works, business establishments, staffs of schools, banks, and Government offices, this was an increase of £451 over the contributions of the previous year. The subscribers included a total of 1,394 groups, of which 1,021 were in Edinburgh. The leading contribution was that of the London and North Eastern Railway Company's employees (North British Railway Section), who had subscribed over £2,490. The employees of the North British Rubber Company had subscribed £700, and those of Saint Cathbert's Co-operative Society £660. Sheriff G. L. Crole, K.C., who delivered an address upon the work done by the Royal Infirmary during the past year, said that the number of patients treated in the wards had been 15,755, an increase of 68, while the number of out-patients had been 55,300, an increase of 7,000 over the number for the preceding year. He believed these were the largest figures treated in any hospital in Great Britain. In addition to these, 1,573 patients had been treated in the convalescent house, and 182 female patients had been received in the Astley-Ainslie Convalescent Home, which was developing into a very large institution, its directors were on the point of erecting the main building of this institution, which was set apart entirely for convalescent patients from the Royal Infirmary. When completed it would accommodate 150 patients and would have a marked effect in clearing the wards of the Royal Infirmary and making room for urgent cases. The waiting list for the Infirmary was over 2,000, which was far too large, although it was true that this represented in great part patients waiting for operations in the ear, nose, and throat department. The income of the Infirmary in the year just ended had reached almost £110,000, which was an increase of over £2,000 as compared with the previous year. Expenditure had been kept to much the same figure as in the preceding year, the total sum being £127,750, an increase of £215. He claimed that these figures were a triumph for the voluntary system. Several extensions of the Infirmary were in active progress. An extension of the ear, nose, and throat department costing £17,000 was to be opened early in the year. The new radiological department, which was to be opened in March, would be, the managers were assured, the finest radiological department, not only in Great Britain, but in Europe. The amount of money involved for the building would be £40,000, with £12,000 for equipment. The Rockefeller Trustees in America had given the University £25,000 to erect a clinical laboratory on condition that it was erected in the Infirmary grounds. It was hoped that, in the near future, the Infirmary would extend its borders over ground belonging to the Merchant Company, and at present occupied by George Watson's College. The report of the departmental committee on hospital inadequacy was read with interest. It was hoped that it would not recommend any interference with the Infirmary, but there were two ways in which the State could help the hospital without affecting the voluntary basis: these were by giving grants for capital expenditure and also to help in research.

EDINBURGH HOSPITAL FOR INCURABLES

The report presented to the annual meeting of the Royal Edinburgh Hospital for Incurables, which was held on November 27th, Sir Henry Cook, chairman of the board of management, presiding, stated that 329 patients had been treated in the Longmore and Liberton Hospitals during the past year, the daily average under treatment being 199. The ordinary income for the year had been £12,071 and the ordinary expenditure £18,594. The expenditure, therefore, had exceeded the income by £6,523, the balance being met out of capital. The average cost per occupied bed was approximately £84, as against £82 in the previous

year Professor G. Lovell Gulland, President of the Royal College of Physicians, gave an address in which he referred to the usefulness of hospitals intended for special purposes. An important gap had recently been filled by the institution of the Astley-Linslie Hospital, which would fill a place intermediate between the general hospital as it existed in the Royal Infirmary and the hospital for incurables, such as the Longmore Hospital. Cases which could not be kept in the infirmary, but which it was believed would get better after a prolonged time with proper care, were handed over to that hospital. The Longmore and Liberton Hospitals for Incurables filled a most important place. A class of human beings for whom all had the greatest respect and sympathy was the nummured daughter or daughter who gave up their lives to looking after their old mothers and fathers, and who awoke when they were about 50 to find their occupation gone and nothing left to take its place. The Longmore Hospital set very many of these free to lead more useful and happy lives than they otherwise could do. He was struck by the sameness of cases in its wards, which included rheumatoid arthritis, disseminated sclerosis, paraplegia, and, of course, cancer. Tuberculosis was becoming more and more a curable disease, and it was hoped in time to banish it from the country. With regard to the others, he saw no reason against hoping that they too might be prevented. He was inclined to hope that the gap at the other end of hospital work might some day be filled by hospitals for the prevention of diseases, so that institutions for incurables might disappear, and funds and buildings be devoted to prevention rather than to treatment. Something had already been done in this direction in regard to tuberculosis, venereal disease, and child welfare. The atmosphere of hopefulness which was now present did not exist fifty years ago.

GLASGOW DISTRICT NURSING

The fiftieth ordinary general meeting of the Glasgow District Nursing Association was held in the Merchants' Hall, Glasgow, on November 25th. Lord Provost Montgomery presided. The report stated that during the year 1924-25 the nurses working under the association had treated 5,334 cases, and the directors felt that if the public realized fully the value of a district nursing association in a large city like Glasgow, the funds necessary for its maintenance and extension would be easily obtained, the ordinary annual income had always fallen short of ordinary expenditure, and in the year under review it had fallen short by £2,198. The Countess of Mar and Kellie, in proposing a special appeal for support, said that the public took it for granted that the nurses were part and parcel of the community, and they did not think how much it cost to train them and what a large measure of responsibility rested on those who organized the training and nursing. If sufficient funds were forthcoming to provide more nurses, 10,000 cases could be dealt with in Glasgow every year instead of about 5,000, and the larger number would be more in accord with those who demanded nursing services and nursing care. Sir John Macleod, Bt., also paid tribute to the work of the association and appealed for greater support.

PROPOSED HOSPITAL FOR INVERNESS

A public meeting was held in the Town Hall, Inverness, on December 1st, to consider a proposal to make additions to the Inverness Northern Infirmary at a cost of about £100,000. The chair was taken by the Mackintosh of Mackintosh, who said that he was sure that this money would be subscribed by Highlanders at home and abroad for the purpose of erecting an up-to-date hospital for the Highlands. A resolution was adopted to request the directors of the institution to go on with a scheme which had been prepared by Dr. D. J. Mackintosh, medical superintendent of Glasgow Western Infirmary.

PENSIONS FOR NURSES

At the thirty-third general meeting of the Glasgow and West of Scotland Co-operation of Trained Nurses held on December 3rd, it was reported that 2,341 cases had been attended during the year by nurses belonging to the institution and that the amount earned by the nurses had been £26,726, since the establishment of the body in 1894,

51,939 cases had been nursed at a cost of £369,199. It has been decided to inaugurate superannuation and pension funds for the nurses and, in order to give the scheme a good start, it was intended to place the interest accumulated from different funds to the credit of this scheme.

CENTRAL MIDWIVES BOARD FOR SCOTLAND

The examination of the Board, held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen, has just concluded, with the following results. Out of 151 candidates who appeared for the examination 137 passed. Of the successful candidates, 36 were trained at the Royal Maternity Hospital, Edinburgh, 41 at the Royal Maternity Hospital, Glasgow, 5 at the Maternity Hospital, Aberdeen, 10 at the Maternity Hospital, Dundee, 12 at the Queen Victoria Jubilee Institute, Edinburgh, and the remainder at various recognized institutions.

At a special meeting of the Board for the hearing of penal cases (Dr. James-Haig Ferguson in the chair) a certified midwife was cited for failure to send for medical assistance in a case of ophthalmic neonatorum, failure to take and record the pulse and temperature of patients, and for other breaches of the rules. Miss Baker, assistant inspector of midwives for Glasgow, was present in support of the charges. The Board found the charges to be proved, and instructed the secretary to remove the name of the midwife from the roll and to cancel her certificate. Another certified midwife appeared in answer to charges of having neglected to send for medical assistance in a case of haemorrhage, failure to take and record the pulse and temperature of the patient at each visit, failure to attend for the full time during the lying-in period, and other breaches of the rules. The Board found the charges proved, but, in order to give the woman charged an opportunity of proving amendment, final decision was postponed to allow of receipt of reports at the end of three months from the local supervising authority on her conduct and methods of practice, and also at the end of six months. Pending satisfactory reports being received her name was instructed, *ipso facto*, to be removed from the roll.

Ireland.

THE ULSTER BRANCH

THE ULSTER Branch of the British Medical Association held the opening meeting of its new session on November 18th in the Medical Institute, Belfast. Professor MacLellan introduced Dr. D. P. Grussen, Dunmurry, the president for the year, who gave his address entitled "Some advances in scientific medicine during the past forty years." Dr. Grussen pointed out the great progress of the British Medical Association since its inception, and how the Ulster Branch had fulfilled its function of spreading medical knowledge and promoting social intercourse and a *esprit de corps* among the members. He then gave some of his recollections of early pre-Listerian antiseptic surgery, when pus was "laudable," to open the peritoneum was fatal, and when patients died of perityphlitis. He next reviewed the rapid change to the practice of the present day, remarking that now the whole aspect was altered: microbes, vaccines, serums, internal secretions, biochemical tests, x-ray examinations and treatment, electro-cardiograph examinations, and psychoanalysis were dominant. Formerly alcohol held a prominent place in treatment and elaborate rules were assigned for its administration, whereas now it looked as though it were fast becoming a vanishing quantity, instead of ten, fifteen, even twenty ounces of whisky in pneumonia and acute fevers, hypodermic injections of caffeine were given. Preventive medicine had done wonders instead of a death rate of 21.4 per 1,000 (1875-80) it was 11.9 in 1923. Typhoid had disappeared, or was disappearing, and the public were being educated in hygiene. Much of this was due to the medical man becoming a missionary of health. Myxoedema and diabetes might be cited as the reward of original research. Much, however, still remained to be done. Calmette's new vaccine in children

predisposed to tubercle, the now specific antitoxin for scarlet fever, and the discoveries in cancer, all showed that there were new fields to conquer, but knowledge of the cause had always been far ahead of ability to cure. Dr. Gussen then gave some of the latest statistics from Calmette, and discussed the demands for a healthier maternity and lessened mortality in childbirth, with greater hospital accommodation. Finally, he emphasized the fact that nothing did away with the importance of the medical man's personality, as illustrated by the later psychology. Dr. Loughridge proposed a hearty vote of thanks to the president for his address, which was seconded by Dr. Morrow, and passed by acclamation.

Mr. Geoffrey Jefferson, M.S., F.R.C.S., of Manchester, then contributed a short paper on surgery of lesions of the nervous system. He confined his remarks to cerebral tumour, and chiefly to cerebral tension. He referred to the rapid proliferation of bone at the sutures in cases of dilatation due to cerebellar tumour. Vomiting was a very inconstant sign, headache was meningeal, great pain was caused as soon as there was any dragging on the meninges in cases where a local anæsthetic was used, and reference was made by the patient to the forehead and behind the eyes, any increase of tension, as in coughing, increased the headache, and vascular depletion relieved it. Optic neuritis was still not precisely known, if toxic it should be constant, but it varied with position of the tumour, a small tumour might cause it, and it might be absent with a very large one. Venous congestion and cerebrospinal fluid pressure were also causes, in the latter the base of the third ventricle might be depressed. Injection of air was a difficult technique, it showed whether the ventricles were displaced to one side. Numerous lantern slides, illustrating the various points in the paper, were shown. Professor Tulletton proposed, and Mr. Mitchell seconded, a hearty vote of thanks to the lecturer for his instructive and stimulating address on a difficult subject which he had helped to make clear.

PUBLIC HEALTH IN AMERICA AND IRELAND

Dr. W. J. Russell, medical officer of health for the borough of Dublin, and Dr. R. P. McDonald of the Ministry of Local Government and Public Health (Irish Free State) to accept the invitation of the Rockefeller administration to study public health administration in the United States. They visited ten States and certain districts in Canada. One of their most vivid impressions was the enormous importance the Americans attached to public health. Not alone did the Federal State and the municipal authorities spend money unstintingly on this administration, but private citizens were so appreciative of its value that they all seemed prepared to contribute lavishly towards the funds of private societies interested in this matter. The Rockefeller Foundation alone was endowed with 180,000,000 dollars, which was devoted to education and research work in public health matters. Charitable societies were also generously endowed, and as evidence of the funds at their disposal Dr. Russell gave the figures of the relief afforded to one family which came under his notice. It consisted of husband, wife, and five children, ranging in age from 3 to 13 years. The husband, who was suffering from tuberculosis, was sent to a home, and his wife received the following relief: 28 dollars a month for rent, 49½ dollars for food, 6½ for fuel and light, 22½ for clothes, and 7½ for sundries. This allowance was made from a private society. Their average allowance in cases of distress was 19 dollars a month for a child under 16. Insurance companies were very large subscribers toward public health funds. The medical inspection of school children was most thorough and efficient. A great deal was also done in immunizing children against diphtheria and scarletina. American corporations were highly staffed in the professional and technical branches. The city of Toronto, with a population of 800,000, employed 23 doctors and 150 nurses in its public health administration. All the other cities both in Canada and the United States had large staffs of doctors and dentists in their employment, either as whole- or part-time officers, and these enjoyed the

co-operation of private societies. The milk question in the United States had been dealt with very drastically, and now 90 per cent of the milk sold was pasteurized, in some cases the average was as high as 98 per cent. In many States restaurants must have a licence and were rigidly supervised, and in nearly all persons handling food must have a clean bill of health. At one large dairy at Princeton, near New York, where some 1,000 cows were kept, every employee had to have a health certificate, all the cows were free from tuberculosis, they were examined regularly, as were the employees. In many places funds were contributed towards compensating dairy-keepers for the destruction of tuberculous cows. The housing question, as known in Ireland, did not exist in America here and there a little trouble arose over rents, but there was no scarcity of accommodation. Dr. Russell and Dr. McDonald found that each family had a flat, consisting of three rooms and a kitchen, with light, water, and other modern facilities supplied. It was common to see notices to the effect that spitting in tramways or underground or on overhead railways was a misdemeanour punishable by a fine of 500 dollars or twelve months' imprisonment with hard labour. The result of this was that that particular offence was practically unknown in America. Another right precaution was the refusal to allow any child that had not been vaccinated into the schools. In spite of all these advantages, Dr. Russell is strongly of opinion that Irish people are better off in their own country, from a health point of view, and he states emphatically that anyone who wishes to enjoy a long, healthy life would be well advised to remain at home in Ireland.

VITAL STATISTICS IN NORTHERN IRELAND

During the quarter ending September 30th, 1925, 7,124 births were registered in the twenty-seven superintendent registrars' districts of Northern Ireland, this number being equivalent to an annual birth rate of 22.2 per 1,000 of the estimated population. In England and Wales during this quarter the birth rate was 18.6 per 1,000, and in Scotland 20.8. The population of Northern Ireland is estimated at 1,281,000, including the military forces. The deaths in Northern Ireland during the same period numbered 3,858, representing an annual rate of 12 per 1,000. The death rate in England and Wales during this quarter was 9.7, and in Scotland 10.9. The death rate in Northern Ireland was 0.4 below the average rate for the third quarter of 1924, and 1.4 below the average rate for the third quarters of the years 1915-24. Of the total deaths registered 726, or 18.8 per cent, occurred in public institutions, and 407, or 10.5 per cent, were unclassified, there having been no medical attendant during the last illness and no inquest held.

India.

FREE OPHTHALMIC HOSPITAL, PAREL

THE Free Ophthalmic Hospital was founded at Parel, Bombay, in 1914, with the object of providing free treatment for the poor, and 1,284 patients were treated in the first twelve months. Starting with only six beds, the inpatient accommodation had to be doubled within the first year, and a few years later the number of beds was increased to eighteen. In 1922 a local supporter provided some urgently required new buildings in memory of his wife. The hospital report for the year 1924 illustrates the rapidity with which the activities of the hospital have increased the out-patient attendances, which in 1914 were 5,561, have risen to 25,707 in 1924. Accommodation has now been provided for paying patients, special rooms having been set aside for them. Post-graduate training in ophthalmology is now proceeding actively, and thirty clinical assistantships are available at the hospital. It is hoped to add soon a modern operating theatre in the place of the existing one, which is inadequate, and bacteriological and pathological laboratories are also contemplated. It is only possible at present to supply food

to destitute in-patients, the remainder having to provide their own. It is proposed to build a kitchen of adequate size for the preparation of food for all patients and under the direct control of the hospital staff. Nursing has hitherto been entrusted to ward boys, but three or four fully trained nurses will be engaged as soon as the financial conditions improve. The only regular grant received by the hospital is a yearly sum of 1,500 rupees from the municipality, and voluntary contributions are at present insufficient. The hospital is situated in an area of mills and workshops, with the result that over 1,200 cases of injuries due to foreign bodies were dealt with during the year. Errors of refraction accounted for 12 per cent of the new cases during 1924, and granulations and ectropion for 11 per cent each. More than half of the patients with granulations came from the provinces along the coastline. In treating phlyctenular conjunctivitis it was found that a certain number of cases refractory to the usual treatment were benefited by gradually increased doses of tuberculin. With griseofulvin the best results were obtained by trephining, with iridectomy.

HEALTH IN THE PUNJAB DURING 1924

In 1923 there was a moderate outbreak of plague in the Punjab during the spring months, it lingered on through the hot weather in an unusually large number of districts, with a recrudescence in the autumn. Circumstances were, therefore, very favourable for its extension at the beginning of 1924, and an epidemic of very grave dimensions followed. By the end of July 246,046 persons had died, and by the end of the year the mortality exceeded a quarter of a million, a figure surpassed in only three other years (1904, 1905, and 1907) since the first appearance of plague in the province in 1898. All districts were involved, Lahore and Rawalpindi being more severely infected than others, the disease was, as usual, more severe in the rural areas than in towns. The decline of the epidemic was, contrary to custom, less abrupt than the onset, owing to the unusual type of weather during April and May. The disease in most cases was of the bubonic type, but in almost every district an appreciable number of septicaemic cases was reported. Very energetic preventive measures were adopted, and we referred to these in our issue of December 13th, 1924 (p. 1135). Antiplague inoculations reached a very high figure, and many striking instances of its great value were forthcoming, despite the fact that the unprecedented demand for vaccine from all parts of the country was only met with great difficulty. Although in some cases the great value of preventing infected villages was manifest, yet in others evacuation was postponed until too late, and was incomplete. Little use was made of segregation camps and plague hospitals, but the great camp erected in the Minto Park at Lahore showed that evacuation even of large cities is not impossible. In his report on the public health administration of the Punjab for 1924 Lieut.-Colonel C. A. Gill insists that for the solution of the plague problem reliance must still be placed on intensive rat destruction during the quiescent period in potential plague centres, combined with inoculation and evacuation during the plague season. In the Dutch East Indies the problem has been solved by rehousing the population, but this method is not applicable in the Punjab, though Colonel Gill remarks that it is significant that no Europeans and very few Indians, living in houses designed on Western lines, contracted plague during the epidemic. He adds that even though rehousing is not possible it is clear that the plague problem would be much simplified if, on the first appearance of rat mortality, infected dwellings were immediately abandoned and their inhabitants accommodated in temporary quarters on the outskirts of the villages. Relapsing fever broke out in two districts during the year, but the mortality was not serious and the epidemics were quickly overcome. Cholera reappeared in epidemic form, and was responsible for over 4,000 cases and 3,000 deaths, as compared with 11 deaths in the previous year, but the spread of infection was soon checked by public health measures. The small-pox mortality during 1924 was 4,040, as compared with 2,140 during 1923, and an average annual mortality rate of 6,601 during the preceding five years.

Correspondence.

BLOOD TRANSFUSION IN CARBON MONOXIDE POISONING

Sir,—In the *BRITISH MEDICAL JOURNAL* of December 5th (p. 1049) Sir Charles Gordon-Watson gives a very interesting account of six cases (all of which recovered) of poisoning by fumes in a dug-out. The two worst cases were saved by transfusion next day, but I think that Sir Charles is mistaken in inferring that this fact indicates that transfusion in similar circumstances might be equally successful in cases of carbon monoxide poisoning.

It is probable that all the men were at first affected by carbon monoxide, but this affection cannot have been serious, as they were all able to escape by their own effort, and it was only later, at the clearing station, that the severe symptoms appeared. Sir Charles points out that some other agent than carbon monoxide may have been partly responsible for these later symptoms, but it seems to me that the chemical evidence, so clearly given, shows that this other agent must have been wholly responsible. The extraordinary dark colour which developed in the lips and skin, and the manner in which the symptoms increased in severity, are inconsistent with carbon monoxide poisoning. On the other hand, the absence of lung symptoms, and the fact that even the administration of pure oxygen caused no improvement of the dark colour, seem to exclude the theory that any lung irritant gas, such as phosgene or nitrous fumes, was responsible.

It seems clear that the symptoms were such as are produced by a poison which causes shortage of oxygen by converting oxyhaemoglobin into methaemoglobin or other decomposition product incapable of transporting oxygen from the lungs. Such substances as nitrites or dimethyl-benzol are known to produce symptoms exactly similar to those described, but on the data available we can only guess at the substance responsible. A guess which seems fairly probable is that nitrite originating from the ammonal of the Mills bombs which were exploded by the heat was suspended in the air of the dug-out. If this was the cause the blood would have, during life, the chocolate colour described, but would, after death, have assumed a more or less bright red colour, closely simulating that of acute CO poisoning, but actually due to the formation *post mortem* of NO haemoglobin, as was recently pointed out by Banham, Savage, and myself (*BRITISH MEDICAL JOURNAL*, August 1st 1925).

It seems to me that, while there was every indication for transfusion in the two cases described, there is none in cases of carbon monoxide poisoning which have not recovered rapidly. Carbon monoxide is eliminated fairly quickly from the blood, which is practically free of it after several hours, and the very severe symptoms which often remain are not due to existing shortage of oxygen, but are after-effects of shortage of oxygen when this has lasted for a considerable time. Neither transfusion nor administration of oxygen can be expected to have any good effect in such cases, though oxygen administration, particularly if about 5 per cent of carbon dioxide is added to the oxygen as recommended by Yundell Henderson, will greatly hasten the elimination of carbon monoxide, and so in many cases avert the after-effects if the exposure has not been too long—I am, etc.,

Oxford Dec 7th

J S HALDINE

THE LEAD TREATMENT OF CANCER

Sir—Professor Adams, in his letter published in the *JOURNAL* of November 28th (p. 1034), states that "death and absorption of the cells of malignant growths can be brought about by an agent of known composition administered in known doses." He also states in a previous communication that cases of cancer have been cured for periods of three years or more, the natural assumption therefore, is that these agents of known composition have been in the hands of the Cancer Research Committee, Liverpool University for at least that period.

In October 1924, I wrote to Professor Blum Bell asking

if he could give me details of the methods which were being adopted for the treatment of cancer by lead under his direction, but he answered in a letter of October 17th that the preparation of lead which they were using had not been brought to the level of perfection which they hoped to achieve, he added that anyone who was unwilling to go to Liverpool to learn the methods, druggists, etc., at first hand they could not help. I at once wrote offering to visit the Research Department at any time convenient to Professor Blair Bell, but was then told that individuals could not be given the information, but only delegates from institutions.

From other sources I understand that the colloidal preparation of lead which is being used can be manufactured in London, and I therefore fail to understand why full details of the methods of treatment of these cases could not have been given to the profession long enough ago. There are admirable and efficient organizations in several towns in England, where the testing of any preparations for the treatment of cancer can be carried out, and it seems to me a very great pity that Professor Blair Bell has not seen fit to give the fullest information he has to the rest of the profession as soon as it was available.—I am, etc.,

London W 1, Dec 2nd

CECIL A. JOLL.

EDUCATION OF THE PUBLIC AS TO CANCER

SIR,—In the House of Commons last week, as reported in the *BRITISH MEDICAL JOURNAL* (November 28th, p 1036), the Minister of Health was asked a question regarding the advisability of instituting in this country a system of free clinics for cancer similar to that which has been in existence for some years in the United States. The free clinic is part of a wide scheme of cancer propaganda in the States, the results claimed for which are now so striking that the time is clearly ripe for a consideration of its value in Great Britain. In deciding on this question two facts are to be emphasized. In the first place, the very considerable chance of cure by surgery and radiation treatment in the early stage of cancer has within recent years been proved conclusively. This is especially obvious in accessible cancers. Thus the incidence of five-year cures after operation where the cancer has not spread to the glands is up to 90 to 95 per cent (Johns Hopkins Hospital, Mayo Clinic), breast 70 per cent (Johns Hopkins), tongue 62 per cent (Johns Hopkins), cervix 58 per cent (Bonner). With radiation treatment in cervical cancer the results are equally striking. Thus in early and border-line cases Heyman records 40.5 per cent five-year cures, and in early cases Doderlein's results are as high as 80 per cent. The next point to be emphasized is that the very considerable powers which we thus possess are largely frustrated by the fact that, even in the most accessible cancers (breast, breast, and uterus), the majority of cases are seen only at a late stage. When the causes underlying this lamentable fact are considered there can be no doubt that the most important is ignorance on the part of the public of the signs of early cancer, as also of its curability at the early stage. Few women know that a lump in the breast is dangerous, and that if sho is over 40 it implies cancer in an 80 per cent degree; few women know the danger that may underlie an irregular bleeding, especially when this occurs at 35 years of age or over, few men know the dangers of a non-healing sore of the lip or tongue, etc. Few people know that cancer in its beginnings and during its curable stage is rarely a painful ailment.

About 50,000 persons die annually from cancer in this country. Of this total, in about 15,000 to 18,000 the disease occurs in regions where early diagnosis allows of a proved curability into varying in different sites from about 60 to 95 per cent. After allowing for the cures actually accomplished by surgery and radiation treatment, Childs has computed that in males at least one-third, and in females at least one-half, of all cancers are capable of early removal and cure. This means, under ideal conditions, a potential annual saving of about 7,000 male lives and 13,000 female lives, or a total potential annual saving of about 20,000 lives. This is a goal to be reached in very ideal circumstances, but even if only realizable in a 50 per cent degree it is obviously worthy of the most strenuous endeavour.

A little reflection will show that the only way to reach the thousands of cases of early cancer is by education of the public. The problem is largely outwith the province or power of ordinary medical practice. It is a problem essentially of community health and community instruction. This great fact has been recognized by our American colleagues and by American publicists earlier than by ourselves, and for many years this recognition has found expression in the activities of such bodies as the American Society for the Control of Cancer. The most useful of these activities, it is claimed, is the popular lecture. There is, in addition, propaganda carried out through the lay press. In connexion with "Cancer Week" there are free clinics where people with suspicious lumps, sores, etc., can find advice. At Detroit, for example, during four days 1,100 persons applied to eight hospitals, and in this number 42 cancers were discovered (face 7, lip 4, breast 16, uterus 8, etc.), and 75 pre-cancerous lesions. In Idaho, in seven small communities, 108 cases of early cancer were so discovered. At seven clinics during Cancer Week in Pennsylvania 886 patients were examined. Of these 146 had pre-cancerous conditions requiring treatment, 40 had early and 19 had late cancer. The success of this propaganda is seen also in the fact that patients are coming earlier to the routine hospital clinic. Thus Bloodgood (professor of surgery at Johns Hopkins Hospital) says that in this regard the results are almost incredible. At his clinic in the decade 1890-1900, of the breast cases 99 per cent required operation and 85 per cent were cancerous, whereas lately only 50 per cent required operation, and of these only 50 per cent were cancerous. At the same clinic the operable tongue cases have increased from 53 to 80 per cent. Pimrose (professor of clinical surgery, Toronto University) states that at his clinic within the past decade 37.5 per cent of the breast cancers came to operation within three months of the initial symptoms, as compared with 19 per cent in the previous decade, 27 per cent came within one month, as compared with 8.4 per cent in the former decade.

An organized crusade against cancer has the further advantage of providing a channel by which all that is known regarding prevention can be conveyed to the public, and new facts can be utilized quickly as they transpire. Within its operations there will be embraced all medical agencies in contact with the public, such as public health authorities, midwifery and other nurses, health visitors, etc. The Minister of Health, in Circular 426 dated as far back as 1923, has already officially recognized that education of the public is essential to a successful attack on the basic problem, and I know from inquiry that some local health authorities in this country are alive to the advantages and possibilities of a well planned scheme. But before such bodies can exert their full powers they must have behind them the support of organized and articulate medical opinion. I have shown that the crusade in America has proved by results the efficacy of such a movement. It may be that the intensive press and platform methods adopted there would be unsuited to this country, and that other schemes of permeation would be better here. It is clear that caution is necessary in the means employed, for unwise methods and overstatement can do much harm by creating panic and unfounded hopes. On the other hand, it may be considered certain that a wisely planned effort would result in the saving of many lives. To the student of community health it is known that the argument of panic was advanced against the antituberculosis crusade at its inception but all now recognize that in this disease the results following publicity, backed by adequate provision for diagnosis and treatment, rapidly swept away this natural dread of panic and at the same time the sentiments of loathing which tuberculosis was wont to inspire in the public mind.—I am, etc.,

JAMES YORRA

Edinburgh Nov 28th

NASAL PLASTIC REPAIR BY CARTILAGE GRAFT

SIR,—While sincerely congratulating Mr E Watson-Williams on his cartilage graft results (November 28th, p 987) we are sorry that Mr J F O'Malley (December 5th, p 1091) confirms and approves the method of approach

In a series of several hundred cartilage grafts we have naturally tried this incision, and gave it up because of the scar on the tip of the nose. It is, of course, a great improvement on the incision at the root of the nose which we also practised and abandoned early, but we do not think it is justifiable to make any scar on the outside of the nose if the operation can be done without.

In certain cases the whole operation of planting cartilage in the nose can be done through the vestibule, but in others it is wise to use the incision shown before the Royal Society of Medicine in 1923 (*Proceedings*, vol. xvi, Section of Laryngology, pp. 4-6), which leaves a scar only across the root of the columella.

We have persistently maintained that the correct operation is the introduction of an "L-shaped" piece of cartilage, and we do not think this can be inserted through the incision described by Mr. Watson-Williams.—We are, etc.,

H. D. GILLES
T. POMFRET KILNER

London W. 1, Dec. 7th

ABDOMINAL CRISES IN CHILDREN

SIR,—In Mr. Adams's very complete survey of the abdominal crises in children (*BRITISH MEDICAL JOURNAL*, December 5th) there is a sentence (p. 1044) which might, I think, be modified. In discussing diagnosis with special reference to intussusception, he writes "Severe diarrhoea and dysentery are associated with bloody stools containing mucus, but some faecal matter is usually present."

In most cases of acute bacillary dysentery, soon after onset, the stool consists entirely of blood and mucus. Such dysenteric cases can be diagnosed from intussusception by rectal examination. In dysentery rectal examination sets up a degree of tenesmus which is manifest when, on attempting to withdraw the finger, it is somewhat forcibly expelled, and its expulsion is followed by a small quantity of blood and mucus, circumstances which do not occur in intussusception.—I am, etc.,

ROBERT RICHARDS, M.D., F.R.C.S. Ed.

Aberdeen Dec. 5th

TREATMENT OF PRIMARY ACUTE INTESTINAL OBSTRUCTION

SIR,—The paper on acute intestinal obstruction, by Sir William Taylor, at the Bath Annual Meeting (reported in the *JOURNAL* of November 28th, p. 993), will undoubtedly cause very great interest, as stated in your leading article.

It seems a pity that Sir William thought fit to open his remarks by a diatribe against a section of the profession whose difficulties he apparently fails entirely to appreciate.

I have no doubt whatever that everyone, even every general practitioner, will agree that the ideal to be attained is an early diagnosis, the great difficulty, I am afraid, is to make that diagnosis. In the books are given certain very definite and classical signs and symptoms of this condition, not one of which need be present in an early case, and which, in my experience, are generally absent. If they are present, then it is, as Sir William points out, very often too late.

Several other speakers, particularly Mr. Sampson Handley, pointed this out, and some mentioned the value, as an early sign, of complete constipation. If this were easy to be sure of, it would be very helpful, but very often one is met by a statement that constipation for one and often more days is a regular habit of the patient, in such cases as these it is very hard to estimate the importance of that part of the history. In a case which I mention later the patient had definite diarrhoea.

The value of enemata also is variable. In three out of four cases I have seen recently an enema produced excellent results, no doubt owing to the large bowel being fully loaded and the obstruction being higher up. Such results from an enema only help to increase the difficulty of diagnosis and make the anxiety of the general practitioner still greater.

The books tell us that tenderness and rigidity are often

absent in the early stages. This is perfectly true, but not very helpful, it merely increases anxiety in a doubtful case.

Pain and vomiting vary so much as to be most puzzling. I have seen a case in which there was no vomiting at all, and at the operation several feet of small gut were found to be strangulated by a band. In general practice one is called to dozens of cases a year of acute abdominal pain, the great majority of these turn out to be nothing at all serious, thereby increasing our difficulty in deciding which is the serious case and which is not.

My experience of the condition under discussion is not vast, but I have yet to see a case in which, in the early stages, the pulse and temperature were anything but normal, so that these usually valuable signs do not help us here.

As a general practitioner I may say that no other illness or condition seems to present the same difficulties and pitfalls in diagnosis as this acute intestinal obstruction, and yet we are told by Sir William Taylor that we are deserving of a civil action for damages if we fail to make an early decision. May I give as an example one of the most tragic cases I have had?

A thoroughly healthy and strong man of 50 had a good breakfast on Saturday morning. Soon afterwards he had pain in the abdomen and back and vomited his breakfast. He went to work and felt quite all right, having his bowels open during the day and no more vomiting. On Sunday he had a loose action of the bowels three times, and so kept to a light diet, he did not vomit again. On Monday morning he did not feel very well, so stayed in bed and sent for me. I found him with an "ache" in his back, normal pulse and temperature, moist furred tongue, abdomen quite flaccid, no tenderness or distension. I ordered an enema and very light fluid food. I saw him again in the evening, and his condition was exactly the same and he felt quite easy, he had not vomited nor had he had any more pain. The enema had produced a moderate result. I proposed calling the next morning but at 5 a.m. I was called and found him dead, he had gone to sleep as usual but had suddenly awakened, vomited some brown fluid, and died. *Post mortem* examination showed a complete obstruction of the small gut, high up, by a band.

I think this case should speak for itself in illustrating the difficulties of a general practitioner with this condition. I suggest that Sir William Taylor would help towards the attainment of his ideal more efficiently if he would write a paper giving us his friendly help and advice as to the early diagnosis of these cases. I can assure him that general practitioners would do their very best to turn that advice to good uses. His abuse affects us not at all, his help would be greatly appreciated and carefully used.

I am sure that we all felt grateful to these other surgeons who spoke, and who tried to assist and not to criticize.—I am, etc.,

Sheerne's Nov. 29th.

W. HOPPER SHEPARD,

POST-GRADUATE MEDICAL EDUCATION IN ENGLAND

SIR,—Sir Holburt Waring's address on post-graduate medical education published in your issue of November 28th is on the whole a very fair summary of the position of post-graduate education to-day. Sir Holburt has, however, done *him* justice to the Fellowship of Medicine, which, with all its faults, is doing something for the post-graduate.

I welcome his criticisms because they are not merely destructive, although all his remedies have been considered over and over again by the executive of the Fellowship, and have had to be deferred owing to lack of funds. I estimate that the outlay involved by his suggestions would amount to a capital sum of £400,000 and an annual maintenance of £50,000. We have an income of less than £3,000.

We should all like palatial offices, a medical director, and a hospital, but we cannot afford them at the moment. We all agree that post-graduates and undergraduates cannot be taught together, and it is arguable whether this is the fault of the post-graduate or of the teacher. It is possible that the undergraduate teacher, absorbed in his

important task of training beginners to pass examinations, has never acquired nor needed the wide outlook which is necessary to instruct men experienced in the difficulties of practice. And was that not one of the causes of the early failure of the Fellowship of Medicine? The question is referred to in the current (December) number of the *Post-Graduate Journal* by an overzealous correspondent.

Sir Holburt Waring must be patient. It is only two and a half years since the Fellowship of Medicine was reorganized and control placed in the hands of the actual teachers. In this short time the Fellowship of Medicine has affiliated some fifty hospitals in London, has arranged general and special classes covering the whole range of medicine and surgery, with a programme arranged for twelve months' work, has started a journal of its own, and is embarking on an extensive scheme to attract overseas students. There is a steady increase in the number of post-graduates on the books and there is a modest balance in the bank.

Sir Holburt Waring's criticism that the Fellowship of Medicine is not incorporated by Royal Charter or by registration would be sound were it not that the memorandum and articles of association of the Fellowship of Medicine have been drawn up and will be signed in a few weeks—I am, etc.,

London W 1 Dec. 7th

H W CARSON.

Sir,—I have read Sir Holburt Waring's address (*BRITISH MEDICAL JOURNAL*, November 28th, p. 1022) with interest, and am in agreement with much of it. Sir Holburt does not, in my opinion, quite strike at the root of the trouble. Post-graduates fall naturally under one of two categories: (1) Those who are able to devote their whole time temporarily to post-graduate study; (2) Those engaged in practice or holding public appointments who have only a strictly limited time at their disposal.

The former class is fairly well provided for under present arrangements, the latter may take advantage of the yearly ticket issued by the West London Post-Graduate College, but the cost of tickets issued by many of the other hospitals is prohibitive. If several of the better known hospitals would set aside one or two days a week for post-graduates, and issue a yearly ticket at a nominal charge, I am sure the latter class would take full advantage of the arrangements.

Again, one cannot fail to notice that many hospitals arrange revision courses for those taking the F.R.C.S., but no such arrangements appear to exist for the M.R.C.P. candidate, surely this should be remedied—I am, etc.,

November 29th

M D

OSTEOPATHY AND CHIROPRACTIC

Sir,—An "osteopathic aurist" (so described in the telephone directory) treated for slight deafness a middle-aged patient for whom I was called up by telephone at 11 p.m. recently. After ascertaining that he was no longer under the osteopath's care, I went and found the patient ill in bed with a temperature of 103.9, right tonsil enlarged, tender gland beneath jaw, and intense redness of both external auditory meatuses at upper parts near the drums, especially the left. The previous day, under gas, the osteopathic aurist had manipulated the nasopharynx about the Eustachian orifices.

Incidentally he was induced under pressure to undergo Plombières treatment (rectal irrigation), to which he weakly acceded, though he felt doubtful of its efficacy in his case.

The temperature became normal in five days, and after a week in bed the patient was well enough to go home. A week later he wrote that he was not yet quite as fit and strong as usual.

While in bed he showed me a letter written by mother of this osteopath's patients, who wrote that after her operation she too had fever and had to lie up some days before she was well again.

My patient was fortunate in escaping acute middle-ear suppuration—I am, etc.,

London W 1, Dec. 2nd.

BERNARD E. POTTER

THE PREVENTION OF COLD IN THE HEAD

Sir,—May I be allowed to supplement the excellent paper by Dr. Simey on the prophylaxis of common colds (*BRITISH MEDICAL JOURNAL*, November 14th, p. 901) by some remarks which the lateness of the hour prevented me from adding to the long discussion that followed it?

My attention was first directed to this subject many years ago, when first I made the acquaintance of a middle-aged gentleman and his wife, neither of whom had ever suffered from a cold in the head, and who, though they carried pocket-handkerchiefs—chiefly for dusting purposes—had never had to employ them for "blowing the nose."

The lady was of Irish parentage, her husband was a member of one of the numerous branches of a well-known family which occupies prominent positions throughout several counties from the Northern Midlands to the southern coast. For nearly half a century I have been intimately acquainted with more than fifty of its members of both sexes and have from time to time met and observed several others. They are a prolific race (a fact of some significance), and the men all present the following characteristics: a well-formed face, with broad jaws, affording ample room for well-developed evenly spaced teeth, and a sonorous voice of pleasing quality. All of them can tell the same story of never suffering from cold in the head and of not needing to use a handkerchief. Their health has been robust—with the single exception of one on whose mother's side there was a marked family history of tuberculosis, he died comparatively early and of a comparatively trivial malady.

I have been able to examine fifteen of these exceptionally gifted persons with great care and more than once, in health and in illness, and several others with less thoroughness, and what impressed me in each case was the absolutely perfect formation of the oro-nasal cavities: there was no spur, no deflected septum, no exaggerated or ill-formed turbinate, there was every facility for a complete and even flow of the normal nasal moisture (it could scarcely be described as a "fluid") along the smooth and even slopes provided. There were no ridges or irregularities to form pools in which the mucus could accumulate and become infected by organisms under conditions which would favour their development into active and irritant toxicity. Some of them were very heavy pipe-smokers, they showed chronic congestion of the fauces and tonsils in varying degrees, from which they did not suffer conscious inconvenience. In all, the maxillary sinuses were well and symmetrically developed. I was able to observe some of them during attacks of influenza. The malady followed a normal course, but was never attended by any running from the nose or any interference with the sense of smell. I examined several of the women with equally good results, though as a rule the good points in their case were less complete and less evenly distributed.

I have been driven to the conclusion that the perfect and symmetrical development of the oro-nasal cavities reveals the secret of this unusual freedom from the nasal troubles which are nowadays practically universal throughout the British Isles, and common enough elsewhere. For it will be admitted that nearly all of us have "colds" from time to time, and that very few of us possess perfect nares. Such embarrassing and displeasing conditions are quite unnatural. They are the inevitable result (1) of a deliberate thwarting of the natural and beneficent instincts of early infant life, (2) of the foolish and injurious habits impressed upon the child in the later stages of its existence, (3) the fostering of these habits by example.

Before any tooth has emerged from its gums the infant, left to itself, instinctively puts any hard substance which it can grasp into its mouth and bites upon it. The pressure thus made upon the swollen gum above the tooth beneath it achieves the discomfort which the child feels—much as an adult may often find that biting on an aching tooth lessens the pain by emptying the gorged blood vessels and numbing the super-sensitive nerve endings. The infant's "biting" is not a simple vertical "clump", it is of a grinding character, the lower jaw being moved slightly from side to side. It

Community Settlements we look to those in the Dominions far-sighted enough to realize their potentialities. We do not propose to have any financial interest in the enterprise, or in fact any interests at all, save the interests of those for whom the scheme is designed.

Through private channels and by the valuable aid of the principal Government departments and service banks, details of our project have been circulated in many quarters. The response was immediate and enthusiastic, so much so that Sir Roland Bourne, our vice chairman and the originator of the project, is now in South Africa examining offers from responsible interests there to furnish the facilities needed for the first Community Settlement. He has cabled and written that suitable offers are assured.

Our present need is to make known the provisions of our scheme to all those to whom it might be of interest, and perhaps benefit. To this end, will you allow me, through your columns, to invite those interested to write for further particulars to the Empire Community Settlement Committee's head office at 89, Kingsway, London, W C 2?—I am, etc.,

T W PEARSON,
Representing the Medical Profession on the
Empire Community Settlement Committee

London Nov 28th

NEO CARDIOLOGY

SIR,—Dr Harrington Sainsbury (November 28th, p 1031), in adversely criticizing the methods of investigation of neo-cardiology, finds fault rather with the conclusions drawn than with the apparatus employed. He is voicing, I think, an attitude which is very general. Personally, I have frequently opposed the explanations offered of the records made.

Take, for instance, the wave *a* in the jugular curve. Sir James Mackenzie, in the second edition of his *Diseases of the Heart*, wrote "The forces operative in producing variations in the auricular pressure are also acting in producing the jugular pulse. Both are due to the systole of the auricle." This gratuitous assertion I opposed in a short article on the genesis of the venous pulse in the BRITISH MEDICAL JOURNAL of April 13th, 1912. It is a terrible condemnation of the efficiency of the human heart to assert that the auricle works also backwards into the jugular whenever it attempts to drive blood forwards into the ventricle. If for its explanation the wave *a* requires such an assumption, it is a pity that the wave *a* was ever recorded.

The study of the phases of the heart's action by the polygraph and electro-cardiograph gave considerable promise of usefulness, because they introduced accurate physical methods. Unfortunately the polygraph, being very indirect in its application, has produced curves which the investigators have found very difficult to explain, and others more difficult to follow.

The electro-cardiograph records only the electrical changes originating in the heart, which, fortunately, may be some measure or indication of the strength and duration of the cardiac contractions, consequently they are of more than mere laboratory interest. Its application, however, is limited, and can seldom serve as a key to cardiac problems.

The riddle of graphic records has turned cardiologists aside from the clinical problems of the previous generation, which, though less showy, seemed far more profitable. Is it not time we again took some interest in the evidence of our ears as well as our eyes? Take, for instance, the presystolic murmur heard near the apex. Who discusses it now? And yet does it not tell us that the mitral orifice is constricted, that the auricle is contracting vigorously to drive the blood through it, that the prolongation of the murmur up to and into ventricular-systolic time indicates that the murmur manages somehow to keep up its contraction into ventricular-systolic time, and force its blood into the ventricle, even after the latter has commenced its contraction? Even the electro-cardiogram shows that the auricular contraction may be simultaneously prolonged, and physical principles indicate that the auricle late in its contraction should be more than a match for the full ventricle. Does not the cessation of the presystolic murmur coincide with the break down of compensation, and with the occurrence of a systolic regurgitant

murmur? Then it is that the murmur dilates probably for the first time, for if a sufficient be killed by accident dilatation is generally absent, though commonly present with the hypertrophy after natural death. This I proved statistically in my article, "Mitral stenosis: a statistical inquiry," in the BRITISH MEDICAL JOURNAL of February 5th, 1898.

After all the elaborate methods lately introduced for investigating the heart's action, the one practical conclusion which has emerged is that the heart's condition should be judged, not by these curves, but by its "response to effort." It cannot be so judged any more than an old motor car can. Its parts, its sounds, and its general condition must be examined in detail, for "a short life and a merry one" may easily go together—I am, etc.,

Menton, France, Dec. 3rd

D W SAINSBURY

SIR,—To adopt the new is not to discard the old, and I think I can comfort Dr Sainsbury and Dr Thorne Thorne with the assurance that those of us who are familiar with graphic methods are yet not ignorant of physical signs and the "palaeo-cardiological" methods of examination. These latter methods in many cases of heart disease or supposed heart disease suffice and will continue to be adequate, whatever new aids the profession is endowed with in the future.

We have in the polygraph and the electro-cardiograph instruments which enable us to analyse with precision all abnormalities of rhythm, but most of us through time require the knack of recognizing clinically the various irregularities with more or less certainty, and I shall not stress this point. What I would emphasize with all the force I can is that by clinical examination we may learn nothing of the myocardium. Pace Dr Thorne Thorne, the unfortunate owner of a degenerated myocardium may yet possess normal heart sounds, normal heart borders, and normal blood pressures, but he will not yield a normal electro-cardiogram. I had thought the fallacies of percussion and auscultation in myocardial disease too notorious to require comment.

No one would assert that we have yet reached finality in the investigation of heart disease, but it is certain that in the electro-cardiogram we obtain a record whereby we detect disease of which clinically we were ignorant, and whereby we confirm disease of which clinically we were but suspicious. By these records examination achieves precision, prognosis and treatment acquire decision, positive clinical findings are revealed as facts, and negative clinical findings are in many instances revealed to have the value which negative evidence possesses in other parts of the body, in others they are confirmed, and then the patient and his medical attendant may go on their way rejoicing, for the electro-cardiogram will not let them down—I am, etc.,

Hove Dec 7th

DAVID HALL

PREHISTORIC TREPHINING

SIR,—I have a photograph of the Dutch oil painting "Senox" refers to (BRITISH MEDICAL JOURNAL, December 5th, p 1090) concerning other reasons for trephining in ancient times besides depressed fracture. It was painted by Jan Steen, Rotterdam. My copy was given me by the late Mr Arthur F G Leveson Gower, who was prompted to inquire concerning such pictures by seeing an old Dutch print which I possess by Weydmans, which represents the same operation, this latter has an old Dutch legend beneath it which Mr Leveson Gower referred to the curator of the museum (I think) where the painting by Jan Steen is, and he forwarded the following translation "I go, I go, with great joy, here they will operate on the woman of Ayo (Kyen, Keien) for stones in the head," and added the footnote, "A fictive operation, stones in the head = stupidity."

There is also another painting by Jan Steen, of which I gave me a copy, entitled "The Quack Doctor," which represents the same operation being performed, apparently by an itinerant quack, who is holding up for exhibition to the surrounding bucolics the stone which he professes to have removed from his patient—I am, etc.

London E 1 Dec 5th.

LARRY SIMMONS

Obituary

SIR JOHN MACALISTER,

Late Secretary of the Royal Society of Medicine

WE had the grief last week to record the death, on the evening of December 1st, of Sir John MacAlister, the first secretary of the Royal Society of Medicine. He had been in failing health for about a year and had been compelled on this ground to resign last April.

John Young Walker MacAlister was born at Perth in 1856, the second son of Donald MacAlister, of the ancient family who were keepers of Tarbert Castle. His elder brother is Sir Donald MacAlister, Bt, Principal of Glasgow University and President of the General Medical Council. John MacAlister was educated at the High School, Liverpool, and studied medicine for three years at the University of Edinburgh. Owing to ill health he had to give up his purpose of entering the medical profession, and in 1878 became sub-librarian of the Liverpool Library. In 1880 he was appointed librarian of the Leeds Library, where the new buildings were erected in conformity with his recommendations. He classified the collection of some 50,000 volumes, and was also concerned in the planning and arrangement of the Yorkshire College. He had already done some journalistic work in Liverpool, and now became a contributor to the *Liverpool Mercury* and *Yorkshire Post*. In 1887, on the recommendation of Professor Thorold Rogers and Mr Herbert (now Viscount) Gladstone, he was nominated librarian of the newly founded Gladstone Library at the National Liberal Club, London, but had only held the post for a few months when he was elected, on August 9th, 1887, resident librarian of the Royal Medical and Chirurgical Society, then in Berners Street, in succession to the late Mr J B Baile, who had been appointed librarian of the Royal College of Surgeons of England. MacAlister continued to take a practical interest in librarianship, and in 1889 founded *The Library*, a periodical devoted to technical work of librarians and to the literature of libraries, it was at first published monthly, but afterwards became a quarterly, in the conduct of which MacAlister was associated with Professor A W Pollard, it is now the organ of the Bibliographical Society. In 1887 MacAlister became honorary secretary of the Libraries Association, and was largely concerned in the passage of the Public Libraries Act of 1892, under which public libraries are now conducted. He helped in obtaining the Royal Charter of Incorporation for the Libraries Association in 1898, and in that year ceased to be its secretary. He remained an active member, and from 1914 to 1919 was its president. When the second International Library Conference was held in London in 1897 he was its secretary general.

MacAlister's chief life work, however, was done for the Royal Society of Medicine, which is the direct successor of

the Royal Medical and Chirurgical Society, founded in 1805 by the then leaders of the profession in London. Their conception of it was a society comprehending the several branches of the medical profession for the purpose of conversation on professional subjects, for the reception of communications, and for the formation of a library. This society prospered, and in 1835 bought the lease of 55, Berners Street, where its work was carried on when MacAlister became librarian. It had a fine library and a well proportioned meeting room, but was outgrowing its accommodation, moreover, the lease had nearly expired. MacAlister proposed that the society should get a larger house, and found for it No 20, Henrietta Square, which was first occupied, after it had been renovated and largely reconstructed, in 1890. The society continued to prosper, and celebrated its centenary there in 1905. Meanwhile, however, a large number of specialist medical societies had

been founded in London, and there was a widespread feeling that this led to a waste of effort. The matter was first brought to a head by a scheme MacAlister submitted in 1893 to Sir Andrew Clark, then president of the Royal Medical and Chirurgical Society, who was warmly in favour of amalgamation, but he died suddenly on the day on which he had convened the first meeting, and the proposal lapsed. In 1905 it was revived by a scheme submitted by MacAlister to Sir Richard Douglas Powell, then president of the society, who heartily approved it. At his house a number of meetings were held, as is mentioned in the short appreciation from him appended to this notice. Eventually he proposed that representatives of all medical societies in London should be invited to attend a meeting at the Royal College of Physicians, at which the President of the College, Sir William Church, was in the chair, an Organizing Committee was formed with Sir William Church as chairman, and Mr Pendlebury and the late Dr Arthur Latham as honorary secretaries. The



SIR JOHN MACALISTER
(After the portrait by Eric Kennington)

committee carried on negotiations with the several societies for nearly two years, until in June, 1907, the supplemental charter was granted by King Edward VII, and fourteen medical societies joined the Royal Medical and Chirurgical Society and became the Royal Society of Medicine. After this the prosperity of the society increased rapidly, and in 1910 the site now occupied at the corner of Wimpole Street and Henrietta Street was required. In May, 1912, the new house was formally opened by the King who was accompanied by the Queen. It provides a meeting hall dedicated to Dr Robert Brines, several smaller meeting rooms, and a fine reading room, in which a collection of books is placed, the remainder being housed in the capacious storerooms in the basement.

MacAlister was associated with Sir St Clair Thomson in founding the Inter-Allied Fellowship of Medicine, which had for its object the encouragement of co-ordination in medicine among the nations and especially the care of the social needs of foreigners and our fellow countrymen of

the Dominions when in London. After the armistice the Dominions Governments gave their medical officers a period of study leave before demobilization. To meet the need thus created the Fellowship undertook the establishment of post-graduate courses in London. The effort was successful and for many months the courses were well attended, and it will be remembered that the British Medical Association held a special General Clinical Meeting at the Imperial College of Science in April, 1919, which also was largely attended. In the autumn the Fellowship amalgamated with the London Post-Graduate Association, but after the period of study leave for overseas officers had ended the numbers attending the courses naturally fell off. MacAlister, however, continued to work with enthusiasm for the establishment of a good practical plan of post-graduate instruction, and it is largely through the success of his efforts in keeping the organization alive that we have now come to the point when the Minister of Health has appointed a committee under his own chairmanship to advise as to the means that can be taken to establish a first-rate post-graduate medical college in London.

A funeral service at St. Peter's, Vere Street, was held on Saturday, December 5th, when the large congregation was composed almost entirely of representatives of the medical profession. The King was represented by Sir Edward Wallington, and among the immediate family mourners, beside the widow and her two sons, was Sir Donald MacAlister. The President of the Royal Society of Medicine, Sir St. Clair Thomson, was accompanied by four past presidents—Sir William Church, Sir Henry Morris, Sir Humphry Rolleston, and Sir William Hale-White. Other officers of the society included Mr. Walter Spence (honorary librarian), Mr. C. H. Fagge (honorary treasurer), and Mr. W. Gilling Ball and Dr. H. Letheby Tidy (honorary secretaries). Representatives were also present from kindred societies and medical institutions. The British Medical Association was represented by the Treasurer, Mr. N. Bishop Harman, and the *British Medical Journal* by the Assistant Editor, Dr. N. G. Horner. The congregation included also Sir Dyce Duckworth, Sir George M'Kins, Major-General Sir W. G. Macpherson, Sir Hector MacKenzie, Sir Chilton Biscoe, Sir George Blacker, Sir Hugh Rigby, Sir James and Lady Dundas Grant, Sir James and Lady Berry, Professor G. Elliot Smith, Dr. A. M. H. Gray, and Mr. Geoffrey R. Edwards. The staff of the headquarters of the Royal Society of Medicine attended.

Sir St. Clair Thomson, President of the Royal Society of Medicine, has sent us the following tribute:

By the death of Sir John Y. W. MacAlister we have lost one of our best friends. It is doubtful if any man, not himself a graduate in medicine, has ever done more for the profession than the late secretary of the Royal Society of Medicine. His good work was commenced thirty-eight years ago, when he started as librarian to the Royal Medical and Chirurgical Society. At that date, although the leading body of its kind in London, this society numbered only 745, and was housed in three dark little rooms in Beiers Street. When, a few months ago, Sir John retired owing to ill health, he had effected an astonishing change in the academic life of the profession in the metropolis.

It was chiefly through his organizing talents that the Royal Medical and Chirurgical Society moved to a larger house in Hanover Square, and there amalgamated itself with eighteen other distinct medical societies of London into the now flourishing Royal Society of Medicine. Sir John's indomitable energy was the chief factor in erecting the handsome home for this great amalgamation at the corner of Wimpole Street and Henrietta Street. He who had commenced as librarian to a society of 745 Fellows, with an income of about £1,600 per annum, lived long enough to be secretary of a society of 4,000 Fellows, with an income of £20,000 a year, and possessing, among other valuables, the largest medical library in the British Empire.

This fusion of eighteen separate and independent societies was really a Herculean work, if it is remembered how many conflicting interests and jealousies had to be

overcome. Many efforts at the task had failed since the foundation of the original Royal Medical and Chirurgical Society in 1805. It was nearly successful in the time of Sir Andrew Clark, but the untimely death of that great physician arrested progress until amalgamation was finally accomplished in the year 1907, when Sir William Church, ex-President of the Royal College of Physicians, became the first President of the Royal Society of Medicine. This great achievement was doubtless accomplished because MacAlister was a man with imagination, was absolutely devoid of selfishness, and was single-hearted in his devotion to a great idea. Fortunately he was a man endowed with a serene and equable temperament which allowed his Celtic imagination to be controlled by the more rational spirit of his Southern friends. If any project of his was occasionally turned down as visionary or impracticable he was neither resentful nor cross about it.

His handsome presence will not easily be forgotten. He was twice threatened with tubercle. He suffered from other troubles, for the relief of which he was ever grateful to his old friend Sir Arbuthnot Lane. But he never looked the invalid. Broad shouldered and erect, with his handsome head of hair and curling beard, with the refined straight nose and the high cheek bones of the Celt, his one grey and his other blue eye added an increased charm, while his clear diction and low musical voice had an attractive and caressing effect. In his prime there was something about him suggestive of the Viking type, with which much of the Highland strain on the coast of Scotland is mingled. This same Celtic strain gave him a love of hospitality, a sociability, a courtesy, a facility of approach, and a pliability which is sometimes wanting in the Lowlander. Possibly it also accounted for a certain respect for the ceremonial and *bravura* of public affairs, and for the simplicity and frugality of his private life.

He was known to and beloved by successive generations of medical men. There is hardly a consultant or specialist in London to whom he was not a friend and a helper. Outside the profession he was ready to join in any undertaking of public interest, and particularly those concerned with books and libraries. His catholic tastes were shown by his membership of the Athenaeum, Garrick, and Bath Clubs, and his life membership of the Savoy Club. He was, in Dr. Johnson's true meaning of the word, "a very clubbable man."

The council intends to hang his portrait, a photograph of which is here reproduced, in the entrance hall. Fellows will recognize in this fine picture that the artist has not omitted to indicate, by the surroundings, his love of books and libraries, and his great share in the erection of the society's house. The cigar in his hand indicates his devotion to "my lady nicotine," and no sweeter incense could be burnt before his picture than the tobacco smoke which will in future curl up round it during the tea hour.

It is one of the curious, though not uncommon, coincidences of our great country that MacAlister and the last president to be associated with him both came from small neighbouring villages on the shores of Loch Fyne, and yet it was not in Argyllshire but in Berners Street that they met for the first time.

When I saw him shortly before he died he told me he had not smoked for two days, and then, as Mistress Quigley said, "I knew there was but one way." He was able still to take great interest in the most recent doings of the society, and gave one to his well known chuckle when I told him that the annual dinner had been so managed that it had left us with a profit instead of the usual deficit. He had neither distress nor pain, for the devoted attentions of his family, his friends, and his faithful attendant, Dr. Moreland McCrea, had smoothed the last passage. His only complaint and his last words were, "I am only tired—very tired—always tired."

His best and most enduring memorial will be the house or the society he served so long and faithfully. As was said of Sir Christopher Wren: "Si monumentum requiris circumspecte." If those interested care to look up *Who's Who* they will see that he has quizzingly recorded that his chief recreation was "sleeping." After life's fitful fever our friend sleeps well.

Sir HUMPHRY ROLLSTON, Bart, FRCP, who was President of the Royal Society of Medicine from 1918 to 1920, has been good enough to send us the following

On John MacAlister's death, after a long and tiring period of increasing disability, removes a personality remarkable for chain of manner, infinite variety, and organizing ability. He had, indeed, a genius for friendship, and was characterized by the impulsive enthusiasm of a generous boyish nature to help others. A many-sided man, he had friends everywhere and of the most varied kinds, with an univalued knowledge of men and their manners there was no touch of cynicism or imprudence, and though from his sympathetic nature secretly sensitive he preserved a philosophic imperturbability in spite of constant ill health and many worries. Had not his career as a medical student been cut short by illness, he must have been an outstanding success in our profession, as indeed he would have been in other walks of life. While a brilliant raconteur he was pre-eminently a man of action and imagination, risks he certainly sometimes took, but always with the happiest results for the Royal Medical and Chirurgical Society, and later for the Royal Society of Medicine, which was his child and is his memorial. What he did for the Royal Society of Medicine is shown by a comparison of the old society in Beine's Street and its 800 Fellows with the flourishing society now at Wimpole Street with its twenty-four sections and its roll of some 4,000 Fellows. Careless of his own interests and much given to generous hospitality, he did much better for others than for himself, but his reward was in the hearts of his friends, who feel that no one can ever quite take his place.

Sir WILLIAM HALF-WHITE, who was president of the Royal Society of Medicine from 1922 to 1924, writes

On John MacAlister was, nominally, not a member of our profession yet, in truth, no man was ever more a part of it. How did he come to occupy this unique position? Primarily because he loved the medical profession. He had intended to belong to it when he went to Beine's Street he hoped that the proximity of the Middlesex Hospital would give him the opportunity of studying there. But he quickly came to see that his unusual combination of natural gifts could serve the profession in better ways than by becoming a doctor.

The gods had endowed him with their best, he had imagination, he dreamed great dreams, he had the power of organization and of incredible industry, no obstacle ever daunted him, he delighted in a difficult task for the sheer joy of accomplishing it. Never did he play for his own hand, he invariably strove for the cause, but always honourably. He was as unselfish as anyone could be, he gave unstintingly of the most valuable of all commodities—his time—working for others far into the night, on Sundays and on holidays. Many came to him to talk, wasting his precious moments with trifles, he never turned them away. He was kind and considerate because it was not in him to be otherwise. Nobody ever heard of anyone who did not like working with him, doing so had the remarkable result that toil became a pleasure, the eye ceased to wander towards the clock in the hope that the hands were pointing to the hour for stopping and overtime was positively delectable. He was generous in his appreciation of others, he had a keen sense of humour, and, as might be expected, he knew everybody and had troops of friends. He was happiest when with them, how enjoyable it was to sit and talk with him! But he knew fools, too, he combined an affection for good writing with the librarian's delight in a rare edition.

He utilized these priceless qualities for the good of others without any thought of self, he was constant in the doing of true and laudable service with a great cheerfulness. Little wonder that hosts of persons felt a deep and lasting affection for such a man, and that he was a fountain from which spring many plans for the benefit of the profession to which he had happily attached himself.

That I have not overestimated him will be clear to those who read his life, the account of the Royal Society of Medicine given in its calendar, and the report of the dinner given to him when he received his knighthood. But even then the extent of what he did will not be fully known, for he collected a large sum of money for the building at

1, Wimpole Street, he started the library in its course, in which it has become the second finest medical library in the world, and, what is more important, the most used, he edited the *Proceedings* out of mere goodness of heart without pay, he promoted the Fellowship of Medicine and was its honorary treasurer, he organized a staff of surgeons for air-raid casualties—indeed, he was in thought and action perpetually working solely for our profession. Whenever anything needed doing for it, he was the man to whom to apply—his enthusiasm, his energy, and his resourcefulness combined to be an almost irresistible driving force. The motto "*Si monumentum requiris circumspice*"—put up by Wien over the north door of St Paul's—might with equal justice have been inscribed by MacAlister over the entrance to the Royal Society of Medicine, and if his friends had to choose a motto for him the one word "Service" would be the best.

Sir RICHARD DOUGLAS POWELL, Bt, writes in response to our request

I held in high esteem Sir John MacAlister for his width of vision, his subtlety of mind, and tenacity of purpose. He was a great librarian, and earned on the good work of the late Mr Whentley in the development of the society's library to its present perfection. But the work for which he will be remembered is that of bringing about the amalgamation of the various medical societies in London under one roof. This idea was already in the air when I became president of the Royal Medical and Chirurgical Society, and had been started during the presidency of Sir Andrew Clark, but I am not sure whether he originated it. It fell through at that time, and was again started by MacAlister about my second year. I most cordially approved and did all I could, by meetings and social gatherings at my house, to promote it. But without MacAlister's clever organization and zealous work it would never have materialized. The details were largely in the hands of a strong committee, with Sir William Church as chairman, and Mr Pendlebury and the late Dr Litham as honorary secretaries. I am very pleased to think that the scheme has proved a complete success and the societies have become harmoniously welded together, while retaining their autonomy to the honour of medicine in this country. This has largely been accomplished under Sir John's fostering care and by his devoted loyalty.

Dr GUSTAVE MONOD, who is so well known here as liaison officer between the Paris Faculty and medicine in this country, sends us the following

Les amis Français de Sir John MacAlister (et tous ceux de nous qui avons franchi le seuil de cette belle maison dont il était l'âme sommes devenus ses amis) ressentiront douloureusement sa perte. Il savait particulièrement faire vibrer cette note spéciale qui harmonise l'esprit Ecossais et l'esprit Français et possédait ce don congénial de nous faire sentir à home. Gracia à lui l'P.A.D.R.M. était devenu comme un poste avancé à la Faculté de Médecine de Paris du Fellowship of Medicine et le souvenir de reconnaissance que nous lui gardons ne saurait s'éteindre.

Votre deuil est le nôtre

RICHARD DENISON PEDLEY, FRCS Ed, L.D.S.,
Consulting Dental Surgeon Evelina Hospital

Mr R. D. PEDLEY died on November 25th at his home in Croydon, aged 68. He was the eldest surviving son of the late George Pedley, who practised for many years as a dental surgeon at Railway Approach, London Bridge. After studying at St Thomas's Hospital and the Royal Dental Hospital he obtained the diplomas of M.R.C.S. Eng. in 1883, L.D.S. in 1884, and F.R.C.S. Ed. in 1887. He then entered his father's practice, and worked with him until his death. For many years he held the post of dental surgeon to the Evelina Hospital for Sick Children. At this period of his life he took the greatest interest in the problem of the care of children's teeth, writing freely on the subject and doing much of the pioneer work which eventually led up to the general appointment of school dentists to elementary schools throughout the country. He was one of the first presidents of the School Dentists'

Society, and when this society became a group of the Society of Medical Officers of Health he was chosen as its representative on the council, thus taking an active interest in its work until the time of his death. He was also a member of the council of the London and Counties Medical Protection Society, and was a regular attendant at its meetings. His kindly and lovable disposition and sincerity of character endeared him to hosts of friends.

SIR ARTHUR NEWSHOLME writes: The announcement of Mr Denison Pedley's death after a short illness—he saw ten patients on one day within a fortnight of his death—will have been received by his many friends with profound regret. Mr Pedley had a genius for friendship, he cultivated his many friends, and although always a very busy man devoted time to keeping in touch with them. Professionally Mr Pedley deserves to be held in memory as a pioneer in the subject of dental hygiene in this country. To him and to his co-workers we owe it that appointments of dental surgeons to many Poor Law residential schools were made at a comparatively early date after the dangers of oral sepsis had become recognized. In conjunction with Mr Spokes, dental surgeon of University College Hospital, Mr Pedley, who was then on the staff of the Evelina Hospital, with the permission of the respective boards of guardians, examined the children maintained in the Poor Law schools of Southall, Harefield, Sutton, and Feltham. In these schools 3,800 children's mouths were examined during 1891-92, and exact records taken, with the general result that over 78 per cent of the teeth examined were found to be carious, the proportion varying with the age of the children. When the facts became known to the guardians there followed the appointment of dental surgeons, and since then such appointments have become general, similar appointments have been made for elementary day schools, and a vast amount of remedial and preventive work has been done, which has had great influence in raising the standard of health of the population. Much of this work done by dental surgeons in various parts of the country, especially in the earlier years, is but little known, and Mr Pedley's death gives the opportunity of bearing testimony to the invaluable pioneer public health reforms which were stimulated and expedited by his work and by that of those associated with him in bringing about dental reform.

We regret to record the sudden death on November 28th, at his residence, Goring Hall, near Worthing, of Dr JOHN ELSDALE MOLSON, formerly a medical member of Parliament. He was born in 1863, the son of Samuel Elsdale Molson of Montpelier, From Cheltenham College he went to Emmanuel College, Cambridge, and afterwards studied medicine at the Middlesex Hospital Medical School. He obtained the diplomas of L.S.A. in 1889 and M.R.C.S. and L.R.C.P. in 1890, graduated M.B., B.Ch. Cantab. in 1891 and proceeded M.D. in 1905. He contested North-East Bethnal Green at the two parliamentary elections in 1910, and from 1918 to 1923 represented, as a Unionist, the Gainsborough Division of Lincoln in the House of Commons. He held a commission as major R.A.M.C. (T.A.), and served at home and in Egypt during the great war from August, 1914, to December, 1918. He was a justice of the peace for West Sussex. His chief recreations were shooting, motoring, and golf. He is survived by his widow, a daughter of the late Dr A. E. Leeson, three sons, and a daughter. The funeral took place at St Mary's Church, Goring-by-Sea, on December 2nd.

In the obituary notice of Lieut Colonel Decimus Curme, published last week (p. 1095), an error occurred owing to a confusion between him and his son, Lieut Colonel Duncan E. Curme R.A.M.C. It was this Regular officer who served in South Africa, and not his father, who, during the South African war, served with the 3rd Battalion (Militia) of the Dorsetshire Regiment at Kinsale and Shorncliffe camp. We are informed also that the day on which Lieut Colonel Decimus Curme died was November 24th.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

THE House of Commons this week passed through all its stages the bill implementing the new Irish agreement. It also completed consideration of the resolutions proposing import duties on cutlery and other articles, and discussed the bill giving effect to these resolutions. The second reading of the Bethlem Hospital Bill was moved once more on December 8th, but objection was again taken, and the measure now seems to have no chance of passing into law this session.

It is anticipated that the session of 1926 will begin on February 3rd, and that the bill for reform of the Poor Law system will have a prominent place in the programme.

The Government has withdrawn the Lead Paint (Protection against Poisoning) Bill.

The Medical Committee of the House of Commons met on December 7th and heard members of the General Medical Council (Professor T. Sinclair, C.B., M.P., of Belfast, and Sir Humphry Rolleston, Bt.) and the Registrar of the Council detail the procedure of that body in considering charges of "infamous conduct in a professional respect." The presence of a legal assessor at sittings of the Council was emphasized, and attention was drawn to the fact that a case could be taken to the Privy Council, though this had scarcely ever been done. One speaker remarked that the barrister, solicitor, or dentist who was struck off the register was debarred from practising his profession, whereas no such penalty was imposed on the medical man whose name had been removed from the Register. There was a keen debate in the Committee, which eventually adjourned the discussion till Wednesday, December 16th, when the policy, as well as administration, of the General Medical Council may be considered. It can be said that the general opinion of the Medical Committee was that the system as it exists is administered fairly and efficiently by the Council.

The General Medical Council and the "Medical Register"

Colonel Woodcock, on December 3rd, asked the Minister of Health whether his attention had been called to the recent action of the General Medical Council in striking off the *Medical Register* one of its members for what was described as "infamous conduct in a professional respect," whether the Minister was aware that the General Medical Council was now composed wholly of medical members and whether, seeing that the statute did not require that the General Medical Council should be composed exclusively of medical men, he would, in nominating members of the Council, take steps to add members representing the public.

Mr Neville Chamberlain said: The answer to the first and second questions is in the affirmative except that the practitioner to whom I understand my hon. and gallant friend to refer was not a member of the General Medical Council. The answer to the third question is that members of the Council other than those representing certain bodies specified in the Acts are nominated by His Majesty with the advice of his Privy Council. The Minister departmentally responsible is the Lord President of the Council.

Colonel Woodcock: Is the right hon. gentleman aware that there is no appeal whatever against the punishment inflicted by the Council and will he therefore, set up a committee to investigate the procedure of the Council and its relation to modern usages and methods? Mr Lawson: Is it not worth while taking steps to make the Trade Disputes Act apply to these people?

Mr Chamberlain: I think the answer to the first supplementary question is that I am not the Minister departmentally responsible.

Sir W. de Frece: May we ask who is the Minister responsible? Mr Chamberlain: I have already said in my answer that it is the Lord President of the Council, Commander Kenworthy. Who represents the Lord President of the Council in this House?

Sir Robert Gower then asked the Minister of Health whether his attention had been called to the action of the General Medical Council in removing the name of Mr William Lloyd from the Register of medical practitioners for having given treatment to certain patients and whether he would consider the necessity of introducing legislation restricting the power of the General Medical Council to strike off the *Medical Register* the names of practitioners who had not been proved to be guilty of actual misconduct and giving him power to replace on such Register the name of any person which, in his opinion, had been capriciously or

Mr Chamberlain said: I have consulted my noble friend the Lord President of the Council (the Earl of Balfour) on this matter as responsibility rests with him and not with me. The name of Mr William Lloyd was not, as I understand it, removed from the *Medical Register* by the General Medical Council for having given treatment to certain patients, but for having sought to obtain patients and promote his own professional advantage by unprofessional methods. I am furnishing my hon. friend with a copy of the charge on which Mr Lloyd was summoned to appear before the Council. In answer to the second and third parts of the question, I am advised that the General Medical Council has

statutory power to direct the erasure from the *Medical Register* of the name of a practitioner who has been convicted in England or Ireland of any felony or misdemeanour or in Scotland of any crime or offence or has after due inquiry by the Council been judged to have been guilty of infamous conduct in a professional respect. I am further advised that there is no evidence that the Council has directed the erasure of the name of any practitioner without his having been thus convicted or thus judged after due inquiry to have been guilty of infamous conduct in a professional respect as defined by Lord Justice Lopes, Lord Justice Dyer and Lord Esher. In regard to restoration it has been the practice of the Council to replace names on the *Medical Register* when it is satisfied that such a course will not be prejudicial to the public interest. My noble friend has no reason to believe that the Council has acted capriciously or unreasonably, and as at present advised does not consider that the introduction of further legislation is necessary, there being already power under the relevant Acts for the Privy Council to issue its directions to make good any defaults in practice of the General Medical Council.

Colonel Watts Morgan: Are we to understand from that reply that this is a penalty inflicted on Mr. William Lloyd for having acted as a blackleg to his trade union? Commander Kenworthy: Do we understand that questions which come within the purview of the Lord President of the Council are answered in this House by the Minister of Health and if not to whom should we address questions affecting the public which can only be answered on behalf of the Lord President of the Council?

The Speaker promised to look into this question, which Commander Kenworthy said he would raise again.

In reply to Colonel Woodcock, who on December 8th asked the Prime Minister whether members struck off the *Medical Register* had no redress or appeal and whether a committee would be appointed to investigate the procedure of the Council, Major Hennessy (Lord of the Treasury) replied: I am asked by the President of the Council to say that there is no appeal from the General Medical Council to another court, but a medical practitioner struck off the *Register* may at any future session bring up his case for revision and his name may be and often is, restored to the *Register*. In all inquiries the General Medical Council is assisted by a lawyer of great experience and ability. It has since its creation in 1858 performed the duties entrusted to it without serious criticism and the Lord President, as at present advised, does not think that sufficient reason has been shown for setting up a committee of inquiry. Colonel Woodcock asked whether members of the Bar, solicitors and members of all professions except the medical profession had an independent court of appeal. Professor Sinclair (Belfast) asked whether it was not a fact that practitioners struck off the *Register* had a right of appeal to the Privy Council if they cared to exercise it. Major Hennessy said that Colonel Woodcock's observations would be conveyed to the Lord President.

Inquiry Committees and Panel Practitioners' Costs.—On December 3rd Lieutenant Commander Kenworthy asked the Minister of Health the total number of committees of inquiry convened, since these committees had power to award costs, for the purpose of inquiring into a practitioner's fitness to remain on the panel; the number of cases in which the practitioner was unsuccessful in rebutting the suggestion that he was unfit to remain on the panel; and the amount of costs awarded to the practitioner in each case. Mr. Neville Chamberlain replied that since the Inquiry Committee referred to had had power to award costs thirty-four inquiries had been held. In twelve cases the inquiry resulted in the practitioner being removed from the medical list and in one case he was permitted to resign in lieu of removal. In five of these thirteen cases no order was made as to costs. In fifteen of the remaining cases the facts disclosed were held to justify requiring the practitioner to pay the costs of the imposition of other penalties. In three cases no order was made and in three cases costs were awarded to the practitioner; the respective amounts being £35 3s 4d, £59 4s 2d, and £4 4s.

Ministry of Pensions.—Replying to questions regarding tuberculosis among ex-service men, Major Tryon (Ministry of Pensions) said the total number of ex-service men who had received awards from the Pensions Ministry was not on record. He regretted to say that during the ten years down to November 30th about 21,000 men pensioned for tuberculosis had died of the disease. Approximately 33,500 men were now in receipt of pensions for tuberculosis pulmonary or other. He could not say in how many unsuccessful applications for a pension on account of tuberculosis the men concerned were diagnosed as having suffered from the malady before entering the army. The weight of medical evidence required to refute applicants' claim that they did not suffer from tuberculosis before entering the army depended on the circumstances in each case. In reply to Mr. Groves, Major Tryon said that on November 1st 26,148 pensioners were receiving medical treatment with allowances. Only twelve men remained in training courses completing a course of vocational training with treatment. He could not say how many pensioners were receiving home treatment without allowances. The general rule was that men applying for treatment were referred to the Deputy Commissioner of Medical Services in the area to be examined or referred to the most suitable medical officer. In cases of urgency the man might be sent to the nearest clinic or medical officer for immediate examination without prior examination by the D.C.M.S. Answering Colonel Day, Major Tryon said he was satisfied there was no ground whatever for removing from the Ministry of Pensions Hospital at Orpington the medical officer recently summoned by a patient for assault. Colonel Day further asked whether in view

of general complaints the Minister would consider making a complete change in the staff of this hospital. Major Tryon said that practically the entire medical staff had been changed on medical grounds when the hospital was adapted for the class of patient now sent there. Lieut. Colonel Stanley, on December 8th, informed Captain Bower that a procedure was already in operation which met the cases of wounded ex-service men whose wounds broke out and caused trouble after their time limit for appeal had expired. In such cases not only was the disabled man eligible for medical or surgical treatment with allowances if necessary, but his assessment for pension purposes was considered at the conclusion of treatment and any necessary adjustment of it as was proper was made by way of further grant. He could not recommend that appeal tribunals should adjudicate on these cases on their merits, which would render nugatory the provisions of Section 4 of the War Pensions Act 1921.

Air Force Hospitals.—On December 4th Brigadier General Charteris asked the Secretary for Air what was the present number of equipped beds in hospitals under the Air Ministry, and the average daily number of patients in these hospitals during the current year. Sir S. Hoare said that the answer to the first part of the question was 1,586 to the second 528. Of the 1,586 equipped beds 1,139 were in hospitals in Iraq and Palestine which catered for the whole garrisons—that is Army as well as Air Force and British as well as Indian troops and in Palestine the British gendarmerie in addition. It was necessary to provide beds considerably in excess of the average occupation in order to be in a position to cope with epidemics, casualties, seasonal illnesses and the special conditions under which the forces in the Middle East were serving, but their number would continue to be brought under constant review. A further answer stated that the medical staff at Halton Hospital consisted of nine officers and ninety-four airmen but their duties were not confined to providing medical attendance for the Halton School, the hospital being a central one for the whole Air Force.

The Cost of Vaccination.—In response to an inquiry by Mr. Groves the Minister of Health has given the following information as to the cost of vaccination and revaccination and the charge upon national and local funds respectively:

England and Wales

Year	Number of Successful Vaccinations and Revaccinations Performed by Public Vaccinators at the Cost of the Rates		Approximate Expenditure Incurred in Respect of Public Vaccination	
	Vaccinations	Revaccinations	Expenditure out of Local Rates	Expenditure out of Exchequer Funds
1914-1915	—	—	£ 144,000	£ 25,000
1915-1916	—	—	138,000	12,000
1916-1917	—	—	129,000	16,000
1917-1918	199,013	33,635	116,000	21,000
1918-1919	186,861	16,052	110,000	20,000
1919-1920	258,996	12,893	124,000	18,000
1920-1921	245,154	26,775	175,000	15,000
1921-1922	223,838	12,887	162,000	22,000
1922-1923	415,549	316,611	181,000	20,000
1923-1924	331,522	89,600	—	—

The figures in columns 2 and 3 relate to the years ended September 30th those for the years 1914 to 1917 are not available. The figures in columns 4 and 5 relate in each case to the year ended March 31st those for 1923-24 are not yet available.

Tuberculosis Deaths.—On November 26th in reply to Mr. Groves who asked the number of persons who died in England and Wales from tuberculosis during the years 1914 to 1924, Mr. Neville Chamberlain gave the following figures:

Deaths from Tuberculosis (all forms) in England and Wales		Deaths from Tuberculosis (all forms) in England and Wales	
Year		Year	
1914	50,298	1920	42,545
1915	54,295	1921	42,678
1916	53,858	1922	42,777
1917	55,934	1923	40,788
1918	58,073	1924	41,103
1919	46,312	Total	528,661

Neurological Clinics.—On December 7th Captain Waterhouse asked the Minister of Pensions what general instructions if any had been issued to officials with a view to cutting down the number of patients receiving treatment in neurotic clinics. Lieut. Colonel Stanley, who replied, said that the general instructions in force were issued with the object of securing that all patients who required it received appropriate and efficient treatment. The operation of the neurological clinics was under the general supervision of the Deputy Commissioner of Medical Services for neurological cases who was a specialist and was responsible for seeing that the treatment carried out at the various clinics was both necessary and satisfactory.

Medical Welfare of Young Children.—Mr. Neville Chamberlain, in reply to a question on December 3rd said it was untrue that no provision existed for the medical welfare of children between 2 and 5 years of age. The arrangements made under the Maternity and Child Welfare Act did not exclude any category of children under school age and the Ministry of Health lost no opportunity of impressing upon the local authorities in charge of maternity

and child welfare schemes the importance of maintaining a continuous supervision over children up to the age at which they attended school.

Army Hospitals—On December 4th, answering Brigadier General Charters, Sir L. Worthington Evans said that in military hospitals under the control of the War Office the number of equipped beds at home and abroad on October 31st 1925, was 6,751, and the average daily number occupied during the year ended on that date was 3,567. On December 8th Captain King informed Sir W. de Frece that the number of men invalided from the army in each of the last three years ending on September 30th had been 2,920, 2,673 and 2,673 respectively.

The number of cases in which disability service were 373, 419 and 347 respectively. The decision of appeal against the decision of the Chelker Commissioners were an independent body who adjudicated upon the soldier's claim and were not subject to the control of any Government department in administering the pension regulations.

Artificial Sunlight—On December 8th Mr Neville Chamberlain stated that he was advised that artificial sunlight treatment was still in the experimental stage, but he had approved of the provision of such treatment under skilled supervision, for children suffering from rickets and other disorders of infancy and childhood, at a certain number of infant welfare centres, in order to secure further evidence as to the results of the treatment.

Small pox—On December 8th Sir Kingsley Wood informed Mr Groves that the only death from small pox registered in Middlesex during the quarter ended June 30th, 1925 was in respect of a child aged one month. The cause of death given in the medical certificate was 'Bronchopneumonia following small pox,' and in accordance with the general rules based upon international agreement the death was classified as being due to small pox. The child had not been successfully vaccinated. Sir J. Gilmour (Secretary for Scotland), on December 8th informed Mr Westwood that the Registrar General for Scotland had not classified the deaths from small pox in Scotland for the years 1870 to 1875 into vaccinated unvaccinated, and doubtful. Such classification was not introduced in the Registrar General's reports until a later period.

Notes in Brief

Of 39 fatal accidents in the Royal Air Force since the beginning of the year causing 55 deaths 3 were due to engine failure 19 to error of judgement, 1 to constructional defect, and 16 to miscellaneous or undetermined causes.

On October 21st there were 1,270,186 persons in England and Wales in receipt of Poor Law relief excluding lunatics, casuals, and persons in receipt only of domestic medical relief. Mr Neville Chamberlain informed Mr. Phys that the amount expended in England and Wales on administrative charges in respect of the relief of the poor during the financial year ended March 31st, 1924, was £1,187,906.

In the four weeks of November 1923, the deaths in London from pulmonary diseases were 1,207 in the similar four weeks of 1924, 1,064 and from November 1st to 28th 1925, 1,190. In the last period there were 344 deaths from tuberculosis of the respiratory system, 320 from bronchitis, 321 from bronchopneumonia, 94 from lobar pneumonia, and 53 from pneumonia (undistinguished).

The Home Secretary stated on December 3rd, that in July he referred to the Mining Association and the Miners' Federation, for their observations proposals for amending the present descriptions in the schedule of industrial diseases for miners' bent knee and miner's bent elbow. Neither body had so far furnished him with its views.

The Minister of Agriculture states that the available evidence indicates that infection of foot and mouth disease is generally spread by means of mechanical carriers, which may be either human beings or other living agencies, or by contaminated food stuffs, hay or straw.

In reply to an inquiry as to the establishment of dental consultation centres for insured persons Mr Neville Chamberlain said that before considering any extension of the benefits provided he must await the report of the Royal Commission.

The Services

THE KING has granted licence and authority to Lieut. General Sir William B. Leishman K.C.B., K.C.M.G., F.R.S., Director-General of Army Medical Services to wear the insignia of Grand Officer of the Legion of Honour conferred upon him by the President of the French Republic in recognition of valuable services rendered.

NO 14 STATIONARY HOSPITAL

The annual dinner of the No 14 Stationary Hospital was held at the Trocadero Restaurant London on December 4th. Lieut. Colonel J. R. Harper C.B.E., in the chair, proposed the toast of the hospital to which several informal toasts were made in the shape of reminiscences. It is proposed to hold the next dinner on the first or second Friday in December, 1926.

Universities and Colleges

UNIVERSITY OF OXFORD

The reappointment of Dr. Alexander G. Gibson (Christ Church) as University Lecturer in Morbid Anatomy has been approved by Convocation.

UNIVERSITY OF CAMBRIDGE

THE Special Board for Medicine has appointed Professor G. H. F. Nuttall F.R.S., Dr. W. J. Dixon, F.R.S. (Reader in Pharmacology), Mr. D. Keith Dr. Frank Robinson (M.O.H. Cambridgeshire County Council), and Dr. A. J. Laird (M.O.H. Borough of Cambridge) as members of the managing committee for the Diploma in Public Health.

UNIVERSITY OF LONDON

A MEETING of the Senate was held on November 18th. The following were recognized as teachers of the University in the subjects and at the institutions indicated.

Westminster Hospital Medical School—Mr. Aubrey Goodwin (midwifery and diseases of women).

St. George's Hospital Medical School—Mr. George A. Fawcett (surgery).
London Hospital Medical College—Dr. James C. Woods (mental diseases), Mr. G. H. Cutts (dental surgery).

biochemistry)
A. Maass as a
1 for two years.

The recognition of the Royal Dental Hospital and London School of Dental Surgery as a school of the University in the Faculty of Medicine (dentistry only) was continued for a period of three years from January 1926.

The annual report of the Graham Legacy Committee, giving particulars of general progress of the laboratory, the researches carried out, and the amount of the grants made to workers, was received. Professor A. E. Boycott F.R.S., was reappointed director of the laboratory.

The following have been appointed chairmen of the respective committees for 1925-26—**Brown Animal Sanatory Institution Committee** Sir Holburt J. Waring, **Graham Legacy Committee** and **Library Committee** Sir Wilmot P. Heringham.

UNIVERSITY OF EDINBURGH

THE following candidates have been approved at the examination indicated.

FR. — — — — — Elizabeth Cairns, I. J. W. Edwards, N. Hay, J. Hays, Latham, Mitchell, A. R.

UNIVERSITY OF DUBLIN

Regius Chair of Medicine

DR. T. GILLMAN MOORHEAD, F.R.C.P.I., Professor of Materia Medica in the University, has been elected Regius Professor of Medicine, in succession to Dr. John M. Purser, resigned.

NATIONAL UNIVERSITY OF IRELAND

A MEETING of the Senate was held on December 4th. Dr. D. J. O'Connell was appointed Lecturer in Medical Jurisprudence at University College Cork and the award of the Henry Hutchinson Stewart scholarship in mental diseases to Dr. William J. Coyne was approved.

A report from the Vice-Chancellor of the University, Dr. Denis J. Coffey, as representative of the University on the General Medical Council, was approved.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

THE following have been admitted to the Licences in Medicine and Midwifery.

H. I. — — — — — Brodenck, J. J. M. Barry, Mary F. L. D. Nolan, D. O'Brien, J. F. Scales, Mabel M.

M. J. Hillery, L.R.C.P. and S.I., has passed the examination for the Diploma in Public Health.

Medical News.

At the last meeting of the Joint Council of the Order of St John of Jerusalem and the British Red Cross Society, the resignation of Dr F N Kay Menzies as Director of the Jonnells Hospital and Medical Services Department, in consequence of his appointment as medical officer of health for the County of London, was accepted as from December 31st next. At the same meeting, Mr R H P Orde, B A, was appointed Acting Director of the Hospital and Medical Services Department as from January 1st, 1926.

EARLY in the new year various special courses will be held under the auspices of the Fellowship of Medicine and Post-Graduate Medical Association. A fortnight's course in medicine, surgery, and the specialties at the Prince of Wales's General Hospital (North East London Post Graduate College) will begin on January 11th. On January 4th the Bethlem Royal Hospital will start a series of lecture demonstrations on Tuesdays and Thursdays at 11 a.m. on the various branches of psychological medicine, the course lasting for four weeks. On the same date the West End Hospital for Nervous Diseases will begin a month's course in neurology, lectures and clinical demonstrations will be given daily at 5 p.m. The North Eastern Fever Hospital will hold a three weeks' course in infectious fevers, beginning on January 11th, the demonstration taking place at 11 a.m. on Wednesdays and Saturdays. A cardiology course will be given at the National Hospital for Diseases of the Heart from January 11th to 22nd. On January 18th the Queen's Hospital for Children will start a fortnight's course in diseases of children. The first of a new series of lectures arranged by the Fellowship of Medicine will be given on January 21st at 5 p.m., when Dr Herbert Spencer will lecture on "Abdominal palpations in pregnancy." A copy of each syllabus and of the general course programme may be had from the Secretary of the Fellowship, 1, Wimpole Street, W 1.

A FURTHER series of lectures and practical courses of instruction for a diploma in psychological medicine will be given at the Maudsley Hospital, Denmark Hill, S E 5, in the new year. Part I of the course comprises eight lectures on the anatomy of the nervous system, by Sir Frederick Mott, on Tuesdays at 2.30 p.m., commencing on January 5th, eight lectures on the physiology of the nervous system, by Dr F Golla, on Fridays at 2.30 p.m., commencing on January 8th, eight lectures on psychology, by Dr Henry Devine, on Thursdays at 2.30 p.m., commencing on January 7th. Part II, which follows in April, includes eight lectures on psychoneuroses, by Dr Bernard Hart, eight lectures on morbid psychology, by Dr E Mapother, six lectures on the pathology of mental diseases, including hysteria, syphilis, its symptomatology and treatment, by Sir Frederick Mott, lectures on the legal relationship of insanity and treatment, by Dr C Hubert Boud, eight lectures on the practical aspect of mental deficiency, by Dr F C Shrubbsall, six lectures on crime and insanity, by Dr W C Sullivan, six demonstrations in clinical psychiatry, by Dr E Mapother, and twelve clinical demonstrations in neurology, by Sir Frederick Mott. The fee for the whole course, Parts I and II, is 15 guineas, for Part I or Part II, 10 guineas, for one single series of lectures in Part I, 4 guineas, and for one single series of lectures in Part II, 2 guineas.

A MEETING of the members of the Institute of Radiology will be held at 32, Welbeck Street, on December 17th, at 3 p.m., the council meets the same day at 6 p.m. On December 18th, at 2.30 p.m., Dr Melville will give a special demonstration for members of the Institute at the Brompton Hospital for Diseases of the Chest, including the bronchial injection of lipiodol. At the meeting of the Lectro Medical Section of the Royal Society of Medicine on December 18th, at 8.30 p.m., discussions will be held on Paget's disease of bone, and methods of examination of the pelvic caecum.

THE Central Midwives Board for England and Wales met on December 3rd, with Sir Francis Champneys, Bt, in the chair. A special session was held in the morning, followed by the ordinary monthly meeting. A message of condolence was sent to the family of the late Mrs Brian Wilson, who had for many years been an active member of the Board. Dr C G Lewis was approved as lecturer, and approval as teacher was granted to several applicants. The resignation of Dr Fletcher Shaw as an examiner at the Manchester-Liverpool centre was received and the best thanks of the Board were accorded him for his efficient services. Mr John Chisholm, F R C S, was appointed to fill the post in Dr Shaw's stead. An application from the Midwives Institute to the trustees of the Carnegie Fund to contribute to a scheme for the establishment of an institute for the instruction of teachers of practical midwifery was signed by the chairman on behalf of the Board in its support.

MR C J S THOMPSON, M B E, has resigned his post as curator of the Wellcome Historical Medical Museum, with which he has been associated since its foundation.

THE house of the Royal Society of Medicine will be closed from Thursday, December 24th, to Monday, December 28th, both dates included.

THE November issue of *Asculape*, the official organ of the International Society of the History of Medicine, is devoted to the recent congress held at Geneva (reported in our issue of August 1st, p. 226), and contains numerous interesting portraits and other illustrations.

THE Municipal Council of Paris has decided to organize two centres for the preparation of serum from measles convalescents for prophylactic purposes, one to be at the Hôpital Claude Bernard at Aubervilliers and the other at the Hôpital des Enfants Malades in the Rue de Sevres.

THE first number of *Terapia Contemporanea*, which, as its subtitle indicates, is an international review of treatment, was published in October at Naples under the editorship of Senator G. Pascale of Naples and Professor G. Klempner of Berlin. The issue contains original articles by Italian, Austrian, German, Swedish, Danish, and Russian writers on medicine, surgery, ophthalmology, gynaecology, and orthopaedics, society intelligence, abstracts from current literature, and reviews.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **THE EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W C 1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the *Journal* should be addressed to the Financial Secretary and Business Manager.

THE TELEPHONE NUMBERS of the British Medical Association and the *British Medical Journal* are **MUSEUM 9361 9362, 9363, and 9364** (internal exchange four lines).

THE TELEGRAPHIC ADDRESSES are

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QUERIES AND ANSWERS

"H C D" about three years ago had charge of a patient who was treated by the Erlangen deep x-rays for a myoma of the uterus. The treatment was successful but for some months past she has been rapidly increasing in weight. "H C D" asks for suggestions as to what line of treatment he should now follow.

UTERINE PROLAPSE AND PREGNANCY

"J G B" asks for advice to ensure the birth of a living child in the presence of uterine prolapse. His patient aged 33 is three months pregnant. Her first child lived seven weeks and died from what may have been birth injuries as labour was long and much force was used during delivery. Her second child was born dead after a seven months pregnancy during the early part of which there was some uterine prolapse. Her third pregnancy resulted in the birth of a dead premature infant of about seven months after a breech presentation. A small ring pessary which had been placed in the vagina shortly after the commencement of pregnancy was simultaneously expelled. During her present pregnancy she has noticed that the womb has dropped and this renders walking uncomfortable. The vaginal orifice is somewhat patulous and the cervix is nearly presenting there. No other abnormality has been detected and syphilis can be excluded apparently. Would a pessary be useful until the uterus has risen out of the pelvis, or is prolonged rest necessary?

AIR SPACE IN A BEDROOM

"VIGILANS" writes to ask whether the local sanitary authority would have any jurisdiction over the proprietress of a boarding-house in regard to the letting, as a bedroom, of a box room

(approximately 5 ft by 6 ft) with no fireplace or window, the only ventilation being through a casement window opening on the stairhead

* * We are advised that if the room in question has come into use as a bedroom since 1894 this is a contravention of the London Building Act. If, on the other hand, it has been in use since prior to that date it is probably justifiable to assume that a room 5 ft by 6 ft, and probably less than 10 ft high, making less than 300 cubic feet in all, is unsuitable for use as a bedroom. The minimum cubic space required per person for sleeping for common lodging house purposes is 300 cubic feet. Furthermore, the model by laws of the Ministry of Health relating to habitable rooms require that at least one window shall open directly into the open air and that such window shall be equal to not less than one tenth of the floor area and that at least one half of the window shall be made to open. Ventilation through a casement window on to a staircase is not ventilation into the open air as required by this by law. The distinguished medical officer of health to whom we referred this question adds that, in his opinion, the room as described is unsatisfactory for sleeping purposes, and if such a case came to his notice he would be prepared to recommend the authority either (1) to take action under the London Building Act, if such Act applies, (2) to take action under the by laws based on the model by laws of the Ministry of Health, having regard to the improper character of the lighting and ventilation, or (3) to take action under the ordinary Nuisance Section of the Public Health (London) Act, 1891, as a house or part of a house so overcrowded as to be injurious to health.

BAGGY EYELIDS

DR T STACEY WILSON (Birmingham) writes: When baggy eyelids are due to blockage of the lymphatic channels by an attack of erysipelas I have seen very good results from the adoption of the following simple device, and doubtless the same treatment would cause the absorption of redundant fat in this situation. The following apparatus is required: Two deflated toy balloons of small size with six or seven inches of rubber tubing attached to each for their distension, and a clip to close the end of the tube and maintain the balloon at any desired distension, also an ordinary firm bandage. Last thing at night a couple of turns of bandage are fastened round the head over the eyes; a balloon is then slipped underneath it so as to cover the eye and by means of the tube the patient blows up the balloon until it exerts a moderate pressure upon the eye and eyelids. The end of the tube is then closed by the clip and the apparatus worn all night. The prolonged gentle pressure on the eyelids effects the cure.

INCOME TAX

Adjustment on Purchase of New Car

"T D N" bought a four seater car in 1918 for £262, and sold it for £45 in 1922, purchasing in replacement a four seater of another make for £336. He has claimed a deduction of £336-£45=£291, but the inspector refuses to allow more than £180-£45=£135 the £180 being the present price of a four seater of the make first bought.

* * We have to disagree with both! In our view the proper deduction for the cost of replacement as an expense of the year 1922 is £262-£45=£217. "T D N" is wrong, because when he purchased a superior grade of car he was raising the standard of his professional equipment by capital outlay. The inspector goes too far in the other direction, and his action does not accord with the official evidence given before the Royal Commission on the Income Tax, or with the present official practice as we understand it to be. "T D N" is also entitled to a depreciation allowance for the current year 1925-26 in respect of his present car, calculated as follows:

	£	£
Original capital expenditure on car	45	262
Deduct Receipt for sale	217	
Renewal allowance		262
		0
Add cost of new car		336
Allowance at 15 per cent		50
Value carried forward		286

Salary from Appointment

"T R A." inquires (1) as to the allowance of expenses incurred in qualifying for the appointment he holds, and (2) whether he can average his earnings.

* * The income derived from an appointment is assessable according to the rules of Schedule E which (1) allow expenses only if incurred wholly exclusively and necessarily in the performance of the duties of the office and therefore exclude expenses of qualification and (2) require assessments to be made on the income of the year and therefore so long as "T R A." derives income from 'employment,' his salary cannot be averaged.

Assistant's Salary

"PERPLEXED" states that A and B were in partnership and made up their accounts to December 31st, in September 1924, B retired and A took over the practice and employed an assistant. "A has been assessed for 1924-25 on the total profits" (on the usual average) less B's share from April to September, the assistant's salary being deducted as an expense.

* * There is one point we do not understand, the 1924-25 assessment is apparently on the average of the three years 1921, 1922, and 1923, and the assistant's salary would not be an expense in any of those years. A's liability to assessment is determined by his share of the average assessment but he has the right, under No 9 of the rules applicable to Schedule D, Cases I and II, of applying to have that basis set aside for the period from September, 1924, to April, 1925, and to have his liability adjusted to the amount of his earnings for that period, after deducting of course, the assistant's salary, etc. Strictly the right is exercisable by way of a claim to repayment of overpaid tax, but we believe that it is quite common in practice to arrange an adjustment before payment of the second instalment of the tax assessed. "Perplexed" might usefully bring the Inspector's attention to the section referred to above and discuss the matter with him.

LETTERS, NOTES, ETC

KENYA

MAJOR W. LLOYD-JONES D.S.O. late of the King's African Rifles writes to controvert the statement in our review of Dr Norman Leys's book on Kenya (November 21st p. 95), that there is no "desert" in that country. Although (he says) it is not necessarily all "sand" except in the Kavirondo country and coast belt land below 5,000 ft has no perceptible agricultural value and only affords a very meagre living to the scattered nomadic tribes.

MECHANICAL LOCOMOTION FOR ELDERLY PRACTITIONERS

A MEDICAL practitioner who in his youth, was very active and has crossed on his bicycle nearly every Alpine pass is now over 60 and weighs more than 13 st. He writes to report his experience of various accessory forms of locomotion which he has tried in his town practice where hills are steep and numerous and the traffic is heavy. He abandoned bicycling and at first carried on his professional work on foot but later tried two types of motor cycle and a small car. The lack of a chauffeur caused the abandonment of the car, and our correspondent felt that the motor cycles usurped control too much. Whereas he wanted to travel slowly, they tended to run away with him at corners. He finally tried a "cycloroid" which he found perfectly adapted to his needs. He can use it as an ordinary bicycle or by lifting a lever, as a motor bicycle. He can travel as slowly or as fast as he pleases, stop when he likes, and he feels master of the machine. He adds that it is a strongly built bicycle with a front wheel which can at will be converted into a motor wheel.

FACIAL IRREGULARITIES

DR J. STEWART MACKINTOSH (Hampstead, N.W.) writes. It is needless for Sir Arthur Keith to speculate on the cause of facial irregularities in the British. Alexandre Dumas solved the problem in his day. "Je remarquai que la déformation de la bouche si commune chez les vieux Anglais et les vieilles Anglaises, ne s'opérait qu'à un certain âge, et que tous les Anglais et toutes les Anglaises jeunes avaient en général, des bouches charmantes. Qui peut avoir déformé la bouche au point d'en faire un musée chez les uns, ne trompe chez les autres? C'est le th." (*Une Aventure d'Amour*)

GENERAL PRACTICE TO DAY

"ANOTHER JUNIOR G.P." writes. County council fees are quite inadequate. Two guineas is not a proper fee for a doctor who has to deal with a case of abnormal labour. Is "Junior G.P." (November 14th p. 928) aware that the Poor Law guardians are paying the ridiculous fee of 10s. 6d. to the parish doctor for attending a midwifery case?

CHRISTMAS CHOCOLATES

NEVER we imagine in the 400 years that have passed since Christopher Columbus first brought cacao from Mexico to Europe has this substance been more universally popular than it is to day. Cocoa as a beverage may perhaps be drunk less in England than it was a generation ago but chocolate sweetmeats seem to grow in favour with young and old as may be judged by the swarms of sweetshops in every street throughout the land. An agreeable package of chocolates and cocoa received from Bonville reminds us that Christmas is fast approaching and that the immense popularity of these preparations both as beverages and as eatables is due to the energy and enterprise of a few English manufacturers of whom the firm of Cadbury Brothers by general consent stands foremost.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 40, 41, 42, 43, 45 and 47 of our advertisement columns and advertisements as to partnerships, assistantships, and locum tenencies at pages 44 and 45. A short summary of vacant posts notified in the advertisement columns appears in the Supplement at pages 207 and 225.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL
MEETING, BATH, 1925

SECTION OF MEDICINE

Professor T R ELLIOTT, M.D., F.R.C.P., F.R.S.,
in the Chair

DISCUSSION ON HYPERPIESIA.

OPENING PAPERS

I—THE RIGHT HON. LORD DAWSON OF PENN,
G.C.V.O. M.D., F.R.C.P.

Physician to the London Hospital President of the Section

BEARING in mind that the subject it is my privilege to introduce is large and that our time is short, I must perforce confine myself to certain of its aspects

I will assume that hyperpiesia, in its developed form, is a condition *sui generis*, manifesting certain discomforts or disabilities and culminating, it may be, in heart disease or arterial degeneration or their varying consequences, that it is a condition distinct from chronic interstitial nephritis, though the two diseases may sometimes show so close a resemblance in their clinical behaviour as to be difficult of differentiation. I will deal first, and briefly, with certain physiological considerations

The circulation of the blood is maintained by a number of forces, there is the paramount force of the heart, and beyond this there are the elasticity of the arteries, the contractility of the arterioles, and the forces belonging to the capillaries and veins. In the capillaries not only does the internal friction of the blood contribute to the peripheral resistance, but there is a capillary tone produced by nervous or chemical influences. The veins also possess tone and the circulation in the larger veins is influenced by the thoracic movements

These several factors vary each in its prominence and contribution to the circulation of the blood in different healthy people. Pressure in the arterial system is maintained by the heart beat, which is an intermittent force, and by the peripheral resistance, which is a continuous force. The systolic or maximum pressure represents the force of the heart beat and the peripheral resistance together. The diastolic or minimum pressure represents peripheral resistance only.

On the supposition of the output of the heart remaining constant a limited increase of vaso-constriction will bring out, with and during ventricular systole, an extra quantum of elastic stretch in the arteries, which extra quantum will fade away during the subsequent diastole of the heart—that is, systolic pressure is raised but not diastolic. It might be argued that if the increase of vaso-constriction went further, the diastolic pressure would also exceed its normal—that, in short, the systolic and diastolic pressures represent a difference in degree of vaso-constriction. That this explanation is inadequate is shown by the fact that sometimes diastolic pressure will show an increase out of proportion to the systolic

Vaso-constriction may be increased either by increase of contractility or anatomically, by the thickening of the intima and a consequent narrowing of the lumen. The former involves hypertrophy of (muscular) tissue, and the latter degeneration of tissue

Arterial Pressure in Youth

I suggest that it will assist in the study of our problem if we pay special attention to arterial pressure in youth where tissue is pure and undefiled by degenerative processes. In later life hyperpiesia and arterio-sclerosis hunt in couples, and have a similar causation, such as strain or toxæmia, and although arterio-sclerosis is so often associated with low pressure as with high it is a common accompaniment of hyperpiesia in the middle-aged and elderly. Evidence of this abounds and does not require quotation

It is by the study of blood pressure in youth that we may hope to disentangle hyperpiesia from arterio-sclerosis and determine whether hyperpiesia has its beginnings in structural change or in faulty function

What should the Blood Pressure be?

The systolic pressure in infancy would seem to rise from a beginning of 55/40 at birth. It then increases, but by no means constantly, to the third decade. From the early twenties to 45 in the same individual it should not vary much. Most observers would put it at 115 to 130. If it were habitually over 140 they would not feel happy. I have estimated the blood pressure as a routine for some years, and my own experience would accord broadly with that statement. On exercise the normal blood pressure should rise with the pulse and respiration and return to normal within a few minutes of the resting position being resumed, in some healthy people there is a subsequent fall of pressure after exercise

On the other hand, Brandreth Symonds, with a large experience of life insurance, takes a stricter view. He points out that blood pressure varies not only with age but with build, and increases with weight as well as with years. Taking male lives accepted at standard rates and all builds, he gives the average systolic pressure from 123.5 (ages 15 to 19) to 135.3 (age 60 and over). He further states that a systolic pressure of over 140 at an age is suspect in insurance circles. If clinicians were to accept these views they would indeed have to be gloomy prophets

Alvater studied blood pressures on 1,500 freshmen at the University of California, and judged the normal average to be—for young men 124.7, and for women 114.6. He found, however, over 20 per cent of the examiners with a pressure over 140, and here and there pressures of 170 and upwards. No doubt some of these raised pressures were due to the effect of passing circumstances on impressionable youth, but when every allowance is made it remains a fact that high blood pressure is to be found amongst the young need produce no evidence of ill health, and is only discovered in the course of routine examination

Diastolic Pressure

The diastolic pressure has been less widely studied. I would suggest that in healthy males from 15 to 25 the diastolic pressure will be found about 75 to 80, and that it should not be beyond 85. From the age of 25 onwards one prefers not to see it beyond 90, and above 100 causes us uneasiness. The health limits of the diastolic are narrower than those of the systolic pressure. These figures are the readings at the commencement of the fourth stage, when the sound fades

The normal blood pressure of the healthy body would be expected to vary within comparatively wide limits, just as men's other physical characteristics do. The higher civilization goes, the broader the limits of the normal will become. I may illustrate this by referring, on the one hand, to a healthy vigorous family in which the father, even after the age of 50, the mother, and the grown up sons have none of them a systolic pressure above 110 and, on the other hand, to a family no member of which has a systolic pressure under 130

These examples prompt the reflections that vaso-constriction plays in some people a larger and in other people a smaller part in the circulation, and that it is difficult to say where normal blood pressure ends and abnormal begins. It looks rather as if hyperpiesia may begin as an exaggeration of a quality (too much of a good thing) and as something which begins in a realm of physiology and ends in the realm of pathology—that, in short, it is physiology gone mad

In order to study blood pressure in youth and the early stages of hyperpiesia I decided to investigate a group of school children, and this has been rendered possible through the kind and understanding support of the school medical officers, of the headmasters and headmistresses concerned, and with the valuable and valued help of a group of workers led by Dr Donald Hunter. The investigation took place in four schools—two secondary (boys and girls) and two primary (boys and girls). I will not take up the time of the meeting

with the details, which will be published on a future occasion, but will deal with the general results.

Taking these schools together we find a total of 650 examined—ago limits 10 to 17—and of these 52, or exactly 8 per cent, show a pressure above 130. Some cases show a rise in the diastolic pressure. A reading of 90 or above at so early an age is abnormal, and is of more serious import than a raised systolic, for it means that the minimum pressure within the arteries is high.

We next studied the distribution of the raised pressures. We could not identify hypertrophy with any particular physical type of child. The headmaster or headmistress made a selection of a small group of keen younger children—"nippers"—and amongst these hypertensives was not a feature, and this observation is confirmed by Dr. Peier. Stocks's valuable investigation seem to raise pressure ordinary examination seem to raise pressure. On the other hand, in the two secondary schools there were classes working for the Oxford senior local examination, and in these classes the incidence of abnormal blood pressure (that is, above 130) was more than two and a half times larger than the incidence for the two schools as a whole.

Now the issues which are attached to this examination are various, success comes with it not only a prospect of entrance to a university but a raising of social position for the pupil and indirectly for the parents. It is easy to understand that such a class would attract the intelligent and ambitious children, and how it would engender not only stirring but in some of them intentness and anxiety. In some temperaments this anxiety would relax in the intervals of work, in others it would not.

The conclusion I am inclined to draw is that the abnormal pressure is not produced by stirring, but is an existing tendency or trait made manifest and accentuated by the stirring. A rise in pressure occurs normally in anticipation of effort, and anticipation—the desire to forestall—plays in civilization an increasing part which shows reactions with bodies and minds of a certain physiological cast. I will postpone to another occasion consideration of the relation of emotion to vaso-constriction, a matter to which Golla has made valuable contribution in his Croonian Lectures.

It is impossible to suppose that these 52 young people—this 8 per cent—having the appearance of health and vigour, but with abnormal arterial pressures, can all be the victims of a degenerative process. Rather, I suggest, do they show an inborn peculiarity of function—and in some cases a family tendency. Then arterioles have a selective responsiveness. Just as some hearts are too responsive and easily get tachycardia or deranged rhythm, the arterioles of some people become too easily overthrown.

But this peculiarity of function may become so pronounced as to produce damage, and thus disease may ensue. We see a comparable happening in the case of people with so-called "bad circulation." One can observe all the gradations from cold extremities, raw-beef hands, chilblains of varying severity, to typical Raynaud's disease. Some of these 52 young people are the potential hyperpiesics of later life. With many of them the tendency may be corrected by educational treatment and a careful choice of their careers.

What a field for preventive medicine is this! As long as the vaso-constriction relaxes within reasonable time after the occasion of the overtone has ceased, the arterial pressure, though high, remains flexible. But with some the vaso-constriction seems, by contact with the world, to be provoked by slighter and slighter stimuli—it is as if the patient becomes sensitized, and then the vaso-constriction tends to persist after the cause of the increased pressure has been removed. Thus arises an increasing habit in the high blood pressure, and then begins the era of strain which leads to disease.

The correctness of these views may be tested by a more detailed investigation amongst the 52 young people already referred to. This has been carried out sufficiently to justify my advocacy, though I hope with further time and labour to speak with greater authority. Their blood pressure readings were reported under varying conditions and at different times. Amongst these young people 9 cases of fixed high pressure were selected, the names of these 9

were examined for albumin, and, if the latter were present, for casts. They have been examined by radiography, the electro-cardiograph, and by chemistry. I will summarize the results.

Their ages varied between 15 and 19.

Their pressures varied between 130 and 185 systolic and 70 and 115 diastolic.

In most of them the radial arteries were palpable, in none of them hard. In 6 the aortic second sound was accentuated.

In 4 the left ventricle was definitely hypertrophied, in 1 it was doubtful and in 4 normal in size. 3 had blood urea over 0.050 per cent, in spite of good urea and good dye excretion. None had blood urea over 0.0038.

None showed a dye excretion below 50 per cent, and only one had urea concentration below 15.

In 3 of the cases I had the advantage of careful observations having been made by Dr. Stocks years ago.

- A Blood pressure in 1922 = 155/98, now 160/100 and definite hypertrophy
- B Blood pressure in 1922 = 155/98, now 160/100 and definite hypertrophy
- C Blood pressure in 1923 = 146/110, now 185/110 and definite hypertrophy

These three last cases are especially valuable because their blood pressure may be taken as having been on a high plane for some years. The last named (C) is a bank clerk, a well made youth, who plays games, and has rather a pale complexion, he stands out in the list of 9 as having a definitely high blood urea—namely, 0.070. His blood urea acid was not raised, being 0.0030, the concentration test was normal and the dye excretion 50 per cent. He impresses me as the type of case whose clinical picture will be difficult at a later stage to distinguish from that of interstitial nephritis. It is a case in which I would judge that the kidney will take command at an early stage, or, as some authorities would reason, the infective factor has got grip of him.

It is to be noted that in none of these 9 cases (and I have others which bear out this statement) was the blood urea acid over 0.0038 (N.B. normal limits of urea acid in Canada 0.005). This is of interest in view of recent work in Canada and elsewhere in which it has been suggested that raised urea acid content can produce a pressor influence.

As one would expect, there is amongst these cases considerable variation. As a series they seem to merge, on the one hand with the physiological, and on the other hand with a pathological state. It is, I think, a right conclusion that some of them show signs of strain and are passing into the realm of disease—they are predestined. The most definite change is cardiac hypertrophy, which the continual over-tone of the arterioles has produced. With cases so mild can summary pathological evidence is lacking, but I can produce such evidence in the following account, which describes the same process at a later stage.

At the age of 11 a girl X.Y. began to have migraine headaches. After menstruation was established the liability to migraine was more noticeable and especially prior to the periods. At the age of 14 the headaches became more frequent and interfered with her work. At the age of 19 in the year 1922, she came under my observation when I found a blood pressure as high as 240 systolic and 140 diastolic. There was slight cardiac enlargement, the accessible arteries were soft. Rest in bed did reduce the pressure but not below 150/110, and then only temporarily. There were sometimes a trace of albumin and a few hyaline casts in the urine. She had had a severe attack of scarlet fever in childhood. A suggestion was made that she was a case of slowly progressive interstitial nephritis but neither the clinical nor anatomical picture fits in with that suggestion. Her youth was not only that of years but of appearance colour and attitude of mind.

This year (1925) it was noticed that her headaches were fewer and otherwise she felt well provided she was protected from too strenuous work. Nevertheless the cardiac hypertrophy was more marked and when up and about, although doing no work the blood pressure was often 240/140. So it was resolved to decapsulate the kidneys. This was done and at the same time portions of the kidney were secured for examination. The sections showed the following: (1) The most marked feature was hypertrophy of the tunica media of the larger arteries. (2) Slight changes including some fatty degeneration of the intima of the smaller arteries. (3) Patches of partial atrophy of tubules due to infiltration by small round cells (early fibrous changes). The latter change I should regard as due to defective blood supply though some might interpret it as evidence of infection. Changes characteristic of interstitial nephritis were absent.

This case represents a later stage of the condition noted in the school children. Not only the systolic but the diastolic pressure was considerably raised and in a measure

† The full report of the sections by Professor Turnbull will be published later.

fixed, and habit has become a vice. Structural changes have ensued—the effects but not the cause of the pressure—though they have now stereotyped the condition and henceforth will go far to determine the future history of the patient. If one tries to forecast that future, one visualizes increasing patches of fibrosis and atrophy of tubules, the work of overaction thrown on diminishing areas of renal tissue and the kidney influencing the clinical picture in increasing measure. This influence includes an increased drive of the heart, perhaps due to failing kidney function. In short, the kidney takes command.

If one puts the school children referred to above and X Y side by side, there is every gradation from normal pressure to fixed high pressure and structural changes—potentiality passes into actuality.

The following brief observations, made among a group of adults, are comparable with those made among the school children already referred to.

Three hundred men, belonging to an active and responsible calling in which a good standard of health is expected, were examined. Of these, 35 had a systolic pressure above 140 and of the 35 20 were aged 40 or under—that is, rather more than 6 per cent of these men under 40 years of age had raised pressures. These pressures varied from 140 to 190 systolic. None of these men with raised pressures showed any signs of ill health though one or two of them were beginning to show signs of cardiac hypertrophy. They would seem to belong to the same category as the hypertensive school children.

The high blood pressure which becomes manifest for the first time in middle or later life has probably more varied explanations. No doubt in some instances it has existed since youth and loomed larger with the years, but in others it supervenes after years of normal pressure. It may be that the plain muscular tissue develops too great a responsiveness, just as asthma can develop in later life, but here degeneration and narrowing of the smallest vessels may play an early and prominent part, following more or less closely behind the hyperpiesia, whereas in the youthful cases such changes are a later development. Moreover, here we may find association with sedentary life, waning of sexual activity, obesity, and the stockiness and fixity which are apt to arise in middle life. All of these suggest on the one hand errors of metabolism or internal secretion, or on the other hand toxæmias. MacDonald's work is of interest in this connexion.

A hard working man at the age of 40 had a blood pressure of 160 at 42 it was still 160 at 43 it was 170/90 and at 45 185/112. At the time of the last observation the blood urea and uric acid were within the normal.

Proneness to vaso constriction, like some other peculiarities, may be inborn. Such it must be when it occurs in school children. Strickland Goodall has shown that high tension may exist in babies, and in this connexion one is led to reflect whether certain fatal cases of idiopathic hypertrophy of the heart in young children which have been reported may not have been due to high arterial pressure.

Hyperpiesia may be a family tendency, the case of X Y is an example of this. The family record is as follows:

Father, aged 47	blood pressure, 166/120
Mother, aged 46	, " 160/100
A younger sister	, " 138/90

Among the relatives of three of the school children we investigated were discovered a brother of 20 and a sister of 23 with high tension. I am indebted to Dr Charles Weber for another example:

Father aged 56	blood pressure, 215
Mother, aged 49	, " 182
*Sister aged 20½	, " 130
*Brother aged 20½	, " 140
Sister, aged 17½	, " 135

* Twins

O'Hare has recorded others.

On the other hand, there are families in whom a low pressure prevails. I suggest that the family tendency may in some cases be so strong as to show itself, come what may, whereas in other and more frequent instances it will only take control if stimulated by the temperament or by the environment or both, of the individual.

As regards the ways and means of such vaso-constriction it may be due to chemical agencies (to pressor substances—

for example, guanidine derivatives) in the blood, or it may be due to the influence of the higher centres—that is, to an innate or inherited habit. The search for pressor substances has so far been limited and not altogether encouraging.

In conclusion, hyperpiesia is not a condition with a defined territory, it has no threshold. It begins as a habit of body and mind which is not disease but may lead to disease, it creeps into our lives without our ken—while we are fit and efficient, it gives no evidence of its presence or only such signs as a healthy-thinking individual would ignore, and unless some lucky defect in health brings about a medical examination, and therefore a disclosure, no revelation occurs until definite damage to the life compels an acknowledgement that the frontier of health has been crossed and return will be difficult or impossible.

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II—ERNEST H. STARLING, C.M.G., M.D., F.R.C.P., F.R.S.

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THE PHYSIOLOGICAL FACTORS IN HYPERPIESIA

THE arterial blood pressure is the resultant of two factors—namely, the output of the heart and the peripheral resistance. The output of the heart depends on the inflow, and is chiefly conditioned by the muscular activity of the body and by the blood volume. The peripheral resistance is maintained by the tonic contraction of the arterioles, especially of the splanchnic area, and is thus under the constant control of the vasomotor centre working through the sympathetic system. A fairly high arterial pressure is necessary for the maintenance of a blood flow through the working parts of the body according to their activities. Although the blood flow through each part is regulated by variations in the calibre of its nutrient arterioles, these variations would be without effect unless a constant head of pressure were maintained in the main arteries. In the normal individual this pressure varies with the heart beat between 85 and 120 mm of mercury. Since its height depends on the average state of contraction of the arterioles of the body, the height at which it is set must be regulated according to the needs of the vasomotor centre. The brain with the vasomotor centre require a constant supply of oxygen at a fairly high tension. Since they are the master tissues and control the blood supply to all other parts of the body their own supply depends only on the pressure in the circle of Willis—that is, on the general arterial pressure, thus they will maintain constant whatever the needs of the other tissues. Thus we find that even in failure of compensation they will not allow this pressure to drop so as to relieve the heart, they will maintain this pressure by shutting off the other regions of the body, so

as to diminish the total output of the heart necessary to maintain a normal arterial pressure.

This insistence of the vasomotor centre on its average and constant blood supply is strikingly shown in some experiments lately carried out by Anrep and myself. In the ordinary animal any change in the circulation through the brain will at once compensate itself by changes in the circulation in other parts of the body, and we get a complex series of events which it is difficult to unravel. In order to study the influence of alterations in the circulation of the vasomotor centre on the circulation through other parts of the body we must provide the brain with a blood supply which is entirely under the control of the experimenter, so that any change in the general circulation evoked by altering the blood supply to the vasomotor centre will not have its normal results on the circulation through the centre itself. This can be accomplished by using the heart-lung preparation from one dog to feed the brain

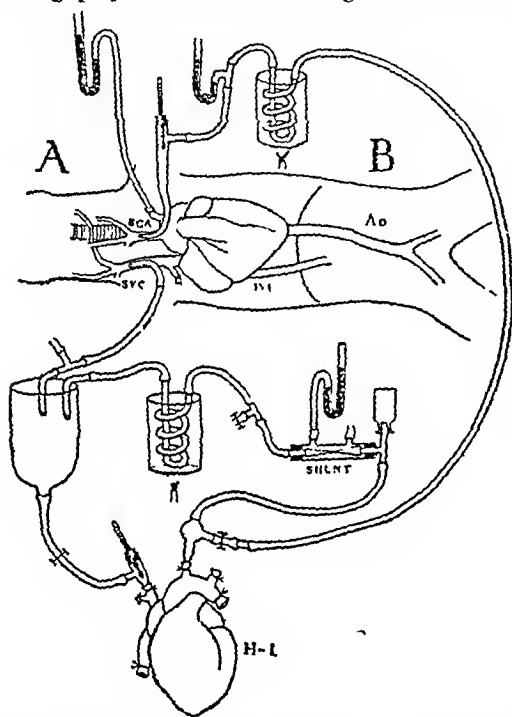


FIG 1.—Diagram of the crossed circulation. A, perfused head B, part of animal supplied by its own heart. SCA, brachiocephalic artery. SVC, superior vena cava. Ao, descending aorta. IVC, inferior vena cava. H-L, heart-lung preparation supplying blood to perfused head (lungs not shown).

of another dog in which the heart is maintaining the circulation simply through the trunk and limbs (Fig 1). The results on the general circulation of altering the blood flow through the brain and vasomotor centre are illustrated in the accompanying diagrams (Figs 2 and 3). These show that the vasomotor centre is acutely sensitive to the slightest alteration in the blood flow through it. The smallest increase in this flow causes general vaso-dilatation, and therefore a fall of blood pressure, while the slightest decrease brings about general vaso-constriction and a rise of blood pressure, and these effects are permanent—that is, last as long as the alteration which is effected in the vasomotor centre.

In hyperpiesia we do not dealing with the temporary rise of blood pressure such as is brought about in the normal individual by increased activity, especially of the muscular system or by chemical means, such as setting free adrenaline, but the blood pressure is set permanently at a high level, round about which occur the physiological fluctuations of pressure. Such a setting of the blood pressure at a high level cannot be brought about by any local alteration in the peripheral circulation. We may have claudication of the lower extremities, till the legs become gaugrenous and drop off, without any lasting rise in the arterial blood pressure. The setting of the arterial blood

pressure at an abnormally high level must mean that at the normal pressure in the circle of Willis the vasomotor centre is not receiving sufficient blood for its requirements.

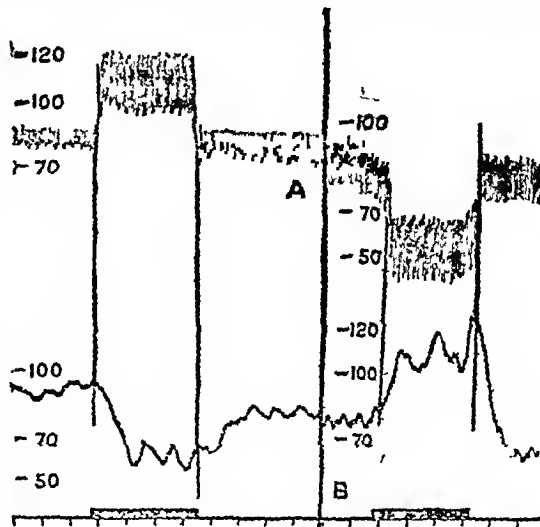


FIG 2.—Effect of abrupt rise and fall of the blood pressure in the perfused head (A) upon the blood pressure in the rest of the animal (B). Both vagi cut.

There are many ways in which such a state of things might arise, and I do not believe that the condition of hyperpiesia will be found to be unitary in its pathogenesis.

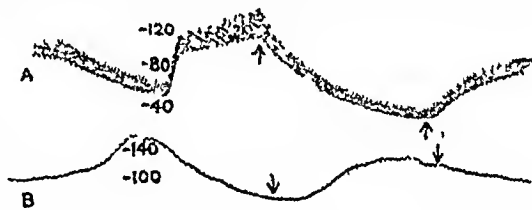


FIG 3.—Effect of slow changes in the blood pressure in the brain vessels (A) in producing the reverse compensatory changes in the systemic circulation (B).

The condition in which the normal arterial pressure was not sufficient to drive an amount of blood through the capillaries of the vasomotor centre sufficient for its needs might arise in various ways.

1 In the first place gross lesions in the arterial trunks might diminish the average pressure in the circle of Willis or in the arteries of the brain, either by abolishing the elastic resilience of the arteries by which the blood pressure is maintained between each heart beat, or by actual partial occlusion of their lumen. This condition is, however, well known, and hardly comes under our consideration to-day.

2 It is conceivable that we might have a condition of claudication in the vessels of the vasomotor centre similar to that which frequently occurs in the lower extremities. This might have its origin in a subinfective process arising from the internal surface of the body and leading to proliferation of the intima and narrowing of the lumen of the arteries. The natural reaction of the vasomotor centre to such a condition would be a permanently raised pressure in order to drive the normal quantity of blood through the narrowed channels by which it is supplied.

3 A contraction or spasm of the muscular coat of the arterioles to the brain and vasomotor centre has played at different times an important part in our pathological speculations, even since the time of Brown-Sequard. I must own I am sceptical as to the probability of such a condition existing at any rate as a permanency. The contractility of the arterial wall does not play the important part in the brain that it does in other parts of the body, and a continuous contraction of the arterioles to the vasomotor centre against the requirements of this centre and the

needs of the body as a whole seems an unlikely explanation of the phenomena of hypopiesia.

4 All the mechanisms for the regulation of the activities of the heart and arteries are directed towards the maintenance of a blood flow through the capillaries in accordance with the needs of the tissues they supply. First among these needs are those of the vasomotor centre and brain. There is evidence that in many parts of the body—perhaps in all—the capillaries are endowed with contractility, and this property must be a considerable factor in regulating the migration of the tissues according to their activities. Any such contraction of the capillaries to the vasomotor centre would evoke as an immediate response a rise of arterial pressure lasting as long as the contraction of the capillaries. But we know that the capillaries are susceptible to other chemical influences which alter their permeability—that is, the amount of blood fluid which filters through their walls. A familiar example of such a change is the wheals produced in the skin as a result of ingestion of certain animal poisons, or by the local injection of substances such as histamine. Any similar change in the capillaries to the brain would be fraught with evil results for the circulation through them, for it must be remembered that these capillaries run in a pericapillary lymphatic, increased exudation would cause a rise of pressure in the lymphatic and a corresponding narrowing of the lumen of the capillary. I would suggest that such a condition of altered capillary wall is responsible for the high arterial pressure which is the invariable concomitant of certain toxic conditions, such as uraemia and the toxæmia of pregnancy. In both of these the high pressure which I have attributed to interference with the capillary circulation to the vasomotor centre is accompanied by well marked signs of deficient circulation through other parts of the brain, such as headache, transient loss of speech, various paralyses, and convulsions, and we know that in the toxæmia of pregnancy, at any rate, all these symptoms may subside with the termination of the pregnancy. It is perhaps not without significance in this regard that records of *post-mortem* examinations of patients who died from uraemia or eclampsia often speak of a "wet brain"—that is, one in which there is overfilling of the perivascular lymphatics.

5 It is impossible in any consideration of the causes of hyperpiesia to exclude the question of the part played by the kidneys. If we exclude altogether the acutely toxic conditions, such as uraemia, there remains still a large body of cases in which kidney changes of a low order are associated with raised blood pressure. Although opinions differ on this point and experiment has not said its last word on the subject, there is considerable evidence that progressive occlusion of the vessels to the kidney, which we might call claudication of the renal vessels, or destruction of the glomeruli, may give rise to progressively increasing arterial blood pressure. Cohnheim regarded this condition as a physiological reaction for the purpose of increasing the pressure in the remaining glomeruli, thus favouring the elimination of the soluble waste products of the body. But it must be remembered that even if this account of the sequence of events is correct, complete obstruction of the renal circulation would not by itself cause a rise of blood pressure. It can only do so indirectly by the results of this obstruction on the vasomotor centre. One can hardly imagine that in the initial stages of such a disorder, when the patient remains in apparent health for years, there is a toxic alteration of the capillaries of the brain and vasomotor centre leading to increased transudation and capillary obstruction. The only possible explanation for such a condition that I can see at present is that the retention of substances which should be excreted with the urine has a direct effect on the vasomotor centre itself. It may diminish the rate at which this centre takes up oxygen, or may impede in some way the transference of oxygen from the blood in the capillaries to the nervous tissue of the centre, or finally it may raise permanently the irritability of the centre.

Whether alterations in the kidney are ever the prime cause of the changes associated with hyperpiesia seems to me still an open question. The point I have tried to insist on in this communication is that the causation of hyper-

piesia must be first sought in the vasomotor centre. The changes in the circulation through the brain and the vasomotor centre may be primarily local or may be secondary to changes in other parts of the body, such as the kidney. But no pathology will be adequate which does not take into account the sensitiveness of the vasomotor centre to the changes in the circulation through it which determine the height at which the arterial blood pressure is set. The part played by each and any of the factors I have enumerated can only be decided by the continued labours of the morbid anatomist in association with experiment in the laboratory and the wards.

III—H. BATTY SHAW, M.D., F.R.C.P.,

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THE FEATURES OF A HYPERPIESIC CRISIS

As a contribution to this discussion I will detail the features of a hyperpiesic crisis in a patient who, while under treatment, presented a remarkable clinical picture.

A clerk, aged 59 years, was observed to become less keen about the discharge of his daily duties and complained of inability to grasp the details of his work. The effort to get off to business and catch the usual train was so great that after several months he declared he was quite incapable of making the attempt to start. His employer had found him inefficient and had had to relieve him. During his stay at home for many weeks he complained of sensations of all-goneness of sinking at the epigastrium of depression, of somnolence in the day and restlessness at night. Simple hypnotics were used but soon lost their effects, and the doctor in charge, fearing to use the more drastic ones, asked for his admission to hospital.

When admitted the symptoms described continued and, in addition, he was found to be delirious and drowsy. He could be roused but showed symptoms of motor and sensory aphasia. A trace of albumin was found in the urine, but no sugar, and white patches were found in the neighbourhood of the maculae. He was dyspnoeic and had swelling of the feet, occasionally he complained of headache. The cardiac impulse was heaving and placed in the fourth space in the left nipple line, the brachial arteries were tortuous, the second aortic sound was accentuated, no murmurs were heard. The pulse was regular and 96 to the minute, the respirations were 28 to the minute and a pleural effusion was found at the right base behind. The temperature was 97°. The pupils were pin point and did not react to light or accommodation. Kernig's sign was present, and the plantar responses were flexor. The systolic blood pressure was 250 mm.

The following day two pints of serous effusion were removed from the right chest, the fluid was sterile and showed no excess of cells. He slept well that night.

Thirty-six hours after admission he suddenly became unconscious and remained so for twenty-four hours, but moaned and made so much noise that he was given 1/75 grain of hyosine. He continued to groan and constantly put his hand to his head, he was also incontinent of faeces. As he had passed no urine since the morning of that day, a catheter was passed, but only 2 to 3 ounces of urine could be obtained. It looked normal, except that it showed a good cloud of albumin and readily reduced Febling's solution. It was free from acetone. The same sample of urine was found to be free from casts and organisms, and gave a positive fermentation test. Forty-eight hours after admission cerebro-spinal fluid was removed by lumbar puncture. It escaped under low pressure, was found to show no excess of cells, was sterile, and the globulin test was negative. The Wassermann test was negative. Venesection was performed to the extent of 6 ounces, and 100 c.c. of blood was found to contain 70 milligrams of urea.

During the period of coma the blood pressure fell to 124 mm. in systole, the urine remained scanty, the pulse reached 100 to the minute, the respirations at first reached 36 to the minute and then returned to about 25. The temperature which had hitherto been subnormal, now rose to 100.2°. He was infused with 2 pints of normal saline solution.

Seventy-two hours after admission he put out his tongue when requested to do so, but did not recognize his relations. In a few more hours he became quite conscious, had a large action of the bowels and passed urine spontaneously. In twenty-four hours the total reached 1700 c.c. The following morning the blood pressure had reached 228 mm. in systole and the crisis was at an end.

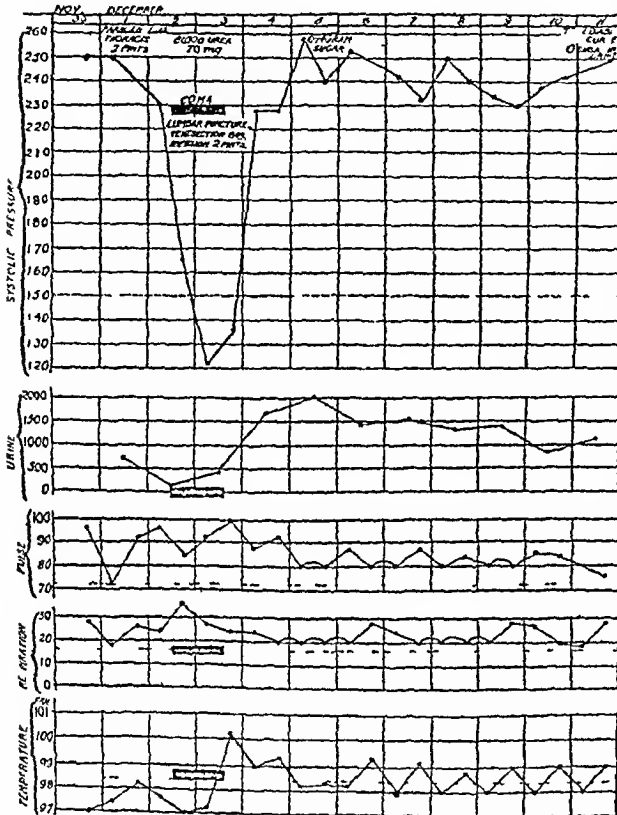
So ill was he during the crisis that it was expected that he would die. He slowly recovered with the return of the blood pressure to its usual height of about 250 mm. on the fifth day after admission the urine being normal in amount and only showing albumin occasionally. The pulse rate which had been excessive since admission, reached 80 to the minute, the respirations 20 and the temperature oscillated from normal to 99°. The oedema of the ankles lessened, the pupils reacted normally, and the Kernig sign disappeared. The blood sugar at this date was 0.14 per cent, but the urine was free from it.

On the eleventh day after admission the blood sugar curve indicated true diabetes, but no sugar was found in the urine. The maximum sugar in the blood two hours after the ingestion of 40 grams of glucose, was 0.23 per cent. A pint of serous fluid was

again removed from the right chest, and was again found to be sterile.

Although the patient had improved so much since the crisis, his condition was never sufficiently satisfactory to allow him to leave the hospital. Sixteen days after the crisis the blood urea was 20 mg per 100 ccm of blood, and at a later date was 33 mg. The blood pressure became higher than on admission, reaching a maximum of 284 mm, and on one occasion shortly before death, it suddenly fell again to 184 mm, but without loss of consciousness. Gradually the dropsy increased, effusion occurred at the left base, and albumin was constantly present in the urine. After seventy-nine days in hospital he gradually became drowsy and sank, the blood pressure being maintained at a high level until shortly before death.

At the post mortem examination the heart weighed 24½ ounces, it showed hypertrophy, but otherwise was normal. The lungs were oedematous, and fluid was found in the pleural cavities. The kidneys only showed slight fibrosis. The brain was quite normal.



On December 19th the blood urea equalled 20 mg, and on February 7th 33 mg

Comment

Obviously it was difficult to say at the time of the crisis what was the cause of such an extraordinary clinical picture. Cerebral haemorrhage was thought of, but was excluded by the fact that the temperature did not rise excessively, and the cerebro-spinal fluid contained no blood.

The presence of sugar in the urine during the attack, and the discovery when the attack had passed off of a typical diabetic blood-sugar curve, were most unusual, and have not been observed in other cases of hyperpiesis crises. Despite the presence of excessive sugar in the blood when the attack had passed off, the renal threshold was apparently high enough to prevent sugar occurring in the urine, but in the attack the threshold was apparently lowered owing to some temporary disturbance of the kidney function, this possibility being supported by the discovery of a high blood urea content during the crisis.

It looks as if the crisis occurred owing to a sudden relaxation of the peripheral vasomotor tone which allowed the patient to bleed as it were into himself, for the pulse rate was increased before and during the attack, and gradually assumed the, for him, normal rate when he regained consciousness. This would agree with possible

histamine poisoning, or it might have occurred as a result of a terminal infection which raised the temperature and caused pleural effusion.

IV—OTTO MAY, M A, M D,

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MORTALITY IN RELATION TO HYPERTENSION

My remarks will be limited to the statistical relation between hypertension and mortality. They are based on proposals made to the Prudential Assurance Company from 1920 to 1924. The reason for choosing such a recent period is that at the beginning of 1920 we adopted a system of coding various facts with regard to each policy issued, thus facilitating the investigation of statistics regarding these facts. One of these is the "systolic blood pressure" on the policy card there is recorded whether or not the pressure was measured, and, if measured, whether it was (a) below 140 mm, (b) 141 to 170 mm, (c) above 170 mm. The duration of the policies has therefore been necessarily short, and I hope to be able, in the course of a few years, to present more authoritative figures, representing a longer and fuller experience. The present must be regarded in the light of a preliminary or interim report.

I should like to point out, before giving any actual results, that no statistics based on examination for life assurance should be interpreted too meticulously. The examinations are made by a large number of medical men, varying considerably in experience and, I may add, in the skill and care which they bring to the work, with the result that the data do not conform to any uniform standard of exactitude. It is curious how long it is taking to establish the sphygmomanometer as a clinical instrument second only in importance to, if not equal to, the thermometer and the stethoscope. A considerable proportion of general practitioners do not possess the instrument at all, and regard it, in the actual words of one of our referees, "as all right for the consultant, but no use to the general practitioner." It is, of course, quite true that its findings must be interpreted intelligently, that it is not infallible in its aid to diagnosis and prognosis, but surely the same applies to the thermometer, and still more emphatically to the stethoscope. I feel that we are helping appreciably in the popularization of the sphygmomanometer by requiring the blood pressures, in suitable cases, from thousands of our local medical referees.

Another probable source of fallacy, besides inexperience or faulty methods on the part of the examiner, is the fact that, in many cases, only a single reading is possible. There can be no doubt that a first reading in a subject of excitable temperament is liable to be higher than subsequent ones. The mean of, say, three estimations on consecutive days would probably give a truer measure of the average systolic pressure than a single reading does, but the exigencies of life assurance examination permit this only in exceptional cases, in most we have to be content with the single reading.

With regard to diastolic pressure, the difficulties are, of course, even greater in getting figures of any value. It is only in a small minority that any estimate of it is given, and we have not attempted any statistical work on the scanty material available.

I have thought it right to draw your attention to the possible fallacies in the data on which the following figures are based. But, in statistics, the larger the number of cases on which they are based, the less is the importance of individual errors. As will be seen, the results show so uniform an increase of mortality as the arterial pressure increases that they afford ample confirmation of the current view that increased systolic pressure is a definite handicap to longevity. I need, perhaps, hardly explain that in the following statistics the ratio of actual to expected deaths is worked out from actuarial tables, which take into account the age distribution of those "exposed to risk."

In the period under survey policies were issued on persons of 40 and over to the number of 106,507, comprising 84,700 males and 21,807 females. Of this number, the systolic arterial pressure was recorded only in 20,260 cases—17,760 males and 2,500 females—that is, only in about

19 per cent. At the present time the proportion is gradually increasing as the result of our persuasive efforts with our referees.

Systolic Arterial Pressure	Males		Females		Total
	Entrants	Per cent	Entrants	Per cent	
Under 140	13 375	75.3	2 066	82.6	15 441
141-170	4 073	22.9	1 399	16.0	4 472
Over 170	312	1.8	35	1.4	347
Total	17 760	100.0	2 500	100.0	20 260

These figures confirm the view, commonly held, that the pressures in women tend to be lower than in men, though no attempt has been made to analyse the figures in each group according to age.

With regard to the mortality actually experienced in these groups during the period under review, the actuarial investigation resulted as follows, taking the figure 100 as the ratio of actual to expected deaths for our ordinary branch policy-holders medically examined at entry over this period:

	Male and Female Combined	Male Only	Female Only
1 S.A.P. not recorded	97.1	103.3	77.2
2 S.A.P. under 140	102.8	105.4	83.8
3 S.A.P. 141-170	133.6	133.1	139.5
4 S.A.P. over 170	219.6	255.4	—
5 S.A.P. 200 and over	827.5	—	—

These figures confirm, so far as they go, the view that high blood pressure is unfavourable to longevity, that the outlook gets rapidly worse when the pressure is over 170, and that at 200 and over the mortality is no less than eight times the normal.

The last group needs a little further explanation. It includes some of the cases comprised in Group 4 (170 and over), and, in addition, some who were examined, but to whom no policy was issued, either because they were declined outright or they did not accept the terms offered to them. A special register of such cases was kept, and in March last inquiries were instituted through our local representatives as to whether these people were (1) alive or dead, (2) if dead, the cause and date of death. This was done only in the case of those who had been examined not less than a year previously. In some cases no information was obtainable, but we succeeded in following up 75 of them, and the actuarial analysis of the experience showed the ratio of actual deaths to what would have been expected at our normal rate of mortality to be no less than 827.5 per cent.

Out of 130 cases collected with a systolic pressure of 200 or over, the position with regard to albuminuria at the time of examination was as follows:

	Number	Per cent.
Albumin absent	95	71.5
Trace of albumin	20	15.4
Albumin present in appreciable quantity	17	13.1
	130	100.0

Of 16 deaths of patients in whom the systolic arterial pressure was 170 and over the certified causes were as follows:

Cardiovascular diseases—	5
Cerebral haemorrhage	1
Cerebral thrombosis	1
Cerebral embolism	1
Syncope	2
Endocarditis	1
Myocarditis dropsy	1
Arterio-sclerosis	1
Thoracic aneurysm	1
Uremia	1
Cancer of caecum	1
Postero-lateral sclerosis of cord	1

Of the above 16 cases only 1 showed any considerable albuminuria at time of examination, in 2 others there was a "trace," and in the remaining 13 it was described as "absent."

Our difficulty as physicians arises, of course, in any attempt to apply statistical findings to individual cases. Most of us know of many cases in which a pressure of 200 to 250 is consistent with many years of active life, to an advanced age. I myself have watched a man of rather "plethoric" type who, nearly thirteen years ago, at the age of 65, had a "haemoptysis of high tension," and was found to have an enlarged heart, leathery arteries, and a systolic arterial pressure of 190. He is still alive and pretty active at the age of 78, and his pressure has never been below 180. I have similarly observed, for the last five years, a man now 56, whose systolic pressure has been maintained throughout at 200 to 230. In neither case is there any evidence of renal disease. And so with many more.

My own impression is that if we find a persistent pressure of 240 or over we can, with little fear of error, venture to ourselves a prognosis that the patient will be dead within two or three years, but that he is a rash man who will attempt to predict, from the pressure alone, the expectation of life of an individual with a pressure less than this.

V—GEOFFREY EVANS, M.D., F.R.C.P.,

Assistant Director of the Medical Unit and Assistant Physician to St Bartholomew's Hospital

To avoid ambiguity about the subject of this discussion I would define hyperpiesia as simply a condition of persistent hypertension, it is not necessarily a condition of permanent hypertension, as a previous speaker suggested. I think that any systolic pressure that is persistently as high as 170 mm Hg or over comes into the category of hyperpiesia.

In contrast with hypopiesia, hyperpiesia is a condition of disease, Sir Clifford Allbutt, who first recognized the condition, described it as a morbid series, because it not only has clinical characteristics by which it can be recognized, but it also runs a certain clinical course. Its first clinical characteristic is a persistent high blood pressure, its second, described once by Dr. Batty Shaw as its hallmark, is left ventricle hypertrophy. This may also be evident in an electrocardiogram, and the enlargement of the heart can be verified by x-rays. The second aortic sound is ringing, the radial pulse is hard and sudden, or small and contracted, the retinal vessels are pale and contracted, and there may be retinal arterio-sclerosis. The name is generally unimpaired in colour and specific gravity. It may contain a trace of albumin, and the presence of sugar is not very uncommon. When it is well established it is easily recognized as a very definite clinical condition, and for the purpose of my contribution to this discussion I would contrast it with migraine. Migraine is an equally definite clinical condition, which is distinguished by its characteristic symptoms, hyperpiesia is distinguished by its characteristic signs. Migraine is transitory, hyperpiesia is persistent, though not necessarily permanent. It is not possible to determine in a dead body whether there was migraine during life, it is possible, however, in the case of hyperpiesia, to recognize it after death by its morbid anatomy. In other words, definite structural changes are associated with hyperpiesia, and by examination of a dead body it is possible to say whether or not hyperpiesia was present during life.

The most typical case is one in which death has occurred from cerebral haemorrhage or heart failure, or, it may be, from intercurrent affection such as pneumonia or septicaemia. I am not sure if Sir Clifford Allbutt's distinction of it from Bright's disease will ultimately hold good, for I think that I have seen cases of hyperpiesia terminate in uraemia (with marked urea retention), but I cannot speak with certainty, as I have not seen the post-mortem examination of such a case.

Whatever the nature of the terminal event, characteristically the patient is beyond middle age, well nourished, even plethoric, and above the average in height and weight. On exposure of the viscera the heart is found enlarged, and weighs more than 15 ounces. The enlargement is chiefly

due to hypertrophy of the left ventricle the valves are healthy, and the myocardium is thick and firm. Some of the larger arteries may be obviously thickened to the naked eye; there may be a visible thickening of the aorta, and when the splenic artery or other arteries are laid open longitudinally the inner surface may appear transversely ridged, apparently owing to muscular hypertrophy. When the spleen and kidneys are cut through, the smallest visible arteries can be seen to protrude beyond the cut surface like tiny quills. In other respects the kidneys may appear normal in size and colour, but their surface may be very finely granular, or they may be scarred by occasional old infarcts. On section the kidney is often normal, and the cortex retains the appearance of health in its fine radial striation, its thickness, and contrast to the pyramids.

On microscopical examination the most important feature is the condition of the smallest arteries and arterioles. It has been described¹ under the term of "diffuse hyperplastic sclerosis," and there is no need to repeat this description now.

The important fact which I wish to bring forward is that hyperpiesia has a morbid anatomy by which it can be recognized after death. I can imagine that this change of structure is not present in every patient who dies with hyperpiesia. It is not necessary to explain every change in function by postulating a change in structure. Thus there may be persistent hypertension (due to persistent increased activity of the vasomotor centre, as Professor Stirling has suggested), and persistent increased tone in the peripheral vessels without any alteration in their structure. In my experience, however, a change in structure has always been present, and I regard the association of this change in vascular structure, which is described under the term "diffuse hyperplastic sclerosis," to be coincident to the change in vascular function found in "hyperpiesia." There is no necessity for regarding the one as the outcome of the other, it is simpler to regard both change in function and change in structure as the effects, possibly simultaneous, of a common pathogenic agent.

REFERENCE

¹ BRITISH MEDICAL JOURNAL, March 17th, 1923, p. 455

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THE ELECTRIC TREATMENT OF HYPERPIESIA

My apology for introducing the subject of electrical treatment of hyperpiesia is to be found in the absence of any mention of it in most of the scientific books and papers dealing with the subject which have appeared during the last twenty years. My justification for introducing it is to be found in one sentence of the last work,¹ recently published, of that great teacher, Sir Clifford Allbutt: "d'Arsonvalization is the most valuable immediate aid we possess for hyperpiesia." Sir Clifford Allbutt, writing to me two years ago on the subject of electrical treatment, said

"I have never written on high pressures without advising it (as I did not in my big book [?], well that is twelve years ago). In more than one recent published paper I have said that it is the one means that I have known (since it was first recommended) which does influence the high pressure."

What need have we of further witnesses?

In a paper I contributed to the *Clinical Journal*—I said: "When a high tension is sought to be lowered, d'Arsonvalization has a wide sphere of usefulness." Unless the abnormal tension be compensatory, efforts should be made to reduce the abnormality. It is now generally conceded that electrical currents have the power of modifying pathological arterial tension and yet have little or no effect upon normal blood pressure. And indeed the same has been observed of the action of digitalis.²

May I here forestall a criticism which has so often been levelled at the head of the electrotherapist who mentions electricity as a means of reducing blood pressure? It has often occurred to me. The objection is that it is not every case of increased blood pressure that is suitable for reduction, or that it is not advisable to reduce the increased tension in every case. Let me say at the outset that this is admitted. Where, for instance, there is a failing ventri-

cular compensation we know it would be harmful, and the mention to-day of electricity in this connection, as in many of the past, is limited solely to those cases in which the physician has come to the conclusion that the patient would benefit were his pressure reduced. Parenthetically it may be mentioned that in electricity there is a simple means of determining whether or no it would be wise to attempt to lower the pressure—that is, whether we have simply imperfect elastic recoil with increased peripheral resistance, or whether we have broken cardiac compensation.

It may be interesting to describe the effect of the treatment. Each application will, in about fifteen minutes, produce about a 10 per cent lowering of the maximum arterial tension as measured by the sphygmomanometer. For instance, in a patient with a pressure of 220 mm the reading will be about 20 mm less at the end of treatment. The following day the reading will have returned to its normal height, and this will go on for several days until one day before treatment the reading will be about 200 mm, then about a 10 per cent reduction on this will be obtained, until after a time no further reduction is effected. This may be taken as the limit to which the pressure should be reduced. Charted, the falling pressure is somewhat similar to a falling temperature chart in typhoid fever. The patient should attend daily until his low level is reached, when he should have treatment at such intervals as will keep him at this low level. These intervals vary much in each patient.

A discussion of the way in which the electric current acts, or a description of the apparatus, would be out of place in this Section, but here we have to tread somewhat delicately. Allbutt says "Diathermy does not, as far as we know, counteract the direct cause or causes of the malady, but until we know the primary cause, we may be thankful to counteract the secondary."

I suggest, however, that the therapeutics of this current in lowering blood pressure are twofold: there are the general, or constitutional effects, as affecting metabolism, and the local effects on the vasomotor system. The general effects of the current as influencing metabolism have been demonstrated both clinically and chemically. There is a gain in physical and mental strength, and general improvement in the health, the symptoms of insomnia, palpitation, or anxious fears disappear. Chemically there is an increase of solids in the urine, and a similar increase has also been found on analysis of the perspiration. The improvement in general metabolism is probably largely due to the effect on the vasomotor system, whereby the arteries, becoming relaxed, permit of a more free circulation of the blood, and, if this one fact be granted, the beneficial effects of the current are easily explained. A subsidiary cause may be at work—namely, the thermic effect of the current. This is quite apparent to the patient, and it may be that it causes an increase of functional activity by which the elimination of the toxic materials is augmented.

Then there must be a benefit, too, from a temporary relaxation of the arterial tension. If a piece of elastic is put on a stretch by attaching it to a weight continuously, after a time that elastic will cease to possess the recoil properties of elastic. But if the weight be removed for a short period at frequent intervals the recoil property will be evident for a much longer period of time—that is, the failing of the recoil property will be delayed. The analogy is obvious, though its bearing is perhaps somewhat hypothetical.

It is not claimed that in electricity we have the—or, indeed, any—cure, but we do say that with patients presenting a certain group of symptoms associated with hyperpiesia we can rely upon electricity, properly administered, to do a great deal. In the pre-sclerotic state signs and symptoms may be vague. These may be giddiness, a heavy feeling or fullness in the head, headache, often intensified with the effort of mental concentration ("the sign of painful thought"), insomnia or drowsiness, a disinclination to work, and an inability to concentrate the attention, alternating perhaps with an irritability of temper or occasionally with a mild psychic exaltation with confusion of ideas, failure of memory, noises in the ear, migraine or neuralgia, general nervousness with anxiety, or a sense of impending evil impossible to define.

Here we have a condition in which medical diathermy can accomplish much, apart from relieving the symptoms, for which alone the patient will often be very grateful. We believe that the treatment will check the degenerative processes which are going on and will ward off inevitable consequences, such as cerebral haemorrhages, renal affections, and the myriad ills which follow in the train of arteriosclerosis. Though electricity, as I have said, may be no cure, yet, except in very advanced cases, it will keep a patient for years in a condition of safety, and, indeed, in a state of comparative comfort.

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GENERAL DISCUSSION

Dr McCRAE (Philadelphia) said that to his mind the outstanding feature of hyperpiesia was the difficulties it presented. In youth they met with individuals with high blood pressure, in some cases this was certainly merely temporary, in others it was permanent. He suggested that Lord Dawson's case was really secondary to organic disease, and he raised the question as to whether all cases of permanently raised pressure were not due to organic disease. Some cases of variation in the blood pressure were certainly independent of the vasomotor centre. In obese children with high tension the blood pressure frequently returned to normal at puberty, and high tension at the menopause was possibly due to endocrine influence. He concluded by emphasizing that this was pre-eminently a subject for investigation by the general practitioner.

Dr W SALISBURY-SHARRE (London) said that his series of 500 cases consisted wholly of men in the seventh decade of life, nearly all were between 60 and 65. His question was not so much one of continued life, but of fitness for continued work and of reliability and safety therein. The records showed the average systolic pressure of the group to be in the immediate vicinity of 180 mm., and that safety and efficiency depended more upon the heart condition than (within fairly wide limits) upon the actual figure shown on the sphygmomanometer. The actual condition of cardiac stress needed careful examination and experience in the reading of an aggregate of small signs to estimate it efficiently.

Professor CAWADIAS (Athens) said that he regarded hyperpiesia as a syndrome, and it was necessary to recognize that in addition to a central hyperpiesis there was also a local hyperpiesis—for example, in the limbs or the heart. In considering the etiology he thought there were three main groups—toxic, nervous, and chemical.

Dr D A ALEXANDER (Chifton) cited the case of a patient as illustrative of the discovery in the course of general practice of hyperpiesis in the young. A woman, aged 27, had much ill health, assumed from the family history to be due to latent tuberculosis, an irregular erythema appeared on the limbs which did not conform to erythema nodosum. When adrenaline was about to be tried it was thought desirable first to take the blood pressure, which was found to be 240 mm. In arterial condition the patient followed her mother, who had nephritis, her father's arterial state was probably that of low pressure, since he died of tuberculosis. The patient's heart was not enlarged, a little albumin had appeared in the urine since abdominal pain was frequent and severe, menstruation was irregular, and emotion was probably a cause.

Dr STACEY WILSON (Birmingham) referred to the difficulty in the present state of knowledge of recognizing the cause of any particular case of high blood pressure, and illustrated the point by an experience he had in the First Birmingham War Hospital. Two young men of about 25 years of age were under his care, one of whom both had a blood pressure of over 140. In searching for a focus they were both found to have an apical dental abscess, from which a streptococcal auto-vaccine was prepared. In the one case the vaccine treatment had no influence what-

ever on the high blood pressure, and in the other it was clearly the cause of its reduction to normal after three months' treatment. In the second case it was found that although the vaccine apparently produced no local or constitutional reaction, it did influence the blood pressure during the first forty-eight hours. In the early weeks of the treatment it was liable to cause a definite rise of blood pressure if too full a dose was given, and later on a fall in the blood pressure was often clearly traceable to an injection of the vaccine. The case, therefore, showed the desirability of always watching the blood pressure for at least the first two days after an injection of vaccine had been given for high blood pressure. In searching for a cause of high blood pressure it had to be remembered that not only did faulty brain circulation call for it when due to atheromatous cerebral arteries, but that a not infrequent cause of it was an amount of atheroma of the coronary arteries, which made a normal blood supply to the heart not possible unless the blood pressure was materially raised.

In order that their somewhat scanty knowledge of the pathology of high blood pressure might be increased, Dr Wilson emphasized the desirability of not only using the sphygmomanometer more freely than appeared to be the case at the present time, but also of making a more thorough study of those cases where it was used. For many years past he had not only used the sphygmomanometer in most of his patients, whatever their ailment, but had also adopted the following routine method. First, observing and noting the range of movement of the needle of the aneroid from the point where it commenced to the point where the oscillation ceased. Secondly, noting the systolic pressure as estimated by the finger. Thirdly, noting the sound at the bend of the elbow with the stethoscope as regards (a) the pressure at which the sound was first heard and the pressure when it was lost, (b) the point where a moderately loud sound was first heard, and the point where it ceased, (c) the range through which the maximal loudness of the sound was audible. The study of the oscillation of the needle was of great value in determining the output of the heart, and a sudden drop in the range of oscillation might, in an acute case, show the onset of myocardial weakness many hours before any definite symptoms appeared.

The systolic pressure as judged by the finger was often different from that estimated by auscultation. Although when the circulation was normal the two estimations were approximately the same, there might be a difference of 20 or more millimetres of mercury between them in abnormal states of the circulation, sometimes the one being higher and in other cases the other. The clinical significance of these differences was often far from clear. The loudness of the sounds at the bend of the elbow, as well as the range of the loud sound, gave important information as to the mode in which the heart was beating. If this fuller study of the pulse by means of the sphygmomanometer were followed out where possible they would gain more knowledge of the heart's action in disease than they had at present.

Professor R J S McDOWALL (King's College, London) said that of recent years he had carried out a large number of experiments on the peripheral circulation in animals. He had been impressed by the fact that much of the apparent divergence of opinion of the various specialists could readily be correlated along simple physiological lines, which had been confirmed by actual experiment, and which went to support the conception that hyperpiesis was due to active contraction of the arterial muscle which, subsequently, as a physiological result of overaction, would hypertrophy and later tend to degenerate. Many observers had drawn attention to the thickening of the media. Lord Dawson had emphasized the importance of strain or striving in the production of high blood pressure. Physiologically high blood pressure occurred in exercise in order, no doubt, to ensure better distribution of the blood. But it began in anticipation of the exercise. Under civilized conditions such a setting of the organism to effort was not necessarily to be succeeded by effort, but it could be demonstrated experimentally that in such circumstances definite vaso-constriction took place. This could be demonstrated as a diminution in the volume of the limb or a

decrease in the skin resistance. Several speakers had spoken of the undoubted influence of toxins, but it was not necessary to assume that these were necessarily pressor substances. A toxin such as alcohol or histamine, which was a normal constituent of the intestine, although a capillary dilator and capable of bringing about shock if absorbed in large quantities, brought about constriction of arteries reflexly, as did haemorrhage. Here, then, was another example of straining on the part of the vasomotor centre, but in this instance to maintain arterial pressure in spite of capillary dilatation, and which tended to soak up the blood and allow the animal to bleed, as it were, into its own capillaries. As he had pointed out in a recent paper, there was actually a pressor reflex, by way of the vagi, called into operation. These toxic effects were, then, not so essentially different from the simple nervous strain cases as it at first sight might appear. Thus reflex action might readily be overdone, and might be sup-

plemented by direct action of substances—for example, histamine, which, although a capillary dilator, had a definite constrictor action, as shown by Dale, on all smooth muscle. They knew that all reflexes, if continued, tended to become more active. He considered that the often rapid recovery in individuals suffering from hyperpnea, and the intermittency which was often observed, supported the conception that the condition was due to muscular contraction. Lord Dawson appeared to have summed up the matter when he stated that hyperpnea was in its first stage a physiological mechanism "gone mad." From physiological evidence the mechanism which was upset was that which was normally responsible for the raising of blood pressure in anticipation of exercise or the maintaining of it in blood loss. At first the condition might be temporary, but later, when degeneration or extensive hypertrophy set in, the high blood pressure would become permanent.

A Lecture

ON

RESPIRATION IN ANAESTHESIA.

CONTROL BY CARBON DIOXIDE.*

BY

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To understand, to predict, to control these are the objects of all scientific investigation. The last and greatest is control, but unless we have first attained an understanding of the nature and working of basic phenomena, prediction is inaccurate or impossible, and control is incomplete and unreliable. Such, I take it, is always the relation of applied science to pure science.

Anaesthesia is one of the most beneficent of the applications of science, and one of the greatest achievements of modern medicine. Perhaps if we took all other drugs and weighed them in the scales of usefulness against the anaesthetics, the balance would incline in favour of the anaesthetics. We should expect, therefore, that the fundamental phenomena of anaesthesia would have been very thoroughly explored, and that much inventive ingenuity would have been applied to the utilization of fundamental principles. In fact, however, the art of anaesthesia as we have it to-day is founded on little more fundamental knowledge than that certain substances produce unconsciousness, and until quite recent years anaesthetists have been content with an extreme crudity of technique. It is probable that 90 per cent, perhaps even 99 per cent, of all anaesthetics in the world are still administered by dipping the liquid anaesthetic on to a towel or into a cone or on a few layers of gauze, the anaesthetist trusts to the heat of the atmosphere to volatilize the liquid into a gaseous form.

It is one of the first principles of anaesthesia that it is only when the liquid anaesthetic is vaporized and inhaled in gaseous form that it can be absorbed from the lungs into the blood and produce its desired effects. It is another first principle that the depth of anaesthesia should be maintained as nearly uniform as possible, and yet another principle that this depth should be attained as quickly as possible, and that the first stage, the stage of excitement, should be made as short as possible. But, in fact, the fulfilment of these requirements is made as difficult as possible by the crudity of the method of volatilization employed. The conditions are those of an essentially unstable equilibrium. Stable equilibrium would require, in respect to anaesthesia, that the condition should be such as would automatically tend to increase the concentration of ether inhaled whenever the patient tends to come out, and, contrariwise, to decrease the concentration whenever the patient is sunk too deeply under the influence of the drug. In fact, however, as soon as the patient emerges

to any extent, the volume of his breathing increases, and under the drop method more of the anaesthetic is blown away by each expiration. Thus the anaesthesia tends to be still further decreased. Contrariwise, when the patient is deeply anaesthetized, the volume of breathing grows less, and the tendency is for a more concentrated vapour to be inhaled. The latter tendency is met by the watchful anaesthetist decreasing the rate at which the anaesthetic is dripped upon the mask. But it is far more difficult to meet the situation when the patient is excited and struggling. Sometimes, during recurring periods of excitement, it seems as if the more liquid that is poured upon the mask the more it becomes chilled and frosted, the less the volatilization therefore, and the greater the difficulty of getting the patient under again. By such recurring periods of excitement, alternating with periods of unduly profound anaesthetic coma, the vitality of the patient is depleted to an extent equalled only by a severe haemorrhage. The risk of failure of respiration or circulation is increased, and a prolonged period of post-anaesthetic prostration and slow recovery is rendered inevitable. There is probably also an increased liability to a subsequent pneumonia.

I am aware that this picture is somewhat highly coloured, although I insist not too highly. I rather expect that one or more skilful and conservative anaesthetists will take up the cudgels and reply "Nothing of that sort occurs as I conduct anaesthesia." In my own country, at least, such remarks as I have here made have called forth this rejoinder. But my answer is ready. The fact that these conditions do not occur in your cases is due, my dear sir, or madam, to the great skill which you have acquired as the result of natural aptitude and unflagging care, and not to the inherent adaptation of a mask and dripping bottle to the production of a uniform or easily controllable mixture of vapour in air.

Perhaps I ought to confess here that I am not an anaesthetist by profession, but merely a physiologist with a special interest in respiration and in gases and other volatile substances, including the anaesthetics, of course, which enter the body through respiration. For twenty years I specialized in bird anaesthesia by the drop method. Out of a hundred or more cases a year I saw a mortality early in anaesthesia running usually around 30 per cent, and sometimes higher. I was then teaching physiology, and I felt that medical students could not have a more valuable experience than to have undergone the trouble and anxiety of an anaesthetist with a bad case, and that even to have had a "death on the table" was very instructive for them. Of course, I reprimanded them and sent them away in disgrace whenever a fatality occurred, saying to them "It is not allowable for you to report, I have killed that patient, give me another!" Let me explain, however, that the patients in question were not cats or occasionally dogs, which were intended for experiments on blood pressure. It seemed to me that it was well worth while for these future medical men to have an experiment delayed and to have to buy another animal, for the sake

of seeing how disastrously the vital mechanism may be affected by badly administered anaesthesia.

While those young men thus learned the elements of anaesthesia I utilized the opportunity to study anaesthetists. I am convinced that they made no errors that are not inherent in the drop method, or that are not made to some extent by all who use it. They merely made these errors much more frequently, more acutely, and on subjects which, being smaller and more excitable than human patients, are more readily and more obviously affected deleteriously.

Importance of Control of Breathing

What, then, is it that an unskilful anaesthetist does? Or, contrariwise, what are the errors which the skilled anaesthetist instinctively avoids? To put the matter in a single short statement, which I shall spend the remainder of this hour in elaborating, the whole difference between good and evil in anaesthesia lies in this: the capable anaesthetist with suitable apparatus and technique controls respiration to his purpose, or adapts his administration to the patient's respiration. The incapable anaesthetist, on the contrary, is constantly struggling with a respiration over which he has neither intelligent nor instinctive control; he is like the nervous driver of a horse, or, if he is more up to date, of a motor car which alternately runs away with him and stalls. What I shall here say applies particularly to the use and effects of ether, for chloroform, formerly extensively used in America, has, I am glad to say, been almost entirely discarded.

Respiration is a function of great variability. Its rate may vary from four or five times a minute to twenty or thirty or more. The volume of air breathed may vary from 5 litres a minute to 30 or 50 or more. It is unfortunate that respiration is usually thought of in terms of rate. The really important quantity is the volume of air breathed in a minute. This is particularly true with relation to anaesthesia, for the quantity of the drug that the patient receives is the product of the volume of air breathed and of the concentration of the vapour mixed with the inhaled air. Let us say no more of the rate of breathing therefore, but let us fix our attention on the volume a minute.

The significance and relations of the volume of air that a man breathes were first clearly grasped and explained by Haldane.¹ The interpretation which he gave of this matter has been one of the most important contributions that modern physiology has made to the science and art of medicine. It has been the foundation of the developments in many important clinical fields, among others that of anaesthesia. It has been particularly appreciated, and its originator honoured, in America. In fact, in delivering this lecture, I come as one of Haldane's disciples to preach an application of his doctrine in the land of the prophet of modern science who is its author.

The principle is simple. Carbon dioxide is produced in the body by the same process by which oxygen is consumed. The supply of oxygen has relatively little immediate influence upon respiration. The administration of pure oxygen gas never acts as a stimulant. Carbon dioxide, on the contrary, is the normal stimulant and regulator of breathing. The amount, or, more exactly, the pressure, of carbon dioxide in the air in the lungs, and thus in the arterial blood flowing from the lungs, acts upon the respiratory centre so precisely that in normal life the volume of air breathed is kept in almost exact proportion to the amount of carbon dioxide. Even during the tenfold variation of carbon dioxide production during bodily rest and in vigorous muscular work, the proportion of respiration to the amount of its gaseous stimulus is maintained. In other words, the lungs are automatically ventilated so that the air which they contain has, under all normal conditions, a content of a little more than 5 per cent of carbon dioxide. This concentration of carbon dioxide is also one of the prime factors in the acid-base balance of the blood and tissues. It is itself the chief acid in this balance, and it controls indirectly, but effectively, the amount of the alkali in use in the blood.

Suppose now that a nervous patient is anaesthetized.

His anxiety has caused overbreathing and an abnormal depletion of the carbon dioxide in his lungs and blood, the condition of *respiria*, and other disturbances of function. Suppose that the first stage of anaesthesia is prolonged, a stage in which the exciting effect of an insufficient concentration of anaesthetic in the blood often causes excessive breathing and further depletion of the body's normal store of carbon dioxide. I am speaking now particularly of ether administered by the drop method. Finally a sufficient amount of the drug is administered to produce full anaesthesia. The sensitiveness of the respiratory centre is thereby reduced to normal, or, if the anaesthesia is profound, it is reduced far below normal. Respiration may then fail temporarily, and it is to be noted that this failure is not merely the result of what the anaesthetist has done in the minute preceding. It is rather the resultant of all that the patient has been through up to this time. The excessive breathing has reduced the carbon dioxide and has thus decreased the normal stimulus for respiration. It has finally caused an excessive inhalation of the anaesthetic vapour, and thus reduced the sensitiveness of the respiratory centre much below normal. There is therefore a simultaneous decrease both of the stimulus and of the sensitivity of the centre. Respiration inevitably stops, and with it ceases the supply of oxygen to the blood, and so to the brain. Thus to *respiria* is added *anoxaemia*. If respiration is restored, the *anoxaemia* leads to another period of excessive breathing, and so to an intensification of *respiria*—a vicious circle of increasing velocity.

The Control of Anaesthesia

The practical problems of anaesthesia are uniformity of administration, rapid induction and termination, prevention of *respiria* and *anoxaemia*, and preservation of the patient's vitality generally. These problems have been attacked with marked success in America during the past decade. Our anaesthetists have asserted the importance of their work and have brought our surgeons to realize, as they formerly did not, that the anaesthetist plays a part, for good or ill, in the outcome of every major operation, second only to that of the surgeon himself. From being a matter of dead routine, anaesthesia has become a field of active study and progress. The national and local associations of anaesthetists hold meetings and publish discussions and researches which testify to the live interest and vigorous development in their field. But the particular aspect of this growth to which I wish to call attention is the invention of apparatus for administering the various forms and combinations of anaesthetics.

These apparatus enable the anaesthetist to administer nitrous oxide, ether, ethylene, sometimes even acetone, and other new anaesthetics, in any sequence or combination, with oxygen pure or combined with any percentage of carbon dioxide. It is particularly noteworthy that such provision is made for volatilizing ether that it is administered as a vapour. There is also in nearly all such apparatus a rebreathing bag or bags, and various valves and other devices for estimating the volume of the flow of the gases in and out of the bag, and also the volume of the patient's breathing. Some of these apparatus are, indeed, quite unnecessarily or even appallingly complex, but they give the anaesthetist a far greater control over conditions than he has ever had before. Nearly every prominent anaesthetist has a special apparatus which he has devised, and the clinical journals are full of advertisements of these devices, thus testifying to the extent to which their use has already grown.

Only the main features common to most of these apparatus and approved by almost universal experience concern us here. The primary features, in my opinion, are the rebreathing bag and such accessories as a cylinder of compressed oxygen, another of carbon dioxide, pure or diluted with oxygen, and the valves for their control. As regards this bag, experience has shown, in confirmation of theory, that nothing contributes so much to uniformity of anaesthesia as properly adjusted rebreathing. Our lungs are themselves a rebreathing apparatus, especially fitted to prevent fresh atmospheric air from coming in contact with the blood as it flows through the pulmonary vessels.

Suppose that the lungs had only the capacity of the breath and were emptied by each expiration, then at each inspiration the gaseous contents of the lungs would be virtually atmospheric air, and the blood would be momentarily greatly over-oxygenated. Similarly by the end of each expiration the air in the lungs would be so vitiated that the blood would be inadequately oxygenated. The faces of our friends would go blue and pink a dozen times a minute. Instead of this truly alarming spectacle, Nature has arranged that the lungs constantly contain 3 to 5 litres or more of air, of which only about a tenth is thrown off at each respiratory tide. This fraction is replaced by the same quantity of fresh air, which is immediately mixed with the stationary air. Accordingly, in the successive phases of each breath, the composition of the air in the lungs normally varies so little that the oxygen and carbon dioxide rise and fall by only two or three tenths of 1 per cent.

By following Nature in this regard, anaesthetists have found that the addition of a rebreathing bag of 4 or 5 litres to the volume of the stationary air of the lungs is advantageous. The total contents of lungs and bags are thus about 8 litres, and the variations in the composition of the air are reduced to half what they would be in the lungs alone. This is true even when a volume equal to the whole volume of the tidal air escapes from the bag at each expiration, and is replaced by fresh air or oxygen. The equalizing and conserving effects are even more marked when the volume discharged and replaced is less than the tidal volume by a third, a half, or even two-thirds.

This is the main point in the now well established principle of enlarging the stationary air of the lungs by the addition of a rebreathing bag. It requires, however, that oxygen from a cylinder attached to the apparatus shall be fed into the bag instead of merely atmospheric air. In order to be managed in the best manner, the apparatus must have a sufficiently accurate device for measuring the flow of oxygen, so that the anaesthetist knows within a small fraction of a litre how much oxygen he is feeding in each minute. The apparatus should also afford at a glance a quite approximate indication of the volume of the breath, and thus, from the volume and rate, a close estimate of the respiratory volume a minute. Furthermore, there must be, and on all the apparatus that I have seen lately there is, some arrangement for volatilizing ether, so that the anaesthetist can feed the vapour to the mask over the patient's face, or into the rebreathing bag, instead of handling merely a liquid, which may or may not volatilize completely and immediately. Such a device is essentially similar to the carburettor in which petrol is volatilized in an automobile—a fact full of practical suggestion for those with a turn for invention or adaptation.

Use of Carbon Dioxide with Anaesthesia

Finally, there is a feature in an increasing number of these apparatuses, and in the technique employed by an increasing number of the most skilful and intelligent anaesthetists, to which I wish especially to direct attention. It is a cylinder of a mixture of oxygen and carbon dioxide. The amount of carbon dioxide, the percentage added to oxygen, is still variable. On physiological grounds and in order to play safe, I first recommended about 5 per cent of carbon dioxide in 95 to 99 per cent of oxygen.² But one anaesthetist after another has used stronger and stronger mixtures with increasing advantage, until now some of the most competent tell me that 25 per cent carbon dioxide in 75 per cent oxygen is the mixture which affords them the most perfect control of respiration. Of course, it is not used straight, but is added to air or to oxygen from another cylinder. It then allows any degree of stimulation, and in fact it enables the anaesthetist to exercise an absolute control of the patient's breathing. Thus at the initiation of anaesthesia before nitrous oxide, or ethylene, or ether vapour is turned on, full deep breathing may be induced. Then the anaesthetic is added, and full anaesthesia is induced almost instantaneously. The stage of excitement is virtually eliminated. During anaesthesia the breathing can be allowed to decrease as it does under the full effects of ether and ethylene, or it can be increased by throwing into the breathing bag a moderate amount of the carbon

dioxide-oxygen mixture. Finally, at the termination of the anaesthesia, the supply of anaesthetic is shut off, the breathing bag is emptied or disconnected, and by mixing some of the carbon dioxide-oxygen with the air which the patient inhales vigorous breathing is stimulated for a few minutes, and the anaesthetic is quickly ventilated out of the patient's blood. Consciousness returns with extraordinary rapidity, although enough of the anaesthetic still remains in out-of-the-way parts of the body to induce the patient to sink into a condition approximating normal sleep, after removal from the operating table to his bed.

The principal advantages of modern anaesthetic apparatus over the mask and dropping bottle are, then, as follows:

- (1) Ether is fully vaporized before it is administered. This is advantageous, not only for the reasons already stated, but also because the deleterious cooling effect of ether, when vaporized close to the patient's face, is thus eliminated.
- (2) The use of rebreathing apparatus affords a far more uniform concentration of the anaesthetic vapour than is attainable in any other way. The contents of the bag should be so enriched with oxygen that its supply and concentration are always equivalent, or more than equivalent, to that in atmospheric air. The rate at which the contents of the bag are renewed is then adjusted to keep the pressure of carbon dioxide at that concentration which will afford the amount of respiration desired.
- (3) The use of carbon dioxide mixed with air or with oxygen furnishes the anaesthetist with the means of dominating respiration and of using this function for the purposes of rapid induction, smooth administration, and rapid termination of anaesthesia. He is no longer under the necessity of struggling with unsteady breathing, while the vitality of the patient melts away under his hands. Nothing in my observation is more striking than the differences in the appearances of patients anaesthetized in two different ways. Those of one group were etherized by the open drop method in the usual fashion, and were then left to hours of subnormal breathing, cyanosis, nausea, acrimonia, and anoxaemia. In contrast to these conditions are the rapidity of the return of normal functions in patients who have had uniform anaesthesia, rapid elimination of the anaesthetic, and a restoration of their store of carbon dioxide sufficient to ensure normal breathing, and therefore a normal oxygenation of the blood, during the hour following anaesthesia.

Other Uses of Carbon Dioxide

The use of carbon dioxide as a means of controlling respiration is not confined to the field of anaesthesia. It applies equally well to other scarcely less important problems. Several anaesthetists of my acquaintance have told me of their success in overcoming the asphyxia of the newborn by a brief inhalation from a cylinder of mixed oxygen and carbon dioxide. The last case that I learned of was that of a baby which persistently refused to breathe spontaneously until its lungs were inflated a few times with 25 per cent carbon dioxide and 75 per cent oxygen. Then it started breathing on its own account. In fact, it could not very well do otherwise, if it had any respiratory centre at all. At the last report, some days later, it was breathing as if it intended to continue for a full life term of three-score years and ten.

Another very practical use to which the inhalation of carbon dioxide has been put is in the treatment of alcoholic intoxication. This is a matter both of benefit to the patient and of a very large saving of expense in a large city hospital. Alcohol of all varieties is volatile. Common experience and the sense of smell teach us that even in quiet breathing some of it may be exhaled in the breath. Ethyl alcohol is burned in the body to a certain extent but methyl alcohol, which now is contained in some cheap liquors, at least in America, is not burned. It is very slowly excreted, and if it accumulates in the body it is extremely poisonous, causing optic atrophy and thus many cases of permanent blindness. Such patients may occupy hospital beds and be a source of expense for weeks. On the other hand, it is found that by means of simple and inexpensive apparatus for administering carbon dioxide mixed with air, which is also very cheap, even a comatose alcoholic may be made to ventilate the alcohol out of his blood through

his lungs in the course of an hour or so. He can then be discharged from the hospital sober and well the next morning.

Still another and even more important use of carbon dioxide as a stimulant for respiration has been developed in connexion with carbon monoxide asphyxiation. Such cases occur frequently in every city where the amount of carbon monoxide in the public gas supply is allowed to rise above the minimal amount. They occur also frequently among the men in the city fire brigade, for the smoke from a burning building usually contains considerable amounts of carbon monoxide. Carbon monoxide asphyxiation is best known perhaps as the result of explosions and fires in coal mines. In the blood of the victim the haemoglobin is so far combined with carbon monoxide that its capacity to transport oxygen is seriously diminished. As Haldane showed, oxygen will drive the carbon monoxide out again and restore the normality of the blood. But as Haggard and I have shown, in addition, an asphyxiated man breathes so poorly that oxygen is not adequately inhaled when administered. Accordingly we have introduced very widely in America, and to some extent on the continent of Europe also, the use of oxygen to which 5 per cent of carbon dioxide has been added. This mixture must be administered with a properly devised inhaler, one which allows a very large volume of breathing, in order to produce the best results. The great increase of breathing, which the carbon dioxide in the mixture stimulates, causes the blood in the lungs to be flushed and flooded with oxygen, by which the carbon monoxide is rapidly displaced.²

This matter may seem somewhat apart from anaesthesia. But there is one point in connexion with it which has a special bearing here. It is the fact that persons primarily asphyxiated, and left to recover without such treatment, very frequently develop pneumonia. In fact, in the past a considerable percentage of all deaths, primarily due to asphyxiation, have been the immediate consequence of a secondary pneumonia. On the other hand, patients who soon after asphyxiation have been treated with the oxygen and carbon dioxide mixture not only recover rapidly from the asphyxiation, but are also relieved of the danger of pneumonia. There is considerable ground for the claim that a similar elimination of post-anaesthetic pneumonia is afforded by the use of oxygen and carbon dioxide at the end of each surgical operation.

The Absorption, Distribution, and Elimination of Ether

So much for the application of the principles of respiration to the clinical side of our subject. Now let us consider some of the results that have come from recent investigations in the laboratory, but which are not yet fully realized by anaesthetists. The work to which I wish particularly to refer was carried out a couple of years ago in my laboratory at Yale University by my associate, Dr H. W. Haggard.⁴ It dealt with the principles underlying the absorption, distribution, and elimination of ethyl ether. It has, however, a wider application even than this broad field, for the same principles apply to any gas or vapour whatever that may be inhaled and that is taken up by the blood and by the tissues of the body in simple solution. A similar study of the absorption, distribution, and elimination of nitrogen was made some years ago by Haldane, Borecott, and Damant⁵ in connexion with their important investigation on the prevention of compressed air illness.

The determining characteristic of each gas or vapour is its solubility, for the coefficient of solubility determines the distribution, or equilibrium, between the vapour in the lungs and the solution of the substance in the blood flowing through the lungs. Secondly, and much more slowly, it determines the concentration in the tissues. The more soluble the substance the more the body will finally take up, but the longer the time required to reach saturation. Both the amount held in the blood and in the tissues at the point of saturation and the rate of absorption are directly proportional to the concentration in the inhaled air. For any one gas or vapour such as ether the time is the same for all concentrations to reach the full saturation corresponding to that concentration, or any given percentage of that saturation. In regard to absolute amounts,

therefore, the initial rate of absorption when a high concentration is inhaled is proportionally greater than when the concentration in the air inspired is low.

The solubility, or coefficient of distribution between blood and air in the lungs, is a factor also in the elimination of a gas or vapour that has been absorbed. It is of fundamental importance both for the induction and for the termination of anaesthesia.

The One Essential Condition for Anaesthesia

Haggard's experiments have demonstrated that there is at all times equilibrium in respect to ether between the air of the lungs and the arterial blood. Furthermore, the circulation through the central nervous system, and especially the brain, is so large that the concentration of ether in the nerve centres becomes almost immediately the same as that in the arterial blood. This uniformity of the pressure of ether in the lungs, blood, and brain is similar to that which we know from the work of Haldane and his collaborators holds true of carbon dioxide. The pressures of carbon dioxide in the lungs and in the brain are equal and so, too, of ether.

These are facts not only of great theoretical interest but of direct practical importance. Haggard has demonstrated that the condition of surgical anaesthesia depends on nothing else but the concentration of the anaesthetic in the central nervous system. The degree of saturation of the rest of the body has no direct influence on anaesthesia. Formerly we had supposed—and certainly superficial appearances during the induction of anaesthesia suggest—that a certain time is required to saturate the body up to the point at which the state of anaesthesia occurs. This appearance is fallacious. We can, in fact, calculate the length of time that it would take for the body to become even half saturated. It would be about two and a half hours.

Now that we know that the sole condition for full surgical anaesthesia is the concentration of ether in the brain, and that this is immediately determined by the concentration in the lungs and blood, we see that theoretically it is possible to carry a man from full normal consciousness clear into full surgical anaesthesia in a period of not more than two or three minutes. This is not only theoretically possible, it is actually practised, and it is of great advantage to the patient.

The coefficient of distribution of ether between the vapour phase at body temperature and its solution in blood is 15. This means that there is equilibrium when a certain volume of the blood contains 15 times as much ether by weight as an equal volume of pulmonary air. The anaesthetic tension of ether is 3.7 to 4 per cent of an atmosphere, which comes to about 12 grams of ether per litre of blood. The anaesthetic concentration is probably the same for everyone even for the most recalcitrant old alcoholic case. The reactions prior to attainment of anaesthesia, and the amount of difficulty in administration which they produce, are the real variables as between different patients, and not the concentration at the point of full anaesthesia.

Technique for Rapid Induction of Anaesthesia

The practical problem facing us, then, is that of how other can be volatilized and the vapour passed into the lungs rapidly enough to raise the concentration in the arterial blood immediately to the full anaesthetic amount. Obviously some device far more efficient than a mask or cone and dropping bottle is needed to vaporize the amount of ether needed. But that is only the mechanical side of the problem. Owing to the high solubility of ether in blood fifteen out of every sixteen parts of ether drawn into the lungs at first pass into the blood. Haggard and I have recently shown that the circulation in a normal man is much larger than has generally been believed heretofore. About the same volume of blood flows through the lungs in a minute even during rest, as the volume of air normally breathed in that state. Owing to the dead space (the mouth, trachea, and bronchi) only two thirds of the air breathed reach the lungs. So it follows that, in order to induce full anaesthesia within two or three minutes with no more than normal breathing, the concentration of the ether vapour inhaled would have to be extremely high.

Extremely high concentrations of ether vapour have, in fact, frequently been used, especially in Germany, during the initiation of anaesthesia. But such concentrations have an irritating effect upon the lungs, especially when the vapour is very cold, and are objectionable on other grounds also. So the problem of rapid, safe, harmless induction resolves itself into this: How can a large amount of ether, 6 or 8 grams a minute, be introduced into the pulmonary blood? Or, to restate the question: How can 9 to 12 grams of ether a minute be introduced as vapour into the inspired air without increasing the concentration of ether in this air to appreciably more than 7 or 8, or at most 10, per cent vapour?

These questions almost answer themselves. Obviously, to introduce a large amount at a comparatively low concentration is possible in one way only—that is, by means of a large volume of breathing. The principles to which I have already referred, controlling the absorption of a gas or vapour, teach us that any relatively slightly soluble volatile substance is absorbed, and eliminated again, nearly in proportion to the circulation—that is, to the volume of blood flowing through the lungs per minute. On the other hand, these principles demonstrate that a quite soluble vapour, such as that of ether, is absorbed almost in proportion to the volume of air breathed, or, more exactly, to the pulmonary ventilation. Thus if fifteen sixteenths of all the ether vapour drawn into the lungs at first are taken up by the blood, it is only necessary to increase the volume of breathing so that the necessary absolute amount of ether will be drawn into the lungs in a sufficiently large volume of air. Thus a large absorption is effected without allowing the concentration in unit volume of the air to rise high enough to irritate the passages and chambers of the lungs. Thus we are again led to see the advantage of stimulating respiration, by means of carbon dioxide, up to several times the ordinary resting volume, and then running in a sufficient concentration of fully vaporized ether to produce in the shortest possible time the concentration of ether in the blood, and thus in the brain, necessary for full anaesthesia.

Relation of Respiration to Blood Alkali

One of the topics which has excited the greatest interest during recent years in the borderland between physiology and clinical medicine has been the balance of acids and bases in the blood and other fluids of the body. The resultant of this balance is the so-called hydrogen ion concentration. Modern chemistry teaches that this is the essential element in what we formerly called acidity, and that it is a factor in most of the reactions of substances in solution. It has become clear that the concentration of hydrogen ions in the blood has a normal value, and that the automatic processes of the body tend to adjust it to this value. It is thus another of the vital constants, such as body temperature, arterial pressure, the amount of salt and of sugar in the blood, and the other conditions whose uniformity constitutes health. From the standpoint of physiology, disease may be defined as a disturbance, or a perversion to an abnormal value, of one or more of these normal vital constants.

The two chief factors in the acid-base equilibrium of the blood are (1) the amount of alkali in use in the blood, which is chiefly the sodium bicarbonate of the plasma, and (2) the pressure of carbon dioxide maintained in the blood by respiration, and thus the amount of carbonic acid in simple solution. As is well known, this equilibrium tends to be disturbed in anaesthesia. The blood alkali after a prolonged and difficult anaesthesia may be reduced to an extent which is recognized as a serious departure from the normal for health. It is the condition now, rather loosely, called acidosis.

The term "acidosis" has long been applied to such conditions as occur in acute diabetes, and the post-anaesthetic state has obvious points of similarity to diabetic coma. The word "acidosis" suggests that the chemical condition is due to poisoning by acids resulting from disturbed metabolism. We are coming to realize that this conception is far too simple and too crassly mechanistic.

But it still exerts a great influence, and the hold which it has upon medical thought was greatly strengthened by the introduction of the term and conception "alkaline reserve" to signify the blood alkali, and particularly the sodium bicarbonate of the plasma. Thus, when it was found that in conditions of so-called "acidosis" the blood alkali was below normal, this fact seemed to be a direct demonstration of the idea that the alkali had merely been partially neutralized by acids.

I have recently shown⁷ that there are very serious discrepancies in this general conception. For instance, the real alkaline reserve of the blood is now known to be composed to only a quite small extent of the plasma bicarbonate, it is to a much greater extent the haemoglobin alkali of the corpuscles. Thus the mere addition of a moderate amount of acid to blood does not reduce the plasma alkali correspondingly. Even when an amount of lactic or other strong acid is found in the blood corresponding to the lowering of the bicarbonate, this fact does not justify the conclusion that the lowering is due to neutralization by the acid. Most of the acid is neutralized by alkali from the corpuscles, and some additional factor must be looked for to explain the greater part of the lowering of the plasma alkali. Such a factor was found by Haggard and myself in respiration.⁸ When the lungs of an animal were ventilated excessively by means of artificial respiration an excessive amount of carbon dioxide was removed from the blood. This removal would leave the blood alkali in relative excess, and we found that a compensatory decrease occurred. Presumably this was due to the passage of alkali from the blood into the tissues. Similarly, when we depicted respiration by means of morphone, and then administered an inhalation of air to which 8 or 10 per cent of carbon dioxide was added, we found that the carbonic acid of the blood was at first raised out of balance to the alkali. But under these conditions physiological readjustment developed, so that a considerably increased amount of alkali was, as we expressed it, "called into the blood" in the course of half an hour. These and similar experiments reveal to a very considerable extent the normal mode of control of the amount of alkali in use in the blood. The living body is not merely a beaker containing a slightly alkaline solution, in which the amount of alkali is determined by the amount of acid that is spilled into it, or by the excess or base in the food. On the contrary, this factor in the vital economy is regulated physiologically, and in this regulation respiration is one of the prime elements. When respiration is excessive, the pressure of carbon dioxide in the blood is lowered and alkali tends to pass out of the blood, when respiration is depressed, the pressure of carbon dioxide in the blood is increased and tends to call more alkali into the blood.

With this conception to justify us, Haggard and I turned to the study of the blood alkali in patients following prolonged anaesthesia. We found, in agreement with others, that the amount was often much below normal, and that it tended to rise only slowly, and in the course of many hours. We then tried the effects of inhalations of air and 8 or 10 per cent of carbon dioxide, or whatever concentration was necessary to produce a distinct effect upon the visible physical condition of the patient. In all such cases we obtained, not only a rapid elimination of the anaesthetic and a return of a full normal circulation, together with relief of cyanosis and recovery of a pink skin colour, but also a rapid return of alkali to the blood, so that in the course of half an hour this element in the balance was back at very nearly its normal value.

For a considerable time we met with criticism and opposition, especially from biochemists, who alleged that a low blood alkali is a definite indication of "acidosis"—that is, of an excess of acids in the blood, and that the administration of carbon dioxide was therefore absolutely contraindicated. Then view of the matter was that the post-anaesthetic state is similar to that following an asphyxia, and that the condition of the blood may be regarded as essentially an "asphyxial acidosis." I accept these premises, but not the conclusion. Facts, both experimental and clinical demonstrate that carbon dioxide, both after

anaesthesia and after asphyxia, instead of exacerbating the condition called "acidosis," tends to relieve it.

I am inclined to the view that the lowering of the blood alkali by anaesthesia is to be explained as a secondary result of acapnia, the excessive blowing off of carbon dioxide, rather than as due to an excessive production of acids. In fact, I doubt whether such a condition, as the term "asphyxial acidosis" implies, occurs even in poisons overcome by carbon monoxide. The orthodox fundamental conception implied by this term is probably erroneous. But I prefer to recognize that in this whole field of tissue respiration we have still a great deal to learn. I have tried to avoid the error of overthrowing a false conception by substituting for it another which might ultimately prove equally misleading. It would be a mistake to overemphasize theoretically the direct benefit of an increased pressure of carbon dioxide in the blood and tissues. Acapnia is not the whole story. Oxygen is also a factor in the vital economy, and the inhalation of carbon dioxide, by improving respiration, causes both a greatly improved oxygenation of the blood and a greater readiness in the blood to give off oxygen to the tissues.

All theorizing aside, I take my stand on the absolutely demonstrable fact that inhalation of air or oxygen to which a considerable percentage of carbon dioxide has been added is of very great benefit, in fact, is usually brilliant in its effects, alike after a prolonged anaesthesia and after asphyxiation.

Haemorrhage and Respiration

Closely related to the disturbances and hazards involved in anaesthesia are the effects of haemorrhage. The parts played by anaesthesia and by haemorrhage in the depression of vitality, or more extremely in the degree of shock, are so much alike that it is often difficult to estimate their relative contributions. A few words on haemorrhage may therefore be in order, even at the end of a paper into which I fear too many topics have already been introduced.

What is haemorrhage physiologically? In other words, what is the intermediate factor through which a decrease of blood volume leads to shock and death? Physiologists would, until recently, have answered unquestioningly and unreservedly that this factor is lowered arterial pressure. Thus the chain of causation would run: loss of blood, decreased blood volume, lowered arterial pressure, shock. During the war this conception was developed practically and therapeutically by one of the most eminent of British physiologists, the late Professor Sir W. M. Bayliss.² He introduced the so-called gum saline solution for purposes of infusion, because he found that this solution does not pass out of the blood vessels as normal saline alone does. It replaces the lost blood with a medium by which arterial pressure is quite well restored and maintained.

It was later shown by a number of investigators, especially in America, that gum saline solution has distinct toxic properties, and that it is not a satisfactory substitute for a transfusion of blood from a donor. But that matter is apart from the point to which I wish to call your attention, and which is as follows. Investigations in my laboratory,³ also during the war, led to quite a different conception of haemorrhage. According to this view, haemorrhage is essentially asphyxia. It is the loss of red blood corpuscles which is the critical initial factor. In consequence of the loss of corpuscles the capacity of the blood is invalidated in at least three respects: (1) its capacity to transport oxygen from the lungs to the tissues, (2) its capacity to transport carbon dioxide from the tissues to the lungs, and (3) its capacity to maintain the normal acid-base balance in the blood. These are the three functions which we now recognize that the haemoglobin of the corpuscles normally enables the blood to perform. Accordingly, a series of symptoms and conditions develop after haemorrhage closely analogous to those occurring under carbon monoxide asphyxia. Excessive breathing, induced by oxygen deficiency in the brain and tissues and culminating in air hunger, is a significant phenomenon. We found, in fact, that quite soon after a large haemorrhage in an animal we

could foretell the final outcome by means of two measurements of the volume of breathing spaced about an hour apart. If the volume of breathing held steady, recovery almost invariably followed; if, on the contrary, it increased progressively, there was almost invariably a fatal termination.

For the anaesthetist who is asked to pilot a patient through an operation after a haemorrhage of unknown amount, a measurement of the volume of breathing would, I believe, afford an indication of the risk more significant than the arterial pressure. It would tell him whether he should first insist on a transfusion of blood. It would warn him of the special need to keep up the oxygen supply and to avoid both acapnia and anoxaemia with the utmost care. In fact, if the conception is correct that haemorrhage is essentially a form of asphyxia, the observation and control of respiration which, as I have here tried to show, are essential to skilful anaesthesia should be extended so as to afford an understanding and a means of counteracting to a large extent the effects of haemorrhage as well.

SUMMARY AND CONCLUSIONS

The essentials of good anaesthesia are rapid induction, uniform concentration of vapour, and rapid termination. In the drop method of administration the vaporization of a liquid anaesthetic is often irregular. A more reliable and more uniform method of producing the vapour in proper concentration in air is desirable and is afforded by many of the forms of apparatus introduced recently.

The use of a controllable amount of rebreathing is also advantageous in the maintenance of a nearly uniform concentration of the anaesthetic vapour and of oxygen and carbon dioxide.

An almost complete control of respiration is afforded the anaesthetist by the use of carbon dioxide mixed with oxygen. By its use rapid induction and termination of anaesthesia and any desired volume of breathing and depth of anaesthesia are at his command.

It is not the amount of anaesthetic in the body which determines anaesthesia, but that in the nervous system. The amount in the nervous system at all times follows closely the concentration in the arterial blood, and the concentration in the arterial blood is in turn determined by the volume of the breathing and the concentration of the anaesthetic vapour in the air inhaled. Thus control of respiration is the essential element in the control of anaesthesia.

The use of carbon dioxide as the means of controlling respiration applies also to asphyxia of the newborn, alcoholic intoxication, carbon monoxide asphyxia, and related conditions.

The restoration of an approximately normal content of carbon dioxide in the lung air and in the blood and tissues of the body at the termination of anaesthesia probably tends strongly to prevent the development of a post-anaesthetic pneumonia. It is also a means of restoring a nearly normal acid-base balance in the blood.

Finally, the close similarity of haemorrhage to asphyxia renders it another of the elements whose effects are to be understood and controlled through the application of the principles of the physiology of respiration.

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HAEMORRHAGE IN ASSOCIATION WITH PREGNANCY, LABOUR, AND THE PUERPERIUM*

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I HAVE divided the subject of obstetric haemorrhage into four categories

- 1 Haemorrhage in early pregnancy
- 2 Haemorrhage in late pregnancy and early in labour
- 3 Haemorrhage during the third stage of labour
- 4 Haemorrhage post partum

I do not intend attempting to bring forward anything new in this well worn subject, but to give a general revision, necessarily brief, of the whole subject

I HAEMORRHAGE IN EARLY PREGNANCY

By haemorrhage early in pregnancy I mean up to the twenty-eighth week, the usually accepted period of viability. Such haemorrhage may be due to menstruation during the first two months. After the ovum has settled in *utero* the mucosa of the uterus takes on decidual characteristics, and the decidua consists of three parts—the decidua vera, reflexa, and serotina. The decidua vera and reflexa do not meet and fuse till the third month, so that till that date there is a potential menstruating cavity. This occurrence is rare, and less likely to cause the patient to seek advice than to lead to a miscalculation of the time of onset of labour. Bleeding may be due to the presence of tumours of the cervix, chiefly polyp or carcinoma. It may be due to ectopic pregnancy. In such a case the usual history is that the patient has gone two weeks or so over her time and then started bleeding. Pain on the affected side is a constant symptom, and a decidual cyst of the uterus may be shed. The discharge is characteristically dark and thick. Vaginally an enlarged tube will be felt to the right or left of the uterus.

A tubal pregnancy may die and haemorrhage take place into it and produce a mole, without any serious symptoms save that the uterine haemorrhage continues. The pregnancy may be aborted from the limbril extremity, and remain in the peritoneum, often attached to the end of the tube, and causing the same results as in the last case. The tube may rupture into the layers of the broad ligament, causing haematoma with severe symptoms temporarily, or into the peritoneum, with sudden agonizing pain on the affected side, often fainting, increasing pallor and pulse rate, and falling temperature. This with a history of a missed period presents a picture difficult to mistake for any other abdominal condition. Per vaginam, a pelvic haematocoele, soft and boggy, will be felt in the pouch of Douglas.

The haemorrhage may be due to abortion, and commonly is. We speak of abortion as threatened and inevitable, and the distinction is often difficult to make. I regard abortion as inevitable when there is dilatation of the cervix together with pain and haemorrhage. If haemorrhage be the only sign, I have often known the pregnancy to proceed. For the threatened type absolute rest in bed till all haemorrhage has ceased for at least a week, with small doses of potassium bromide and no violent aperients, constitutes the treatment. In the inevitable, as soon as it is considered that the patient's general condition is suffering from the haemorrhage, and there is no sign of natural abortion taking place, it is best to evacuate the uterus. Up to the third month dilate to the size of the index finger, then remove the ovum with sponge forceps, and make quite sure with the finger in the uterus that evacuation is complete. Afterwards douche with a blunt curette, and pick in a little gauze till morning. I never feel satisfied

about a case unless I have actually had my finger in the uterus. By this means subsequent bleeding and possible sepsis from retained products of conception can often be avoided. After the third month the immediate evacuation of the uterus becomes a very dangerous operation, and the safest plan is to use T aylor's bag, a small elastic rubber bag capable of distension up to six compression of a Higginson's syringe. This bag, with the air expelled and folded up, may be introduced through the undilated or with sinus forceps. It is usually expelled in twenty-four to forty-eight hours and followed by the complete ovum. If not, there is now sufficient dilatation to render evacuation safe and easy. It is more certain and accompanied by less risk of subsequent sepsis than is picking.

In cases where some critical state of the patient may demand immediate evacuation, extreme caution in dilatation is necessary, and if the cervix shows the slightest tendency to split it may become necessary to perform hysterotomy. At all events I consider such an instrument as a Bossi's dilator is always dangerous, and should never be used.

A pregnant becoming molar may lie in the uterus for months without sepsis and often with slight bleeding only. This is the carneous type of mole. In hydatid mole the diagnosis is often difficult. Bleeding from a uterus which is of much larger size than the period of amenorrhoea would indicate, some toxemia, and the passage of hydatid material are the signs. The importance of extra-uterine thorough evacuation must be emphasized, on account of the risks of deciduoma malignum following.

II HAEMORRHAGE IN LATE PREGNANCY AND EARLY IN LABOUR

This group includes two very serious complications—namely, haemorrhage from a normally situated placenta in the upper uterine segment or accidental haemorrhage of two types, concealed and apparent, and haemorrhage from an abnormally situated placenta or placenta praevia in the lower uterine segment, when the haemorrhage is called unavoidable.

ACCIDENTAL HAEMORRHAGE

I first take accidental haemorrhage, which complication of late pregnancy and early labour is characterized by the very great difference in the severity of the symptoms exhibited by different cases. For the most part the symptoms are only slight and cease with suitable measures, but in a smaller number the symptoms are so severe that the case becomes the gravest class the obstetrician is called upon to deal with. Fortunately these severe cases are rare and seldom met with in general practice, but in the practice of a large maternity hospital, drawing abnormal cases from a very wide area, a considerable number are encountered, and it may be of interest and value to analyse a large number of consecutive cases, with the various methods of treatment adopted. There is nothing new or original to be described in the methods of dealing with such cases, and I merely give certain statistics, and the conclusions which may legitimately be drawn from them. For this purpose I have investigated all the cases of accidental haemorrhage admitted to the St Mary's Hospitals, Manchester, during the ten years 1906 to 1915 inclusive—253 cases altogether.

Diagnosis

The most important differential diagnosis is from placenta praevia, for, as I shall presently show, the strict line of treatment in placenta praevia proves one of the worst in cases of accidental haemorrhage. The central and marginal types of placenta praevia present no difficulty in diagnosis but the partial type, where just one edge of the placenta reaches the lower uterine segment, and is almost out of reach of the examining finger, presents a difficulty, and will be apt to be diagnosed as accidental haemorrhage. In such cases the haemorrhage will be slight, as the amount of placenta separated is so small, and it seems to me very likely that most of the slight cases of accidental haemorrhage are really of the above type, especially when the bleeding ceases untreated. It must be remembered that

* A post graduate lecture delivered at the St. Mary's Hospital Manchester March 1st 1924

this may be haemorrhage from the portion of a placenta in the lower uterine segment concurrently with that from a portion separated in the upper uterine segment, which may well account for some cases of placenta praevia not responding to orthodox treatment.

Apart from haemorrhage and inability to feel the placenta, a most important feature in accidental haemorrhage is the presence of albumin in the urine, probably in from 40 to 50 per cent of all cases. In the series under consideration the presence of albumin is recorded only in 51 cases—one-fifth of the whole—but I feel sure that this is due to the fact that the urine analysis was not noted. This brings up the point as to whether there is a predisposition to accidental haemorrhage in cases of toxic albuminuria or not. I incline to the belief that accidental haemorrhage is due to a diseased condition of the uterine wall, for failure to contract and retract after delivery is a notable feature of the condition. On the other hand, the actual bleeding into the uterine wall, and through it into the peritoneum and the broad ligaments, is suggestive of the haemorrhages found in cases of chronic Bright's disease.

In cases of placenta praevia the uterus almost invariably recovers after orthodox treatment, the uterus is healthy, and albuminuria is not a feature. A case of concealed accidental haemorrhage might simulate rupture of the uterus, but the history of absence of severe labour pains, failure to feel foetal parts, and the characteristic hard wooden feeling with extreme tenderness of the uterus, and possibly a greater enlargement thereof than is consistent with the period of amenorrhoea, render a mistake unlikely.

Symptoms

There are, of course, two types of accidental haemorrhage: one when the bleeding is visible, the external or concealed, the other when the bleeding is internal or concealed. It is not unusual to have both types coexistent.

In cases of revealed accidental haemorrhage bleeding in the later months of pregnancy or early in labour is found, and no placenta is to be felt in the lower uterine segment. In severe losses the characteristic signs of haemorrhage will be present. The coexistence of concealed haemorrhage is found out after delivery by the expression of huge dark clots before or with the birth of the placenta.

In concealed cases, with or without any external bleeding, the symptoms are those of internal haemorrhage with rising pulse, falling temperature, and anaemia. The uterus, from the presence of retained blood, may be larger than it should be for the period of amenorrhoea, and is particularly hard and tender.

Prognosis

In severe cases the outlook is bad, as the risk of post-partum haemorrhage is always great. Slight cases do well, often without any treatment at all except rest in bed. The concealed type is extremely fatal, and is one of the most serious obstetric complications met with. Blacker gives the mortality in accidental haemorrhage at the Guy's Hospital Living in Charity as 11.4 per cent in the mother, the foetal mortality is much higher. In my series of 253 cases there were 22 maternal deaths—a mortality of 8.6 per cent. It is a curious fact that 18 of these 22 patients died in the last three years of the series—1913, 1914, and 1915—when there was a great increase in the number of cases admitted suffering from this condition, and the cases were particularly severe and the concealed type was relatively common (Fletcher Shaw²). Of these 22 cases, 14 were of the concealed type, 4 were apparent, and 4 were of the combined apparent and concealed.

I will next consider the results of the present investigation.

Age—The average age of the patients was 33 years.
Parity—Twenty were primiparae, 233 were multiparae—that is a very large proportion of multiparae which is usual.
Maturity—Of the 253 cases, 155 were 8 months and over and 98 cases under 8 months. Of the 155 cases, 78 were at term of the 9th, 74 were at 7 and 7½ months.
Type—There were 203 cases of apparent haemorrhage, and 50 cases of concealed and concealed and apparent together.
Albuminuria was recorded in 51 cases only.
Mortality—Among the 253 cases there were 22 maternal deaths (8.6 per cent) and 196 foetal (176 stillborn, 20 died) a percentage of 77.

Treatment

In 19 of 109 slight cases the bleeding was arrested without obstetric treatment, and the patients were sent home undelivered and well to proceed to term if possible. The remaining 90 slight cases also received no obstetrical intervention and were treated by rest in bed the bleeding ceasing and delivery taking place naturally. They all recovered. Of the children, 45 were living and 45 stillborn. The remaining cases were treated by the methods shown in the table, which also gives the results to mother and child.

Results of Different Methods of Treatment

Treatment	No. of Cases	Mothers		Children		
		Living	Died	Living	Undelivered	Still born
Nil	109	109	0	45	19	45
Ruptured membranes	66	62	4	15	0	51
Plugging	23	22	1	3	0	23
Forceps	8	5	3	0	0	8
Version	20	13	7	4	0	16
Caesarean section and hysterectomy	16	10	6	1	0	15
De Ribes's bag	9	8	1	3	0	6
Vaginal hysterotomy	2	2	0	0	0	2

From the table we find that the method of treatment most commonly adopted was that of rupturing the membranes, applying a tight binder, and administering ergot or pituitrin. The number so treated was 66, and of these 4 died. With regard to these latter, the notes state that one was a bad cardiac case, one died almost immediately on admission, and the other two died of post-partum haemorrhage.

The method next in frequency was plugging the vagina with rupture of the membranes in 23 cases, one of which died. This patient had the packing in for some days before admission, and gangrene had set in. *Post mortem* the *B. aerogenes capsulatus* was found to have invaded most of the abdominal organs. Version was performed in 20 cases, with 7 deaths. Four of these cases are stated to have been moribund on admission. One was a case of eclampsia and died from this cause. The other two died of post-partum haemorrhage.

Caesarean section with hysterectomy was performed in 16 cases of severe concealed haemorrhage, and of these 6 died. All were in *extremis* on admission, and it may be considered lucky that 10 recovered.

Champetier de Ribes's bag was used in 9 cases, with one death.

Forceps application after manual dilatation of the cervix was resorted to in 8 cases, with 3 deaths.

Vaginal hysterotomy with delivery by forceps or version was performed in 2 cases successfully.

Summary of Results

Rupture of the membranes etc., a mortality of 8 per cent	
Plugging the vagina	4.3
Version	35.0
Caesarean with hysterectomy	37.5
Champetier de Ribes's bag	11.0
Forceps	37.5
Vaginal hysterotomy	0.0

It is to be remembered that in all those cases where obstetric treatment was adopted the condition of the patients was critical. Of those who died 20 were multiparae, 2 primiparae, 5 were at term, 17 were premature, 14 were severe concealed haemorrhage cases, 4 were apparent, and 4 were of the combined type.

Conclusions

It seems fair to draw the following conclusions:

1. Plugging, I know, is often regarded as the best treatment, especially for general practice. The drawbacks to it are that it may predispose to sepsis, but this largely depends on the material to hand and the assistance

available. At the Rotunda Hospital, Dublin (Hastings Twcedy³), it is the routine treatment for every case of accidental haemorrhage. As carried out in that hospital it is claimed that the pulsation in the uterine arteries is stopped by the method. The collateral circulation is, however, so free that plugging the vagina appears to me to be insufficient to effect this. The method has perhaps hardly been given a fair trial in Manchester. In the carefully packed cases that I have observed the plug has gradually become saturated and slippery with blood, and has eventually slid out of the vagina, the bleeding still continuing. In cases of partially concealed bleeding I cannot conceive that it is sufficient, and it is apt to give a sense of false security. I feel inclined to regard it as a good temporary measure to be adopted in cases of moderate severity, and only after the next method has been given a good trial.

2 Rupture of the membranes, application of a tight binder, and the administration of ergot or pituitrin has been and still is the method chiefly adopted in Manchester at St Mary's Hospitals. Four out of the 66 cases so treated died, they were in an almost hopeless condition on admission. This treatment is all that is necessary in most cases, it is simple to carry out, and is very largely free from the risk of subsequent sepsis. It is the method that appeals to me most of all for the average case where the patient is constantly under the practitioner's eye. Should he find that uterine contractions are not provoked, and that although external bleeding has ceased the patient does not improve, it is reasonably certain that the case is one of concealed bleeding also, and in many cases like this operation holds out the only hope, and then only if not too long delayed.

3 This brings us to Caesarean section, usually combined with supravaginal hysterectomy. I have had the opportunity of seeing most of the cases so dealt with in this series, and in all of them the uterus was sodden with blood, the broad ligaments were filled with blood, and there was free blood in the peritoneum. The uterus in all cases made no effort to contract after the Caesarean section, and so was removed. Fortunately these severe cases are very rare. In the present 253 cases there were only 14 concealed and 4 concealed and revealed combined, 16 were treated by Caesarean section and hysterectomy, and 6 died. Remembering the cases, I feel that it was a great matter for congratulation that 10 were saved. I am convinced that this method is the only one that holds out any hope for a case with rapidly rising pulse and falling temperature, a particularly hard uterus, possibly distended to a size greater than would be expected for the corresponding period of amenorrhoea, and very slight or no external bleeding to account for the patient's condition. Such cases are best in hospital, and even then the outlook is bad.

4 Version, such admirable treatment in cases of placenta praevia, is to be condemned in accidental haemorrhage. One-third of the cases so treated died, and those who did not were probably cases of partial placenta praevia.

5 Forceps application, like version, has really no place as a method of treatment for accidental haemorrhage.

6 De Ribes's bag was used in only 8 cases. It often fails to excite any contractions, and so necessitates some further treatment after it has been removed. Further, it is difficult to insert, and it is seldom at hand when required.

In brief, the average case of accidental haemorrhage is met by rupture of the membranes, a tight binder, and ergot. In slighter cases merely rest in bed suffices. Plugging the vagina may be combined with the above, but greatly increases the risk of sepsis, and may, if the doctor is obliged to leave the case for a time, disguise to the nurse the symptoms of concealed bleeding.

No rapid method of evacuation of the uterus is in these cases to be considered for a moment, unless it is feasible to go on to the performance of hysterectomy. For this reason both forceps and version are contraindicated in the treatment.

The absolutely and many of the partially concealed types of accidental haemorrhage are only to be treated by hyster-

ectomy, and are best in hospital, unless the home conditions are ideal.

PLACENTA PRAEVIA

I will now consider in a much more cursory manner some aspects of cases of placenta praevia which occurred in the same period of 1906 to 1915.

The number of cases admitted was 405, and of these 36 died, a mortality of 8 per cent.

Of the children, 251 were stillborn—that is, 61 per cent, further, of these 405 cases, only 102 were at term, and 301 were premature. Thus three-quarters of the children were premature on delivery.

There were only 42 primiparae in the series of 405 cases, showing the comparative rarity of the condition in first pregnancies.

Thirty-six patients died. Of these, 14 are recorded as having been moribund on admission, and only surviving for a very short time. It is, of course, to be expected that many such desperate cases are admitted, often after a long journey by ambulance. They are literally bled white and cannot be expected to rally. Ten cases died after version combined with extraction of the foetus. This line of treatment, which has as its aim the production of a living child, was tried for a brief period and has now been quite abandoned. The child being so often premature, there is little to be said for a method of treatment which places the mother's life in jeopardy also. Four cases died after dilatation and forceps extraction, which is only to be compared with version and extraction and has little to recommend it. One case died after version without extraction of the child, and may in all probability have been a case of accidental haemorrhage.

The remaining seven cases died from extraneous causes as follows. Two from eclampsia, one from each of the following complications—eclampsia, pneumonia, puerperal sepsis, a fibroid complicating labour, uterus ruptured after version, and one died under chloroform.

The Methods of Treatment

Eighty-one cases delivered themselves naturally. Version was performed in 220 cases, leaving the uterus to expel the foetus itself. Eighteen cases are recorded as living, version performed with extraction of the child. This figure is probably too low, and should include some of the cases simply recorded as version. De Ribes's bag was used in 26 cases. It has the disadvantages referred to under accidental haemorrhage. In 12 cases the vagina was plugged—a risky method from the point of view of subsequent sepsis, and not an efficient one. Seventeen cases were delivered with forceps, which method has all the disadvantages of version with extraction. Six were cases of breech presentation and a foot was pulled down. In 11 cases the membranes were ruptured. In 2 cases Caesarean section was performed.

Conclusions

The broad results of these figures, I consider, bring out the following points, which are now, of course, well established.

1 That when we have a living foetus at term, and in a case of central placenta praevia, especially in a primipara, Caesarean section is the operation of election. Version in a primipara at term, with the difficulty in dilatation of the soft parts of the parturient canal, is bound to be a troublesome proceeding, and the child is sure to be sacrificed. Caesarean section is undertaken with so little risk that a lippy result for both the mother and child can be practically promised.

2 In all premature cases the foetus is not to be considered. A foot must be pulled down and a weight attached to it. This invariably arrests the haemorrhage and gives the patient time to recoup her loss of blood and to have salines and restoratives administered to her. The uterus in the meantime will recover, expel the child and the placenta, and this without further loss of blood. If the child is born alive, it is all to the good.

3 There are a few slight cases of marginal and partial placenta praevia where rupture of the membranes suffices

to stem the bleeding, and delivery may take place naturally. Should the bleeding continue, version must be undertaken, and it is a much more difficult operation after the waters have been drained away.

One may almost say that the treatment of placenta previa resolves itself into version and allowing the uterus to expel the foetus, with two exceptions. First, in a primipara at term with a central placenta praevia, Caesarean section must be insisted on for the sake of both mother and child. Secondly, in a multipara in the same case Caesarean section may be suggested if a living child is especially desired. If not, version is the treatment. However great the temptation to terminate the case either by version with extraction or by forceps extraction, this temptation must be resisted.

Post-partum haemorrhage is a subject closely associated with the two foregoing conditions.

Severe uncontrollable post-partum haemorrhage is only met with in cases where a uterus which is not contracting has been suddenly emptied. In placenta praevia this extra loss is sufficient to kill the patient before the uterus has time to recover. In accidental haemorrhage the same occurs, only the uterus would probably not recover its tone anyhow. I have already indicated how with due care these misfortunes may be avoided.

The average case of post-partum haemorrhage following unduly prolonged labour or overdistension of the uterus by twins or by hydramnios as a rule readily responds to massage of the fundus and pituitrin, or careful control by a hand on the fundus for a judicious period of time. Taking this, bimanual compression of the uterus, taking the opportunity to ascertain that the uterine cavity is quite empty of secundines, possibly combined with a hot douche, generally meets the case. Compression of the abdominal wall often gives the uterus time to contract successfully and retract, and so stop the bleeding. The question of the treatment of post-partum haemorrhage is so well worn that I will not dwell on it. A great percentage of the cases respond to any of the accepted forms of treatment. Those that do not generally die unless it is feasible to perform hysterectomy, and thus, hoping against hope, is generally postponed until it is too late.

III HAEMORRHAGE DURING THE THIRD STAGE OF LABOUR

Some of the most alarming cases with which we have to deal in midwifery are those of severe bleeding while the placenta is still *in utero*. This is due to a partial separation of the placenta, and this separation itself is generally due to efforts to expel the placenta by pressure on the fundus before it is naturally separated from the uterine wall and has passed into the vagina. The signs of this having happened—rising up of the fundus, uterus smaller and flatter from front to back, escape of molar cord, and slight gush of blood—are well known. In a partial separation thus brought about, the bleeding is often extremely severe. Attempts at expression will have failed, and the only treatment is to pass the sterilized hand into the uterus, complete the separation with the fingers, give 5 ccm of pituitrin, and maintain a firm grasp of the fundus till the uterus is and remains firmly contracted. This is what the midwives are now taught to do in extreme cases where they find it quite impossible to get a medical man in time to save the patient's life.

IV SECONDARY POST-PARTUM HAEMORRHAGE

Haemorrhage occurring after the first twenty-four hours may be due, first, to retained products of conception, often a small piece of placenta or placenta succenturiata, or, more rarely, membrane, secondly, to getting up too soon, or overexertion, and not infrequently as a sequela of puerperal sepsis.

The treatment is to clear out the uterus, and swab it out afterwards with tincture of iodine, and pack with gauze for twenty-four hours.

REFERENCES

¹ Blacker G F *Practitioner's Encyclopaedia of Midwifery and Diseases of Women* (Fairbairn) p 261. ² Shaw, W Fletcher *Trans Roy Soc Med*, October, 1926. ³ Tweed, Hastings *Ibid.*, October, 1920.

CYESOEDEMA: A PECULIAR BLOATING OF PREGNANCY

BY

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THE object of this somewhat bizarre heading* is to attract attention to an accompaniment of pregnancy which I have seen very pronounced in 6 out of 363 consecutive cases of midwifery since I first observed the condition in 1901.

It is a peculiar bloating or swelling, which is quite distinct, on the one hand, from anasarca or ordinary pitting dropsy, and, on the other hand, from the solid swellings, such as myxoedema, which it certainly more nearly resembles.

It affects the whole body, but naturally it attracts more attention in the face, as it so greatly alters the features of a young woman as almost to make her unrecognizable towards the end of pregnancy. In my experience it has occurred only in primiparae, it disappears with considerable rapidity after the labour is over, it has not occurred in my cases in subsequent labours, though not specially associated with post-maturity according to the maternal reckoning, the babies have been large—in three instances they weighed on the average just under 8 lb, and in two other cases were described as very large. In two cases there was some albuminuria, but no other recognized indication of the so-called toxæmia of pregnancy.

To describe eyesoedema is a matter of some difficulty, and I must confess rather beyond my powers. I was never able to induce a victim of it to sit for her photograph. There is no accompaniment such as the slow speech of myxoedema, nor the supraclavicular fatty masses, there is no senso of general ill health complained of. There is not the pallor of renal oedema, nor the porcelain clun tint to be seen in the cheek. There is rather some lividity, but happily it does not suggest alcoholic indulgence, it has not been associated with high blood pressure, though the cases mostly were observed before the sphygmomanometer came into general use.

Of one of these cases I have lost sight, of the remainder four agree in this respect—that they have all become stout in middle age, and three have undergone treatment for obesity.

What is its nature? It is certainly not due to nephritis, and I think that hypothyroidism may be ruled out of the question. I have failed to find any description of eyesoedema in any textbook in our university library, but Whitridge Williams refers to "the non-oedematous" (presumably non-pitting) "thickening of the features observed in so many pregnant women," and suggests that it may be related to hypertrophy of the anterior lobe of the pituitary body, which, he says, has been "shown to undergo regularly great hypertrophy during pregnancy and to atrophy after the termination of the pregnancy."

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE NON-LUTIC ARGYLL ROBERTSON PUPIL

In my experience the phenomenon of this form of Argyll Robertson pupil reported by Mr Foster Moore (November 7th, p 843) is not uncommon, and to the features described by him I would add certain others which appear to me no less important—namely, that the condition occurs more often in women than in men, and that when unioocular it is (or has been in all my cases) the left eye which is affected. In a paper entitled "Emotion and eye symptoms," read in 1921 before the Medical Section of the British Psychological Society, I referred to several of these cases, whose history strongly suggested that the unequal pupils were the result of emotional stress, and in each of these it was associated with the death of the father. This led me to regard the phenomenon as a disorder of the sympathetic nervous system, and

* Kypsis pregnancy οίδημα, swelling

in pursuance of this theory I have for some time been engaged in an investigation, the results of which I hope shortly to publish. Mr Foster Moore's interesting communication prompts me to anticipate matters and to record one striking example which bears out his observations and furnishes him with another instance of familial tendency.

A lady, aged 32, consulted me in 1915 and again in 1916 on account of some difficulty in reading. Beyond a low degree of compound hypermetropic astigmatism nothing abnormal was found. In May 1921, she attended again, complaining chiefly of headache. The left pupil was found to be larger than the right, and to react to accommodation but not to light. The Wassermann reaction was negative. As she was of the type commonly described as 'highly strung' I surmised that some shock or grief might have caused the symptom and asked her if she had had any recent bereavement. To my astonishment she burst into tears and then told me of the death of her father, which had occurred, not immediately before, as one might have supposed, but fourteen months previously, in March 1920. On the anniversary of his death she was on her way to visit his grave, and was actually buying a wreath, when her sister noticed and commented upon the dilatation of the left pupil which was so pronounced as to give her a strange look. I saw her again in March, 1922. She was then unaware that it was about the time of the second anniversary of her father's death. The pupils were at first normal in size and reaction, but a reference on my part to the old sorrow, whilst evoking no apparent emotion, was yet followed by a dilatation of the left pupil. The patient said that she had noticed that the equality of pupils was disturbed by certain actions and instances going upstairs. She came again in the following March, complaining of a sensation of squinting when she looked to the left. She had no diplopia, and the only muscular imbalance was 2 degrees of exophoria. The left pupil was found to be larger than the right, but a few minutes later they had become equal.

It was only later that, by chance, I found in the notes made on her elder sister who had consulted me in 1920, the entry 'Left pupil larger than right. Patient states that for many years the left pupil has been much greater than the right, at times feeble reaction to light. Nervous breakdown after death of father in previous March. Similar attack more than twenty years ago, when he was about to be married and then could not determine to leave parents, although banns were twice declared.' Some eleven years later she eventually married the man to whom she had been previously engaged.

These are only two of a number of cases which have led me to the conclusion that the conditions described by Mr Foster Moore are to be attributed to an emotional rather than to an infective or toxic factor.

Portsmouth

W S INMAN

The following case is of interest, in view of the eight cases mentioned by Mr R Foster Moore in the *BRITISH MEDICAL JOURNAL* of November 7th (p 843).

In the course of a routine examination a woman, aged 33, who made no complaints as to her eyesight, had been twice married, and had had a healthy child by each marriage, was found to have an Argyll Robertson pupil, there was no history and no signs of syphilis, the knee-jerks were present, and there were no other nerve symptoms. The Wassermann test of the blood serum was negative, as also of the cerebro-spinal fluid in all dilutions. Cells 5 per c mm, globulin slight excess, Lange's gold test 0000000000.

I am indebted to Dr H M Galt for the examination of the blood serum and the cerebro-spinal fluid, and to Lieut-Colonel H Herbert for kindly examining the patient's eyes and supplying me with the following report.

The Argyll Robertson pupil is definite in the right eye only, and is associated with some miosis. The latter, however, is evidently inconstant.

The patient was seen on two days at a week's interval. At the first examination the right pupil was definitely contracted, the left being perhaps very slightly dilated and irregular in shape from flattening of part of its curve. An unexplained slight transient enlargement of both pupils was noticed. On the second day both pupils were larger than before. The right was of about normal size (2 mm) except during accommodation and the left was somewhat dilated throughout measuring quite 3 mm in its greater diameter. No reaction to light was obtainable in either eye. With the left eyelids closed a very moderate contraction of the right pupil took place with maximal accommodation. If then the left palpebral aperture was opened that eye was found to be slightly divergent or at least not at all convergent. Accommodation being maintained full convergence followed, together with increased contraction of the right pupil. Comparing the two stages of pupillary contraction, the second movement with convergence, always appeared greater than the primary movement, associated with accommodation. The only corresponding contraction of the left pupil was a barely discernible one, with combined maximal accommodation and convergence.

The vision was 6/5 in each eye and accommodation was unimpaired; the fundi were normal. The pupils dilated readily with homatropine, the effect was equal in both eyes, the left pupil remained slightly the larger of the two.

Hove Sussex

F H LAWSON

Reports of Societies.

RESPIRATION AND ANAESTHESIA

At a meeting of the Anaesthetics Section of the Royal Society of Medicine held on December 4th, with the President, Dr F E SHAW, in the chair, a paper on the subject of apnoea, dyspnoea, and cyanosis in relation to anaesthesia was communicated by Professor M S Pembrey, F R S, and the President.

Physiological Considerations

Professor PEMBREY stated that anaesthesia was a pathological condition which had its representation in physiology, for it was impossible to discover any change which was unique. The same life and death were observed by the pathologist and the physiologist, the difference lying in the conditions of the subject and the mental attitudes of the observers. Mutual benefit would therefore result when anaesthetists and physiologists compared their findings. The present discussion would be confined to respiration. By apnoea was meant the absence of respiratory movements whereby the lungs were ventilated. In the foetus there was a profound and long apnoea before birth, though the mechanism for pulmonary ventilation was present in reserve. A foetus born before full term was capable of breathing, and this might be considered an exception to the rule that muscular work needed progressive training, trial and error, but Ahlfeld had shown that muscular contractions of a rhythmic nature occurred within the uterus, and appeared to be respiratory and due to stimulation of the medulla by gaseous changes in the blood. Colnstein and Zuntz removed a foetal sheep from the uterus without damage to the placental circulation, and found that stimulation of the skin did not cause respiratory movement, but the animal began to breathe as soon as the umbilical cord was tied. Undue importance had been given to cutaneous stimulation as the cause of the first breath, but it was well known that if the placental circulation were intact the foetus could be subjected to much manipulative treatment, in cases of complicated labour, without being stimulated to breathe prematurely in the uterus. The effective stimuli resulted from changes in blood composition, and cutaneous stimuli were only an accessory influence upon the respiratory centre, the excitability of which was low in the foetus and infant, as they could withstand deprivation of oxygen and accumulation of carbon dioxide better than the adult. The young mammal retained characteristics of its cold-blooded ancestors. A cat could not survive submersion for three minutes, but a two-day-old kitten would recover after being under water for as long as twenty minutes.

Apnoea signified diminished excitability of the nervous system and the absence of sufficient carbonic or other acid to stimulate the respiratory centre. Apnoea was not due to excess of oxygen, as could be demonstrated by observations on hibernating animals, the respiratory movements of which differed in type according to the activity and temperature of the animal. When the temperature was below 12°C the periods of apnoea lasted several minutes with few respirations between, when the temperature rose above 15°C the apnoeic periods were shorter and the periodicity of the breathing resembled that of the Biot or that of the Cheyne-Stokes type. The excitability of the animal was much depressed, there was muscular rigidity, which resembled that of a man during unconsciousness produced by lack of oxygen. In infants, Cheyne-Stokes breathing commonly occurred and was physiological. The same type of breathing was seen in the old and might have no relation to disease, being due to diminished excitability of the central nervous system. Morphine would produce periodic breathing, often of the Cheyne-Stokes type, hence the success of the old ambulatory treatment of morphine poisoning could be explained by the production of carbonic acid in sufficient quantity to stimulate the depressed respiratory centre. Yandell Henderson had shown the value of 5 per cent carbon dioxide in such cases. The injection of morphine might lead to serious respiratory failure, and the injection of adrenaline into anaesthetized

animals might produce Cheyne Stokes respiration. The classical type could be abolished most readily by giving air mixed with 3 or 4 per cent carbon dioxide. Analyses of the alveolar air showed a low tension of oxygen and a high tension of carbon dioxide at the beginning of the period of breathing and the opposite during the last waking breaths. This periodic breathing was due to diminished excitability of the central nervous system, together with defective supply of arterial blood, the CO₂ accumulated and the O₂ diminished until the nerve cells were stimulated, inspiration began and culminated in hyperpnoea or dyspnoea, CO₂ was washed out, and sufficient O₂ taken into the blood, apnoea followed owing to insufficient CO₂ to stimulate the centre. Air containing more than 2 per cent of CO₂ abolished apnoea by maintaining the tension of that gas at its stimulating value. Pure oxygen given by a mask and valves abolished apnoea by maintaining the partial pressure of CO₂ in the blood at its stimulating value. The forebrain impulses resulting in excessive ventilation and the washing out of the CO₂ from the alveoli were thereby avoided. Air containing less than the usual quantity of oxygen abolished apnoea owing to steady stimulation of the centre. Historical cases sometimes exhibited Cheyne Stokes respiration, but this could be cured by suggestion. Piton and Huxley had described another type of apnoea—the postural apnoea of diving birds. A duck with the neck held out, as for diving, would cease to breathe and a long period of apnoea resulted. The impulses arose in the neck muscles and in the labyrinth, for apnoea could not be produced if the corresponding nerves had been divided. Reflex inhibition of inspiration was the chief factor leading to anoxaemia and death in cases of drowning in a few inches of water, whether the act were voluntary or accidental. Forced breathing caused apnoea, enabling a man to remain a long time under water after a dive. This was dangerous, however, as it might lead to anoxaemia, unconsciousness, and death, it might, by washing out the CO₂, produce apnoea. As long ago as 1876 Adamell Hewson of Philadelphia published a paper on the analgesic effects of rapid breathing and operated on patients after such breathing. Fifty breaths a minute for three to five minutes were necessary for the production of the requisite analgesia. The condition was one of cyanosis, as shown by the colour of the patient and the blood. Rigidity varied considerably. In conclusion, Professor Pembrey said that as it was of fundamental importance in relation to anaesthesia, the question of apnoea in health and disease had been gone into fully. The respiratory movements indicated not only lung ventilation but also the excitability of the central nervous system and were more informative to the anaesthetist than an examination of the pulse. Dyspnoea was the counterpart of apnoea. The former was evidence of vigorous respiratory stimulation, the latter denoted its absence.

The Anaesthetist's Point of View

The President (Dr Shipway) dealt with the subject from the point of view of the anaesthetist. The instruction, "Breathe deeply," might cause apnoea, as too much CO₂ was washed out. Respiration should be natural and easy. Rapid induction could not be obtained without a sense of discomfort, since the supply of oxygen must be cut down to get the necessary anaesthetic tension in the blood. Apnoea might occur during an anaesthetic. It was rare when chloroform was given through a tracheotomy tube, as the intake of air was unimpeded and the supply of oxygen was adequate in relation to the rise of CO₂. Apnoea as a complication was most likely to arise during intra-tracheal insufflation if the ventilation was excessive and the CO₂ washed out. In a case recorded by the authors an average ventilation of 16 litres of air a minute was sufficient to oxygenate the blood, but 30 litres a minute produced apnoea for a period of two minutes, the pulse was very good and the blood pressure was 155 mm. at the commencement of the rapid ventilation. After a minute it had fallen to 138 mm. During the period of apnoea it gradually rose again to 150 mm. The patient then commenced slow voluntary breathing. A sample of alveolar air taken when the respiration recommenced showed CO₂ percentage to be

6.04, or about normal. Samples of air taken during the operation showed that the blood pressure followed the CO₂ tension. Apnoea might occur during prolonged gas-oxygen anaesthesia, when expired air was allowed to escape through valves, and this could be abolished by instituting re-breathing. The presence of CO₂ in excess caused sweating, flushing, and rapid breathing, with a fall in pulse rate, but if there was a lack of CO₂ the opposite phenomena were seen—pallor, cold clammy skin, shallow breathing, and a quickened pulse. This condition was now seen less frequently, as modern apparatus made provision for re-breathing. The apnoeic phenomenon was often mistaken for shock, but apnoea leading to apnoea was seldom seen, as the lack of oxygen and formation of lactic acid in the tissues stimulated respiration. The danger of reduced partial pressure of CO₂ in the blood was increased during gas oxygen anaesthesia if at the same time there was a deficiency of oxygen in the air inspired. Lactic acid formed during anoxaemia acted similarly to CO₂ on the respiratory centre and on the dissociation of oxyhaemoglobin. Apnoea seldom occurred during "open" ether, as the method was really a semi-open one. Analyses of air under such masks had shown that the percentage of CO₂ was adequate to stimulate breathing. The percentage ranged from 2 to 4. With chloroform anaesthesia apnoea might lead to syncope, if followed by a resumption of breathing of a concentrated vapour. The action was direct on the heart. It might also occur during anaesthesia in old persons and those suffering from arterio-sclerosis. Cheyne-Stokes breathing could be abolished by oxygen or CO₂. It was caused by lowering of the arterial pressure induced by the depressant action of the drug. The respiratory centre was also depressed and the rate of blood flow reduced. The tissues were starved of oxygen, but anaesthesia reduced the metabolism, and the tissues did not call for so much oxygen. It was therefore unnecessary to give oxygen as a routine, for if Cheyne-Stokes breathing arose it could best be abolished by substituting a semi-open for an open method, and both on physiological and anaesthetic grounds the semi-open method made its appeal. Excess of CO₂ produced hyperpnoea and dyspnoea, and was caused either by excessive re-breathing or by obstruction of the airway, in the latter case associated with lack of oxygen. If morphine or scopolamine were given (even with the addition of atropine) re-breathing should be instituted almost from the start and increased later to promote anaesthetic absorption. Even if the percentage of oxygen given were high it might be insufficient to oxygenate the blood in the absence of re-breathing. The effect of excess of CO₂ and lack of O₂ caused by obstruction might be so great that it had been well said that anaesthetic difficulties and dangers lay largely above the larynx. Excitement and struggling during induction were largely asphyxial in origin, irregular strengths of vapour giving rise to reflex phenomena, such as swallowing, breath-holding, and feelings of suffocation when the concentration was high. Even the most difficult subject could be made to pass into anaesthesia, by ether given by the drop method, without a struggle if the strength of vapour were increased gradually. Again, the use of oxygen during induction, when cyanosis was present, eliminated or cut short the period of struggling. The most interesting of the signs of lack of oxygen—interesting because so often overlooked as to its significance—was the onset of rigidity and clonic muscular movements, which might be regarded merely as evidence of light anaesthesia. Abdominal rigidity had long been known as possibly due to anoxaemia, and it could be abolished by oxygen. During the third stage of anaesthesia, when all the other signs pointed to deep anaesthesia being present, clonic movements might occur, such as piano playing movements of the fingers and hands, accompanied by jerky adductor movements of the arms, and irregular movements of the shoulders. These athetotic movements were of great importance, as they were due to lack of oxygen, and were therefore more common under chloroform or its mixtures than under ether. Whatever the anaesthetic, early recognition of their nature was obviously essential to ensure free ventilation of the lungs. They were frequent in the anaemic, feeble subject, especially if induction had been rapid. The question then arose whether it was necessary to give oxygen

in uncomplicated cases. On physiological grounds it would appear to be unnecessary, for the utilization of oxygen by the tissues was so much reduced that the essence of anaesthesia might be said to be a reduction of oxidation. Indeed, it was possible to give an excessive amount of anaesthetic where the colour of the patient was good owing to the abundance of the oxygen supply. The aim of respiration was the adjustment of oxygen and CO_2 . The real seat of respiration was in the tissues. The tissues, not the oxygen, determined the process of oxidation, which was characteristic of life. The colour of the blood was an indication of its oxygen content, but might be no guide to the activity of the tissues. Further, the use of oxygen in uncomplicated cases might tend to disguise a faulty administration. Mucus in the trachea, churned up and aerated, represented a real danger, particularly in a patient with a feeble or dilated heart. If present in the smaller tubes the difficulties were almost insurmountable, as appeared very clearly from a case details of which had been given to Dr Shipway.

On the conclusion of the paper, owing to the lateness of the hour it was not possible to allow of much discussion, and the few speakers confined their remarks to questions on points mentioned by the opener, who briefly replied.

GENITO-URINARY TUBERCULOSIS IN THE MALE

At the meeting of the Medical Society of London on December 14th a discussion was held on the treatment of genito-urinary tuberculosis in the male. Sir HOLBURN WARING was in the chair.

Mr CYRIL A. R. NIREN, who opened the discussion, said that it was most convenient to start with the kidney, for a lesion in the kidney was very commonly the primary focus from which the lower urinary tract was directly infected. The bacilli reached the kidney from some other focus in the body, either a quiescent and obscure lesion like a tuberculous mediastinal gland, or an active and obvious source like pulmonary, articular, or osseous tuberculosis. These two sources of infection, generally speaking, gave rise to two distinct clinical types of renal tuberculosis. One of these was surgical, primarily unilateral, and characterized by caseation and ulceration, while the urine contained tubercle bacilli, caseous material, pus cells, and a small trace of albumin of pyogenic origin. The other, the medical form, was bilateral, the renal parenchyma was studded with urinary tubercles, and the urine was clear, containing a few bacilli, many casts, and a large trace of albumin of sanguineous origin. As surgical renal tuberculosis was primarily unilateral and as spontaneous cure was practically unknown, the treatment was early nephrectomy, but before the operation was performed the function and condition of the opposite kidney must be carefully investigated. After nephrectomy the condition of the bladder often improved rapidly, but in 40 per cent of cases local and general treatment was required for a considerable time. The contraindications against nephrectomy were (1) when the function of the opposite kidney was defective (unless the deficiency was solely due to the accompanying toxic nephritis), (2) in advanced bilateral tuberculosis, (3) when the disease was secondary to pulmonary or other gross tuberculous lesions. Most surgeons (Mr Nitch continued) divided the ureter in the lumbar wound as far as possible from the kidney, either with a cautery or between two ligatures after injecting pure phenol. His own practice was to remove the entire ureter whenever it was obviously diseased, with a view to preventing further infection of the bladder and also accelerating its recovery. The results justified the operation, and in twenty-two cases there had not been any operative mortality. Ureterectomy might not be considered necessary in every case, but it was definitely indicated as a primary operation when the ureter was much enlarged and dilated, for in such a condition high division was often followed by a urinary fistula in the loin. Secondary ureterectomy was indicated when persistent cystitis was obviously caused by discharge of tuberculous material from the ureter, also for a lumbar urinary fistula, and for a persistent tuberculous sinus. With regard to vesical tuberculosis, which was almost

always secondary to renal or genital tuberculosis, the immediate treatment consisted in removing either the affected kidney or the affected portion of the genital tract. When the disease was complicated by both renal and genital tuberculosis, the kidney must be removed first and the lesion of the genital tract at a later date. The results of such drastic treatment were often so remarkably good that extension of the disease to the genital tract after nephrectomy should not deter the surgeon from a second radical operation. In many cases the bladder eventually recovered without further treatment, but in about 40 per cent a persistence of pollakiuria and pyuria called for both general and local treatment. General treatment consisted of rest, bladder sedatives, cod liver oil when tolerated, and tuberculin. The best form of local treatment was surgical diathermy at intervals of a fortnight or three weeks, the electrode being introduced through a catheterizing cystoscope and the granulation tissue or ulcer carefully fulgurated. Mr Nitch left the subject of genital tuberculosis to the speaker who followed, but he mentioned that in the treatment of tuberculous epididymitis he had found the operation of epididymo-vesiculectomy devised by Loughnan gave excellent results, the removal of a portion or the whole of the prostate was necessary only in advanced cases. A post-operative course of tuberculin improved the general condition.

Mr KENNETH WALKER said that it was impossible to discuss the treatment of genital tuberculosis without referring to its pathology. The first lesson that pathology taught was that genito-urinary tuberculosis was always the result of a focus elsewhere in the body, most commonly in the lungs, the bones, or the lymphatic glands. The post-mortem room demonstrated the frequent association of tuberculosis of the genitalia with similar lesions of the urinary system, but a false impression as to frequency might be obtained thereby, owing to the fact that what was seen in the post-mortem room was only the advanced stages of the disease. Combining figures from various sources, including the consulting room and the out-patient department, he was inclined to think that only in about 45 per cent of cases was the urinary system attacked in conjunction with the genital. As a rule the disease appeared first in the urinary system, and from there spread to the genitalia. There seemed to be no records of the frequency with which the disease took the reverse course, from the genitalia to the urinary system. His own feeling was that when a genital tuberculosis spread to the urinary system it was the bladder that became infected through the prostate and seminal vesicles, and that the appearance of a renal lesion almost always meant that the infection started primarily in the kidney. The direction taken by the disease in the genitalia was a matter of controversy. He believed that the path taken by the tubercle bacillus was the same as that taken by the gonococcus or by any other organism that was known to attack the urethra primarily, and the epididymis by secondary spread down the cord. He regarded the prostate and vesicles as playing a very sinister part in the spread of tuberculosis from the urinary to the genital systems. The prostate furnished a bridge between the two systems along which infection passed. To those who objected that, if the spread was from the prostate to the epididymis, lesions of the prostate and vesicles without involvement of the testicles should be more common, he answered that such cases frequently occurred, but were often missed. Provided the intral mucous membrane was not involved, tuberculosis of the prostate and of the vesicles produced few signs or symptoms. A rational treatment, based on this pathology, must forbid entire reliance upon surgery. General constitutional treatment was as important as local extirpation by the knife. In many cases surgery was adjunct to treatment by open air, diet, cod liver oil, tuberculin, "artificial sunlight," and so forth. If the case was one of pure genital tuberculosis—on the whole a benign disease—the tendency was towards encapsulation and cure. The first step, therefore, in the treatment of a patient was to make sure that there was no disease of the urinary system. Should a focus be found in the urinary tract surgical measures must be adopted. Once the urinary condition had been satisfactorily dealt with an improvement would take place in the genital disease, and constitutional measures would begin to

take effect. Again, if the theory was accepted that the disease most commonly started in the prostate and vesicles and spread to the epididymis, obviously even such a wholesale measure as castration must fail to eradicate it. Should the aim of the surgeon be to remove entirely by means of the knife the infected tissue, he could only do so by means of a complete extirpation of the genital tract. Whatever might be thought of Mr. Hampton Young's radical operation, it must be admitted that it was the only logical one from the point of view of complete removal of infected tissues. To remove the testicle and to leave behind an infected prostate and vesicle was an incomplete operation. It might be justifiable, but it must be recognized that all that had been done had been to remove grossly infected tissues in order to assist the body to overcome the infection that remained. The operation of total extirpation of the genital tract should be reserved for cases which had failed to respond to other measures. In the majority of cases the only surgical measures required were epididymectomy, orchidectomy, the opening of abscesses, and the scraping of sinuses. In all cases in which the body of the testis was healthy, or in which such foci as existed could be removed without damage to the blood supply, the testis should be left behind. Bilateral castration was never justifiable. Of the procedures he preferred epididymectomy, and it was surprising how little the patient appeared affected by this operation.

Dr. STEPHEN GLOVNE contributed some observations from the point of view of a pathologist. He thought that in cases of doubt as to the presence of the tubercle bacillus it was best to collect all the urine for twenty-four hours. In a twenty-four hours' specimen he had found numbers of tubercle bacilli which he felt sure he would not have found in the small quantities usually sent. Judging from some recent experience, he was inclined to think that secondary infections in renal tuberculosis were much more common than was supposed, the pathologist should always make careful cultural examinations for secondary infections, and this could only be done if catheter specimens were available. With regard to spontaneous healing of renal tuberculosis, Dr. T. B. Hobbs, resident medical officer at Victoria Park Chest Hospital, had recently found two cases in which there were small areas of fibrosis in the kidneys of phthisical patients, so that spontaneous healing did occasionally occur.

The PRESIDENT (Sir Holburt Waring) mentioned that he had dealt surgically with a case of what was supposed to be, on x-ray examination, calculus of the kidney, and had found a large area of healed tubercle.

Mr. JOSELYN SWAN said that a patient with a bad tuberculous kidney, and even with tuberculous infiltration in the vesicle and prostate, was a perfectly good surgical risk, and could be cured. It was astonishing how well the patients were even after heroic operations. He was inclined to put the proportion of cures considerably higher than the 60 per cent mentioned by Mr. Nitch. He was quite certain that the whole length of the ureter ought to be removed at the same time as the kidney, otherwise the operation was incomplete, leaving what was virtually a test tube of tuberculous material in the ureter. Vesicular tuberculosis was almost always secondary to renal or genital tuberculosis, but he had experience of at least one case in which there was undoubtedly primary tuberculous disease of the bladder. He thought that the less one did in the way of local treatment of the bladder the better, when the primary focus in the kidney was removed it was astonishing how the bladder condition cleared up, he had seen quite large tuberculous ulcers in the bladder scarred over.

Dr. NATHAN RAW could not agree that the mode of infection from pulmonary tuberculosis in those cases in which the kidneys were involved was through the blood stream. He thought that extension to the kidney was very often by way of the mesenteric glands. In cases of primary pulmonary tuberculosis the number in which the kidney was affected was remarkably small, but in primary genito-urinary cases the number of subsequent invasions of the lung was larger. With regard to tuberculin, he was of opinion that this extremely valuable remedy ought to be prepared from attenuated, not toxic, cultures, for the treatment of all forms of tuberculosis.

Mr. J. E. H. ROBERTS said that genital tuberculosis was a rare complication of the pulmonary condition. During the last five years at Brompton Hospital he had operated upon only twelve cases. In such operations he had as a rule removed the testis, epididymis, and cord as far as the internal ring. In the majority of such cases there were nodules also in the prostate. He had found it useful, after operation, to apply x-rays to the vesicle and prostate and to the course of the vas between the internal ring and the vesicle. The rapid disappearance of the lesion under this procedure was surprising, and he proposed to continue this treatment.

Dr. ROLF CREASY spoke of the good effects of tuberculin. It was right, as had been stated by other speakers, to begin with very small doses, and gradually to work up to large ones, but the really beneficial effects of tuberculin would not be observed until the big doses were given.

Sir HENRY GAUVAIN referred to the extreme rarity of this condition in children. Out of some 4,000 cases which had passed through his hands at Alton he could recall only two with renal tuberculosis.

Mr. NITCH and Mr. KENNETH WALKER replied briefly to some questions which had been addressed to them. The latter stated his impression that genital tuberculosis was certainly much less common in this country than on the Continent.

ORTHODONTICS FOR THE MASSES

In a paper read before the British Society for the Study of Orthodontics, on December 7th, Mr. F. ST. J. STEADMAN discussed the importance of the adequate treatment of cases of malocclusion among the poorer classes of the population. He declared that a very large number of cases of malocclusion were being allowed to develop in spite of regular attendance of patients on their dentists. The reason for this was twofold: the inability of parents to pay adequate fees for complicated methods of treatment, and the lack of training and interest taken by a large proportion of the dental profession in orthodontics. He went on to show how much could be done by means of extraction alone, in most cases without the appliances which made the treatment so prolonged and expensive. In some thirty cases which he demonstrated the results, though not always the best obtainable, nevertheless proved that marked improvement could be obtained very often by quite simple methods. He emphasized the importance of the adequate study of cases treated by extraction in view of the fact that it present a large number of cases were treated wrongly by taking out the wrong tooth or the right tooth at the wrong time, leading to severe mutilation of the dental arches. In a long and interesting discussion several leading orthodontists spoke in support of the principles advocated in the paper.

Mr. NORMAN BENNETT said that a critic might interpret the argument as meaning that it was better to do bad treatment than no treatment at all, but that would be an unkind way of putting it. It could not be considered bad treatment if the extraction of certain teeth left the child with a better occlusion than before. Apart altogether from the economic aspect, to describe every case of extraction as mutilation was absurd. Those who had seen the thousands of children who came forward in hospital practice would agree that extraction was in very many cases the only treatment practicable, but the right teeth must be extracted and at the right time. It was not a question, however, of putting extraction on the one side and treatment by appliances on the other as if they were antagonistic. At the one extreme there were cases in which obviously no teeth should be extracted at all, and which should be dealt with entirely by appliances, at the other end of the scale there were cases in which extraction was obviously called for, and in which, after extraction, no other treatment was required. But in between these two extremes there were a large number of cases in which extraction was necessary but in which treatment by appliances in addition was required in order that the best result possible might be produced. It was too often assumed in cases in which extraction was a necessary part of the treatment that extraction was the only thing that needed to be done.

Mr J H BIDCOCK agreed that regard must be had to the masses of the people who could not afford elaborate treatment, and who, of course, greatly outnumbered those who could. In such cases the second best was very much better than nothing at all the best could not be achieved.

Mr A T PITTS said that he had always held the forceps to be the most valuable weapon in the armament of the orthodontist but he agreed that the number of cases that could be treated only by the forceps was very small, and that a great number did need some supplementary treatment, although such treatment could be very much simplified if the extraction had been carried out.

Mr HAROLD CHAPMAN, president of the society, said that cases were often seen in which extraction had been performed to relieve crowding but eventually the crowding had not been relieved so that the orthodontist had to practise a good deal of caution and perhaps even to put in appliances after all in cases in which extraction was at first thought to be sufficient.

At a meeting of the Nottingham Medico-Chirurgical Society, held on November 5th with the President, Mr H BELL TAYLOR, in the chair, Sir WILLIAM WILCOX delivered an address on the treatment of diabetes with special reference to toxicæmic conditions and insulin. He expressed his belief that in a great majority of cases diabetes originated as a result of some toxicæmic condition which caused impairment of the endocrine function of the pancreas. He believed that in most cases a definite focus of infection could be found and this was often dental, tonsillar, or colonic in origin. Attention was called to the great frequency of latent maxillary antral infections these having undoubtedly been the cause of numerous cases of severe diabetes. Illustrative cases were given in detail which showed the great improvement in the diabetic condition when the focus of infection was removed. In a number of cases the condition had resulted in a cure. In conclusion, Sir William Wilcox dealt with the dietetic treatment of diabetes and the use of insulin, pointing out the precautions necessary. A discussion followed, in which the President and Drs JACOB ROWE, and CARTER took part.

Puerperal Septicæ

WITH reference to the report in the BRITISH MEDICAL JOURNAL of December 12th (p 1125) of a paper read by him on puerperal infection, Dr H J PHILLIPS wishes to point out that the treatment he described was devised by Dr Remington Hobbs and not by himself.

Reviews.

RESPIRATION IN DISEASE

Respiratory Function in Disease represents a considerable achievement on the part of the authors Professor J C MEAKINS and Mr H W DAVIES. The book is addressed to those engaged in the practice and teaching of medicine and it will be strange if amongst these it does not find a large audience. But to others engaged in the purely physiological aspects of respiration there is embodied much that is valuable. The laboratory worker is privileged for the sake of greater exactness to take his problem to pieces. He can study isolated functions. The physician must always see his patient whole. If then we do not from time to time take the stock or the relation of special research to the life of the animal normal and abnormal, continuity and confusion of thought are likely to creep in. Even the traditional language of the subject may suffer by diverging interpretation. In the present volume we have the welcome opportunity of reconsidering what we severally mean by such terms as "acidosis," "anoxemia" and "asphyxia." So successful has been the application of principles of physical chemistry to the problem of the regulation of blood equilibria and the gaseous exchange that the chemical control of respiration is capable of very exact description. What must not be forgotten is the fact that behind this presides a

physiological regulation comprising nervous, metabolic and excretory factors which have not yet been subordinated to a mathematical formulation. The authors have not failed to remind us that, though the fitness of the environment may be a chemically demonstrable fact, the control by the organism of its own response remains a physiological problem.

The book opens with a careful and not too extensive review of the recent progress in the physico-chemical of blood equilibria and the respiratory exchange in relation to functional anatomy, circulation, and metabolism. One-fifth of the volume is wisely devoted to this. Similar space is allotted to the general pathology of the respiratory function whilst the main body of the book is devoted to a consideration of the functional disturbances in specific diseases—bronchial, pulmonary and pleural lesions and cardio-vascular and nephritic diseases. In another chapter are discussed the effects on respiration of abnormal environment, mountain sickness, gas poisoning and the like whilst the chapter on therapy is largely devoted to a detailed consideration of the administration of oxygen.

There remain some hundred pages which are suitably occupied by the question of the assay of functional disturbances and physiological fitness by lung volume, vital capacity and basal metabolic rate, and to description of the standard methods of blood and alveolar air analysis. The bibliography covers four hundred original papers.

This book will find many readers, and careful readers are likely to be its best advertisement.

LOCAL IMMUNIZATION IN SOME GENERAL DISEASES

PROFESSOR BESREDEKA, in his book *Immunization Local* gives a summary of conclusions he has reached from very many years of study. The most important idea put forward is that indicated by the title. Professor Besredka believes that the reaction to some diseases is not a reaction of the organism as a whole but is confined to certain tissue or groups of tissues. He describes experiments upon the anthrax bacillus, on staphylococci and streptococci and on dysentery and typhoid bacilli. In the case of the first three organisms he considers that infection and immunization primarily concern the skin or mucous membrane whilst in the case of the last two organisms the intestinal tract is primarily affected. Professor Besredka gives a full account of his fundamental experiments upon anthrax infection. He first proved that a skin lesion was essential for the infection of guinea-pigs with anthrax and that although guinea-pigs could not be immunized against anthrax by the most prolonged hypodermic or intravenous administration of vaccines, yet partial immunity could be rapidly produced by cutaneous inoculation. These researches led to the perfecting of methods of preventing cutaneous vaccination for larger animals, which was applied with success by the veterinary service of the French army in Syria. In the period from 1919 to 1923 the average loss of horses and mules from anthrax in this army was 81 per 1,000. Cutaneous vaccination was tried on 882 horses and mules and the loss from anthrax in these animals was at the rate of only 0.45 per 1,000 per annum.

In bacillary dysentery and typhoid Besredka believes that the intestinal wall is the susceptible tissue which the invading organism attacks and that this must be immunized in order to protect the animal. He describes laboratory experiments with Shiga's bacillus and *B. typhi* and explains what he considers to be the rational vaccination by oral administration. The successes at ending the oral method of vaccination in various epidemics of dysentery are shown by statistics. In one epidemic of dysentery in a garrison of 1,100 men one-half were vaccinated and the other half not; the incidence of disease was 76 per cent amongst the vaccinated and 40 per cent amongst the unvaccinated. Figures are also given showing that oral administration of TAB is at least as effective as the hypodermic administration of this vaccine.

¹ *Respiratory Function in Disease*. By Jonathan C. Meakins, M.D. C.M. (Cant.) F.R.C.P. Edin., F.R.S. Edin. and H. Whitridge Davies, M.R.B.S. Adelaide. Edinburgh and London: Oliver and Boyd 1925. (Med. Sci. pp. x + 478. 6s. 6d. net.)

² *Immunization Local*. By Professor Besredka. Paris: A. Benoit. 1925. (Paris. Sci. pp. 252. 20 fr.)

Professor Besredka's conclusions are, of course, of the very highest theoretical and practical importance, and he has summarized the results of his prolonged researches very concisely and clearly in this book.

DENTAL AND MAXILLARY SURGERY

THE volume of *Annual Reports of the Royal Dental Hospital of London*¹ contains some eighteen articles by various members of the staff on subjects of maxillary as well as of purely dental interest. One of the most valuable deals with the perennial difficulty of so-called "dead" teeth. It is by Mr J G Turner, and wisely does he commence by saying that "the attitude of individual members of the profession ranges from claims of infallibility to confessions of total failure"; at the conclusion of his article he acknowledges that "in dealing with dead teeth we are compromising with the devil."

Mr Dolamore contributes a useful series of cases in which serious dental haemorrhage was treated by suturing the gums, this method has the advantage of avoiding the subsequent removal of plugs, a fruitful cause of recurrence of troublesome bleeding, and at the same time does not preclude the use of haemostatic drugs when deemed desirable.

An article on the clinical aspects of x-rays in dental practice is quite needlessly spoilt by a common cause of confusion in dental writings—namely, the indiscriminate use of diagrams which are sometimes negative and sometimes positive. As the practitioner is always provided with negative diagrams by the radiographer, it is surely common sense that the diagrams should represent the negatives to which his mind and eye are accustomed. On page 110 of the same article additional confusion is caused by Fig 5 succeeding Fig 3, and Fig 4 following Fig 5.

For those whose work occupies the borderland between dental and maxillary surgery these reports of the Royal Dental Hospital are well worth perusal. The book is extremely well got up and the diagrams and illustrations excellently reproduced.

ANATOMY FOR ARTISTS

THERE is good reason for supposing that the ancient Greeks knew nothing of human anatomy as disclosed by dissection, but reproduced in their sculpture only what they saw of the nude body, since the days of Michelangelo, at least, it has, however, been held by painters and sculptors that a knowledge of myology is desirable for artists. That such a knowledge may be abused the works of Michelangelo himself testify, but, assuming its desirability, Mr D Wolff's book, *Anatomy for Artists*,² can be recommended as a means of acquiring it. Judging from the title-page and jacket of the book, the illustrator, Mr George Charlton, is a follower of Albrecht Dürer. The numerous illustrations are clear and the information which they convey definite, but the art student must not assume that the appearances of dissected muscles are quite such as these, which are obviously intended to be diagrammatic or symbolical. The descriptions and illustrations of the bones are adequate.

As Mr Wolff justly claims, his representations and descriptions of the subcutaneous fat of the female are a novelty in works on artistic anatomy. In previous books such as those of Robert Knox and John Marshall the nude female form has been represented in all the alluring beauty of youth. Mr Charlton represents a rather obese woman past her youth and with her skin folds. In the profile view the posture may be typical of the average model, but it cannot be allowed to pass as the normal attitude of a really healthy vigorous woman. The exaggerated lumbar curve amounts to a distinct lordosis. There is no illustration of the nude male figure, although a comparison

of the amount and distribution of subcutaneous fat in the young adult male with that of the female might have been instructive.

SOME ASPECTS OF PSYCHOLOGY

FIVE lectures by Professor KNIGHT DUNLAP have been published in a volume entitled *Old and New Viewpoints in Psychology*.³ The topics discussed are mental measurements; present-day schools of psychology, including behaviorism, psychoanalysis, and "instinctivism"; the psychological factors in spiritualism; the psychology of the comic, and the reading of character from external signs. Attention has been given to the last subject, as it would appear that there is an increasing tendency in America at the present time to employ so-called character analysts. After a few minutes spent in interviewing an employee the "expert," having noted the characteristics of eyes, mouth, ears, hair, and shape of head, decides upon the general mental and moral characteristics of his subject, and upon the particular line of work, if any, in the factory to which he should be put. Such methods must tend to bring industrial psychology into disrepute.

In his discussion of the psychology of the comic the author develops the view that a situation provoking laughter is always one which enhances an individual's appreciation of his own superiority. This theory, which scarcely seems adequate to account for all the subtleties of wit and humour, would appear to be similar to that propounded by Thomas Hobbes (quoted by Dr William Macdougall), who traced the source of the pleasure responsible for laughter to the feeling of "sudden glory," which he supposed all men to experience at seeing another man cast down. The author of the work before us is severely critical of behaviourism, and still more so of psycho-analytic theory. He is unable to discover that Freud and his disciples have hitherto contributed anything of value to psychology.

NOTES ON BOOKS

THE eighty second annual issue of the *Medical Directory*, for 1926, has been published by Messrs Churchill.⁴ Minor changes have been introduced here and there in the introductory and supplementary sections, but in general the new volume is arranged and printed in the familiar form which has made it so valuable a reference book to generations of medical practitioners. As daily, and we might say hourly, users of the *Medical Directory*, we can testify perhaps better than others to the very high standard of accuracy maintained by this publication. The number of names in the present edition is 51,153, which exceeds that in the previous issue by 1,802, it is greater than that in the issue for 1916 by 8,583. There is again an increase in all areas, but once more a slight decrease in the section devoted to the Services, whose total has dropped to 3,283 from 3,318. The names grouped under London have grown in number by 198, in the Provinces there has been an increase of 737, in Wales of 209, in Scotland of 312, in Ireland of 169, and the miscellaneous section headed "Abroad," which includes medical men and women registered in this country and residing in the Dominions, has grown by 412 names. Of the work as a whole we may say that editorial care and experience, with the support and co-operation of the profession at home and abroad, has produced once again a yearbook which is a model of its kind.

M JAQUEROD'S little monograph on *Haemoptysis in Pulmonary Tuberculosis*⁵ has been translated into English by Dr S F SILBERBAUER. The ideas expressed in the book are the fruit of twenty years' experience, and as such are entitled to respect.

The eleventh edition of *The Nurse's Dictionary*⁶ has been considerably enlarged, and the text has been revised and brought up to date. Besides providing a dictionary of medical terms and nursing terms, explanations are given of the abbreviations of medical terms used in prescriptions, tables of weights and measures are also supplied.

¹ *Old and New Viewpoints in Psychology*. By Knight Dunlap. London: Henry Kimpton, 1925. (Post 8vo pp 165 10s 6d net.)

² *The Medical Directory 1926*. London: J and A Churchill, 30s net.

³ *Haemoptysis in Pulmonary Tuberculosis*. By Dr Marc Jaquerod. Translated by S F Silberbauer, M.D. F.R.C.P. Edin. London: Baillière Tindall and Cox, 1925. (Cr 8vo pp viii + 106 5s net.)

⁴ *The Nurse's Dictionary*. Eleventh edition revised with which is incorporated *The Midwife's Pronouncing Dictionary*. London: The Scientific Press (Faber and Gwyer, Ltd.) 1925. (Fcap 8vo pp viii + 250, illustrated 3 6d net.)

⁵ *The Royal Dental Hospital of London Annual Reports for 1924*. Edited by A T Pitts D.S.O. L.R.C.P. M.R.C.S. L.D.S. London: John Bale Sons and Danielsson Ltd, 1925. (Roy 8vo pp 154 illustrated 7 6d net.)

⁶ *Anatomy for Artists*. Being an explanation of surface form. By E. Wolff M.D. B.S., London, Demonstrator of Anatomy, University College, London. Illustrated from original drawings by George Charlton. London: H K Lewis and Co., Ltd, 1925. (Cr 4to pp viii + 174 141 figures 12s 6d net.)

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RESPIRATION

It is an axiom of medicine that a sound pathology rests upon a sound physiology. At the same time, it is to be acknowledged that there is mutual benefit in a close liaison between clinic and laboratory, for it is in the diseased organism that we are permitted to watch Nature perform many of the more critical experiments in physiology. There is frequent need, therefore, that there should be performed the important service of bringing into a common discussion the problems of the normal and of the abnormal. In *Respiratory Function in Disease*—which we review on another page—Professor Meakins and Mr. Davies make of this service a considerable achievement. They offer a careful account of progress in a field which is difficult and forbidding to those who had hoped to have left far behind them the subtleties of physico-chemical argument. The thorns have been cleared as far as may be from a path that leads by way of partial pressures, electrolytic dissociation, and—that blessed symbol— pH , to an understanding of the chemical regulation of respiration in health and in disease.

No problem in physiology has submitted to such exact expression in mathematical terms as has that of the gaseous exchange and the electrolyte equilibria of the blood in respiration. So smoothly runs the story of the chemical regulation of the respiratory function that we are tempted to forget that thermodynamic arguments take little count of physiological mechanisms, and that we still have far to travel before we obtain a comprehensive picture of the biological mechanisms of the respiratory function. After all, the intimate nature of a process is likely constantly to be stated in new words as the comprehension of matter extends and the language of science grows in harmony. To the practical mind the quantitative analysis of the function is the great achievement. Having numbered and weighed the components, and having measured the effects of change in the environment, the function is placed substantially under control. Sound practice rests upon control.

Two articles in our present issue deal with the control of respiration under conditions of great interest to clinical medicine. One is a lecture by Professor Yandell Henderson—a welcome visitor to this country—on the subject of respiration in anaesthesia. The other reports a discussion on the same subject at the Anaesthetics Section of the Royal Society of Medicine. The contributors to the discussion were Dr. Shipway, the President of the Section, and Professor Pembrey. The anaesthetist and the experimentalist pool their experiences and views on the practical control of respiration in anaesthesia. Throughout the discussion recurs the theme, which is the special text of Professor Henderson's lecture, of the control of breathing by carbon dioxide. The reader, who may remember only that he was taught that carbon dioxide was the waste product of animal metabolism, of use merely for the charitable purposes of plant life, will

marvel at the great respect now being paid to this "inert" gas. Nor is he likely to be reassured by being told of the peculiar fitness of carbonic acid, as a weak acid, for the control which it exercises over the ionic equilibrium of the blood. Let us rather hand him over to the persuasive words of Professor Yandell Henderson.

If, as Professor Henderson urges, the wise administration of carbon dioxide and oxygen makes possible the rapid initiation, certain control, and speedy removal of the required depth of anaesthesia, he will have the sympathetic ear of both surgeon and anaesthetist. If the distressing symptoms of post-anaesthetic nausea, cyanosis, acapnia, and pneumonia are also mitigated, much anxiety will depart from the operating theatre. Carbon dioxide will then hold its place as the practical controller of respiration, not only in anaesthesia, but also in gas poisoning, post-natal anoxaemia, and intoxication, and we shall agree with the chemists that the animal exercises a nice discretion even in the choice of its waste products.

Did not Elshah employ, with complete success, the method of mouth to mouth insufflation in the resuscitation of the son of the Shunammite woman? A prophet indeed.

BLOCK GRANTS FOR HOSPITAL SERVICES

At a meeting of the Midlands Branch of the Incorporated Association of Hospital Officers, held in Birmingham on December 12th, an important speech on voluntary hospitals was made by the Minister of Health, the Right Hon. Neville Chamberlain, M.P. The association which he addressed contains a very large number of hospital secretaries and other important hospital officers, mainly those who are connected with the voluntary hospitals. In his speech to the association the Minister of Health gave most eloquent and ungrudging testimony of his appreciation of the work done for the health of the community by the voluntary hospitals. He recounted the crisis that had come to these hospitals shortly after the war, when prices and costs rose to such unprecedented heights, and also added his tribute to the manner in which the hospital managers had surmounted this crisis, and secured, for a time at any rate, the effective work of the voluntary hospitals. Thus, he said, was a demonstration of the inherent vitality of the voluntary system and the hold that it had upon the affections of the people. But, he added, new times brought new problems. The present problem was one which dealt with the necessary increase of the voluntary hospital accommodation. The growth of population made an increase imperative. If the maintenance of income on the present scale was difficult, how were the increasing demands for capital expenditure to be met?

The ideal scheme of hospital services would bring into co-operative relation all the hospital accommodation and work of the country. In such a scheme the voluntary hospitals must necessarily play a great part, and Mr. Chamberlain suggested that a system of "block grants," analogous to that of which so much had recently been heard in relation to educational services, might well be found applicable to public health work and hospitals. It would necessitate the establishment of hospital areas throughout the country, for each of which there would be a controlling body to take into consideration all the hospitals therein and the needs for extension. Certain measures of control would necessarily follow such procedure, the authority would need to have its say as to what, if any, exten-

sions were contemplated, and to have some voice in the settling of the site, and perhaps in the character of the buildings. The control would be applicable to every type of hospital, whether statutory or voluntary. The body should be fully representative, both of statutory authorities, voluntary hospitals, and of the medical profession. The block grant would be a return for the exercise of general authority over the main lines of policy. It would be for hospital expenditure, and would be for a definite amount to be expended over a term of years, subject only to the conditions indicated and to the maintenance of a certain minimum standard of efficiency. Subject to that, each hospital would have absolute freedom in administration of its own affairs. In this way it would be possible, Mr. Chamberlain thought, to secure the increased accommodation necessary, to preserve the voluntary hospitals, and even enhance their value, and to do so at a minimum cost to public funds.

It will be remarked by those who have made themselves familiar with the work of the British Medical Association and its hospital policy (which has been formulated after exhaustive discussion in the Divisions and the Representative Body during the last half dozen years, and of which a very clear account is given in Dr. Anderson's address printed in this week's SUPPLEMENT) that the scheme outlined by the Minister of Health is in very close conformity with the Association's policy. Both envisage the formation of hospital areas, the co-operation of all types of hospitals within each area, the prevention of overlapping, and the determination and general control of extensions, and all this without interfering with the autonomy of the several types of hospitals in their domestic affairs. Each institution would be encouraged to develop on the lines of individual initiative. When the Association gave evidence before the Care Committee on the voluntary hospitals it advocated that these hospitals during the crisis should be sustained on the plan adopted in respect of the universities through the University Grants Committee. That was done, and most successfully, and without any infringement of the vital independence of the hospitals. That the same is true of the arrangements for the universities was made clear by Sir Gilbert Barling, who spoke for Birmingham University at this meeting in Birmingham. This system, which now goes by the name of "block grants," provides a buffer authority between the subsidizing State and the beneficiaries. To this authority is given the responsibility of determining when, to whom, in what manner, and in what amount grants shall be made. This plan possesses the very great advantage that it is possible to remove such vital and sensitive services as those for higher education and hospital provision from the risk of injury entailed by the turmoil of electoral strife.

We hope that the Minister of Health may be able to initiate this scheme and see the effective beginning of the work during his term of office, and add yet another measure of constructive statesmanship to those he has already achieved.

EPSOM COLLEGE

SIR HUMPHRY ROBERTSON, speaking as a guest at the Old Epsomian dinner on December 10th, observed that the services rendered to the medical profession by Epsom College had now become so valuable that they might almost be described as essential, and he added that the profession was not unmindful of the debt it owed the College, for it had shown its appreciation in

some measure in the past by personal subscriptions, legacies, and the provision of certain scholarships. It is now evident that this recognition of indebtedness is extending, and, in his letter of appeal, which appears at page 1197, Dr. Raymond Crawford, chairman of the council of Epsom College, reports a gratifying increase in annual subscriptions from medical practitioners, and also in the active support given by Panel Committees throughout the country.

Epsom is the only public school closely associated with the medical profession, and it is estimated that at present some 150 Epsomians are students at various hospitals, while a large proportion of the old boys now at the universities are taking the medical curriculum. We have previously remarked on the high standard of the preliminary medical training in the school, and it may now be added that the new chemistry block, to be completed next summer, will be one of the finest of its kind in the country, it will have accommodation for 110 boys, and represents an anticipated enlargement of the College itself. A hint of this enlargement is to be traced in that part of Dr. Crawford's appeal where he refers to the suggested building of a new infirmary. This urgently needed addition would set free the present building, which, though ill adapted for medical treatment on modern lines, would provide housing for forty-five more boys. Since many of the 500 boys on the present waiting list for entry at the College are the sons of medical men eager to follow their fathers in the work of our profession, this portion of the appeal should arouse special interest. The greater economy in management made possible by the erection of this new infirmary, and by the increase in the number of boys, would lend automatically to further extension of the advantages to individual medical practitioners with sons to educate, while in view of its high efficiency and great popularity, enlargement of the school may be expected to benefit the medical profession as a whole.

Details of the College education and of the Royal Medical Foundation appear in our advertisement pages this week, and we may remind our readers of the statement made last year—that, great as are the needs to be met, yet if one of every two medical practitioners contributed a guinea annually for five years the Medical Foundation at its present dimensions would be permanently endowed. The great work of the foundation in helping members of the medical profession who have fallen on evil days, in assisting the widows of those who have died without being able to make provision, and in educating their sons to follow their high calling, must command our respect, but it is still sadly inadequate to meet present needs. We therefore commend Dr. Raymond Crawford's appeal to the generosity of our readers in the hope that the next annual report may reveal a further advance and foreshadow still greater appliances—such as means prevent them from being supplied for the treatment of as many abdominal belts and think that small gifts of included belts and pads for the Association would contribute to so-called floating or through the Association would preponderance of these for the committee, the additional, and the question suggests itself how would go far to the right kidney to digital palpation in the appeal. I have no right kidney to digital palpation welcome, but cannot follow. Whatever may be thought of stream. There is, to doubt that many patients get educational work of E. Other large items in the list of activity of its Medical and artificial teeth, 2,310 complete upon an increasingly subscribers.

PROFESSOR REID OF ABERDEEN

In the *Aberdeen University Review* for November, Sir Arthur Keith has an appreciation of the work of Professor Robert Reid, who retired last September from the chair of anatomy in Aberdeen after filling it for thirty-six years. Professor Reid was the third son of the Rev. William Reid, minister of Auchendou on Donside, and received his early education at the neighbouring village school of Lumsden. He came of a family which had had its home for many generations in the North of Scotland, and which had contributed distinguished representatives to the church, the army, and to the fields of literature and invention. One of Professor Reid's brothers was the late Dr. William Reid, medical superintendent of Aberdeen Royal Asylum, and another was Major-General Sir Alexander John Reid. Two of his schoolfellows in the village school at Lumsden were the late Sir William Robertson Nicoll and Dr. Henry Stephen, professor of English literature in the University of Calcutta. At the age of 15 Robert Reid proceeded for a few months to the Grammar School at Aberdeen, and later went to King's College. The winter session 1868-69 saw the commencement of his medical studies at Marischal College, where John Struthers was then professor of anatomy, a subject to which from the first Reid was attracted. He graduated M.B., C.M. in 1872 at the age of 21, and after holding the post of house-physician at the Royal Infirmary commenced his career as an anatomist, by becoming assistant to Professor Struthers. In 1873 he accepted the appointment of demonstrator of anatomy in the medical school of St. Thomas's Hospital, London. In 1877 he became joint lecturer and then senior lecturer. When Robert Reid entered St. Thomas's Hospital in 1873 anatomical inquiry had come under the dominance of Darwin, and variations in structure which occur so abundantly in dissecting-room subjects had taken on a new significance and importance. Into this field he entered with zest, and in 1884 opened up a line of research in which he had no equal. In 1884 he published an article dealing with the relation of the principal fissures and convolutions of the cerebrum to the outer surface of the scalp. This, Sir Arthur Keith declared, placed him in the front rank of the anatomists of his time. Operations on the brain were then in their infancy, and surgeons needed a simple, accurate, and reliable method to guide them to its various parts. This method of research entailed much exact observation and systematic records, but it is a contribution to practical knowledge, not to theory. In 1889 he published a paper of similar nature dealing with the spinal cord, which has been in great part embodied in surgical and anatomical textbooks. When the Anatomical Society of Great Britain and Ireland was founded in 1887 Robert Reid became one of its original members and was elected a member of its first council. In the autumn of 1889 Professor Struthers retired from the chair of anatomy at Aberdeen, and Robert Reid was presented to this Regius chair by the Secretary for Scotland, the next thirty-six years his work. Henderson—a welcome addition to the subject of respiration, and included details of other reports a discussion on the subject of respiration. The contributors to the discussion, enriched anthropological The President of the Section, a, He greatly developed The anaesthetist and the experience of his predecessor, experiences and views on the subject of respiration in anaesthesia. The importance of respiration in anaesthesia. This subject. In 1896 he Professor Henderson's lecture, breathing by carbon dioxide, resulted in a record, remember only that he was taught the physical and renal was the waste product of animal attending the University merely for the charitable purpose of exact measurements.

and details of growth of 2,000 students drawn from the population of the north-east of Scotland. It has proved of immense importance in anthropological science, and mention may be made of Professor Reid's papers drawn from it, upon the relation of cranial capacity to intelligence and on the relation between stature, head breadth, and head length of 847 natives of north-east Scotland, and his anthropometric comparison between natives of the north-east of Scotland and inhabitants of Norway and Sweden. These papers appeared in the *Journal of the Royal Anthropological Institute* for 1923 and 1924, and in the third of them the question is answered as to the race to which the Aberdonians belong, the answer being that they are of a common stock with the Scandinavians, and have little or nothing to do with the Mediterranean race nor with the dark-haired, round-headed Alpine stock. Professor Reid also made valuable investigations into the relationships of the bones found in several ancient tombs in Aberdeenshire, which were contributed to the *Proceedings of the Society of Antiquaries of Scotland* and other publications. In 1912 Professor Reid published an illustrated catalogue of the anthropological museum at Marischal College, University of Aberdeen, in which this valuable collection is described, and in 1924 he added an illustrated catalogue of specimens from prehistoric interments in Scotland, wherein is set down all that is known of the strange people who lived in Aberdeenshire some three or four thousand years ago. His valuable work for practical surgery, which has already been mentioned, was completed during the war by an exact description of the position of the nerves in the limbs, which was published in the *Journal of Anatomy*.

HIGH BAROMETER AND SUDDEN DEATHS

In a note in our issue of December 5th (p. 1098) a correspondent ("A O W") mentioned the association of high barometric readings in the second half of last November with an unusual number of deaths from "heart failure." The point thus raised in a brief and tentative manner has drawn from Dr. Percy Stocks, medical officer to the Department of Applied Statistics and Eugenics in the University of London, an interesting communication. It seemed to him, he writes, that it might be worth while to ascertain whether any statistical evidence for such an association could be obtained. He has therefore correlated the weekly deaths registered in London as due to diseases of the heart and circulatory system with the mean corrected barometric pressures for the same weeks at Greenwich during this period of the year since 1900. The figures used were those given in the weekly returns of the Registrar General for the last week in October and the four weeks of November for the years 1900 to 1914 and 1919 to 1925. Dr. Stocks finds that the resulting correlation coefficient is 0.23 ± 0.06 , which indicates an appreciable relation between deaths from circulatory diseases and the atmospheric pressure. Since (he continues) a high barometer in November is frequently associated with a low temperature, which is known to increase mortality from circulatory diseases, this might be the real explanation, but to test this possibility the correlations have also been calculated with the mean temperature of the air at Greenwich for the same weeks. When this is done there is a coefficient of -0.44 ± 0.05 between deaths from circulatory diseases in London and mean temperature, and of -0.15 ± 0.06 between mean barometric pressure and mean temperature. It follows from these figures by partial correlation that when the effect of temperature is eliminated mortality is still correlated with barometric pressure to the extent of 0.19 ± 0.06 —that is to say, there does appear to be a small but significant relation between heart deaths and

¹ Defined as the week ending on one of the dates October 28th to November 3rd inclusive.

atmospheric pressure during November apart from the effect of temperature, a result which seems to confirm the opinion formed by "A O W." Dr Stocks adds that the mean weekly deaths from circulatory diseases in the twelve weeks preceding New Year's week (that is, the week containing New Year's day) for the last twenty-five winters were as follows: 154, 161, 164, 168, 180, 190, 193, 201, 197, 196, 195, 187, the highest figure (201) being for the fourth week in November. The drop in the last figure is, he says, probably due to some peculiarity in registration returns during Christmas week, since the next, New Year's week, gives the figure 224, the figures for the ensuing twelve weeks are then 212, 213, 201, 208, 215, 221, 215, 206, 202, 204, 196, 196. Dr Percy Stocks's conclusion, therefore, is that there appears to be in the average year a rapid rise in mortality from circulatory diseases during November, a slight fall during December, and another rise about the New Year, the highest mortality for the year being in January and February.

THE TSETSE FLY PROBLEM

The solution of the tsetse-fly problem is one of supreme importance to tropical Africa, not only on account of the losses in stock due to *n'gana* and other trypanosome diseases, but because of sleeping sickness in man. Many schemes for the eradication of this insect have been suggested—trapping, cutting down undergrowth, and so on. A method which has been popular with many people is the suppression of the wild game hosts and the consequent starvation of the fly. The Society for the Preservation of the Fauna of the Empire is among the individuals and bodies which have protested against this policy, and has recently issued a pamphlet urging that, should extermination of game be necessary, it must be discriminate, and pointing out that epizootics of rinderpest have killed out game in parts without also destroying the fly. It is suggested also that from wild game it may be possible to obtain an immune serum for use in stock. The object of the society, however, is mainly to preserve the big game, and much capital is made of the monetary value of these animals to the African colonies. While we cannot agree that the value of game to the sportsman should have any influence on the fight against trypanosome diseases, yet we agree that it would not be advisable to exterminate game without fuller investigations, such as those Mr Swynnerton is carrying out. Cattle definitely carry the human parasite, and in them it causes a chronic condition. The situation has not been fully explored yet, but in any event history shows that to tamper with the balance of nature is at best a hazardous task, and (as Australian rabbits and American sparrows have shown) may be followed by unexpected consequences.

INSURANCE AGAINST DOCTORS' BILLS

The Family Medical Services, Ltd, is a company which issues a Lloyd's policy, described in the *BRITISH MEDICAL JOURNAL* on September 26th last, for insuring against the cost of doctors' bills. We found this experiment in middle-class medical insurance interesting and ingenious, and apparently it has already been sufficiently successful to justify some reduction in terms. Under the scheme the head of a family insured all the members of the family who were eligible against the medical fees payable during the year, after a deduction which varied according to the doctor's fee and the size of the family. Under another table a proportion of the expenses of operations and nursing homes could be covered. Insurance under Table A applied only to general practitioners' fees, whether 7s 6d, 10s 6d, or £1 is a visit. This table has now been modi-

fied, so that bills for fees of 5s can be covered, and the amount of the bill payable by the insured is now £2, £2 10s, £3 10s, or £7, according to the size of the doctor's visiting fee, together with a fixed sum for each insured person over the number of two. The company (whose address is 20, York Street, Manchester) has issued a leaflet answering some of the points of doubt or difficulty which were raised about the scheme. It has also omitted neurasthenia from the list of diseases excluded from benefit.

THE SURGICAL AID SOCIETY

THE Royal Surgical Aid Society attained its grand climacteric last week, when the Lord Mayor presided over its sixty-third annual meeting at the Mansion House. Beginning in a small way in 1862, this society has steadily increased in financial strength and philanthropic effort until in the year ending in September last its income amounted to £42,000. Although a subscriber's letter or letters are generally needed to entitle applicants to relief, the committee is able, out of funds placed at its disposal, to help patients who require costly or elaborate appliances by the grant of letters, and the honorary surgeons are empowered to recommend the supply of urgently needed instruments, such as trusses, without the production of letters. From the very beginning it has been a fundamental regulation of the committee of this society that no appliance shall be supplied except on the prescription of a registered medical practitioner. It was long ago found, however, that many patients had difficulty in obtaining such a prescription, and applied directly to the office with a subscriber's letter only. To meet the needs of these, honorary surgeons were appointed whose duty it is to examine such cases, make a diagnosis, and prescribe the requisite appliances. At present there are three such honorary surgeons, who are all orthopaedic specialists attending at the head office in London, while each of the eighteen country branches, scattered over the provinces from Cardiff to Colchester and from Sunderland to Hastings, has an honorary surgeon on its staff. In the last year nearly 7,000 patients were thus examined at the London office alone, while in London and the provinces taken together, according to the surgeons' report, 22,000 cases were dealt with and over 30,000 appliances provided. Nearly 4,000 of these patients were suffering from inguinal and femoral hernia. The latter form was found in only 1.32 per cent of the 3,385 male cases, but in 18 per cent of the female ones. This is a very much lower percentage than that given in some well known works on hernia, and it is difficult to account for the discrepancy. The honorary surgeons advocate the radical cure of hernia in suitable cases, and are provided with leaflets explaining its desirability, for distribution to patients, but it is found that not many are ready to accept this suggestion, no doubt largely owing to the length of time necessary for true radical cure and their fears of thereby losing their employment. Most patients whose ruptures can be kept up with trusses are content with them. Over 3,000 appliances—stockings and bandages of various kinds—were supplied for the treatment of varicose veins, and nearly as many abdominal belts and supports. Among these are included belts and pads for the relief of the symptoms attributed to so-called floating or loose kidney. The great preponderance of these for the right side only is notable, and the question suggests itself whether the diagnosis does not often depend on the greater normal accessibility of the right kidney to digital palpation as compared with its fellow. Whatever may be thought of the possibility of supporting a loose kidney by means of external pads, there is no doubt that many patients get relief from their use. Other large items in the list of appliances are spectacles and artificial teeth, 2,310 complete

or partial dentil prostheses were supplied in the year under notice, in most cases on account of dyspepsia attributed to defective teeth, while the number of artificial limbs ordered amounted to nearly 600. Were it not for this and some kindred societies the after-care of hospital patients and the surgical care of the non-legal poor could hardly be effected unless the State shouldered the responsibility, and the Surgical Aid Society may therefore be reckoned as an important link in the chain of the voluntary hospital system.

SOCIETY OF APOTHECARIES

The winter lively dinner of the Society of Apothecaries of London was held in the Society's Hall, Blackfriars, on Tuesday, December 15th. The members of the Society and their guests were received in the Court Room by the Master (Dr T. Vincent Dickinson) and the Warden (Dr Alfred Hepburn and Dr R. W. Statham), and dinner was served in the Livery Hall. After the loyal toast had been honoured in the traditional manner, Dr Hepburn, Senior Warden, proposed the health of the Royal Navy, Army, and Air Forces, paying high tribute to the work of the services and their medical departments, and ending with some pertinent questions regarding their equipment for future needs. Surgeon Rear-Admiral Sir Percy Brissett-Smith replied in a very graceful speech on behalf of the senior service. Lieut-General Sir William Leishman, Director-General A.M.S., explained that in the absence of Air Commodore David Munro, head of the R.A.F.M.S., he was responsible for two-thirds of the reply to this toast. He said that all the services were now going through very difficult times, but the medical branches knew they had done good work in the war and were doing good work now; they were confident they would not lose the support and backing of the civilian profession. The toast of the Royal Colleges was proposed by the Master. After mentioning the seventeenth century squabbles between apothecaries and physicians—a feud largely composed by the wit of a physician-poet, Sir Samuel Garth—Dr Dickinson pointed to the harmony that had now long existed between the Colleges and the Society. Sir John Rose Bradford, Senior Censor of the Royal College of Physicians of London, said it was always a pleasant duty for representatives of his College to meet in that ancient hall and enjoy the hospitality of a medical corporation set up by James I. less than a century after the foundation of the College by Henry VIII; he paid a tribute to the Society's great services, both to the public and to the profession. Mr. Walter Spencer, replying as Vice-President of the Royal College of Surgeons of England, spoke of the important recent developments in the Huttonian Museum at Lincoln's Inn Fields, and of the debt owed by that great collection to the genius of its present curator, Sir Arthur Keith. The health of the guests was proposed by the Junior Warden, Dr Statham, and responded to by Sir D'Arcy Power. A good programme of music, provided by a quartet of singers, added to the enjoyment of everyone. The dinners of the Society of Apothecaries have the peculiar charm of a medical gathering held in the old-world setting of a city company's hall.

WILLIAM CADOGAN, M.D.

SPECIALISM is sometimes regarded as a feature peculiar to the quite modern times within the memory of many not yet on the shelf, but in the period of the commencing decadence in the medicine of ancient Egypt each disease had its physician, who was, so to speak, a strict monogamist. Passing to much later times, it is not without interest to notice as a double-barrelled specialist William Cadogan (1711-1797), who wrote "An Essay upon Nursing and the Management of Children" (London, 1750), which went

through nine editions in twenty years, and "A Dissertation on the Gout, and all Chronic Diseases, jointly considered, as proceeding from the same Causes, What those Causes are, and a rational and natural Method of Cure proposed. Addressed to all Invalids. Quod petis in te est." By a Doctor. Works were printed in London, the first in 1750, the second in 1771. Offered at the modest price of 6s. 6d. and 1s. 6d., in two years no fewer than ten editions of the "dissertation" were called for. In appearance, indeed, caused a sensation, and around a number of satirical tracts, such as a readable anonymous "Candid Enquiry into the Merits of Dr Cadogan's Dissertation on the Gout," which, incidentally, was three times the length of the original. The great Dr Samuel Johnson gave it his praise, especially for its recommendation as to moderation in diet. Professor John Rubrah of Baltimore has reprinted from the *Annals of Medical History* his article "William Cadogan (His Essay on Gout)" in an attractively got-up booklet, in which after some historical details about Cadogan, who, though a dubitable man, on one occasion teased and tormented damned champagne, this effort on gout is reproduced and appropriately supplemented by the poetical squib, "The Doctor Dissected or Willy Cadogan in the Kitchen. Addressed to all Invalids, and Readers of a late Dissertation on the Gout, etc. By a Lady. The best of all Doctors is sweet Willy O!" (London, 1771). The frontispiece of the volume is a reproduction of the portrait of Cadogan in the Royal College of Physicians of London, of which he was a Fellow, and shows that he was a handsome man. In spite of his rather popular appeal, Cadogan held high office at the College, being Harveian Orator on two occasions, when 53 and 80 years of age, a censor and elect. His personal hygiene was suspected not to come up to the standard he set up for others, but the late Dr J. T. Parry failed to find evidence of this. Cadogan, however, was no fanatic, for while asserting that "wine undoubtedly produces nine out of ten of all the gout in the world," he modestly adds that if a man adopts a proper regimen "he may safely indulge once a week, or perhaps twice, with a pint of wine for the sake of good humour and good company, if they cannot be enjoyed without it. For I would not be such a churl as to forbid, or even damp, one of the greatest joys of human life."

ANIMAL RESEARCH IN EDINBURGH

THE science of genetics, although one of the youngest branches of biology, is every day becoming more and more important. Although the subject has received more attention in America than in this country, one of the most fertile of the research stations is that in Edinburgh under the directorship of Dr F. A. D. Cren, whose fifth annual report, for the year ended March 31st, 1925, has recently been issued. The pioneer work being undertaken by that department is becoming more apparent every year. Not only is the amount of research increasing, but teaching and lecturing are playing a larger part in the activities of the department. The teaching alone makes considerable call on the time of the staff, for, in addition to five courses in Edinburgh University (one of which, we are glad to note, is given to medical graduates), courses are also given to agricultural students at Glasgow and Aberdeen. Nearly thirty lectures were given to outside bodies during the year—significant evidence of the increasing popularity of the science of breeding and its implications. The research work is concerned, mainly, with problems affecting the domestic animals and birds, but as the interest in the subject increases so also will the opportunities for further extensions.

William Cadogan (*His Essay on Gout*), by John P. Birch, M.D. New York: Paul B. Hoeber, Inc. 1925. (Cr. 8vo pp. vii + 114) 1s. 6d.

THE RELATIONSHIP OF THE MEDICAL PROFESSION TO UNQUALIFIED PRACTICE

DISCUSSION BY THE MARYLEBONE DIVISION

A LARGELY attended meeting of the Marylebone Division was held at the British Medical Association House, Tavistock Square, on December 9th for a discussion on the relationship of the medical profession to unqualified practice. Lord Dawson of Penn presided. It had been hoped that the Attorney General, Sir Douglas Hogg, M.P. for Marylebone, would be present, but his wife regretting that important duties detained him at the House of Commons.

The Functions of the General Medical Council

SIR HOLBURN WARING, Senior Treasurer of the General Medical Council, said that he was honoured by the invitation of the honorary secretary of the Division, Dr Spurgin, to open the discussion, the more so because he was not a member of the British Medical Association, he had resigned his membership some years ago in order to discharge with more freedom his duties on the General Medical Council. He began by reading the Warning Notice of the Council in regard to "covering," an offence which the Council looked upon with extreme disfavour. Any registered medical practitioner who employed an unqualified person in the sense of "covering" was liable to have his name erased from the Medical Register, but the present position of legislation was such that, although a medical practitioner could not employ an unqualified partner or assistant, an unqualified person might practise his profession independently if a misguided public chose to avail itself of his services. The main disabilities of the unregistered practitioner were inability to sign death certificates, to give evidence in a court of law on medical subjects, to recover fees in court for professional services, to sign certificates or notifications in respect of disease, and to obtain dangerous drugs under the regulations of the Dangerous Drugs Act. Many unqualified persons, nevertheless, contrived to carry on forms of practice, but, of course, they were able to make use of advertising and canvassing, which were not open to the qualified and registered. Occasionally, while an unqualified practitioner was treating a patient, some serious or possibly fatal condition developed, and a qualified practitioner was called in. In such circumstances the latter ought to refuse actively to co-operate with the unqualified or to sign the death certificate.

The first function of the General Medical Council was to maintain the Medical Register, which must not be confused with the Medical Directory. By the latter and by large numbers of the profession the Medical Directory was looked upon as an official publication, and the inclusion of a name therein was held to make a reference to the Register unnecessary, but there was one notorious case in which the name of an unregistered practitioner remained in the Medical Directory for twenty years or more, and only when the practitioner was granted the O.B.C. for his services was it discovered that he had never been on the Register. No very serious penalty was provided for this offence, and the practitioner, electing to be dealt with summarily, was fined the maximum of £20, and, of course, resigned his appointments, afterwards becoming, Sir Holburn Waring believed, a practitioner in medical electricity. Another function of the General Medical Council was to ensure that the courses of study and examinations of candidates by the licensing bodies were satisfactory, and, again, it had to see that the persons placed on the Register maintained the necessary standard of professional conduct. Practitioners were summoned before the Council mainly in two ways—one as a result of a report from the judicial authorities of conviction for felony or misdemeanour, and the other as the result of a complaint from some individual or body of persons. Many people asked why the Council did not investigate the supposed delinquencies of particular practitioners.

The answer was that, according to British justice, it was not right for one body to be judge and policeman. It was not the duty of the Council to forage around to discover malpractice, but when complaints were made it had to investigate them and, if necessary, to take penal action. The penalties it could impose were, unfortunately, limited in number. The Council might find the accused guilty of "infamous conduct in a professional respect" and proceed to erasure, in other cases, where the charge was proved, it might be held not sufficiently serious to merit the extreme penalty, and judgement might be postponed for six or twelve months, the offender being required at the end of that time to furnish evidence from his colleagues that he had been carrying on a strictly ethical practice. With regard to restorations, there was also some confusion in the public mind. It was asked why the Council did not restore a particular man to the Register. The fact was that it had no jurisdiction. The man in question had never applied for restoration, and, moreover, the two licensing bodies concerned had taken away his diplomas, and the Council could not place on the Register a man who had been so deprived. It had been complained that a man erased from the Register had no right of appeal. That was no fault of the Council, it was part of the statute, but what a man could do was to apply at a later period to the Council itself, and if his conduct in the meantime had been satisfactory and his original offence was not too heinous, the Council would probably restore his name. In conclusion, he referred to the position of dentists under the Act of 1921, the result of which had been to make dentistry a closer profession than medicine, for no one (except a registered medical practitioner) could now practise dentistry unless his name was on the Dentists Register. On the other hand, a dentist, if struck off the Dentists Register, could appeal to the High Court, a course not open to the medical man.

At the close of his address Sir Holburn Waring answered a number of questions. He stated that a very large proportion of complaints, of a frivolous character, were dismissed under the machinery of the Council without coming up for formal hearing by the full body. Motoring offences were rather new, and the number of convictions against practitioners was so small that no particular procedure with regard to these had been formulated. In the case of drunkenness it was usually only after a second or third conviction that the practitioner was summoned before the Council. Even then, given satisfactory assurances, the charge might be dismissed, but if there were still further convictions the Council might take a very serious view. In reply to another question, he said that complaints were considered only from the point of view of their substance and gravity, and no difference was made between offenders in high positions in the profession and those in the rank and file. Asked how his statement that there was no appeal from the Council could be reconciled with the statement made by the Minister of Health that an appeal could lie with the Privy Council, Sir Holburn Waring said that if a licensing body was found by the General Medical Council to be deficient as regards its examinations and what it exacted from students, and was reported by the Council to the Privy Council, the body so indicted had a right of appeal to the Privy Council.

A Review of Unqualified Practice

DR C. O. HAWTHORNE expressed the thanks of the Division to Sir Holburn Waring for opening the discussion. This was not the first request that the Association had made to him, and in view of his goodwill it would not be the last. Unqualified practice undoubtedly existed and sometimes was thrust upon the general attention in a very conspicuous fashion. Hence it was a reasonable expectation on the part of the public that the profession should declare its attitude. Personally he was disposed to think that the right kind of policy would not be reached by considering the merits or demerits of the various forms of unqualified practice. The alleged triumphs of unqualified practice, just like the alleged errors or ignorances of the qualified practitioner, naturally attracted the enterprising journalist, and these things were fairly frequent topics of conversation in the railway carriage and at the tea-table. Such stories, however, were told in

sensational terms, and the accuracy and knowledge which were necessary to a confident and scientific conclusion were generally conspicuous by their absence. It might be allowed, without any shamefacedness, that qualified practitioners, being human, were liable to err, and in individual cases did err, in dealing with the complicated problems presented to them. Equally it might be allowed that the unqualified practitioner did at times seem to secure a triumph over obstacles which for some reason or other had baffled the efforts of the qualified. But in making these admissions it was necessary to add certain comments. The first was that coincidence had a long arm and that *post hoc* was not necessarily *propter hoc*, though he would not suggest that the benefit of this natural law was reaped entirely by the unqualified practitioner. A second comment was that winning tricks was not always proof of good play, and a third, that whereas the daily routine beneficent work of thousands of practitioners throughout the length and breadth of the land in the homes of the people excited no particular remark and led to no advertisement, the triumphs—if such there were—of the unqualified practitioner were sounded forth on every hand, while his failures or the disasters which might follow his practice were generally written in water. Further, if unqualified practice were taken as a whole, from the practitioner who was boomed periodically in a society journal to the arrant quack of the market-place, or the still less attractive announcements in the advertisement columns of the Sunday newspapers, and its promises were contrasted with its performance, every impartial man would admit that these promises were, to put it mildly, grossly exaggerated, and that in particular instances there was more than a suspicion of fraud. If regard were paid to the history of unqualified practice—not merely the phase which it presented to-day, but its history over a long period of time—the admission must be made that unqualified practitioners had very often been proved to be lime-brained enthusiasts, sometimes clever commercial speculators, and sometimes deliberate frauds. Speaking generally, and admitting some exceptions, condemnation would have to be written across the record for which the unqualified practitioner was responsible.

Definition of Principles

The attitude of the medical profession towards unqualified practice (Dr. Hawthorne continued) must be based upon well established and well recognized principles. These principles would emerge if care was taken to note what were the things in relation to unqualified practice which the profession would not and could not do, having in mind the interests alike of medicine and of the public. The first of these negatives was that the profession could not allow it to be a safe and wise course for any person to submit to treatment based upon a diagnosis professed by one who had not undergone the discipline of the medical curriculum and had not justified himself by success in professional examinations. The art of diagnosis, as every experienced medical practitioner would agree, was one of the most difficult enterprises to which the mind of man could apply itself, and if it was true that a stated course of preparation was needed for the practice of architecture or law, or even for the laying of bricks or the shoeing of horses, a fortiori such a course of training was necessary for the art of diagnosis. It was contrary to common sense to suggest that a man was born a diagnostician, or that this gift came to him through hereditary influences, or that it could be acquired by empirical experiences. The claim of the profession was that for the practice of diagnosis the compulsory medical curriculum was essential. Every citizen must be free to select advice from any quarter, but the medical profession could not lend its countenance to the idea that it was wise or prudent for the sick individual to undergo a line of treatment based on the diagnosis of someone who was untutored in the medical curriculum and undisciplined by clinical experience. The second negative followed from the first—namely, that as medical practitioners they could not, and would not, meet in consultation for the purpose of diagnosis any person who had neither the training nor the knowledge to make such consultation useful and fruitful. The third position which must be maintained was a refusal to recognize as a phylar-

thropist or a benefactor a person who possessed on his own showing a remedy for disease, and yet kept this secret and used it for his own personal gain. Such a proceeding might be a piece of smart commercial enterprise, but it was not one which could be recognized by the medical profession either as beneficial to humanity generally or as creditable to the person responsible for it ("Hear, hear"). And yet again, qualified practitioners would not use or administer to their patients substances the nature and composition of which were not openly declared. It was impossible for them, in view of the responsibility placed upon them by the choice of the patient, to indulge in experiment of this kind. As a further negative, the profession would oppose a proposal to allow any group of unqualified practitioners to acquire by Government action a status and recognition which would be readily mistaken by the public as a guarantee of efficient training and competence in the diagnosis and treatment of disease. It was out of these negatives (Dr. Hawthorne concluded) that the attitude of the medical profession could be defined. It might be admitted that in this controversy medical men were to some extent interested parties and therefore could not claim to be quite impartial judges, they would not ask for any legal right to have a monopoly in the relief of suffering and they might further add that if suffering was relieved and people were cured, whether by the qualified or the unqualified, such results were grounds for gratification. They tried to keep an open mind towards knowledge, whether it came from within or without the professional enclosure. And if they held to these positive and negative definitions and acted upon them, they could go steadily and quietly upon their well ordered way, neither seeking controversy nor shunning it, cultivating industriously their own "garden" in the full belief that it was only on the basis of scientific knowledge and carefully garnered clinical experience that the safe and successful practice of medicine could securely rest. (Loud applause)

The Need for a Broad Outlook

SIR WILLIAM WILCOX said that all those present would agree that no one should practise as a doctor—namely, undertake the responsibility of diagnosing a case, of dealing with the complications which might arise, and of laying down the main principles of treatment—unless he had had a proper training, or, in other words, held a medical qualification. That was where the danger lay if certain unqualified persons, such as osteopaths, were allowed to make diagnoses and prognoses and to undertake the management of treatment. He did not quite understand, however, what was meant by "unqualified practice" in the title of the discussion. There were certain aspects of treatment which after the diagnosis of the case had been made and the general lines of treatment decided by a qualified practitioner, might be undertaken by persons who had not medical qualifications. The governing factor in all these matters was the public interest. It was futile to argue in a court of justice or before any lay assembly that a certain procedure should be adopted because it was in the interests of the medical profession. On many occasions he had given evidence in cases where unqualified practice had been concerned, and when the counsel had said to him, "You don't approve of this because it is not in the interests of the profession?" he had answered "Rubbish! I do not care about the interests of the profession in this matter, this is not in the interests of the public." Everyone present could quote instances of tragedies which had occurred as a result of unqualified persons undertaking the treatment of cases. He had seen cases of sarcoma of the femur and of tuberculosis treated by unqualified practitioners with dire results. He recalled a case, a few months ago, of a girl dying of renal disease, her abdomen full of fluid, and the osteopath who was called in, having no knowledge or training, declared that this accumulation of fluid was due to defective action of the liver and treated her accordingly, she died within a few days. It was interesting that, as Sir Holburt Waring had indicated, the medical profession was not protected as the dentists were, nevertheless, it got its protection indirectly, and the privileges of medical men were very great. It was necessary for them, however, to cultivate a

broad outlook Pasteur, one of the greatest of physicians, was not a qualified medical man. The late Sir William Bragg, the distinguished physiologist, had no medical qualification, and the same was true of other great teachers in medicine. Any line of treatment which appeared to be of value to the public should be sifted carefully and without prejudice. In connexion with electricity, "artificial sunlight," surgical instruments, and in other directions much valuable work was being done by people who were not qualified, but there would be general agreement with Dr Hawthorne that in respect to the diagnosis, prognosis, and the general management of a case the responsibility should be undertaken only by those who had been through the proper training.

Advantages to the Public of Registration

Mr McADAM ECCLES remarked that a few years ago the largest theatre in one of the medical colleges of London was packed to the doors to hear a man whose name was known the world over deliver an address "On the advantages of being unregistered." His name was George Bernard Shaw. He made out his case with such effect that some of those who listened to him felt that if they had their time over again they would never become qualified and registered practitioners. But this question, whatever its aspects from the individual angle, was fraught with enormous public importance. Was it or was it not advisable for intending members of the medical profession to pass through a fairly long course of training—not less than five years, and in his experience averaging six—and then to satisfy examiners before being granted a qualifying degree or diploma entitling them, not to treat all the ills that flesh was heir to, but to be registered by the General Medical Council? Registration was not altogether, in one sense, an advantage to the practitioner, as Mr Shaw had shown, but there would be general agreement that it was to the advantage of the public. What, then, should be the attitude of the profession to the unqualified and unregistered? There was only one answer. Believing that it was for the good of the public that there should be qualification and registration, they should stand aloof in every way from the unqualified practitioner. By the unqualified practitioner he meant the man who was out on his own, of course, nurses in a sense treated patients, and were medically unqualified, and the same was true of masseurs and others, but these were not out on their own—they were respectable in their various professions and callings because what they did they did under the control of the qualified and registered practitioner. That was just the difference between the unqualified quack and the persons who, while legally unqualified, were quite capable of carrying out treatment under proper direction. Between the medical profession as a whole and those who were unqualified and unregistered there were certain differences which ought to be fixed quite fearlessly. The first was that the volume of work done for no fee or reward by qualified and registered practitioners of medicine and surgery was far, very far, greater than that which was done by the unqualified and unregistered. (Applause.) The second was that the amount of advertising, direct and indirect, by unqualified and unregistered practitioners was very far greater than any type of advertising—always to be deplored—in the ranks of the qualified and registered profession. (Applause.) Mr Eccles added that before very long a strong effort would be made to secure registration for a certain type of unqualified practitioner. At the present moment, in a London directory, there were thirty of these practitioners—many of them practising in Park Lane—and the efforts, direct and indirect, to secure registration on their behalf would be very great. The medical profession must oppose that sort of registration through thick and thin. Every type of treatment which was good was available through the medical profession, and, where necessary, could be obtained by the public without fee through the medical profession in the recognized hospitals. (Applause.)

Dr T. P. BEDDOES thought there was something to be said for persons, qualified or unqualified, who devoted their attention to one subject—a subject to which in some cases hereditary traditions inclined them—and became experts. Sometimes great things along this line had developed from

what was originally unqualified practice. He gave several historic instances, one of them from bone-setting. With regard to ophthalmology, Dr Beddoes said that there were some junior ophthalmic surgeons who were in favour of prescribing by opticians, because large numbers of the public could not afford the fees of the medical expert to fit their eyes.

Position of Osteopaths and Chiropractors

Dr E. GORDON FLEMING, who was called upon by the CHAIRMAN as being one of the qualified medical practitioners who were in sympathy with osteopathy, said that he spoke rather as a chiropractor than as an osteopath. The remarks made by Sir Holburt Waing in his recent address to the Medical Society of London (BRITISH MEDICAL JOURNAL, October 17th, p. 679) with regard to the training of chiropractors were true: they were untrained except with regard to certain manipulations, but, on the other hand, the work they did was extremely beneficial. The patient who usually came to the chiropractor was a person with some chronic complaint who had already been treated by other medical men without satisfaction to himself. People rarely came to the osteopath or chiropractor of their own accord before seeing other medical men. He did not agree with Mr McAdam Eccles that every type of treatment that was good could be obtained through the medical profession. Osteopathy and chiropractic were not available to poor people, for the reason that there were very few practitioners in these arts—only four registered men in Great Britain—and there was not the opportunity for continuous clinical observation. Dr Hawthorne had said that the triumphs of the unqualified practitioner were blazoned abroad and his failures were written in water. No doubt, if a patient received benefit from an unqualified man, after failing to do so from a qualified, the patient was inclined to act as an advertising agent, but, on the other hand, the failures of the practitioners of these cults were brought strongly to the notice of the medical profession, and they were stigmatized more than they deserved. He was not pleading that these people should have any separate registration, because he thought they should first take the trouble to go through the ordinary curriculum, but he did plead for prolonged clinical, and if possible experimental, investigation of their methods.

Mr PHILIP FRANKLIN believed that the medical profession would have to be protected in the same way as the dental profession was already protected, and anyone not on the Medical Register should not be allowed to practise. Osteopathy was increasing in this country, some fifty persons held a degree of "doctor" in this subject, and he thought that these men, if they wished to practise, should go through the medical curriculum which was necessary for entrance into the qualified medical profession of Britain.

Sight-testing Opticians

Mr BISHOP HARMAN said that the passing of the Dentists Act, 1921, was a good illustration of Dr Hawthorne's contention with regard to the interests of the public. Why was it necessary for the State to impose a Dentists Act restricting dental practice to persons on a *Dentists Register*? It was because unqualified practice had been killing qualified practice, and if the State had not stepped in there would have been no proper position for dental treatment in this country. The public did not know whether a dentist under the old system was qualified or not, they were attracted by his advertisements on his house front or in the newspapers. Dr Beddoes had stated that young practitioners were content to have their patients go to sight-testing opticians because the patients could not afford relatively large fees for expert advice in the provision of such necessary equipment as spectacles. [Dr Beddoes's remarks referred to junior ophthalmic surgeons.] But recently the British Medical Association had compiled a list of between 600 and 700 qualified medical men who were able and willing to treat insured persons in connexion with ophthalmic benefit. Owing to ignorance which was not quite excusable, some practitioners continued to send their patients to the advertising optician. Ophthalmic benefit for insured persons would shortly be one of the regular benefits under the Insurance Acts, and a great contest for the provision of that benefit was inevitable. Certain opticians were striving their utmost

to get a supplementary register of opticians, though opticians were so divided amongst themselves that their success in anything which required a united effort was not very likely. But the result of such a supplementary list would be to push out the really trained men. It was difficult to conceive that people should be willing to hand over the most precious, sensitive, delicate, and complicated of all the sense organs to the unqualified person who had been taught by a private company banding themselves together for that purpose and giving him what looked like distinguished letters following his name. The speaker hoped that full regard would be paid to the public interests in this matter.

Lord Dawson's Summing-up

The CHAIRMAN (Lord Dawson of Penn), in summing up the discussion, posed the question why the public supported unqualified practice. In his view it was due to the persistence of a belief in the miraculous which had come down from the Middle Ages. Perhaps the medical profession would do well first of all to exorcise any similar belief from its own body. Was there not often a subconscious feeling that there might be, after all, a short cut to salvation other than the road of scientific endeavour? It was a belief in the miraculous which made people an easy prey to plausible talk. With regard to osteopathy, he was free to admit that he had known an osteopath to do much good. The osteopath was often an expert manipulator, and in addition he was gifted with the power of suggestion. The human mind, so curiously constituted, looked for some physical explanation, as definite and localized as possible, of any illness, and when the osteopath, regardless of facts, referred all ills to the spine he supplied "a physical hook on which to hang the coat." If the public were told that it was suggestion they would accuse the profession of a narrow and prejudiced view, but that, nevertheless, was in very many cases the basic fact. He agreed with Dr Hawthorne that there must be not the smallest concession to unqualified practice on any question relating to diagnosis. The question of treatment raised certain other considerations. It had to be remembered that medicine was widening its bounds, calling to its aid certain ancillary sciences, and venturing into various realms, such, for example, as chemistry and physics. All this might necessitate a review of the position with regard to the organization of treatment. In some branches it might be necessary to employ technicians, strictly under medical supervision, who were not themselves medical men. He had found this practice in being during his recent visit to Canada and the United States. Highly educated people—college girls, for instance—were employed as technicians in laboratories. In Toronto there was even a degree of "Bachelor of Science Medical," attainable by persons in various departments who were highly trained in some subject ancillary to medicine. These persons had no right to practise, but they could study a certain amount of medicine in the wards. In this country medical men did too much detail work, they carried at one and the same time as subalterns and colonels. Here, therefore, was one constructive line on which possibly to meet this big question of unqualified practice. The general control of all the means of treatment must be maintained by the medical profession, but a certain amount of work might be delegated. When diagnosis was in question, however, there could be no possible delegation.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

THE Royal Commission on Lunacy held sittings on December 10th and 11th, under the chairmanship of Mr H P MACMILLAN, K C, to hear further evidence from the Board of Control and from the Ministry of Health, and it was understood, although no public announcement was made, that this concluded the evidence which the Commission proposes to take.

The Board of Control's Scheme

SIR FREDERICK WILLIS (Chairman of the Board of Control), who was accompanied by Mr Fraser Macleod, K C, and Dr C H

Bond (Commissioners), gave evidence in answer to a questionnaire which had been submitted by the Commission to the Board. He stated that for the purpose of settling the procedure to be adopted for the treatment of persons suffering from mental illness it was desirable that patients should be divided into three classes: (1) voluntary, (2) non-volitional but passive, (3) resistant. A voluntary patient, he thought, should be received for treatment, on his own application, accompanied by one medical recommendation, in any mental hospital, registered hospital, licensed house, general hospital, nursing home, or private care, subject to certain conditions. The conditions were that notification of the admission of the case, with a copy of the medical recommendation, should be sent to the Board of Control, that a medical report should be sent to the Board within seven days of admission, and thereafter at intervals of six months, each such report to contain the statement that the patient was in need of further treatment and was willing to remain, that the Board should have the right of inspection of the institution, that it should have the right to order the discharge of the patient from the voluntary class should it consider him unsuitable to remain on that footing, that if the patient ceased to possess real volition, and this condition continued, he should within a month be dealt with under the provisions relating to passive or to resistant cases, or should be discharged, and that the patient should have the right to leave the institution at any time on giving seventy-two hours' notice in writing. Sir Frederick Willis explained that twenty-four hours' notice did not give sufficient time for communication with the friends of a patient when this was necessary in a case which needed a longer stay.

The Chairman thought that instead of the Board having the "right" of inspection of approved institutions it should have the duty of inspection, and Sir Frederick Willis agreed.

With regard to the non-volitional but passive case, Sir Frederick Willis said that his Board was in favour of a patient of this class being received for treatment in any mental hospital or registered hospital, or—if the place had previously been approved by the Board—in any licensed house, general hospital, nursing home, or private care, subject again to certain conditions. These conditions were that an application should be made by a relative or friend or public official for the reception of the case, accompanied by two medical recommendations, that the admission was immediately notified to the Board, that copies of the recommendations, that a medical report was sent to the Board within seven days of the admission, that the institution was open to the inspection of the Board, that the Board had the right to order the discharge of the patient from the "passive" class if he was considered unsuitable, that if a person on whose application the patient was received for treatment should at any time have the right to remove the case on giving twenty-four hours' notice, that if the patient recovered volition he should be allowed to leave on giving seventy-two hours' notice, and that if at any time the case became a resistant case it should within one month be dealt with under the provisions relating to that class or should be discharged.

Lord Russell objected to the condition that the person on whose application the patient was received for treatment should have the right at any time to remove the case. This seemed to make the petitioner the sole custodian of the lunatic.

Sir Frederick Willis, however, pointed out that in the cases it was undesirable to have any element of detention beyond that involved in the three days' notice. He also thought that the non-volitional but passive patient should only be received on that footing for a period of six months in the first instance, but that there should be power to extend the period for a further six months if the independent medical practitioners so recommended. If after having been treated under such conditions for a year it was considered that the patient should be detained for further care and treatment, this should only be done on full certification. If after full certification he recovered volition and was willing to remain as a voluntary patient he should be allowed to do so, subject to the conditions relating to voluntary patients. With regard to the resistant case, this should be detained after full certification on a petition signed by a relative, friend, or public official, and an order signed by a judicial authority. A case might, however, be received on a provisional order, accompanied by one medical certificate. Such a patient might be detained for fourteen days if in the opinion of the medical officer of the institution (or, in single care of the medical attendant) he needed detention, and this period of fourteen days might be renewed for a second similar period, but beyond twenty-eight days the detention of the resistant case should only be allowed under the order of the judicial authority on petition. These cases during the provisional stage should only be received where suitable accommodation and expert medical treatment and nursing were available. They might go to any public mental hospital, registered hospital, or licensed house, and, if the institution or place had previously been approved by the Board for the reception of cases under a

provisional order and certificate, in any general hospital, nursing home, or single care, or in a Poor Law institution. Provisions for dealing with urgent cases, similar to those of Section 20 of the Lunacy Act, 1890, must be retained. During the three days steps must be taken to obtain a provisional order. Cases fully certified should be received only in public mental hospitals, registered hospitals, and licensed houses, or in single care, but they might also be received in Poor Law institutions or in nursing homes which had previously been approved by the Board of Control.

Sir Frederick Willis considered that the public responsibility for providing for all mental cases should rest with the visiting committee of the local authority, and not with the guardians of the poor, and if any Poor Law accommodation was used it should be used in pursuance of a contract between the visiting committee and the guardians.

The Ministry of Health

The Commission met on December 11th expecting to take the evidence of Mr L G Brock, Principal Assistant Secretary of the Ministry of Health, but Mr Brock was prevented by illness from attending, and in his place Mr H W S Francis, an assistant secretary of the Ministry, offered some observations.

The Chairman said that it was generally appreciated that there was an intimate relationship between the existing code of lunacy administration and the Poor Law. The Commission, in the course of its investigations, had been considering the general question of that relationship, and he hoped the Ministry would assist it by any observations on the possibility of extricating lunacy administration from Poor Law administration. At present there was an unfortunate element of pauperization associated with lunacy, and the Commission desired to know how that could be removed.

Mr Francis said that patients who were accommodated in institutions provided by the guardians were on that account regarded as paupers. Some mental patients became paupers, from economic causes, before the onset of their malady, but there were others who had had no relation with the Poor Law until their malady began. The lunatic population in Poor Law institutions might, in fact, be divided into three classes: (1) patients who went into the workhouse as a receiving house on their way to the asylum (unless in the meantime it was found that asylum treatment was not suitable or necessary), (2) persons already paupers who became insane while in the workhouse, (3) persons discharged from asylums and going back to the workhouse, where they were detained under other provisions of the Act. If it was held desirable to take over parts of Poor Law institutions by the county or municipal authority for the purpose of housing mental cases, this could be done under Section 26 of the Lunacy Act, 1890. Even though lunacy administration were taken out of the Poor Law, it would almost certainly still be necessary to use Poor Law premises for mental patients to some extent. A certain part of a Poor Law institution might be set aside for this purpose and be regarded as under the control of the local authorities other than the Poor Law authorities. A parallel was afforded by the use of Poor Law institutions at present for the reception of maternity cases sent there by the health authority. No part of the expenditure for these mental cases should fall ultimately upon the guardians, for although the expenditure in the first instance would be met by them they would be entirely indemnified. Both the Poor Law premises and the infirmary staff might be used so long as the whole cost was met from some source other than the Poor Law funds. The local authority could lease the premises from the guardians and recoup the guardians for the cost of maintenance. The Board of Control would inspect the premises, and would make any representations, not to the guardians, but to the Poor Law authority for the area. The lunacy authority would then be responsible for all cases arising in its area, irrespective of the Poor Law. The relieving officer as such would have no function so far as lunacy was concerned. The procedure would be for the doctor who was called in in the first instance, if he thought the case required institutional observation or treatment, to communicate with the medical officer of health, who would then put the appropriate machinery in motion for the admission of the patient into a receiving home. In his view the medical officer of health and his staff offered the most suitable alternative to the present procedure for dealing with the present Poor Law cases, and in this way the pauperization stigma would disappear. He saw no difficulty in the case of persons already in receipt of Poor Law relief who became mentally afflicted, these people were initially paupers, on developing mental illness they would pass under a different administration, and on recovery would simply return to the pauper status. Asked whether the accommodation and facilities at present provided by the guardians were "a fair standard," Mr Francis said that generally he thought they reached a fair standard. In some instances they were good, in others not so good.

England and Wales.

VITAL STATISTICS FOR 1924

The Registrar-General's statistical review of England and Wales for 1924, Part II (Civil), has been issued, and can be obtained from the Stationery Office, price 5s net. The estimated population of England and Wales on June 30th is given as 38,746,000, as against 38,403,000 in the previous year. On December 5th (p 1089) we referred to various statistics which appear in Part I of the statistical review, but it may be added that the marriages during the year show an increase of 4,008 over the previous year. A special table shows the mode of solemnization of marriages in 1924, and it is strange in these days of compulsory education to note that 954 men and 1,051 women signed the marriage register by mark. The number of decrees nisi made absolute during the year was 2,286, as compared with 2,667 in 1923, and 2,588 in 1922. The number of parliamentary electors on the autumn register was 18,806,842, an increase over 1923 of 221,743 men and 186,266 women.

COST OF MATERNITY AND CHILD WELFARE SERVICES

The Ministry of Health has asked local authorities to supply a forecast of expenditure during 1926-27 on maternity and child welfare services. The forecast of expenditure by the London County Council is £11,760, and of receipts £1,200, making a net expenditure of £10,560. This sum includes £4,300 in respect of fees to medical practitioners called in to the assistance of midwives, and £2580 in respect of grants to schools for mothers. The estimate for London is slightly above the revised estimate for the current financial year.

BRISTOL ROYAL INFIRMARY

A new nurses' home, named after the late Henry Herbert Wills, formerly president of the Bristol Royal Infirmary, was opened on December 9th by his widow, Dame Mary Monier Wills, the Duchess of Beaufort presided over the ceremony. The new wing, which cost £25,000, is situated on solid rock, and during the excavations several springs were discovered, so that the supply of water is assured. All the furniture in it, with the exception of the chairs, has been made in the workshops of the infirmary. The building is an essential part of the expansion of the infirmary, where the waiting list is very long. The original estimates have been exceeded by 25 per cent, and the time taken in building was two years.

PENSIONS FOR HOSPITAL OFFICERS AND NURSES

A draft scheme of pensions for hospital officers and nurses has been prepared by a conference composed of representatives of King Edward's Hospital Fund for London, the British Hospitals Association, the Incorporated Association of Hospital Officers, and the College of Nursing, Ltd., under the presidency of Lord Stuart of Wortley. The conference was convened by King Edward's Hospital Fund at the request of the other three bodies, and traces its origin to a special committee of inquiry appointed by the King's Fund in 1914, the report of which was issued in 1919. The memorandum contains a very careful and detailed examination of the existing systems of pensions, the various problems involved, and the general principles of the combined scheme suggested. The hospitals adopting such a scheme might contribute 10 per cent of salary and emoluments, and the officers and nurses 5 per cent, towards the fund. The normal pension age would be 60 for officers and 55 for nurses, and three main types of policy would be provided: an endowment assurance with a fixed rate of annuity at the retiring age, or a definite sum if death occurred previously; deferred annuities, with return of the premium at premature withdrawal or death; and deferred annuities without return of premiums. Such a scheme would include the salaried staff—administrative, clerical, and dispensing—and also the whole nursing staff except probationers during their first year. Members

* Obtainable from Messrs George Barber 23 Farnival Street Holborn, E.C.4, price 1s post free.

moving from one hospital to another, or from one branch of a nursing service to a different one, would not forfeit their benefits, thus, a junior officer would be able to apply for a higher post elsewhere without endangering his pension rights, or the new hospital being obliged to undertake increased liabilities. The whole working life of the nurse would be covered by the scheme, which would enable her to make adequate provision for old age, special arrangements are suggested for those engaged in private nursing. The scheme would be administered by a central council representing the hospitals and the members, and this council, through a special nurses' committee, would deal with nurses not in hospital service.

Scotland.

GLASGOW WESTERN INFIRMARY

Two new memorials were unveiled in the chapel of the Glasgow Western Infirmary on December 12th, in the presence of a large number of nurses and members of the general public. The matron of the infirmary, Miss Gregor Smith, unveiled a memorial in memory of Lieutenant Donald Mackintosh, V.C., son of the superintendent of the infirmary, Colonel D. J. Mackintosh, C.B., M.V.O., which took the form of two stained glass windows erected by the Nurses' League. A tablet was unveiled also in memory of two nurses, Sister Ellen Mund Bond and Staff Nurse Margaret S. Derris, who lost their lives in the war. The Rev. George H. Morrison, D.D., conducted a commemoration service, and delivered an address in which he recalled the high esteem and affection in which those whom they were commemorating had been held. Such a joint commemoration was particularly appropriate because of the united comradeship, co-operation, and self-sacrifice of the two sexes in the great war. Colonel Mackintosh for many years had directed the Western Infirmary with a grasp of detail which had placed him high in the ranks of organizers, no man had surpassed him in devotion to the welfare of the great nursing profession. It was, therefore, fitting that in remembering the son the Nurses' League should also bear the father in mind. The two windows were the first of a series to be placed in the chapel. The matron of the infirmary, unveiling the memorials, spoke of the high esteem and regard in which Lieutenant Mackintosh and the two nurses had been held by the infirmary staff. Colonel J. A. Roxburgh, accepting the custody of the memorials on behalf of the infirmary board of managers, said that they would serve to remind them of the spirit of devotion to duty and self-sacrifice which had always distinguished the medical and nursing professions. At the conclusion of the service wreaths were placed at the base of the memorials.

EDINBURGH ROYAL INFIRMARY

At a meeting of managers of the Royal Infirmary of Edinburgh on December 7th the retirement of Sir Norman Walker, M.D., F.R.C.P., from the post of dermatologist to the institution was announced. Reference was made to the fact that he had been associated with the skin department since May, 1892, when he was appointed assistant physician for diseases of the skin, and also to the fact that since October, 1924, he had been engaged in testing the value of artificial sunlight in the treatment of lupus in the Royal Infirmary. The managers invited him to accept the post of consulting dermatologist to the Royal Infirmary. It was reported that the receipts during the previous three weeks had amounted to over £7,010. It was also intimated that the Royal College of Physicians had elected as its representatives on the board of management for the year 1926 Dr. James C. Dunlop and Dr. William Russell, while the university had nominated Professor Harvey Littlejohn and Professor William Wilson.

SCARLET FEVER EPIDEMIC IN EDINBURGH

A considerable outbreak of scarlet fever, affecting especially school children, began in Edinburgh during the last

half of November. For the week ending November 21st there were 102 notifications, and for the week ending November 28th 52, for the week ending December 5th the number of cases reported was 7, which is practically a normal figure.

Ireland.

ULSTER MEDICAL SOCIETY DINNER

The annual dinner of the Ulster Medical Society was held in the Medical Institute, Belfast, on December 10th. Professor R. J. Johnstone, M.D., M.P., occupied the chair in the unavoidable absence of Mr. James A. Craig, F.R.C.S., owing to illness. After dinner the chairman proposed "The King," which was duly honoured. Later he referred to the absence of their president, who, he said, had bidden him convey to the Fellows and guests his apologies and regrets. He (the chairman) was sure that they would allow him to tell Mr. Craig how much they missed him and then hopes that he would soon be among them again, of which there was every prospect. The following toasts were given: "His Grace the Governor and Prosperity to Northern Ireland," by the chairman, and responded to by the Marquess of Dufferin and Ava, "The Legal Profession," by Mr. Howard Stevenson, and responded to by Lord Chief Justice Moore, "The Guests," by Professor Lindsay, and responded to by Vice-Chancellor Livingston, and by Dr. T. Henry Wilson, Dublin, President of the Royal College of Physicians, "The President," by Dr. Colville, and responded to by the chairman, who said that he would convey to Mr. Craig all their good wishes, he asked them to respond to the toast of "The Honorary Secretary," who had done all the hard work, and Dr. Berth, in replying, warmly associated Dr. Marshall, ex-secretary, with himself, as the latter had given him most willingly all the benefit of his experience. During the evening Dr. Morrow and Mr. Christy gave some recitations and songs, which were much appreciated.

PROPOSED UNIFICATION OF APPROVED SOCIETIES (IRISH FREE STATE)

The Association of Trade Union Approved Societies in Ireland at its first annual meeting passed the following resolution:

That this conference views with alarm the recommendations of the Committee of Inquiry into Health Insurance and Medical Services that all insured persons should be automatically transferred to a unified society, in the management of which they would have no voice and which would be at the same time outside the control of the Oireachtas. We insist further that unless the health insurance scheme is administered directly as a State service, any attempt to prevent freedom of choice in the selection of an approved society is an unwarranted interference with the rights of insured persons.

WESTMORLAND LOCK HOSPITAL, DUBLIN

During the year ended March 31st, 1925, the Westmorland Lock Hospital, which was founded in 1755, reports a slight decrease in the number of patients treated, though it is admitted that this cannot be taken as evidence of diminution in the incidence of venereal disease in Dublin. The relative numbers of married women, single women, and children remain very constant year by year. The routine treatment employed for syphilis is novarsenobillon, but for patients who cannot tolerate arsenic, or after prolonged arsenical treatment return a strongly positive Wassermann reaction, such bismuth preparations as the oxychloride and suspensions of metallic bismuth in glucose solutions have been used. Alternating courses of novarsenobillon and bismuth were found beneficial in cases of a persistently positive Wassermann reaction. Bismuth seemed to be the more effective remedy in the treatment of syphilis of the central nervous system and of syphilis in young children.

CORRESPONDENCE

Correspondence.

EPSOM COLLEGE

ROYAL MEDICAL FOUNDATION

SIR,—Last Christmas I humbly approached your readers on a note of entreaty this Christmas I approach them on a note of gratitude, not unmixed with a hope of further favours to come. We have won the support of many additional annual subscribers, but, like Oliver, I am still handing up my plate for more. A most gratifying response has come from the Panel Committees throughout the country, without any question of *quid pro quo* they have just done what they could, and certainly one who owed his success in the election last June to their activities. We are deeply indebted also to our many honorary local secretaries, some of whom have sent us most substantial returns, and to the great medical institutions, the British Medical Association and its *Journal*, the *Lancet*, and the Medical Insurance Agency. So strenuously did the Pathological Society, under the leadership of Professors Dearn and Boycott, canvass new subscribers that it secured at the first attempt a high place on the list of successful candidates for the son of a recently deceased pathologist. The increased subscription list has enabled us to do many things a little better, and to give materially greater advantages to our fifty Foundation Scholars. In the school department substantial improvements in the salaries of some of our masters have been made—a very important step, for good teaching is a basic requirement.

In the matter of legacies and benefactions we have been very fortunate too. It is on these that we depend almost entirely for the immediate provision of the more costly improvements that we effect. The rebuilt chapel—a war memorial mainly provided by Old Ipsomians—was dedicated last February, a well known Old Ipsomian has beautified it with a gift of handsome silver-plated candlesticks, vases, and an alms dish, and has also been instrumental in securing a contribution of £1,000, which by his wish is being spent on Gothic oak panelling for the chapel. Four generous donors contributed a total sum of £1,300, which has permitted a complete transformation of the library and a good equipment of new books. We have promises of the bequest of parts of two valuable libraries, but let me hasten to say that we welcome suitable books from the living as well as from the dead. If each medical man were to give one well bound book, what a library we should have!

Carefully husbanded legacies have enabled us to lay the foundation stone of a new chemistry block by the hand of our President, Lord Rosebery, and we intend to open it next midsummer on Founder's Day. This is costing rather more than £10,000. At the same time we are taking in hand the concentration at a cost of some and nearly worn-out heating installation for washing and drying £5,000, and we can see our way also to much-needed additions to the accommodation for washing and drying for the boys in the lower school—another £2,000 or more. There we reach the bottom of our pocket, until kind friends of the College can give or influence the giving of legacies or benefactions for other objects of which I venture to name a few.

The provision of a new infirmary would be a priceless boon to the school. The present infirmary is not constructed according to the requirements of modern medicine and nursing, and is uneconomical to run. Our medical officer has plans for a model school infirmary, which would cost from £15,000 to £20,000. The invited infirmary would give accommodation to forty-five more boys from our waiting list, which now totals nearly 500, and this addition to the total numbers would make the school a much more economical unit in many directions. What a chance for a wealthy patient as a thank offering for life or limb, and for the council to inscribe his name on it in perpetuity!

More houses for married masters are a standing need, as also is an entrance lodge adjoining the college quadrangle. Some sportsman may be tempted to build a

sports pavilion or to undertake the much needed levelling of the lower school playing fields.

But in drafting these grandiose proposals before the eyes of potential benefactors, we must not lose sight of our humble daily needs, whereby we educate and maintain our Foundation Scholars free of cost, and distribute also many pensions, if funds were available we should like to increase these pensions, owing to the present high cost of living.

One guinea annually, or a single donation of ten guineas, makes a governor and gives ten votes at each election in June of foundationers and pensioners, and each additional guinea gives ten votes more. We already relieve much distress in the profession will you help us to relieve much more?

Subscriptions and donations may be sent to the Secretary, Epsom College Office, 49, Bedford Square, London, W.C.1, who will be glad to give any information and welcomes personal visits at any time—I am, etc.,

RAYMOND CRAWFORD,
Chairman of the Council of Epsom College.

London Dec 3rd

EDUCATION OF THE PUBLIC AS TO CANCER

SIR,—The late Walter Hines Page, American Ambassador in London during the war, was characteristically outspoken in his judgement of the British nation. Though he admired without stint many of their qualities, he confessed that as a people they were too slow for words. It may be admitted that "slow but sure" is an admirable trait, but "slow when sure" is not so manifest a virtue. Now it has been abundantly proved during the present generation that cancer *per se* is not an incurable disease—that is, that if it occurs in an accessible region and is removed early enough it may never return. And acquaintance with all records, during the present century, during the conviction that these records could have been vastly improved were it not that so many patients applied too late for anything hopeful, from the point of view of cure, to be done for them. Yet the obvious and only remedy for this—that is, supplying the potential victims of cancer with the knowledge which would enable them to apply in time—remains pigeon holed as far as the medical profession generally is concerned, whereby annually thousands of lives that could indubitably be saved are inevitably lost.

Here and there is heard a voice crying in the wilderness—to wit, Winter's effort in regard to cancer of the uterus, my book *The Control of a Scourge, or how Cancer is Curable*, published in 1906, six years before the American Society for the Control of Cancer was founded, an attempt three years ago to induce the Royal Society of Medicine to move in the matter, the half-hearted circular to local authorities emanating from the Ministry of Health in 1923, Wright's book and my own *Cancer and the Public*, published this year, lastly, letters and papers in various medical journals, such as Young's in your last issue. Yet nothing emerges. Medical opinion generally hesitates to give its imprimatur to the initial effort. The one and only objection that can be urged is the production of panic, yet the experience of the American Society for the Control of Cancer, which has been in operation a dozen years, and which employs very sensational (in my opinion far too sensationally) measures to disseminate knowledge about cancer, is that there is no evidence whatever of any increase of cancerophobia in America owing to its educational campaign, in fact, that its efforts have resulted in nothing but good. Statistics of various surgeons, some of which are quoted in Dr. Young's letter, corroborate this fully, and, as he points out exactly the same boys who trotted out in relation to the antituberculosis crusade, there is no doubt that if a campaign for the education of the public was seriously launched, county and borough councils could quite easily set the necessary machinery in motion and keep it going. The most important precaution would be to secure that where literature and public meetings were concerned in the campaign, the public, and that section alone of the public which had reached the usual cancer age—that is, those of middle life and over—should only be told what might really be of use

to them, and in language which was calculated not to alarm them, in other words, strict discrimination should be exercised in the dissemination of literature and in the selection of speakers. A scheme of a cancer campaign for the education of the public by local authorities is given in detail in my latest book, *Cancer and the Public*—I am, etc.,

CHARLES P. CHILDS, B.A., F.R.C.S.

Portsmouth Dec 14th

SIR,—I am glad to see that the attention of your readers is once again called to this important subject by Dr. James Young in your issue of December 12th (p. 1147). At the Annual Meeting of the British Medical Association at Bradford in 1924 I read a paper on this subject which created much interest, and as the result several cancer committees were formed in various towns. In my own city, largely through my influence on the Public Health Committee, a cancer subcommittee was formed, and as the result of our deliberations a circular was drawn up, specially directed to women, drawing their attention to the question of seeking early medical advice on the appearance of early symptoms, and of avoiding running risks. There was some opposition to the circular, but it was agreed to, and was ordered to be distributed throughout the city, one copy at every house. This was supposed to have been done. As a result of this circular the medical officer, in his report for 1924, says "As a result of this, a good many women have applied for information about doubtful lumps." Surely a little more than this might have been said of an effort that entailed a considerable amount of work, and was the least costly to the ratepayers. I may add that the report gives no credit to the cancer subcommittee, the medical officer of health ignoring its existence.

The report goes to show that during the year there were in Birmingham 159 more deaths from cancer than in any previous year. It then explains that this was due to the fact that in every 1,000 of the population there existed a much larger number of persons at ages most likely to be attacked by cancer. What the increase in the number of persons of the cancer age—namely, above 45—was is not stated, but it is certain that this increase alone does not account for the 159 more deaths from the disease than have occurred in any previous year. The publication and issue of the circular to women was undertaken in the hope that, by the education of the public, the death rate from cancer could be reduced, but the half-hearted way in which the proceeding was carried out defeated the end in view.

On submitting a rough draft of the circular to an eminent medical man the question was asked "What man living ever smokes a clay pipe with a jagged end?"

Within a week of being asked this curious question I happened to mention it to an out-patient surgeon in one of our large hospitals, who informed me that two or three days previously he had seen a man with epithelioma of the lip, who was smoking a broken clay pipe, and had been doing so for many months. Why, then, should objection be taken to my calling attention to a perhaps uncommon habit, but one which every man of the world knew existed?

I have mentioned these points because I entirely agree with the statements made by Dr. James Young, and, while in previous articles I have advocated the formation of local committees for the purpose of dealing with the cancer problem, I am now more than convinced that the only way of dealing properly with the subject is for the Ministry of Health to take the matter in hand, and issue instructions to all public health authorities as to the way in which education on the cancer problem is to be broadcast.

I have no hesitation in saying that the public, armed with the knowledge of the disease at present at the command of the medical profession, could reduce, by their own efforts, the death rate from cancer by 25 per cent within a couple of years.

A sporadic crusade against cancer is useless. Nothing but a continual hammering propaganda campaign is likely to produce the results which I am convinced are within our reach. Objection to such a campaign on the ground of producing alarm and panic are all futile and unproved, and there exists no reason why the spread of knowledge on

the subject of cancer should produce results different from those achieved by the spread of knowledge concerning tuberculosis—I am, etc.,

Birmingham Dec 12th

J. HILL EDWARDS

SIR,—I read Dr. James Young's letter (BRITISH MEDICAL JOURNAL, December 12th, p. 1147) on the education of the public as to cancer with much pleasure, and trust it will meet with the serious consideration it deserves. The number of late or inoperable cases of cancer still met with in hospital, and particularly Poor Law hospital, practice is much too great, and is due, in large measure, to the popular belief, for which our profession is largely responsible, that cancer is incurable. Persons afflicted with tumours, who hold this belief, naturally postpone the evil day when they must go to a doctor and have their doom confirmed, and thus allow the period in which a curative operation might be performed to pass.

I have for many years taught that many cases of carcinoma are curable by operation, and in my textbook on surgery say "If all medical men, and through them the public generally, could be taught to regard surgical interference, not as a last resource, but as the proper treatment of carcinoma as soon as detected, the results would undoubtedly be still better." I have also urged the students to do all in their power to educate the public as to the hopefulness of early operation, and thus encourage them to see a doctor as soon as they noticed any suspicious swelling.

But I agree with Dr. Young that further steps are necessary to educate the public, and trust that his letter will lead to prompt and energetic action being taken—I am, etc.,

Glasgow, Dec 14th

JOHN A. C. MACFARLANE

THE LEAD TREATMENT OF CANCER

SIR,—The following is the actual text of the correspondence, except for the omission of a name, that passed between Mr. Joll and myself, together with the last letter sent to one of my colleagues on the Cancer Research staff, before the matter was brought to my notice.

"October 6th 1924

"Dear Mr. —, "Many thanks for your kind letter. I suppose it would not be possible to get an account of how preparation S3 is manufactured? Perhaps that is a secret they would not care to reveal, but I have no doubt I could get it made up if the details were forthcoming.

Again many thanks

"Yours sincerely,
(Signed) CECIL A. JOLL."

"October 17th 1924

"Dear Mr. Joll, "— has consulted me about your correspondence with him. We are continually receiving requests from all over the world exactly similar to yours. We have however so far felt that our preparation has by no means reached the level of perfection to which we may be able to bring it. We have not made any attempt to ensure secrecy as you suggest. I can only presume you have not read my publications.

"At the present moment the committee and I are engaged in endeavouring to reorganize our arrangements, and until this is done I can enter into no discussion as to what may be possible in the future. There is no one more anxious than we are that suitable cases should be treated all over the world. I can however go so far as to say that it is unlikely that we shall help anyone who is unwilling to come to Liverpool to learn the methods, dangers, etc., at first hand.

"Yours sincerely,
(Signed) W. BLAIR BELL."

"October 20th, 1924

"Dear Dr. Blair Bell, "I think you have misunderstood my letter if you think that I suggested any desire on your part to keep these matters secret. I merely thought that while these matters are experimental you probably do not wish to broadcast the information, which is, of course, in accordance with what is legitimate. I should however, like to see what work is being done on these lines and if you could tell me a convenient day, or days during the early part of November I shall make a point of coming up for that purpose.

"Yours sincerely,
(Signed) CECIL A. JOLL."

"October 22nd, 1924

"Dear Mr. Joll "Thank you for your letter. I am afraid I can no longer undertake to show individuals round except in special circumstances. It wastes too much time as our organization is scattered

I gave a demonstration to the Association of Surgeons and until we have definitely decided on how best the question of teaching outsiders can be tackled I can do nothing.

I think I told you in my last letter that I am busy reorganizing our arrangements, and I am taking into consideration all these matters.

"Yours sincerely,
(Signed) W. BLAIR BELL."

From these letters unprejudiced readers will be able to form their own conclusions as to how far Mr. Jell has truly represented what passed between us, or has misrepresented the whole affair.—I am, etc.,

Liverpool Dec 14th

W. BLAIR BELL

BLOOD TRANSFUSION IN CARBON MONOXIDE POISONING

SIR,—I am very grateful to Professor Haldane for his letter in your issue of December 12th (p. 1146), which throws considerable light on the cases I reported under the heading of carbon monoxide poisoning. I always suspected, and in my report hinted at, another factor, and I now have little doubt that these cases should be labelled methæmoglobin poisoning.

Professor Haldane states that the severe symptoms resulting from carbon monoxide poisoning are not due to existing shortage of oxygen, but to the after effects of shortage of oxygen, and that neither transfusion nor administration of oxygen can be expected to have any good effect in such cases.

Assuming that the severity of the after effects is in direct proportion to the duration of time for which the carbon monoxide remains in the blood, might not both be reduced by early venesection and blood transfusion when possible, or does Professor Haldane consider that this can be accomplished equally well, or better, by the administration of oxygen with 5 per cent of carbon dioxide? Information on this point seems to be of great importance in view of the fact that we read from time to time of fatal cases occurring to motorists working in a closed garage with the engine running.

Assuming adequate facilities, what is the correct procedure for a medical man when faced with a patient found unconscious in similar circumstances?—I am, etc.,

London W, Dec 11th

C. GORDON-WATSON

SIR,—I read the article by Sir Charles Gordon-Watson (BRITISH MEDICAL JOURNAL, December 5th, p. 1049) with much interest. During the past four years I have examined over one hundred cases of death from carbon monoxide poisoning, and have also tested the blood from several cases which have survived. In every instance the blood has been of a pink colour, except when seen in bulk, as, for example, in the large veins. Carbon monoxide blood picked up in the laboratory invariably has the pink colour which is characteristic of this compound of hæmoglobin.

As the very interesting paper by Banham, Haldane, and Savage in the BRITISH MEDICAL JOURNAL of August 1st indicates, this pink colour may occur *post mortem* in cases of poisoning by nitrates, being due to nitric oxide hæmoglobin. In the living body, however, whilst small traces of NO hæmoglobin may be formed, the process does not get beyond the stage of methæmoglobin, which is the first step in the conversion of oxyhæmoglobin into NO hæmoglobin. Nitrites poison by depriving the blood of its oxygen-carrying power just as CO does, but gives a cyanosed appearance as contrasted with the pink of CO poisoning, the cyanosis being due to the presence of methæmoglobin.

The appearance of the blood in cases of methæmoglobinæmia, which is one of the forms of enterogenous cyanosis, is identical with that described by Sir C. Gordon-Watson in his article. In these cases, although the patient is very cyanosed, the lips being lead-blue to black in colour, there is frequently no respiratory distress, a point emphasized in his article. Again, methæmoglobin is practically unaffected by oxygen, whilst CO-hæmoglobin responds to its administration. The spectrum of neutral methæmoglobin shows four bands, but these may be so faint that

only the two bands which correspond in position to those of oxyhæmoglobin are seen, this would explain the spectroscopic findings in Sir C. Gordon-Watson's case. In methæmoglobinæmia the urine is sometimes coloured with methæmoglobin, which gives it a dark colour, this is not met with in the usual form of enterogenous cyanosis, but only occurs when hæmoglobin takes place, and would account for the suspicion of bile in the urine which was raised in his case.

Sir C. Gordon-Watson has suggested that other gases may have been the cause of the condition. I think this is certainly the case, and that while there may have been some small amount of carbon monoxide present the main cause of the symptoms was probably a methæmoglobinæmia due to the inhalation of one of the other gases formed by the explosion in the confined space.—I am, etc.,

DOUGLAS J. A. KERR, M.R.C.P.

Forensic Medicine Department,
Edinburgh University, Dec 11th

ABDOMINAL CRISES IN CHILDREN

SIR,—I am much obliged to Dr. Robert Richards for calling my attention to the value of tenesmus in the differential diagnosis between intussusception and crises of acute bacillary dysentery. I quite agree that rectal examination is readily tolerated in intussusception, and I ought not to have omitted the mention of tenesmus in dysentery. The question of the presence of fecal matter is evidently merely a matter of adverbs and adverbial expressions. I said that in severe diarrhoea and dysentery some fecal matter is usually present. Dr. Richards says that in most cases of acute bacillary dysentery, soon after onset, the stool consists entirely of blood and mucus. These are not contradictions, and the supply of fecal matter is obviously more strictly limited than that of blood and mucus.—I am, etc.,

London, W 1 Dec 14th

JOSEPH E. ADAMS

TREATMENT OF PUERPERAL SEPSIS

SIR,—In his address on the above subject, reported in the BRITISH MEDICAL JOURNAL of December 12th (p. 1126), Professor Watson states that the benefit of quinine, administered intravenously and intramuscularly, is probably due in many cases to the formation of a fixation abscess. I regret that I cannot agree with this. I have been responsible for the administration of many hundred injections of quinine bichloride during the past few years, and have never yet seen a fixation abscess result. I think it important to give the injection deep into the gluteal region and massage it away from the site of inoculation. Thus, discomfort and pain are avoided and no fixation abscess results.—I am, etc.,

London W 1 Dec 14th

S. GORDON LUKER

POST-GRADUATE EDUCATION IN ENGLAND

SIR,—Certain statements regarding the finances of the Fellowship of Medicine made by Sir Holburt Waring in his address on post-graduate education may create a wrong impression. Sir Holburt stated that the total expenses for 1924 were less than the total receipts by £220 8s. 4d. It might be overlooked that the expenses included a payment of £1,505 in fees for the teaching done. This payment of £1,505 was the net amount paid for teaching, and did not include payment of expenses in connection with the various courses, which expenses were defrayed before the balance available for teaching fees was allocated. Thus the Fellowship of Medicine is distributing about £1,450 in fees. Since its inception the Fellowship has distributed over £8,500 in fees, and as the number of post-graduates is increasing steadily and the attendance at the courses is improving, I think it will be admitted that the Fellowship of Medicine is not such a failure as Sir Holburt would appear to think.—I am, etc.,

London, W 1, Dec 14th

HERBERT J. PATFORD

Always taking a keen interest in the scientific work of the British Medical Association, Powell contributed his share to the discussions at the various annual meetings. At Portsmouth, in 1899, he delivered the Address in Medicine, surveying the recent advances in practical medicine, and discussing, amongst other important subjects, susceptibility and immunity, serum therapeutics, prophylactic inoculation, and the prevention and treatment of tuberculosis. In the discussion at the same meeting on the preventive and remedial treatment of tuberculosis, opened by Sir Clifford Allbutt, Powell, in dealing with insanitary houses as a factor in the spread of the disease, laid special stress on the danger of the common house-fly, which he thought might be potent for harm. He was a vice-president of the

added experience of a generation is the view Powell took of the tubercle bacillus in relation to phthisis. He sums up his consideration of the question thus:

"We cannot say with phthisis as with the more definite zymotic diseases that we have health on the one hand and a specific organism on the other, that when we observe a man sickening with phthisis, the tubercle parasite is already in possession of him, and that we might hope by exterminating the bacillus to eliminate phthisis from our list of diseases. The characteristic lesions of phthisis are brought about by many causes and furnish a soil upon which the tubercle bacillus will readily grow. Epiphytic in nature, concomitant in time, neither the seed nor the fruit of the disease, it must nevertheless be allowed that the tubercle bacillus takes an important part in the extension and conveyance of tubercular lesions."

His own personal experience and observation convinced him that in the ordinary circumstances of life phthisis was not an infectious malady. In a fourth edition, which appeared in 1893, no material change was made in the plan of the work. It continued to be popular, but it was not until eighteen years had passed (1911) that the fifth edition was published, with the title *On Diseases of the Lungs and Pleura, including Tuberculosis and Mediastinal Growths*, in its preparation he was associated with Dr (now Sir Percival) Horton-Smith Hartley. It came at an opportune moment, for much had been done by many workers during the years of its preparation. The British Congress of Tuberculosis had been held in London in 1901, and the second Royal Commission on Tuberculosis, appointed after the Congress, had reported in 1911. The book therefore embodied much important new material and met with a ready acceptance from the profession.

During a discussion in 1899 at the Royal Medical and Chirurgical Society, Powell summarized his views on open-air treatment, a term he thought unfortunate, because it ignored other factors in the sanatorium method, and seemed to suggest that it needed a special building for its application, sanitary or hygienic treatment would, he urged, be preferable as a descriptive term. He recognized, however, that the method was an advance in therapeutics, and that it played an important part in educating the patients for life at home. He expressed his conclusion more fully in a foreword he wrote at this time to the work by Dr Rufenacht Walters on *Sanatoria for Consumptives* (1899). Their usefulness, in his opinion, extended far beyond their immediate purpose of enabling tuberculous patients to get the maximum amount of fresh air, he insisted on their value as educational establishments for teaching the patients self-management, self-discipline, and hygienic laws, and on the importance of the destruction of the tubercle bacilli. He expressed the opinion that sanatoriums are only useful at certain stages of the disease, and urged the importance of giving medical officers of health authority to do much more in regard to consumption than to regulate the sanitation in their districts. A few years later (1902) he was appointed by King Edward VII one of the advisory committee of six to adjudicate in the competition for the erection of a sanatorium to be called after His Majesty's name. The prize was awarded to the late Dr Arthur Latham, with Mr William West as architect, and the sanatorium was built subsequently at Midhurst.

Another work was *On the Principles which Govern Treatment in Diseases and Disorders of the Heart*, founded on the Lumleian Lectures which were delivered before the Royal College of Physicians in 1898 and originally published in the *Journal*. In 1894 he had opened a discussion, at the Bristol meeting of the Association, on the functional diseases of the heart, in an address which showed a wide experience of the subject. The Lumleian Lectures surveyed the whole question of diseases of the heart, and were, like his other work, full of evidence of his careful and thorough methods as a clinician in the matter of trying new methods of treatment, for he related his experience of the treatment of infective endocarditis. Among his other contributions to medical literature were his articles in *Allbutt's System of Medicine* on diseases of the myocardium and angina pectoris. The latter article, concise and to the point, is made more interesting and practical by notes from his case-books. Previous to this he had written articles on physical examination, hæmoptysis, and pneumothorax for *Quain's Dictionary of Medicine* (1882 and 1894 editions),

and on aneurysm of the thoracic aorta and mediastinal tumours in *Reynolds's System of Medicine* (vol. v).

In person Powell was slight, with clean shaven, almost ascetic face, his manner was gentle and deliberate, as was his speech, and his examination of a patient careful and thorough. He had, indeed, a personal charm which appealed to doctor and patient alike. His written opinions, too, were most thorough, and details of treatment were carefully discussed. He married, in 1872, Juliet, daughter of Sir John Bennett. She died in 1909, and in 1917 he married Edith Mary Burke, daughter of the late Mr Henry Wood. He is succeeded by his son Douglas, brevet lieutenant-colonel, late Royal Welch Fusiliers.

Sir HUMPHRY ROLLSTON, President of the Royal College of Physicians, has been good enough to send us the following tribute to his predecessor's memory.

The death of Sir Richard Douglas Powell removes a great figure in the medical world of London, who is successively President of the Medical (1891), the old Clinical (1899-1901), and the Royal Medical and Chirurgical Societies (1904-6), and of the Royal College of Physicians (1905-10), had eminently maintained their dignity and advanced their prestige. During these years of official authority he played an active part in important changes which owed much to his enlightened and hearty co-operation—for example, the amalgamation of the seventeen separate societies with the Royal Medical and Chirurgical Society to form the Royal Society of Medicine in 1907, for it was to him that the late Sir John MacAlister submitted the scheme in 1905, and as a result effective steps were at once taken. The Association of Physicians of Great Britain and Ireland, of which, in 1907, he was the first president, took form under his hospitable guidance in Wimpole Street with the collaboration of Sir William Osler and Sir Wilmot Herrington. He was one of the last of the distinguished band of broad-minded physicians who were so closely connected with Sir William Jenner, and preserved the ideals of medical practice while showing full sympathy with the progressive advances of science. At the Royal College of Physicians he was a dignified and impressive President, and when he felt it his duty did not hesitate to express his opinion as to the right course of action. He had the wide sympathies of a sportsman, and was a courtly gentleman with a most kindly nature.

GEORGE PADDOCK BATE, CBE, M.D., F.R.C.S.P.,
Formerly Medical Officer of Health, Bethnal Green.

We regret to record the death, on December 1st, of Dr G. Paddock Bate, a past-president of the Society of Medical Officers of Health, who from 1875 to 1919 was medical officer of health for Bethnal Green.

George Paddock Bate was born at Leicester in 1843, and from Leicester Collegiate School went to the Westminster Hospital, where he was Chadwick prizeman. In 1865 he obtained the diplomas of M.R.C.S. Eng. and L.R.C.P. Lond., and in 1868 the L.S.A. In 1875 he became F.R.C.S.P., and in the following year took the M.D. Bux. degree with honours in surgery, pathology, and forensic medicine. After serving as house surgeon at the Westminster Hospital he was appointed visiting medical officer to the Manchester Hospital for Sick Children, a post he held for three years. In 1894, when he had been twenty-one years M.O.H. at Bethnal Green, he was appointed surgeon to the J Division of the Metropolitan Police, and so remained until 1920. He was for many years a certifying factory surgeon and a medical referee under the Workmen's Compensation Act, and held the rank of surgeon-colonel (ret.) of the 5th Battalion Rifle Brigade. He was also honorary consulting physician to Queen Adelaide's Dispensary, and medical inspector to Parmiter's Foundation School.

Dr Bate was a keen microscopist, and became a Fellow of the Royal Microscopical Society. His other recreations were chess, and in earlier years lawn tennis. He was for many years a member of the British Medical Association, and in 1907 was a member of the Executive Committee of the City Division. The CBE was conferred upon him in June of this year in recognition of his services to public health.

We have received the following appreciation of Dr Bate from a distinguished member of our profession who knew his work well.

Both the late Sir R C Brown of Preston and Dr G Paddock Bate were closely associated with the Factory Department, the former for fifty-five and the latter for thirty-five years. No factory inspector had been in Preston or East London for more than a week or two without feeling that here was the special medical knowledge of real assistance to him in applying the seriousness of the accidents caused by machinery. Both of them maintained the most cordial relations with successive inspectors, as, indeed, was to be expected, seeing the interest they took in their factory work. Dr Bate, no doubt, also from his position as medical officer of health for Bethnal Green, acted as examiner in sanitary science for many years for posts as inspector of factories. He never ceased to regret that the discontinuance of the requirement of reporting on accidents caused by machinery deprived him of the best means of ascertaining the danger points to life and limb—from which it was his duty to try to safeguard the children whom he had to examine. He must have "passed" at least half a million children and young persons into industrial life—all with a word of encouragement. He used to say, when discussing the question of whether it was worth while to go to the trouble of visiting the place of employment instead of making the children come to his office, that at the factory he could see them with the signs of their occupation upon them, and he could influence employers to concede willingly matters not legally enforceable, once the need or desirability was pointed out to them. Small points, like biting the nails in the handling of lead paint, poisonous drugs, or stains containing potassium bichromate, never escaped him, nor would he permit girls with loose hair, or children with deafness, to work near power machinery. He utilized the power of attaching conditions to his certificates, as to the nature of the work upon which the child or young person should be employed, to the utmost. On the other hand, he used to say that young persons—particularly girls—who attended for examination at his office, away from the factory in their outdoor clothes, earned with them no precise indication of their actual employment, of which, indeed, they were often ignorant. No responsible person attended with them to whom instructions could be given. He was always a protagonist for the certifying surgeon as a field worker in the factory.

SIR HENRY F NORBURY, K C B,

Formerly Medical Director General R N

SIR HENRY FREDERICK NORBURY, K C B, R N (ret.), died at Bitham on December 10th. He was born on September 12th, 1839, and educated at Oundle School and at St Bartholomew's Hospital. After taking the M.R.C.S. in 1860, he entered the navy as surgeon in the same year. In 1868 he took the L.S.A., and in 1870 graduated M.D. Malta. He became staff surgeon in 1872, fleet surgeon in 1879, D.I.G. in 1887, I.G. in 1894, and in 1898 succeeded Sir James Dick as Director General of the Medical Department of the Navy, he retired in September, 1904.

He served in the Kafir war of 1878, in medical charge of the Naval Brigade, was present in the actions at Quoina River and Quintana, was mentioned in dispatches and recommended for promotion. In the Zulu war of 1879 he was again in medical charge of the Naval Brigade, as principal medical officer, was present at the battle of Inyezane, was mentioned several times in dispatches, was promoted to fleet surgeon, and received the C.B. In August, 1879, he was appointed to the charge of the Naval Hospital at the Cape of Good Hope. After three years in that post he was appointed to the charge of the Naval Hospital at Stonehouse. From 1890 to 1895 he was Assistant Director General, and from 1895 to 1898 principal medical officer at Plymouth, ending his career with six years as Director General of the Medical Department of the Navy. In 1879 he won the Gilbert Blane gold medal, in 1882 he received the honorary degree of M.D. from the University of the Cape of Good Hope, in 1895 he was made a Knight of Grace of the Order of St John of Jerusalem, in 1897 he was promoted to K.C.B. at the Diamond Jubilee, in 1900

he received the honorary Fellowship of the Royal College of Surgeons of England, and in 1901 was awarded a good services pension. He was also honorary surgeon to King Edward and to King George, and had the medals given for Queen Victoria's Diamond Jubilee, and for the coronations of King Edward and King George. In 1868 he married the daughter of Mr E G Wade Bowd of Burton Bradstock, Dorset, by whom he had three sons and five daughters. His eldest son is Captain H B Norbury, C.B., R.N., the second is Mr H F O Norbury, Civil Service, and the third is Mr L E O Norbury, surgeon to the Belgrave Hospital for Children and to St Mary's Hospital. His five daughters are all married, three of them to medical men.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

PARLIAMENT will be prorogued on Monday or Tuesday till February 2nd, 1926. Before rising it will have passed the Government of India (Civil Services) Bill and the Safeguarding of Industries Bill.

The county councils, whose views on the draft Poor Law Reform Bill were requested by Mr Chamberlain, will not be able to furnish them before the House reassembles in February. For this reason, and because of other heavy calls on the time of Parliament, the Government has decided that it cannot carry the Poor Law Reform Bill into law next session. It may, however, be introduced late in the session to give the House of Commons an opportunity for discussion.

On December 14th at the House of Commons, Mr Chamberlain (the Minister of Health) met the Unionist party's Health and Housing Committee, with Dr Fremantle in the chair. The Minister explained the scheme of the Poor Law Bill, and showed himself resolved to stand by its principles. He dealt incidentally with the opportunities which it would give local health authorities to assist voluntary hospitals and co-ordinate their work with other public health activities.

About thirty members who support the claim of osteopaths for recognition met at the House of Commons on Tuesday evening and decided to introduce next session a bill proposing that a statutory register of osteopaths should be established, and that this bill should define the educational qualifications to be demanded of osteopaths in Great Britain before registration. At this meeting it was announced that the osteopaths proposed to apply for a charter. There is no confirmation of the recent report that the Government had decided to propose the statutory registration of opticians.

No progress has been made with the Bethlehem Hospital Bill.

The General Medical Council and the "Medical Register"

On December 14th Lieut. Commander Kenworthy asked the Prime Minister if the Lord President of the Privy Council had been approached by any section of the medical profession with regard to the constitution of the General Medical Council and what steps if any he had taken or proposed to take in this matter. Major Hennessy who replied said the answer to the first part of the question was in the negative and the Lord President of the Council considered that the case for action as suggested in the second part did not arise. Mr Basil Peto asked if the Prime Minister would consider the necessity of amending Sections 26, 28, and 29 of the Medical Act of 1858, in view of the obscurity of the procedure under the Act and the confusion of the powers of examining colleges and bodies and the General Medical Council whereby persons whose names had been removed from the Register were required by the General Medical Council to prove that they possessed degrees of which they had been deprived in consequence of the General Medical Council having removed them from the Register before their names could be restored to the Register. Major Hennessy said he was informed that there was no difficulty in interpreting the sections of the Act of 1858 to which Mr Peto referred. It must be remembered that the General Medical Council could not confer medical degrees or qualifications nor could it annul them when once conferred. Moreover it could not place a man on the Register unless he possessed a degree or qualification. When therefore, a practitioner had been deprived of his degree or qualification by the body which originally conferred it that body must restore it before the General Medical Council could reverse its own previous decision. Mr Peto asked whether, when the General Medical Council removed any person from the Register for reasons given the consequence was that the colleges or other examining bodies automatically withdrew that person's degree. If that were the case how could such a person get on to the Register again unless the original examining body acted in the matter? Major Hennessy replied that he must have notice of that question.

Deaths from Erysipelas, and Successful Vaccinations in Infants.—Mr. Serrington, on December 7th, asked the Minister of Health to supply figures giving the deaths of infants under 1 year of age from erysipelas per million births for each year since 1910, the number of infants under 1 year of age successfully vaccinated by public vaccinators in 1914, with the percentage of births, and the total expenditure on public and local funds for each year since 1914 in reply to the first two parts of the question, supplied the following information relating to England and Wales:

Deaths of Infants under 1 year of age from Erysipelas per million Births

Year	Year	Year	Year
1910	167	1915	207
1911	154	1916	146
1912	179	1917	127
1913	161	1918	119
1914	207	1919	91
		1920	149
		1921	133
		1922	124
		1923	112
		1924	116

Number of Infants under 1 year of age successfully vaccinated by Public Vaccinators, and the Percentage of such Vaccinations to the Births Registered

Year ended	Successful primary vaccinations by public vaccinators at the expense of the rates	Percentage to births
September 30th	Number	
1914	284,227	32.2
1915 17	Figures not available	
1918	180,090	27.5
1919	170,653	27.0
1920	241,209	21.8
1921	220,474	25.7
1922	205,106	25.5
1923	234,103	31.0
1924	245,211	33.3

Details of the expenditure on vaccination for 1914 had been given in the report on November 30th.

Vaccination and Small pox.—Mr. Chamberlain stated that in 1924 the deaths of four persons in England and Wales were attributed to vaccination or to causes associated with vaccination. These persons were aged 8, 3, 3, and 5 months respectively. Answering questions by Mr. Bromfield about deaths registered from small pox in foreign countries, Mr. Chamberlain said that in Germany 109 deaths were registered from small pox in 1921, the figure for 1922 was not available. In 1923 there were 17 cases and in 1924 16. The number of deaths in those years were not available. In Italy 16 deaths were registered from small pox in 1916, 114 in 1917, 924 in 1918, 16,380 in 1919, 11,037 in 1920, 1,360 in 1921, 37 in 1922, and 16 in 1923. In Japan there were 889 cases and 212 deaths in 1921, in 1922 the figures were 679 and 124, in 1923, 1922 and 381, in 1924, 1,702 and 266. In reply to Mr. Compton Mr. Chamberlain said vaccine lymph was not tested on rabbits before it was issued to public vaccinators.

Right of Appeal of Insurance Practitioners.—Answering Lieut. Commander Kenworthy, Mr. Chamberlain said he was aware that a considerable section of insurance practitioners desired to be given a general right of appeal in the courts against his decision. He had received resolutions passed at a meeting of delegates, though he could not agree that they represented not less than 5,000 practitioners. He had refused to receive a deputation from the conference as he had already discussed the matter with the Insurance Acts Committee of the British Medical Association, which represented the general body of insurance practitioners. The question was engaging the attention of the Royal Commission on Health Insurance, and he did not propose to take any action pending its report. Inquiry committees, set up to consider whether the continuance of a practitioner on the medical list would be prejudicial to the service were appointed in accordance with regulations made under Section 24 (2) of the National Health Insurance Act, 1924, and were not governed by the provisions of Section 91 of that Act.

Pensions Ministry.—Major Tivon (Minister of Pensions) has stated in reply to questions: (1) That the number of pensioners at present in payment for neurasthenia was about 32,000 of which about 12,000 had been awarded for life. Of the balance, about 17,000 pensioners had been in receipt of pension for four years or more. The possibility of making final awards in these cases was constantly kept in view in connexion with the medical re-examination of cases. (2) That the number of men in receipt of inpatient treatment for neurasthenia in the first week of the present month was 1,809. The yearly cost of the treatment in Ministry hospitals for this class of case was approximately £250,000.

Diphtheria.—Answering Mr. R. Richardson Mr. Chamberlain said that the mortality from diphtheria in West Bromwich was exceptionally high in 1922 and 1923 but the incidence was fairly constant throughout those years and the occurrence presented no feature necessitating any special inquiry by the Minister of Health or reference to the matter in the annual report of the chief medical officer. The high incidence and fatality in 1922 were attributed by the medical officer of health to the fact that in the majority of cases medical assistance was not sought until the third or fourth day of the disease, and there was consequent delay in administering antitoxin. As regards the year 1923 the medical officer of health reported that more prompt recourse to medical assistance, which rendered earlier administration of antitoxin possible, had resulted in a reduction in the case mortality. In 1922, 95 cases were treated

in hospital, of which 18 proved fatal. The figures for 1923 were 153 and 19 respectively. In all these cases antitoxin was administered.

Infant Welfare Centres.—On December 11th Mr. Neville Chamberlain informed Sir C. Oman that he was aware that the infant mortality rate in Market Drayton had generally been in excess of the average rate for the whole country, although this had not always been the case in the past ten years. The county council was taking steps to provide a new infant welfare centre in the district, and further inspection did not seem to be necessary. In reply to another question it was stated that the total maintenance cost of the Wednesbury infant welfare centre was about £225 a year, and of the Wednesbury tuberculosis dispensary about £300 a year.

Arsenic and Apples.—The Minister of Health is trying to arrange that measures shall be taken to remove contamination by arsenical washes before apples are packed for export to this country and has reminded port sanitary and other local authorities of the necessity for strict inspection of apples. Recent analyses have shown the quantities of arsenic on certain brands of apples. The Minister states that poisonous washes are used on apple trees in this country, but the applications are made so early in the season that the risk of any appreciable quantity of poison remaining in the apples, when they are gathered, is negligible.

Fumal in Epilepsy.—Mr. Seurr asked the Minister of Health what steps had been taken to draw the attention of the medical profession to the dangers arising from the use of the drug luminal, especially as, when used for the treatment of epilepsy, serious danger arose if the treatment was continued though the epilepsy was cured. Mr. Chamberlain said the effects of the drug had been fully discussed in the medical press and it seemed justifiable to assume that those doctors who used it were well aware of its action and possible risks.

Industrial Poisoning.—Asked by Mr. J. Baker about the use of varnishes or dopes composed of celluloid or nitrocellulose dissolved in acetone, amyl acetate, or similar solvent, the Home Secretary said he was advised that the existing requirements of the Factory Act had been found adequate so far as danger to health from inhalation of the fumes was concerned. The Chief Inspector was not satisfied about the security from fire or explosion. Answering Mr. Robinson the Home Secretary said 5 cases of lead poisoning were reported in 1921 among pasters manufacturing or repairing electric accumulators, 11 in 1922, 44 in 1923, and 42 in 1924. Since March 1st there had been 15 cases among pasters. The new regulations appeared to have substantially reduced the number of cases. Two cases of carbon bisulphide poisoning had been reported since February 1st and 30 cases of aniline poisoning, but no case of chronic benzene poisoning. The whole subject was receiving special attention from the medical inspectors of the Home Office.

Army Pharmacists.—On December 8th Captain D. King stated that all army dispensaries were under the direct supervision of a medical officer. The only persons, other than medical officers, who might make up prescriptions in those dispensaries were qualified army dispensers and they might only make up prescriptions signed by a medical officer. He was not aware of any reason for considering that the present procedure was not satisfactory. It was not the case that a superintending pharmacist was now in subordinate charge of the dispensary in every military hospital of one hundred beds and over. The War Office had advised the Central Voluntary Aid Detachment Council who consulted them on the subject that the status of pharmacists in their detachments should not be higher than that of non-commissioned officers in the army. The reason was that the status of members of Voluntary Aid Detachments should be appropriate to the duties they might be required to perform in war. There were no appointments of officers' rank for pharmacists in the army. He would not be justified in giving instructions that quartermasters in the British Red Cross Society, whose duties it would be to order and superintend the distribution of medical supplies in war, should be qualified pharmacists.

Death Statistics of Seamen.—On December 15th Sir P. Cunkiff (President of the Board of Trade) told Mr. Watts that he had received a resolution from the Royal Sanitary Institute and also its detailed suggestions regarding the death statistics of seamen. The Permanent Consultative Committee on Official Statistics had appointed a special subcommittee to advise whether any alteration in the classification of these death statistics was necessary.

Notes in Brief

Giving particulars of accommodation in Naval Hospitals, Mr. Davidson (Parliamentary Secretary to the Admiralty) said in reply to General Charteris that the average daily numbers of patients in these hospitals for the period January 1st to September 30th 1925 were: Haslar 334, Plymouth 375, Chatham 377, Portland 50, South Queensferry 44, Malta 188, Bermuda 22, Hong Kong 51, Cape 36, Wei-hai-wei 11. No later information was available.

Meeting the Unionist Agricultural Committee at the House of Commons, on December 9th Mr. Chamberlain said there was no intention of passing the Poor Law Reform Bill into law during 1926 though it might be introduced late in that session, purely for discussion.

The Minister of Transport is considering the question of asking for additional powers to deal with dazzling headlights, in the Road Vehicles Bill which he hopes to introduce.

The Secretary for Scotland has stated that no local authority in Scotland so far as he was aware, made a charge to tuberculosis patients or their relatives for sanatorium or other treatment provided by the authorities.

Medical News.

In our issue of December 5th we published a review of the new fourth edition of the late Sir James Mackenzie's *Diseases of the Heart*, and in the same issue (p 1075) referred to it in the course of a leading article entitled "Mackenzie's Last Work." Messrs. Faber and Gwyer inform us that there is still another book by Sir James Mackenzie to come. It is a short book, or perhaps more correctly, as they tell us, a long essay, which they intend to publish under the title *The Basis of Vital Activity* early next year. It deals with the conclusions he drew from researches in the institute at St. Andrews, now known by his name.

THE Royal Sanitary Institute will celebrate its jubilee next July by an Imperial Congress in London, of which Mr. Neville Chamberlain will be president. The Lord Mayor and Corporation of the City of London have granted the use of the Guildhall for the opening meeting. The congress will have six sections and seven conferences. The Lord Mayor will be chairman of the conference for sanitary authorities, Sir George Newman of the section of sanitary science and preventive medicine, Sir William Hardy, F.R.S. (Director of the Food Investigation Board), of the section of the hygiene of food, Sir William J. Collins of the conference of sanitary inspectors and Dr. G. F. Buchanan of the conference of medical officers of health. Official representatives to attend the congress have already been appointed by Australia, New Zealand, India, the Straits Settlements, and by the Spanish Government.

A BALL in aid of the Royal Medical Benevolent Fund Guild will be held, under the patronage of the Princess Louise, Duchess of Argyll, at Kensington Town Hall, on Tuesday, January 12th, 1926. Tickets (15s. each or 6 for four guineas) can be obtained from the Honorary Secretary, 20, Upper Phillimore Place, Kensington, W 8.

THE Fellowship of Medicine announces that a special vacation post-graduate course will be held at the Prince of Wales's General Hospital from January 11th to 23rd, 1926. Demonstrations of modern clinical methods will be given each morning, and in the afternoons special lectures will be delivered and there will be practical work in the various departments of the hospital. From January 4th through out the month a series of lecture demonstrations on psychological medicine will be given at the Bethlem Royal Hospital on Tuesdays and Saturdays at 11 a.m. At the West End Hospital a month's course in neurology will open on January 4th at 5 p.m. The North Eastern Hospital will hold a three weeks' course in infectious fevers on Wednesdays at 2.30 p.m., and Saturdays at 11 a.m., from January 11th, and there will be a course in diseases of children at the Queen's Hospital from January 18th to 30th. At the National Hospital for Diseases of the Heart a whole day course will be arranged from January 18th to 30th. It is proposed to hold weekly demonstrations in clinical surgery throughout the year. Those arranged for next month are: January 11th, Mr. Munro at St. Mark's Hospital, 5 p.m.; 19th, Mr. Souttar at the London Hospital, 2 p.m.; and 27th, Mr. Carling at the Westminster Hospital, 2 p.m. The Fellowship has arranged a further series of lectures from January to March. The first will be given by Dr. Herbert Spence on abdominal palpations in pregnancy, on January 21st, at 5 p.m., in the hall of the Medical Society of London. A copy of each syllabus and of the Fellowship general course programme may be obtained from the Secretary, 1, Wimpole Street, W 1.

THE People's League of Health, of which the King is patron, has arranged a series of lectures for the coming year, beginning at the end of January. Among the lecturers are Sir Frederick Mott, Sir Maurice Craig, Sir Robert Armstrong, Jones Dr. Bernard Hart, Dr. A. F. Tredgold, Dr. T. Beaton, Dr. R. H. Cole, Dr. W. A. Potts, Professor Leonard Hill, Professor Mellanby, Sir Henry Gray, and Professor F. F. Wynne. The lectures will be given at the house of the Medical Society and the Regent Street Polytechnic. Particulars can be obtained from Miss Olga Nethersole, R.R.C., 12, Stratford Place, W 1.

THE annual dinner of the Medico Legal Society was held at the Holborn Restaurant, London, on December 11th. Earl Russell (a past president) took the chair in the absence of the President, Lord Justice Atkin. Sir St. Clair Thomson, President of the Royal Society of Medicine, in responding to the toast of the medical and legal professions, proposed by Lord Riddell, made amusing reference to the "irregular relationship" between Medicine and Law which (like all liaisons) had its features of interest. "We doctors," he said, "trust and envy, but do not understand lawyers, if we understood them, perhaps we should not trust them so much." Mr. T. R. Hughes, K.C., chairman of the General Council of

the Bar, responding for the Law, spoke of the high regard felt by lawyers for the medical profession and their appreciation of its great assistance in the administration of justice. Sir Emley Blackwell, Legal Assistant Under Secretary of State, Home Department, also replied. The chairman, in submitting the toast of the society, mentioned the proposed foundation of a medico-legal institute, to which reference was made in these columns on June 27th last (p. 1184). It was hoped, he said, that considerable progress with the scheme would be made in the near future. In a passing allusion to recent criticisms of the General Medical Council in the lay press, Earl Russell remarked that public opinion as expressed by the man in the street was about the least competent body to decide on the standards of conduct necessary among members of a profession. The toast of "Our Guests" was proposed by Sir Bernard Spilshury, joint honorary secretary of the society, and responded to by Dr. Vincent Dickinson, Master of the Society of Apothecaries, and Sir Alexander Renton, formerly Chief Justice of Ceylon.

THE forty-sixth annual meeting and dinner of the Old Epsom Club was held on December 10th at the Procadero Restaurant, Mr. J. S. Cotman in the chair. The toast of "Florest Lpsomia" was proposed by the chairman and the headmaster, Mr. A. O. Powell, in his reply, drew attention to the "record" attendance, and gave an account of the various successes of the year. During the evening Mr. S. Maynard Smith, O.B., F.R.C.S., for many years honorary secretary of the club, was presented with a cream jug of the 1735 period, for which a large number of subscriptions had been received from all parts of the world. The toast of "The Visitors" was proposed by Mr. Maynard Smith, and was responded to by Sir Humphry Rolleston, who acknowledged the great debt owed by the medical profession to Epsom College.

AT the annual dinner, on December 10th, of the British Serbian Units Branch of the British Legion, Sir James Purves Stewart occupied the chair, and was supported by Professor Louise McIlroy, Sir James and Lady Berry, Dr. Alice Hutchinson, Miss Nina Boyle, Sir William Simpson, Miss Flora Stades, and the Serbian Minister in London. About 120 guests were present, and all civil and military units were represented.

THE late Mr. James Shorrocks of Bowdon, Cheshire, has bequeathed £2,000 each to the Manchester Royal Infirmary and St. Mary's Hospitals, Manchester, and £1,000 to the Altincham Provident Dispensary and Hospital. His wife having predeceased him the sum of £100,000 is to be divided between eight legatees and the hospitals mentioned above in share proportionate to the amounts of the legacies already given to them.

AT the meeting of the Court of Governors of the London Hospital, on December 9th, it was stated that Her Majesty the Queen had consented to become president of the hospital in succession to the late Queen Alexandra. Viscount Knutsford also announced the receipt of a gift of £50,000 for research work from a donor who desired to remain anonymous.

THE annual report of Livingstone College for the year 1924-25 opens with a reference to the loss sustained by the death of Dr. C. F. Harford, its founder and first principal, of whose work an appreciation appeared in our issue of July 11th. The report contains several letters from old students showing how the elementary medical training given them at Livingstone College had been of assistance in their missionary work. During the year nine students had entered for the whole nine months' course, one for the six months', and twelve for periods of one to five months. The vacation class in July was attended by thirty-two students, and forty-two others entered for the short courses on care of the health in the tropics. As a memorial to Dr. Harford an effort is being made to raise a capital sum of £3,500 in order to supplement the college funds.

AN oto-neuro-ophthalmological society has recently been founded in Paris, with Dr. Andrieu Thomas as president and Dr. Baldeuwick as secretary. Its organ will be the *Revue d'oto-neuro-oculistique*.

M. PIERRE DUVAL, professor of surgical therapeutics in the Paris faculty, has been elected a member of the Académie de Médecine in the Section of Surgery.

A MEETING of the Parliamentary Medical Committee, which included Lord Dawson of Penn, resumed on December 16th a discussion on the General Medical Council and on the processes of striking off practitioners from the *Medical Register* and reinstating them. The Committee felt that the position and responsibilities of the Council were not fully understood by the public, and approval was given to a suggestion that next session lay Members of Parliament should be invited to meet the Medical Committee and hear explanations. No suggestion was made that the constitution or powers of the General Medical Council required revision.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The Editor, British Medical Journal, British Medical Association House, Tavistock Square, W C 1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the **British Medical Journal** alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the **British Medical Journal** must communicate with the Financial Secretary and Business Manager, British Medical Association House Tavistock Square, W C 1 on receipt of proofs.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the **JOURNAL**, should be addressed to the Financial Secretary and Business Manager.

The TELEPHONE NUMBERS of the British Medical Association and the **British Medical Journal** are MUSEUM 9561, 9562, 9563, and 9564 (internal exchange four lines).

The TELEGRAPHIC ADDRESSES are

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The address of the Irish Office of the **British Medical Association** is 16 South Frederick Street, Dublin (telegrams *Bacillus Dublin*, telephone 4737 Dublin), and of the Scottish Office, 6, Drumshough Gardens, Edinburgh (telegrams *Associats, Edinburgh*, telephone 4361 Central).

QUERIES AND ANSWERS

ECHINOCOCCAL CYSTS IN A CAMEL

Dr J C MILNE (Hurghada, Egypt) reports the discovery of two cysts of *Taenia colonicocis* in the lungs of an old camel. The outer walls of the cysts were thick and fibrous, with a white, easily broken, lining. One cyst was filled with a clear fluid, the other contained a gelatinous material, with some calcareous fragments and numerous hooklets. Dr Milne asks whether this condition is common in camels. He has found in medical textbooks no report of its occurrence in them.

AN ERRATIC CASE OF DIABETES

Dr J RICKARDS (Banbury) reports a very erratic case of diabetes, in which the symptoms vary so rapidly even from hour to hour, that a suitable régime is difficult to devise. On one day the patient is free from all symptoms and the pulse rate never exceeds 80; on another day the pulse rate may reach 120 and never be lower than 100, though the afternoon sample of urine may be absolutely free from both acetone and sugar. For about a year this patient has been kept fairly well on a carefully restricted diet with occasional egg and vegetable days, insulin being given in doses of 12 to 14 units in the morning and 4 to 5 in the evening. Recently he developed inconstant symptoms of acidosis: a very rapid pulse, some air hunger and general malaise relieved by moderate exercise. His wife also has detected an odour of acetone occasionally before breakfast. The patient is a tall, spare man who has maintained his average weight and before this attack could take his daily walk of four or five miles with full enjoyment and vigour. He has, however, been troubled by attacks of rapid pulse and other signs of acetone poisoning the worst time being usually when resting after breakfast. Exercise almost invariably slows the pulse. He takes very little fat, and very readily gets attacks of hypoglycaemia with insulin especially if the evening dose is much increased. Only a weak reaction to Rother's test has appeared in the morning urine and none in samples taken later in the day. Benedict's test for sugar produced a yellow precipitate in the morning specimen while the afternoon and evening specimens were quite free from sugar. The most recent tests have given an acetone reaction in both morning and evening samples and even in sugar free specimens. This specific gravity of samples is quite normal, and also the daily quantity. He does not suffer from thirst.

Dr Rickards asks if there is any relation between the presence of sugar and acetone in the urine and blood, and if not what is the cause of acetone in this case? Also, does insulin antagonise acetone formation as it does hyperglycaemia? This problem is the notable tendency to acidosis in the absence of sugar and other symptoms of diabetes. Increasing the carbohydrates in the diet effected some improvement but the acetone is eliminated very slowly. Further increase in insulin is precluded by attacks of hypoglycaemia.

INCOME TAX

Rents of Property in the Irish Free State

"Puzzled" owns property in the Irish Free State the gross rental of which is £100 per annum and the fixed charges, agent's fees and deduction of Free State tax amount to £50. What amount should be returned for assessment to British income tax?

The expenses referred to are deductible if they are payable in the Irish Free State, but not the income tax. On the

other hand, an allowance can be claimed in respect of that tax from the duty charged at the standard rate on the income. Particulars of the Irish Free State tax paid should be given with the return for assessment, in order that this proper allowance can be made.

LETTERS, NOTES, ETC

INFLAMMABLE HAIR COMBS

Dr CECILY M E MAUDE (Oxford) writes with reference to Colonel Lillott's letter (December 5th, p 1089). "An elderly relative (not under my own care) recently set fire to her hair combs by accidentally coming too near a lamp. The burns are deep and rather extensive, and at the present rate of progress she will hardly be restored much before Easter."

RECURRENT URTICARIA

Dr G CRAIGIE BELL (Frinton-on-Sea) sends the following observations with reference to the inquiry by "N L," published in the **JOURNAL** of November 21st (p 984).

J N, male, labourer aged about 35, a pauper patient had for many years suffered from attacks of urticaria. Fork in any form, many forms of fish shrimps and cockles, would always be followed by a pretty severe attack. In March 1922 he had a severe attack of what is generally called rheumatic fever, temperature 104°, profuse acid sweating, intense pain and swelling in most joints, and pleurisy. This lasted some weeks. On recovery he was most careful in his diet and yet had some attacks of urticaria. In May, 1923 he had another acute attack of rheumatic fever with the same symptoms as before, plus pericarditis. He again recovered and very soon had the most awful attack of urticaria that I have ever seen. Nothing did him any good, alkalis, calcium lactate, salol, kerol and aperients were useless. At the end of a fortnight he was so hot from want of sleep that I sent him to the Colchester Hospital for an opinion. He seemed so ill that he was kept in for about a week and then discharged, no better. I then wrote to Sir Kenneth Gosday, who said the case was almost certainly one of streptococcal poisoning, and sent me a vaccine of polyvalent streptococci of the strains most likely to be useful—namely *pyogenes*, *proteus*, and *teniculous*—and said that if no good followed he would examine the man's faeces chemically and bacteriologically. The result of the vaccine was an immediate improvement in less than a fortnight the man was well and he has so continued ever since. He comes to see me about four times a year and has an inoculation. He eats anything and everything, and has never had a suspicion of a recurrence. I presume the rheumatic fever was an acute streptococcal infection, which left the man with a lowered resistance to intestinal toxins, from which he had suffered for many years.

CANCER AND PNEUMONIA

APPROPOS of the case reported by Dr E I Spriggs (**BRITISH MEDICAL JOURNAL**, November 14th p 873), Dr Charles J Hill Aitken (Kilnthurst, Lorks) writes: "An elderly man subject to attacks of diarrhoea of which he was sure he knew the cause passed through what I called acute primary pneumonia. His pneumonia was not quite so type and his consolidation took two months to clear up. He returned to his work, but complained of being easily tired. His diarrhoea still occasionally bothered him, but not his chest. A few months later he had acute abdominal obstruction, and, as I expected, inoperable cancer was palpable from the rectum. Presumably his 'pneumonia' was closely connected with the cancer, which was then growing, but which had not been diagnosed."

THE "GRASSENDALE" DIET SHEET

WE have received from Mr S G Willmott Ph D, B Sc, and Mr Frank Wokes, B Sc, of Grassendale a diet chart for the use of patients whose food has to be carefully watched. For each article of diet it gives the percentage composition in carbohydrates, proteins, and fat the energy value, the essential elements, and approximate vitamin content. All ordinary foods are represented in this list, in fact, we find everything that middle class people are likely to want to eat. These charts can be purchased at 6d each or less for large numbers, and special terms are promised to hospitals. The scheme adopted is very simple but some knowledge of dietetics is necessary to get the best out of a chart like this. We suggest that most people would like to be told again how much 1 oz by weight or measure equals in grams and also how much the average hen's egg weighs. One difficulty not solved by such a chart as this is the ratio of edible portion of food to total as purchased and we presume that the authors assume knowledge of this in the kitchen. But these are minor points. The chart is an excellent piece of work and will be most useful in guiding dietary. The authors' notes on the back are sound and in keeping with the latest research. Orders for copies should be sent to Messrs Willmott and Wokes, Grassendale, Liverpool.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 45, 48, 49 and 50 of our advertisement columns and advertisements as to partnerships assistantships and locum tenencies at pages 46 and 47.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 220.

An Address ON BACKACHE IN WOMEN

BY

HENRY RUSSELL ANDREWS, M.D. F.R.C.P.,
SENIOR OBSTETRIC PHYSICIAN, LONDON HOSPITAL

When I started writing a few preliminary notes on the subject given me by your secretary—namely backache in women—I was faced at once by the question: Was I to attempt a scientific and orderly review of all the varieties of backache, with their causes, diagnosis and treatment, or was I to talk about backache in a much more informal way, discussing the common causes, the differential diagnosis of cases of backache as met with in ordinary everyday practice, pointing out some of the most likely pitfalls for the unwary who omit to make as thorough an investigation as they can, and to tell you what treatment I have found most successful? I chose the latter, and hope that I have done right.

Backache is one of the commonest complaints of women in fact, one lady member of our profession has said that women may be divided into two classes—namely, women with backs and women without them. The following is a rough and ready classification of some of the causes of backache which will be of some use for our purpose to-day, and will avoid some needless repetition.

Definite disease or injury of some of the tissues of the back.
Fatigue without abnormal physical signs.
Enteropneustic.
Abdominal tumours.
Carcinoma of the uterus.
Carcinoma of the rectum.
Disease or infection of the kidney.
Retraction of the uterus.
Prolapse.
Chronic pelvic inflammation.

There is nothing to prevent a patient from having at the same time troubles coming under more than one of these headings. This is a very important matter from the point of view of treatment, and will be referred to later.

Disease or Injury of some of the Tissues of the Back

This is a very large class of cases, including among others curvatures of the spine, secondary malignant growths, toxic meningitis, injury or disease of the sacro-iliac or sacro-coxal joints, bruising or tearing of muscles, etc. This class emphasizes the importance in the diagnosis of backache, of not trusting to abdominal, vaginal, rectal, and bimanual examination alone, but examining the back itself as well. It does not take long to examine the back, the important points are: Is there any limitation of movement or rigidity in any part of the back? Is there tenderness of any part of the back made worse by pressure? Is there any tenderness of the sacro-iliac or sacro-coxal joints, with pain on passive movement?

I saw last year a patient aged 36 from whom I had removed a tuberculous pyospinus eight years previously. She was complaining of lumbago and sciatica and was being treated by massage and electricity. Examination of the back revealed definite rigidity, and an x-ray examination showed caries. Instead of massage and electrical treatment she was treated by a spinal splint grafted on from the tibia, and a plaster jacket, with the happiest results.

If a patient can touch her toes without bending her knees, bend over backwards and to either side and can stand being gently thumped all over her back without pain, disease of the spine can be excluded, but if anything in this examination causes suspicion that there may be spinal disease an x-ray examination should be made.

Meningitis of the roots in women is rare and would probably be fairly easy to diagnose.

If there is a secondary malignant growth involving one or more of the vertebrae there will be evidence of a malignant growth elsewhere, or a history of removal of the breast or uterus, or some other operation for malignant disease some time before. The severity of the pain in

these cases is usually far greater than that of the common lumbago of women.

Disease of the sacro-iliac joints is rather rare. Unless it is advanced, definite proof of its presence cannot be obtained without an x-ray examination. Injury or strain of these joints, however, is more common, sometimes is the result of labour sometimes as the result of a fall. In such a case the pain and tenderness are localized to one of the sacro-iliac joints, and the pain is increased by pressure on the iliac crest and by an attempt at passive movement of the iliac bone on the affected side. The best treatment is counter-irritation combined with firm stripping of the affected side of the pelvis. In many cases of so-called "chronic lumbago"—I say advisedly "so-called"—the pain is localized to the sacro-iliac joints, although there is no evidence of injury or disease of these joints, and there are no abnormal physical signs to be found elsewhere. Massage, heat, bending exercises, and a potassium iodide mixture will often effect a cure.

Backache due to tearing or bruising of muscles of the back is not nearly so common in women as it is in men, but it occurs occasionally after some usually violent effort lifting a heavy weight, or after a fall. A tender spot is found, firm pressure on which aggravates the pain rather than relieving it—just the opposite to the effect of firm pressure on a back which aches only from fatigue. I can speak from personal experience of the effect of stripping on such a back, after a heavy hunting fall. Before the application of stripping I felt that I was crippled, and hardly dared to move my back, but after being stripped I was able to operate and do anything I wanted in comparative, if not absolute comfort. I understood then that the "old physios" which I had applied to the backs of libonics in the receiving room of the London Hospital in days gone by had possibly had more than a mental effect.

Fatigue

A very large number of the chronic backaches of women are due to fatigue of the back muscles, often increased by weakness of the abdominal muscles and the consequent distension of the abdominal viscera, which sag down when they are deprived of the support normally given by a sound abdominal wall. Such patients are often multiparous, in whom the effects of rapid child-bearing, with hard work, insufficient rest, nights broken by attention to the needs of babies and young children, insufficient amount of fresh air, often chronic constipation, insufficient nourishment on account of bad teeth, etc., possibly on top of a poor muscular development, result in exhaustion with chronic backache. Some of these patients say that they always get up tired. Sometimes the backache is relieved by rest in the recumbent position, but some of them say that the backache keeps them awake. To label these patients as neurasthenics does not help matters. As the late Sir Clifford Allbutt said (I forget his exact words), they have a general asthenia. Some of these patients have enteropneustosis, many of them have loose kidneys, and many of them have some uterine and vaginal prolapse on account of the weakness of the pelvic floor. That they should have loose kidneys is only to be expected, as the packing of fat round the kidneys has been absorbed, but the low position of the kidneys alone will do little or no harm unless the patient is told that she has a floating kidney. I think that "floating kidney," like "ulcerated womb," is a term that should never be used to a patient. Patent medicine advertisements have so convinced the public that anything wrong with the kidneys is a cause of pain that a patient who is told that she has floating kidneys must be unusually strong-minded not to brood over this disaster and to imagine pain if she has none, and to exaggerate any pain that she has. Her women friends will sympathize with her and tell her horrible stories of the effects of floating kidneys. Unless there is torsion of a loose kidney causing constriction of the vessels or merely a rare condition—the low position of the kidney is usually of very little importance. Excision operations for loose kidneys, nephropexies, which used to be performed frequently twenty years ago, have almost died out. Ventral suspension or ventral fixation for retention of a slight degree of prolapse in women with

prolapse of most of the abdominal contents, and, fortunately, rapidly dying out as well. It used to be fairly common to see a worn-out multipara with sagging abdomen and chronic backache who had had one of these operations performed, with wonderfully successful result until she returned to her household duties, but with no permanent benefit.

The ideal treatment would be a long course of rest, largely in the open air, with massage and guided movements, and attention to all the points which had been neglected in a busy, unselfish life, but this can seldom be carried out. A well fitting abdominal belt, however, will often alter a woman's whole outlook on life. If examination of the abdomen is made with the woman standing up—the only way to examine the position of the kidneys—it will often be found that if the examiner stands behind the patient and lifts up the lower abdomen with both hands she will say at once that that gives her exactly the feeling of support which she needs. The belt must fit properly, be sufficiently deep from above down in front, take its support from the back, and lift up the lower abdomen. A few patients find extra relief from kidney pads, but their use as a general rule has been given up, as they are usually found to be unnecessary. In some cases they do harm. I have seen two or three patients who said that they were more uncomfortable after being supplied with a belt than before, and the explanation was simple—namely, they put on the belt when they were standing up and carelessly pressed in the kidney pad above the kidney instead of below it. If the belt has a special kidney pad the patient must be shown how to apply it, lying down on her back and sitting the pad below the kidney.

Some of these fatigued backaches begin before marriage in girls of poor muscular development who get no outdoor exercise of any sort after they leave school. The so-called upper classes have had drilled into them at school the importance of exercise and of keeping fit, but there is an opportunity of doing some useful work in preventive medicine in the education of work-girls, shop-girls, city typists, etc. Very many of these girls have to leave home early after a hurried breakfast, with no time for a habitual evacuation of the bowels, travel to their work by train, trolley, or omnibus, spend a long day sitting over a desk or standing, and arrive home, after having a minimum of fresh air too tired to go out again. In some of them the nature of their occupation is peculiarly liable to bring on backache—for example, sitting at and bending over a low desk or table for many hours at a time. If they marry when they are slender, with poor muscular development, anemic, and chronically constipated childbearing is only too likely to result in general fatigue with chronic backache. They ought not to have to pay this high price for maternity. Girls' clubs, with their gymnastics, Swedish exercises, and dancing, if tennis and other outdoor games are impossible, can do a great deal to improve the physique of these workers but many girls will not join them, or find that home duties make it impossible for them to join them. If such girls can be made to believe that chronic constipation is a thing to be ashamed of, that it ought not to be treated entirely by drugs, and that exercises with the help of taking much more fluid will do much to combat it, and that a visit to the water-closet ductly after breakfast is one of their most important appointments in the day, their physique will improve and their work will not make them too exhausted to be able to take some outdoor exercise when it is over. Swedish exercises, especially those which excite the abdominal muscles, skipping, and abdominal massage before dressing, will improve the condition of these girls and enable them to start the day with a feeling of *bien-être*. But even if they have the inclination to try this simple treatment they may say that they have neither the room nor the time for it.

High-heeled shoes are sometimes blamed for backache. It is probable that many men who wore high-heeled shoes would complain of backache, chiefly because he had fallen to them suddenly and had to alter his balance, but the fact remains that the majority of girls and women who wear them are free from this trouble. My colleague, Mr. Robert Milne, tells me that an addition of half an inch to a woman's heels will sometimes do a good deal to relieve her backache.

Intoxication

Taken together with, or apart from, the fatigue element backache may be caused by anteopiosis and by enlargement of the abdomen from any cause. Pregnancy, especially in multipara, is a frequent cause of backache which makes the housework an effort and the woman's life during the last few months of pregnancy a miserable one. It is surprising to me that so few women wear abdominal belts during pregnancy. Unless a multiparous woman has unusually good abdominal muscles it must be a conservative measure to give them some artificial support. A well fitting belt will not only give much comfort during the later months, but, by preventing undue stretching of the weak muscles, will give a much better chance of recovery of tone of the abdominal muscles after labour. I cannot resist the temptation to stray a little from my subject—it is not really straying, as we cannot consider the subject of backache without paying some attention to prophylaxis—and to say a few words about prevention of a pendulous condition of the abdomen. Every woman ought to have her abdominal muscles massaged during the puerperium from about the sixth day onwards in a normal case. If the nurse is a trained masseuse so much the better, but any intelligent woman can be shown in a few minutes how to massage the recti and oblique muscles. Massage, for ten minutes or so daily, will make the puerperal woman more comfortable, will help her to avoid flatulence and constipation, and will increase her chance of recovering the tone of her abdominal muscles. The use of a stiff binder should be forbidden and patients should be encouraged to carry out bed gymnastics.

Tumours, Obesity

It is obvious that large ovarian and uterine tumours may cause backache by their weight, without any inflammatory changes, as may also a large collection of free fluid, and we need not say any more about these. Much smaller tumours, such as uterine fibroids or ovarian dermoids, impinged in the pelvis, may cause backache, as well as bearing down pain if they extend deeply into Douglas's pouch.

Very fat women, who find walking difficult and cumbersome, frequently complain of backache. They are caught in a vicious circle—the less they walk the fatter they become and the fatter they become the less they will. In some of them an abdominal mass of adipose tissue weighing 2 or 3 stone can be lifted up. If this mass is held up by a belt they may become much more active, with great benefit to their health and comfort.

Carcinoma of the Uterus and of the Rectum

In some cases of carcinoma of the uterus backache may be of almost intolerable severity. Unfortunately, when pain in the back is present with carcinoma of the uterus the growth has usually advanced beyond the limit of surgical aid. One still sees patients with continuous bleeding whose doctors say that they had not made a vaginal examination because they saw no indication for a suspicion of carcinoma, as there was no wasting, no pain, and no offensive discharge. It cannot be emphasized too strongly that these clinical symptoms only too often indicate that the carcinoma is no longer confined to the uterus and that radical operation is impossible, and to wait for these symptoms before attempting a diagnosis is in many cases to wait until too late.

There is no time to say more about carcinoma of the rectum than that it must be suspected when the patient complains of severe backache from "piles," and that rectal examination is imperative in obscure cases of pelvic disease.

Discussion on Infection of the Kidney

About renal calculus and tuberculosis, and renal carcinoma I do not propose to say anything, as I see these conditions so seldom. Pyelitis or pyelonephritis, due to infection with the *Bacillus coli communis* is an exceedingly common condition, and is often missed until the patient has suffered from it for a long time, while she has been having treatment for various conditions which might have caused, but did not cause, the backache. If the condition is acute or subacute the character of the pyrexia is often most suggestive. There are few other conditions in which a patient, a few hours after a severe rigor, with a temperature of 104° or so, looks well, feels well, and has a normal

or only slightly increased pulse rate. Haematuria is common in these acute and subacute cases. In many cases, however, there is little or no pyrexia, and no symptom beyond backache. Careful examination may reveal that one kidney, usually the right, is tender, and that there is tenderness along a line from the kidney to the iliac fossa, along the line of the ureter. The urine, which is always acid in reaction, may show nothing wrong on naked-eye examination, or there may be a small deposit of pus or debris when it has been allowed to stand in a conical glass, there may be an opalescent appearance, and there may be a trace of albumin. Bacteriological examination of a catheter specimen, drawn off into a sterilized bottle, will show the *B. coli communis*. It was thought, a few years ago, that pyelitis due to *B. coli* was specially common in pregnancy, but it is now known that it is extremely common apart from pregnancy. It is so common that bacteriological examination of the urine has become part of the routine examination of cases in which pain in the back is complained of and no evident cause can be found on a thorough physical examination. The treatment is simple, and, in most cases, successful in a short time. The patient must be confined to bed and kept warm, must drink large quantities of harmless fluids, and must take potassium citrate and sodium bicarbonate in moderate-sized doses sufficiently frequently to render the urine alkaline. The common practice of giving hexamine and acid sodium phosphate cannot be recommended. Pain is often increased by this acid treatment in spite of the diuresis produced by it. As soon as the urine has become alkaline the pain and pyrexia disappear in the large majority of cases. The treatment is then gradually relaxed, the urine being kept alkaline for some weeks. In only a very small proportion of cases is catheterization of the ureter with lavage of the renal pelvis necessary.

Retroversion of the Uterus

We come now to a matter on which there has been, and still is, much controversy. Some look on almost every case in which the uterus is turning backwards as a case for operation. At the other end of the scale are some who contend that retroversion of a normal-sized, freely movable uterus is never of any importance, and that any symptoms which may accompany it are the outcome of neurasthenia. The safe course lies between these two extremes. There is little difference of opinion about cases in which the retroverted uterus is fixed by pelvic inflammation, usually the result of salpingitis. Everyone agrees that in many of these cases there is persistent backache, increased on exertion and before the monthly periods, and that if medical measures fail, as they usually do, an abdominal operation is called for, with removal or freeing of the tubes, and slinging the uterus up in a position of anteversion. In my opinion retroversion of the uterus without any fixation is sometimes responsible for backache. I do not find, as some do, that retroversion is the cause of backache in young single women, but I find a few cases in puerperal women in which backache is apparently caused by retroversion of a rather bulky uterus. The backache is worse before the periods, and there is dyspareunia. The proof that the retroversion is the cause is that if a pessary keeps the uterus anteverted the backache disappears and does not return unless the retroversion recurs. In two or three cases every year I advise a round ligament operation, sometimes after a preliminary trial of a pessary, and I find that the permanent results are good. In these cases there is some subinvolution. I do not believe that uncomplicated retroversion in young single women and in the elderly causes backache or calls for operation. I think that the cases of retroversion of the uterus which cause backache would become less common if more care were taken during the puerperium to prevent retroversion. Distension of the bladder and fullness of the rectum cause retroversion and should be avoided. Before the patient gets up a pelvic examination should be made, and, if the uterus is retroverted, a ring pessary should be inserted after the uterus has been manipulated into the normal position. The pessary inserted during the puerperium will have a curative, not only a palliative, effect, and when it is removed

at the end of three months the uterus will probably be found to remain in the normal position.

Many patients are accused of having retroversion of the uterus and are given useless and possibly painful pessary treatment on a wrong diagnosis. I have been struck by the number of cases in which I have been told that rectal examination proved that the uterus was retroverted because the uterus could be felt bulging into the rectum, whereas what was felt "bulging into the rectum" was the cervix, which was pointing downwards and backwards as it should. If rectal examination of a normal pelvis is made the cervix will always be felt easily, and when the rectum is converted from a potential into a positive cavity by the examining finger the cervix appears to press against the anterior wall.

Prolapse of the Pelvic Contents

In some cases of prolapse there is a good deal of backache, though it is not usually the chief complaint, and some patients with complete prolapse are free from backache. A word of warning must be given once more against concentrating on treatment of weakness of the pelvic floor or retroversion of the uterus in cases in which almost all the abdominal viscera as well as the pelvic organs are sagging down. Results of colporrhaphies and ventral fixation are sometimes extremely disappointing to the patient in these circumstances. Prophylaxis is as important as treatment of prolapse. Patience in the conduct of midwifery, avoidance of too early rupture of the membranes, waiting until the os is really fully dilated and the edge of the cervix pulled up, or, in some cases, pushed up above the presenting part, not simply dilated sufficiently to allow of application of the forceps, gentle traction in the right direction rather than forcible pulling if the forceps must be used, and immediate repair of lacerations, will do much, though not all, to prevent prolapse. I say "not all" because I see a few cases of prolapse, only a very small proportion, in which there has been no difficulty and no interference in labour. It is possible that general use of pelvic-muscle gymnastics during the puerperium will still further diminish the frequency of the occurrence of prolapse.

Conclusion

Lack of time prevents me from discussing pelvic inflammation and coxalgia as causes of backache, and also lumbago, about which most of you know much more than I do.

As I said before, I have not attempted a comprehensive survey of the whole of the subject, but I hope that I have said enough to stimulate a discussion.

THE THYROID AND MANGANESE TREATMENT

ITS INFLUENCE ON ABNORMAL BLOOD PRESSURES
(INTERIM REPORT)

BY

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When first practising this therapy (described in the *BRITISH MEDICAL JOURNAL* of March 7th, p. 443) very little notice was taken of its action on blood pressure, and whenever changes occurred they were attributed to coincidence or chance. But as the treatment proceeded, and successful results were being seen in complaints usually recognized as of toxic origin, it appeared likely that some detoxicating process must be taking place in the blood as well as in the tissues generally. It was argued that the changes in blood pressure might be due to the removal of pressor or depressor agents which had, either directly or indirectly, interfered with the automatic balancing apparatus which is understood to govern the circulatory system.

During the past thirteen months careful observations and innumerable blood pressure readings have been made in between 70 and 80 cases, and the impressions recorded in this paper have been culled from the notes on these cases taken in the aggregate. But only 34 are published, as they represent abnormalities of pressure which will be

unquestioned by anyone, whereas the remainder showed digressions which some might accept as being within the normal ambit.

Nor would this paper have appeared just now had it not been for the publication of the late Sir Clifford Allbutt's book *Lithemiasis*, in which Sir Humphry Rolleston drew attention in the *British Medical Journal* of July 11th. In the preface to that book is the following passage:

'It is to be hoped the cause and the secret of the cure of hyperpiesia may be not very long hidden from us, for we are realizing more and more the frequency of the malady. Dr John Parkinson speaks of it as "that very common disease which is responsible for so much suffering and mortality in late middle age and early old age."

After reading this it seemed to me that it was not a matter for two or three to dally with for months, but rather that an early verdict should be given, and that this could only come by as widespread a trial as it was possible to obtain.

This inquiry began in earnest with a case where the systolic blood pressure was 274 mm. of mercury. It was the case of a man, aged 67, who had suffered from a slight puerile seizure two months previously. He entered a nursing home knowing an attempt was to be made to bring his blood pressure to a safer level by a method not requiring change of diet or mode of living, and without taking the medicines he was tired of. Dr George Taylor of Chester was called in consultation, and he confirmed the high reading. Complete analysis proved the absence of organic disease, and he was looked upon as either a case of hyperpiesia of unknown origin, or possibly one of hyperpiesia due to middle-aged disease, from which he had suffered in the past (Case 1).

Rectal injections of 1 pint of the standard solution (1 gram of pure potassium permanganate freshly dissolved in 12 pints of warm water) were ordered to be given twice daily from ten to fifteen minutes after defecation, together with 1 gram of thyroid extract twice daily. The injections were returned from the first, and six days later his systolic blood pressure was found to be 215 mm. of mercury. For the next two weeks he was only given one daily injection, and at the end of that time he returned home with a blood pressure reading of 220, with his breathing relieved, with less cardiac oppression, and a less congested appearance.

In this and many other cases blood pressure readings have been taken daily, weekly, fortnightly, and monthly. Some have shown a tendency to an early rise when treatment has been discontinued, but this has not been our experience with the majority. By far the greater number have responded very rapidly, high blood pressures having been reduced to much safer levels, and low blood pressures raised to more normal levels, in from a week to fourteen days. An improvement in appearance has been seen with an improved sense of well-being, and with some reduction of these signs of the symptoms of such complaints as they find that home duties. Some have been reduced by rectal them. If such gills can so thyroid feeding whilst others, constipation is a thing to be. Again, some who were found to be treated entirely by drugs have responded to treatment help of taking much. and that a few of the mine had been rendered alkaline, and a continued observation has been possible these improved pressures have been returned by in occasional injection or a course of rectal treatment.

It was stated in the first report on this treatment that cathetics of various strengths of potassium permanganate given with plenty of water on waking in the morning, were found useful, but not so satisfactory as were the rectal injections, and in general this has been found to be the case in the treatment of abnormal blood pressures. For several reasons, however the cathetic method of treatment has been followed up and extended, and so far the greatest promise has come from a freely made one containing 1/8 grain of potassium permanganate, combined with 1/2 to 1 grain of thyroid extract. It has been about in this way. It will be remembered that the report (March 7th) contained contributions from two medical men. During the few weeks following its publication letters were received from three times the

number who announced they were joining the investigation with earnestness, and as one after another sent in his opinions and results it was obvious many were finding patients who were unwilling to have the injection treatment. So more attention was given to the cathetic. Various combinations were tried, and are still being tried, but the above formula has been found exceedingly useful in many disorders.

Opinion generally would probably be that thyroid substance would suffer by being exposed to the oxidizing effect of the potassiumate, whereas apparently something is produced which brings about results not always so easily or so quickly obtainable when similar doses of these things are given separately. Here it can be said that this effect appears to have a rapid effect in conditions of neurasthenia accompanied by low blood pressure. In from five to eight days many miserable and depressed individuals of middle age find themselves remarkably improved, and after two weeks' treatment they look and feel rejuvenated, with an intellect and body so invigorated as to be reflected in occupation, business, and sport, and this improvement has been accompanied by a slight rise in blood pressure in some cases. Conversely the picture is not so favourable, but although no high blood pressures have been observed to be reduced some victims of this disorder find they have not to resort so frequently to injections when they take a two weeks' course of these cathetics occasionally.

I have been fortunate in having the whole-hearted help of my assistant Dr I. Hammett, whose unflinching attention to blood pressure readings has made it possible to glean these impressions. Besides Dr Taylor and Dr Hammett I have to thank twenty other doctors who have contributed to these results by taking pressure readings after one or two weeks' treatment, or in supplying information as to the time the malady had been known to exist. The cases noted with an asterisk are those where dual diagnosis and observation has been carried out. This list of cases is presented with the belief that, if it proves nothing, it justifies the recording of some impressions which it is hoped will be found sufficiently interesting to stimulate further inquiry.

IMPRESSIONS

1 That the majority of abnormal blood pressures are due to toxins in the blood, which has been the belief of many for some time, and that most of them can be removed or lessened by this process of detoxication.

2 That probably over 85 per cent. of abnormal pressures can be quickly and safely brought nearer the normal figure for the respective age with a general improvement in health, so long as they are kept under careful observation.

3 That these toxins for the most part are present in the blood by reason of infinitesimal digressions from normal metabolism.

4 That they are by products resulting generally from microbial infections which ought to be eliminated from the body by its detoxicating apparatus—the thyroid and parathyroid system—and have been retained because this system has failed, and in being retained have suffocated, inhibited, or exaggerated the action of this or that member of the endocrine system.

5 That families are to be found who are hereditarily unable to antidote certain poison and depressor agents (Cases 17 and 29).

6 That this most probably determines the tendency to apoplexy in one family and to neurosis in another (Case 29).

7 That it is probable that most of the hereditary diseases will in time be proved by this process of detoxication, or variants of it, to be due to delicate changes in the efficiency of the thyroid gland by reason of its inability to eradicate this or that result of metabolic error. That the mildest inefficiencies of this gland are just as liable to be transmitted as are the gross ones which no one disputes. That enlarged tonsils and adenoids, appendicitis, and gastric ulcer are notable later day results of modern toxins affecting tissues which are hereditarily predisposed to deterioration. That McCarrison's experiments by which he produces congenital goitre in animals go to support this impression. That the number of reports announcing successful results by this treatment in goitre, gout, rheumatoid arthritis, migraine, angina, etc., all point in this direction.

8 That many organic diseases which are considered primary in time be found to be secondary results of irritation of harmful products in the system and of which the sufferer has been unaware.

9 That Dr Gyes' 'specific factor' may be wholly or partly of metabolic origin

10 That it might be advisable to ascertain if any difference occurs in the proportions of successful inoculations in chickens and rats between those that have been and those that have not been detoxicated before the respective viruses were inoculated

11 That considering how frequently chronic mastitis is the forerunner of malignant disease of the breast, some encouragement can be derived from the fact that another successful case can be added to the three described in the first report, where a badly affected breast in a woman aged 50 of cancerous pedigree became normal and healthy after eight weeks' continued treatment

12 That "specific factors" may be concerned in many diseases together with viruses yet to be found

13 That Dr H S Pemberton's recent announcement (BRITISH MEDICAL JOURNAL, July 4th) that he and others have come across a hitherto unrecognized organism in the joints of advanced cases of arthritis points in this direction

14 That detoxication experiments on guinea pigs and rabbits might help to tell us whether susceptibility to disease is in some way due to a waywardness in metabolism. Whether a specific factor of a racial type exists in these animals which permits the human or bovine tuberculous virus to propagate readily

15 That it may be due to minute divergences in metabolism that some diseases are not prone to develop side by side with others. If this is so there may be some significance in the fact that the death rate from cancer amongst the insane is only some 3 per 1,000, whilst the mentally sound are dying from this disease at the rate of 9 per 1,000

16 That many middle aged people are to be found whose domestic unhappiness, shown by changes in temper, taste, or character is directly due to excitations and irritations caused by the retention of harmful by-products of metabolism, of which they are unaware and for which they are not always responsible. That gout is not the only hereditary complaint of the kind which causes abnormalities in blood pressure and an irritability of manner. That numerous combinations of toxins are formed which can so subtly alter character that even life partners drift apart unwittingly—one being driven by the excitement of this combination to an extravagance or an intemperance that jars, whilst the other is reduced by that combination to a state of dependency and alcoholism which disgusts. The timely taking of blood pressures will suggest a course of detoxication, with resulting improvement in both

May I ask the sceptically minded to remember one or two important points before they dismiss this line of treatment as unworthy of trial?

First, let it be remembered that the human toxins have long been known to resemble snake venoms, that snake venoms are of metabolic origin, and, numerous as they are in variety and potency, potassium permanganate is an antidote to all, or nearly all. A significant fact is that all venoms act on the animal body in one of two ways, and can be grouped under two physiological headings. They are either haemotoxic or neurotoxic in their action, death occurring from changes in the blood or from paralysis. Now if the human body is producing toxins resembling snake venoms, is it not possible that we poison ourselves by our venoms affecting the blood and the nervous system? And if potassium permanganate in minute quantities is an antidote to the snake venoms, why not also to the human venoms?

Complete proof would come if it were found possible to lessen the potency of any snake's venom by detoxicating it. Various families of snakes have venoms of various potencies and the bloods of some families are known to be of standard toxicity. If any of these venoms, or toxic bloods, could be found reducible by detoxication in vivo with potassium permanganate or calcium hypochlorite (which, on the authority of Calmette, has an even greater power than potassium permanganate) to the extent of making a member of a family no longer immune to a lethal dose of the venom of its own family, it would be an important contribution to the subject of immunity generally

SUGGESTIONS IN TREATMENT BY INJECTION

In conclusion, I must mention some mistakes that have been made in the technique. In the first place, some are using ordinary commercial crystals of potassium permanganate. The drug must be pure, as it is found in the tablets manufactured by the wholesale druggists. Another mistake is that the injection is given too quickly. It must be given very slowly on a spasm of the bowel

will result and nothing will enter. Most patients retain the fluid better when introduced by funnel and tube. The water ought to be comfortably hot, lukewarm water only irritates the bowel and prevents it being retained. Patients who have been suffering from stasis may not be able to retain more than an ounce or two for the first eight or ten injections. These are just the subjects who will find improvement if they will persevere, and they should be assured that the power of retaining the fluid will come when the bowel has become healthier. The best results are seen when the injection is regularly given in less than half an hour after the bowels have acted. For this reason irregular attendance on the part of a visiting nurse is undesirable, and it is better to choose and instruct some member of the household who can attend to instructions faithfully. The presence of haemorrhoids need not deter treatment, for benefit results, especially so where occasional haemorrhage is occurring.

SUGGESTIONS FOR TREATMENT BY CACHET

Here again the ordinary crystals have been used in place of the pure drug. A reference to the list of adulterants commonly found in these crystals will convince most that harm might come by using them. The cachets must be made with greatest care. The drugs must be pure and fresh, and not a breath of moisture must be present whilst preparing them. Very explicit instructions about this must be given to chemists or no results may be seen, so easily is an eighth of a grain of potassium permanganate reduced by moisture. Not more than sixteen or twenty-four should be ordered at one time, and in the case of the combination cachet, containing thyroid and permanganate, mentioned above, the tablets of these drugs should be powdered separately, and then mixed together.

The Lowering of Pressure in Abnormally High Blood Pressure Cases

In the following list of cases the initials B.P. are to be understood as representing systolic blood pressure readings. Injections mean the standard solution. Thyroid 1 gr. refers to the ordinary tablet of that strength. Cases marked with an asterisk have been under dual observation.

Case 1*—Male aged 68 B.P. 274. Post-hemiplegic condition. Two injections daily for six days B.P. 215. One injection daily for next twelve days B.P. 220. Reading remains between 220 and 240 at the end of twelve months' treatment with one or two injections weekly.

Case 2*—Female aged 38 B.P. 236. Mild symptoms of exophthalmic goitre. Two injections daily for one week, with thyroid extract 1/2 gr. twice daily. Injections continued for two weeks longer but no thyroid given. End of third week B.P. 175 with reduction in the severity of symptoms. (Self administered.)

Case 3*—Female aged 60 B.P. 227. Hyperpiesia of uncertain origin. Two injections daily thyroid extract 1 gr. twice daily for two weeks B.P. 180 with less confusion of thought and improved appearance generally.

Case 4*—Male aged 63 B.P. 226. Hyperpiesia of uncertain origin. Two injections daily for three weeks, thyroid 1 gr. twice daily for two weeks B.P. 191 with reduction in weight. Improved condition maintained for months with one or two injections a week and an occasional dose of thyroid. (Self administered.)

Case 5—Female, aged 69 B.P. 225. Post-hemiplegic condition three years since seizure. Two injections daily for two weeks, thyroid 1 gr. daily. No change observed at the end of two weeks. This case is interesting as being the only one that did not respond to treatment quickly. But with two weeks' treatment with cachets followed by injections for two weeks more B.P. was found to be 170.

Case 6—Female aged 69 B.P. 224. Hyperpiesia of uncertain origin. Two injections daily for one week no thyroid given B.P. 202 with improvement seen in neurotic symptoms.

Case 7*—Female aged 67 B.P. 222. Hyperpiesia of uncertain origin known to have existed for seventeen years. Two injections daily for two weeks thyroid extract 1 gr. daily one injection daily for three weeks. General condition much improved B.P. 165.

Case 8*—Female aged 60 B.P. 215. Hyperpiesia of uncertain origin with slight urinal symptoms. Two injections daily thyroid 2 gr. daily B.P. 186 with relief of symptoms. Noticed middle of third week. (Self administered.)

Case 9*—Female aged 63 B.P. 210. Slight rheumatoid symptoms with thickened knuckles and painful feet. Hyperacidity of urine. Two injections daily for four weeks alkaline powder 1 d.s.p. B.P. 153 suppleness returning in the hands at end of fourth week. (Self administered.)

Case 10*—Female aged 49 B.P. 198. Hyperpiesia of uncertain origin nervousness but nothing definite. Alkaline powder 1 d.s.p. two injections daily 2 gr. thyroid daily for three weeks B.P. 174. Considerable relief to nervy feelings. (Self administered.)

Case 11—Female aged 60 B.P. 198. Very advanced case of myxoedema. Three injections daily for ten days two daily for fourteen days one for many months 2 gr. thyroid daily B.P. 162

in three weeks. Great reduction in weight and disappearance of all symptoms in six weeks. After twenty months' treatment requires one injection every second or third day to keep himself in good health, hands vigorous keep her in better health than by courses of thyroid medication alone.

*Case 12**—Female, aged 55 B P 194 Obesity with dyspnoea and bronchial asthma. Two injections daily for fourteen days with 2 gr thyroid daily. Slight reduction in weight and great improvement in breathing, B P 172.

*Case 13**—Female, aged 53 B P 191 Angina minor long history and quite incapacitated. Two injections daily for three weeks 1 to 5 gr of thyroid extract daily. Complete relief from anginal attacks after four days' treatment continues relieved for seventeen months no return of anginal pain B P 155. Thyroid medication and occasional injections taken.

*Case 14**—Female, aged 39 B P 191 Obesity and mild myxoedematous symptoms. Two injections daily 1 to 4 gr of thyroid extract daily B P 175 end of second week. Disappearance of disagreeable endometritis which had existed for many years and had resisted two cures was noticed on the fifth day of treatment.

*Case 15**—Female, aged 56 B P 193 Bright disease of many years standing. Two injections daily together with the usual treatment for this disease B P 165 in four weeks. Gradual disappearance of albumin and epithelium. All symptoms relieved.

*Case 16**—Male, aged 45 B P 190 Hyperpiesia of unknown origin. Two injections daily for one week one injection daily for six days B P 140 at end of second week, and remained at this figure by taking an injection weekly some months later (Self administered).

*Case 17**—Female, aged 63 B P 190 Hyperpiesia, renal with uricemic symptoms, apoplexy common in family history. Two injections daily for three weeks and one or two injections weekly for sixteen months B P 175 all symptoms improved with reduction in blood urea.

*Case 18**—Male, aged 70 B P 183 Angina minor. Two injections daily for twenty-one days B P 170 relief from anginal symptoms keeps himself comfortable with one injection a week and in occasional course of thyroid medication during the past twelve months (Self administered).

*Case 19**—Female, aged 60 B P 185 Hyperpiesia of unknown origin. Two injections daily for five days B P 150 and keeping at that average after many months by the use of one injection a week. No thyroid given (Self administered).

*Case 20**—Female, aged 51 B P 185 Rheumatoid arthritis recent onset affecting fingers and shoulder. Alkaline powder 10 gr two injections daily for two weeks B P 140 reduction in pain and swelling of joints signs of rheumatoid arthritis almost disappeared at end of ninth week (Self administered).

*Case 21**—Male, aged 56 B P 185 Gouty earache and neuritis. After two injections daily for fourteen days with no thyroid B P 150 and gouty symptoms relieved. Six months later continued relief from gout and B P remains reduced (Self administered).

*Case 22**—Female, aged 47 B P 184 Hyperpiesia of unknown origin. Injections daily for blood eighteen months previously. Two injections daily for one week B P 140 with rejuvenated appearance. No thyroid given (Self administered).

*Case 23**—Female, aged 41 B P 184 Mild symptoms of exophthalmic goitre and nervousness. Two injections daily for ten days with thyroid extract 1/2 gr twice a day B P 149 on tenth day with reduction in anxiety neck less swollen and nervous feelings relieved (Self administered).

*Case 24**—Female, aged 49 B P 174 Mild exophthalmic symptoms with slight rheumatoid condition of hands. Two injections daily for fourteen days B P 142. With continued treatment swollen knuckle joints have disappeared at the end of nine months. Neck quite normal in appearance. Nervousness and tremors disappeared (Self administered).

*Case 25**—Male, aged 57 B P 178 Gouty liver and jaundiced at increasing weight. Two injections daily for seven days with 2 gr thyroid extract daily B P 160 at the end of a week. Has kept up treatment occasionally during the six months which have elapsed as he finds it relieves him and his weight has been reduced by many pounds (Self administered).

*Case 26**—Male, aged 36 B P 172 Acute exophthalmic symptoms of the classic variety existing three weeks but preceded by unaccountable nervousness for some months. Two injections daily for ten days with thyroid extract 1/2 gr twice daily for ten days B P 135. Continued treatment with injections but no thyroid all exophthalmic symptoms disappeared at the end of the seventh week. Five months later is well with one injection weekly (Self administered).

*Case 27**—Female, aged 44 B P 172 Long history of asthmatic attacks with bronchial asthma and inclination to bronchitis. Two injections daily for two weeks with thyroid extract 1 gr twice daily B P 145 at end of third week with relief to asthmatic breathing (Self administered).

*Case 28**—Male, aged 48 B P 170 Hyperpiesia of unknown origin accompanied by unaccountable nervousness which interfered with his business. Two injections daily for fourteen days with no thyroid B P 148 with complete change in his nervous condition. Four weeks later he finds himself able to attend to his business better than he has done for years (Self administered).

The Raising of Pies ups in this usually 1 a Blood Pressure

*Case 29**—Male, aged 49 B P 110 Hypopiesia of uncertain origin symptoms of depression not irritative looks old for his age. Several members of his family with similar low blood pressures.

Two injections daily for three days, one injection for four days B P 124 at the end of a week continued one daily injection for three weeks longer B P 130 Improved appearance in every way, looks younger, has more vigour and more hope in life. No thyroid (Self administered).

*Case 30**—Male, aged 60 B P 115 *Bacillus coli* infection existing for ten years, with recurrent attacks much reduced by periodic rigors and cystitis etc. Injections continued over twelve months having one or two daily, thyroid medication occasionally B P averages around 130, with improved condition no rigors and little or no cystitis.

*Case 31**—Male, aged 52 B P 118 General depression with inability to attend to his business and loss of confidence in himself. Two injections daily, thyroid extract 2 gr daily B P 135 in seven days, with renewed interest in business improved digestion, and increased vigour. After twelve months' treatment with an average of one injection a week notices a less tendency to bronchitic catarrh, which had been treated unsuccessfully by vaccines on many occasions (Self administered).

*Case 32**—Male, aged 60 B P 123 Feeling unaccountably weak and depressed for no apparent reason. Two injections daily for one week with 1 gr of thyroid extract daily one injection daily for second week with continued thyroid medication B P 134 at end of second week feeling renewed interest in his occupation and energy enough to help in his garden (Self administered).

*Case 33**—Male, aged 56 B P 120 Similar case to the above. Treatment as above B P 137 in fourteen days (Self administered).

*Case 34**—Female, aged 67 B P 129 Well developed angina minor which had existed for five years preceded by minor anginal attacks over several years. Two injections daily for three weeks interval of three weeks and injections renewed again for three weeks with 1 gr of thyroid extract daily from the commencement of the treatment B P 140 at end of ninth week anginal symptoms relieved. Fifteen months later found still relieved with B P 190.

REFERENCES

Sir Clifford Allbutt *Intermediocrisis*
Colonel R. McCarrison *The Thyroid Gland in Health and Disease*
A. Calmette *Leçons et Sulfures de Sulfures*

Some time having elapsed since the notes were gathered together in preparing this paper observations have now been made in the full complement of 100 cases and in all of them satisfactory changes in pressures have occurred.

CATARRHO-PTOGENIC AND TUBERCULOUS INFECTIONS OF THE LOWER RESPIRATORY TRACT

BEING THE BOLINGBROKE LECTURE DELIVERED BEFORE THE SOUTH WEST LONDON MEDICAL SOCIETY, JUNE 1925

BY

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Symptomatic Classification

THE symptoms produced by infection of the respiratory tract may be broadly grouped in accordance with their association with discharges yielded from above the larynx, and those associated with discharges brought from beneath the larynx. For the purposes of this lecture the latter group will prove more than enough, for the infections of the respiratory tract associated with cough and expectoration are not only numerous, but they are of serious moment to the individual infected. The keynote of this lecture is not the rehearsal of those signs and symptoms of the various infections of the subglottic respiratory tract, but a study of the possible influences one sort of infection has upon the effects of another different kind of infection. It is not intended to refer to symbiosis, but rather to the interaction of the end results of such symbiotic functions.

Catarrhal Infections

One of the most familiar infections of the respiratory tract is that group which is characterized by the production of mucoid secretions from the supraglottic portion, and mucoid expectoration from that part below it. Such infections have had to play the part of the neglected Cinderella, and too often the patient can extract from us nothing further than the comment that catarrhal colds need only treating by simple household remedies "they take three days to come, three days to stay, and three days to go away." Sometimes these colds seem to be limited to the supraglottic portion, at others, from the very beginning they appear to attack the lower respiratory tract, at other times they begin above and end below the glottis. About

these catarrhal attacks many discussions have taken place, but to this day we are not sure what it is that gives the organisms responsible for these attacks their chance to operate. We are not even sure that the recurrent attacks to which such subjects are prone are the result of reinfection from without or of revival of infection already resident within. Not all members of the same household develop these catarrhal colds at the same time, some may even escape altogether, so that it is clear that catarrhal colds are not like the acute exanthemata, they differ from the exanthemata also in the fact that, while so many of the latter appear to confer immunity, a catarrhal respiratory infection seems to invite recurrence, the exceptions to this rule seem to confirm this deduction for measles and whooping cough, which are so essentially associated with catarrhal inflammation of the respiratory tract, are known to recur. For want of a better name a special group of catarrhal infections is spoken of as "influenza" and the more the patient suffers from headache and pains generally the more likely is this particular qualification to be accepted. There can be no doubt whatever that the use of the term "influenza" to describe these particular maladies is most useful clinically, though the impression that the disease in question is caused by the influenza bacillus is not justifiable.

These catarrhal infections run a varied course, they may even recur in a short lapse of time, or they may not occur again till a corresponding season ensues—a year or years later. The usual thing is for the catarrhal expectation to be transformed gradually into something quite different.

PYOGENIC INFECTION

At some variable period of time, with the abatement of the more unpleasant symptoms of an attack of catarrh, the expectoration changes in appearance, and a new element announces itself, for what was a glairy, gelatinous material becomes faintly yellow, even deeply yellow, may become greenish, and may even be streaked with blood. If we ask ourselves what has happened to produce this change we really are met with many difficulties. We learn that the poisonous materials produced by the organisms of catarrh can at first only excite the secretion of glairy material, but if they continue to operate the exudation becomes purulent and with the cessation of the formation of pus there is an end to the poisoning and the tissues gradually assume their normal state—the cold is at an end.

It is, however, interesting to speculate whether it may not be that the glairy material is directly due to one set of organisms only, and the pus to quite another set—the so-called pyogenic. After all, easy as it is to realize that an organism can produce excessive mucus, and particularly tenacious mucus as in bronchial asthma, and that another set of organisms can produce pus, it is not so easy to realize that some organisms can function at one moment in one direction, and at another in a totally different one, the most exquisite example of this latter group being the organism that can produce first a red corpuscular exudate, then a fibrinous one and finally a leucocytic one, which last *mirabile dictu* may never appear as purulent expectoration but be quietly got rid of by such powerful digestants as antolytic enzymes.

THE "CARRIER"

It has been the popular belief that each and every attack of respiratory catarrh is due to a reinfection from outside, but so numerous are the deductions that must be made upon such an hypothesis that it is necessary to turn to another possible explanation. It is the common lot of physicians to notice many cases in which, gradually, patients become afflicted with more and more recurrent catarrhs. It is gradually noticed that these attacks do not always come on in the early winter or in the late spring months—a most virulent attack may supervene in the summer, gradually the so-called bronchitis lasts all the year through, and the patient at last joins the army of those suffering from chronic bronchitis. Bronchial asthma may supervene, and also become permanent, or a severe attack of pneumonia, while not destroying life, may render the process of invalidism much more rapid in its development. The converse may be true—a sharp attack of pneumonia or

bronchitis in childhood may be followed by bronchial asthma and repeated or chronic bronchitis and the remarkable fact must be recognized that in some cases attacks of pneumonia recur again and again. Those who have the opportunity of watching the above cases know that the patient concerned may really never be rid of the infection, for in the absence of cough and expectoration bronchi and rules may be present in the lungs for months on end. The doctrine of the "carrier" explains all these cases much more satisfactorily than the doctrine of reinfection from outside.

The Habitat of the "Carrier" Organisms

It is almost certain that quite early in infant life these organisms are present in the respiratory tract, quite probably as mere casual visitors, for it can hardly be imagined that the atmosphere which carries to the adult respiratory tract so many pathogenic organisms would draw the line at the infantile one, such casual visitors need not produce harmful effects, for the child may only harbour such organisms, and even if infected need not necessarily show signs of such infection. It is quite clear that many pathogenic organisms can be harboured on the surfaces of the airways, even including the alveolar epithelium, and it is perfectly clear, too, that these organisms, if picked up by leucocytes, or carried by any agency, may leave such airways and enter the parenchyma of the lungs. Otherwise how could it be explained that abscesses disposed in a necropo form are found round bronchial tubes? It is impossible to say which of these two sets of organisms, those in the airways or those in the parenchyma, is capable of assuming intense pathogenic characters and become the source and origin of a recurrence. The fact remains that the seed is somewhere in the lungs, and something which it is hard to find out and comprehend has given a fillip to these organisms so that from being casual visitors they have been converted into full dressed pathogens.

Functional Capacity of the "Carrier" Organism

The doctrine of the "carrier" organism requires the belief that an organism may reside in the body and yet not produce any pathogenic effects until some fresh circumstance, with which at present we are little familiar, allows such organism to become once more pathogenic. We like to think that by improving the patient's general condition, by life in the country and in the sunlight, we can prevent the organism concerned from exerting its bad effects. It is a peculiarity of the catarrhal organisms that they sometimes exert their most harmful effects in the face of what we call improved hygienic conditions so that the patient may have his worst attack of infective bronchial asthma in the summer in the country, and he may be most free from attacks of asthma while living in London, and we have to fall back upon the view that the continuous "salting" by small returns to pathogenicity on the part of the "carrier" organism is better for the individual than prolonged depression of pathogenicity in the country in the sunlight. We follow Nature's methods by prophylactic vaccination, sometimes with successful results, sometimes with none.

Catarrhal organisms as their name implies, produce exfoliation of the epithelium of the airways and also the discharge of much mucus. It is believed that the same organisms by continued action produce actual suppuration, but it is possible that a quite different set of organisms is really responsible for these pyogenic effects. In either case catarrh generally precedes suppuration. The suppuration may be confined to the surface of the airways, with destruction of tissue, and consequent emphysema and bronchiectasis. If the suppurative organisms reach the parenchyma of the lung, abscesses may form and ultimately cavities develop. If blood vessels are opened then hæmoptysis results. These destructive effects may be described as histolytic ones, and the particular destruction of blood vessel walls could be conveniently spoken of as angiolytic. Angiolytic, however, need not result from the extension of abscess formation to the walls of the adjacent blood vessels, for purpura and allied conditions seem to be due to the local operation of toxic material manufactured at some distance. It is therefore clear that the hæmoptysis met with in infection of the respiratory tract may be due

to suppurative foci, or to angiolytic toxins and such haemoptysis may not be present in the catarrhal cold contracted in January, but be quite serious during the subsequent March and April, without the development of another catarrhal cold. At the same time, haemoptysis may occur only in the early stages of a catarrhal cold, never to occur again during the life of the individual, and, though the haemoptysis may have been severe, neither clinical nor radiological study can discover changes in the lungs. That an angiolytic function may be a feature of an infection in one circumstance, and not in another, is probably the reason why the haemorrhagic types of the acute specific fevers occur, but it is possible that it is the occurrence of another infection with special angiolytic functions which is responsible for haemorrhagic manifestations.

The histolytic functions exercised by organisms met with in catarrho-pyogenic infections may produce other effects—for example, if the abscess of the lung lies under the pleura it may rupture into the pleural cavity, hence an empyema, or pneumothorax, and pyopneumothorax of so-called spontaneous origin, if the abscess ruptures into an adjacent healthy bronchus fresh bronchi and lung parenchyma become exposed to the infection.

To sum up, catarrho-pyogenic infections of the respiratory tract are capable of producing different clinical pictures in different patients, or of producing several clinical pictures in the same patient. These clinical pictures, when occurring in the same individual, need not be equally complete in each person, nor need they preserve any constant sequence. These infections may result in bronchial catarrh, suppurative bronchitis, bronchial asthma, pneumonia, abscess and cavitation of the lungs, haemoptysis, empyema, etc. We need no longer be surprised if an apparently simple attack of bronchitis is accompanied or followed by a smart haemoptysis, nor need we be surprised if an "influenzal cold" is followed by an attack of acute pneumonia, or that an attack of acute pneumonia is followed by what we call clinically bronchiectasis, but which may at post-mortem examination prove to be a condition of putrefactive pneumonia with few or many abscess formations, even with cavity formation, and acute bronchitis.

Such lessons as these are not novel to you, they have, indeed, become a part of your medical beliefs. Successive infections from outside are unnecessary to explain them; the infection is a reinfection from within, but a corollary to this belief is not yet accepted in our profession—namely, that these catarrho-pyogenic organisms may be "carried," and exert their pathogenic results over periods of very many years. We need not feel that too great a demand is made upon our credulity when we are asked to believe that in initial attack of bronchitis and pneumonia in 1910 is the cause of a right-sided pleurisy in 1912, of a so-called influenzal attack and severe haemoptysis in 1922, of chronic bronchitis with fetid expectoration in 1924, with signs only at the base of the left lung, and death almost exactly a year later from intense septicaemia, from diffuse suppuration throughout both lungs, especially in the left one, neither lung revealing, even microscopically, any trace of tuberculosis. The "carrier" theory invites us to believe that the bronchitis and pneumonia of 1910, if themselves not mere expressions of a catarrho-pyogenic infection of many years' date, were at least the first expressions of this group of infections in 1910, the last and fatal ones being operative fourteen years later.

TUBERCULOUS INFECTION OF THE LOWER RESPIRATORY TRACT

If the "carrier" theory can be applied to any infection, it can certainly be applied to the tuberculous one. This infection, like other respiratory ones, probably begins in and about the moment the infant breathes. It is present in a latent form in an extremely large proportion of all adult town dwellers locked up in fibrous tissue, or permeated with lime salt, it is doing no harm—indeed, some think it is doing good, it is mostly deposited in glands, and those about the roots of the lung are the seat of much infection, and so are the minute collections of lymphatic tissue which are found throughout the lung substance. Hitherto it has been considered that the infection by the

tubercle bacillus is a continuous affair, and this view dies hard but it is dying. It is to us the least, in the light of the application of the principle of anaphylaxis to the study of tuberculosis, is likely that the tuberculous infections from outside which really matter are the earliest ones, for the tuberculous infections from outside which subsequently occur are, like the catarrho-pyogenic infections, from outside, not true infections, because they cannot truly infect, as the individual is already infected.

We sometimes see in the young that rare tuberculous infection known as confluent tuberculous pneumonia. It is a true pulmonary tuberculosis. Part or whole of the lung may be involved by an extension of the tuberculosis of the lymphatic glands, the involved lung is a light yellow, somewhat tough tissue—it is nothing more than a congeries of tuberculomata. Another pure tuberculosis of the lung is the diffuse miliary tuberculosis met with in the young subject, which is probably due to the rupture into a blood vessel of a broken-down tuberculous focus, this explains the uniform distribution of the miliary tubercles throughout both lungs. How difficult it is to diagnose at the bedside that either of these conditions is present is well known, because there may be no pulmonary signs in miliary tuberculosis of the lungs, and consolidation of a lung is caused by so many infections.

There is another condition of the lung, officially spoken of in this country as "pulmonary tuberculosis", other nations prefer the use of the term "consumption" or "phthisis pulmonum". The term "pulmonary tuberculosis" should mean a pure tuberculosis of the lung, consumption or phthisis pulmonum is not a pure tuberculosis of the lungs. The physical signs of the condition of so-called pulmonary tuberculosis, it is said, include those of bronchitis, catarrhal or purulent, pneumonia, acute or chronic, pulmonary abscess, cavitation, fibrosis of the lungs, haemoptysis, bronchiectasis, pneumothorax, etc. If tubercle bacilli are found in the expectoration in cases showing these manifestations, then it is said we may with more confidence speak of them all as examples of pulmonary tuberculosis. If tubercle bacilli are not found in the sputum in these cases, we are advised that it would be better for the good of the community especially if these cases are accompanied by debility and wasting still to describe them all as examples of pulmonary tuberculosis.

You see what this entails—you must throw clinical study and pathology to the winds, and say you believe that the tubercle bacillus is a catarrh-producing organism, that it is a pyogenic one, and that it can produce pneumonia and cavitation of the lungs, haemoptysis, empyema, bronchiectasis, empyema, pneumothorax, etc.

A CLINICAL "IMPASSE"

The point of this lecture is to call attention to the impasse, not because it is not familiar, but because I want it to be realized that if we subscribe to the idea that the tubercle bacillus behaves identically with the catarrho-pyogenic organisms we shall inflict a great hardship upon patients, we shall say that they have pulmonary tuberculosis when we have no proof whatever that the tubercle bacillus is responsible for the condition of the lungs. I have known some practitioners say that cases of catarrho-pyogenic infection are so closely allied in symptomatology and signs to pulmonary tuberculosis that they have decided to call all cases of this kind associated with cough, wasting, and debility, examples of pulmonary tuberculosis, although tubercle bacilli have never been demonstrated in the sputum. This is inflicting a great hardship upon those patients who are not tuberculous, and many of you prefer to reserve the term "pulmonary tuberculosis" for those who yield tubercle bacilli in the sputum.

THE APPEAL TO THE SPUTUM

It must be confessed at once that the former criterion by which these two groups of cases are separated has become discredited. There are many practitioners who say that it is useless to base this criterion on sputum examination for tubercle bacilli, for they say that a sputum which is negative to-day may be positive to-morrow, or in three years' time, or it may be positive to-day and for a few days and

then become negative, or it may be continuously alternately positive and negative, or the sputum may be positive continuously for a very long time, and even when the patient feels perfectly well. Many of you are fully cognizant of all the difficulties connected with the questions coming round the nature of pulmonary tuberculosis. You are glad of sympathy, but I am sure you would welcome help as well. You do not want to notify a case as one of pulmonary tuberculosis without being sure, because, if for no other reason, of the calamity such a diagnosis brings to the ordinary household. At the same time, you feel that your patient who yields tubercle bacilli in the sputum should, without any doubt, be removed from near association with young children.

THE CAUSE OF THE CONFUSION

I propose now to discuss shortly matters which have been studied by pathologists and bacteriologists, and upon which, as a clinician, I have no first-hand information. I make use of the knowledge they have gained by exact experimental study to prevent myself from falling into errors and making clinical assumptions for which there is no scientific support. As a clinician I know that catarrho-pyogenic organisms can produce at the bedside and in the post-mortem room certain conditions which are identical with those wrongly alleged to be produced by the tubercle bacillus. I also know that the tubercle bacillus is not always able to be demonstrated in these lesions. I am, therefore, suspicious that there is something wrong in our conceptions of what the tubercle bacillus can do.

Pathologists have found that every adult town-dweller at death shows latent or active tuberculosis, or both, in some part of the body, and in a great many cases in the lung and adjacent areas. I can find no experiments to prove that the tubercle bacillus by inhalation, or by inoculation, can produce catarrh of the bronchi or alveoli, or suppurative bronchitis or bronchiectasis. The tubercle bacillus is not classed as a pyogenic organism; it cannot be made to produce pus by experimental means, though tuberculin can do so.

An organ attacked by tuberculous infection develops tuberculomata, which in favourable cases may involute, but if more tubercle bacilli arrive, more tuberculomata form until a whole organ may be replaced by tuberculomata. The more an affected organ or tissue approaches the surface of the body, or is brought into direct connexion with the outside of the body, the more likely is a suppurative process to be added to the tuberculous one. Tuberculosis of organs deeply buried in the body unconnected with the outside air remains pure tuberculosis; suppuration is exceedingly rare, and, if it occurs, is due to the arrival of pyogenic organisms by way of the blood stream.

In answer to the question, Can tuberculomata *per se* give rise to cavities by the unaided efforts of the tubercle bacillus, and the cells of the tuberculomata and their enzymes? it must be admitted that, though cavities may, and do, form in tuberculomata by a process of liquefaction of the interior of the tuberculomata, such cavities do not the cavities met with in pulmonary tuberculosis. When liquefaction occurs in a tuberculomata, the fluid material may be absorbed and the tuberculomata contracts, and this goes on till at last the tuberculomata becomes healed, or calcified. It is well known, as in the case of a pyous abscess, that this liquefactive process takes place, and this advance is helped by gravity, so that in time an enormous so-called "cold abscess" forms, but its contents are never purulent unless pyogenic organisms are admitted into its interior directly from the outside or by the blood stream. In the same way, cavities cannot arise from a tuberculomata without the help of pyogenic organisms entering the latter from outside, but cavities may be formed in the lungs by pyogenic organisms without the previous existence of the tuberculomata.

It is known that the tubercle bacillus has a great tendency to excite the proliferation of cells new to its site of deposit, and that is why it is spoken of as an organism which is characterized by a proliferative capacity, but at the same time in a sense it is destructive because the cells of which it is formed (derived from fixed tissue cells of several types and even from certain cells which wander from the blood vessels into alveolar spaces, pick up bacteria, carbon,

etc., and then wander back) have assumed a dominating influence, and lead to the complete disappearance of cartilage, elastic tissue, lymphatic vessels, and blood vessels which may have been originally resident at the site in which the tuberculomata has formed, and it is known that the tubercle bacillus, directly or indirectly, first of all causes thrombosis of the blood vessels before it leads to their disappearance. It is clear, therefore, that the tubercle bacillus, so far from exciting haemorrhage (and therefore haemoptysis), is a deterrent.

It is believed by some investigators that the tubercle bacillus can cause exudation of blood cells and plasma from blood vessels, and that therefore the tubercle bacillus on admission to the lungs can cause an exudative pneumonia. The evidence is simply histological—namely, that such pneumonia may be found in the lungs of people who have died having had tubercle bacilli in the sputum, and tuberculomata scattered about the lungs. But when the research is converted into a bacteriological one, then it is found that in the lung tissues there are present not only tubercle bacilli but other organisms which are well known causes of exudative pneumonia, and it is concluded—and rightly—that the pneumonia found in the lungs of people dying with tuberculous disease present in some part of the lung is, with one rare exception (confluent tuberculous pneumonia) already referred to, not caused by the tubercle bacillus.

No one has succeeded experimentally in proving that he can produce in the lungs of an animal the changes met with in the lungs of people who have died of so-called pulmonary tuberculosis by inoculations of pure cultures of the tubercle bacillus. It is very unusual, relatively speaking, for children to die showing the signs and symptoms met with in adults dying of pulmonary tuberculosis. They seem better able to resist the destructive changes in the lungs produced by catarrho-pyogenic organisms than are adults.

It is clear that because Koch discovered that the tubercle bacillus is the cause of tuberculosis we are wrong in assuming that because a patient reveals tubercle bacilli in the sputum his lungs are infected by the tubercle bacillus alone—they may be infected by other organisms as well. Indeed, we are quite sure they are. This is frankly admitted in the late stages of pulmonary tuberculosis, but it is clearly necessary to admit that catarrho-pyogenic organisms may begin to exert their influences upon the lung before or as early as the tubercle bacillus, so that when we are asked what is the latent period for the development of pulmonary tuberculosis we should say it is that period which elapses between the development of simple catarrh or suppuration of the respiratory tract and the development of so-called pulmonary tuberculosis, whether the onset of the catarrho-pyogenic infection was insignificant and unostentatious, or whether the onset was marked by all the turbulent manifestations of an attack of acute pneumonia, influenza, bronchitis, etc., and whether the interval between these events is days, weeks, months or years, few or many.

THE NEED FOR A CHANGE OF NOMINATURE

The present confusion cannot be ended unless it is recognized that the term "pulmonary tuberculosis" is too inclusive. It would be better to use this term to denote the condition of diffuse military tuberculosis of the lungs and confluent tuberculous pneumonia. We should revert to the use of the term "consumption" or "phthisis pulmonum" but we should elaborate this latter term and speak of the condition of the lung as "simple consumption" or "simple phthisis pulmonum" if tubercle bacilli cannot be recovered from the sputum and we should speak of "tuberculo-consumption" or "tuberculo-phthisis pulmonum" when we want to indicate that cases of simple consumption have become complicated by the presence of tubercle bacilli in the sputum.

I will note briefly the features of these different conditions.

1. Pulmonary tuberculosis due to infection by the tubercle bacillus alone—probably an incurable disease difficult to diagnose. It expresses itself as diffuse military tuberculosis or as a consolidation of the lung accompanied by no manifestations of catarrh, suppuration, abscess, and cavity formation, bronchiectasis, haemoptysis, etc. It is

the sort of tuberculosis which should limit itself to a cure when the specific cure for tuberculosis has been found.

2 Simple consumption or simple phthisis pulmonum, called simple by analogy with simple otitis media, simple meningitis as opposed to a condition due wholly to a specific single cause, such as tuberculous otitis media, cerebrospinal meningitis, etc. A condition in which histolysis is produced by extra-pyogenic organisms, the destruction at first may be slight and unrecognizable clinically or radiographically. All that the patient complains of is slight haemoptysis, or even marked haemoptysis, a cough that will not come to an end, as if due to tubercle or chronic catarrhal or suppurative bronchitis, or the patient may complain of several symptoms, and examination may reveal acute or chronic pneumonia, or cavity formation, or bronchiectasis, or putrid bronchitis, with signs especially in one part of the lung, and there may be progressive wasting and debility. In all cases, whether slight or severe, histolysis of some of the lung tissues has taken place. All signs and symptoms may disappear, never to return, or there may be recurrences, or persistent change takes place, and in the latter case extra-pyogenic organisms are "curied" organisms, and may be curied for many years, from the first infection, whatever form it takes. But it is not necessary for the first infection to be accompanied by severe manifestations, or even slight ones. The tubercle bacillus takes no part in encouraging these infections to occur, or in producing any of the signs or symptoms.

3 Tuberculo-consumption, tuberculo-phthisis pulmonum. These terms are somewhat ambiguous, but serve admirably to indicate a condition in which to the above severity or plenitude of symptoms and signs met with in simple consumption there is added the presence of tubercle bacilli in the sputum. These organisms may be present in few numbers, only occasionally, even once only in a long series of sputum examinations, they may be discovered in sputum which is only mucoid in appearance, or which is very purulent, they may be absent in the fluid brought up in haemoptysis, or they may be present at the first attack of haemoptysis, they may be discovered because the practitioner has routine examinations made of all sputa, surprise may be caused by finding the organisms in the sputum in a patient who feels quite well and yields no signs, but "hacks" or coughs up scanty phlegm.

There is no escape from the fact that there is no parallelism between the presence of tubercle bacilli in the sputum on the one hand and symptoms and signs on the other, so that it is not to be wondered at that prognosis is so difficult in these cases, and especially when it is known that cases who have never yielded tubercle bacilli in the sputum which may amount to diaphoresis and ounces a day, even on repeated examination, and even in the presence of signs of excretion, or of pneumonia, or of bronchitis, the symptoms being slight or severe, may eventually in the near or remote future yield tubercle bacilli, few or many, in the sputum.

To imply that such conditions of the lung are wholly of tuberculous origin, whether tubercle bacilli are present in the sputum or not, is to ignore pathological studies, because *post-mortem* examination may show that the lung lesions are not wholly nor in part tuberculous, and experimental study shows that the tubercle bacillus cannot produce all the changes met with in the lungs in these cases.

When tubercle bacilli occur in the sputum they do so in an episode in the progress of a case of simple consumption, this is shown by the fact that the tubercle bacilli are very scanty and are only found on rare occasions, the patient living a long and useful life, the extra-pyogenic organisms responsible for the simple consumption have mobilized the tubercle bacilli by opening up a focus of tuberculosis which has been resident ever since early life. In other forms of tuberculo-consumption the tubercle bacilli are present in increasing numbers, because, a focus of old tuberculosis having been opened, the tubercle bacilli have been aspirated into other districts of the lung, and with the help of extra-pyogenic organisms have produced the common well known type of disease which destroys so many young adults, but takes toll even after a full, or very full span of life.

Reflection will show that this view of the nature of the

changes met with when the lower respiratory tract becomes infected by extra-pyogenic organisms and tubercle bacilli, and of their interactions one upon another, must influence our views not only as to the meaning of the signs and symptoms of such infections, but will give us more certainty in diagnosis and prognosis, more certainty in treatment and, in addition, by showing precisely who are the patients who are responsible for the dissemination of tuberculosis in a community, will reduce the expense to the individual and to the nation of treating without discrimination large numbers of people as if they were suffering from some form of tuberculo-consumption, when in reality they are suffering from an infection which is much more serious than it is thought to be—namely, that brought about by extra-pyogenic organisms.

This view simply requires, on the part of our profession, the examination much more frequently, and infinitely more continuously and thoughtfully, of the sputum for tubercle bacilli.

A reversion to the use of the term "consumption" or "phthisis pulmonum," with the qualifications above suggested, is by no means a reversion in itself. We must still believe that the tubercle bacillus is the cause of tuberculosis, but we need no longer believe that all the changes present in the lungs of a case yielding tubercle bacilli in the sputum are due to the tubercle bacillus. We may believe that cases of simple consumption exist, and are in no way dependent upon early or late tuberculosis of the lungs, but upon extra-pyogenic infection, the proof of this latter position is that critical examination of the lungs in such cases at *post-mortem* inquiry, and the modern radiographic study during life of these cases, show the existence of cases of simple consumption which yield signs and symptoms identical with those of tuberculo-consumption, but differing from the latter condition during life by the absence of tubercle bacilli from the sputum.

THE EFFECTS OF PANCREAS PREPARATIONS BY THE MOUTH UPON CARBOHYDRATE METABOLISM

BY

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Even since the important part taken by the pancreas in carbohydrate metabolism was proved experimentally in 1889, attempts have been made to treat diabetes mellitus by administering the fresh gland, or preparations made from it, by the mouth. On the whole the results have been disappointing, although a few observers have claimed individual successes. The striking and often dramatic effects obtained with insulin diverted attention for a time from other forms of treatment, but the unavoidable disadvantage of a method which necessitates daily injections over long periods, it may be for the remainder of the patient's life, has recently revived interest in this question, again, satisfactory results have been reported by some, while others have met only with failure. Experimental work, rendered possible by the discovery of insulin, has offered an explanation of this divergence of experience and suggested that there are types of cases in which the regular ingestion of pancreas may be of benefit.

The effects of insulin are usually gauged by the fall in the percentage of sugar in the blood which rapidly follows its subcutaneous or intravenous injection, and it has been generally assumed that because no such change occurs when it is administered in other ways it has no influence upon carbohydrate metabolism. This is not necessarily the case, however, for insulin promotes the deposition of glycogen as well as influencing the utilization of sugar by the tissues, possibly the two functions are distinct, so that one may be lost while the other is retained. In order to test this possibility Mr. Howard and I carried out a series of experiments upon rats and guinea-pigs. They were based upon the well known fact that the fall in the sugar content of the blood induced by injecting insulin can be counteracted by injecting adrenaline as long as there is stored glycogen

in the tissues, since adrenalin promotes the formation of sugar from glycogen, whereas insulin has the reverse effect. If, then, insulin given by mouth for example has no influence upon the percentage of sugar in the blood of itself but is still capable of preventing the rise which would otherwise result from an adrenalinic injection it follows that the insulin or at least a part of it having antihyperglycemic properties, has been absorbed into the circulation.

Six rats and nine guinea pigs were first tested for their response to subcutaneous injections of insulin and adrenalin separately and in succession. The average fasting sugar content of the blood in the rats was 0.11 per cent, after the injection of two units of insulin it had fallen to 0.06 per cent by the end of the first hour, while half an hour after 0.25 c cm of adrenalin had been given subcutaneously it had risen to 0.17 per cent. When two units of insulin were injected and followed a quarter of an hour later by 0.25 c cm of adrenalin, an average blood sugar of 0.11 per cent was found in half an hour, one hour and again in an hour and a half. Similar results were obtained with the guinea-pigs, an average fasting blood sugar of 0.09 per cent being reduced to 0.05 per cent by the injection of two units of insulin, and increased to 0.15 per cent by 0.25 c cm of adrenalin. When the two were given in the same doses in succession the rise which should have resulted from the adrenalin did not develop nor did the same fall occur as when the insulin alone had been given, an average level of 0.07 per cent being obtained in one and a half hours, suggesting that the dose was not quite as well balanced as in the rats and that there was a relative excess of insulin. Investigation of the respiratory quotient of these animals showed that an injection of two units of insulin induced an average rise of 6.5 per cent in the rats, and 15.5 per cent in the guinea pigs, while 0.25 c cm of adrenalin given subcutaneously resulted in an increase of 8.3 per cent in the former and 8.8 per cent in the latter. Successive injections of the same dose brought about no change in one rat and one guinea pig, in the remainder there was a rise of 3.2 per cent in the rats and 5.5 per cent in the guinea pigs.

The same animals were then given two units of insulin by the mouth every hour for three hours, and it was found that no alteration in the sugar content of the blood or in the respiratory quotient resulted. On repeating this experiment but injecting 0.25 c cm of adrenalin subcutaneously a quarter of an hour after the last dose, the pronounced rise in the sugar content of the blood when adrenalin had been given alone did not occur, the average for the rats in half an hour working out at 0.12 per cent and in an hour at 0.11 per cent, while in the guinea-pigs 0.09 per cent was found at the half-hour and hour. Two of the rats and one of the guinea-pigs showed a slight rise in the respiratory quotient—2.6 per cent and 1.3 per cent respectively, but both figures are probably within the limits of experimental error. It is therefore evident that when insulin is given by the mouth to rats and guinea-pigs it loses its power of bringing about the characteristic drop in the sugar content of the blood resulting from subcutaneous injection, but is absorbed and retains its property of counteracting the effect of adrenalin.

Further observations upon rats suggested that this property is not due to a chemical neutralization of adrenalin by insulin but is dependent upon their exerting opposing influences on carbohydrate metabolism for when an injection of 0.25 c cm of adrenalin was given subcutaneously, followed immediately by a mixture of the same amount of adrenalin with two units of insulin hourly for three hours by the mouth, the percentage of sugar in the blood was not affected and the respiratory quotient was unaltered in four of the rats and showed an average increase of only 1 per cent in the remaining two. It should be mentioned that preliminary experiments had proved that adrenalin by the mouth has no effect on the blood sugar or on the respiratory quotient.

Rats are peculiarly suitable for feeding experiments as they greedily eat anything, no difficulty was experienced therefore in feeding six rats with large quantities of fresh guinea pig pancreas. Although as much as a whole gland

was taken by each of the animals on one occasion, frequent examinations of their blood at intervals up to four hours showed no fall in the blood sugar which averaged out at 0.12 per cent, compared with the average fasting value of 0.11 per cent. The respiratory quotient was unchanged in five and showed an increase of 2.5 per cent in one, but as there was no rise in the blood sugar this slight increase may have been an experimental error. When these rats were given half a fresh guinea-pig's pancreas by the mouth and 0.25 c cm of adrenalin was injected subcutaneously a quarter of an hour later the percentage of sugar in the blood was not increased and the respiratory quotient was unaltered in four while in two there was an average rise of 2.5 per cent. It is of course, impossible to estimate the insulin content of the pancreas administered in these experiments but it is evident that half a fresh guinea-pig's pancreas neutralized the effect exerted by 0.25 c cm of adrenalin on carbohydrate metabolism more completely than two units of insulin in spite of the fact that by itself it had no more influence upon the sugar content of the blood.

We have carried out a similar series of experiments with a number of commercial preparations of pancreas advertised as being efficacious in the treatment of diabetes employing samples kindly supplied to us by the makers. None of these was found to reduce the sugar content of the blood like insulin when administered orally or by subcutaneous injection, so that evidently, they cannot be used to supplement or replace the entire internal secretion of the pancreas and promote sugar utilization by the tissues. That this is the case, in any rate as regards oral administration is further shown by there being no appreciable change in any instance in the respiratory quotient when they were given to rats in doses advised by the makers for human beings.

Proportions of Fat showing an Increase in the Respiratory Quotient (R.Q.)

	R.Q. Increase	R.Q. Average per cent Increase
Insulin 2 units subcutaneously	6 out of 6	6.5
Adrenalin 0.25 c cm subcutaneously	6	8.3
Insulin and adrenalin subcutaneously	5	3.2
{ Insulin oral 2 units hourly for three hours	0	—
{ Do and adrenalin subcutaneously 0.25 c cm	2	2.6
{ Raw pancreas oral (half guinea pig's pancreas)	1	2.5
{ Do and adrenalin subcutaneously 0.25 c cm	2	2.5
{ Mackenzie Wallis's extract oral 1 g hourly for three hours	0	—
{ Do and adrenalin subcutaneously 0.25 c cm	1	1.3
{ Trypsogen oral 1 tablet hourly for three hours	2	3.3
{ Do and adrenalin subcutaneously 0.25 c cm	2	1.3
{ Trypsogen with gold and arsenic oral 1 tablet for three hours	2	3.1
{ Do and adrenalin subcutaneously 0.25 c cm	7	3.1
{ Insulase oral 5 gr hourly for three hours	2	1.3
{ Do and adrenalin subcutaneously 0.25 c cm	3	1.3
{ Pancreatin (old stock) oral 1 tablet for three hours	1	2.6
{ Do and adrenalin subcutaneously 0.25 c cm	7	11.0
{ Pancreatin (new) oral 1 tablet for three hours	0	—
{ Do and adrenalin subcutaneously 0.25 c cm	7	7.6
{ Foetal pancreas (Harrower) oral	0	—
{ Do and adrenalin subcutaneously 0.25 c cm	6	3.9
{ Pancreas (Harrower) oral	1	1.3
{ Do and adrenalin subcutaneously 0.25 c cm	6	6.1
{ Pancrehepatine oral 1 tablet hourly for three hours	1	7.6
{ Do and adrenalin subcutaneously 0.25 c cm	3	2.2

Several although not all of the preparations appeared to have the power of neutralizing the effect of a subcutaneous injection of adrenalin like insulin or fresh pancreas for when an average human dose was given by the mouth and 0.25 c cm of adrenalin was subsequently injected there was no rise in the respiratory quotient in at least the majority of the animals, and when

an increase occurred it was considerably less than when adenaline had been injected alone (see table). Judged by this criterion, Mackenzie Wallis's preparation, typtogen, especially when prepared without gold and arsenic, and to a less extent insulin and pancreheptine, would seem to contain an antglycogenolytic fraction which is absorbed from the alimentary tract, and, so far as one can tell without means of accurately comparing the dosage, is as active as in raw pancreas. It is probable that the age of the preparation influences its efficiency in this respect, for a sample of pancreatin which had been kept in the laboratory for over a year was found to have no power to neutralize the effect of adenaline, whereas a fresh sample used immediately after its receipt from the maker gave a better result.

If raw pancreas and pancreas preparations taken by the mouth act in human beings as they do in rats it would seem that they cannot be relied upon to replace the internal secretion of the pancreas entirely when it is deficient or absent, for although glycogen storage may be improved by their administration, the utilization of sugar by the tissues is not affected and the progress of the disease will not be materially influenced, when, however, there is merely a relative deficiency of the antglycogenolytic factor due to the abnormal activity of some influence which, like adenaline, prevents glycogen storage, the excessive formation of sugar from glycogen can apparently be controlled and prevented by an adequate dosage of one or other of these substances. In other words, it seems probable on experimental grounds that true pancreatic diabetes, dependent upon organic or functional deficiency of the gland, is not likely to benefit from the treatment to any appreciable extent, but that "non-pancreatic" glycosurias in which the functions of the pancreas are being normally or nearly normally carried out and there is merely a relative deficiency of the internal secretion will probably be improved and may even be cured, if suitable restriction of the diet is practised at the same time, especially in the earlier stages.

My clinical experience with various pancreas preparations, and especially with Mackenzie Wallis's extract and typtogen, tends to confirm these conclusions, for I have found that when their administration is confined to cases where analysis of the blood shows that defective glycogen storage is responsible for the glycosuria the results of adequate and prolonged treatment are satisfactory, but that it is useless, or worse than useless, to waste time on oral treatment where examination of the blood gives decisive evidence of an absolute deficiency of the internal secretion of the pancreas, in such cases insulin subcutaneously is required, either as a temporary expedient while the pancreas is recovering its functions, or permanently when there is organic disease of such extent that an adequate diet cannot be metabolized without. As a rule the non-pancreatic forms of diabetes or glycosuria are met with in the later years of life, and it is interesting to note that most of the cases in which treatment with raw fresh pancreas is reported to have been beneficial have been middle aged or elderly. In some there has been a family history of diabetes or glycosuria—a more common occurrence in the non-pancreatic than in the true pancreatic forms in my experience.

The first case in which diabetes was successfully treated by the oral administration of fresh pancreas was described by Cowles in 1911.¹ The patient, a middle-aged man, is said to have consumed an average of over three fresh pancreases daily, and as a result his appetite improved, his thirst disappeared, a gain in strength and weight occurred, the quantity and specific gravity of the urine fell, and the sugar diminished, although he was never quite sugar-free. The diet was not much restricted, only sugar being forbidden. Eventually the patient discontinued the treatment, the symptoms returned, and he subsequently died after developing a large carbuncle on his neck. *Post mortem* the pancreas was found to be represented by a fibrous cord about one-fourth the size of the normal gland. In this particular instance there was undeniable evidence of serious organic disease of the pancreas, yet large doses of raw pancreas by the mouth were

found to be beneficial. The explanation probably lies in the nature of the disease, which was evidently a chronic interstitial pancreatitis, and this leads me to a brief consideration of the reason why the sugar-utilizing fraction of insulin when given by the mouth does not usually gain entrance to the circulation, like the antglycogenolytic fraction.

The starting point of Banting's work upon insulin was his conviction that the failure of previous experimenters to preserve the antidiabetic hormone in extracts of the pancreas was due to the presence of the associated proteolytic enzymes by which it was destroyed, and his success arose from the adoption of methods of extraction by which their action was avoided. It seems probable, therefore, that the inactivation of insulin and pancreas preparations taken by the mouth is due to the action of trypsin in the intestine, and that this is the case is further suggested by the results of experiments upon healthy rats which Mr. Howard and I have recently performed. We have found that when means are taken to minimize tryptic action in the intestine the effects of insulin given by the mouth, upon both the blood sugar and the respiratory quotient, approximate more nearly to those resulting from the injection of insulin the more completely the action of trypsin is prevented—results which incidentally suggest that it may be possible eventually to overcome the present disadvantages of oral administration and make it applicable to all forms of diabetes. These results also offer an explanation of the success of the raw pancreas treatment in Cowles's case, for when the external secretion of the pancreas is absent or deficient, as analysis of the faeces shows it is if the gland is sclerotic, the inactivation of insulin, or the internal secretion contained in fresh pancreas, will not take place or will be less complete than when a normal amount of trypsin is entering the intestine, consequently the effect upon carbohydrate metabolism will be greater, particularly as regards the sugar-utilizing fraction. It is probable, therefore, that fresh pancreas and active pancreas preparations given by the mouth will improve carbohydrate metabolism in some forms of pancreatic diabetes as well as in the non-pancreatic varieties, under suitable conditions, but as my examinations of the faeces from a very large number of diabetics have shown that an excess of the external secretion of the pancreas is much more commonly met with than a deficiency, more especially in young people and in the earlier stages of the disease, there still remains a very considerable proportion in which no benefit can be expected, at least as the treatment is at present carried out.

REFERENCE

¹ *Boston Medical and Surgical Journal*, 1911

THE ULTRA-VIOLET RAYS IN DERMATOLOGICAL PRACTICE

BY

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FROM time immemorial the value of sunlight has been recognized in the treatment of disease, but it is only recently that, in this country at any rate, physicians have been able to ensure a constant supply of ultra-violet rays. The mercury vapour and the carbon arc lamps were at once recognized as providing a remedy of high potential value, and were tested against various diseases. Enlarged claims were made for these lamps before a sufficiently long clinical trial had been given them, but they have now been used over a period of some months in the treatment of many different dermatological conditions, and experience has shown in which success may be looked for.

The action of the lamps is both general and local. The general action is that of a powerful stimulant. Young persons respond more readily to this general action than do the old, but patients are few, especially if they live in a town, who do not obtain great benefit. The improve-

ment, physical and mental, in hospital children has to be seen to be believed. The local effect of the ultra-violet rays is in part bactericidal and in part stimulating. The call on the lamp is great but it has been found safe to put children suffering from impetigo contagiosa under the lamps in actual contact with other children without the infection having spread in a single case. The local stimulating effect, such as is required in patches of infiltration and in sluggish ulcers, almost equals that of the x-rays, and as far as is known, is considerably safer. In most cases general treatment has been given, when practicable, in addition to local treatment. It is as well, when commencing a course of general treatment, to find out as a preliminary the "erythema dose," as by this means larger doses can be given, with perfect safety, than would otherwise be the case. Special caution should be used when treating asthmatic patients, as their skin is apparently extremely sensitive to the ultra-violet rays. The erythema dose is measured by stripping a belt on one arm with four circular apertures in it. The arm is then exposed to the light at thirty inches and the apertures are covered over, one after the other, at two minute intervals. By this means the reaction may be tested over a small area of skin after two, four, six, or eight minutes. As a rule, the fainter the patient's skin the smaller is the erythema dose.

Of the lamps available, the mercury vapour and the carbon arc are the most generally useful. Each has its advocates, but in private practice the mercury vapour is the more suitable because of the much shorter exposure required. Locally, the mercury vapour will do all that the carbon arc can do, and do it even better, but it seems probable that the general tonic effect is greater with the carbon arc. Possibly this view may be due to the fact that patients treated by the carbon arc develop, as a rule, considerable pigmentation, and so look very healthy, while with the mercury vapour there is no pigmentation worth mentioning.

In the following paragraphs only those diseases are discussed in which either the mercury vapour or the carbon arc lamp has been used in a long series of cases with success. In many dermatological conditions application of the ultra-violet rays is the reverse of beneficial, and no mention has been made of them. In order to discover, as accurately as possible, the therapeutic power of the rays, all treatments given in hospital were unaccompanied by the use of any external applications such as lotions, ointments, or powders. When the preliminary experiments had been carried out during the summer months were employed, with a view to determining the quickest methods of cure.

Infective or "Septic" Group

Impetigo—Lesions of the face and body can, even in the absence of any local applications, be treated by the ultra-violet rays with the most successful results. Daily exposures, either general or local, quickly prevent the disease from spreading. The crusts drop off and the affected places dry up and heal rapidly. Care should be taken not to stop treatment too soon, as otherwise relapses are frequent. Light treatment combined with local applications affords the quickest and pleasantest form of cure yet devised.

Sycosis—In the early stages of this disease treatment with the mercury vapour lamp will often bring about a rapid cure, while in cases of long standing steady perseverance may avert the necessity of using the method of opilation by x-rays with its attendant dangers. Care must be taken not to give too heavy a dose to begin with and the treatment should be continued for a considerable time after the appearance of the last lesion. As is well known, this affection has a strong tendency to relapse, and treatment should be resumed as soon as any warnings present themselves.

Boils and Furunculosis—Local application of the rays of the mercury vapour lamp to a boil has one of two results. If treated early enough the boil will abort and dry up without ever having come to the suppurative stage. If, however, the boil has already burst, then the rays by their antiseptic action, will cause rapid healing. In furunculosis generalized exposures have proved themselves the most powerful agent in the prevention of any further abscesses.

The exposures will go a long way towards reducing the malice associated with these two conditions.

Carbuncles—What has been said about boils applies to the treatment of carbuncles. Heavy doses of the rays cause healing at a very much more rapid rate than by any other known method. Pain, discharge, and malodorousness after one or two exposures.

Septic Wounds—Exposure to the rays will in many cases cause the discharge to dry up and the wound to heal quicker than by any other method. In fact infections by the pus-forming cocci are, with a very few exceptions, quickly mastered by the mercury vapour lamp.

Multiple Subcutaneous Abscesses of Infants—After incision or rupture of the abscesses, daily exposures should be given during the whole course of the disease. Not only does the lamp assist very materially in causing rapid healing of the lesions, but the general effect in overcoming the toxæmia may actually be the means of saving the child's life. No hesitation need be felt in exposing an infant however young to the rays, so long as small exposures only are given.

Other Conditions

Alopecia Areata—Whether one regards this disease as being due to some micro organism or is of neurotic origin the accepted treatment is the same. Stimulating lotions containing antiseptics will bring about a cure in a large proportion of cases, others will get well spontaneously. But there will always remain some to resist all forms of treatment, and it is in this group that the ultra-violet rays are so useful. Of six cases treated recently in hospital by the lamp only, one alone failed to respond after six weeks' treatment. All these cases were of at least two years' standing. The rays have a most powerful stimulating and antiseptic action than any lotion the scalp can tolerate.

Psoriasis—Much has been written about this treatment for psoriasis, and many extravagant claims have been made, but this much is certain, that in a large series of cases a good proportion rapidly regain a normal skin. This applies to the generally disseminated group and to those cases practically indistinguishable from seborrhoea. Patients with thickened patches of long duration require heavy doses at close range, these can be given with greater safety than the x-rays, so far as my experience goes. To ladies especially this new treatment is an advantage since ointments will ruin any clothes. Treatment of the scalp should be given by lotions and shampoos because the hair cuts out a large quantity of the rays, making it difficult to judge the dosage accurately. If the patient can be treated at the commencement of an attack the chances of obtaining a very rapid cure are extremely good.

Seborrhoea—In any but the most acute forms a few general exposures will effect a cure. Seborrhoea as a rule affects mostly those parts of the trunk not exposed to sun light, and is not found among persons who by reason of working in warm climates wear but few clothes, hence the rationale of the treatment. Infiltrated patches clear up rapidly with a few big doses.

Acne Vulgaris—The results with this disease have been very satisfactory. It is as well to commence with general treatment for the first few exposures and then to give the affected parts a fairly big dose—one large enough to cause a moderately profuse exfoliation. These big doses should be repeated every fourth or fifth treatment as one good exfoliation will accomplish more than weeks of mild treatment.

Lupus and the Tubercles—Considerable experience of the treatment of tuberculous infections by the rays has shown that, while no startling results are to be expected steady improvement takes place in most cases. Treatment must however be continued over a period of some months, three or more exposures being given weekly. Several writers have pointed out the need for caution when treating patients with any active lesions in the chest.

Chilblains—By reproducing summer conditions as nearly as possible a large proportion of cases can be greatly improved. With the onset of cold weather the treatment of those who habitually suffer from this complaint should be begun, and continued intermittently throughout the winter.

ENDOSCOPY OF THE UTERUS

WITH A DESCRIPTION OF A HYSTEROSCOPE*

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CHARLES DAVID, in a Paris thesis (1908), described a method of endoscopy of the uterus, in which he employed an instrument consisting of a sheath into which fitted the cystoscope, closed at the far end by a glass crystal and containing near it an incandescient lamp. By enclosing the lamp he hoped he avoided blurring of the visual field due to the bleeding following the introduction of the instrument, but this instrument was never taken up.

Dr. Rubin of New York has described the technique which he has been employing during the last few months, in making endoscopic examinations of the uterine cavity. The hysteroscope which he has used is a modification of the cysto-urethroscope devised by McCarthy, and can only be used combined with gas inflation. He makes his observations without anaesthesia.

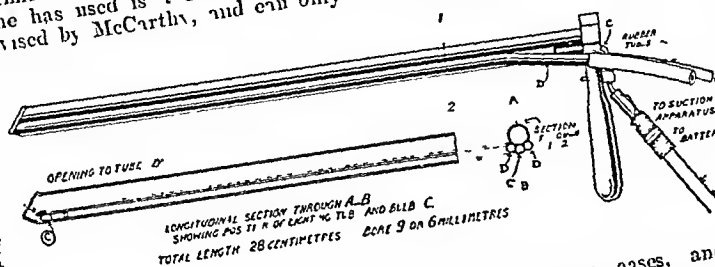
Since last May I have been experimenting with simpler means of uterine endoscopy before hearing of Rubin's work, but under general anaesthesia. Patients in England are not so docile as in America, and do not bear so well manipulations which may be decidedly uncomfortable without an anaesthetic. I first began with a tube angled like a uterine sound, to facilitate introduction of the cervix in the usual way. This tube after introduction, was straightened out by the device designed by Messrs Davidson of Great Portland Street, which held it fixed in the straight position. The light was at the proximal or ocular end, reflected into the tube, as in one type of sigmoidoscope, but only fleeting. I obtained some views of the endometrium, but only fleeting ones, as blood oozing out and mucus soon obscured the view. After the examination of a few cases I soon found that it was unnecessary to have an angled tube, as a straight one is easily introduced after the cervix has been dilated up to 10 or 12 mm.

The next problem was to get rid of the obscuration of the view by blood and mucus. Constant irrigation by sterile water or saline did not solve the difficulty, as it was found impossible to get rid of air bubbles, which spoiled the view. I then thought of continuous suction, as used by Dr. Chetlier Jackson for bronchoscopy. I determined to try a hysteroscope made on the bronchoscope principle. The George P. Pilling Company, surgical instrument makers in Philadelphia, have made for me two suitable tubes for uterine work. There are two tubes made of brass, each 28 cm long, one having a bore of 6 mm and the other of 9 mm. The light is at the distal end, and is furnished by a dry battery on the current from the main, after it has been run through a suitable resistance. The distal end, which carries the light, close to the opening, is bevelled at an angle of 45 degrees, and the edges are rounded off so that there is nothing to scratch the endometrium. In the wall of this tube are three channels—one for the light which carries the light, and one on each side for suction, either channel can be used for irrigation if need be. When in use the suction channels are connected by rubber tubing to a bottle with a rubber cork, which is kept a partial vacuum by means of an electric suction apparatus. I have found the Mennell pump satisfactory, it can be used with any voltage, which is a great convenience. The 9 mm tube is intended for general use, the smaller (6 mm) is reserved for the post-climacteric uterus, or for cases where dilatation to over 10 mm is difficult.

For an endoscopic examination the patient is prepared by placing a glycerin tampon against the cervix for two nights to make it easily dilated. I usually slowly dilate up to 12 mm. The hysteroscope is then very gently introduced, a swab on a sponge holder is used as an obturator, and prevents the lamp becoming obscured by blood during the passage through the cervical canal. The suction apparatus should be set going previous to the introduction. When the instrument is passed in almost to the fundus, the swab on its holder can be withdrawn, and only introduced again should the lamp become smeared. With the suction apparatus working briskly, the lamp end of the tube only requires swabbing out three or four times during an examination.

The whole endometrium is then carefully scrutinized by turning the instrument about and by partially withdrawing and reinserting the lighted end. The whole lining of the uterus cannot be seen at once, it has to be examined piecemeal. There is an aluminium handle to the instrument, which is intended to give one direction during use. I find that the more cases one examines the more one can see. The first time a cystoscope is used it is with very little profit to the observer, and so with the hysteroscope one needs practice to become familiar with the appearances of the endometrium in its functional changes during the menstrual cycle and in its alterations from pathological causes.

So far I have examined some fifteen cases, and have been able to see and remove a large fibroid polypus and diagnose a case of fungous endometritis. I derived great help in removing the polypus by being able to trace up the pedicle to its origin on the anterior uterine wall, near the fundus, and snip it through at the right spot by sight, avoiding buttonholing the uterine wall, which can happen when the weight of the polypus has caused a partial inversion of the uterus. The difference between the appearance of the mucous membrane of the uterus during menstrual life and after the menopause is striking, in the latter case the membrane is much paler and smoother. I have also been able to bring into view the os uteri, which is going to prove useful in diagnosing the uterine causes of general bleeding, since it can reveal such lesions as glandular hyperplasia of the endometrium, polypi, and carcinoma. A piece of tissue can easily be removed for microscopic purposes by direct vision. The diagnostic emetage has often been a disappointment to me and, I am sure, to others. The serings removed in this way do not really give the pathologist a fair chance. The instrument and the method of using it here described have the advantage of extreme simplicity. Uterine endoscopy is in its infancy, but from the limited experiences I have had of it I believe that it will be of great use as an aid to diagnosis, and of some therapeutic value also.



REFERENCE
1 Amer. Journ. Obstet. and Gynecol. September 1925

THE TREATMENT OF UTERINE FIBROIDS
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FELIXSTOWE

It should be a axiom that when surgical intervention is necessary, an innocent tumour should be removed, but the organ which contains it should be left, unless the removal of the tumour alone is a more dangerous operation, or the organ that is left is useless. Myomectomy must from its very nature be a higher ideal than hysterectomy, whether total or partial. Why, therefore, have surgeons and

* Abridged from a paper read before the Brighton and Sussex Medical-Chirurgical Society, December 3rd.

* Presidential address to the Ipswich Clinical Society

gynecologists continued until quite recently to neglect myomectomy?

I trust I shall be able to demonstrate that the mortality of myomectomy is about the same as that of hysterectomy, and that the uterus which is left is a useful organ. The first recorded case is that of Atlee of Philadelphia in 1844. The patient bravely endured the operation which was, of course, performed without an anæsthetic. It lasted nineteen and a half minutes—a very creditable time. One fibroid, weighing nearly 2 lb., was removed, and though peritonitis supervened the patient recovered and was completely cured. Atlee very wisely says that this case goes far in testing the propriety of gisiotomy, as the operation of opening the peritoneal cavity was then called.

After this the history of myomectomy was one of continued opposition until quite recently. In 1898 Alexander of Liverpool pleaded strongly for it, but his opinion was against the consensus of opinion, probably because the mortality was then higher than that of hysterectomy.

Indications and Contraindications

The indications for myomectomy are

1 The fact that the woman is of child-bearing age—that is, up to 40—should indicate the advisability of myomectomy, and is, in fact, its all important indication.

2 All pedunculated and single tumours should be removed and the uterus left.

3 There are cases in which hysterectomy would otherwise be indicated, but in which there are so many adhesions between the womb and other organs that myomectomy is the easier and safer operation. I recently operated on a woman who, five years previously, had had removed, for a tuberculous infection, the left ovary and tube and the right tube. At the operation it was found that there was in the uterus a single fibroid undergoing red degeneration. The womb was bound down by many adhesions. Myomectomy was a comparatively simple operation, hysterectomy would have been most difficult. There are other cases in which the excision of one or more fibroids renders the following hysterectomy a far easier operation.

4 Some patients object to the loss of the uterus. In these cases, even if over age, myomectomy is advisable.

The contraindications are as follows:

1 If the patient is above child-bearing age, all things being equal, hysterectomy is, as a rule, the operation of choice, but when only one or two fibroids are present, if they can be easily and safely removed by myomectomy, then certainly that is the correct operation.

2 It has been taught that only in cases in which there are a few fibroids is myomectomy advisable, but neither the number nor the position of the tumours should deter us from performing myomectomy. The only index for guidance is the ease, rapidity, and safety with which the operation can be performed. If it is possible to shell out the fibroids more easily and quickly than to perform hysterectomy, then myomectomy holds the field. I have removed as many as nineteen tumours from the uterus in one case and completed the operation in twenty-two minutes. That patient is alive and well, and has had one baby.

3 Coexisting disease of the ovaries and tubes is a contraindication to myomectomy.

4 When the patient is blanched from excessive loss of blood, then the operation of choice is that which will take the shortest time to perform, and not as has been taught, hysterectomy. I have shelled out a single fibroid, measuring 6 inches in diameter, from a patient who was blanched from a loss lasting three weeks. The operation lasted eighteen minutes. Hysterectomy would certainly have lasted longer.

5 If malignant, meriod, or septic degenerations are present, then myomectomy is contraindicated.

Myomectomy is indicated during pregnancy under the following conditions: (1) when pre-existing tumours grow rapidly, (2) when acute pain is produced by red degener-

tion, (3) when pressure symptoms make life a burden, (4) when the position of the tumour makes it almost certain that it will produce obstruction during labour.

If any of the above conditions exist operation is advisable. If the fibroids are fairly superficial and not too numerous then myomectomy should be performed and the pregnancy allowed to continue to term. If the tumours are too numerous to be dealt with in this way the pregnancy should be allowed to continue to term, and at that stage Cæsar section, followed by hysterectomy, should be the operation of choice.

The Results of Myomectomy

Unless the results are superior or equal to those of hysterectomy the operation is not an advisable one.

It is important in this connection to consider the following points: (1) the mortality, (2) whether the operation cures the symptoms and whether recurrence of fibroids is common, (3) whether patients are capable of child-bearing after the operation.

1 Bonney has recorded a mortality of 2 per cent for myomectomy with a mortality of 15 to 20 per cent for hysterectomy, but he points out that his mortality has been gradually dwindling. Giles has recorded a mortality of 0.95 per cent as against 0.73 per cent for hysterectomy. The Mayo Clinic, out of 504 myomectomies, had a mortality of 0.8 per cent. Personally it could be expected, I have had very few cases in comparison to these authorities, but up to the present I have had 12 myomectomies with not a single death.

2 If symptoms recur this clearly shows either that small fibroids have been left or that a thickening of the uterine mucosa or uterine polyp is present. Bonney advises that the uterine mucosa should always be opened so as to allow of these conditions being diagnosed and dealt with. It is also important that all fibroids however small should be removed. Giles reports that there had been no recurrence of fibroids in 90 per cent of the cases and that menorrhagia had recurred in 9.3 per cent after operation. The Mayo Clinic reports that out of 504 myomectomies only five later required hysterectomy, a percentage of less than 1. In my series of 12 cases I have, up to the present, had no recurrences and no menorrhagia. I believe this is due to the following of Bonney's advice.

3 The question whether patients become pregnant after the operation is, I think, the important point and clearly shows the superiority of myomectomy to hysterectomy. Since it has been shown that its mortality is practically the same as that of hysterectomy and is after all a preventable mortality, and since it has been shown that the recurrence of menorrhagia is rare then the birth of but one child in a whole series of myomectomies shows the superiority of this operation to hysterectomy for fibroids. Giles has shown that 26 per cent of women who could have children have become pregnant. The Mayo Clinic has reported that out of 504 cases whether married or not and whatever the ages, 24 have had children, 28 children had been born to these women, and 5 more were then pregnant.

In my series of 12 cases, one woman has had one child, one has had two children and one has had three. These six children are all living. One other woman became pregnant, but developed eclampsia and abortion had to be procured. Out of the remaining seven women three have been operated on too recently for any report to be made. One is an unmarried woman and four have remained sterile. I have little doubt that more babies could have been born had the mothers so desired.

The operation is normally one of only moderate difficulty, but at times for various reasons it becomes one of extraordinary difficulty. The abdominal incision should be made vertically to one or other side of the linea alba over the rectus muscle. An incision of 6 to 7 inches is usually sufficient. The rectus is drawn upwards and the uterus exposed in the ordinary way. The Trendelenburg position is often of very great assistance. If possible an anterior incision should be made over the fibroid. Bonney makes a great point of this so as to prevent adhesions between the small intestines and the posterior surface of the uterus,

but it is quite simple to graft a piece of omentum over the incision and thus prevent adhesions. The incision is made through the capsule to the fibroid, which as a rule shells out easily. If any difficulty occurs it is far easier and quicker to carry the incision right through the tumour, the cut surface of which is then gripped with a volsellum and easily shelled out, than to make a long search for the demarcation between the capsule and the fibroid. If there are two or more fibroids, and they are situated close to each other, it is easy to carry incisions down to the other fibroids from the bed of the first, and to shell them out through the same opening. If this is impossible multiple incisions are as easy to deal with as one incision.

In the case of a fibroid with a thick stalk the usual practice has been to excise the stalk as well as the tumour. This, however, leaves a large raw surface. It is preferable to make the incision convex on one side of the stalk so that there should remain a portion of the capsule to stitch over the raw surface. When many fibroids are removed a very shapeless uterus is left, but as involution takes place the most shapeless uterus soon recovers its shape, size, and functions. The uterus from which I removed nineteen fibroids was a shapeless mass, but on examination to day a practically normal sized uterus can be felt, this patient has had one child.

The great danger is haemorrhage. As a rule the bleeding can be controlled by pressure. If this is not sufficient, temporary pressure can be applied to the ovary and uterine arteries with intestinal clamps, care being taken not to apply pressure to the Fallopian tubes by making an opening through the broad ligament, so that one blade of the clamp can be passed through it. The two great secrets of success are (1) to remove all fibroids, however small, only an educated finger can feel a small fibroid through the thickened uterine wall, (2) to obliterate all cavities from which fibroids have been removed, unless this is done there is danger of haemorrhage. Ligatures of silk should be used unless the uterine mucosa has been opened, then crêpe is indicated. The sutures can be passed as mattress sutures or circularly round the cavities so as to obliterate them in layers. Finally, a layer of Lembert sutures should be passed through the peritoneum to cover the last line of sutures. Ochsner's recommendation, that sutures should be tied tight enough to stop haemorrhage, but not so tight as to blanch the tissues, should not be forgotten.

I think Bonney's advice, that in every case the uterine mucosa should be opened and the uterine cavity examined for thickening or polyp, is most important. I feel sure that menorrhagia following myomectomy is often due to simple causes which could easily have been put right at the time of the operation.

The number of fibroids removed from my series of 12 were 19, 17, 13, 11, 8, 6, 6, 1, 1, 1, 1, 1. The time taken at the operation is an important matter. The shorter the time the less the shock, and the more fibroids can be removed. My times have been 22, 30, 25, 28, 20, 30, 21, 25, 28, 18, 39 (when an appendicectomy was also performed), and 25 minutes. The woman from whom 19 fibroids were removed has had one baby, the woman with 13 fibroids has had two children, one with one fibroid has had three children, and the one with 17 fibroids became pregnant but had eclampsia.

I have had in my series one cervical fibroid which weighed over 2 lb, and in one case I removed a large fibroid with red degeneration at the fourth month of pregnancy. The woman was taken with acute abdominal pains. The womb reached nearly to the ensiform cartilage and was very tender. The tumour shelled out very easily, it weighed over 2 lb. The pregnancy was not disturbed and the patient has since had two other children.

I have little doubt that myomectomy is the correct operation not, it is true, for all fibroids, but for a very large number for which hysterectomy is done to day. It seems but reasonable that an operation with so low a mortality which cures the patient's symptoms in so large a proportion of the cases, and which permits of the continuation of child-bearing, especially in these days when children are so badly needed by the nation, should become the operation of choice in the not distant future.

THE TREATMENT OF THE PAROXYSMAL STAGE OF WHOOPING COUGH

BY

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D.P.H. OXON. AND GLAS.

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Whooping cough is still one of the chief killing diseases of infancy and early childhood. Hitherto there has been discovered no drug capable of allaying the paroxysms which, especially in infants, so often end in convulsions and death. The following series of observations was carried out at the instance of the late Dr. Claude B. Kei, superintendent of the Edinburgh City Hospital for Infectious Diseases, to find whether the reputation enjoyed by *Drosera rotundifolia* in Scandinavian countries¹ and amongst many general practitioners² of this country, as a specific in the treatment of the paroxysmal stage of whooping cough is justified, by putting the drug to a definite clinical hospital test.

Method

1 Whooping cough cases were selected in pairs, each pair being as similar as possible in respect of (a) stage of disease, (b) severity of spasms, (c) age.

2 Tincture of *Drosera rotundifolia* was given in known strength to one member of the pair, and using the other as a control, either with or without another antispasmodic, both were compared from time to time as regards improvement in the number and severity of the paroxysms.

To facilitate comparison the beds of each pair were placed beside each other in the ward when possible. As a continuous record of the paroxysms and whoops had to be kept day and night, a sheet of paper was placed in a prominent position in the ward, and the sister or nurse by day and the night nurse by night marked up the number or whoops in each paroxysm opposite the name of the patient immediately on termination of the paroxysm.

Drosera rotundifolia was given in the form and dose in which it is usually prescribed—that is, min. ij t.i.d. of a tincture of 1 in 10 proof spirit. The 10 per cent tincture was made up in teaspoonful doses of varying strength, and in four cases the dose was gradually increased by the addition of 1 minim daily to min. xij t.i.d. to test the effect of dosage.

The controls of the majority of the cases were treated with tincture of belladonna, the antispasmodic in which the late Dr. C. B. Kei had the most faith. The dose given was min. ij t.i.d., increasing by 1 minim daily till the pupils were widely dilated. In other cases the controls were not treated with any antispasmodic.

In all 31 pairs of cases were investigated over different periods from February to April, 1925. In 11 of the 31 pairs of cases observations had to be abandoned on account of one or other of the pair dying or being removed to another ward (where control was not practicable) or less than three weeks after commencement of the drug.

Summary of Results

(a) In 16 pairs of cases, using tincture of belladonna as the control, 8 showed greater improvement under tincture of belladonna, 3 under tincture of *Drosera rotundifolia*, and in the remaining 5 pairs of cases no appreciable difference between the two drugs as regards rate of improvement was found.

(b) In 4 pairs of cases, where the control was not treated with any antispasmodic, most rapid improvement was observed in the control of one pair, and in the other 3 pairs of cases no appreciable difference was found.

(c) In 4 cases where tincture of *Drosera rotundifolia* was increased from min. ij to min. xij t.i.d. by 1 minim each day, no difference in the rate of improvement was noticeable. In 2 of these cases the patients developed enteritis after about a week, which stopped in one case a day after the tincture of *Drosera rotundifolia* was stopped, but in the other case enteritis continued after cessation of the drug, and death followed twenty days later. In the latter case there was also a bronchopneumonic element.

Summary and Conclusions

1 Twenty cases of whooping-cough in the puerperal stage were treated with tincture of *Dioscorea rotundifolia* and compared under hospital conditions with controls treated with tincture of belladonna or without any antispasmodic.

2 There is no evidence whatever to show that tincture of *Dioscorea rotundifolia* is a specific in the treatment of the puerperal stage of whooping-cough. On the contrary, its therapeutic action would appear to be negligible.

3 In doses beyond the usual limit of the 10 per cent tincture it is an intestinal irritant and is liable to set up enteritis, which in weak bronchopneumonic cases may prove fatal.

Dioscorea rotundifolia.—Leaves of smoky yield a greenish brown, odorous wet acid in glucose citric acid and probably malic acid and a ferment which converts albumin to peptone. (*National Standard Dispensatory* 1925).

REFERENCE

BRITISH MEDICAL JOURNAL 1911 1 p 792 Ibid p 812

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

RECTAL ANAESTHESIA

In a memorandum (BRITISH MEDICAL JOURNAL, December 12th, p 1123) Mr. Laine has drawn attention to the advantages of "rectal etherization," and compares it favourably with administration by inhalation. He refers to the report of a case by Mr. Granville Chapman and Mr. McNeillan (BRITISH MEDICAL JOURNAL, September 19th). Judging from these isolated reports it must be inferred that the method is not generally employed, and that the fear of unpleasant sequelae, generated by antiquated writings, still prevails. Dr. Boyd, anaesthetist to the Richmond Hospital, Dublin, drew attention to the many advantages of this form of anaesthesia at the Annual Meeting of the British Medical Association at Portsmouth in 1923.

In my own practice ether by the colon is used almost as a routine for operations about the head and neck. The comfort of a field free from the paraphernalia employed for inhalation anaesthesia cannot be exaggerated. It is the method *par excellence* for excisions of the tongue or jaw and for the removal of goitre or glands in the neck. A fortnight ago I removed a bullet which had been embedded for about four years in the base of the brain. It was a difficult and prolonged operation, but the anaesthesia induced by ether by the colon (Dr. Giffney) was flawless, and added considerably to the comfort of the assistants, the sister, and myself. A tube, fastened in the patient's mouth, carried a gentle stream of oxygen from a cylinder near by. There was very little bleeding during the operation, and there was no vomiting or unpleasant after effects.

The method was suggested in fact back as 1847 by Pirogoff, but owing to misadministration was abandoned and only revived in recent years.

From a wide experience I can strongly recommend the method in suitable cases to those surgeons who have not yet given it a trial.

Dublin

W. I. DE C. WHELFER

PREGNANCY COMPLICATED BY NECROTIC
FIBROIDS

On January 23rd, 1925, a woman aged 38½ was admitted under me into the Elizabeth Garrett Anderson Hospital, complaining of abdominal pain. It was chiefly on the right side of the epigastrium, was sometimes acute and had been almost continuous since her last period in August 1924. Examination of the abdomen showed the pregnant uterus (five and a half months) reaching to the level of the umbilicus. Apparently connected with the upper limit of the uterus was a firmer, tender mass filling the epigastrium. A small rounded tumour could also be felt on the anterior surface of the uterus at the level of the anterior superior spine. The patient had previously had three miscarriages, the last ten years ago, and was anxious for a living child.

At the operation a large subperitoneal fibroid, 7½ by 4 inches, attached by a short pedicle to the fundus of the uterus, and a second situated in the mid-line behind at the level of the internal os, about 3½ inches in diameter but not pedunculated, were removed. While with difficulty enucleating the second fibroid, some pus-like fluid escaped and the tumour was seen to be necrotic. The incisions in the uterus were closed by Lembert sutures of catgut. Two other quite small fibroids, apparently not degenerating and not in a position to cause any difficulty, were left in order not to weaken the uterine wall more than necessary. The pathological report states that both fibroids were entirely necrotic and infiltrated with pus cells. Unfortunately no cultures were taken.

The patient made an uneventful recovery and was later safely delivered of a living full-term boy by Caesarean hysterectomy, performed by Miss Chidbren at the same hospital.

MORNA RAWINS M.B. B.S.

Surgeon Elizabeth Garrett Anderson Hospital

London W.1

PULMONARY TUBERCULOSIS COMMENCING
AT SEVENTY-SEVEN

THE fact that the patient had reached an advanced age when he first developed symptoms of pulmonary tuberculosis is sufficiently uncommon for the following case to be recorded.

A man, aged 80, when first seen on August 12th, 1925, was suffering from advanced pulmonary tuberculosis. The general condition was very poor and the physical signs extended over the whole of the right lung and the upper half of the left. Tubercle bacilli were present in the sputum in considerable numbers. Careful questioning of the relatives elicited the fact that the patient had enjoyed excellent health and remained at work until three years previously, when, at the age of 77, he had developed pleurisy at the right base. Since that time he had suffered from the usual symptoms of pulmonary tuberculosis—cough, wasting, etc.—and had slowly gone downhill.

No family history of tuberculosis could be obtained, and the patient did not appear to have been in close contact with anyone suffering from the disease. He died on September 11th 1925.

A. P. FORD, M.R.C.S. J.R.C.P. D.P.H.,
Tuberculosis Officer, Hertfordshire

A NOTE ON FROST-BITE

SEVERAL years ago it was my lot to have under my observation about 400 cases of frost-bite among prisoners of war in France. Some of the patients stated that they first observed the condition when engaged in working parties, but as a rule it was first noticed while in the tents or huts, and at times occurred during sleep. Slight burning pain only was experienced but within a short time the affected parts became discoloured and gangrenous. As a rule the lower extremities alone were affected, only in one or two cases were the fingers and ears affected also, and in the latter the lesions were superficial.

The condition varied from mere coldness and paleness in the toe with or without blister formation to massive gangrene of one or both feet and in the comparatively slight cases the lesions were mostly bilateral and symmetrical, and consisted of small superficial gangrenous patches or ulcers on the inner aspect of the terminal phalanx of the great toe. Unilateral distribution was rare. Severe cases did not show this symmetry. One toe only might present the features of dry gangrene but as a rule several toes were thus affected on both feet and in a few cases all the toes were affected.

When the gangrenous condition extended beyond the toe it was of the moist variety, and even when the disease did not extend in continuity beyond the mid metatarsus, isolated portions of gangrene involving all the tissues were present beyond this area in the sole or dorsum and frequently in the heel. In the worst class of cases there was massive gangrene of one or both feet with sickening odour. Pressure was unusual and pain was absent except in a few cases, even then it was not severe or continuous.

In a case of massive gangrene of both feet there was marked oedema of one leg and both knee joints were distended with pus. In a somewhat similar case there was painful effusion in

the left knee joint and left elbow joint, whilst later a huge abscess developed in the left buttock. In two cases pyelitis was present, and in one case pyonephrosis. Inguinal adenitis was rare. Multiple septic wounds were not uncommon, and other complications, such as emphysema, were also noted. Diarrhoea also was not uncommon. In only one case was there gas formation, and that in the knee joint.

Treatment was local and general, and an effort was made to prevent or eliminate sepsis. In cases of superficial gangrenous pytic acid in spirit was applied. Sloughs were slow to separate and ulcers slow to heal. Similar treatment was applied to more advanced cases, and a line of demarcation was slowly formed, but it was not necessary to wait for this, as in all cases observed the limits were obvious.

Amputation of toes was performed by circular incision just proximal to the disease. There was a striking softness of the bone. The tissues were pale and avascular, and there was no bleeding, but in twenty-four hours vasoconstriction gave place to vaso-dilatation, and oozing would occur. Primary suture was not performed, and recourse was had to delayed primary or secondary suture. It was at times necessary to remove all the toes of both feet. Several single and doubtful amputations through the tarsus were performed with unsutured flaps.

Six double amputations in the upper third of the leg were necessary for massive gangrene of both feet. In three cases only was Symes amputation practicable, and in one or two cases there was amputation at the ankle joint by internal lateral flap. In the double amputations the mortality was naturally high. Much amputation was at times the operation of choice, so that the defeat of sepsis, improvement in hygiene, and an abundant supply of nourishing food should mitigate operation at a higher level a hopeful expedient.

Nitrous oxide and oxygen was the anaesthetic, and in no case was a tourniquet used. The tourniquet is always a cumbersome appliance and is seldom necessary. In cases of amputation with a skilled team it is always totally unnecessary.

Wales 11

J. W. THOMSON, M.A., M.B., C.M.

TEMPORARY BLINDNESS AFTER CONCUSSION

For description by Mr. Geoffrey Anderson (BRITISH MEDICAL JOURNAL, November 28th, p. 1005) of a case of temporary blindness following cerebral concussion reminds me of a similar incident which happened to me personally some years ago when I was a lad of 14.

I was roller skating on a concrete pavement, and tripped up, falling heavily on the left side of my forehead. I was very dazed, but did not lose consciousness, and with assistance was able to walk indoors and sit on a chair. I rapidly recovered, and felt quite well, except for the fact that I was blind, and retained only perception of light. I sat quietly and did not say anything, and consequently was not seen by a medical man. After about half an hour my sight gradually began to return, and was normal fifteen minutes later. There were no after-effects, and the only external lesion was very slight bruising of the forehead.

The explanation suggested—that such symptoms are due to a localized concussion or the occipital lobes due to *contre coup*—seems to me to be a very reasonable one.

at the operation is an interesting case of a very rare condition.
LONDON W. 14. JAMES LANNING, M.D. Lond.

TABES DORSALIS IN SURGICAL PRACTICE

In a day of progressive specialism, the importance of avoiding a narrow outlook demands emphasis. Not only do the boundaries of medicine and surgery insensibly overlap, but conditions essentially medical often simulate purely surgical complaints. A chest lesion is frequently mistaken for a gastric ulcer. Banti's disease simulates gastric ulcer, and pernicious anaemia may simulate carcinoma of the stomach. Three recent cases have impressed me with the frequency with which tabes dorsalis complies surgical diagnosis.

The sole complaint of a man aged 63 was stabbing pain in the end of his stump, a good supracondylar amputation of the left thigh following a street accident some years ago. Two years ago when the patient complained of pain similar to that which he now experiences a diagnosis of painful nerve bulb of the great sciatic was made and he was submitted to operation. The man returned to hospital recently again complaining of a painful stump. The irregularity of his pupils led to a closer examination which revealed the typical Argyll Robertson pupil. The knee jerk was absent in the one intact limb. The marked hypomotility of the ulnar nerve and an anaesthesia on close questioning of rheumatism in the right calf and thigh and of occasional decubiti made the diagnosis of tabes dorsalis clear. This was confirmed by examination of the cerebro-spinal fluid.

The second patient was a woman aged 42 with bilateral valgus. On the right there was an ulcerated area over the aspect of the head of the metatarsal which had been present for a long time, but its secondary to the valgoid deformity. It was a deep indolent ulcer surrounded by thickened skin. Its appearance was somewhat of a pie and it was of a painful. The diagnosis of 'perforating ulcer' was confirmed by the presence of typical tabetic signs.

The third case was a man aged 48 who was sent from Wales with a diagnosis of 'hypertrophy of the prostate'. He complained of difficulty of micturition for the past six months, and recent examinations showed that the prostate was undoubtedly enlarged. However, a rubber catheter was readily passed into the bladder. The fact together with certain signs elicited by routine examination of the central nervous system suggested that the disease was degenerative rather than mechanical and the laboratory findings of the cerebro-spinal fluid were conclusive. Wassermann reaction strongly positive, globulin in excess, lymphocytes 60 per cent, metachromatic zone gold colloid curve. The case was clearly one of tabetic dysuria.

For permission to make use of these three highly interesting cases, I am indebted to Mr. Thelwall Thomas and to Mr. Frank Jerns of the honorary staff of the Royal Infirmary. Such cases indicate the necessity for all those who wield the knife being able to say, in the words of an eminent living surgeon, 'I am a physician doomed to the practice of surgery.'

P. WATSON JONES,
Surgical Registrar Royal Infirmary, Llanelli.

TUBERCULOUS DISEASE OF THE TONSIL

The following case seems of sufficient interest to be placed on record.

A man aged 48 consulted me on October 5th 1925 complaining of severe pain on swallowing. I was informed that in May 1924, he had suffered from haemoptysis and that the sputum was found to contain tubercle bacilli. A few weeks later (when undergoing sanatorium treatment) he developed a painful larynx which lasted for four months but eventually cleared up, leaving no symptoms referable to the throat. At the present time his pulmonary condition is satisfactory, physical signs and the X-rays indicate that the disease is confined to the right upper lobe. There is nothing to suggest activity, no loss of weight, and no tubercle bacilli are present in the sputum.

Between October 5th and 20th the dysphagia grew progressively worse and any hot or spiced food caused exquisite pain, all the pain being felt in the laryngeal region on the left side. During this time the larynx and tonsils appeared healthy, the latter being quite small. Very little could be seen in the larynx to account for the pain, the only abnormality being slight injection of the epiglottis and scarring of the left ventricular band. There was no ulceration or swelling.

On October 30th the larynx appeared normal but there was a small white ulcerated area about the size of a lentil on the lower pole of the left tonsil. This area was exquisitely tender to the slightest touch with a probe causing severe pain. Since then several other small ulcerated areas varying in size from a pin's head to a lentil have appeared, some of these areas have coalesced and spread on to the left posterior pillar of the fauces.

The case is undoubtedly one of tuberculosis of the tonsil, and is interesting owing to the presence of very severe pain before the appearance of any local disease.

J. L. CYRIL DOYLE, M.R.C.S., L.R.C.P.

Bromley

PALE BABIES AND DEEP PERAMBULATORS

The modern baby is apt to be pallid, even though it may be plump and muscular. The modern perambulator is deep and dark, so that a small infant lying at the bottom of it, covered with a waterproof apron of some dark material and shaded by the hood, is out of reach of any sunshine or daylight.

We found our infant daughter at the age of 2 months pasty-faced and white, though thriving well enough as regards weight and general nutrition. Her diet of Grade 4 milk suited her admirably, and she took 5½ ounces (diluted with 1½ ounces of water) every three hours.

There seemed no reason for changing her diet. So we tried the effect of bringing her up to the surface, placing a light wooden tray in the pram at such a height that with her mattresses the baby lay not more than four inches below the sides of the pram. The hood and waterproof apron are only drawn up when it is actually raining.

In three days the child's complexion changed from a pasty white to fresh pink, and so it has remained.

This note may be of value in directing attention to the drawbacks of a deep pram, and the advantages of raising the infant occupant up into the light of day.

DORRIS AND JOHN NIXON
Chichester

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS

SWANSEA DIVISION

A clinical meeting of the Swansea Division of the British Medical Association was held at the Swansea Hospital on December 3rd, under the presidency of Dr URBAN MARKS, chairman of the Division. The meeting was well attended, and a number of interesting cases were shown.

Dr KINGSTON KNIGHT showed a case of diabetic gangrene, which had eroded and entirely removed the hard palate of a middle-aged woman. With the aid of an obturator made by Mr S. J. St. Heher Tweney, dental surgeon to the hospital, the patient was now able to speak quite well again. Dr H. R. TIGHE showed a case of frigus of the scalp successfully treated by x-rays. Dr DANIEL E. EVANS read notes on a case of renal dwarfism. The characteristic stunting of growth with bone deformities was associated with much thirst and polyuria, while the urine showed a slight cloud of albumin. After an operation for acute mastoid disease uraemic symptoms supervened, and the boy died. At the necropsy the kidneys were found to be small, and to show well marked interstitial fibrosis.

Dr A. F. SLADDEN, pathologist to the hospital, gave a short account of the colloidal gold test as used in examination of the cerebro spinal fluid. He outlined the colour changes which might occur in suspensions of colloidal gold, and showed how the precipitation of gold produced by some solutions of abnormal cerebro spinal fluids was probably due to globulin. In opposition to this precipitating power of globulin there appeared to be some protective power associated with other protein constituents of the cerebro spinal fluid. In order, therefore, that the precipitation might occur, globulin must be present in abnormal amounts and not be opposed by a sufficiency of "protective" protein. The interplay of these two factors determined the character of the colour changes when a series of dilutions of cerebro spinal fluid were added to colloidal gold suspensions. Curves could usually be constructed to show graphically the type of colour change which had been produced in any experiment, and Dr Sladden demonstrated certain typical curves from which diagnostic conclusions could be drawn in association with other factors. Cerebro spinal fluid removed from patients without any organic neurological disturbance gave invariably negative results, so that the presence of a definite curve was significant, while, in addition, the form of the curve provided still further information. A practical demonstration of the test was then given on a sample of cerebro spinal fluid taken from a case of acute myelitis.

Reports of Societies.

THE TEACHING OF PRACTICAL MIDWIFERY AND GYNAECOLOGY

At a meeting of the Section of Obstetrics of the Royal Academy of Medicine in Ireland, Sir WILLIAM SLYKE, in the chair, the president, Dr D. G. MADILL, gave an address on the teaching of practical midwifery and gynaecology.

Dr Madill expressed his strong conviction that the present method of teaching obstetrics and gynaecology to medical students might well be improved. The lack of adequate practical knowledge had been brought to his notice, particularly within the last six months, by several incidents, of which he mentioned two. In the first, a practitioner of about one year's standing had failed to diagnose a marginal placenta praevia, the second was a fatal case in which a condition of contracted pelvis had been similarly overlooked. Dr Madill thought that the student did not learn much from obstetrical lectures, and though a considerable amount of knowledge had to be obtained from textbooks, yet he was strongly of the opinion that much practical midwifery could be taught by means of models. Whilst holding the position of Assistant Master in the Rotunda Hospital he had started a class in operative midwifery, and had devised a most effective apparatus in the form of an artificial uterus which would hold an artificial foetus. The artificial uterus was made of jam-gee tissue, with a lining of jaconet, well greased with vaseline, a rubber band served as an os. An artificial foetus was similarly prepared, and it was astonishing how

much practical information could be given to the students in the way of palpating normal and abnormal positions of the child and internal and bipolar versions, in learning extraction of the breech, application of forceps, and in practising all the manipulations of operative midwifery except the surgical kinds, such as pubiotomy and Caesarean section. A linseed poultice served admirably as a substitute for the placenta. After a course of this instruction the students acquired great interest in the subject and familiarized themselves with all forms of obstetrical diagnosis. The internal and external measurements of the pelvis could be taught, and though a contracted pelvis could not be used practically, yet the course of instruction had so stimulated the students' enthusiasm that they quickly acquired in the wards the power to make a accurate diagnosis by palpation, to detect an unfixed head, and, what was more important, to ascertain by pressure on the fundus whether the head would be likely to enter the pelvic brim. In Dr Madill's opinion there were too few skilled obstetricians at present in the Free State. While travelling in Northern Ireland he had noticed the rapidity with which in the small towns fully equipped cottage hospitals were springing up, a competent obstetrician was associated with each one, so that difficult maternity cases could be treated without involving much travel for the patients. With regard to gynaecology, Dr Madill had found that by means of an apparatus consisting of a rough pelvic diaphragm of sheet india-rubber, and a plastic model of the uterus, the student could be taught to recognize retroversion and retroflexion, as well as to replace such a uterus and to insert a pessary. While he did not object to the pessary so far as the student was concerned, he condemned it wholeheartedly in the case of the specialist. The practitioner who had recently finished his medical training might use a pessary in two conditions only: in a patient who, owing to disease of the heart, lungs, or to old age, was unable to stand operative treatment, and, in early pregnancy with retroversion. A third case might possibly be added—namely, a patient who refused operative treatment in spite of persuasion. Apart from these three exceptions a pessary should not be used. Dr Madill concluded by expressing his hope that the future medical government of the Free State, whatever form it might assume, would direct attention to the teaching of practical midwifery and gynaecology. He believed that with the aid of the great maternity hospitals in Dublin and the mass of material available for use, a great improvement in practical teaching could be effected.

Sir WILLIAM SLYKE, after pointing out that no student could ever be certain that when he was qualified he would not be called upon to do midwifery, referred to the improvements in obstetrical teaching in London and elsewhere. He looked upon clinical examinations as the most important thing in teaching. There was a great difference between giving a certificate and holding an examination, and he did not see why the medical officers in hospitals should not be examiners also.

Dr GIBSON FITZGIBSON thought that many students aimed at doing only as much work as would enable them to enter for their examinations. The correction of this fault should not be the duty of the clinical teachers but of those who devised the curriculum. If a student learnt how to recognize that the normal physiological process of labour was being followed he would be able to manage safely 90 per cent of the cases he would meet in practice. It was not necessary for the general practitioner to diagnose accurately an abnormality, even if he did diagnose it he was probably not competent to deal with it successfully by operative means. It was sufficient to recognize that the case was out of his province, just as in the case of other special branches of medicine and surgery. Attendance on a course of theoretical lectures in midwifery was useful, but these lectures should be chiefly devoted to explaining the normal physiology of pregnancy and labour just as normal anatomy and physiology were taught prior to clinical medicine and surgery. With regard to gynaecology it should be enough for the student to be acquainted with the characters of the normal female pelvis, to be able to make a vaginal examination, and to recognize any departure from the normal. The great fault in the present teaching of obstetrics and

gynaecology did not lie in the course laid down in the curriculum, but arose from the absence of any defined period of time being set apart during which the student should devote himself to these subjects and be freed from other courses.

Dr L. CASSIDY believed that the tendency had always been to regard obstetrics as the least and last part of a student's medical education, though, since obstetrics and gynaecology concerned the reproduction of the community, it was really the most important part. If normal midwifery were properly taught that should be quite sufficient, as 60 to 70 per cent of cases were normal. At the Coombe Hospital an afternoon class was held three times a week, when the students were given an opportunity of feeling the normal uterus. After this, when they encountered an abnormal case they would be able to recognize it and send the patient to a specialist for treatment. Students were not given enough time for midwifery and gynaecology. He agreed that they should live in hospital for at least three months.

Dr BERTHIL SOLOMONS said that the last occasion on which this subject had been discussed by the Section was in 1910, when two changes were proposed to improve the teaching. One was that the student must attend theoretical lectures before taking his practical course in midwifery, the other was a practical examination at the end. Since then there had been but few changes. There was great need for thoroughly equipped laboratories in charge of efficient teachers, but there must be close co-operation between the laboratory and the ward. The final examination in midwifery was the first encountered by the student, and he must be taught to visualize a patient when asked theoretical questions. Dr Solomon then referred to the report on the teaching of midwifery and gynaecology furnished by Sir William Smyly at the request of the General Medical Council. Ante-natal clinics were absolutely necessary in this age of prevention, and post-natal clinics were relatively necessary. In teaching midwifery the student must have a knowledge of both the physiological and the pathological teaching with the manikin was extremely useful. When an assistant at the Rotunda Dr Solomon used to hold a course in operative obstetrics, using injected stillborn infants for demonstration. This method was also employed in Vienna. For twelve years he had taught gynaecology to large classes at Mercer's Hospital, and had no difficulty—with the assistance of a patient, plasticine, and a pelvis—in getting students to understand the position of the uterus and adnexa. He believed that theoretical lectures, clearly given, were a necessary adjunct to the textbook.

Dr J. S. QUINN regarded instruction in normal midwifery as the most essential part of teaching, and felt that too much instruction in abnormal midwifery tended to make students unduly interfering. Every student should be compelled to reside in a maternity hospital for three months during part of his final year. He thought students should not attend theoretical lectures until they had done the practical work in a maternity hospital. They would thus learn a great deal more from the theoretical lectures, as it was impossible to visualize terms like "post-partum haemorrhage" unless one had seen such a haemorrhage occur.

Dr A. H. DAVIDSON said that students had very little chance of seeing or examining the babies in hospital. He thought they should be encouraged to study the babies and learn how to look after them. Dr B. D. CRICHTON, when he first graduated, had never put a pair of forceps on to a living subject, and he felt that if students were now allowed to do this, instead of just applying them to dummies it would be a great advantage. Further advances would be made if the teaching could become more practical. Dr W. D. Q. KERR suggested that there should be a post-graduate course in midwifery in a lying-in hospital in the last post-graduate year, and that unless this course was taken out general practitioners should not be allowed to do midwifery at all. An examination at the end of this post-graduate course should be compulsory. Dr J. J. ROWLETT feared that there was a danger of the Dublin school losing its pre-eminence in midwifery because it was too conservative in the teaching of this subject.

THE VIRUS OF VACCINIA

At a meeting of the Section of Pathology of the Royal Academy of Medicine in Ireland on November 27th, with the President, Dr J. W. BIGGIE, in the chair, Dr E. C. HORGAN read a paper on some recent work on the vaccinia virus, and gave a demonstration of a method of standardization.

Dr Horgan referred to the recent report by the Medical Research Council on the viruses of vaccinia and variola, and said that although the former was now generally regarded as being one of the ultra-microscopic filter-passing viruses, many workers had failed to demonstrate this property. Enough attention had not been paid in the past to the adsorption of the virus by the material (porcelain, kaolin, etc.) of which the filter was composed. In this respect he recalled the success of French workers who were able to filter vaccinia virus through the extremely small pores of collodion membrane. M. H. Gordon's method of standardizing calf lymph was described in detail, and a rabbit was shown on the skin of which three lymphs had been titrated. No. 1 lymph was received from the Lister Institute, which was potent 1 in 10,000, No. 2 a French lymph (1 in 1,000), and No. 3 a lymph from Sandymount (1 in 100). These results Dr Horgan compared with Gordon's findings, and pointed out the considerable discrepancies. He suggested that the variations in potency were due rather to variations in the virulence of the different strains used by the many workers than to any differences in the standards of manufacture. Vaccinia virus behaved very differently towards various antiseptics and disinfectants (Gordon). Thus carbolic acid was inactive even in a 1 in 20 dilution, while mercuric chloride was active in 1 in 10,000, and potassium permanganate in 1 in 100,000. In two experiments Dr Horgan had confirmed this extraordinary sterilizing action of potassium permanganate. The recent work of Ledingham on the reaction of the skin to vaccinia virus was described as a welcome break away from the old tradition that there was a specific affinity between epidermal tissues and virus. All evidence now supported the view that the primary lesion was in the reticulo-endothelial system, while the well-known changes in the Malpighian layer of the skin were secondary. The serum of an animal immunized against the virus contained several demonstrable antibodies—namely, a complement fixation anti-vaccinia (anti-vaccin) and lysin. The lysin appeared to act without its serum titre was a valuable guide to the progress of immunity in an animal. The modern conception of immunity against vaccinia or variola viruses brought it into line with the common bacterial infections such as typhoid or cholera, and would undoubtedly be of great value in the treatment of diseases caused by these and other filter-passing viruses.

The President said that the organism connected with vaccination differed from those connected with some other diseases in its very small size. The point raised by Dr Horgan regarding the relation of antiseptics to this virus was very interesting. Such conceptions as cellular immunity were accepted without sufficient proof. He referred to the development of antisera, and the possibility of producing one which would be useful in connection with small-pox. The dilution method would, he thought, soon become the method by which the potency of the virus would be standardized.

Thrice Malignant Tumours

Sir WILLIAM WHIFLER and Dr J. LAIT showed a specimen of sarcoma of the tongue in a woman aged 56.

Sir WILLIAM WHIFLER said that it first sight the condition resembled an ulcerating carcinoma, but as the patient was a woman and there was no adherence of the growth to the floor of the mouth the diagnosis became uncertain. The tongue could be moved freely, and protruded to the normal range. There was slight enlargement of the submaxillary gland, probably due to pressure on the duct. There was a history of injury from a dental plate about eight months before and owing to an extension of the sore caused thereby the artificial teeth were dispensed with. The provisional diagnosis was that the

condition was inflammatory, a small portion was sent for examination, and the report was returned that it might be a sarcoma, but the surface was very septic and the whole much degenerated. A second section of the margin of the growth was negative. The ulcerated portion was destroyed by fulguration but within a few days the growth reappeared. Excision of half the tongue was performed. The entire specimen was sent for examination and reported upon as sarcoma. The Wissemann test was negative. Sarcoma of the tongue was admittedly rare, and was most often found during childhood. The growth in this case appeared to be very characteristic, a small tumour suddenly began to grow rapidly, disintegrated very quickly, and was seen first in an ulcerated and sloughing condition. Like others described, it was quite soft, and not well differentiated from the surrounding tissue. The ulcer had a funnel or crater like shape, at the bottom of which lay necrotic tissue.

Dr J LAY said that the tumour was composed of many large, oval nucleated spindle cells, and some round cells, intimately mixed with a variable amount of fibrous tissue. The presence of many mitotic figures was evidence of its activity. There were also present numerous capillaries composed of a single row of endothelial cells and quite distinct from the vascular granulation tissue at the edge of the tumour.

The President said that the condition was one of great rarity. From the photographs and the specimen itself, there seemed to be no doubt at all that the tumour was a sarcoma, in some of the photographs there was evidence of the rapid growth of malignancy, and he thought that the prognosis could not be regarded as favourable.

Dr W D O'KELLY suggested that the tumour might be an endothelioma, and not a sarcoma. The cells seemed to him to resemble endothelial cells, and he did not think the tumour was quite cellular enough for sarcoma. Dr T T O'NEILL agreed that it might be an endothelioma.

Professor J T WIGHAM thought the tumour was a genuine sarcoma, not an endothelioma. The vascularity was mostly in the surrounding granulation tissue and not in the tumour. There was no supporting tissue in the vessel walls, and if it was a malignant angioma he thought that there would be much better formed vessels in the tumour itself. The cells had comparatively small bodies and large nuclei, and did not resemble endothelium. Metastasis of sarcoma in the glands was comparatively rare. Enlarged glands in the neighbourhood of a sarcoma were probably due to sepsis rather than to the growth itself.

Sir WILLIAM WHEELER, replying, said that the patient was going downhill, and he did not regard the prognosis as good. He agreed that the enlargement of the glands was probably due to the inflammatory condition surrounding the sarcoma.

Dr A R PARSONS and Professor J T WIGHAM showed a specimen of an intrathoracic tumour in a boy aged 12. On admission to hospital last April the boy had very distinct stridor on the slightest exertion, and the glands on both sides of his neck were enlarged. There was no enlargement of the spleen or of the thorax. A large area of dullness was found on the left side of the thorax, and harsh breath sounds. No pleural effusion was present, but there was some distension of the superficial veins on the right side. After four x-ray exposures the boy nearly died. After three days of radium treatment improvement began, the patient could sleep better and breathe more easily. He left hospital three months later greatly improved, though still pyrexial. In September he was again admitted to hospital and had more radium treatment, but in November he contracted chicken-pox, from which he died.

Professor J T WIGHAM said that a solid mass had spread downwards from the thyroid over and beside the heart, and a similar mass, apparently a matted mass of enlarged glands, extended up the left side of the neck. It appeared to be formed of a number of hard white round bodies embedded in a fibrous substance. The enlarged glands were almost entirely composed of hard fibrous tissue, with a few vessels and very few nuclei. In some parts the cells were more numerous, and included lymph cells with a few plasma cells, or cells resembling lymph cells but with larger bodies. The vessels in these areas had thick hyaline walls. The

cervical glands resembled those in the thorax, and were matted together by dense fibrous tissue. There was no evidence of necrosis, and the glands were not tuberculous. The question arose whether this was an example of the action of radium on a tumour of the type of lymphosarcoma or a case of chronic inflammation somewhat resembling Hodgkin's disease. There was no sign of glandular enlargement anywhere else, nor was the spleen enlarged.

The President said that though the clinical history suggested sarcoma, yet the patient had a certain amount of pyrexia, no involvement of the spleen, and only a limited number of glands were involved, this made him think that the case was one of Hodgkin's disease. Professor Wigham had not been concerned with the tumour in its original condition, but after it had been subjected to radium and x-rays.

Dr W C STURGEON said that after radium treatment the glands seemed to shrink considerably, but from the beginning the case was hopeless, except that radium seemed to relieve the symptoms. He had spread the radium in small quantities all over the chest, from the front to the back, and had given the maximum amount without injuring the skin. He thought that the boy would have died during the night when the first radium treatment was given if he had not had it. He did not regard this as a case of Hodgkin's disease, the glands became smaller and softer, but did not disappear as in Hodgkin's disease.

Dr W D O'KELLY suggested that it might be a thymic tumour which had possibly started in some of the bronchial glands. The boy might have died, conceivably before enlargement of the spleen had occurred. He thought it probable that this was a case of Hodgkin's disease.

Sir WILLIAM WHEELER said that in young people who developed carcinoma (for instance, in cancer of the stomach in children) there was often pyrexia, and this was supposed to be due to a rapid division of cells and the production of toxins, which were absorbed. This might have happened here. He had obtained good results from x-ray treatment in Hodgkin's disease. It was thought that all mediastinal tumours were malignant, but some were fibromata and lipomata, and could be removed successfully by operation.

Dr V M SARGENT had recently had two cases of intrathoracic sarcoma treated by x-rays. In one treated by the Erlangen method the tumour had diminished to about half the original size, but the patient had died suddenly two months later. The other patient had been treated by x-rays and had also improved, but immediately after the treatment there was an increase in the dyspnoea, apparently due to an inflammatory reaction, it subsided in a couple of days. This sometimes occurred also in cases of goitre after x-ray treatment. He thought that x-ray treatment was much more beneficial in these cases than the Erlangen treatment.

Professors MOORHEAD and WIGHAM exhibited a specimen of a rare intracranial tumour. A man, aged 42, was admitted to hospital complaining of vomiting and headache which had persisted for three months, and presented the typical signs of meningitis—rigidity of the back of the neck and Kernig's and Brudzinski's signs. There was nystagmus but no optic neuritis, and the knee-jerks were absent. A lumbar puncture revealed extreme tension, but apart from the absence of sugar and a slight increase in the cell content the fluid was normal. After a month in hospital the patient died without further symptoms having shown themselves. A lumbar puncture was performed every second day for the relief of the headache. The brain on removal appeared quite normal, except for a slight filmy thickening of the pia mater here and there. After hardening a complete brain examination showed nothing more to the naked eye, but sections showed that the slight thickening was due to a tumour formation of endothelial type. This was spread out over almost the entire surface of the brain in a layer not so thick as tissue paper which penetrated the brain along the blood vessels forming perivascular sheaths. In many places the cells on the surface of the brain were only one row in depth, but within the sulci endotheliomatous clumps of cells were found. As no primary tumour was found in the brain it seemed almost certain that this growth must be regarded as a primary spreading endothelioma almost unique in type. The cells resembled those

further distance from the face, the facial eruption forming only part of a generalized eczematization. It was difficult to say whether there was any underlying condition common to all these cases, or whether it only required some irritation to set up the eczema. Much depended on the state of nutrition of the particular child. Asthma and recurrent bronchitis were apt to occur in children who, in earlier years, had had facial eczema. A return he obtained to a questionnaire suggested that in the facial cases one was dealing with a specialized form of

which was not met with in the other. Most of the scalp cases were infective, and to them the term "seborrhoea" was usually applied. Past histories of cases of flexural pruritus showed that a large proportion had facial eczema in infancy, it was also said that cyclical vomiting and laryngeal fever occurred later in these facial eczema cases. There seemed in these to be some underlying diathesis which persisted throughout life. In the children who were suffering from specific food proteins, they must have got them from their mother's milk, and most observers found in these children a reaction to proteins. A large number of infants with facial eczema showed evidences of overfeeding, and the flushed hyperaemic face might determine the child rubbing and then scratching it. With regard to treatment the main necessity was to put a stop to the friction, partly by methods of restraint. *Chango of temperature he regarded as the most potent cause of itching, therefore the child should be in a room or rooms in which the temperature was equable.* This was the best antipruritic, and a reduction in the amount of food taken was indicated. Bromide was occasionally useful, but he seldom used drugs in these cases.

Dr H. C. CAMERON opened for the Children's Section, and stated a number of questions which arose in the mind on this subject. Was death from eczema a death from generalized eczema? It seemed to be in some cases, and in some it seemed that the infants had suffered from the extensive use of ointments, and especially from branding the skin. He was inclined to divide the cases under discussion into two: (1) the generalized eczema of the very thin, young babies, and (2) the eczema of the fat, older babies, the latter having especially eczema of the cheeks. If the fat babies were rendered thin, thus at the same time improved their eczema, and if the thin babies were well fed their eczema also improved. There were three conditions in young infants in which sudden inexplicable death occurred: eczema, spasmophilia, and status lymphaticus, the latter being, he considered, the *post-mortem* finding in all children who had a very high lymph content in their body. Frequently in records of death from status lymphaticus it was stated that the child had suffered from eczema. The connecting link in these three conditions he considered to be the poikilo-osmotic tendency in these children. He entered into a detailed description of the different types of child, and said in many there was a low grade of acetonaemia. He was always advocating breast-feeding, yet in a number of cases weaning was quite justifiable, at least alternating breast-feeding with feeds from the bottle, for he had seen this have a remarkable effect in improving the eczematous condition, and the substitution of vegetable soups was equally successful.

Dr H. G. ANDERSON began with the epigram "Eczema covers a multitude of skins." He said that if the area affected was protected from rubbing it subsided, and if that were continued it disappeared never to return. Cases which persisted after 2 years of age became altered in character and distribution, and might persist until adult life. Most adult cases he believed, started in childhood. Eczema was a cutaneous inflammation of the skin characterized by a scious exudation into the whole thickness of the skin, coming to the surface as minute weeping follicles. He believed it was independent of any digestive disturbance or any food idiosyncrasy. External irritants he regarded as the sole factor in causation. Though he had seen many thousands of cases of infantile eczema, he had never known a sudden death from it, he agreed with Dr. Whitfield that cases so attributed were due to chill.

Professor F. LANGEVIN thought there was great need for a scientific and careful subdivision of conditions now classed under the one term "eczema." He thought the

eczematous type of skin might be hereditary, though it might be acquired, in some infants both factors were associated. In eczema of the nates, he thought an irritant in urine or faeces was insurmountable, and in all cases the aim should be to keep the skin free from those irritants. Some were associated with a protein idiosyncrasy.

Dr J. M. H. MACLEOD said it was no longer the idea that there was a definite disease which could be labelled eczema, as far as could be seen it was a type of reaction, and thus could be better studied in the infant because it was there uncomplicated by other factors—such as mental ones—as in the case of the adult. His conclusion, based on a very large field of observation, was that eczema in infants was a local condition, locally produced by irritation and scratching. When the skin became thus hypersensitive it showed a reactive response to all kinds of minor irritations which otherwise would have made no impression.

Dr G. H. LANCASHIRE (Manchester) expressed his agreement with the views of Dr. Adamson and Dr. MacLeod, and spoke of the value of coal tar in allaying irritation. He also referred to the harmful part played by the application of evaporating—therefore cold producing—lotions.

Dr. HARRY DAVIS said protection and the adoption of antipruritic measures were the sheet-anchor for these cases. He thought the sugar content of the blood was a factor which would repay investigation.

Dr. MURRAY BRIGH (Liverpool) thought some cases of sudden death in eczematous children resulted from the attempt to cure the eczema too soon. There should be a good nurse, and she should apply and keep applied olive oil to the whole body.

The discussion was continued by Mr. FRANK COFF, Dr. S. E. DORE, and others, and the President spoke of the importance of ascertaining whether a skin eruption was due to an external cause before making a complicated investigation as to possible internal influences. Dr. GRAY and Dr. CAMERON briefly replied, and at the close the operators and speakers were thanked by resolution.

PSYCHIATRY

THE Section of Psychiatry of the Royal Society of Medicine held a clinical meeting at Bethlem Royal Hospital on December 8th. Dr. FOTHERGILL prepared an interesting exhibition of specimens of brains and slides from cases of encephalitis lethargica. Stereo-microphotographs of spinal chistics were also shown. These illustrated a new method of obtaining a stereoscopic view at high magnification, devised by von Welckheim and Christeller of Berlin. They were sent by Dr. R. M. Clark of Whittingham Mental Hospital. Dr. PONTIER PHILIPS showed a case which had developed symptoms suggesting dementia praecox following encephalitis lethargica. He also showed a case of Koisakoff's syndrome. Four cases of general paresis which had been treated with malarin in 1923 were shown by Dr. HARVEY for Dr. WORSTER-DROUGHT. Dr. BEATON showed a case of adolescent psychosis, and he raised the question as to whether such a case should be called dementia praecox. An interesting discussion of these cases followed in which many of the members present participated.

PLASTIC SURGERY

At a meeting of the Nottingham Medical Club and Society, under the presidency of Mr. H. BEN TAYLOR, Mr. H. D. GILLIES (London) gave an address on the present scope of plastic surgery, illustrated by numerous lantern slides and the demonstration of cases. Mr. Gillies described the development of the tubed pedicle graft, and also demonstrated his method for the restoration of the nose. He added an account of the treatment of cleft palate, stating that the usual operations were of little value so far as the production of normal phonation was concerned, and they also produced deformity of the jaws and distortion of the "bite." He illustrated the method he advocated—separation of the hard and soft palates and suture of the soft palate only, the gap in the hard palate being closed by a denture. He claimed that this produced a mobile soft palate in its proper relation to the pharyngeal walls, and that the bite remained normal.

Reviews.

MANIPULATIVE SURGERY

At this juncture, when a celebrated dramatist has bared the terrors of newspaper publicity in order to lecture the medical profession on its shortcomings, and when Parliament is likely to be asked to recognize osteopaths and bone-setters, the appearance of Mr. TIMBRELL FISHER's book on *Manipulative Surgery*¹ is most timely. In it he not only reminds the profession of its shortcomings in neglecting the treatment of those cases which enhance the reputation of irregular practitioners, but he also places in its hands the knowledge which, rightly used, should deprive such persons of many of their opportunities.

Mr. Fisher writes of bone-setters in no hostile or envious spirit, for he recognizes that from the elder Hutton's days onward they have done work which was to a great extent neglected by surgeons, despite the good advice given long ago by Sir James Paget and the lessons placed before them by Hutton's pupil, Wharton Hood. For while experience alone can confer the ability to decide with confidence when a stiff joint should be moved and only practice can perfect methods, yet that experience and that practice will be much sooner and better acquired by those who have studied this book than by others who have not.

Mr. Fisher considers that the preaching of the importance of rest by Hutton and by H. O. Thomas, while amply justified when applied to tuberculous lesions, has done harm in a large number of cases. He does not, we think, give enough credit to the English orthopaedic surgeons of the last century who were certainly not afraid to break down adhesions in and around joints, with or without previous tenotomy.

The author classifies the cases which bone-setters cure under four heads—namely, cases with adhesions, functional hysterical cases, unreduced dislocations or subluxations, and a miscellaneous group which includes cases of adhesions in the soft parts not in the immediate neighbourhood of a joint. Injuries of the knee are fully dealt with. The internal derangement known as displaced semilunar cartilage is very properly characterized by Mr. Fisher as a fracture-dislocation, for it is the displacement of part of the cartilage that causes symptoms and its replacement by manipulation that constitutes the bone-setter's "cure." Mr. Fisher is an authority on treatment of this injury by open operation, therefore he is not likely to be accused of wide-and-see methods when he describes and advocates the manipulative method in certain cases. The good results which often follow manipulation for stiff joint after toxic or chronic arthritis are illustrated by histories of cases. All the joints of the extremities and of the spine are discussed in turn, but none of them with such fullness as the knee, which may perhaps be taken as typical. The author agrees with Jones and Lovett in the opinion that it has not been definitely established that subluxation of the sacro-iliac joint is a cause of chronic backache, the dictum of some American orthopaedic surgeons to the contrary notwithstanding.

We wish Mr. Fisher had told us more about the sometimes violent but often successful manipulations practised by bone-setters in cases of lumbago and chronic backache. He refers to *Hexenschuss*, or witch's shot, this sudden onset of lumbago without known cause was so called by the Germans because it was supposed to be the effect of black magic, an enemy having made an image of the sufferer and with appropriate rites having shot a missile into its lumbar region at that particular instant. A vivid description of such an incantation and shooting is to be found in "The Leech of Folkestone," in the *Ingleby Legends* which although it is in prose, has all the fantastic charm and humour characteristic of Baiham.

It would probably be too much to say that Mr. Fisher would in no case use a splint or plaster-of-Paris, but throughout this book he does not advise their use, or even mention the knee-ice, which has been found useful by others.

This book should be a very useful guide, not only to

specialists, but also to general practitioners who, by appointing to early treatment, may prevent cases from becoming opprobrious to the reputation of the profession. But the irregular practitioner need not fear that any publication will deprive him of his livelihood as long as hospitals exist and even superior persons believe that no good can come out of the Nazareth of scientific medicine and surgery.

MODERN HEALTH BOOKS

THE Modern Health Books,² edited by Professor D. FRASER HARRIS, is a series of little volumes designed to give the latest expert opinions in a popular form. In the first volume, *The House of Health*, Sir JOHN ROBERTSON describes the essential requirements of a really wholesome dwelling, especially of the smaller type. He holds that environment is almost as important as the dwelling, and therefore is grateful to the pioneers who instigated the Housing and Town Planning Act of 1909. Although it is often difficult to get people to move from their one roomed dwellings into accommodation that is larger and more convenient and decent, the author finds that education is gradually making them demand conditions more consonant with healthy existence. The Act of 1909 made it possible to prevent congestion of dwellings, to allocate areas for factories, to provide open spaces and to arrange roads conveniently. After dealing with questions of site, soil, conformation of the land, orientation of the dwelling, and cleanliness of the atmosphere, Sir John Robertson comes to the cost of the dwelling. At present the price is rather more than twice as large as in 1914. The pulson type of house costs about £500. The more important craftsmen—the bricklayer, the carpenter, and the joiner—are just the men who are most difficult to obtain. The ideal in town planning is the construction of narrow residential roads, with wide separation of the dwellings, the roads being designed in such a way as to avoid through traffic. In rural areas the type of cottage need not differ much from that in towns, though owing to the larger families more houses with over one or two bedrooms are necessary. Sir John Robertson favours the construction of bathrooms in rural cottages, but as in many places a water supply is not laid on to the cottage the time is perhaps not ripe for the additional expense involved. Even if all cottages in places where there is no public water supply were provided with wells and pumps, it may be doubted whether the cottager will be willing to undergo the labour involved in filling a fixed bath. Notwithstanding the voluminous discussion which has taken place recently with regard to "pulson" or "non pulson" houses, Sir John Robertson favours the pulson type. But he describes suitable houses of both types and has a strong objection to the construction of flats for the working classes. The book contains several diagrams and illustrations, amongst the latter a view of two Cotswold cottages. The typical Cotswold house is, according to the author, perhaps the most elegant of all the types of dwelling-house in this country.

Of the second volume of the series, *Nursing in the Home* it is not easy to speak quite so favourably as of Sir John Robertson's book on housing. Dr. STELLA CHURCHILL, his perhaps, attempted too much. It is difficult to see why the person untrained in medicine should require a description of the symptoms of all sorts of infectious and other diseases, including encephalitis lethargica and cerebro spinal meningitis, nor is it edifying for the anxious but ignorant parent of a child with appendicitis to find that the misgivings of the author pro and con operation have drawn from the editor a note which might be interpreted to mean that, as the appendix is a vestigial organ, and "our culture tube," we had all better have it out as a precautionary measure. Oracular statements of this kind are only suitable for old-fashioned popular dictionaries of medicine, with the help of which the head of the house either delayed sending for the doctor until too late, or else threw the whole family into a state of anxiety over a cold in the head. Dr. Churchill

The Modern Health Book. Edited by Prof. D. Fraser Harris. Vol. I *The House of Health*. What the Modern Dwelling needs to be. By Sir John Robertson. G. M. C. Vol. II *Nursing in the Home* including First Aid in Common Emergencies. By Stella Churchill. M.R.C.S. L.R.C.P. D.P.H. Camb. Vol. III *The Fight Against Infection*. By G. L. F. Stammer. O.B.E. Lieutenant Colonel R.A.M.C. (ret.) London. Faber and Gwyer Ltd. (The Scientific Press) 1925. (Kcp. 8vo. Vol. I pp. 192, 16 figures. Vol. II pp. 197, Vol. III pp. 214, 2 figures. 2/6 each vol.)

¹ *Manipulative Surgery: Principles and Practice*. By A. C. Timbrell Fisher. M.C. F.R.C.S. Eng. London. H. K. Lewis and Co. Ltd. 1925. (Demy 8vo pp. viii + 168, 62 figures. 7/6 net.)

illuminating section by Dr. Hurst on the radiology of the alimentary canal.

A tracing of the human voluntary tetanus would be more instructive when taken on a slower moving surface than that on page 180, and the average number of "events" per second in that tracing is not 6 to 8 but 10 to 12. Further, this figure (10) ought to be correlated somehow with the much higher one (50) obtained by the galvanometer.

Professor Cathart is responsible for the third section that on chemical physiology, which is very good. The quantitative methods are clearly described and the chemical examination of the faeces, which is so often left to the pathological chemist, is given here in adequate detail. The properties of colloids, and particularly their behaviour with the Beilfeld filter, might have been treated. It is so simple to show the junior student what the "reducing power of the tissues" means by marking him up a little fresh liver press-juice with some dilute soluble Prussian blue, and see the colour vanish, that some exercise of the kind might have been included.

At the beginning of the book there are two pages in small print crowded with a more useful collection of arithmetical data than we ever remember to have seen brought together before in any other treatise on physiology.

There are three separate indexes. The paper, the printing and the binding are most attractive.

PERITONITIS

Peritonitis, by Dr. J. GARLAND SHERRILL, is one of a series of surgical monographs, published by Messrs. Appleton, under the editorial supervision of a committee of medical men. The volume before us contains ten chapters of which the first deals with the anatomy, development, histology and physiology of the condition. When discussing in another chapter the reaction of the peritoneum to foreign bodies, the author has collected a number of strange and interesting cases. Among the embryos issuing he gives left hi surgeons, in addition to swabs, forceps, scissors, drainage tubes, catheters, and glass magnets, are two finger rings and one pair of spectacles! The list is a strange oversight, and we may wonder whether it led to the fashion among surgeons of wearing horn-rimmed spectacles firmly clasped round the ears. Equally curious are the number and variety of articles which Nature has succeeded in discarding by her own unaided efforts.

In the chapter on examination of the abdomen the auxiliary methods of pneumoperitoneum and cholecystography for cases in which the diagnosis by physical means is obscure are fully described. The author reviews the old forms of treatment only to discard them. He inclines to the opinion that the proper course is to lessen the number of cases in which drainage is employed. Washing out of the peritoneal cavity is discussed, but is not recommended. Dr. Sherrill believes firmly in the protective forces of the peritoneum, and thinks that the peritoneal cavity is best cleaned by means of the suction pump. He bans purgation and opiates until the diagnosis is clear. In the post-operative stage he acknowledges a leaning towards gastric lavage and rectal instillation of normal saline. He thinks that in intraperitoneal haemorrhage the use of auto-transfusion will be likely to produce a higher mortality than will the operation alone as usually performed. Auto-transfusion finds most of its adherents in Germany and good results are claimed for it. In the hands of others it has been found to be not without its dangers, of which the greatest is apparently the contamination by bacteria of the blood taken from the abdomen. The method of intraperitoneal transfusion with citrated blood is also described.

Of the many illustrations, some are not worthy of the text which presents a clear well reasoned and conservative account of a subject about many aspects of which there is abundant room for differences of opinion.

¹ *Peritonitis*. By J. Garland Sherrill, M.D., F.A.C.S. Surgical Monographs. New York and London: D. Appleton and Co. 1925. (Sup. for pp. xii + 397, 64 figures, 22s. net.)

EVOLUTION AS AN AID TO RELIGION

Concerning Evolution contains the Dwight H. Terry Lectures delivered by Professor J. ARTHUR THOMSON of Aberdeen at Yale University in 1924. The object of the lectures was to show that evolutionist description is not inconsistent with religious interpretation, and that evolutionary science may illuminate the religious outlook. In the first lecture, on the 'Making of worlds,' the professor suggests that creation has been well thought out "that in the beginning was mind" and that "God made things make themselves." The first picture is of a nebula and the elusive spirit thereof, the irreducibles being electrons and protons. But behind the physical there was the psychical though in integrative impulse a world was fashioned suitable for life. Science gives us a cosmogony, which seems to be congruent with a philosophical or religious cosmology. In the second lecture 'Origin of evolution' is defined as a continuous natural process of racial change in a definite direction whereby distinctively new individualities arise and flourish alongside of or in place of the originitive stock. In the evolutionist picture there is a progressive integration and a strong suggestion of purposiveness, it is, therefore in harmony with the religious vision. In this lecture Professor Thomson summarizes the Darwinian theory.

In the third lecture, on the evolution of man, Professor Thomson tilts at 'materialism' as an attempt to give a false simplicity to the ways of organisms by trying to fit them into frameworks of chemistry and physics without recognizing the distinctiveness of "life" and "mind." Similarly 'biologism' attempts to give a false simplicity to the life of man by trying to fit it into the framework of zoology. Hence an obtusive physiology insinuates that the ductless glands altogether determine the personality. To Professor Thomson there cannot be any rational anti-thesis between scientific description and religious interpretation. There may be clashing as to details and forms of expression, but not in principle. Evolution is, on the whole integrative, and makes for the emergence of mind and personality, it is an ascent, not a descent, that lies behind us. Thus does Professor Thomson escape from the disheartening theological doctrine of the Fall.

The book is very readable and well illustrated and the lectures carry out the object of the founder, which was not the promotion of scientific investigation, but the building on the truths of science into the structure of a broadened and purified religion.

THE CLIMATES OF THE UNITED STATES

PROFESSOR DECOUREY WARD has produced a very complete treatise on climatology with especial reference to *The Climates of the United States*. Although the book is designed primarily for teachers and students of geography the author has had constantly in mind the advantage of making it interesting also to medical men, foresters, agriculturists and the general public.

After mentioning each meteorological records in the United States upon which the climatology of that country is based, Professor Ward summarizes the major climatic controls—namely, latitude, land and water, mountain barriers, altitude, prevailing winds, ocean currents, and storms. The configuration of the United States renders it possible to divide the country into climatic provinces. First the Eastern province from the Rocky Mountains to the Atlantic which is subdivided into the Eastern province proper, the Gulf province bordering the Gulf of Mexico and the Plains province which is included between the generalized line of the 2,000 foot contour and the generalised red line of the main Rocky Mountain divide. The second main province is between the Rocky Mountain divide and the Sierra Nevada Cascade divide, to this is given the name

² *Concerning Evolution*. By J. Arthur Thomson, M.A., LL.D., Professor of Natural History in the University of Aberdeen, New Haven, Yale University, Press, London, Humphrey, Milford, Oxford University Press, 1925. (Med. E. o. pp. x + 245, 25 figures, 11s. 6d. net.)
³ *The Climates of the United States*. By Robert DeCourcy Ward, Professor of Climatology in Harvard University, Boston, U.S.A. Ginn and Co. 1925. (Dem. E. o. pp. xii + 518, 144 figures, 4 dollars.)

of the Plateau province. The third is the Pacific province, a narrow coastal strip west of the Sierra Nevada-Cascades Professor Ward then discusses the paths and influence of cyclones and anticyclones. In the chapter on temperature he points out that the rapid coast from Southern Florida or Northern Maine is, considering the distance, the steepest temperature gradient in the world. As a result the products of tropical and of polar lands are separated by less distance than is the case anywhere else. The contrast in climates was an immense force in stimulating the early economic development of the Thirteen Colonies. Several chapters in Professor Ward's book are devoted to rainfall and humidity and their effects on agriculture and health. In the chapter on "Climate and Health" it is accepted that the older view of the predominant influence of climate has been replaced by the conviction that good hygiene is more important than climate alone. The effect of a change of climate is due more than to actual change in atmosphere, occupation, and food more than to actual change in atmospheric conditions. Perfect climates do not exist, and in climatology it is not necessary to look for the one ideal climate, but rather to select one out of six or seven localities any one of which will do all that climate can do to restore health. In such selection not only must the climate have a maximum of undesirable features, the particular case and a minimum of accommodation, the locality must be provided with suitable food, and expert medical attendance. In fact, Professor Ward is of opinion that when Hippocrates wrote, "In chronic diseases it is advisable to go to another country," he had in mind, not merely the benefits of a change of climate, but also the benefits of a change in the environment—social, mental, and physical. This chapter on climate and health, in which reference is made to the book on climatology written in collaboration by Dr F. Parkes Weber and Dr Guy Hinsdale of America, contains many sound observations. Thus, in writing of the southern winter resorts Professor Ward says "It is, perhaps, fortunate for the future race that so insignificant a part of the population as a whole can afford to bask in the warm sunshine of luxurious southern winter resorts." Altogether the book is most interesting, although its very completeness has led to a good deal of repetition. As the principles underlying the climate in the United States are equally applicable elsewhere, the book should appeal to English as well as American readers.

NOTES ON BOOKS

To the many other Scandinavian Acts there has now been added the *Acta Tuberculosis Scandinavica*, on the editorial committee of which all four Scandinavian countries are represented. It is published in Copenhagen by Messrs Levin and Munksgaard, and four numbers forming a volume are to cost 25s. The first number, which has just appeared, contains in addition to a few abstracts and reviews two long signed articles. One is by Professor H. C. Jacobsen of Stockholm on the cauterization of apical adhesions, and the importance of bronchography in the treatment of the other, in tuberculosis by an artificial pneumothorax. We have French is by Dr Knud Faber, who reports his own experience and those of other Danish physicians in the treatment of pulmonary tuberculosis with sanocrysin. We have referred to Dr Faber's work in the *Epitome* for May 9th, 1925 (para 470), and our issue of July 11th (p 74). In dealing with the reports from various Danish sanatoriums, Dr Faber states in his present article that good results have been obtained in 107 out of 231 cases. He admits that the time is not yet ripe for passing judgement on sanocrysin, but claims that "it is evident that we have here an agent, the action of which is specific and which, in a certain number of cases effects rapid and marked improvement the like of which cannot be expected from any other method."

It is not often that a book is written on hospital routine for the guidance of house officers, and Dr GLOVER H. COPHER'S *Methods in Surgery* will be a gift to them. It is an epitome of the procedure followed in certain Washington hospitals and the University dispensary there. In the hospitals of medical schools, where routine teaching is a continuous process by members of the staff, who evolve their own methods, this

book will not be of so much use as in smaller non-teaching hospitals where the changing house officers come from different schools. It gives a way to meet hints on history taking, which are likely to arise, and useful hints on history taking, and the recording of physical examinations. There is a good deal of information for registrars as to forms and charts used in general and special cases, and their filing and indexing. House officers would be helped in the management of their chapters on the routine of the ward and operating room, on post-operative care, and on the disposal of paying patients. In addition, instructions are given on such procedures as pyelography, cholecystography, renal and other investigations, which if carried out in the manner prescribed would add considerably to efficiency, and often save the hospital staff a good deal of time.

The Library of the British Medical Association has lately received from Dr Frank A. Nyulasy a bound collection of some of the principal papers written at various times by his brother, the late Dr Arthur J. Nyulasy, gynaecologist and formerly surgeon to the Perth Hospital, Western Australia, and Vice president of the Section of Gynaecology and Obstetrics at the Australasian Medical Congress, 1920. In the obituary notice of Dr Arthur Nyulasy, which appeared in the *BRITISH MEDICAL JOURNAL* of May 24th, 1924, mention was made of his papers, some of which appeared in our own columns, some in the *Medical Journal of Australia*, and others in *Surgery, Gynecology and Obstetrics*, a few were published by himself in pamphlet form. Of his writings the most noteworthy perhaps were those on the supports of the uterus, and that in which he traced the cause of a typhoid epidemic at Perth to drinking water infected in the catchment area eighteen miles away.

The *Records of the Second Opium Conference*, which was held at Geneva from November 17th, 1924, to February 19th, 1925, have now been issued in two volumes. We published on August 22nd (p 356) a note about these two conferences based on Sir Malcolm Delevingne's report to Parliament. The first volume contains the text of the debates at the full meetings, and the second volume gives a record of the meetings of the committees and subcommittees. The large amount of valuable information contained in these two volumes will enable those who are interested in the difficult problems concerned to understand why no final conclusions have yet been possible. Attention is paid to the medical side of the question as well as to the social. A third publication, giving the list of seizures of opium reported to the League of Nations since 1921, has also been issued, and, in common with the two previous volumes, may be obtained from Messrs Constable and Co.

In *Some Maternity and Child Welfare Problems* a report is given of the lectures and round table talks at the summer school of maternity and child welfare during National Baby Week, 1925. The main subjects discussed were the formation of character and maternal mortality and morbidity. The speeches delivered are printed in full in some cases, and abstracts of others are supplied. Those who attended the school will doubtless be glad to have this account of the proceedings.

League of Nations *Records of the Second Opium Conference* Vol I Plenary Meetings Text of the Debates Vol II Meetings of the Committees and Subcommittees London Constable and Co Ltd 1925 (Vol I 14s 6s Vol II 9s net)
 10 Advisory Committee on Traffic in Opium List of Seizures Reported to the League during the Past Four Years London Constable and Co Ltd 1925 6s 6d net
 11 *Some Maternity and Child Welfare Problems* London National Baby Week Council 1925 (5s x 8 pp 71 1s net)

PREPARATIONS AND APPLIANCES

Cholecystography
 We have received from Mr W. Martindale samples of preparations of two drugs which can be used to render the gall bladder visible on x-ray examination. The substances are sodium tetraiodophthalate (Bromo-ray) and sodium tetraiodophthalate (Iodo-ray). This method of assisting the x-ray examination of the gall bladder was originally derived in America. It depends on the fact that phenolphthalein and its derivatives are excreted by the liver into the gall bladder, and that bromine and iodine compounds have appeared in these columns describing this method (for example, *BRITISH MEDICAL JOURNAL*, 1925, pp 54 and 1046). Mr Martindale has prepared solutions suitable for intravenous injection and also has a preparation on in capsule ('shilpale') form for administration by mouth. The dose is 25 grams of Sodium tetraiodophthalate in two injections at an interval of thirty minutes, one dose of 3 grams in 28 ccm of distilled water, dose by mouth up to a maximum of 66 grams.

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SATURDAY, DECEMBER 26TH, 1925

THE CLAIMS OF MEDICAL CHARITY

IN an issue of the BRITISH MEDICAL JOURNAL published on Christmas Eve we feel that little apology is needed for returning to the claims of medical benevolence. Last week we commended to our readers an appeal on behalf of the Epsom College Foundation and scarcely a month passes without some reference in these columns to the efforts of the Royal Medical Benevolent Fund to make a little money go as far as possible in the relief of distress. On the one hand there are elderly persons broken by fate and requiring help to mitigate their hardships, on the other there are boys and girls whose education and careers can be aided. The urgent need of greater support for efforts in these two directions is recognized by the British Medical Association, and the last three Annual Representative Meetings have been noteworthy for vigorous speeches on the subject. It was a matter seldom out of the mind of the late Dr Haslip during his trusteeship. In 1923 Dr Deuden, another keen critic of the existing state of affairs, gave a clear call for action by the Association. What he said then has we believe, never been disputed, because it is known to be true, he declared that the medical profession did not look after its own poor in the way it should and Dr Haslip went so far as to say that the position of the charitable funds was a disgrace to the profession.

Plain words at Portsmouth and in the following year at Bradford, had their effect. The Council of the Association was instructed to examine and report upon the situation, and a committee was set up. In approaching the problem two possible solutions were kept in mind. One was to try to get increased support for the existing organizations, the other was to start a new benevolent fund under the direction of the British Medical Association. The committee came to the conclusion and the Council agreed, that the wisest plan would be to endeavour to nouse by energetic action through the machinery of the Association a livelier interest in the funds already established. The Council accordingly recommended the setting up of a British Medical Association Charities Committee, charged with the duty of actively directing the attention of members to the misfortunes which befall necessitous colleagues and their families and of appealing for money to assist them, the sums so obtained being payable to a Charities Trust Fund and (unless earmarked for a particular purpose) distributed at the discretion of the Committee and the Trustees to the medical benevolent organizations. Dr Hawthorne, in putting this recommendation before the Representative Body at Bath explained how his committee after surveying the field had come to the conclusion that the value of existing charitable funds was limited solely by lack of money and that the best way in which the Association could participate in the work of benevolence would be by using its machinery to supply this defect. The chief duty of the proposed British Medical Association Charities Committee would he said, be the collection of funds for distribution to any professional benevolent organization in need of money and doing work which the Association approved. By this means it was felt that the Association as a body could most effectively shoulder its responsibilities.

The case for the setting up of a separate fund, unused and managed by the Association for the benefit of its members, was put by Dr J F Walker in a moving speech. When, however, Dr Deuden, who had set the ball rolling at Portsmouth, lent the weighty support of Manchester to the Council's scheme and Dr Bolam and others had testified to the quality of the work done by the existing benevolent funds, it became clear that the Representative Body would, by a large majority, accept the Council's advice. And so it comes about that the Association's Charities Committee is now in being and at work. A wise step has, we are sure, been taken, and it is to be hoped that every member will respond in the fullest measure to the Committee's appeals.

The hardship, and even actual want, of which many of the older applicants complain, is most distressing to recall, and the sums at the disposal of those who administer medical benevolence are altogether inadequate to meet the claims on their meagre resources. The annual subscription for membership of the British Medical Association falls due on January 1st. The moment is therefore at hand when we can give practical shape to the sympathy which must surely be felt by all, and particularly at this season for our colleagues who have fallen by the way and for the widows and children of doctors left in want. If every member of the Association would add to his next payment a sum for the credit of the British Medical Association Charities Fund, and would do this year by year a great reproach would be lifted from our profession.

EVOLUTION OF MORALS

THE hypothesis of mental continuity throughout organic evolution has been a great stimulus to the study of animal behaviour and investigations which have been made on animals under both natural and experimental conditions have been most fruitful for psychology. As a result of such studies it is now generally held that the powers of the human mind differ in degree rather than in kind from those of the lower animals and that rudiments for all mental functions may be discovered in animal behaviour. We may take the opportunity of the publication of two small books briefly to review the situation. The aim of both volumes is to examine the problem of good and evil from the standpoint of the biologist and philosopher respectively. The one is entitled *The Passing of the Phantom*,¹ by Dr C J Pitten, professor of anatomy in the University of Sheffield, who writes on definitely popular lines, the other is an historical introduction to ethics, by Mr Stephen Ward who endeavours to outline the development of abstract ethical speculations from the time of Societas to the present day.

The assumption is that the rudiments of what we describe as moral behaviour should be discoverable in animals and this is the subject considered by Professor Pitten who seeks to establish the thesis that moral functions like other mental functions are not exclusively human characteristics and that there is no breach of continuity in their evolution from lower animals to man. As evidences of a moral sense in the animal world he cites the behaviour of ants, the tenderness and anxious curiosity exhibited by gulls towards a wounded member of the flock, the mutual aid rendered by birds of different species against a

¹ *The Passing of the Phantom: A Study of Evolutionary Psychology and Moral* By C J Pitten, M.A., M.D., Sc.D. London, Keegan Paul, Trench, Trubner and Co., 2, 6d net.
Ethics: An Historical Introduction By Stephen Ward, London, H. Milford, Oxford University Press, 2, 6d net.

common enemy, the amiability of fierce predatory animals at certain times, and the harmony which often exists between domestic pets, such as the cat and dog—animals proverbially assumed to be hostile to one another. Perhaps the most striking instance of unconscious altruism in the animal world is the devotion unto death exhibited by many an animal mother when her young are threatened. It is curious that Dr. Patten should have omitted to mention this, because it is a fact of peculiar importance in any discussion on the evolution of ethics. Dr. McDougall has pointed out that the maternal attitude in such a case upsets the utilitarian theory of motives, for no nice calculation of the balance of pleasure over pain can be supposed to sustain her efforts, and she has certainly no unshakable belief in heavenly rewards or hellish punishments. She takes no thought for the morrow, anticipates neither good nor evil, neither pleasure nor pain, but, heedless of all consequences, makes one supreme self-sacrificing effort to fulfil the purpose of her being.

Though Mr. Ward makes a gallant effort to outline the trend of modern ethical thought, his treatment of the subject is not free from obscurity. If we understand his views rightly, he would maintain that the behaviour observed in the animal mother affords us an uncomplicated example of goodness and its manner of development. The animal which defends its young is not seeking to be good or self-denying, it is actuated by an inner impulsion to behave in a particular way, and in so doing quite unconsciously becomes a heroine. By aiming at something else, goodness, as it were, emerges. The fact that the goodness is unconscious makes it all the more good, for Mr. Ward holds that the essence of virtue consists in the fact that no man should know that he possesses it. Others can perceive it, but this, if he is to retain it, is just what he must not perceive. His defects he knows for himself, but he is good only for others. The artist can enjoy his work, the learned man his learning, but the enjoyment of our own goodness is denied us all. Goodness is like happiness, in so far as it is not best achieved by those who seek it directly, or, as Mr. Ward puts it, ideals are ethically more efficient the more their ethical aspect is ignored. Thus, morally the idea of self-realization is unsatisfactory, because it postulates an end and perfection in the self which it clearly does not possess. But if self-realization is urged for its own sake, as the sole condition upon which anything else can arise, the ethical difficulties disappear. So with the ideal of self-denial. If the self were moral, no one would wish to deny it, but in a non-moral setting self-denial is merely the other side of self-realization. Man denies himself, not because this is good in itself—which it is not—but because effort, endeavour, and work are the only conditions upon which he can be anything at all. If a man fulfils the condition of his being—namely, that he should be something—the rest follows. As he creates himself, so do truth and goodness supervene.

Mr. Ward contends that such considerations dispose of the theory that the moral and spiritual growth of man is in some sort an automatic process in which our sole concern is to see that the external conditions are favourable. Thus it has been argued that only good education is needed to make man wise, only a competence to make him virtuous, that by wealth and civilization life can be made easy. The difficulty of life is obviously a constant factor. New conditions create new difficulties, and though this is no reason for not removing such difficulties as we can, it should put a stop to vain hopes of an end to trouble.

Thus goodness, as Mr. Ward describes it, is not something imposed upon us from without, rather is it something which we unconsciously create ourselves in the process of self-realization. The more our potentialities are free to develop the better we shall be. The fact that activity is worth while for its own sake, apart from any material or moral consequences which may ensue, is exemplified in the life of all living creatures. Our civilization is not founded on any such principle, however, but on utilitarianism. It relies upon material rewards and punishments, upon praise and blame, and upon moral and religious sanctions, and it is generally considered that the disappearance of any of these three classes of incentives to good behaviour would wreck the whole of our existing social machinery. Many persons, indeed, view with much apprehension the decay of dogmatic religious beliefs, which is so marked a tendency of modern life. Dr. Patten does not hold this view, however, he considers that morality will develop as the revelational theory of ethics declines. In tracing the evolution of human morality he implies that superstitious fear, carrying with it notions of rewards and punishments, has been the dominant factor in the development of religious systems, together with the moral codes associated with them. Animal studies have led him to the view that the tendency to imagine spiritual essences in natural objects has had its origin in creatures below the human race, and he brings evidence to establish the proposition that the imaginative faculties which became so highly developed in humanity have been responsible for the evolution of superstition and conceptions of the supernatural. Most of us have observed the behaviour of a dog confronted with an unusual object which does not fit in with his experience of the nature of things. He barks and growls fearfully and angrily, and his hair becomes erect. But this is not all he betrays curiosity and feelings of attraction as well, exhibiting in his behaviour an exquisite example of conflicting impulses as he retreats and advances alternately. Curiosity generally wins, however, and he eventually makes friends with the unknown. Dr. Patten outlines the story of a similar conflict in mankind, we might, indeed, describe this simple episode taken from animal life as an abridged history of the moral and intellectual development of the human species. The fear of the supernatural or unknown has been the tap root of all the theologies which have evolved without breach of continuity from the time of primeval man until the present, and a form of "morality" must needs have accompanied these religious systems hand in hand, because they contained dictates regarding the meaning of right and wrong given forth through human instrumentality by supposed supernatural beings. As a biologist, however, Dr. Patten holds that the phantasies and speculations of human beings are themselves natural products and part of the scheme of evolution. Contained within and emerging from animistic conceptions of the universe are the germs of scientific thought and a moral outlook founded on the laws of nature. Like everything else in nature, human conceptions are subject to growth, change, and transformation, and there would appear to be no reason why the conflict between naturalism and supernaturalism should not eventually be resolved, and why philosophy, religion, and science should not ultimately fuse into a single body of wisdom. This is evidently Dr. Patten's hope, for he would seem to feel that by the patient study of nature we shall reach enlightenment and a moral outlook based, not upon fear and ignorance, but upon trust and knowledge.

THE STUDY OF HUMAN EMBRYOLOGY

It is a regrettable fact that our knowledge of human embryology is still very imperfect, and that the processes and conditions which result in abnormal development remain obscure. Although each year a very large number of specimens are obtained by medical practitioners, yet, owing to the absence of any central collecting station, the information obtainable from them is too often neglected. Professor J. P. Hill, F.R.S., head of the department of embryology at University College, London, has therefore issued an appeal to medical practitioners to preserve such specimens, and to send them to him together with clinical notes. The specimens particularly desired are embryos passed in abortion, with the membranes and decidua; tubal pregnancies, if possible unopened; uterine pregnancies, where the entire uterus has been removed for surgical reasons; necropsy specimens, if in reasonable preservation, emanating from cases where one or more periods have been missed and stillborn foetuses, particularly when abnormal. The specimens should be addressed to Professor J. P. Hill, or, if of large size, such as still-born infants, to Dr. H. A. Harris, Curator of the Museum, Department of Embryology, the Institute of Anatomy, University College, Gower Street, W.C.1. Collecting bottles filled with preserving fluid will be supplied if desired, and in the London area special arrangements could be made for the collection of large specimens. The fluid recommended is one part of ordinary formalin diluted with nine parts of normal saline solution. It is important that the specimen should be placed in a large amount of this solution as soon as possible after they have been obtained, and transferred to fresh solution twenty-four hours later. Professor Hill adds that the clinical data are of great value and should be sent with each specimen. A preliminary report will be sent to the medical practitioner immediately on receipt of the specimen, and later on, should it be required, more detailed reports will be forwarded concerning the estimated age and the pathological condition present. It is hoped in this way to form a collection of several sections of human embryos which will be valuable for study by competent investigators. Such a collection exists at present nowhere in England, and Professor Hill would, therefore, receive the active support of medical practitioners.

LONDON SCHOOL OF HYGIENE AND TROPICAL
MEDICINE

Work upon the foundations of the new London School of Hygiene and Tropical Medicine, which is to be erected in Bloomsbury to the design of Mr Morley Horder and Mr Vernon Rees, will shortly begin. While this is in progress the working drawings of the building will be completed and the scheme for the engineering services, which have been entrusted to Mr T J R Kienin, will be drawn up. Concurrently with these developments the board of management of the school is taking steps to supplement the facilities at present available for DPH students. A course in parasitology is already being given in the laboratories of the tropical division of the school, and arrangements have been made with Professor R J S McDowall to deliver there a course of lectures in physiology as applied to hygiene. In the tropical division some important changes are taking place. The school is shortly to lose the services of Colonel Alcock, director of the department of entomology, who is retiring under the age limit. He will be succeeded by Dr P A Buxton, who is now on his way home from Samor, where he has been engaged upon a research expedition sent out by the former managers of the School of Tropical Medicine. The post of assistant in the department of entomology has also fallen vacant through the retirement of Colonel Walton, but will not be

filled until Lt. Buxton has taken over his new duties. In the tropical division also the extended course which commenced in October has been strengthened. Wing Commander Whittingham will lecture on biochemistry, and a short course by Lieut. Colonel A. J. Craig on poisonous plants is being added to the curriculum and Colonel G. L. F. Strimmers has been appointed lecturer in tropical hygiene. The following subjects will be embraced by this course: tropical and subtropical climatology, personal hygiene, maternity and child welfare, housing in the tropics, food and dietetics, hygiene of food, water, exercise, and refuse, disinfection and disinfection, health measures. Hygiene of native labour in the tropics, disposal of the dead. Public health administration and organization in the tropics. Besides lectures on these subjects at Endsleigh Gardens, the students will be taken by Colonel Strimmers to see demonstrations, in and about London, in milk supply, water supply, sewage and refuse disposal, disinfection, and meat inspection, and a whole day will be given to a visit to the Army School of Hygiene at Aldershot. This extended programme in the study of tropical hygiene, although forming part of the general course of the tropical division, will be a self-contained course for which the school is prepared to accept a limited number of students at a fee of £6 6s. The lectures and demonstrations will extend over a period of about three weeks from January 13th to February 4th, 1926.

CLINICAL SIGNS OF DISORDERED CARBOHYDRATE METABOLISM

Dr MITLAND RAMSAY recently gave a lantern demonstration at the James Mackenzie Institute for Clinical Research, St Andrews, on the ocular manifestations of disordered carbohydrate metabolism. Excessive carbohydrate intake, continued over weeks or months, was, he said, responsible for the occurrence of phlyctenular conjunctivitis. The resulting disturbance of carbohydrate metabolism produced increased susceptibility to microbial infection, as evidenced by the ready occurrence of ulceration of the cornea, of eczematous eruptions, and of tuberculous disease of glands, joints, and bones. Pulmonary phthisis, however, did not occur, so far as he was aware. The children could tolerate carbohydrate if consumed at proper intervals with other food. But constant and irregular intake (these children are always eating) results in intolerance which must be regarded as a velocity rather than a weight. Abuse of tobacco by adults is in many respects analogous, but the metabolic disturbance in later life results from defective elimination rather than from excessive intake as in children. In many chronic glycosuric disturbance of sight is the first symptom to draw attention to the general condition. A number of the ocular lesions responsible for this were then described—for example, toxic amblyopia, sudden changes in refraction, retinobulbar neuritis, and hyperemia retinalis. In elderly glycosuric persons senile changes rather than the blood condition determine the occurrence of cataract, and Dr Ramsay argued that the term "diabetic cataract" should be reserved for cases in young diabetics. The etiology of cataract in the latter was discussed and the precautions preliminary to operation were described. The close resemblance of diabetic retinitis to the albuminuric form was illustrated and attention was drawn to the connection between protein and carbohydrate metabolism. In many cases both sugar and albumin were present in the urine, and the ophthalmoscopic picture was a combined one. Arterio sclerosis was a factor in both, but only affected the diabetic in later life while in the albuminuric arterial degeneration might be active at all ages. There must be a metabolic factor peculiar to each form of retinitis, but the evidence of this was only pronounced in the acute forms.

The outstanding feature in diabetic retinitis was the occurrence of hemorrhage, whereas oedema and the star-shaped arrangement of white spots in the macula was more characteristic of albuminuric retinitis. In forming a prognosis the outlook as regards life depended upon the state of the heart, blood vessels, and kidneys, and was better in diabetic than in albuminuric retinitis. The prognosis as regards sight was more serious in the diabetic form. The lecturer concluded with a plea for the routine use of the electric ophthalmoscope by the general practitioner, associated with the systematic analysis of the urine.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH

UNDER the Sanitary Officers Order of 1922, medical officers of health are required to prepare annual reports of their districts dealing with the general sanitary administration and vital statistics, but once in five years a fuller and more detailed report is required by the Minister of Health. As we announced at the beginning of the year, such a fuller report or "survey report" would be asked for in respect of 1925, a circular (648) has now been issued accordingly by the Ministry of Health giving detailed information about its preparation. Medical officers of health are required to describe comprehensively the progress effected in their areas during the preceding five years in the improvement of public health, the extent of changes made in the public health services, such as housing, maternity and child welfare schemes, and services directed to the prevention or cure of disease, and any special matter on which information is required by the local authority or considered desirable by the medical officer of health. It is hoped that the vital statistics issued annually by the Registrar General in respect of each urban and rural district will be received by the medical officers concerned at the beginning of February or the beginning of March, and that in consequence of this the survey reports may be completed not later than the middle of May. Medical officers of health are also required to report specifically on the administration of the Factory Acts in workshops, and a form (No 572) is provided for this purpose. Copies of this form when completed, are to be sent to the Home Secretary and the Minister of Health, as well as to the local authority and the county council.

VOLTAIRE AND MEDICINE

IN the second part of his paper on Voltaire and medicine read before the Section of the History of Medicine of the Royal Society of Medicine on December 16th, the President, Dr J. D. Rolleston, gave an account of Voltaire's illusions to anatomy and physiology, his advocacy of inoculation against small-pox, his interest in the history and ravages of syphilis, his attention to other matters connected with public health, his acquaintance with medical jurisprudence, and particularly his sceptical attitude towards historical cases of poisoning and his reference to various diseases of social importance, such as mental disorders, convulsive hysteria at the tombs of saints and ecclesiastics, alcoholism, and the king's evil. Voltaire's interest in public health was shown, not only by his desire to control certain contagious diseases, such as small-pox, by inoculation, and syphilis by the formation of a league of nations for combating the disease—a proposal not realized until 150 years later—but also by his allusions to other epidemic diseases, especially plague, typhus, and malaria, his condemnation of the insanitary condition of the Paris hospitals, the abuses connected with the administration of military hospitals, the crowded state of the Paris cemeteries, and the practice of burial in churches, as well as by his proposal

to found maternity hospitals for unmarried women. In concluding his paper, in which, as in a previous study of Lucian,² Voltaire's counterpart in classical antiquity, he had collected all the passages of medical interest, Dr Rolleston maintained that Voltaire, the founder of modern history and the most representative figure of the eighteenth century, deserved the attention of the medical reader, in that he was a powerful advocate of the profession, an uncompromising foe of quackery, and, by reason of his keen intellect and wide humanitarianism, was well in advance of his time in matters connected with public health, medical jurisprudence, and social medicine. The paper was followed by an epidiascope demonstration of portraits of Lady Mary Wortley Montagu, Trousseau, and Citheron the Great (who all figured in Voltaire's works and played an important part in the history of inoculation), of Astruc, from whose work on venereal disease Voltaire derived his knowledge of syphilis, and of Voltaire himself. Contemporary pictures were also shown of convulsive hysteria and touching for the king's evil, and a photograph of a wax figure of the dying Voltaire, which, according to Mr A. Forbes Stoddard, was probably the work of the Swiss artist Christopher Curtius, the uncle of the original Madame Tussaud.

CONTAMINATION OF APPLES BY ARSENIC

A few weeks ago we referred to the prosecution of a dealer for selling apples containing arsenic, and explained briefly how it is that arsenic is sometimes present on the peel of this fruit. A circular issued by the Ministry of Health on December 21st states that this matter has been brought to the notice of the Minister. Considerable quantities of arsenic have been found on the surface of certain imported apples, and two cases of arsenical poisoning have been traced to the consumption of imported Jonathan apples, samples of these apples which have been examined have shown various amounts of arsenic ranging up to 1/10 grain per pound. The contamination of apples by arsenic has been occasionally reported for a number of years, but the quantities of arsenic found by analysis on former occasions have generally been insignificant, and until recently no cases of illness have been traced to the consumption of such apples. As described in our note on December 5th (p. 1077), the amount of arsenic is liable to be especially large in apples grown in dry foreign climates where the fruit is reportedly sprayed during growth and the rainfall is not sufficient to wash away the deposit. The Minister understands that importers of apples from the regions concerned are taking such steps as are possible to secure the removal of the contamination from future consignments, but he desires to urge upon local authorities the necessity, especially during the next few weeks, of making full use of their powers under the Sale of Food and Drugs Acts, the Public Health Acts, and the Public Health (Imported Food) Regulations to protect the public by the examination of samples of apples likely to be affected, and by arranging for the withdrawal from sale of those found to be dangerously contaminated.

THE usual half-yearly indexes to the JOURNAL and to the SUPPLEMENT and LITERATURE have been prepared and will be published shortly, they will, however, not be issued with all copies of the JOURNAL, but only to those readers who ask for them. Any member or subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a postcard notifying his desire to the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1. Those wishing to receive the indexes regularly as published should intimate this desire.

¹ See BRITISH MEDICAL JOURNAL, October 31, p. 873.

Nova et Vetera.

THE AMPHIARON, OROPOS, ATTICA

A REFERENCE (October 31d, p. 624) to Amphiaron in Professor Gardner's address at the opening of the session of the Westminster Hospital has induced Surgeon Commander H. M. Brathwaite, R.N. (H.M.S. *Isalant*), to send as the following account of the Amphiaron, written from notes made during a recent visit to that shrine.

The Amphiaron is a temple-hospital situated about four miles south of Oropos Skali in Attica, Greece. As usual, a mythical and marvellous origin is ascribed to the institution. Amphiaron was a soldier-priest of Aigos, and fled from Thebes in Boeotia during the troublous times associated with Adrastus, leader of the expedition against Thebes in about 900 B.C. The story says that Amphiaron cut open the earth with his sword. Both he and his weapon were received and passed through the earth and came out at the site of the temple, where also a sacred spring gushed forth. Pausanias in his guide to Greece, volume 1, written about 160 A.D., says that Amphiaron fled to Chalcis and afterwards settled down and erected his hospital at this spring. The buildings are in a narrow valley, which runs roughly east and west, surrounded on three sides by well wooded heights, open to the sea, distant about half a mile, on the east. In the midst is a deep little gorge with ever-running water, formerly crossed by a wide bridge.

The rough track from Oropos Skali approaches the north-east end. The first buildings we meet are the ruins of the hot baths. Next is the Stoa, a colonnade about 100 yards long and 5 yards wide, closed on the north, open to the south. The roof was supported by numerous columns. The Stoa was provided with marble seats, so it is not difficult to visualize the patients walking or sitting talking here. Behind, that is north of the centre of the Stoa, is the theatre with seats of marble arranged in tiers round the semicircular cutting in the hillside. In front are five chairs with inscriptions dedicating them to ex-priests of the temple. At the western end of the Stoa is the temple. It contained a white marble statue of Amphiaron, now in the local museum and five altars, which still remain. The first altar is dedicated to Heracles, Zeus, and Apollo the Healer. The second to heroes and wives of heroes. The third to Hestia, Hermes, Amphiaron, and the sons of Amphiochus. The fourth to Aphrodite, Panacea, Iaso, Hygeia, and Athena the Healer. The fifth to nymphs, Pan, and the rivers Achelous and Kephalos.

The multiplicity of gods, goddesses, and demigods, and the accommodating way in which they shared the altars, is amusing. The absence of honours to Asclepius is noticeable. Before the temple is a big altar with a semicircle of seats in front. In addition there is a row of about twenty tomblike bases on which grateful and mighty patients placed statues of their noble selves. In Roman times the Greek statues were removed and replaced by statues of members of that conquering race.

These are all the buildings on the north side of the valley, and, considering their antiquity, they are in a fair state of preservation. On the south side is the sacred spring, approached by a flight of ten steps. It is dry now, the water comes out into the gorge. Behind the spring is the hospital. On the west is a row of twenty rooms for in-patients. Eastwards we come upon a hall, presumably for out-patients, a cookhouse, and numerous small rooms. These were probably for the attendants and visitors who came at festival times. These buildings were not so strongly built as those opposite and consequently are more ruinous.

Several tables of stone have been discovered inscribed with the rules and procedure of the hospital—as for example, "The Temple is in charge of the High Priest of Oropos."

He must visit it at least once every three days, and must stay at least ten days every month except at ploughing time [that is, from winter months]. He keeps the key of the money chest. The house governor lies in the hospital. He must issue a ticket to

every patient for admission, who must pay a fee of nine Obols and caution money five Drachmas. He must put the money in the Chest. He must keep good order, see that the treatment prescribed by the Priest is carried out, keep the men and the women separate. The left shoulder and the skin of Sacrificed Animals belong to the Priest," etc.

An interesting situation arose in Roman times. Some Romans refused to pay the fee to the god Amphiaron, arguing that a god had no need of fees. The priest of Oropos went to law about it, and eventually the case was taken to the Senate at Rome. The decision went against the priest and the god—a good example of Roman cupidity.

Very scanty records remain of the treatment patients received of the disorders from which they suffered, but the inscriptions and fragments of sculpture show that some surgery was done and that hydrotherapy and massage were employed. There is one specially interesting sculpture showing Amphiaron incising a patient's shoulder, the patient reclining on a couch, and the Sacred Serpent, emblem of medicine, sucking the poisonous matter out of the wound. The third figure shows the patient erect with outstretched arms, rendering thanks for his recovery.

This was the age of Hippocrates the Father of Medicine, so the art of healing had reached a high standard. But the mainstay of treatment was suggestion—the Oracle, as it was called. The patient was put to sleep and the priest, dressed as the deified Amphiaron, visited him and spoke, telling him what to do that he might be cured. He repeated his words many times so that when the patient awoke he believed that the god had come to him, and that if he carried out his orders he might recover. It was the custom for the patient on being cured to drop some silver or gold into the sacred spring.

This temple-hospital flourished for many centuries, as testified by the names, inscribed on the monuments of well known Greeks and Romans who came as patients. Notable among the latter is the name of Sulla.

My best thanks are due to Dr. Leonidas, who spent two hours on a hot Sunday afternoon (August 30th 1925) in showing me round and explaining everything, and who courteously received a party of twelve officers next day. The initial step was due to the kindness of Dr. Welter, whom I met at Aegina, where he is working for the German School of Archaeology.

THE HEALTH OF THE ROYAL AIR FORCE

IN 1921

THE report on the health of the Royal Air Force for the year 1921 has been published with commendable expedition, and is an admirably compiled document.

The average strength of the force for the year was 31,622, distributed among stations in the United Kingdom, Malta, Egypt and Palestine, Iraq and India. The admission rate for sickness and injuries was 463.6 per 1,000 of strength, excluding cases of forty-eight hours' duration or less, as compared with 473.8 in 1923. The invaliding rate was 9.5 per 1,000 as compared with an average of 12.3 for the previous three years, and the daily sick rate 22.4, as compared with 24.7. The death rate, however, shows an increase from 3.9 per 1,000 in 1923 to 4.5 in 1924. The average of the previous three years period was 4.3.

The chief cause of increase in deaths is a larger number of deaths from injuries. In classifying injuries a departure from the procedure adopted in previous years has been made. Injuries sustained during organized games are now classified as occurring on duty. The total number of injuries was 2,254 or 71.3 per 1,000 of strength, as compared with 60.3 per 1,000 in 1923. Nearly half the injuries of the lower limbs, and accidents during athletics, which were the chief cause of these, accounted for 36.4 per cent of the total number.

Injuries from flying accidents numbered 169 resulting in 69 deaths, or 7.5 per cent of the total number of injuries, as compared with 6.3 in 1923, 6.1 in 1922, and

6.4 in 1921. The increase is attributed to an increasing number of women pilots qualifying, and to an increasing number of women enlisted as passengers or undergoing instruction in aircraft. Aircraft is also increasing in size and carrying capacity, with consequent increase in the number exposed to risk of injury in the event of large craft being involved in an accident. Also the hours flown per fatal accident were higher in 1924 than in any previous year. A further factor was the fact that there were four collisions in 1924, with ten deaths. In 1923 no deaths were recorded from accidents of this kind. It would appear that the risk of collisions in the air is definitely on the increase. Several injuries due to miscrews and swinging the propellers are recorded, as in previous years. In 1924 there were two deaths from such accidents. Injuries are also recorded from starting motor engines, with no fatality, and a large number, 309 with 12 deaths, from motor cycle and motor car accidents. There were three wounds reported in action from Iraq, and two from Palestine. None were fatal. A table is given for the first time in these reports to show the age incidence of disease and injury. The age group under 18 years, a group serving only at home, shows by far the highest ratio per 1,000 of strength. In stations abroad the age group 24 to 25 suffered most. The lowest incidence was in the age group 30 to 34 years.

A section of the report contains tabular statements of disease and injury within the different trade groups enlisted in the Royal Air Force and among different types of units. The flying units, with by far the highest death rate, show the lowest ratio of incidence of disease. The highest disease ratio occurred in depots, ground schools, and armoured car companies. Among trade groups the disease ratio was highest in boys and lowest in aircraft hands. The high incidence among boys, nearly double that of other trade groups, was due to the number of admissions—205.0 per 1,000 of strength—for infections of the upper respiratory passages. In no other group did these infections cause a higher admission rate than 66.8 per 1,000.

Veneral diseases caused a remarkably low admission rate, only 16.3 per 1,000 of strength for primary admissions. This is the lowest on record. In 1923 it was 19.3 per 1,000. As in previous years, venereal disease was most frequent among drivers, the nature of whose work removes them to a certain extent from the discipline and supervision of their unit.

There was no outstanding prevalence of disease or epidemic either at home or abroad. The only station abroad with a high admission rate was Basia, where the ratio was 1081.2 per 1,000 of strength. This was mainly due, as in previous years, to malaria. Antimalarial measures were continued and amplified. Especially satisfactory was the success of the measures to prevent sandfly fever, a success due to the research work of previous years.

Among miscellaneous subjects dealt with are the work of the Central Medical Board, the medical officers' school of instruction and research laboratory, the physical efficiency of serving officers, the medical examination of recruits, laboratory work at Air Force hospitals, the transfer of casualties by air, and dental treatment. The physical assessment of 2,284 officers in respect of vital duties shows a higher percentage than previously (89 per cent at home and 92 per cent abroad) of officers fit for full flying duties. A new apparatus was devised for research work on psychomotor responses in relation to flying. The causes of rejection of recruits were similar to those of previous years, dental defects, diseases of the heart, and deformities of the feet leading the list.

A feature of the report that is of general interest to the medical profession, and especially to hospital staffs, is the description of the special method employed in the Central Laboratory for the routine pathological examination of all officers involved from abroad. A point is made of the advantage of carrying out the tests at a definite hour of the day, 10 a.m., in order to render the results of all examinations comparable and void the variations that occur with the time of the day in certain physiological processes. All material is collected within two hours and the tests completed in twenty-four hours. The tests are excep-

tionally thorough and comprehensive. The transfer of casualties by air is now the recognized method in Iraq. The total number carried in 1924 was 81, a small number compared with the numbers carried by French aircraft in Syria and Palestine. A short description is given of three types of aircraft used for transfer of casualties. Only one of these is a specially designed aerial ambulance.

England and Wales.

AN OUTBREAK OF MILD SMALL-POX

THE county medical officer of Lancashire has issued a report of a small-pox outbreak in the borough of Ashton under Lyne and adjoining districts. Though the cases numbered only 116, the report extends to twenty-eight foolscap pages, but it is not a line too long, indeed, it shows how a limited outbreak can be the subject of a detailed and intensive study which would be almost impossible for an extensive epidemic. The report ends with a series of observations and conclusions, but the particulars of the cases are set forth with so much detail that anyone who chooses has abundant material on which to base a judgement of his own on every point. Dr. Butterworth explains that for a large part of the information used in the preparation of the report he is indebted to Dr. Cronk, assistant county medical officer. Careful clerical work in the recording of day-to-day occurrences has been a noteworthy feature of the administrative measures. Another feature was the co-operation between the local sanitary authority and the county staff, the personnel of the latter having been made available to supplement that of the former.

The outbreak began in June, 1924, owing to missed cases and the prevalence of chicken-pox. The spread was favoured by crowded attendances at theatres, by employment exchanges and billiard halls, and by deliberate concealment of cases. From mid-July to mid-September was a period of increasing activity, from mid-September to the beginning of December of maximum intensity, and to the end of January, 1925, of diminishing virulence. The outbreak was of the mild type common in this country at the present day, and no deaths occurred. Infectivity was of no great intensity.

The efficiency of vaccination performed before infection was shown by the hospital statistics. The age of the youngest case of small-pox after vaccination in infancy was 22 years. While it is pointed out that vaccination after infection must have prevented the development of many cases, yet in 19 the disease did develop, the interval between infection and vaccination being from two to seven days in 12 cases for which the facts were ascertainable.

It was found possible to persue very nearly all the contacts to accept vaccination. Among 249 contacts in houses investigated, 22 developed small-pox, 17 being secondary cases, 4 from the same source as the primary case, and 1 from a totally different source. Among 19 contacts primarily vaccinated within twenty-four hours of infection no case of small-pox occurred, among 24 vaccinated within two days of infection one case developed small-pox, and among 55 contacts vaccinated more than two days after infection there were 13 cases of small-pox. These figures relate to primary vaccination of contacts. There were also 86 contacts who, having been vaccinated in infancy, underwent revaccination after exposure to infection, and none of these developed small-pox, though in 10 the revaccination was more than five days after infection, and in 31 it was done on the fourth or fifth day. The intervals between infection, onset, and rash are of epidemiological and administrative interest, and are especially worth study in the mild type of small-pox. They were carefully noted, and in 37 cases the information can be regarded as being accurate from repeated questioning and daily observation. The interval between infection and onset varied between eight and nineteen days, the mean being thirteen days. Two thirds of the cases occurred after eleven, twelve, or thirteen days (inclusive). Observation of contacts was maintained for eighteen days. The time elapsing between onset and development of the rash was two days in 6 cases, three days in 9, four days in 11, and

five days in 5. The mean was three days, and two thirds of the cases conformed to the mean. Hospital isolation was regarded as of only secondary importance to vaccination, but of 114 cases 55 were not notified or removed within less than forty-eight hours after appearance of the rash, in 3 cases the interval being more than seven days.

As regards the question whether classical and mild small-pox can be looked on as different diseases, Dr. Butterworth is not a dualist. After discussion of various points his views are summed up as follows: (1) The type of small-pox met with in an epidemic remains constant throughout that epidemic, (2) on seeing an individual case of small-pox, no conclusion can be formed as to the outcome of cases infected thereby, it follows that an isolated case of small-pox may be the start of an outbreak of the mild or classical variety, and also that in the course of an epidemic, unless each case is traced to its origin, a case of classical small-pox may creep in under the guise of mild small-pox. With the type of disease now present isolation of cases and vaccination of contacts are insufficient, even with constant vigilance, to bring an epidemic once fairly started to a rapid conclusion.

Conclusions

The conclusions drawn are as follows:

- 1 The epidemic at Ashton under Lyne was one of small-pox of the mild type.
- 2 No clinical feature of the disease could it be distinguished from classical small-pox or in its relation to vaccination.
- 3 The infectivity of the disease was not great on the whole but varied with different cases and at different periods of the epidemic.
- 4 The ascertainment and vaccination of contacts with immediate isolation of cases must be instituted immediately and energetically for rapid control.
- 5 The infection is kept going chiefly by "missed" cases there is no evidence in favour of "carriers" playing an important part in the spread of small-pox during an epidemic, whatever may occur in interepidemic intervals.
- 6 Schools should be kept open.
- 7 All public meetings should be discouraged as much as possible, they are a potent source of missed cases.

KING EDWARD'S HOSPITAL FUND

The Prince of Wales, on December 15th, presided over the distribution meeting of the King Edward's Hospital Fund for London, and read a letter from the King expressing satisfaction that the fund had been able to increase its distribution by £10,000, and that with the extended area of its operations it had now made grants to a larger number of hospitals. Lord Sturrit of Wortley, who moved a resolution recording the general council's deep sorrow at the death of Queen Alexandra, and its sympathy with His Majesty and the Royal Family, referred to the great assistance that Queen Alexandra had given to the hospitals of London. It was her special delight to be ever giving to the needy or visiting the sick.

Lord Revelstoke, honorary treasurer, reported an increased distribution of £245,000 out of the income for the current year, as compared with £235,000 in the previous year. Although receipts from legacies were below the average, some timely donations had been received. The British Charities Association had increased its contribution from £15,000 last year to £20,000, and a further amount of £85,485 had been received from the estate of Lord Mount Stephen. From the Wells legacies, which were estimated at £200,000, the amount received to date was £162,240, out of which £138,000 had been allocated so far. Sir William Collins, making the annual statements on behalf of the League of Mercy, said that the league associated itself with Lord Cave's Committee in the hope that the policy of obtaining contributions from patients would not prove detrimental to the indigent sick or prevent the admission of the very poor, for whom the hospitals were primarily intended. The league would be in a position to hand over £15,000 this year, which would make its total contributed to the King's Fund £383,034. Beyond this the league was making grants of £9,845 to extrametropolitan hospitals with the assistance of the British Charities Association, which had contributed £5,000 towards that distribution.

Sir Cooper Peeny, presenting the report of the Distribution Committee, said that the amount to be allocated this year was, apart from the sum provided by the British Charities Association, £243,000, as against £233,000 in each

of the two previous years. The number of hospitals applying for grants had increased from 118 to 133. Taken as a whole, the hospitals continued to maintain in 1924 the improved financial position which had been gradually reached since the crisis in 1920, and for the second year in succession there was an excess of income over expenditure, though less than in 1923. The proportion of hospitals with deficits had fallen from 48 to 46 per cent. Additions were continually being made to the number of beds available, so that a larger income was still required to meet the remaining deficits and to cover the growing work. The maintenance grants had, therefore, been increased this year to £214,075, as compared with £197,275 in 1924. This had involved a decrease in the grants in aid of schemes of capital expenditure, which amounted to £28,925, as against £35,725 in the previous year.

Maj. Harold Wenner, honorary secretary, presented a schedule containing a list of awards to hospitals, including recovery and convalescent branches. Among the larger grants were:

London Hospital £14,625 Guy's Hospital £12,500 St. Thomas's Hospital £11,000 Royal Northern Hospital, £8,700 University College Hospital £8,500 King's College Hospital £7,500 Middlesex Hospital £7,400 St. Bartholomew's Hospital £7,000 St. George's Hospital £7,000 Westminster Hospital £6,150 St. Mary's Hospital £6,000 Metropolitan Hospital £6,000 Royal Free Hospital £6,000 Royal National Orthopaedic Hospital £5,500 West London Hospital, £5,500 Miller General Hospital £5,225 Prince of Wales's General Hospital £5,200 Queen's Hospital for Children £4,250 Queen Mary's Hospital for the Pauper £4,150, National Hospital for the Paralysed and Epileptic £4,000 Charing Cross Hospital £4,000 Hospital for Sick Children £4,000

After Sir Cooper Peeny had presented the report of the Distribution Committee with reference to convalescent homes not attached to particular hospitals, and the report of a committee on the special distribution to hospitals out of the Wells legacies, the Prince of Wales pointed out that the area of the King's Fund had now increased from 255 square miles to 380, while the number of hospitals helped had risen from 118 to 133. The amount of the ordinary distribution during the year was £245,000, the Wells legacies produced £57,000, so that the combined total was £302,000. About two-thirds of the ordinary distribution of £245,000 came as income from investments, and about £82,000 had to be raised in the year. But although annual subscriptions had always been smaller than was desirable, yet this year they had shown a welcome increase—largely in the form of seven-year agreements, many of them so worded that the subscribers gave the King's Fund the benefit of any income tax saved by the agreement. Though the income of the fund had been increased, the demands were also growing. Fifteen new hospitals had been added to the list, and the general hospital expenditure was being continually increased by the discoveries of medical science and by the provision of additional beds. There was, therefore, continued need for generous subscriptions. In the matter of extensions along the King's Fund, by devoting the Wells legacies largely for the purpose, had been helping to provide 697 additional beds, which would all have to be maintained. The Management Committee had also concluded that there was an immediate need to expedite schemes for the provision of another 2,000 beds, the Voluntary Hospitals Commission had accepted this estimate for London, and had added another 8,000 beds for the rest of England and Wales. The Wells legacies acted as a stimulus to enable hospitals to raise the money for extensions more rapidly than would otherwise have been possible. An important piece of work this year had been the further revision of the revised uniform system of hospital accounts, which had been occupying the Hospital Economy Committee for many months, and was now nearly finished. The propaganda committee was arranging a programme of lectures in the schools on the work of the voluntary hospitals, many hospital experts were taking part, and the lectures were arousing much interest. Captain O. E. Warburg, moving a hearty vote of thanks to His Royal Highness for presiding, said that the London County Council viewed with the greatest gratitude the wonderful work that had been done by King Edward's Hospital Fund under his presidency. The Council appreciated the Prince's energy and public spirit in forwarding the great work.

Ireland.

ROYAL MEDICAL BENEVOLENT FUND SOCIETY

IN its eighty-third annual report the Central Committee of the Royal Medical Benevolent Fund Society of Ireland states that the number of grants awarded in the year was 86, an increase of 3 as compared with the preceding year. Of these, 5 were made to medical men, 8 to orphans, and 73 to widows. The amount disbursed in grants was £1,755, as compared with £1,540 in 1923-24, and the average amount of each grant has increased from £18 10s 7d to £20 8s. In presenting the audited balance sheets of the General Fund and of the Osborne Fund, the committee once again expresses thanks to the honorary secretaries of the branches for their work, and to the individual subscribers for their support. The income of the General Fund from all sources amounted to £2,097. In this is included £422, the amount of income tax refunded for two years. Dividends and interest yielded an increased income of £48 19s 2d. Subscriptions paid through branches, including those of the Dublin area, increased by £21 9s 6d, while those paid through the central treasurer increased by £20 5s. The British Medical Association is thanked for collecting £26 13s. Donations amounted to £21 10s, being a life membership payment of £10 10s by the President of the Royal College of Surgeons in Ireland, Mr R. B. Mansell, and £11, the "thankoffering of a widow" who at a time of due need received a special grant from the Fund. The Irish Medical Association sent £20, and the Dublin Clinical Club £5 5s. No legacies were received during the year, nor was any addition made to the invested capital of the Fund. At the beginning of the year the Osborne Fund stood indebted to the General Fund to the amount of £220 18s 5d. On June 18th, 1924, the Central Committee, having reviewed the position of the Fund, decided that charges on the Osborne Fund should be suspended until it showed a credit balance. Accordingly all grants have been charged to the General Fund, and at April 30th, 1925, the indebtedness of the Osborne Fund had been reduced to £109 12s 8d. Looking to the future, the Central Committee found some factors which caused it anxiety. The fall in the capital value of railway stocks had been referred to the trustees for consideration and action. The country was, the committee noted, passing through a period of financial stress, and medical men had suffered in common with all classes of the community. That the subscription list had shown some increase was a matter for congratulation, those who subscribed did so generously and merited thanks, the many who had not hitherto helped the Fund were asked to give their support so that the society might be able to grant relief to those who went to it in their time of need. Only by widening the field of support could the Fund be maintained on a sound financial basis. At the annual meeting the following resolution was passed:

That this meeting desires to convey its thanks to the officers of the branches for their valued aid in the society's work, and also to all those who have subscribed to its funds. It urges the claims of the society on the many members of the profession who have not hitherto contributed as it is only by increased support that it can be maintained on a sound financial basis.

Scotland.

EDINBURGH CHAIR OF PUBLIC HEALTH

THE Edinburgh University Court has appointed Colonel P. S. Lelan, C.B., C.M.G., F.R.C.S., to be Professor of Public Health in the University in succession to Professor Hunter Stewart. Professor Lelan was born in Canada in July, 1871, and received his medical education at St. Mary's Hospital, London, and having entered the Royal Army Medical Corps, had a wide experience of army organization and hygiene. Until recently, when he was appointed inspector under the Home Office in succession to Sir James Russell, he had been Professor of Hygiene at the Royal Army Medical College. During the South African war he served as a civil surgeon, and from 1906 to 1912 was with the

R.A.M.C. in India, where he was concerned particularly with sanitary work. In the Egyptian Expeditionary Force he acted as Assistant Director of Medical Services at General Headquarters. Professor Lelan is the author of a number of scientific publications, including a textbook on *Sanitation in War*, which enjoyed great popularity upon its appearance in the early months of the great war. His capacity as a teacher, writer, and organizer was widely recognized in the posts which he has held in connexion with the army. During the war he rendered important services in experimenting upon the action of poison gas, and in devising methods of protection. At the same meeting of the Edinburgh University Court, Dr. William Robertson, F.R.C.P., medical officer of health for the city of Edinburgh, was appointed to be director of instruction in sanitary administration in connexion with the University.

INSPECTOR UNDER CRUELTY TO ANIMALS ACT

The Home Secretary announces that he is about to appoint an inspector under the Cruelty to Animals Act 1876. The post is permanent, and is pensionable in accordance with the general rules governing pensions in the Civil Service, and the appointment will be subject to a period of probation. The salary will be £800 a year, with Civil Service bonus and the usual travelling allowance. The inspector will be required to give his whole time to his duties, and to reside in Edinburgh for the time being. Candidates for the post who possess the scientific qualifications required for the work and are not over 50 years of age, should apply to the Private Secretary, Home Office, Whitehall, London, S.W.1, from whom further information may be obtained. Applications should be accompanied by one or two testimonials and particulars of the candidate's qualifications, and should reach the Home Office not later than January 15th, 1926.

PREVENTION OF DIPHTHERIA AND SCARLET FEVER IN ABERDEEN

A memorandum has been issued by Dr. J. Purvis Kinloch, M.O.H. Aberdeen, on the methods now available in that city for the prevention of diphtheria and scarlet fever. During the past ten years there have been in the city of Aberdeen 4,563 cases of diphtheria, with 254 deaths, and 5,526 cases of scarlet fever, with 215 deaths. For the treatment of these two diseases during the ten years in the City Hospital alone an expenditure of £150,000 has been incurred. It is obvious, therefore, that any method which lessens the incidence of these diseases will bring about not only a saving of human life, but a considerable decrease of municipal expenditure. Of the cases of diphtheria 73 per cent. and of the deaths 95 per cent., and of the cases of scarlet fever 82 per cent., and of the deaths 95 per cent., occurred in children under 15 years of age. Children, during the first six months of life, have a passive immunity to these diseases derived from the mother, but this rapidly falls off, and from the age of 6 months they become very susceptible to both diseases, remaining so for some years, until they slowly develop a natural immunity. After giving accounts of the Schick test for susceptibility to diphtheria and of the Dick test for susceptibility to scarlet fever and of the methods devised for producing active immunity against the diseases in children found to be susceptible, Dr. Kinloch states that research work at Aberdeen City Hospital has proved that toxoid-antitoxin used for protection against diphtheria can be used in admixture with scarlatinal streptococcus toxin for protection against scarlet fever, and thus one series of injections can be given to produce immunity from both diseases. The memorandum recommends that this plan should be carried out as soon as possible after children are 6 months of age. The Aberdeen Town Council in October, 1925, resolved that material should be made available with the object of having active immunization against the two diseases as widely as possible adopted in the city. The method recommended to be followed is as follows:

Susceptibility Tests.—In the Schick test for susceptibility to diphtheria 0.2 c.c. of a diluted diphtheria toxin is injected intracutaneously into the front of the left forearm while

is a control, the same amount of diluted toxin, inactivated by heat, is injected into the skin of the right forearm. The reaction is read after forty-eight hours, and if a circumscribed area of redness measuring from 15 to 30 mm has appeared round the point of injection the reaction is considered positive. The reaction reaches its maximum intensity about the fourth day and may persist for about a week, but is not painful and does not cause any harmful effect. The Dick test for scarlet fever closely resembles the Schick test, and consists in the intracutaneous injection of 0.2 ccm of a diluted toxic filtrate obtained from a broth culture of scarlatinal streptococcus. The toxin is standardized by finding a dilution (known as 1 skin dose) which gives a negative reaction in convalescent cases of scarlet fever but gives a positive reaction in young susceptible children. A similar dose of inactivated control filtrate is injected into the skin of the right forearm. A positive Dick reaction is said to be present when a light red flush of 15 to 30 mm diameter appears round the point of inoculation in a few hours, reaching its maximum in twenty-four hours. This dose is also quite painless and harmless.

Method of Immunization.—When children, by the above method, are found to be susceptible, a suitably prepared injection of toxin is given to produce active immunity. In diphtheria toxin is prepared by exposing diphtheria toxin to the action of 0.1 per cent formalin at 37°C for about four weeks. This is mixed with a small amount of antitoxin (27 units in 20 ccm of toxin). This mixture is diluted 10 times and 1 ccm is used as the dose for producing immunity. Three injections of 1 ccm of the toxoid-antitoxin mixture are given at weekly intervals subcutaneously into the upper arm near the insertion of the deltoid muscle. Active immunity gradually develops in one to six months and tides the children over the susceptible years until natural immunity manifests itself. In the case of scarlet fever active immunity is obtained by the administration subcutaneously of three graded doses of the toxin injected at weekly intervals. The first injection consists of 500 skin doses, the second of 1,500 and the third of 3,000 or more skin doses. The active immunity from scarlet fever takes about two weeks to develop and thus the method is useful in stopping outbreaks of scarlet fever as contrasted with the inability of immunization against diphtheria to control outbreaks of the latter disease, owing to the long time required for active immunity against diphtheria to develop.

The memorandum suggests that medical practitioners should direct their main activities in this matter to securing the protection of children in the period from 6 months to 6 years of age, and it is proposed to extend the campaign for immunizing children by making the susceptibility tests (Schick's test and Dick's test) widely applicable to the child population at child welfare centres and at school clinics. The materials necessary for immunization will be obtainable from the City Hospital laboratory or from the chief resident medical officer, and among these are combined diphtheria and scarlatina prophylactic (toxoid antitoxin and streptococcus toxin mixture) for producing active immunity to diphtheria and scarlet fever concurrently.

Correspondence.

THE TREATMENT OF ACUTE INTESTINAL OBSTRUCTION

SIR,—In the discussion on the treatment of acute intestinal obstruction (JOURNAL, November 28th, p. 993), the question as to how drainage of the upper end of the jejunum can relieve obstruction low down in the small intestine—that is, how opening the bowel at its highest level above the obstruction is going to relieve the distension of the coils lying below it—does not seem to have been considered.

The explanation given by Mr Victor Bonney (JOURNAL, 1916, i, p. 583)—the view on which his advocacy of this operation of high jejunostomy is based—is that in obstruction of the small intestine the coils for some distance above the obstruction contain no fluid, but are only distended with gas, whereas the upper coils are distended with fluid, and that therefore these must be drained by a high opening of the jejunum, and that it is useless to open a coil just above the obstruction, as here the bowel is only distended with gas. Mr Sampson Handley (JOURNAL, 1916, i, p. 632) pointed out that he had not been able to verify Mr Bonney's description of a separate gas-containing and fluid-containing portion of the obstructed and distended small intestine, nor have I ever found evidence of it on the operating table, or in the post-mortem room, and it would be interesting to know the experience of other surgeons. Mr Bonney says he has obtained evidence in favour of his view in cases in which, on making an opening into the obstructed bowel low down, nothing has come away, and the patient has died

with unrelieved obstruction accompanied by facial vomiting. But this is no proof of his view as to the presence of separate air- and fluid-containing segments of intestine. It is notorious how greatly distended small intestine above a mechanical obstruction is often not relieved by opening the bowel at the lowest level, any more than it may be by removal of a mechanical obstruction such as the division of a constricting band, and surgeons have always believed that this was so because the greatly distended bowel was paralysed and knicked. In such cases nothing short of mechanically emptying the distended coils, by passing them through the fingers—"milking" them, as it is sometimes called, or the adoption of the device advocated by Sir Berkeley Moynihan—will suffice. But this is a very shock-producing procedure in these very bad cases of life obstruction. If, when operating for obstruction of small intestine, we puncture one of the greatly distended coils, we shall evacuate some gas and fluid but only from that one coil; no more comes from the equally distended coils above it because they are too paralysed and knicked.

We may be sometimes tempted to think of distended small intestine as if it were one freely communicating tube. It is not. Every time, when it is greatly distended, becomes a most definite kink the walls of which are tightly pressed together by the distension of surrounding coils, and only vigorous peristalsis above can force fluid and gas through it. This is why, if we make an opening in the distended coils low down, expecting thus to drain them, nothing may come away.

Mr Victor Bonney's view as to why only the upper coils above the obstruction are distended with fluid, and not the lower ones, seems to me hardly justified by the facts. He says the reason is that these upper coils have become infected by the *Bacillus coli*, and he relates a case (loc. cit.) in which, for some feet above a septic focus in the small intestine, the contents of the coils resembled stereococcus vomit, because these coils had become infected from the suppurating focus. But in a case of intestinal obstruction there is not necessarily, or even usually, a septic focus in the bowel, and it is only from putrefactive changes due to the obstructed contents of the small intestine that they come to resemble faeces. Why, then, should this change take place only in the upper end of the obstructed intestine? One would expect it first, and most marked, close above the obstruction, for there the fluid would have been longest retained. Why, then, should the coils of intestine nearest the point of obstruction only contain gas, as Mr Bonney believes?

Of course, it is obvious that the cessation of faecal vomiting, or indeed of vomiting of any nature, from the performance of a high jejunostomy must be a great asset to the patient, but what we want to know is how all the distended coils below the level of the jejunostomy are emptied by it. The surgeon who opened the discussion spoke of a siphoning out these distended coils, but we cannot siphon and siphon out distended and knicked coils of small intestine as we can the bladder, because when the coils are folded on themselves and knicked, as I have just pointed out, each coil is separated off into a different compartment.

If a reversal of normal peristalsis all along the distended coils (which may be the greater part of the small intestine) takes place so that they empty themselves upwards, then our view that paralysis and kinking is the cause of the persistent obstruction, after the relief of a mechanical one, must be wrong. Yet if these coils are really active, how is it that they empty themselves upwards, and not in the normal direction? If as Mr Bonney believes the upper coils are distended with fluid, and the lower with gas, as soon as it was possible for one coil to empty itself into another what is to prevent (what we should expect would happen) the fluid in the upper coils passing down the intestine and displacing the gas upwards? But it may be that the high jejunostomy just tides the patient over a very critical period, in which, without it, death would have occurred from incessant faecal vomiting, and that then (perhaps in twenty-four hours after the jejunostomy) the paralysed bowel begins to pass on its contents in the normal direction and the obstruction is removed. Whatever the explanation of its action may be, undoubtedly this high jejunostomy seems to have been a life-saving operation in many cases.

It is very instructive to note the nature of the six cases first reported by Mr. Bonney (loc. cit.) in which he performed this high jejunostomy for intestinal obstruction. One of them was a 'general' septic peritonitis, one a paralytic condition of the lower ileum and colon following hysterectomy, one appears to have been a paralytic condition of the bowel following operation for ectopic gestation without peritonitis, one obstruction from adhesions which could not be removed, and one paralysed bowel associated with pelvic suppuration. Thus the operation was originally performed not for persistent obstruction, in distended coils of small intestine, after a mechanical obstruction had been removed, but for some form of paralytic obstruction either not primarily due to a mechanical block or strangulation, or in which such block could not be dealt with. The operation was very successful in these cases—indeed, it proved a life-saving operation in desperate conditions, but Sir William Taylor has not apparently had such success with it, for he deplores the very high mortality he still has in operation in late cases of acute intestinal obstruction.

Mr. Rowlands, when, in 1916, discussing the advisability of Mr. Bonney's suggested high jejunostomy (*JOURNAL*, 1916, 1, p. 739), said he considered the right level to drain the intestine was 12 inches above the obstruction. Speaking of Mr. Bonney's high jejunostomy he says: "My experience is that it is neither necessary nor wise to drain the intestine so high up. It is not necessary for drainage at least 12 inches above the obstruction usually proves successful. It is not wise because every inch of small intestine is valuable for digestion and absorption." In the discussion Mr. Rowlands does not refer to the level at which he now drains. It is surprising to me that Mr. Rowlands is able to say that drainage just above the level of the mechanical obstruction in his practice has been "usually successful," for it is in these desperate cases of great distension and kinking of coils of small intestine that such an opening is often attended with failure.

Mr. Sampson Handley (p. 995) thinks that persistent obstruction after the removal of a mechanical obstruction, such as the division of a band, may be produced by the loss of power in a loop which has been very tightly strangulated, so that it does not pass on its contents. A strangulated loop of small intestine, whether strangulated within the abdomen or in a hernial sac, is not usually of any great length, and if the intestine above it is still active, and itself not obstructed by kinking, it seems to me very difficult to conceive that it cannot force on the intestinal contents through a short length of strangulated bowel even though it is paralysed. If the strangulation of the small intestine to a marked degree, but only involving a small length of the gut, were really a cause of persistent obstruction, surely such obstruction would be much more frequent than it is after herniotomy.

Last there should be any misunderstanding may I say that in this letter I, of course, only refer to the operative treatment of the late stage of obstruction—cases in which time has elapsed for this very serious great distension of coils above the level of the mechanical obstruction—I am, etc.,

BRIT. DEC. 13th

CHARLES A. MORTON

INTESTINAL OBSTRUCTION

WHAT THE GENERAL PRACTITIONER THINKS

SIR—So the poor general practitioner has been found guilty—by Sir William Taylor this time—of one more heinous offence. Not sufficient that he should be responsible for all maternal morbidity and maternal deaths in childbirth he is now branded as a criminal because the death rate of intestinal obstructions is so high. At the present rate it would appear that all virtue has departed from the unhappy practitioner, and the sooner he gets out of business the better for everyone. Perhaps polishing the brass plates and acting as "receptionist" for those millionaire ones, the real embodiments of light and learning would be a fitter occupation, and keep him more in the place where he obviously ought to be. For one with such criminal propensities the post of secretary would obviously offer far too great temptations to retain for himself a small share of the fees which a Divine Providence and a discerning public should run without stint upon those

fortunate ones who never could make a mistake in diagnosis or technical judgment but they tried ever so sorely.

But, seriously, is it not time that more restrained language was used by some of the leaders of the profession in calling attention to the alleged shortcomings of the many of their professional brethren? Over-emphasis in the layman only recoils upon the head of the author, and I venture to suggest that remarks like those made by Sir William Taylor in the Section of Surgery at the Annual Meeting at Bath (*BRITISH MEDICAL JOURNAL*, November 28th, p. 995) only serve to make him ridiculous. It is admitted that early diagnosis in the majority of cases of obstruction is a very difficult matter, and may call for the very finest judgement and clinical instinct. We could all of us, no doubt, cite instances within our own experience where clinicians of deservedly high repute have been caught out in cases of this kind. An early diagnosis may be best with pitfalls not alone for the ignorant and unwary. On such occasions to my mind which I encountered when a resident in a large London hospital.

One night in ancient Jew, grave of men and pitiable of aspect presented himself before me with the statement that his bowels had not acted—a not very unusual complaint amongst his race and in that neighbourhood. A few tactful questions elicited the information that it was his custom and had been for a very long term of years previously, to defecate once a week, and that on Tuesday evening. The reason for his visit to the hospital was that on this particular Tuesday evening, in spite of a strict observance of the proper ceremonial, he had tried and failed. An examination did not reveal any suspicious signs either in the abdomen or in the patient's general condition. Accordingly a select assortment of the finest aperients available—and in spite of the need for economy the hospital was very generous in this respect—was administered on the spot, and the patient, fortified with these and much sound advice was sent home. Some hours later he returned, this time on a stretcher, and with a belly blown up like a balloon. He was operated upon forthwith, a volvulus of the sigmoid colon was found, and in due course he was gathered to his fathers.

There is a moral to this story. What the practitioner requires and eagerly looks for is sound guidance and instruction, not vituperation—I am, etc.,

C. J. CORDON TAYLOR, M.D. Oxon

Brighton, Dec. 11th

BLOOD PRESSURE IN THE SCHOOL CHILD

SIR—In his most interesting address to the Section of Medicine at the Bath meeting of the British Medical Association Lord Dawson gave his support to the view that the beginnings of hypertension were often to be found in youth, and incidentally suggested that school medical officers might do useful work in directing their attention to blood pressure in the school child. In 1922-23 I had occasion to measure the pressures of over 1,000 boys in London schools, the results of which research have been published,¹ and those boys who then presented suspiciously high systolic pressures without any obvious heart lesion have recently been followed up. Of the boys in the category who have now left school Lord Dawson referred to 3 whom he has had carefully re-examined, of whom 2 have now developed a definite cardiac enlargement. Some 550 of the total boys are still at school of the age 11, or about 2 per cent. give readings in excess of what I have tabulated as the 'suspicious' limit for their age, and having recently followed up these cases also I think it may be of value to give briefly the results of this inquiry. Apart from their unduly high blood pressures these 11 boys were apparently in normal health when I saw them two to three years ago, and no intimation was given either to the headmaster or the school medical officer with regard to the pressure readings obtained, so that their subsequent dealings with the boys were not biased in any way. I find that their recent progress and present condition are briefly as follows.

No. 1 now aged 13 has been sent to an open air school on account of an ailing and general ill health.

¹ *Blood Pressure in Early Life*. D. J. C. Taylor. Cambridge University Press, 1924.

No 2, now aged 10, has been attending the school clinic for six months for suspected phthisis, and is very delicate and anemic, pressure still very high

No 3, now aged 10, has been recommended for an open-air class owing to ill health, but his parents would not agree, his systolic pressure is now extremely high, being 41 mm above the average for his age

No 4, now aged 11, has been sent to an open-air class owing to general debility, pressure has fallen to 9 mm above the average for his age

No 5, now aged 13, has also been sent to an open-air class for the same reason, pressure has fallen to only 4 mm above his age average

No 6, now aged 14, has remained fit, pressure down to about 7 mm above average

No 7, now aged 14, has remained fit, pressure still high, but now below the suspicious level

No 8, now aged 14, has suffered from quinsy, pressure is still close to the suspicious level

No 9, now aged 13, has gone from specialist to specialist owing to some obscure endocrine disturbance with obesity, pressure remains very high

No 10, now aged 14, has remained healthy apart from tonsillitis, pressure has now fallen almost to average

No 11, now aged 14, has remained healthy, pressure is still high, but now below the suspicious level

The interesting points indicated here are (1) that more than 50 per cent of these boys whom I found two to three years ago to have high systolic pressures but no other symptoms have subsequently fallen into ill health, and (2) that in those ruling boys who have been treated on open-air lines the pressure has fallen, whereas in the others it has continued to increase. For a conclusive proof of the significance of (1), the boys who presented normal pressures should, of course have been examined also, but it is scarcely possible that their medical history could have been of this order. Though this evidence is somewhat slender, it can only be substantiated by further work of the same kind, and I believe it to be sufficient to justify urging the inclusion of blood pressure estimation in the routine school medical examination of children from 10 years upwards. In addition to enabling the beginnings of hyperpnea to be thoroughly investigated (and the school medical officers alone are in a position to do this), and assisting in the detection of cardiac lesions liable to be otherwise missed, such a routine examination would, I believe, provide in an appreciable percentage of children the first warning of an impending breakdown. I suspect, moreover that we shall find that the nervous and toxic factors responsible for this state of affairs may often be successfully combated at this early stage by prescribing open-air treatment in these cases, either in the form of more outdoor exercise, or, where possible, in an open-air class—i.e., etc.

PENNY STOCKS

Department of Applied Statistics
University College London

"NEO CARDIOLOGY"

Sir,—Is it not time that the term "neo cardiology" was dropped? It seems to be used to suggest that the investigation of the heart by means of mechanical instruments is the essence of our knowledge of heart disease, and not, as it really is, a mere fraction. I have possessed a polygraph since 1906 and an electro-cardiograph since 1914, and is my first paper on cardiac subjects was published last century I may perhaps be allowed a short space in your columns.

In the early days our knowledge of cardiac disease was derived from examination by the hand and the eye. With the advent of the stethoscope came recognition of the different forms of valvular defect. With the advent of improved pathological technique came recognition of the various kinds of myocardial disease. With the advent of the sphygmomanometer came recognition of variations in the arterial blood pressure. With the advent of the polygraph and the electro-cardiograph came recognition of the different forms of arrhythmia. At present we are beginning to learn something of the changes which may take place in the intrinsic mechanism of the ventricular muscle.

The facts gained by these methods have then value chiefly because they convey a definite meaning to medical men.

There is nothing special in cardiac disease to separate it from disease in other organs. If anyone wishes to learn the response of the heart to infections he will learn it best in the fever hospitals. If he wishes to learn its response to strain and stress he will learn it best in the naval, military, and air services, or in a mining practice, he will not learn it in hospitals for diseases of the heart. But if we wish to learn the utmost about cardiac hearts we must utilize all the methods which give us information concerning the cardiovascular system. The ophthalmoscope is sometimes more important than the stethoscope.

The finger and the eye recognized aneurysms. The ear recognized mitral stenosis. The sphygmomanometer told us when the arteries and the kidneys were damaged. The electro-cardiograph has taught us to recognize bundle branch block. By these methods our present treatment of auricular fibrillation has been evolved. It is perfectly true that Withering was probably cognizant of the same facts, but the absence of instrumental evidence of the nature of the irregularity prevented the acceptance by other members of our profession of the truth of his propositions.

If we do not take a culture in a doubtful case of diphtheria, and so permit a patient to die from his unrecognized toxæmia, we are justly blamed if we do not recognize that a patient with aortic incompetence is suffering from unmeted syphilis we are equally to blame, and if we confound a putrid heart block with auricular fibrillation, and so institute an erroneous line of treatment, we again deserve reproach.

So it seems to me that if we try to pose as men with special knowledge of heart disease we must use all the available means to learn, as precisely as is possible the exact nature of the disturbance which affects our patients' hearts, and we must not confine ourselves, in our practice, to heart disease alone, for it is from our knowledge of the reactions of the heart to general infections, and to local infections in origin other than the heart, that we will become best fitted to afford help to those patients who do us the honour to ask our aid in connection with some definite cardiac lesion.

And I would ask your permission to sign myself

November 28th A GENERAL PRACTITIONER

Sir,—May I be allowed a little of your valuable space to reply to Dr. Donald Hill's letter on this subject in the *BRITISH MEDICAL JOURNAL* of December 12th (p. 1152)? He writes in such a manner that most readers who had not read my letter would think that I advocated a diagnosis of cardiac disease entirely by auscultation, percussion, etc. What I said was that "one must not only take advantage of the information obtainable from the newest and best scientific methods of investigation, such as the polygraph and the sphygmomanometer, but one must also make a careful study of the character of the cardiac sounds, the area of the cardiac dullness and all other physical signs in any way connected with the heart and vessels." Surely his letter bears out my statement that a certain school of cardiologists actually discover investigation of the cardiac condition by such methods as auscultation and percussion.—I am, etc.,

LESLIE THORPE THORNTON

London W 1, Dec. 11th

Sir,—The correspondence on the subject of cardiology is certainly entertaining, and in one way very informing—namely, with regard to a large amount of ignorance which seems to prevail on the subject, for both parties can hardly be right.

Dr. Hill tells us in the most authoritative manner that "the owner of a degenerated myocardium may yet possess normal heart sounds," and as it is still taught at all the medical schools that the first heart sound is produced by the contraction of the myocardium, it seems very extraordinary that the contraction of an abnormal myocardium can produce a normal heart sound.

I heartily agree with the most emphatically expressed statement of Dr Hall, that it is quite impossible to learn anything by clinical examination of the condition of the myocardium—if he still subscribes to such a theory of heart-sound production—I am, etc.,

Swansea, Dec 13th

G. ANTOUR STEPHENS

PUERPERAL SEPSIS

SIR,—We are told by those who specialise in obstetrics that statistics prove that so far as puerperal sepsis is concerned the death rate shows little diminution in the last twenty years. With all humility I beg to challenge this. We all know that statistics are not always reliable and have led us astray on many occasions, if the other facts in the case are not carefully considered.

As a general practitioner of over twenty years' experience I must say that sepsis during the puerperium does not appear to me to be anything like so prevalent since the advent of the trained midwife, with her knowledge of the value of asepsis and general cleanliness.

Is it not a fact that twenty years ago many cases were not looked upon as septic, nor notified as such, which to-day would call forth a good deal of attention and be carefully notified?

I am fully convinced that puerperal sepsis has shown a great diminution in this area during the last twenty years, but, as diagnosis and notification have become keener, the diminution is more real than statistics would indicate. It would interest me to hear the opinion of other general practitioners on this subject, and whether they agree with my view, that in spite of statistics there has been a great diminution in puerperal sepsis during the last fifteen or twenty years, due largely to the clean and aseptic methods of the present-day trained midwife as against the often unclean and insanitary methods of the old-fashioned monthly nurse.

In my own experience I do not find that if one has the assistance of a properly trained midwife that bruising or perineal tears—providing, of course, any tear is attended to at the time—will cause any trouble or risk of temper time afterwards—I am, etc.,

Bridgwater Dec 12th

RICHARD COATES

NEOSALVARSAN IN THE TREATMENT OF PUERPERAL SEPTICÆMIA

SIR,—In your issue of December 12th (pp 1125-26) I am reported to have stated that "Neosalvarsan was the most efficient drug to use" in puerperal septicaemia. As I was particularly careful to avoid saying this I shall be glad if you will correct it, lest it should give rise to expectations which may not be justified. What I actually said was that arsenical drugs of the neosalvarsan type were more likely, in my opinion, to be effective in the treatment of puerperal septicaemia than any other drug at present known to me. This opinion was explained, rests upon the observation that neosalvarsan, after injection into man in the usual antisyphilitic doses, confers upon the blood fluids a considerable power to kill the hæmolytic streptococcus, and that this killing power lasts for many hours after the injection. These observations which will be submitted for publication in full in the near future, seem to me to give legitimate ground for hoping that something may be achieved in the treatment of these septicaemias by the agency of this drug, but they by no means warrant the assumption that it is bound to be effective. Other considerations, clearly, have to be taken into account—for example the slowness of the bactericidal action combined with the rapid excretion of the drug, the possible development of "fastness" of the streptococcus under the influence of the drug, the damage done by the drug to leucocytes or other essential tissues of the patient. Any of these—or other eventualities as yet not clearly seen—may rob us of success.

To enable us to judge what can be done by means of this drug in the treatment of septicaemia it remains for us now to observe a number of cases supplementing the impressions of our unaided senses by records of changes in the number of cocci surviving in the patient's blood, the functional activity of her leucocytes, the killing power of her

serum, etc. Such observations are in progress and will be reported upon. If the conclusion is reached that neosalvarsan is not an effective remedy in septicaemia I, for one, shall not be very surprised, for it cannot be forgotten that the chances seem to be always against any attempt to achieve a big bactericidal coup by the introduction of a chemical agent into such an extraordinarily complex chemical system as the human body.

Meanwhile we may take a little comfort in the reflection that from a much more slender basis of *in vitro* and *in vivo* observations on the effect of arsenous acid upon trypanosomes (Laverin and Mesnil, 1902) there has come, in the course of twenty years, a considerable measure of success in the control of human trypanosomiasis and also, indirectly, Ehrlich's great contribution to the treatment of syphilis.

One more mistake I should like to point out. I am credited with the suggestion that the hæmolytic streptococci of puerperal fever are transformed non-hæmolytic cocci derived from the vagina. What I said was that I knew of no evidence pointing in that direction—I am, etc.,

London W 2 Dec 19th

LEONARD COLEBROOK

AN UNUSUAL ANAESTHETIC FATALITY

SIR,—With regard to the recent anaesthetic fatality (British Medical Journal, October 17th p 713) in which the cause of an explosion of ether vapour and oxygen still remains a mystery, I should like to add one more suggestion before the subject is finally closed.

Owing to the courtesy of my dentist I was able to carry out an experiment with his unactivated lamp and hot air syringe which suggested a somewhat simple explanation of this explosion of anaesthetics. I found that by brushing the burning wick of the lamp with the end of the hot air syringe it was possible to remove a minute burning portion of the wick and transfer it to some considerable distance from the lamp. I also found that by thrusting the end of the syringe into the saturated wick it was possible to remove a drop of burning spirit on the end of the syringe.

I suggest that the explosion of the anaesthetic in question may have been brought about in either of these ways—I am, etc.,

J. N. JONES, M.R.C.S., L.R.C.P.

London S.W.1 Nov 27th

BLOCK GRANTS FOR HOSPITAL SERVICES

SIR,—In the JOURNAL of December 19th you refer to the speech of the Minister of Health at Birmingham on December 12th in which he advocated block grants from the State for voluntary hospitals on the same lines as now proposed for local education authorities—an ominous comparison. You conclude by expressing a hope that this scheme may be initiated as another measure of constructive statesmanship.

The conditions to be attached to this proposal include, as you say, in usual controlling body for all hospitals situated within the area a say in all decisions by the committee of management of a voluntary hospital as regards extensions, new sites and character of building, a requirement to maintain a certain minimum standard of efficiency, a grant to be received by the hospital as a settlement for this State control.

The definition of a "voluntary" hospital has been gradually watered down until it is now taken to mean "the independent and voluntary management." Can anyone conceive the kind of management of a "voluntary" hospital under these conditions—and others gradually imposed on them—becoming in any way dissimilar from a local Board of Management—that is a body of meddling mandarins?

Those who have consistently advocated that all voluntary hospitals as soon as may be should be taken over by the State will welcome the BRITISH MEDICAL JOURNAL's advocacy of this latest proposal.

The support of a voluntary hospital in the past has been due entirely to local interest developed on behalf of that hospital and those using it—namely, the local necessitous poor. But if the rapidly diminishing number of voluntary supporters of hospitals—at present necessarily

worried by hazards, tears, dances, pound div, and so on—
to be compelled by means of taxation to provide funds
for voluntary hospitals generally, which are to be used by
persons whether resident in the district or not who by
means of fees or contributory schemes or otherwise, are
quite able to pay in full for all their requirements; the
result will be probably to give a final blow to charitable
hospital bequests and subscriptions, and to hasten the day
when these institutions will have to be taken over by
the State if they do not wish to become bankrupt.

The Minister of Health would have done a greater service
to voluntary hospitals had he advocated equitable con-
tributory schemes of self-help for both industrial and
middle classes on the principles enunciated in the hospital
policy of the British Medical Association.

The statement by the Minister of Health that "the
growth of population under an increase imperative"
contains a fallacy—a fallacy often used as an incentive
for further cuts on the rich. If preventive measures
(proper housing, town planning, pure milk supply, smoke
abatement, public house reform, etc.) were promptly taken,
it would not be unreasonable to hope that the percentage
bed accommodation now prevalent would be greatly
reduced—I am, etc.,

Bore Dec 21

1 ROWLAND FOTHERGILL

TRIPLANING AND TIEPLINING

Sir,—In the recent discussion concerning the operation
so frequently performed on prehistoric skulls, and which is
still practised by Neolithic people, the operation itself has
been described as tieplaning; this appears to me to be a
misnomer. The tiepline was a special instrument, in-
vented by John Woodall, a distinguished surgeon who died in
1643, and who had been surgeon to St Bartholomew's
Hospital and master of the Barber-Surgeons' Company.
In his *Treatise* published in 1628 he describes his instru-
ment as an improvement on the tieplan and he calls it
a "tiepline" (subsequently "tiepline") although for
some time after Woodall's invention the operation was
called tieplaning (vide *Pepys's Diary* 1666-1667), as
the tiepline came into more general use the word
tieplaning was used to describe it.

Before the invention of the tiepline the operation was
called tieplaning, and the instrument with which it was
performed was called a tieplan or tiepline. The word
tieplan is of very ancient origin (*Ci-typermoi*, a bone),
and in the Middle Ages was applied to any boring
instrument used for the purpose.

The term "tieplaning" is certainly not obsolete, for
it is curious that lay writers generally refer to the modern
operation as tieplaning, while expert writers so frequently
describe the prehistoric operation as tieplaning.

If a generic term is required I think it should be
tieplaning, which might logically include both the
modern and the prehistoric operation, and that it should
always be applied to the latter—I am, etc.,

London N.W. 3 Dec 8th

H. A. CLOWES

THE MEANING OF "CLAUDICATION"

Sir,—I hope I may not be considered unduly pedantic if
I enter a mild protest against the use (or rather misuse)
of the word "claudication" by Professor Stirling. In the
BRITISH MEDICAL JOURNAL of December 19th he is reported
to have used the expression "claudication in the vessels of
the vasomotor centre" (p. 1164), and again, "claudication
of the renal vessels" (p. 1165).

Now claudication, if it means anything means "lame-
ness" or "limping" and is derived from the Latin
claudicare, "to limp," not from *claudere*, "to shut." The
term "intermittent claudication" was first used by Bonley
in 1831 to describe intermittent loss of power in the limbs of
the horse, and Charcot, in 1858, applied the expression to
a similar condition in the human subject. The fact that
claudication is recognized as being caused by occlusion of
the vessels is no reason for regarding the words as
synonymous—I am, etc.,

1 in lan S.W. 1 Dec 20th

MAURICE E. SHAW

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

PARLIAMENT was prorogued this week till February 2nd, 1926.
The concluding debates in the House of Commons concerned
the Moral and of the League of Nations, and the Lords
amendments to the Riting and Vilitation Bill, Criminal
Justice Bill, and other measures.

Colonial Medical Services

Dr. Shiels asked the Colonial Secretary, on December 17th,
how much below establishment strength were the medical and
sanitary services of Nigeria, Gold Coast, Sierra Leone, Kenya,
and Tanganyika respectively, what steps were being taken to
fill the vacancies, and who was responsible for recruiting and
selecting the personnel.

Mr. Omsby Gore (Under Secretary for the Colonies) stated
that in the West African Medical Staff at present there were
nineteen vacancies in Nigeria, thirteen in the Gold Coast and
nine in Sierra Leone. Nine selected candidates were receiving
instruction in this country in tropical medicine and eight more
would commence instruction in the new year. There were no
vacancies in Kenya and only one in Tanganyika. The vacancies
and terms of service were advertised regularly in the medical
press and the attention of the universities and teaching schools
was drawn to these services periodically, while advantage was
taken of the presence of senior medical officers on leave in this
country to visit the medical schools and interest the students
in the colonial services. Selection of candidates was made by
the Secretary of State with the assistance of a small sub-
committee containing two medical men of distinction who
advised as to the suitability of candidates interviewed by them.

On December 21st Sir Sydney Henu asked Mr. Amery what
steps were being taken to strengthen the medical services
throughout East Africa, and what was the attitude towards
recruitment in this country for such services adopted by medical
schools and societies. Mr. Amery told Sir Sydney that it was
not possible to give definite figures pending consideration of
the estimates of the various Dependencies for the coming
financial year, but he anticipated that there would be a con-
siderable further extension of medical work in Eastern Africa
in the near future, especially in Kenya, Uganda, and the
Tanganyika Territory. It was hoped to increase the personnel
of the East African Medical Service by some twenty or thirty
officers during the next year. The attitude towards recruit-
ment adopted by the medical schools and societies had been
very helpful in the past and he hoped to secure their co-opera-
tion in filling up the many new appointments which were about
to be created.

Mr. Amery, on December 21st stated that he was aware of
the high rate of mortality in Tanganyika Territory. Active
measures were being taken to improve medical and sanitary
conditions. The number of medical officers had been increased
by twelve this year and numerous native assistants, including
sanitary inspectors were being trained.

Public Vaccination

Answering Mr. Groves on December 16th Mr. Neville Chamberlain
(Minister of Health) said he was not prepared to consider
legislation to amend the Vaccination Acts in such a way that
persons who themselves desired or desired their children to be
vaccinated should apply for such publicly assisted service not
as at present that those who desired exemption should apply.
Awards were still payable to public vaccinators in accordance
with the provisions of Section 5 of the Vaccination Act 1867
on reports made to the Ministry of Health with regard to the
number and quality of the vaccinations performed and it was
provided in the section that any payments so awarded should
be in addition to the payments received by public vaccinators
from the guardians. Asked the average amounts of the special
awards to public vaccinators under Section 5 of the Vaccination
Act 1867 Mr. Chamberlain gave the following as the approximate
average amounts per child vaccinated during each of the past
12 years ended on September 30th: 1919 4.4d, 1920 12.6d,
1921 11.4d, 1922 10.9d, 1923 8.7d, 1924 8.6d. Separate figures
were not available showing the amounts spent on the service
of public vaccinators nor the proportion of vaccinated to unvac-
cinated children under 10 years of age during the last decade. Mr.
Groves suggested in his question that the ratio of exemptions from
vaccination was progressively increasing and the ratio of small pox
deaths correspondingly decreasing. The Minister did not deal
with this.

In a further series of answers to Mr. Groves on December 17th,
the Minister of Health said the expenditure from local rates
on vaccination during the year ended March 31st, 1921 was
£175,000 whereas for the previous year the amount was £124,000.
The increase of expenditure was mainly due to the operation of the
Vaccination Order 1919 which came into force on December 1st

1919 and prescribed an increased minimum fee of 5s payable to public vaccinators for each domiciliary inspection. The minimum fees paid to public vaccinators were (a) One shilling in respect of each child whose name was included in the lists forwarded to the public vaccinator by the vaccination officer (b) Five shillings in respect of each successful primary vaccination performed at the home of the child or person vaccinated and duly recorded in the vaccination register (c) Two shillings and sixpence in respect of every successful vaccination or revaccination performed at the public vaccinator's surgery or elsewhere than at the home of the person vaccinated, and duly recorded in the vaccination register. Very few public vaccinators were paid by salary and there was no standard salary. The amount paid varied according to the circumstances of the district and the work to be done. He was not aware that there were any vaccination officers other than public ones. Of the 122 persons who died of small pox during the ten years ending with 1921, 43 had been vaccinated, 59 had not been vaccinated prior to exposure to infection and in 20 instances the vaccinal condition was doubtful. The 43 vaccinated cases included no person under the age of 12, four persons between the ages of 12 and 25, and four between the ages of 25 and 35, the remainder being in each case over the age of 35. The records showed that only four of the vaccinated cases had been revaccinated, the ages of these persons being 25, 35, 58 and 61 respectively. Of the 59 unvaccinated persons 26 were under the age of 12, 18 between the ages of 12 and 25, 9 between the ages of 25 and 35 and 6 over the age of 35. The percentage of births vaccinated during the period in question was 43.5. In the judgement of Mr Chamberlain's medical advisers, primary vaccination was of great and proved utility. He did not contemplate any measures for an obligation to revaccinate quinquennially. The words about the tragedy of a widespread epidemic of small pox being realized had been omitted at the end of the first paragraph in the 1924 edition of the Ministry of Health pamphlet No. 8 on the subject of small pox and vaccination. These words were omitted in view of the general mildness of the type of small pox in this country at the time the pamphlet was revised. He was aware that the number of deaths in this country attributed to chicken pox during the past twenty years largely exceeded the number of deaths attributed to small pox during that period. This fact did not appear to afford any sufficient reason for reconsidering the present vaccination laws. He had no information showing that the commissioners of national health insurance in Germany had accepted the principle of Government compensation for injuries or ill effects following vaccination.

On December 21st Mr Neville Chamberlain informed Mr Bionfield that statistics relating to small pox cases and deaths in Switzerland were available. The following figures relating to deaths had been obtained from the *Statistisches Jahrbuch der Schweiz* for the years 1915 to 1922, and from the *Bulletin du Service Fédéral de l'Hygiène Publique* for the years 1923 and 1924. The figures relating to cases had been abstracted from the several *Bulletins du Service Fédéral de l'Hygiène Publique*.

Year	Switzerland		Small pox Notifications and Deaths	
	Cases	Deaths	Year	Deaths
1915	4	2	1920	7
1916	—	—	1921	596
1917	—	—	1922	153
1918	2	—	1923	2145
1919	3	—	1924	1274

Ministry of Pensions

Answering Mr Pielou and Mr T. Williams Major Tryon said that any information supplied by a panel doctor concerning one of his pensioner patients was always carefully considered in its bearing on any certificate to be given by an officer of the Pensions Ministry. It was not the case that certificates of panel doctors were ignored, but in Ministry of Pensions work the verdict of the Ministry's medical officer must be final. In reply to Mr Montagu Major Tryon said there were 57 deputy commissioners of medical services of whom five were stationed in the metropolitan area. They were distributed throughout the country and if necessary their distribution was varied in accordance with the needs of the ex-service population. In densely populated districts the deputy commissioners were provided with assistants who numbered thirty in all. Each of the deputy commissioners of medical services was responsible for more than one area, with the exception of the deputy commissioners stationed at Aberdeen, Gloucester, Leicester, Belfast and Bristol. Major Tryon informed Mr Gibbins that of the 26,000 pensioners in receipt of treatment with allowances about 6,600 were inmates of mental institutions. Apart from mental cases many required constant medical attention and strict nursing while others in accordance with medical advice were receiving prolonged institutional treatment and care. Where the medical advisers of the Ministry considered any case could more suitably be dealt with by discharge from institutional care this was done.

Major Tryon (Minister of Pensions) said in answer to Mr Ridford that about 59,000 men were in receipt of pension in respect of a disablement arising from one or other form of chest affection. Rather more than half this number were cases of pulmonary tuberculosis for whom treatment was by statute the concern of the local health authority acting under the Ministry of Health. In sanatorium provision for these cases the climatic factor was always considered. Cases of chest affection other than tuberculosis were where necessary provided for in Ministry institutions situated in various parts of the country and in the event of a change of climate being essential in any individual case transfer from one hospital to another could be effected. The results of treatment of these cases in Ministry institutions did not indicate any need for the setting up of further institutions in

other localities. Approximately £2,500,000 was expended by the Ministry of Pensions on treatment of tuberculous pensioners in sanatoriums during the five years ended March last. In the eleven months ended November 30th last 73,770 cases received treatment with allowances.

Major G. C. Tryon states that the treatment for epilepsy at the Ministry of Pensions Hospital, Maghull, included all the known curative and ameliorative methods. He denied that epileptics from Maghull and neurothesians from other institutions had been informed that they must travel home in crowded excursion trains. Where the journey involved overnight travelling two extra nights' absence may be allowed.

The Ministry of Pensions cannot provide auto wheels for the invalid chairs of permanently disabled men.

Tuberculosis—In the West Riding education authority's area there are three sanatoriums schools providing education for 172 tuberculous children. In 1924 287 tuberculous children from this area were sent to sanatoriums or certified hospital schools. Sir Kingsley Wood, speaking for the Minister of Health, said that a letter had been received from the Henbury Parish Council objecting to the proposal of the corporation of Bristol to use Blaise Castle as a tuberculosis institution for advanced cases. If the corporation made application for the Minister's approval the objection would be considered. The Ministry, however, was advised that there was no ground for considering that a properly conducted institution for the treatment of tuberculosis was in any way a danger to the health of the community in which it was situated and that no risk was incurred by living in the immediate neighbourhood of such an institution.

Mr Davidson (Secretary to the Admiralty) states that naval cases of tuberculosis are invalided by the Board of Survey at naval hospitals. In a very few instances, however, where the patient had already entered a sanatorium, prior to coming under naval observation it might be necessary to hold a survey with a view to invaliding without causing the patient to be moved. This survey might be carried out by the Admiralty surgeon and agent of the district in conjunction with the sanatorium authorities.

Death Rates in England and Wales—Mr Chamberlain has supplied the following table of death rates in England and Wales among men and women separately and among children and young persons of both sexes.

Age Groups	Death Rates per 1,000 Living of Each Sex					
	1922		1923		1924	
	M	F	M	F	M	F
21 and over	16.7	14.7	15.5	13.4	15.2	14.2
Under 5	30.2	24.5	24.3	19.6	22.1	20.2
10	16.5	13.5	14.0	11.3	14.9	12.1
15	11.4	9.4	9.7	8.0	10.3	8.4
20	9.2	7.7	7.9	5.5	8.3	6.9
21	9.0	7.5	7.7	6.4	8.1	6.7

Estimates of population in European countries are not available for the purpose of calculating mortality rates.

Nurse—Mr Duncan asked the Minister of Health if the three nurses who contracted a case of that disease in the Brentford Sanatorium in 1924 as mentioned on page 55 of the annual report of the chief medical officer of the Ministry of Health for the year 1924 had been previously immunized against that disease in any way and whether any of the cases proved fatal. Mr Chamberlain said the answer to both parts of the question was in the negative. One of the nurses seven months before attending the case referred to had received a dose of diphtheria antitoxin but this dose would not confer immunity for more than one month after it was administered.

Proposals for Amalgamation of Medical Services—The Prime Minister informed Sir F. Sykes on December 21st that the question of the amalgamation of the medical branches of the three fighting services was carefully considered by the Government some two or three years ago when it was decided that it was undesirable to set up a committee to consider the possibility of reorganization. A Standing Joint Committee on which the Ministry of Pensions Medical Department was also represented had been set up to discuss matters affecting the medical services of the four departments. The question of the pay of officers of the medical branches of the three fighting services and all matters ancillary thereto was at present being considered by a committee set up for the purpose.

Bethlem Hospital Bill—The House of Commons has given its promoters of the Bethlem Hospital Bill special facilities for reintroducing it next session and ordered that if they gave notice of reintroduction before the end of the present session the proceedings on it should be *pro forma* only in regard to every stage through which it had passed in the present session. The House of Lords through which the bill has already passed concurs in this arrangement. In proposing it to the House of Commons the Chairman of Committees said the Bethlem Hospital Bill had been objected to from time to time and he had adjourned it in the hope that some settlement might be arrived at. No settlement had been arrived at but he had some hope that if it were adjourned till next session, a settlement might be reached.

Insurance Dental Benefit—On December 21st Mr Neville Chamberlain told Mr. Waite that the specifications issued to approved societies by the Public Dental Service Association which represented the results of negotiations between representatives of the dental profession and of certain approved societies, did not require and had not received any recognition from his department. He had no power under the existing Acts to make regulations ensuring dental treatment and dentures of a standard price and quality as in the case of medical benefit. He was advised that having regard to the terms in which dental treatment was defined in the Acts, it was not a benefit in the nature of medical benefit.

Opium and Cocaine in India—On December 21st Lord Winterton (Under Secretary for India) informed Mr. Thurtle that under the Protocol to the Geneva Convention a commission would be appointed by the Council of the League of Nations to decide at the end of five years whether control in the signatory countries was sufficient to prevent completely the smuggling of opium from constituting a serious obstacle to the effective suppression of the use of prepared opium in those territories where such use was temporarily authorized. The Protocol had been accepted by the Government of India. On December 21st Lord Winterton said that entire reports of prosecutions in Bombay for the illicit sale of cocaine were not officially received except of the arising from Customs seizures at the ports which were required for communication to the Secretariat of the League of Nations. He had seen reports in the press of recent cases in which convictions were obtained.

Sealed Milk Cans—On December 21st Sir Kingsley Wood told Mr. H. Williams that the Minister of Health had received a number of suggestions that a Milk and Dairies Order should be issued for the sealing of milk cans. The Minister was in the matter.

Housing—During a debate on the Government's housing policy which the Labour party initiated on December 18th Mr. Neville Chamberlain said that over 159,000 houses had been built this year and the production was still increasing. An enormous amount of repairs and renovations was also being done. In the single year 1923 the number of houses put into habitable condition was 512,087. He indicated that local authorities might be given power to acquire houses compulsorily and to make it habitable until they were ready to rebuild. The possibility of improving existing houses in rural areas should also be considered. Since 1919 the number of houses built in rural districts was 161,460. Mr. Baldwin announced that the special subsidy of £40 offered for houses built of alternative materials in Scotland was withdrawn. Instead the Government had decided to undertake the construction of two thousand houses in Scotland by alternative methods. Mr. Frennville said Parliament had sufficient powers at present to solve the housing problem. People must be housed near their work. Artificial roads could not be opened to keep pace with the increase in motor and the congestion on the railway lines was increasing. To get people close to their work tenements must be built. The experience of the London County Council was that some people preferred them. In London it would be advisable to rehouse on the Tabard Street area by buildings five stories high surrounding an open space of five acres. Workers in many trades did not require to remain in the towns but it was a melancholy spectacle to see factories being moved out of London without provision being made for the workers. It was necessary to have a special train daily to bring the workers from London to one model factory at Greenford. The aim of the House of Commons should be the erection of new towns on properly selected sites. An example was afforded by Welwyn. The Trade Facilities Act was available for factories moving out into the country. There should be a revolt against the development of the suburb.

Recent Areas and Infant Mortality—In a debate on recent areas on December 16th Mr. Lansbury said they had heard that in one area 50 babies more per 1,000 were dying. He returned to the subject in a question to the Prime Minister on the following day, suggesting a correlation between the rate of infant mortality and the local rate of outdoor relief. Mr. Lansbury renewed his suggestions on December 21st in a question to Sir Kingsley Wood who said it was clearly necessary to secure a reasonable measure of economy in areas in which special financial difficulty had arisen.

Notes in Brief

The Government has not yet decided whether a Child Adoption Bill shall be brought in next session.

The Ministry of Health is unaware of any instance where an excess of arsenic has been found on Australian apples.

The question of economies in the Ministry of Health is under consideration by the Cabinet Economy Committee.

On October 31st 1925 216,969 persons were receiving institutional relief in England and Wales and 1,053,210 domiciliary relief. On the corresponding date in 1924 the numbers were 211,802 and 834,918.

The Board of Trade cannot distinguish between the imports of boracized and unboracized bacon and hams.

On December 15th Lieut. Commander Kenworthy presented a petition from 2,567 residents in Folkestone praying that the practice of vivisection might be discontinued.

The Minister of Health has raised no objection to a proposal by the Thetford Rural District Council to appoint a fully qualified sanitary inspector at a salary of £200 a year.

Universities and Colleges

UNIVERSITY OF OXFORD

At a congregation held on December 17th the following medical degrees were conferred:

D.M.—M. H. Mackeith
D.M.—C. W. Simpson L. J. Barford F. J. Bach A. Chilton S. Howard
V. H. Brink

The following candidates have been approved at the examinations indicated:

First B.M.—R. G. ...
L. J. Brink
Gardner
D. O. W.
Medic ...
S. B. Davis J. L. Glover R. E. Hayward I. R. Holdday H. E. Mansell
A. J. M. Melly (Pathology) M. D. Bower V. H. Brink C. L. Copp
W. N. Dickenson O. Hooper W. H. Hudson R. Lingworth A. J.
Leslie Spinks R. G. MacGregor R. Oddie D. I. Ree Grace Batten
I. Patullo (Forensic Medicine and
Surgery) M. D. Bower V. H. Brink
J. H. Chitty I. A. Fyfe E. L.
Hamilton R. A. Haythorpe
Howard T. C. Hunt R. G. Mathews F. J. Sale S. Segal C. W.
Simpson A. G. Wilson E. M. Wright Margaret N. Jackson
Constance I. Patullo

UNIVERSITY OF CAMBRIDGE

Chair of Physiology

Mr. JOSEPH BARCROFT M.A. F.R.S. Fellow of King's College has been elected to the chair of physiology in succession to the late Professor Langley. Professor Barcroft was born in 1872 and went to school at York and the Leys Cambridge. After obtaining the B.Sc. Lond. degree he went up to King's with an exhibition in 1893 and gained first-class honours in Parts I and II of the Natural Sciences Tripos, graduating B.A. in 1896. He won a Walsingham Medal in 1899 and the Gedge Prize for original research in physiology in the following year. He was elected F.R.S. in 1910 and received a Royal Medal in 1922. As Oliver Sharpey Lecturer before the Royal College of Physicians of London in 1915 he took for his subject a comparison between some physiological and pathological conditions. A report of these lectures was published in the BRITISH MEDICAL JOURNAL at the time (1915) pp. 713 and 760. The Baly Medal was awarded to him in 1923. He was president of the physiological section of the British Association in 1920. For many years he was a demonstrator and lecturer in the Physiological Department at Cambridge, and since 1919 has been Reader in Physiology. He is also Fullerian Professor at the Royal Institution. During the war he did valuable experimental work as a member of the Chemical Warfare Committee of the Ministry of Munitions and for these services in the course of which he lost health and life he was made a C.B.E. in 1918. Professor Barcroft's many communications to the Royal Society and papers in the *Journal of Physiology* and elsewhere have included reports on the observations made during his expedition to the Andes in 1922 upon the effect of high altitudes on the physiological processes of the human body.

At a congregation held on December 19th the following medical degrees were conferred:

M.B. B. Chm.—A. F. D. Darlington G. A. Back J. P. Malpas W. G. S.
Brown H. W. Fiddison
B. Chm.—A. W. F. Wing E. J. F. Torham

UNIVERSITY OF WALFS

WELSH NATIONAL SCHOOL OF MEDICINE

It will be remembered that about a couple of months ago the Council of the University of Wales decided to apply to the Privy Council for a charter incorporating the Welsh National School of Medicine as an independent school of the University on the lines of the draft scheme which has been before the University for some time or more but that before presenting the petition a conference should be held between the councils of the University of Wales and the University College of South Wales and Glamorgan. At the meeting of the council of the College last week it was decided that it should take part in the conference as a General Purposes Committee without committing itself to any action—that is to say, it will report back to an ordinary meeting of the council. The conference is expected to take place in January.

At the same meeting of the council a College diploma in biology was instituted in accordance with the scheme approved by the Senate and on the report of the Board of Medicine the following appointments were approved: Dr. R. D. Passer M.C., D.P.H., lecturer in pathology and Mr. T. G. Hillyard James M.B. B.Ch., assistant in the surgical unit.

UNIVERSITY OF LONDON

PROFESSOR A. V. HILL Sc.D. F.R.S. has on his appointment by the Royal Society to a Pontefract Chair resigned the Jodrell Chair of Physiology tenable at University College, London. He will carry out his research work at University College and the Senate of the University has resolved that he shall continue to hold the title of Professor of Physiology in the University of London in respect of the functions to be discharged by him at that college.

Dr. W. L. Gye has been awarded the William Julius Wickle Fellowship for 1926 in respect of the work which he has carried out during the past five years.

at the Perth Royal Asylum in Scotland, and in the following year he was appointed physician superintendent of the Ashburn Hill Private Mental Hospital in New Zealand. In 1904 he relinquished this post, and became deputy inspector general of mental hospitals. He was promoted to inspector general in 1907, and retained the position until his death. Dr. Hay was also a member of the National Provident Fund Board and the Prisons Board. He was a member of the British Medical Association, and contributed to the *Journal* and also to the *Journal of Mental Science*.

Dr. PETER HAMILTON ROBERTSON, who died at Hātutū, Wellington, New Zealand, on July 10th, at the age of 49, received his medical education at Glasgow, where he graduated M.B., Ch.B. in 1903, and obtained the diploma of F.R.C.P.S. in 1920. After experience in resident appointments at the Glasgow Maternity and Fever Hospitals, and at the Sussex General Hospital, he was appointed assistant to the Regius Professor of Surgery at Glasgow, Sir William MacEwen, and held that post for five and a half years before the war. His other appointments included those of extra dispensary surgeon to the Victoria Infirmary and to the Royal Infirmary, Glasgow. After the outbreak of war he obtained a temporary commission in the R.A.M.C., and acted during the later stages as surgeon specialist. He then started practice in Hātutū, and was elected to the surgical staff of the Wellington Hospital. He was a member of the Wellington Division of the British Medical Association. Dr. Robertson leaves a widow, his brother, Dr. Alexander Robertson, is in practice in Wellington.

At the memorial service for the late Sir Richard Douglas Powell, Bt., M.D., held at All Saints' Church, Margaret Street, W., on December 18th, Lord Dawson represented the King, and Mr. Bishop Harman, Treasurer of the British Medical Association, represented the Association.

Medical News.

The autumn dinner of the Irish Medical Schools and Graduates Association was held at Pugin's Restaurant, London, on December 18th under the chairmanship of the President Surgeon Vice Admiral Joseph Chamberlains C.B., C.M.G., Director General of the Medical Department of the Navy. In reply to the toast of 'The Guests' which Dr. J. Gubbins FitzGerald proposed, the Right Hon. Charles A. O'Connor, Judge of the Supreme Court of the Irish Free State, gave some recollections of medical dinners in Dublin. Though the Irish medical profession was passing through a grave crisis he hoped that some compromise would be reached whereby those who had been students in the Irish medical colleges would be able to continue to give to England the advantage of the services of Irish doctors. The chairman, in reply, believed that there would yet come about a united Ireland, whose prosperity, happiness, and good government would be the envy of other countries. From his earliest days in Trinity College, Dublin, he had been a student of history, which was still the study of his leisure moments. It filled him with pride that on every page of the story of the British Empire were the names of distinguished Irishmen—diplomats, soldiers, and pioneers. He hoped that the Irish would never forfeit their heritage in that Empire. He had now served for nearly forty years in the medical department of the British Navy; he had been all over the world, and wherever he had gone he had found the Irish to the fore. Speeches full of Irish wit and reminiscence were made by Dr. William Douglas and others.

A FAREWELL dinner was given on November 14th to Dr. Charles Porter, medical officer of health for Johannesburg since 1901. We announced his retirement from this position on December 5th. The chairman, Sir William St. John Carr, described the nomination of the present municipal council in 1901 by the late Lord Milner and the active work of Dr. Porter in its health administrative work since then. Dr. Porter, in reply, gave an account of the various steps taken during his twenty-four years' period of service, including the enlargement of the municipal boundaries, the acquisition of waterworks, improvements in sanitation and the campaign against plague in 1904.

THE next course for the diploma in psychological medicine at the Bethlem Royal Hospital, S.E.1, will commence on January 4th, 1926. Two courses for the diploma are held annually at this hospital. A course is divided into two parts. Part A deals with lectures and demonstrations on the anatomy, histology, and physiology of the nervous system, and Part B deals with neurology, psychological medicine and mental deficiency. The fee for the whole course is 15 guineas, or for Part A or Part B 10 guineas. In addition to the above, clinical instruction in psychological medicine is given at the Bethlem Royal Hospital every morning (Wednesdays excepted) at 11 o'clock. The fee to post graduates for a period of three months is 5 guineas, but a reduction is made to those taking the D.P.M. course. Further particulars may be had from the Physician Superintendent, Bethlem Royal Hospital, S.E.1.

THE Central Association for Mental Welfare (24, Buel Ingham Palace Road, S.W.1) has arranged a course of eight medical lectures on mental disorders and their early treatment to be given by Drs. Thomas Benton, Edward Mapother, and E. A. Hamill on Pearson at 92, Victoria Street, S.W., on Wednesdays at 5.30 p.m., beginning January 6th, 1926. The lectures are intended especially for social workers interested in mental welfare.

THE annual report of the Gordon Memorial College, Khartoum for 1924 describes the very satisfactory progress of the different departments of the school. Certain boys who have completed the secondary course at the Gordon College are now being trained for the medical profession at the Katherine Memorial School of Medicine and this new denture has met with very considerable success. The report contains in account of the research work at the Wellcome Tropical Research Laboratories. Additional laboratories have been established at the Gezira Research Farm and at Atbara for investigations in soil chemistry as applied to cotton growing and for work in connexion with the ulcers and sterility departments. The routine bacteriological examinations during the year amounted to 7,433—a record figure. In addition to agricultural researches, investigations into the life history of bilharzia have been continued, and active steps have been taken for the eradication of this disease. Other studies include the bacteriological typing of the local pneumococci, Kahn's flocculation test for syphilis and various blood diseases.

THE December number of the *World's Children* contains a description by Dr. Katherine S. Macphail, surgeon superintendent of the Anglo-Serbian Children's Hospital in Belgrade of the work performed by this hospital since its foundation immediately after the armistice. During the last seven years more than 37,000 outpatients and 3,000 inpatients have received treatment. In 1921 and 1922 there were temporary convalescent homes in connexion with the hospital. The Serbian Government contributes nearly one half the cost of upkeep and the present English staff is engaged in training the permanent Serbian staff. In the same issue appears an account of the uterine sunlight treatment for children at the South Highgate Infant Welfare Centre of the St. Pancras Borough Council.

A SUPPLEMENT to this month's issue of *Conquest and Healing*, the organ of the Medical Missionary Association of London, states that at the present moment there are in the mission field 463 medical missionaries holding British degrees or diplomas, and that of this total 181 are women. The Church Missionary Society heads the list with 79, the United Free Church of Scotland comes next with 69, while third and fourth are the Wesleyan Missions with a total of 43, and the London Missionary Society with 33.

THE November number of the *Iyeguchi Tieshi*, which is the organ of the Society of the Medical Practitioners of the Orient, Slavonia, and Medjugorje at Zagreb, is devoted to the commemoration of the thousandth anniversary of the foundation of the Kingdom of Croatia. Special articles in English, French and German are published in addition to others in the national language and include an account of a successful hypospadias facial ectodermosis, the hematological diagnosis of Hodgkin's disease, the treatment of hydatid cysts, sarcoma of the orbit and an illustrated article on the four institutions in the country for the treatment of insured patients.

THE chain of children's diseases at the Nancy Faculty of Medicine has been converted into a chain of therapeutics which will be occupied by Dr. Maurice Perrin.

In memory of the late Professor Bergonié it has been decided to found in Bordeaux a laboratory for electrical and radiological research with possibly the creation of a fund to give grants to research workers and to assist radiologists suffering from the effects of radium and x-rays. The treasurer is Dr. H. de Rothschild, 6 rue Saint-Louis du Ronle Paris.

A short summary of vacant posts notified in the advertisement columns appears in the Supplement at page 224

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Medicine.

1

Glandular Fever

C C GUTHRIE and J F PESSEL (*Am. Journ. Dis. Child.*, April, 1925, p. 492) record an epidemic of glandular fever in a school for boys ranging in age from 13 to 18. The younger boys were chiefly affected, and of a total of 500 boys it was estimated that over 300 cases occurred between the latter part of September and the third week in November, 1922. Onset was usually abrupt after a short prodromal stage of malaise, sore throat, and slight headache, and, in a few cases, unilateral conjunctivitis. The febrile period usually lasted three days, and just before the temperature started to fall the patients became drowsy and often slept for twenty-four hours. Swelling of the pharyngeal lymphatic glands gave the throat a dry and coarsely granular appearance without exudate or membrane, the eyes were usually congested, and in about 9 per cent of the patients there was a dry granular palpebral and bulbar conjunctivitis, usually unilateral. Both the spleen and liver were enlarged and slightly tender on palpation during the febrile stage, at the end of which all the superficial glands, including the epitrochlears, became swollen and tender, the posterior cervical glands being the most markedly affected. During the febrile period a polymorpho-nuclear neutrophil leucocytosis was present, followed by a relative and absolute increase of lymphocytic cells accompanying the lymphadenitis. No specific organisms were recovered from the blood, eye, or throat in any case, and there was no skin rash. No complications occurred and recovery was rapid.

2.

Sudden Onset in Pulmonary Tuberculosis

A DUDAN (*Ann. de méd.*, April, 1925, p. 363) reviews the literature dealing with the character of the onset in pulmonary tuberculosis, and records his observations on 100 cases of chronic pulmonary tuberculosis at the Hôpital Laënnec, Paris, in patients aged from 17 to 50, consisting of 50 men and 50 women in whom tubercle bacilli had been found in the sputum. His conclusions are as follows: (1) An insidious onset is by no means the most frequent mode of commencement in pulmonary tuberculosis, as is generally supposed. It was found in only 34 per cent of the present series (14 men and 20 women). (2) An onset with haemoptysis is infrequent, it was noted in only 6 per cent (4 men and 2 women). (3) An acute onset preceded by slight prodromes occurred in 12 per cent (4 men and 8 women). This mode of onset was regarded as transitional between an insidious and a sudden onset. (4) An acute onset without any prodromes or in which the prodromal period did not exceed forty-eight hours was most frequent, being found in 48 per cent (28 men and 20 women). The frequency of a sudden onset and of the transitional form of onset should make the practitioner regard any broncho-pulmonary affection with suspicion and take all available means for excluding tuberculosis from the diagnosis.

3

The Antirachitic Action of Light.

C E BLOCH and F FABER (*Ugeskrift for Læger*, April 16th, 1925, p. 392) give an account of investigations carried out during the autumn and winter into the action of ultra violet light on fifty infants suffering from rickets or tetany or both these diseases. They were kept on the same diet of milk and carbohydrates as that on which they had developed these diseases, and they were not given cod liver oil or any other drug or food calculated to influence the diseases treated. The experiments with light treatment by a mercury quartz lamp were thus uncomplicated by extraneous factors. The phosphorus and calcium content of the blood was determined from time to time, and it was found that in rickets the phosphorus content, and in tetany the calcium content, of the blood rose to the normal level within a few weeks of the commencement of the light baths. In the case of rickets the phosphorus content of the blood rose to the normal level within four weeks of the commencement of the treatment, and after a total exposure of about one hundred minutes. In two cases of diabetes in children ultra violet light treatment was given, with the result that the concentration of sugar in the blood fell, the fall being equivalent to that following the injection of 3 or 4 insulin units. As the excretion of sugar in the urine was not increased, and there was no evidence to show that the blood sugar had been deposited in the tissues, the authors conclude that the light baths had stimulated the pancreas to turn out more insulin.

They argue that light, ultra violet light in particular, is an activating factor on those functions of the body which are below normal, and that this activating action is accompanied with vitamins. Treatment of rickets with ultra violet light not only raises the phosphorus content of the blood to the normal level, but also keeps it at the normal level after the light baths have been discontinued. It cannot therefore be ascertained that these light baths have provided or liberated a substance such as phosphorus or a vitamin which was previously wanting, for these substances are always being consumed, and must therefore always be replaced. The authors also argue that the antirachitic action of cod liver oil is not due to the vitamin A it contains, but to the same, or a similar, activating factor as that provided by ultra violet light.

4

Antityphoid Inoculation in the Italian Army during the War

G ROVIDA (*Rev. Sud Amer. de Endocrinol.*, March 15th, 1925, p. 137) states that Gini and De Beradinis, as the result of their studies on antityphoid inoculation in the Italian army during the war, have come to the following conclusions: (1) Antityphoid inoculation, whether complete (three injections within a month) or incomplete (two injections), considerably reduces the mortality from typhoid fever. (2) Complete antityphoid vaccination shortens the duration of the disease in patients who recover as compared with those who have not been vaccinated at all, or only incompletely, it prolongs the duration of the disease in fatal cases as compared with patients who have not been vaccinated, and makes the disease shorter than in those who have been incompletely vaccinated. (3) The favourable effect of complete antityphoid vaccination is somewhat greater if it is performed 60 to 120 days before the disease than if it is delayed to within 60 days. (4) Complete antityphoid vaccination, if performed within less than 30 days of the onset, prolongs the disease, but if the interval is longer it shortens the duration of the disease, and its influence increases until its maximum effect is reached when inoculation is performed from 120 to 180 days before the onset. (5) Incomplete antityphoid inoculation prolongs the duration of the disease, both in cases which recover and in cases which terminate fatally. (6) The favourable effect of incomplete antityphoid vaccination is greatest when the vaccination has been performed recently, and diminishes as the interval increases.

Surgery.

5

Indications for Splenectomy

E M HARRAHAN (*Annals of Surgery*, May, 1925, p. 906) remarks that our lack of knowledge about the functions of the spleen and its place in the blood system leads to there being no clearly defined indications for its removal. Since an etiological classification is at present impossible he suggests a classification based on surgical results. He divides splenic disorders into three groups. Splenectomy is definitely indicated in purpura haemorrhagica, the slow chronic forms of familial haemolytic jaundice, and the early forms of splenic anaemia, including the Banti syndrome. He thinks that splenectomy should be considered in the more progressive forms of haemolytic jaundice—particularly the acquired forms—splenic anaemia, and rarely in cases of pernicious anaemia. In cases of haemolytic jaundice or splenic anaemia showing signs suggesting pernicious anaemia the results of splenectomy are usually unsatisfactory. Splenectomy, he considers, is contraindicated in lymphoid and myeloid leukaemias, polycythaemia, and the rapidly progressive fulminating forms of haemolytic jaundice, splenic anaemia, and pernicious anaemia.

6

Treatment of Megacolon

J HERTZ (*Bull. et Mém. Soc. Nat. de Chir.*, May 9th, 1925, p. 494) reports the treatment by resection of three cases of megacolon by the Milneuz method. The loop of gut was brought outside the abdomen and excised, an enterostomy was then placed in the space between the two loops, and the fistula finally closed at a second operation. The author considers that the ease and simplicity of the procedure, together with the absence of risk, are sufficient to recommend it. These cases are usually easy to deal with, the gut is freely mobile and the intra-abdominal manipulations are reduced to a minimum. There

is no need to free the bowel as in cases of growth, and there is usually a complete absence of adhesions. He adds that it is always safer, however, to complete the operation in two stages. The bowel is usually distended with faeces, and is in a more or less septic condition, which endangers the suture line for these reasons primary resection and anastomosis should be rejected. In one patient the megacolon was associated with a condition of megacaecum, the H. R. and was dealt with in two stages, while the caecum was simply plicated. The patient was cured, and the H. R. demonstrated the success of the method and the diminution in the calibre of the intestine. Similarly, if megacolon is associated with volvulus the above procedure is said to be safe and to be recommended.

7 Prevention of Post operative Peritoneal Adhesions

C. PRIMA (*Zentralbl. f. Chir.*, April 25th, 1925, p. 930) states that apart from physico-chemical processes the chief cause of the formation of peritoneal adhesions after laparotomy is to be found in circulatory disturbance and diminution of absorption or of intestinal activity. The best plan, therefore, for preventing the formation of adhesions is regulation of the circulation and stimulation of the intestinal activity and power of absorption. This result can be effected by three measures—namely, (1) suitable pre-operative treatment, (2) gentle and rapid operative technique, (3) suitable after treatment. As regards pre-operative treatment, Prima emphasizes the importance of regulating or increasing cardiac activity by administration of cardiac tonics of the digitalis group for two or three days before the operation. Treatment by suggestion should also not be neglected, and the patient should be assured that the operation will be successful. During the operation itself the peritoneum, omentum, in testine, and mesentery should be handled with the utmost gentleness. Prima regards Paquelin's cautery as a useless and even dangerous instrument in abdominal surgery. The appendix should always be removed with a knife, and the stump treated with sodium chloride or sublimate. The use of plugging should be forbidden, as it favours the formation of adhesions. Drainage should also be avoided when possible for the same reason. Lastly, as regards after treatment, more movement is required. The patient should be allowed up as soon as possible, and should not be starved, since such treatment causes diminution of function, weakness, and the formation of adhesions. Moreover, early rising considerably reduces the risk of pneumonia.

8 Movable Kidney

C. P. MATHÉ (*Surg., Gynecol. and Obstet.*, May, 1925, p. 605) points out that the great majority of cases of movable kidney require no treatment. In a certain percentage of cases, however, the condition causes definite symptoms which necessitate fixation by abdominal support or surgical operation. The condition is common in females owing to the shape of the renal fossa, it is more often found on the right side owing to the presence of the liver and the weaker support afforded by the perirenal fascia here. It may give rise to various symptoms both from kinking of the ureter and by producing traction on the stomach, duodenum, and gall bladder. The diagnosis is best made by palpation, while radiograms and pyelography are often useful. The majority of patients can be relieved by the use of proper abdominal support. Nephropexy is, Mathé thinks, a justifiable operation, it relieves the symptoms, and is indicated when belts fail and in cases of kinking of the ureter, in 29 out of 30 cases so treated by him the operation was successful. He believes that surgical suspension has fallen into disrepute because it has been performed when it has not been indicated or the technique has been faulty. The kidney should be suspended by three silk sutures, the uppermost over the twelfth rib. Also the upper part of the ureter should be exposed and any fibrous bands or aberrant vessels dealt with. The article concludes with a full list of bibliographical references.

9 Treatment of Ventral Hernia

C. DANIEL (*Bull. et Mem. Soc. Nat. de Chir.*, May 2nd, 1925, p. 468) describes a method of treating ventral hernia. He has adopted with success. The hernia occurred through the right rectus abdominis muscle below the umbilicus following a transverse abdominal wound. There was considerable retraction of the divided muscular ends, leaving a gap of several centimetres. In such cases the resulting scar tissue leaves a weakened spot in the abdominal wall which is conducive to the occurrence of hernia. The abdominal wall at the site of the scar is filled by a mass of fibrous tissue in front and the posterior sheath of the rectus muscle behind to

which the peritoneum is adherent. The omentum and in testines become adherent at this spot, and the true extent of the hernia can only be discovered after their reduction. In many cases the re-forming of the layers of the abdominal wall is not possible, and the gap can only be filled in by a plastic operation. Daniel accomplishes this by cutting flaps from the rectus muscle above and below the hernial site, and turning them towards each other, these are superimposed and sutured together over the weak spot. A flap of aponeurosis is then cut from the opposite side, turned over, and fixed in front of the sutured muscle, by this means the gap is satisfactorily covered in. The result of this operation was good, and the patient was left with a strong abdominal wall. The technique of the operation is made clear by a series of diagrams.

Therapeutics.

10 Diathermy in the Orchitis of Mumps

H. L. FOUGEROSSE (*Journal Amer. Med. Assoc.*, April 11th, 1925, p. 1117), during a recent outbreak of mumps among recruits for the United States navy, tested the efficacy of diathermy for metastatic orchitis. Out of 100 of these patients admitted to hospital twenty developed orchitis and were immediately treated by diathermy according to the method employed in gonococcal epididymitis and allied disorders. A Corbus clamp was used with the diathermy machine. Treatment lasted half an hour each day, and the results were invariably satisfactory. Practically all pain subsided during the first treatment, and resolution was much hastened in all cases. Fougerosse thinks that with suitable apparatus treatment of the parotitis or primary focus should cut short the disease before metastases can occur.

11 Rickets treated with Ultra violet Rays

P. PORCELLI (*Raggi Ultravioletti*, March, 1925, p. 79) reports in detail three severe cases of rickets successfully treated with ultra violet rays. The children were aged 8, 6, and 5 years, and were members of one family. Twenty-four applications were made at intervals of five to eight days. One child, who had not walked at 5 years, was able to walk after six irradiations. The radiograms showed increased centres of ossification in the carpus after two months' treatment. The general condition of the children improved most markedly, they were more lively, their colour improved, and the bone tenderness disappeared. The quartz lamp was used at distances beginning at 17 metres to 0.8, and the sittings lasted from ten to thirty minutes. Photographs of the children, and radiograms before and after treatment, are given.

12 Dehydrochol Acid in Pyrexial Affections of the Biliary Passages

D. ADLERSBERG and E. NEUBAUER (*Wien Arch. f. inn. Med.*, April, 1925, p. 59) point out that in recent years it has been definitely shown that bile acids and sodium sulphate increase the bile secretion. One of the most powerful and harmless of the bile acid products is dehydrochol acid. Neubauer has shown by observations on a patient, with choledochus drainage after cholecystectomy, that dehydrochol acid increases the bile secretion enormously, and Specht has recorded similar observations in dogs and men with biliary fistulae after cholecystectomy. From these facts it may be expected that the drug will produce an "internal drainage" which will be especially advantageous in cases of cholangitis without gall stones. In such cases the authors consider that the drug will act primarily by mechanical flushing of the biliary passages. During the last two years they have employed the drug in thirty cases of diseases of the liver and biliary passages, seven of these being affections of the biliary passages causing febrile symptoms. These cases were specially suitable for observations respecting the action of the drug (1) because the fever was not of too short duration and the fever curve was fairly regular, (2) the cases had remained uninfluenced by the usual internal treatment. The sodium salt of dehydrochol acid was employed in a 20 per cent concentration in physiological sodium chloride solution. The drug was injected intravenously—2 grams daily—usually for several days. Seven cases are described in detail in which febrile symptoms were produced by disease of the biliary passages, and the authors consider they are justified in concluding that in such the affection was favourably influenced by the drug. The seventh case was not in fact cured, but a subsequent necropsy revealed malignant disease.

Ophthalmology.

13 Optic Atrophy

G KLEEFELD (*The Scalpel*, May 2nd, 1925, p 409) classifies the varieties of optic atrophy in three groups, according as they are due to intraocular, extraocular, or extracranial diseases. Intraocular atrophy may be due to glaucoma owing to increase in intraocular tension, syphilitic choroiditis, retinitis pigmentosa, and amaurotic family idiocy. Extraocular atrophy is the result of neuritis or ischaemia due to severe anaemia or toxic angiospasm. In neuritis there is an oedematous stage, or "choked disc," and the resulting atrophy is characterized for a long period by the presence of sinusoidal vessels. In some cases which are due to tobacco, alcohol, and various vegetable poisons the atrophy is not preceded by a neuritis visible to the ophthalmoscope. Extraocular atrophy is due to tubes, fracture of the optic foramen, or the presence of a tumour in the neighbourhood of this foramen. Optic atrophy, when complete, is usually accompanied by mydriasis. If the pupil is contracted the diagnosis of tubes may be made with almost complete certainty. In exceptional cases, however, morbid processes in the upper part of the spinal cord may give rise to myosis.

14 Ocular Injury caused by Liquid Ammonia

I ABRAMOVICZ (*Brit Journ Ophthalmol*, May, 1925, p 241) describes a case of severe injury caused by the eyes being flooded accidentally with a 10 per cent solution of liquid ammonia. As a result one eye had to be eviscerated and the other, less severely injured, eye was many months before recovering. Abramovicz remarks that ammonia burns of the eye are always serious. The immediate damage is often not very severe apparently, but sooner or later the cornea suffers. Ammonia, in a 10 per cent solution, absorbs water and dissolves albumin, this tends to destroy the corneal epithelium and Bowman's membrane. The apparent delayed action, so often seen, is probably partly due to secondary infection of the damaged cornea, and partly to a continuous destructive action on the deeper corneal layers as a result of the production of all albumin by the ammonia. Abramovicz insists that prognosis in ammonia burns should be very guarded.

15 Embolism of the Central Artery of the Retina

T DE LAPERSONNE (*Journ de Méd et de Chir Prat*, April 10th, 1925, p 229) describes the classical symptoms of this serious affection and refers to the case of a patient with heart disease seen ten minutes after the arrival of an embolus in the central artery of the retina. There was no arterial pulsation, no retinal oedema, and fingers could be counted. By massage of the globe of the eye the embolus was displaced, and next day the vision was nearly normal. Other cases have been recorded, but unfortunately the improvement in sight is often only temporary. It is possible that the central artery may be obliterated by spasm, due to hyperexcitability of the sympathetic and a few cases of this kind have been recorded where the artery looked like a white strand. In chronic glaucoma spasm of the retinal vessels is not infrequent, lasting from a few minutes to several hours.

16 Cilia in the Anterior Chamber

O A SHAPPE (*Amer Journ Ophthalmol*, April, 1925, p 301) describes a case in which four cilia were found in the anterior chamber of an eye, they had been in this situation, apparently, for thirty three years. The affected eye had had what must have been a penetrating injury caused by the peg of a top. This occurred thirty three years ago. The eye had remained quite quiet until three years ago, when it had become at times somewhat painful and red. Slight ciliary injection with infection of the bulbar conjunctival vessels was present. The cornea was uneven and coarsely stippled, and on the upper part of the cornea there was a large opaque scar. The pupil reacted well, but the fundus was indistinctly seen. The eye seemed to be suffering from a low grade endothelial, by slit-lamp examination cilia were seen lying upon the iris. These were removed, after which the eye healed. There appears to be a considerable literature upon this subject, so that the accident cannot be considered to be so very uncommon. The cilia are introduced into the eye by a penetrating injury and nearly always cause some irritation eventually though they may be tolerated for long periods. In only two cases has sympathetic ophthalmitis arisen, and paracentric ophthalmitis is a very rare sequel. Cataract is occasionally produced if the cilia are in contact with the lens. Epithelial cysts in the anterior chamber may be produced by the implantation of cilia in this manner.

Obstetrics and Gynaecology.

17 Tuberculosis and Pregnancy

C MONCKEBERG and J M VERGARAK (*Gynecol et Obstet*, 1925, vi, 4, p 241) state the conclusions regarding the influence of pregnancy on pulmonary tuberculosis that have been drawn from nine years' experience in Chili. Of tuberculous patients 7 per cent were found to die before the third month post partum, 21 per cent of patients with latent lesions showed clear clinical signs of active disease during pregnancy, 53 per cent of those with active lesions became worse during pregnancy, with a marked tendency to generalization. In about 6 per cent, including a number of cases without tubercle bacilli in the sputum, laryngeal tuberculosis became manifest. Extension of the disease was more noticeable in multiparae and in the later months of pregnancy. According to the authors this is due partly to the withdrawal of calcium from the system by the foetal demands, but more especially to a diminished resistance to the tubercle bacillus. Chomé reported that pregnant rabbits succumbed to injections of streptococci which were non virulent for non gravid animals. The present authors found that anaphylactic shock was much less in pregnant than in other guinea pigs, that the intradermal reaction to tuberculin was feebly positive or frankly negative in 76 per cent of tuberculous women at term, and that the Wassermann test was negative in two thirds of patients with active syphilis who were nine months pregnant. Diminished resistance to bacterial invasion is correlated by the authors with impaired liver function, which they report having noted by use of many different tests in 200 pregnant tuberculous women. Therapeutic abortion is only advocated in a certain number of pregnancies in multiparae earlier than the fourth month provided that the tuberculous process, although still early, is proved to be extending, and that the Besicoff and intradermal tuberculin reactions are negative or feebly positive.

18 I CLIVIO (*Riv d Ostet e Ginecol Prat*, March, 1925, p 113) agrees with those Italian and French writers who have recently advocated the restriction of induction of abortion in pregnant tuberculous patients to cases in which there is a good prospect of the pulmonary affection being brought to a standstill, and in which the gestation has not advanced beyond the third or fourth month. He thinks, however, that by an extended recourse to artificial pneumothorax the indications for premature termination of pregnancy may be still further limited. The cases are quoted of three women seen during the early months of pregnancy with unilateral apical lesions which had recently begun to extend more rapidly. In each case pregnancy went to term after artificial pneumothorax had been induced, and a cure of the pulmonary tuberculosis was effected. Equally good results occurred in two other patients who came for treatment with pyrexia and asthenia in the fifth and seventh months respectively, and in a sixth woman with unilateral irritation and early disease of the other lung. Clivio adds that the fears of producing anaemia by performing pneumothorax in pregnant subjects appear to be ill grounded.

19 Intracranial Haemorrhage in the Newborn

W SHARPE and A S MACLAIRE (*Journ Obstet and Gynaecol of the British Empire*, Spring 1925, p 79) emphasize the importance of clinical diagnosis of the less severe cases of intracranial haemorrhage in the newborn. The signs which should arouse suspicion of such haemorrhage are meagre and far from conclusive. They are drowsiness, refusal to suck, and slight muscular twitchings of fingers, limbs, face, or orbital muscles but they may be almost or entirely absent. As an illustration the case is described of a 3 days old baby in whom the only suspicious symptom was spasmodic twitching of the left orbital muscles occurring two or three times each hour. Two hours later the child suddenly died, and the autopsy showed bilateral supratentorial haemorrhage over one inch in thickness, the longitudinal sinus having been torn at the posterior margin of the anterior fontanelle. The tension of the posterior fontanelle has little diagnostic significance. According to the authors lumbar puncture affords the only accurate means of diagnosis in the mild cases of intracranial haemorrhage; this procedure repeated until the fluid is free from blood, is of great therapeutic use. To ascertain the frequency of intracranial haemorrhage Sharpe and MacLaire performed lumbar puncture as a routine in 400 newborn babies, of whom about one half were first born and 10 per cent were delivered by forceps. Bloody or blood tinged cerebrospinal fluid was found in no fewer than 39. The puncture was repeated therapeutically as often as six times. Three of the babies died, and autopsies confirmed the diagnosis. Even in the presence of signs of intracranial haemorrhage babies of low

vitality, especially if premature, and those in a state of shock, should not be submitted to lumbar puncture, which should be deferred until the general condition improves. The early use of forceps, correctly applied, does not seem to increase the risk of intracranial haemorrhage, which is more likely to occur after prolonged labour in which forceps application has been too long deferred. The authors conclude that by extended employment of early lumbar puncture it may be possible to diminish considerably the numbers of children with chronic spastic paralysis with various degrees of mental retardation.

20 Abortion through the Posterior Wall of the Cervix

Z. BUBLITSCHENKO (*Zentralbl. f. Gynak.*, April 11th, 1925, p. 827) believes that a cervico-vaginal fistula following abortion is not usually the sequel of criminal or unskilful attempts to induce abortion, the communication between the cervix and vagina is as a rule the result of spontaneous passage of the foetus through the posterior part of the cervical wall. The accident occurs in primiparae (25 out of 31 cases) with hypoplastic genital organs and marked uterine retroflexion, with a small rigid os, it is to be attributed to yielding of the muscular wall in the neighbourhood of the internal os, in consequence of the pressure of strong contractions in the corpus uteri. The site of rupture and passage of the foetus, and of the fistula which develops later, is the posterior wall of the cervix. Anterior cervico-vaginal fistulae are due to pressure by the foetal parts during their passage into the vagina by the normal route. Hies has recorded a case of some forensic interest in which abortion through a cervico-vaginal tear occurred after the external os had been dilated *secundum artem* up to Hegar No. 10. Bublitschenko describes a case of premature labour with septic infection at five and a half months in a 3 para, in spite of previous artificial dilatation of the cervix and insertion of a metreuryter. The 950 gram foetus was born through a large cervico-vaginal tear.

Pathology.

21 The Antagonistic Action of Posterior Pituitary Extract and Insulin

P. C. MORHLIG and HARRIET B. AINSLEE (*Journ. Amer. Med. Assoc.*, May 9th, 1925, p. 1399) point out that previous observers have shown that injections of posterior pituitary extract produced glycosuria that it has a powerful antagonistic effect on the lowering of blood sugar produced by insulin, and that it removes the symptoms of hypoglycemic convulsions, causing rapid elevation of blood sugar. The present authors record the results of experiments on rabbits and come to the following conclusions: (1) Posterior pituitary extract injected into normal rabbits usually produces a slight rise in the blood sugar. (2) Posterior pituitary extract, when injected simultaneously with insulin, prevents the fall produced by the latter. (3) Posterior pituitary extract, injected during insulin hypoglycemic convulsions, produces a rapid rise in the blood sugar, and the rabbits subsequently recover. (4) The site of action of the pituitary extract seems to be in the skeletal muscle metabolism.

22 The Bactericidal Power of the Human Blood

C. PRÄUSNITZ and GERTRUD MEISSNER (*Zentralbl. f. Bakt.*, April 8th, 1925, p. 376) have tried to determine the variations occurring in the bactericidal power of the human blood after injections of specific and non-specific agents. Their technique was modelled on that of Wright, and consisted in incubating the debarbured blood in capillary tubes with staphylococci killed by heat at one hour 50 cmm of the mixture were withdrawn, mixed with 2.5 cmm of a living staphylococci suspension, transferred to special slide chambers, and incubated for twenty-four hours at 37° C., the number of colonies which had developed were then counted. At the same time the opsonic index, the leucocytic index, and the phagocytic index were determined. It was found that normal human blood had a pronounced bactericidal effect on staphylococci by preliminary vaccination of the blood *in vitro* with dead organisms it was possible to raise it appreciably. The results obtained by the bactericidal and the opsonic estimations agreed fairly closely. Thus it was found that the optimum dose of dead staphylococci for raising the bactericidal power was 24,000 per cmm of blood and 12,000 for raising the opsonic power. With these doses the bactericidal index was raised about 4 times, the opsonic index 1.5 times. Experiments *in vivo* were then made. 500,000 dead staphylococci were injected intravenously. The blood withdrawn after thirty minutes and the bactericidal and opsonic powers compared with those of specimens of blood withdrawn prior to the injection of the vaccine. In one experiment of this nature the bactericidal index was increased 2.8 times and the opsonic index 1.2 times. There

was, however, considerable variation in the reaction of the blood of different persons, some reacted to the vaccine more than others. The effect of the intravenous injection of non-specific substances was likewise tried, the two substances used were y-tin and adlan. The injection of 0.0125 ccm of y-tin raised the bactericidal power 2.6 times in half an hour, the effect of adlan was less marked. When a second injection of adlan was given six days later, and the blood withdrawn an hour, a distinct rise in both the bactericidal and the opsonic power was noticed. Again, there were differences in the reactions of different persons. From the experiments they conclude that it is possible, both by specific and by non-specific agents, to raise the bactericidal power of the blood to staphylococci.

23 Rapid Method of Complement Fixation Test in Tuberculosis

J. VALTIS (*Ann. de l'Inst. Pasteur*, April, 1925, p. 365) describes a rapid method of performing the complement fixation reaction in tuberculosis closely similar to that employed by Nuttmann in the diagnosis of syphilis. It consists essentially in making use of the complement and haemolytic immunity body naturally present in human serum for sheep's red cells, and diminishing the number of tubes to two sets of three. In one set the haemolytic index is titrated, the patient's serum being incubated with varying quantities of red cells, from the amount of lysis which occurs in an hour and a half at 37° C. the quantity of red cells to be added to the first series is calculated. When the serum has no haemolytic power the Valtis method cannot be used. In this first set of tubes the actual test is performed. The first tube receives 0.5 ccm of antigen—Boquet and Negre's methylic antigen, the second tube 1 ccm, the third tube, which acts as a control, receives 1 ccm of saline. To each tube is added 0.1 ccm of unheated serum. According to the haemolytic titre of the serum, which has already been worked out, from 0.1 to 0.9 ccm of sheep's red cells is added to each tube, incubation is performed for thirty minutes. If there is haemolysis in the control tube and not in the first two tubes the reaction is said to be strongly positive, if there is haemolysis in the first and third the reaction is positive, and if there is haemolysis in all three the reaction is negative. The author has compared the results with those obtained by Calmette and Massol's technique, and finds that there is a fairly close correspondence between the two methods, with 38 known tuberculous serums positive results were obtained by Calmette and Massol's technique in 30 cases, and with his own method in 32 cases.

24 Prognostic Significance of Tubercle Bacilli in Sputum

T. STEPHANI and J. STEPHANI (*Schweiz. med. Woch.*, April 23rd, 1925, p. 365) have compared the clinical with the bacteriological findings in the 781 sputum positive cases of tuberculosis treated at their sanatorium in Montana in the period 1898 to 1923. The sputum findings were classified, not only according to the tubercle bacilli were numerous or scanty, but also according to whether they were long or short, homogeneous, granular, or moniform. In 70 per cent of all the sputum positive cases it was found that slight disease was associated with few tubercle bacilli, severe disease with many tubercle bacilli, clinical improvement with a diminution, and aggravation of the disease with an increase in the number of the tubercle bacilli in the sputum. In 8 per cent the number of the bacilli in the sputum was at variance with the clinical signs, and in the remaining 22 per cent there was no uniform relationship between the clinical signs and the number of the bacilli in the sputum. With regard to the appearance of the bacilli, it was found that in 60 per cent of all the sputum positive cases clinically slight disease was associated with bacilli which were mostly granular, whereas severe disease was associated with homogeneous and short bacilli. Clinical improvement was associated with a change from homogeneous to granular bacilli, and the reverse process was observed when the patient was getting worse. In 18 per cent the clinical signs were contradictory of the bacteriological signs as indicated by the appearance of the bacilli, and in the remaining 22 per cent no uniform relationship could be established between the clinical signs and the appearance of the tubercle bacilli.

25 The Blood Platelets in Infections

BECK (*Moritzsch. f. Kinderheilk.*, March, 1925, p. 673) examined the blood platelets in various acute infections—namely, ten cases of vaccinia, three of varicella, and two of measles—with the following results: (1) There was a rapid increase in their number during the incubation stage. (2) During the height of the disease there was a steep fall in their number as had previously been noted by Tschistowitz, Schiff and others. (3) In convalescence there was another increase in their number with a gradual return to the normal

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

25 Familial Lupoid Syphilis

A SCHOGG (*Dermatol Week*, May 16th, 1925, p 711) refers to Jadassohn's account (1907) of two sisters who suffered from congenital syphilis, with precisely similar local lesions. Such cases are rare but important, as they raise questions like that of the possibility of a peculiar familial "terrain." Schogg describes the cases of a mother and son who exhibited the lesions of lupoid syphilis with similar localization, in the son's case lupoid syphilis was associated with squamous celled epithelioma. When the boy was 15 the first skin lesion appeared behind the left ear as a small painless nodule. During twenty years little change occurred, but at the age of 39 the skin lesions rapidly increased in size and formed a crescent of soft nodules covered by yellowish brown or reddish brown crusts and slight bran-like desquamation. A second lesion was found in front of the left ear, with the same spreading crescentic form and atrophic scarring. The third focus was situated immediately below the left ear; this was a sessile tumour as large as a plum. The surface was covered by a greasy crust, on removing which slight bleeding occurred, at its anterior border there were two typical papules undergoing retrogressive changes. The regional lymph nodes were palpably enlarged and painless. Sections of the skin lesions showed typical tuberculous proliferation, no tubercle bacilli were demonstrated, and injection of the tissue into a guinea pig was negative. The tumours proved to be squamous celled epithelioma. The patient gave a plainly positive reaction to tuberculin, and the Wassermann reaction was positive. The lupoid skin lesions healed rapidly and soundly in four to five weeks from the commencement of treatment with neosalvarsan and potassium iodide, the tumour was excised and its site irradiated. The mother of this patient had been treated more than twenty years previously in Jadassohn's clinic. For seven years she had had a painless nodule in front of her left ear, two years later she diseased at the bridge of the nose, and subsequently larger painful nodules developed on the forehead and in the neighborhood of the right eye. She had typical lupus of the nose and both cheeks, spreading in some directions and healing in others with characteristic thin atrophic scarring. There was a tumour the size of a walnut on the forehead. She received tuberculin injections for two weeks, the tumour was excised, and potassium iodide prescribed. Sections showed that the growth was a typical tuberculoma, but injection of a laboratory animal proved negative. The patient's husband, who denied any syphilitic infection, had on his left cheek a stellate scar which was very suggestive of a former syphilide.

27 Leucocytosis following Typhoid Perforation

E. W. LIVINGSTON and W. H. SQUIRES (*Journ Amer Med Assoc*, April 4th, 1925, p 1020), after a review of the literature in which they show that there is no uniformity concerning typhoid perforation, record their observations at the Bellevue Hospital, New York, where among 2,215 typhoid cases admitted from 1905 to 1924 69, or 3.11 per cent developed intestinal perforation, confirmed by operation or necropsy. Blood counts were made on 55 of the 69 cases, with the following results: 8 or 15 per cent, showed leucocytosis of 12,000 or more, 8 or 15 per cent, a slight rise—that is, an increase of more than 3,000 cells in the total 29, or 52 per cent, remained constant, while in 10, or 18 per cent, there was a definite fall in the leucocyte count. Thus in 85 per cent there was no leucocytosis, and in 70 per cent no rise of any degree. On the other hand, in cases of typhoid fever without perforation leucocytosis was very common in association with acute infectious diseases such as acute cholecystitis, pneumonia, phlebitis, wound infections, and local abscesses. The authors conclude that leucocytosis occurring during typhoid fever points to complications other than perforation of the intestine, and emphasize the unreliability of these variable counts for diagnosis.

28 Vaccination and Small pox

F. W. SLARS (*New York State Journ of Med*, April 24th, 1925, p 681) states that in 1923 the United States ranked third among the civilized nations in the number of small pox cases reported, being only exceeded by India and Russia. From incomplete reports received for the year 1924 which gave the total number of reported cases in the United States as 49,819 the indications were that that country would stand second. From January 1st to July 1st 1924, 3,999 cases were reported in the State of Michigan. Detroit alone reported

1,592 cases, with 164 deaths. From January 1st to August 1st, 1924, Minnesota, where compulsory vaccination had been abandoned since 1903, reported 1,613 cases, 193 of which were of the malignant type, with 40 deaths. The case mortality for small pox in 1922 was 28.6 per cent in Arizona and 24.9 per cent in Colorado. At the beginning of the outbreak in Detroit in 1924, 26 per cent of its population were unvaccinated and 44 per cent were in need of revaccination. During 1924 New York State had the largest number of cases recorded for many years—namely, 488, of which 451 had never been vaccinated, some were of the malignant type. In the presence of an epidemic States does not recognize any contraindication to vaccination. In the recent Detroit epidemic 3,346 hospital patients were vaccinated, of these 50 were cases of erysipelas, 773 were obstetric cases, 676 were newborn babies, and 21 were venereal cases. Numerous patients with diphtheria, scarlet fever, measles, and tuberculosis were also vaccinated, and no untoward results occurred in any case. During the recent epidemic in Detroit 817,000 vaccinations were performed, 500,000 of which were done in May and the early part of June without any serious ill effects. The epidemic terminated at the end of June. (See also *JOURNAL*, May 23rd, 1925, p 976.)

29 Joint Manifestations in Late Syphilis

M. P. WEIL and P. BOURGEOIS (*Presse Med*, April 25th, 1925, p 538) draw attention to three syphilitic affections of the joints which they say are not sufficiently known. Unilateral hydrarthrosis, which is less common than the bilateral form, is usually painless and affects the knee, it may disappear spontaneously on resting, and immobilization does not cause stiffness or ankylosis. Sometimes there are signs of thrombosis or there may be glycosuria with high blood pressure. The results of cytological examination of the fluid vary so much that nothing very definite can be concluded. Radiography, unless there are bone changes of a tubercular kind, does not show anything definite. The second affection is flying pains in various joints, and the third, chronic rheumatic pains due to syphilitic affection of some of the endocrine glands.

Surgery.

30 Simple and Complicated Dislocations of the Astragalus

WEITZEL (*Rev de Chir*, No 4, 1925, p 306) states that simple or complete dislocation of the astragalus, with or without injury to the malleoli, is unusual. He describes three cases. In the first an obese unhealthy man dislocated his astragalus outwards, the superior articular surface being directed outwards with the apex of the internal malleolus detached from the fibula and following the astragalus in its displacement. All efforts to reduce the dislocation under a general anesthetic failed. Astraglectomy was then performed easily, on account of the rupture of the ligaments, the apex of the internal malleolus was also removed. The foot was immobilized for eight days, the patient was then allowed to walk wearing Deltet apparatus. In the second case a subletian's horse fell on its rider's ankle, the astragalus was dislocated inwards and downwards so that its head was lodged below and internal to the os calcis. The malleoli were intact. Attempts at manipulative reduction having failed, a curved incision was made over the bony prominence from the internal malleolus downwards, the astragalus was then levered into its normal position with chisels. The torn ligaments, partially divided in the tendons, and tendon sheaths were restored and the joint closed without drainage. The ankle was immobilized in plaster for fifteen days, and then active and passive movements were ordered. The patient could walk without pain and with the aid of a stick in twenty days and in two months he was able to dance. In the third case the patient fell 50 metres from an aeroplane and not only dislocated the astragalus backwards and inwards, but that bone and also the internal malleolus were fractured. Skiagrams showed that the anterior fragment of the astragalus was in normal position and that the astragalo-sephoid joint was intact. Under a general anesthetic, a curved incision was carried from the internal malleolus downwards and forwards over the bony prominence. The posterior fragment of the astragalus, which lay transversely on the os calcis, was removed. The separated internal malleolus was sutured to the fibula, the torn ligaments restored, and the joint closed, horseshoe drains were left *in situ* for two days. The joint was immobilized for ten days when the patient was allowed to walk with crutches, which he was able to discard two months after the accident. A skiagram showed

callus formation at the site of the fracture of the internal malleolus. The ankle movements were complete and the patient was able to return to duty as a pilot. Weitzel concludes by remarking that his decision to preserve the head of the astragalus and to replace the internal malleolus was due to his having seen a patient a few days previously who had had a fracture of the astragalus (three fragments) and of the internal malleolus. Astragalectomy had been performed and the internal malleolus had not been replaced, the result was that the patient had severe pes valgus with projection of the base of the internal malleolus and ulceration of the skin at this point. The patient could only walk with severe pain on the heads of the metatarsals. There was extensive oedema of the dorsum of the foot and the patient asked that the foot might be amputated. This disastrous result led Weitzel to adopt a conservative procedure in the aviator's case, which produced an excellent functional result, with only a minimal degree of shortening of the limb, due to the loss of the posterior portion of the astragalus.

31 Suprarenal Transplantation in Addison's Disease.

DMITRIJEV (*Zentralbl. f. Chir.*, May 16th, 1925, p. 1082) records a case of Addison's disease in which considerable improvement followed subcutaneous suprarenal transplantation. The patient was a man, aged 26, who was in good health until 1920, when he developed general bronzing of the skin and pronounced asthenia. In March, 1923, a dog's suprarenal was transplanted under local anaesthesia. General improvement took place, and a month later the patient felt quite well. Dmitrijev has been unable to find any records of improvement after suprarenal transplantation in Addison's disease. Biedl in his textbook quotes three cases in which the operation had a bad effect. In two cases death followed twenty-four hours after transplantation of a dog's suprarenals (Jiboulay), and in a third case reported by Basch and Wihl, in which a pig's suprarenals were transplanted, the patient died after a fortnight's improvement. In the present case, as well as in seven others in which he performed suprarenal transplantation for spontaneous gangrene, Dmitrijev found that the transplanted suprarenal had undergone atrophy within ten days. While admitting that the case was not conclusive, especially as it had not been kept under observation for long, he considers that the result was sufficiently encouraging to justify further operations of the kind in Addison's disease.

32 Remote Results of Heart Suture

L. HESSE (*Deut. Zeit. f. Chir.*, May, 1925, p. 239) has collated 107 cases of operative treatment of wounds of the heart, and gives particulars of 48 cases admitted from 1903 to 1921 to the Obukhov hospital, Leningrad. Of these 48 patients 33 died and 15 survived, three of these survivors could not be traced after discharge from hospital, but the remaining 12 patients were under observation for periods varying from seven months to fifteen and a half years. Hesse arrives at the following conclusions. Among the patients who survived, suture of all types of heart wounds is successful in 77.3 per cent of cases, in 22.7 per cent the result is moderately good, and only in 1.7 per cent were the results unsatisfactory. In only 1 case (0.8 per cent) was the operation, after an interval, followed by death. In general the ultimate results of heart suture are excellent, in spite of the fact that in the majority of cases pericardial adhesions occur. Exercise tests showed that 80.1 per cent of these patients were able to do full work, while 8.4 per cent were able to work moderately hard, the general condition was good in 89 per cent of patients. A number of these patients suffered subsequently from serious illness, or lived under conditions which formed a severe test of functional soundness—such as lobar pneumonia, epidemic influenza, typhus fever, recurrent fever, pruritus, severe fatigue, watery service, pediculosis and chronic alcoholism. Moderately good results followed suture in 21.3 per cent of punctured wounds and in 29.6 per cent of gunshot wounds of the heart, in the latter class the characteristic explosive effects were obvious and retarded recovery. Similarly, the results in through and through punctured wounds were less favourable than in single stab wounds of the myocardium, in the former case fair success was obtained in 22.6 per cent, while among cases of single wounds the proportion of recovery was 37.5 per cent. Wounds of the auricles were more serious than those of the ventricles, in auricular wounds moderately good results were obtained in 21.8 per cent of cases while in those of the ventricle the percentage was 25.8. In 10 instances the trunk or branches of one of the coronary arteries were ligatured, no evil effects followed. In the early days of heart surgery a number of cases of dry pericarditis occurred after operation occasionally this was severe and chronic. Suppurative pericarditis is a very serious but not necessarily fatal complication, among a recent series of cases Hesse found 9 patients suffering from this. Plastic pericarditis and mediastino-pericarditis followed

operation in 27 per cent of all cases, the resultant adhesions bound down the heart and impeded its action, myocardial hypertrophy followed, and in some cases the adhesions were stretched. In other cases the pericardial sac was completely obliterated, resulting in severe dilatation, myocardial failure, and finally death. One of these patients exhibited the classic symptoms of Pick's syndrome. Hesse thinks that it is possible that operation on the lines of Brauer's pericardial thoracotomy may prolong life in some of these cases, when there is no evidence of stretching of adhesions as the result of cardiac and respiratory movements. In numerous cases the pleura and lung were wounded and inflammatory effusion followed, this complication was neither so frequent nor so serious as pericarditis. In 2 cases aneurysm developed in the pericardial scar, possibly due to local necrosis following infarct. In the great majority of cases there was no change in the character of the heart sounds, but in 13.5 per cent there was persistent tachycardia. Occasionally necrosis of one or more costal cartilages in the thoracoplastic flap occurred. Skiagrams and screening showed that in spite of the fibrous scars in the myocardium the heart outline and contractions were absolutely normal, while electrocardiograms indicated that in the majority of cases the function of the auriculo-ventricular bundle was completely restored.

Therapeutics.

33 Diathermy in Gonococcal Infection

I. P. CUMBERBATCH and C. A. ROBINSON (*Brit. Journ. Venereal Dis.*, April, 1925, p. 36) record their experience of the treatment of gonococcal infection by diathermy. Its application to the prostate and seminal vesicles alone caused subsidence of symptoms, even when the testis, epididymis, and vas were affected, and metastatic arthritis was present. In this last condition application to the joints was not found necessary. The contents of the serotum were included in the treatment because pain was thus relieved more quickly. With the patient lying on his back one electrode eight inches long is passed four inches into the rectum, the outer end being depressed on to the couch while the other electrode of thin sheet lead encircles the pelvis or waist. The current is increased until pain is felt, when it is reduced until the pain disappears, at which strength it is continued for twenty minutes. This treatment is repeated twice weekly. For application to the testis, epididymis and vas, strips of lint soaked in salt solution are applied to the scrotum and covered with thin sheet lead to form one electrode, the circuit being completed by the rectal electrode. The authors contend that the application of diathermy to the disseminating foci will cure or arrest gonococcal arthritis, they found the subsidence of inflammation, pain, and tenderness after three treatments spread over a period of ten days in epididymitis was strikingly rapid. In chronic cases three or four weeks' treatment may be necessary. In prostatitis and vesiculitis diathermy caused cessation of discharge, and disappearance of the gonococci and of the metastases in the joints and epididymis. In urethritis in the female and in endometritis five applications appear to be sufficient if recrudescence does not occur, and in salpingitis subsidence of pain, tenderness, and swelling usually result by the fourth application.

34 Tryparsamide in Neurosyphilis

J. H. STOKES and L. F. A. WILHELM (*Arch. Derm. and Syph.*, May, 1925, p. 579) treated 152 cases of neurosyphilis by weekly injections of tryparsamide in 3 gram doses for from eight to ten weeks, accompanied by intramuscular injections of mercuric salicylate in 1 gram doses. They consider the method superior to others in resistant cases. Since there is, however, a definite risk from eye complications, treatment should be preceded and regulated by careful examination of the eyes, especially with reference to visual activity and perimetric fields. Such symptoms as blurring of vision, flashes of light, and difficulty in seeing objects near the feet should lead to examination for organic injuries, which, if present in the slightest degree necessitate discontinuance of treatment. In mental cases a flare up of symptoms may occur requiring special nursing and precautions against violence. Tryparsamide appears to be beneficial in resistant tabes, and in early paresis its use is recommended in conjunction with other forms of treatment. In certain cases sexual activity is increased, and with the possibility of converting an unobjectionable and harmless patient into an objectionable and dangerous one each case must be considered from the social aspect. In other types of syphilis its use is contraindicated on account of its lack of spirillocidal power. Owing to the possibility of eye complications the authors consider that the drug should be used as a last rather than as a first therapeutic resort in asymptomatic neurosyphilis.

Diseases of Children.

33 Pneumonia in Anaemic Infants

M. H. BASS (*Inner Journ Dis Child*, March, 1925, p. 318) records the favourable results he has had with blood transfusion in 10 cases of pneumonia in anaemic infants, all under 3 years of age. In 3 cases citrated blood was employed, in the others whole blood by the Unger method, the amount transfused varying from 150 to 400 c.c.m. In only one case was there a severe reaction, the temperature rising to 105.8°, with chill, within an hour of the transfusion of citrated blood, but after this there was an immediate drop to 99.2°, followed by continued normal temperature and rapid recovery. In every case there was not only improvement in the anaemia but cure of the infection, 9 patients recovered, 1 patient suffering from coeliac disease improved for a time, but finally died of purulent meningitis. The author offers no definite explanation of the success of the treatment, and points out that there is a difference in the circulatory efficiency in infants and children as compared with adults, which possibly accounts for the lack of circulatory embarrassment during and after the blood transfusions.

35. Rickets

R. POLLITZER (*Il Policlinico*, May 11th, 1925, p. 659) refuses to think of rickets as limited to the skeletal system, and states that it is an anomaly of tissue change of which the bony changes are only one of the consequences. In rickets there is an inability to fix the calcium and a diminution of the phosphorus in the blood serum, which slows the processes of tissue change and induces a state of acidosis. This anomaly of tissue change is, he thinks, determined by a deficiency in the hormone, physiological, and vitaminic stimuli. This deficiency may be primary and dependent on constitutional, alimentary, or environmental causes, or secondary to digestive or toxic infective causes. Calcium is seldom much below the normal content (10 mg. per 100 c.c.m.) in the blood serum. Syphilis causes a special type of early rickets (before 3 months), characterized by cranial lesions, anaemia, enlarged spleen, and marked deformities. It is doubtful whether endocrine changes act as a primary cause of rickets. The ultra violet rays seem to act by increasing the phosphorus content in the serum.

37 Infantile Lupus

L. CHATELIER (*Ann de Derm. et de Syph.*, April, 1925, p. 265) states that lupus in early childhood is more common than is usually thought, and occurs as a secondary infection usually, the primary type being very rare. He describes a case in a child in whom, when 7 months old, a small chronic indolent lesion appeared on the left forearm. Two months later a similar lesion appeared on the right cheek, spreading in a few weeks to the nostril and inner part of the lower eyelid. When first seen there was induration of the surrounding parts, but later, progressive softening occurred. On the left forearm there was a patch of lupus as large as two lentils on the cheek the lesion was rather smaller than a threepenny piece. The nose was swollen, the centre of the lymphangitic ridge was softened and fluctuating, at this point the skin was unaltered. Until the age of 6 months the child was healthy and of normal development. There was a family history of tuberculosis. Both lesions were excised. Histologically they were typical, and two months later the child was quite well. Hutinel and Jeanselme (1909) published the case of a child, aged 5 months, in whom lupus followed chronic facial eczema. Jungmann collected 838 cases of lupus among these 7 occurred in the first year of life, 10 before the second year. In nearly all the cases there was a family history of tuberculosis. Chatelier adds that lupus in children almost always attacks exposed parts—the cheeks, hands, forearms, or thighs. The lesions are seldom numerous or extensive, and, as in adults, spread very slowly. Prognosis must be guarded when, as in the present case, lymphangitis occurs, indicating active tuberculous extension. Excision, he thinks, remains the most satisfactory method of treatment, although the Finsen lamp gives equally good results in suitable cases.

Obstetrics and Gynaecology.

38 Anterior Crural Nerve Paralysis after Childbirth

N. A. CARR (*Journ Bone and Joint Surg.*, April, 1925, p. 451) records a case of complete paralysis of the anterior crural nerve occurring in a woman, aged 26, after the normal birth of her second child. Her first pregnancy had been normal until the eighth month, when she developed a dull aching in the symphysis and lower part of the back, this gradually

increased until delivery, when the symphysis symptom disappeared in a few days, but the back aching persisted for a further four months. With the second pregnancy the symptoms returned at the seventh month with tenderness over the symphysis extending to the left along Poupait's ligament. Delivery was not followed by relief, and extreme tenderness and swelling were present over the articulation and extended to the centre of Poupait's ligament on both sides. Complete paralysis of the left anterior crural nerve developed from the fifth day but gradually improved until six months after delivery, when normal function and strength in the limb had returned. The paralysis appeared to be due to pressure upon the nerve before its division into the anterior and posterior branches, causing complete motor paralysis without disturbance in sensation. Cary believes that this was probably due to an abnormal position of the nerve in the pelvis; and that the severe symphysis pain was caused by an early separation of the articulation and inflammation of the synovium, together with irritation of the sensory portion of the genito-crural nerve from pressure.

39 Primary Mortality of Radium Treatment of Cervical Carcinoma

G. DODERLEIN (*Zentralbl. f. Gynak.*, April 18th, 1925, p. 852) states that in a series of 2,200 cases of radium application for cancer of the cervix death occurred within a few days in 13, or 0.6 per cent. In 3 patients causes of death other than the treatment were found, but in 10 septicæmic processes following treatment led to death within seven to eighteen days. In 5 of these cases there had been some surgical treatment of the tumour prior to the radium insertion. A recent communication of Baum is quoted in which 5 deaths are reported to have occurred after radium applications in 25 patients who had been previously shown to harbour locally virulent staphylococci, and one death in 50 patients without such organisms. Doderlein recommends that before radiotherapy each carcinomatous patient should be examined for the presence of virulent staphylococci near the growth, in those harbouring such germs only a ray treatment (or possibly vaginal rather than intracervical radium application) should be performed, in the first instance at any rate, all instrumental procedures being avoided. In this way, he remarks, the primary mortality of radium treatment, already very small, may be made negligible.

40 Pelvic Haematocoele in Sarcoma of the Uterus

F. PATRI (*Rivista d'Obstet. e Ginecol. Prat.*, April, 1925, p. 161) records the case of a 3 para, aged 36, who for eight years had had menorrhagia but appeared to be in good health until, shortly after two painful menstruations, she was seized with violent hypogastric pain followed by temporary loss of consciousness. Examination led to diagnosis of uterine myoma. The morning before her admission to hospital a second attack of pain occurred, with increased vaginal bleeding. Two days later the pouch of Douglas was found to be filled by a semi-liquid mass, shown at the operation to be a haematocoele. The uterus, the size of a three months pregnancy, was softened, and just above the isthmus there was a perforation 2 cm. in width. The neoplasm was found to be a spindle cell sarcoma, and there was no trace of a pre-existing myoma. The patient died three weeks later. Erosion of the uterus by a sarcoma appears rarely to have caused such acute symptoms as in this patient, and in most cases reported the sarcoma before perforating has been present for a considerable number of years.

41 Bilirubinaemia in Pregnancy

L. PUCCIONI (*Società Toscana d'Obstet. e Ginecol. and Riv. d'Obstet. e Ginecol. Prat.*, March, 1925, p. 1) has estimated the bilirubin in the serum of 65 pregnant, parturient, and puerperal patients. During the first eight months of gestation the bilirubin varies from a trace to an average of 0.9 van den Bergh unit, during the ninth month towards term and during labour, it is notably increased. Very high values were found in two eclamptic patients in premature labour and in two other eclamptics during the puerperium. The bilirubin was also increased in certain patients who manifested no sign of toxæmia other than slight albuminuria. In all patients the bilirubin progressively diminished during the puerperium to a small trace. The author refrains from drawing conclusions, in these preliminary observations as to hepatic function in pregnancy and its toxæmia.

42 Pelvic Measurements

ACCORDING to L. LITZEN (*Zentralbl. f. Gynak.*, April 11th, 1925, p. 817), the average measurement of the true conjugate of the pelvic brim in the presence of the soft parts is 10.4 cm., and variation between 9.5 to 11.5 cm. is found in normal pelvis. The average internal diameter is 23.5 cm., variation from 28.5 to 32 cm. occurring in normal pelvis.

The transverse diameter of the brim varies between 13 and 15 cm. The intercrystal diameter may show wide variations in comparison with the conjugate—from 26.5 to 34.5 cm, with a conjugate of 11 cm, and similar divergences are shown in comparison of the transverse and conjugate brim diameters. Clinical measurement of the intercrystal diameter enables no very certain inference to be drawn concerning the transverse diameter, intercrystal diameters of 28, 29, 30, 31, and 32 cm correspond to mean transverse diameters of the brim of 13.6, 13.8, 14.1, 14.3, and 14.6 cm respectively, but the transverse diameter thus calculated may be about 1.6 cm larger or smaller than is actually the case in a particular pelvis. The figures are derived from necropsy measurements of the pelvis still clothed with soft parts.

43 Hydatidiform Mole at the Age of Fifty-two

MARZETTI (*La Clin. Ostet.*, February, 1925, p. 66) describes the case of a woman, aged 52, who suffered from menorrhagia and was thought to have a myoma. A myomatous nodule in the fundus uteri was found at the operation and also a hydatidiform mole which had partially eroded the uterine wall. Marzetti adds that apart from the indication of this erosion, hysterectomy was justified by reason of the large percentage (38 to 53 in various statistics) of cases in which chorion epithelioma is preceded by a vesicular mole.

44 The Disinfectant Value of Chloramine

G. FROMMOLT (*Zentralbl. f. Gynäkol.*, May 16th, 1925, p. 1075) states that Linzenmeier and Engelhorn recommend midwives to use chloramine instead of mercuric chloride as a disinfectant of the hands. Frommolt has carried out exhaustive experiments for the purpose of determining the disinfectant power of chloramine as compared with that of (1) 5 per cent lysol in (70 per cent) alcohol, and (2) 0.05 per cent and 0.1 per cent mercuric chloride for disinfection of the hands. Subsequently he used it in a large number of intravaginal gynaecological operations. In 163 cases chloramine was employed, while mercuric chloride was used in 159 cases as a preliminary the hands are thoroughly scrubbed with nailbrush, soap, and hot water for ten minutes, they are then rinsed in hot water and immersed for from three to ten seconds in the antiseptic solution, this is removed by a careful rinsing of the hands in hot water for thirty seconds. The hands are then thoroughly dried with a sterile towel and a toothpick is used for scraping beneath the edges of the nails. Cultures were then made from the scrapings. Frommolt reports that chloramine is inferior to mercuric chloride and to a 5 per cent alcoholic solution of lysol. In alcoholic solution its action is similar to that of lysol, but stronger concentrations and the daily use of chloramine cause dermatitis of the hands. He found chloramine solutions in 0.05 to 0.1 per cent concentration useful for douching the vagina, either as a preliminary to operation or for the disinfection of offensive discharges during pregnancy.

Pathology

45 Pathogenesis of Internal or Spontaneous Anthrax

G. SANARELLI (*Ann. de l'Inst. Pasteur*, March, 1925, p. 209) dissents from the view that cases of internal anthrax are due to the ingestion of anthrax spores with the food, the pathological lesions found in the intestine being the result of the direct attack of the anthrax bacilli on the gut wall they are in short internal malignant pustules. He has found it impossible to reproduce anthrax in rabbits or guinea pigs—adult or newly born—by the administration of the bacilli by the mouth. Experiments made *in vitro* by inoculating 1 cm of the gastric juice of a newborn guinea pig with a loopful of blood containing anthrax bacilli, and subculturing on to agar after varying intervals, showed that the bacilli were all killed in between two and forty minutes, depending apparently on the acidity of the fluid. When anthrax spores were given by the mouth to guinea pigs and rabbits, even in enormous doses, the results again were negative in all but a few instances, the spores being incapable of proliferating either in the stomach or the intestine. Experiments *in vitro* showed that the intestinal juice prevented the spores from multiplying though it had no such action on the ordinary intestinal bacteria. It therefore appears that the spores taken in by the mouth are partly aspirated or taken in other ways to the lungs. Thus, in rabbits infected with spores by the mouth, the organisms were demonstrated a few hours later in the lungs and twenty-four hours later in the spleen and other viscera. To determine the effect of introducing anthrax spores into the respiratory passages Sanarelli injected given numbers

into one nostril in such a way as to ensure their being aspirated into the lungs. If about 100,000 spores were injected, death occurred from anthrax, if fewer were given, the animals did not die, but the organisms were ingested by the phagocytes and carried to the various internal organs, where they could be demonstrated even after several days. Here they remained in a latent condition, till finally they were destroyed. But while they remained alive, it was found possible to stimulate them to activity by the simple device of injecting some substance, such as arsenic, lactic acid, sodium hyposulphite, or even distilled water, into the spleen, liver or kidney, which produced a necrotic area, this enabled the spores to germinate, to invade the blood, and to set up fatal septicaemia. The same effect was produced by incubating the rabbits at 37°C, or by feeding them on a diet poor in water. Finally Sanarelli shows that the intestinal lesions present in anthrax are due not to enteric but to haemotogenous infection. They occur after subcutaneous injection of the organisms, and are most marked in young dogs, less so in the omnivora, and least of all in the herbivora. By this method it is possible to produce in guinea pigs swelling and ulceration of Peyer's patches, passing on to haemorrhagic necrosis, and accompanied sometimes by ulceration and necrosis of the intestinal mucosa.

46 The Physiology of the Lung

G. H. ROGER and L. BRUNET (*Rev. de Med.*, No. 1, 1925, p. 1), as the result of some years' study of the lung, state that it is something more than a mere filter with respiratory functions, and they consider it a glandular organ comparable to the liver and playing an important part in metabolism. As the liver acts on the albumins and sugars, so the lung acts on the fats brought to it by the thoracic duct and veins. They add that the fats are arrested in the fine capillaries of the lung, and are oxidized by a kind of intravascular digestion, started by a ferment in this process of combustion on the fats a certain amount of heat is generated. These pulmonary fat contain antirheumatic and growth vitamins. Moreover, the authors believe that the lung also exercises a certain influence on the alkaloids and different toxic substances brought to it.

47 Diphtheroid Organisms in the Blood in Obscure Fever

E. GUNDERSEN (*Norsk Mag. f. Lægevid.*, May, 1925, p. 477) records three cases of remittent fever in female patients, aged 20, 57, and 10, without any obvious lesions. The serum test for typhoid fever was negative in each case. In the first case the disease began with rhinitis and lasted for two months, but the patient gradually recovered. In the second case the disease developed after an injury to the nose and lasted two months, when death supervened from exhaustion. There were no signs of a malignant growth or tuberculosis. In the third case the illness lasted two and a half weeks, death being due to septicaemia with signs of endocarditis. In each case a growth of *Bacillus aeris* was obtained from the blood. Gundersen thinks it probable that this organism had invaded the blood from the nasal mucous membrane, though he would not assert that the organism isolated was the cause of the disease.

48 Urea Tolerance in Health and Disease

H. E. ARCHER and G. D. ROBB (*Quart. Journ. Med.*, April, 1925, p. 274) describe an attempt made to devise a urea tolerance test on the lines of the glucose tolerance test in diabetes. A solution of 15 grams of urea, in 3 ounces of water was administered, and blood urea determinations were made 30, 60, 120, and 240 minutes subsequently, the urea in the urine being estimated at intervals of 60, 120, and 180 minutes after the urea had been given. Investigations were made in twenty-eight cases, four healthy persons being used as controls, and curves were plotted. The authors found that, in normal individuals, after urea had been administered the return to the normal concentration was complete in 120 minutes. In patients with pronounced renal disease the examination of the resting level of blood urea, taken in conjunction with the concentration, was found quite adequate for the diagnosis of renal insufficiency, the tolerance test being therefore unnecessary. In sixteen cases the presence of renal insufficiency was less apparent, and in twelve of these there was known to have been some interference with renal function, very valuable help being obtained by the tolerance test. Though the resting blood urea levels and the concentration test results were normal, the tolerance test showed the presence of renal deficiency in all cases except one. The authors dissent the value of the tolerance test in detail, and believe it to be more trustworthy than the other two tests in detecting renal insufficiency of slight degree. They add that the chief disadvantage of the test is the rather long period during which specimens must be collected.

CABANES and MONTOUX (*Gaz hebdomadaire des Sciences Médicales de Bordeaux*, April 19th, 1925, p 243) state that ocular disturbances at the onset of epidemic encephalitis or in the course of its prolonged forms have been noted by Aebard and Netter in 75 per cent of all cases. The present authors, however, like de Lapersonne, think that they are really much more frequent. Although involvement of the optic nerve is perhaps much commoner than is supposed, ocnomotor disturbances are much more often encountered. Paralysis or paresis of one or more muscles of one or both eyes is chiefly found at the onset of the disease. The principal features of these palsies are that they are incomplete, partial, and dissociated, showing a tendency to shift from one muscle to another and to extend. The symptoms may be described as follows: (1) Ptosis, which is very frequent on one or both sides, is complete or incomplete, generally transient, and sometimes so slight as to escape notice altogether. (2) Diplopia, which appears to be constant but is often atypical. It is sometimes the first sign of the disease and is frequently found, as de Lapersonne has shown, in ambulatory cases. (3) Paralytic or paretic strabismus, which is more or less pronounced. The third, fourth, and sixth nerves are most frequently affected, but chiefly the third. The various ocular palsies may be isolated or combined. The most frequent combination is paralysis of the vertical movements and those of convergence. The authors think that the so-called palsies of divergence are really spasms of convergence. The internal muscles of the eye are often involved. English authors have emphasized the frequency of unilateral or bilateral paralysis of accommodation and of botulism. Most writers have, which is usually associated with, reflex to light. Often the reflex to accommodation is diminished while the reflex to light is preserved—the converse of the Argyll Robertson pupil.

ROUSSEAU SAINT PHILIPPE (*Bull de l'Académie de Médecine*, April 28th, 1925, p 470) emphasizes the fact that whooping cough is variable in its form, appearance, and course. Side by side with moderate and well marked cases are incomplete and abortive forms which escape recognition and are often the most dangerous. Pertussis is not always accompanied by a whoop, but should be suspected in the presence of an obstructive cough, most pronounced at night and followed by vomiting or expectoration. The cough may be rendered characteristic by pressure with the thumb on the cricothyroid region or trachea or by tickling the windpipe. Lastly, all doubt can be removed by bacteriological examination of the sputum. Whooping cough patients should be kept under close observation and should be antenatalized periodically, as many of the complications are insidious and latent. They are chiefly found in the prolonged relapsing forms. In view of the fact that whooping cough predisposes to tuberculosis, prolonged contact between a case of whooping cough and one of active tuberculosis should be carefully avoided. The patients should be protected against chills and secondary infections. The author does not agree with those pediatricians who recommend that the period of staying away from school should be shortened on the ground that the causal organisms are hardly ever found in the sputum, as they may be lurking in the recesses of the larynx.

LOUIS BORY (*Bull Soc Française de Dermatologie et de Syphilis*, April 1925, p 171) suggests the possibility of the existence in women of cases of unrecognized but contagious syphilis evading the strictest clinical observation—a matter of considerable importance in the examination of prostitutes. He asks whether such atypical cases have a special origin with an abnormal onset, and whether it is possible for an apparently non-syphilitic woman to convey infection to a man. Bory cites the analogous examples of carriers of tuberculosis, diphtheria, cerebrospinal meningitis, and enteric fever and quotes Milian's remarks. The untreated syphilitic exudes spirochaetes from every pore and in all his secretions. Bory condemns the official method of inspection of prostitutes, and thinks that the Bordet-Wassermann test should be compulsory in every case. He holds that in the absence of any lesion of skin or of mucous

membrane, spirochaetes may travel as far as the ovaries, or even the peritoneum, where they may remain dormant for an unknown period, or possibly, in the absence of favorable conditions, they may die. Such spirochaetes, latent in the ostium of the Fallopian tube, might attack the ovum at the moment of fertilization, so explaining Colles's and Protos's laws. Moreover this suggestion would account for the varying degrees of immunization of women in regard to syphilis, even to the extent of complete immunity. Bory believes that a woman may be infected either by local infection, producing, as in man, a chancre followed by secondary generalization or by direct inoculation of the menstruating uterine or of the peritoneum, in the latter case the local lesion does not occur, and in the majority of cases the disease remains latent.

J. SABRAZES, D. POUZAT, and P. LARAUD (*Journ de med de Bordeaux*, May 10th, 1925, p 371) state that two groups of combined meningococcus and pneumococcus infection can be distinguished. In the first group pneumococci are found at the onset of the disease in smears and cultures among the meningococci which predominate. Netter has seen cases of this kind in which recovery took place under combined anti-meningococcus and anti-pneumococcus serum therapy. In the second group, as the meningococcus infection appears to be subsidiary, pneumococcal infection supervenes, and the disease assumes a most malignant form, against which the most energetic anti-pneumococcus serum therapy proves ineffective. The present case was that of a man, aged 23, who developed a severe attack of meningococcus. A meningitis accompanied by extensive labial herpes. During the course of treatment pneumococcus meningitis developed. The symptoms consisted of hyperpyrexia with dissociation of pulse (76) and temperature (105.4°), and towards the end intense polyuria and glycosuria.

J. M. T. FINNEY, sen and jun (*Surg, Gynecol and Obstet*, June, 1925, p 743), report a series of fifteen cases of tuberculosis of the tongue. The condition is not common and occurs chiefly in cases of advanced pulmonary tuberculosis. It may be associated with a laryngeal manifestation also. The authors remark that primary tuberculosis of the tongue is very rare and the disease may manifest itself in several forms. Lupus may occur as an extension from the cheek. Tuberculosis is usually found as a single nodule deep in the muscles of the tongue and simulating a gumma. It tends to soften, form an abscess and ulcerate. The most frequent lesion is a shallow ulcer with irregular edges. It may be single or multiple and show a tendency to heal and break down again. The tip, margin or dorsum of the tongue may be attacked. Pain does not seem to be a striking feature, and when present is usually a late stage of the disease. There is a marked preponderance of cases in males as occurs also in carcinoma. Most cases occur between 30 and 60 years of age. The lymph glands may or may not be enlarged. The diagnosis may be difficult and is made by eliminating other conditions. The usual tests may be useful but it is often difficult to find tubercle bacilli present. The authors think that no special form of treatment is indicated, but recommend wide excision much as if it were carcinoma. The prognosis appears uniformly bad, especially in the presence of a general infection. Direct trauma appeared to be a causative factor in some of the cases.

E. WEGNER (*Zentralblatt für Chirurgie*, May 2nd, 1925, p 971) records the case of a woman aged 65, who was admitted to hospital for intestinal obstruction of two days duration. On laparotomy the distal end of the appendix was found to have undergone a cystic change and to be lying between two haustra of the ascending colon, no adhesions had been formed. The appendix was removed in the ordinary way, and the subsequent recovery was uneventful. The case was an example of a mucous cyst of the appendix, sometimes known as pseudo-myoma. In the previous cases on record this condition has merely been an autopsy finding, or has been discovered on laparotomy owing to rupture of the cyst.

necessitating operation Wegener has been unable to find any record of a similar case in which intestinal obstruction was due to a mucous cyst of the appendix. Although there was no previous history of such an occurrence, it is probable that inflammation of the proximal part of the appendix had occurred some years previously and had caused occlusion of the lumen. On microscopic examination the cyst showed all the layers of the appendix, especially the epithelium, in a good state of preservation. It was particularly remarkable that the goblet cells of the mucous membrane were still actively engaged in the production of mucus in spite of the internal pressure.

55 Cancer Mortality in Copenhagen.

P. HEIBERG (*Ugeskrift for Læger*, May 7th, 1925, p. 460) thinks the cancer mortality in Copenhagen has remained unchanged as far as a certain age class is concerned. He selected this age class (55 to 64) for this reason, among others—that the recent epidemics of influenza had comparatively little influence on persons in this decade of life. The twenty-year period studied was from 1904 to 1923, and the deaths from cancer in each of the five-year periods between 1904 and 1923 were as follows: Men, 354, 440, 488, 528, women, 421, 483, 561, 644. It will thus be seen that, in the period under review, there was a rise in the number of deaths from cancer by 50 per cent, and that the deaths among women were greatly in excess of those among men. But when these figures were corrected so as to show the number of deaths from cancer among 10,000 living persons in the same age group, the following figures were obtained: Men, 60, 63, 61, 60, women, 50, 51, 50, 52. In other words, there has been no change in this twenty-year period in the death rate from cancer in men and women between the ages 55 and 64, and the cancer mortality is actually about 20 per cent higher for men than for women.

56 Pseudo myxoma Peritonei

T. S. KLOTS (*Nederl Tijdschr v Geneesk*, May 9th, 1925, p. 2112), who records an illustrative case in a woman aged 50, states that pseudo myxoma peritonei was first described under this name in 1884 by Weith, who found it arising from an ovarian cyst. The first case in a man was reported by E. Fraenkel in 1901, in which it arose from the appendix. Subsequently several cases were described both in men and women in which the appendix was the only cause. Examples were also recorded of unilateral or bilateral ruptured ovarian cysts with a similar condition in the appendix. The prognosis is much less grave than is generally supposed if the primary and secondary pseudo myxomatous tumours are carefully removed. The appendix should be excised in all cases, even when it is apparently healthy. Pseudo myxomatous tumours adherent to the peritoneum should be left in situ if they cannot be removed easily, and the abdomen should be closed without drainage. When there is recurrence an operation should be performed as soon as possible and a careful search made for pseudo myxomatous growths. The operative mortality is fairly low. Of six patients operated on by Briggs, of whom only two had recurrences, after twenty-six months and seven years respectively, one died nine years after the first operation after having had twelve operations for recurrences, while the other four had had no recurrences two years after their operation. Of six patients operated on by T. Wilson one died nine days after the operation from intestinal obstruction and another two years after the operation from psoas abscess, while the others had had no recurrences nine months, two years, seven years, and eight years respectively after the operation. In Klots's cases, in which the condition originated from a cyst of the right ovary, a diagnosis of colloid cancer of the ovary was made at the first operation, but at the second operation a week later the true condition was recognized, and complete recovery followed.

57 Treatment of Perforated Gastro duodenal Ulcers

S. RADOJEVITCH (*Rev de Chir*, No 3, 1925, p. 161) deals with the treatment of perforated gastric and duodenal ulcers in a large series of cases. When the perforation had occurred less than twelve hours previously the mortality was 23.5 per cent in 119 cases treated by simple suture, whereas in 134 cases treated by gastro-enterostomy the mortality was 19 per cent. The prognosis, therefore, in early cases appears to be improved by the addition of a complementary gastro-enterostomy, and this was even more noticeable in cases of indurated and callous ulcer. Simple excision was employed in 18 cases with 2 deaths, a mortality of 11 per cent; the thermo-cautery used in 9 cases had a death rate of 22 per cent; gastro-pylorotomy in 124 early cases was followed by 14 deaths. Radojevitch considers that in early cases direct methods of treatment give better results and a lower mortality than indirect methods. In cases in which perforation had occurred more than twelve hours previously direct methods

such as excision and the use of the cautery, were found to have a distinctly higher mortality than suture combined with gastro-enterostomy. With regard to ultimate results simple suture appeared the least satisfactory, the author believes that where the ulcer is not dealt with directly there is probably a definite risk of malignant disease later. He concludes that in all cases, speaking generally, excision of the ulcer-bearing area or local treatment of the ulcer combined with gastro-enterostomy give the best results in the treatment of perforated gastric and duodenal ulcer.

Therapeutics.

58 Ulcers of the Leg treated with Insulin

M. FAURE BEAULIEU and M. DAVID (*Bull Soc Med de Paris*, June 12th, 1925, p. 892) report favourable results in ten cases of ulcers of the leg treated by insulin injections. In these cases, although the urine showed no trace of sugar, it was found unexpectedly that there was a slight excess of sugar in the blood, 1.67 to 2.77 per 1,000. The authors, however, do not consider that they were cases of latent diabetes. The insulin was given hypodermically and not used as a local dressing, and, except for the occurrence of urticaria in one case, no bad effects were noted. Most of the ulcers were large and chronic, they responded remarkably well to the treatment, and the authors suggest that insulin possesses a trophic action. In one case an ulcer $4\frac{1}{2}$ by $2\frac{1}{2}$ in was cured in two months, whereas a year previously it had taken seven months to heal.

59 Vaccine Treatment of Whooping cough

J. M. WIGGELENDAM (*Nederl Tijdschr v Geneesk*, May 23rd, 1925, p. 2326) states that in the last six months of 1924 he treated by pertussis vaccine 34 cases of whooping cough, 3 of which were in adults and 31 in children aged from 3 months to 8 years. The vaccine, which had been prepared at the Utrecht Serological Institute, had been put up in bottles of 10 c.c. containing 2,000 million bacilli per cubic centimetre. Increasing doses of 1,000, 2,000, 3,000, and 4,000 million were injected subcutaneously over four or five days. Half this dosage was employed for children under the second year of life, while patients more than 10 years old were given as much as 5,000 million. With two exceptions, in which no result was obtained even after six injections, remarkable success was attained after two to five injections, only one child, which developed very severe urticaria, showed any bad effects from the injections.

60 Adjuvants in the Treatment of Glaucoma

F. FERRIER (*Brussels Medical*, April 19th, 1925, p. 830) observes that at present the treatment of glaucoma, especially when acute, is essentially surgical. In acute glaucoma iridectomy is essential, but it cannot always be performed immediately, in all but the most acute attacks, it is possible that the use of suitable myotics will reduce the tension and thus improve the intraocular conditions, so rendering the subsequent operation safer and more effectual. The use of pilocarpine nitrate (2 per cent aqueous solution) or preferably a 1 per cent oily solution of eserine, instilled every six or eight hours, is very general. Their action is not yet fully understood, neither is the mechanism of glaucoma, but it would appear that the latter is a result of oedema of the vitreous which may be regarded as analogous to the anaphylactic or protein "shock" such as the angio-neurotic oedema of Quinke, or serum disease. Alteration of the chemical constitution of the intraocular fluids probably occurs very early, preceding by a long period the actual attack. Endocrine changes may be a contributory cause, since statistics show that glaucoma occurs rarely before the age of 50, and is rather more common in women than in men. Another probable contributory cause may be found in senile changes in the sclerotic lens and iris. Nervous factors have also been suspected, but if glaucoma is a vagotome phenomenon it is difficult to account for the mydriasis which is always so marked. Although adrenaline raises the general blood pressure, yet it has been found to diminish the intraocular tension, and it is therefore a valuable adjuvant in glaucoma. Rollet and Curtius succeeded in reducing abnormally high tension in a case of irido-cyclitis by subconjunctival injection of a few drops of 0.01 per cent adrenaline solution, thus rendering the use of atropine safe. Instillation of a similar adrenaline solution may dilate the pupil when intraocular hypertension exists, thus furnishing a means of diagnosing glaucoma. Fromaget by injecting into the retro ocular cone 3 c.c. of a 2 per cent novocain solution containing 10 per cent of a 0.01 adrenaline solution, succeeded in preventing a threatened attack of glaucoma in twenty minutes. Later he obtained similar results by the injection of adrenaline alone.

These observations have been repeatedly confirmed, but Terrien finds that this reduction of tension is always temporary, the lowest point being reached on the first or second day, after which the tension gradually rises, reaching its original height at the end of five or six days. In a case of acute glaucoma in which Terrien had performed iridectomy on the other eye four years earlier, the tension was very high (70 mm), with severe pain and vomiting. The patient could distinguish hand movements only at a few inches. Retrobulbar injection of 2 c.c. of novocain-adrenaline solution produced an obvious improvement, and by the evening the tension had fallen to 55 mm. Next day it rose to 60 mm, and, the pain having returned, iridectomy was successfully performed. The author adds that this procedure is valuable as it may assist the action of myotics in all cases, if it can not replace iridectomy it may enable the operation to be performed under better conditions, or at least delay operation until a specialist's arrival. The injection may be repeated several times, moreover, if hypertonia supervenes after iridectomy, it will assist the action of myotics. The mode of action of adrenaline in these cases is obscure. Dionne (in 5 or 10 per cent solutions) dropped into the conjunctival sac, or even the pure powder, which has a definite lymphagogue action, will give great relief to the symptoms and will reduce tension considerably. Some authors, regarding glaucoma as the result of vitreous oedema, have used subconjunctival injections of 1 per cent sodium citrate solution, these are always painful and may be replaced by a solution of sodium bicarbonate.

Anaesthetics.

61. Apothesine Anaesthesia

S. G. CHAVAN and J. P. ARLAND (*Indian Med. Gaz.*, June, 1925, p. 272) report the successful use of apothesine as a local anaesthetic in operating upon a patient with an irreducible scrotal hernia, enlarged heart, emphysematous lungs, and rigid arteries. An intradermal wheal was made one inch internal to the anterior superior spine and half an inch below it. The needle of the hypodermic syringe was then inserted vertically until the resistance of the external oblique muscle was felt, and 4 drachms of a 0.5 per cent solution of apothesine was introduced. The needle was then thrust horizontally in a direction midway between the anterior superior spine and the spine of the pubis, and 1 oz. of solution injected. An intracutaneous infiltration was made in the line of the proposed incision, and, after exposure of the hernial sac, its neck was infiltrated with about 2 drachms. The anaesthesia was found to be perfect in all respects, no shock was caused, and, although as much as 15 grains of apothesine was employed, no toxic effects followed.

62. The Fall of Blood Pressure in Splanchnic Anaesthesia

W. HARKE (*Zentralbl. f. Chir.*, March 14th, 1925, p. 565) states that Cyon and Ludwig in 1866 showed that section of the splanchnic nerves in the animal caused a considerable fall of blood pressure, which was explained by paralysis of the vasoconstrictors of the intestinal vessels and the resulting accumulation of a considerable quantity of blood in these vessels. This form of vascular paralysis is generally supposed to account for the fall of blood pressure after splanchnic anaesthesia, which forms a considerable drawback to this method. Hitherto all attempts to prevent it have been unsuccessful. Digitalis, strychnine, caffeine, and adrenaline have no permanent effect. Harke has recently employed "pituglandol," which is a 10 per cent extract of the fundibular portion of the hypophysis, in 28 cases of fall of blood pressure following splanchnic anaesthesia. In 24 cases the fall of blood pressure was avoided by giving 1 c.c. of pituglandol ten minutes before the injection of the anaesthetic, and the action of the drug lasted one to one and a half hours. The hypertensive action of pituglandol was all the more marked when there was a low arterial blood pressure from the first, or when a considerable fall of blood pressure had been caused by any therapeutic procedure, such as bleeding or eversion of the intestine. In four cases two injections of pituglandol were given, in one of which the second injection was followed by a fresh rise of blood pressure, and in the other three by no change. All four patients were very anaemic as the result of haemorrhage from gastric ulcers. Apparently, therefore, the action of pituglandol is not so marked in anaemic patients as in those with normal haemoglobin values. In cases of high blood pressure (175 mm Hg) 1/2 c.c. of pituglandol instead of 1 c.c. was given. The blood pressure after the injection rose to 250 mm, and then gradually sank to 150 mm, but no lower. No bad effects of any kind could be attributed

to the use of pituglandol in any of the 28 cases. According to Biedl the action of pituitary extract consists in producing a rise of the arterial blood pressure, partly by vascular contraction and partly by slowing and strengthening the cardiac action.

63. Sacral Anaesthesia

N. MURVEY and D. C. ELLIOTT (*Amer. Journ. Surg.*, Anaesth. Suppl., April, 1925, p. 39) describe the technique for producing anaesthesia by the injection of novocain into the sacral canal between the dura and the bony covering of the spinal cord. With a hypodermic syringe containing 2 per cent novocain solution an intradermal wheal is made over the sacral hiatus, the point over the tip of the sacrum which is situated at the apex of an equilateral triangle, of which the base lies between the posterior superior iliac spines. A spinal puncture needle is then inserted into the sacral hiatus at an angle of 45 degrees, and as soon as this impinges upon bone it is slightly withdrawn and lowered so that its shaft is parallel to the sacral canal, into which it can be introduced to a depth of 4 or 5 cm. With a 10 or 20 c.c. syringe partially filled with novocain solution aspiration is attempted, and if blood or spinal fluid appears the needle must be slightly withdrawn before an injection is made, as the solution must not be injected into either the blood or the spinal fluid. By dissolving a powder containing 1 gram of dry novocain and 0.2 gram of quinine and urea hydrochloride in 55 c.c. of normal saline and boiling for two and a half minutes a solution for injection is obtained which is never over 2 per cent novocain and 0.4 per cent quinine and urea hydrochloride, and at least 45 c.c. may be injected in normal adults. The authors consider that the method is suitable for operation upon the anus, lower rectum, perineum, and bladder, and occasionally the prostate, and in women for local operations upon the external genitals and for dilatation and curettage. In cystoscopies upon painful or irritable bladders the method is of great value.

Obstetrics and Gynaecology.

64. Ante natal Death due to Abnormalities of the Umbilical Cord

ACCORDING TO F. J. BROWNE (*Journ. Obstet. and Gynaecol. of the British Empire*, Spring, 1925, p. 17), true knots on the umbilical cord, which have been described as present in from 1 in 1,000 to 1 in 200 cases, may exist during intrauterine life without endangering the life of the foetus. In two of the author's cases, however, and in 24 cases collected from the literature, it appears that such knots may lead to foetal death, usually during the later months of pregnancy. In such cases the cord is not necessarily long and may even be unduly short. Knots existing before labour may, it is stated, be distinguished from recent ones by persistent flexion after the knot has been undone, by permanent grooving at the site, and by the local disappearance of Wharton's jelly. A few cases have been recorded of ante natal death due to encirclement of the child's neck (before delivery) by a loop of the cord, and sometimes the pressure is so great as almost to amputate the head. Excessive torsion of cord rarely causes the foetus to perish, the twists may be as numerous as 95, and insufficiency of the Wharton's jelly is probably an important predisposing cause. Localized constriction is frequently associated with pathological torsion; it is commonest at the foetal end, and is probably due to obliterating vascular changes. Haematomata and solid tumours of the umbilical cord are of great rarity.

65. Post climacteric Haemorrhages

M. HENKEL (*Deut. med. Woch.*, March 27th, 1925, p. 507) gives statistical evidence in support of his criticism of a textbook of gynaecology published in 1924, in which one of the writers, Stockel, suggested that a post climacteric haemorrhage should be an indication for immediate hysterectomy. Against the practice of first performing an exploratory curettage and carrying out a hysterectomy at a later date in the event of the microscopic examination revealing malignant disease, Stockel argued that the curettage might favour spread of the disease, and that this procedure entailed two operations instead of one. Henkel admits that the post climacteric uterus has finished serving its purpose, but he considers the risks entailed by the wholesale removal of every uterus convicted of post climacteric haemorrhage to be too great, particularly when the patient is old and likely to tolerate a general anaesthetic badly. In support of his contention that post climacteric haemorrhages from the body of the uterus are generally not malignant, he gives the following statistics from the University Maternity Hospital of Jena in the six year period 1919-24. Of 240 cases only 27 showed

malignant disease as indicated by the result of a microscope examination, in the remaining 213 cases the haemorrhages were from a benign lesion of the lining of the body of the uterus. In his private practice in the same period he had 72 cases of post climacteric haemorrhage from the body of the uterus, and only in 9 of these cases was carcinoma diagnosed. Adding his hospital to his private cases, he shows that only in 11.85 per cent. was the cause of the haemorrhage from the body of the uterus a malignant growth. In no case did the exploratory curetting do any harm, and his opinion of the harmlessness of curetting was confirmed by the examination of the uterus in these cases in which it was subsequently removed. The usual interval between the two operations in cases of malignant disease was a week. Hysterectomy was performed by the vaginal or abdominal route, according to the nature of the case, when pyometra exists—and this was so in two of the author's cases—hysterectomy by the vaginal route is apt to be dangerous.

63 Treatment of Menorrhagia in Virgins

A SIREDI Y (*La Gynecol.*, April, 1925, p. 193) remarks that the treatment of menorrhagia about the age of puberty is hindered by the difficulty of making a complete local examination, but the great majority of patients recover under general treatment. A careful examination must be made of the patient's health and the personal and family antecedents. Certain cases of menorrhagia occur in the subjects of cardiac, renal, or hepatic disease, here, in addition to treatment of the organic disease, absolute rest in bed is necessary during the menses. "Essential haemorrhages" in young girls, otherwise healthy, yield in the majority of cases to absolute repose during two or three consecutive menstrual periods. Very grave haemorrhages require, in addition, the raising of the foot of the bed and hypogastric application of an ice bag, renewed every three hours. Hot vaginal douches in grave cases are given with difficulty if the hymen is intact, they should consist of four or five litres of water at 122°F, be repeated at intervals of four hours, and if effective are usually so within forty-eight hours. Siredy adds that it is most unwise to advise a very liberal diet aided by tonic exhibition of iron, arsenic, and phosphorus, the diet should not be restricted, however, except, perhaps, in endocrine dyscrasia with tendency to obesity—here a milk and vegetable dietary is often useful. Search should be made for signs of thyroid inadequacy—coldness of the extremities, dryness of the skin, loss of hair, migraine, somnolence, and obesity. If these are found 25 mg. of thyroid extract with 1 to 2 cg. of hypophysis and 5 to 10 cg. of suprarenal extract may be given once or twice weekly for two or three weeks, the doses being increased if necessary. If these measures fail local examination is indicated, especially if the periods are followed by a scrous or mucous discharge tinged with blood, the detection of a mucous polyp or even of a dilated os calls for curetting under general anaesthesia, which usually brings about cure. Certain cases resist repeated curettings, and radiotherapy is therefore justified exceptionally. Siredy prefers intrauterine radium to x-ray treatment, chiefly because the antecedent curetting affords useful diagnostic data, he has used small doses of radium in eight cases of severe haemorrhage (resistant to curetting) in which the endometrium was polypoid and adenomatous. All these patients were cured, with conservation of the menses, one subsequently gave birth to healthy offspring. Cases of myoma and ovarian disease require the appropriate treatment. Siredy thinks that many cases of otherwise inexplicable menorrhagia in young virgins are due to an hereditary syphilitic taint, of which the patients may or may not show stigmata. In these cases he is of the opinion that the older treatment by mercury and small doses of iodides is more effective than administration of arsenic, benzol derivatives or of bismuth.

Pathology.

67 Viability of Typhoid Bacilli in Shell Oysters

H. O. JORDAN (*Journal Amer. Med. Assoc.*, May 9th 1925 p. 1402), as the result of his experiments, found that shell oysters infected with typhoid bacilli by floating for an hour in sea water to which typhoid bacilli had been added and then placed at ice box temperature (from 5° to 8°C) continued living typhoid bacilli after as long as twenty-four days. There was no evidence of multiplication, but rather a diminution, with the passing of time. F. O. FONVEX and J. L. WHITE (*ibid.*, p. 1403) carried out the following experiments. Shucked oysters were inoculated with typhoid bacilli and stored at 98°, 70° and 45°F. *B. typhosus* survived in the oyster fluid in considerable numbers for one, four, and twenty-two days respectively. Living shell oysters were inoculated with large numbers of typhoid bacilli and stored

at 70° and 45°F. At the former temperature *B. typhosus* survived in the fluid within the shells for eight days, while in the latter temperature, which is the ordinary icebox temperature of the trade, the organism survived for sixty days. C. KINLOUGH (*Public Health Rep.*, April 24th, 1925, p. 819) has also found that the typhoid organism may be recovered as long as fifteen days after it has been given to oysters at temperatures of both—2.8°C and 14.4°C. These experiments conclusively prove the importance of preventing contamination of the oyster at any time from the beginning of its growth to its ultimate consumption.

68 The False Dick Reaction

G. ZOFFLER and MANOUSSAKIS (*C. R. Soc. de Biologie*, April 10th, 1925, p. 1046) state that one of the chief difficulties in the performance and interpretation of the Dick test is the occurrence of the so-called "false Dick reaction" which Zingher has attributed to protein substances of streptococcal origin dissolved in the broth culture. When a streptococcal toxin is heated in the water bath to 100°C for an hour the toxin disappears and the protein elements persist. The heated toxin therefore remains capable of producing a pseudo reaction, and the true reaction can be distinguished from the false by giving a control injection of heated toxin. The true reaction is effaced or neutralized by the serum of a scarlet fever convalescent, whereas the pseudo reaction persists. The authors describe their technique for purifying streptococcal toxin and freeing it from the protein substances responsible for the pseudo reaction. The technique is based on the fact that the precipitation of albuminoid substances may occur without much affecting the streptococcal toxin. The best method of precipitating the protein substances is the employment of nitric acid or acetic acid in the presence of a 20 per cent. solution of sodium chloride. 2 grams of sodium chloride are dissolved in 10 c.c.m. of streptococcal toxin, and acetic acid is added drop by drop until its concentration is about 1 per cent., or 0.1 c.c.m. of acetic acid for 10 c.c.m. of toxin. The solution is then carefully shaken so as not to redissolve the precipitate formed, and rapidly filtered. The filtrate is neutralized by a decinormal solution of soda, and its sterility tested. The pseudo reaction is now abolished, or much attenuated, and no longer constitutes a source of error.

69 Persistence of Antitoxin in the Blood after Inoculation of Anatoxin

H. DAVREL, G. LOISEAU, and A. LATFAILLE (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, April 9th, 1925, p. 565) report three cases to show that the increase in the antitoxic power of the serum in persons vaccinated by anatoxin persists for some time. Eleven months, one year, and thirteen months respectively after inoculation the antitoxin content of the serum, though diminished, was still pronounced and considerably in excess of the quantity needed to render the Schick reaction negative. The authors find that the duration and intensity of the immunity conferred by anatoxin thus greatly exceeded those conferred by other methods of vaccination. LÉRENOUËT (*ibid.*, p. 567) also emphasizes the superiority of preventive inoculation against diphtheria by anatoxin over injection of antitoxin, which conferred only a temporary protection. In most cases 1/4 or 1/2 c.c.m. of anatoxin was given and repeated three weeks later.

70 Fibrinogen in the Cerebro Spinal Fluid

LET, and P. BRUNER (*C. R. Soc. de Biologie*, p. 1201) describe a method to distinguish the mechanical and the inflammatory types of the cerebro spinal fluid, based on the estimation of the proportion of fibrinogen to total albumin. In normal blood plasma this proportion is a little above 1 in 20, in the mechanical type of hyperalbuminuria the proportion in the cerebro spinal fluid is much the same, but in the inflammatory type it is greatly increased. To estimate the amount of fibrinogen the spinal fluid is mixed with an equal quantity of a saturated solution of sodium chloride, and left for twelve hours. At the end of this time the fibrinogen will be found precipitated in the form of a magma. Unfortunately it is impossible to estimate it directly, as it is impregnated with the sodium chloride. The total amount of albumin in the original fluid and in the dechlorinated fluid are estimated, the difference gives the amount of fibrinogen precipitated. For practical purposes it is not the total quantity of fibrinogen which is of importance, this may be high in a compression fluid and low in an inflammatory fluid. The important figure is the proportion of fibrinogen to total albumin. In compression of the medulla or cerebrum the figure is between 1 in 10 and 1 in 15. In inflammatory lesions, particularly those which are accompanied by an increased cell content (in syphilis, for example), it rises to 1 in 3 or 1 in 2.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

71 Anaphylaxis due to Insulin

M. RINAUD and A. LACROIX (*Bull et Mem Soc Med des Hop de Paris*, June 4th, 1925, p. 831) publish the case of a diabetic woman, aged 64, who, after injection of insulin, developed on several occasions signs of severe anaphylaxis. These consisted of marked oedema of the face and pharynx, vomiting, redness, giant urticaria on hands and feet, generalized pruritus, troublesome cough with abundant frothy mucus, headache and dyspnoea. The symptoms lasted about two hours. The authors tried to determine how far the condition was due to insulin and to other protein substances, they came to the conclusion that the insulin was responsible, causing haemolysis. This, they point out, would explain certain alterations in the coagulation time and in blood pressure which were noted.

72 The Heart in Faucial Diphtheria

H. M. MARVIN (*Amer Journ Dis Child*, April, 1925, p. 433) records his clinical and electrocardiographic observations on ninety patients with faucial diphtheria and three additional cases which were not studied with the electrocardiograph, but were subjected to necropsy. The only important abnormalities in the electrocardiogram were disturbances in ventricular or intraventricular conduction. Sinus arrhythmia occurred invariably in young patients with heart rates below 95 a minute. Auricular and ventricular premature beats, sino-auricular block, and variations in the form of the P wave were seldom noted and appeared to have no significance. There was no evidence that in some patients the heart was primarily injured, and in others the peripheral circulation suffered the first and greatest damage. In Marvin's patients who showed circulatory impairment the clinical picture seemed to be that of myocardial failure. The most important signs of myocardial involvement were vomiting, hepatic engorgement, and change in the character of the first heart sound. Syncope occurred only once in the series and gallop rhythm was noted only three times. Abdominal pain was complained of in five of the thirteen fatal cases. Necropsies in five cases revealed widespread myocarditis. The vagus nerves were found normal in the only case in which they were examined. Electrocardiograms proved of considerable value in the diagnosis and prognosis.

73 Geilher's Disease

K. REHSTEINER (*Schweiz med Woch*, May 7th, 1925, p. 410) gives an account of a small epidemic of Geilher's disease, which seems to have been unknown in Europe since 1900, although it has been more or less endemic in the north of Japan. In one house, in which a family of four persons lived, all showed signs of this disease, and in another family of four persons three were ill. All seven patients suffered from transitory attacks of ptosis of the upper eyelids, disturbances of vision, giddiness and weakness of the muscles of the nape of the neck. In one case there was also spasm of the orbicularis oculi—a phenomenon not commonly associated with Geilher's disease. The triad of phenomena which Geilher considered most characteristic are: (1) pareses of certain muscles, notably the levator palpebrae superioris, the muscles of the nape of the neck, and, in some cases, the extensors of the arms and legs; (2) disturbances of vision and giddiness; (3) pain in the nape of the neck and back. The disease, which is never fatal, usually begins in the summer and ceases when the weather becomes cold. Each attack of ptosis, giddiness, and pain lasts only a few minutes, but there may be as many as a score of such attacks during the day, and they are, therefore, liable to interfere greatly with the patient's work. Discussing the differential diagnosis, the author points out that the transitory character of the attacks distinguished his cases from typical cases of myasthenia pseudo-paralytica and lethargic encephalitis. In his summary of studies of this disease in Japan he points out that this is often a disease of stables, persons employed therein being subject to it, while others, even though they live in intimate contact with stablemen, remain immune. It would therefore seem that the disease is not contagious, though it has been known to be transmitted through the milk from mother to infant. The work of Couchoud in 1914 suggests that the disease is caused by small Gram-negative cocci, entities of which when injected subcutaneously into rats, may provoke signs identical with those observed in man.

74 Vaccine Prophylaxis of Scarlet Fever

L. PICCHEZZI (*Riv Polichinico*, Sez. Prat., April 27th, 1925, p. 594) states that on the occasion of an outbreak of scarlet fever near Rome in August-December, 1924, 150 children were given prophylactic intramuscular injections of Caron's vaccine on alternate days, while 100 other children served as controls. Of the 150 vaccinated children 34 developed scarlet fever at various periods after vaccination, and were classified in the following groups: (1) Five patients who contracted the disease one month after the last injection of vaccine, the symptoms were very slight and no complications occurred. (2) Nine patients who developed scarlet fever two months after the last injection. The symptoms in this group were more severe and five patients had complications, but all recovered. (3) Twenty patients who fell ill three months after vaccination and had a still more severe attack which was almost identical with that in the non-vaccinated. One died after presenting necrotic angina, effusions into the joints, and deep abscesses in the right hip, all the rest recovered, though four had nephritis, one otitis, and one pleurisy. On the other hand, all the non-vaccinated children contracted scarlet fever and mostly in a fairly severe form. 11 died—4 from a septic attack, 3 from toxæmia, 1 with meningitis, 1 of empyema, and 2 of nephritis. Moreover, a large number had renal complications and abscesses of various kinds. Picchezzi concludes that the vaccine prepared from the organisms isolated by Dr. Cristina, Caronia, and Sindoni is of undoubted efficacy in the prophylaxis of scarlet fever. T. LAZZARINI (*ibid.*, p. 595), during an epidemic of scarlet fever in Istria in October, 1924, vaccinated 70 children under 18 years of age with Caron's vaccine, 50 of these were brothers and sisters of the scarlet fever patients and had never had scarlet fever, but had been in close contact and in some instances in the same bed with the scarlet fever patients. The remaining 20 had not been in direct contact with scarlet fever patients, but were mostly the relations of the doctors and dispensers who had been exposed to infection. None of those vaccinated contracted the disease and no bad effects resulted from the vaccination.

Surgery.

75 Operative Treatment of Gastric Ulcer

K. A. MEYER, W. A. BRAMS, and W. N. GRAVES (*Annals of Surgery*, June, 1925, p. 1102) report a series of 22 cases of gastric ulcer in which the Polya operation of pyloric resection with gastro-enterostomy was performed after medical treatment had failed to give permanent relief, and there was evidence of the presence of a chronic ulcer of considerable severity. Eighteen of these patients, subsequently examined, showed an absence of free hydrochloric acid in the stomach contents. The rate of emptying of the stomach was estimated radiologically in 15 cases and found to be rapid in 10. Diarrhoea was found in only one case, and as a whole the patients were much improved after the operation, they were free from gastric symptoms, had gained in weight, and were able to return to their occupations. The authors believe that in such cases of chronic gastric ulcer it is wise to resect the pyloric antrum, so removing the ulcer and the ulcer-bearing area. Moreover, the eradication of the factors in ulcer formation—namely, the gastric juice and the retention of stomach contents—is also achieved. With the exception of one death and of one patient who was limited to light work, all the patients so treated have recovered completely and returned to their regular occupations.

76 Intestinal Obstruction due to Lane's Band

GIVESTI (*Bull et Mem Soc Nat de Chir*, May 30th, 1925, p. 593) reports the following case. A man, aged 30, was admitted with symptoms of acute obstruction of twenty-three hours' duration. There had been a sudden attack of generalized abdominal pain, and after that the patient passed neither faeces nor flatus, the vomiting being bilious. The abdomen was slightly distended and generally painful on palpation, especially in the umbilical and right iliac regions. There was a previous history of slight dyspepsia with pyrosis and slight constipation, but none of appendicitis or of lithiasis. A provisional diagnosis of perforated gastric ulcer was made, and an immediate suprapubic laparotomy was performed. The stomach and gall bladder were normal, but at the lower end of the incision congested and distended coils of intestine could be seen. The incision was closed and

the abdomen was reopened by a median subumbilical incision. A Meckel's diverticulum was found adherent to the anterior abdominal wall, and, although not the cause of the obstruction, it was divided and excised. The coils of small intestine were greatly distended, the colon was empty, the appendix was normal and non-adherent, the terminal portion of the ileum was completely flattened and compressed against the posterior wall for about 10 cm by a thick, smooth, fleshy band. This had produced a V shaped notch in the intestine with which its upper extremity was fused, while below it was attached firm to Douglas's pouch. The band was divided along the free border of the ileum and the abdomen closed. There was severe shock, the patient dying fifteen hours later. Ginestry states that only one previous case of obstruction by Lane's band has been reported (Hillingworth's). In that case the operation was performed eight hours after the onset and the patient recovered, in Ginestry's case there was a delay of thirty three hours. Manœuvre states that in the course of every appendectomy which he has performed in the last twelve years he has found Lane's band fifteen times—some times alone, at others associated with Jackson's membranes situated on the caecum and ascending colon.

77 Congenital Dislocation of Hip

L. W. LEE (*Journal Amer Med Assoc*, May 30th, 1925, p 1627) gives the results of a clinical study of 29 cases of congenital dislocation of the hip, of which 27 were females. The dislocation was right sided in 6, left sided in 6, and double in 17 cases. Treatment consisted in manipulation without incision, extreme abduction in plaster for three or four months and modified abduction for a further period. If this failed an open operation was performed through an anterior incision between the tensor fasciae latae and the sartorius, the capsule being opened, and adhesions and any constriction divided in order to remove all obstruction to the return of the femoral head into the acetabulum. When capsular constriction alone had been the cause of failure the thigh was put up in moderate abduction and slight flexion with plaster reaching only to the knee. In cases complicated by an anterior twist of the neck the femur was held in internal rotation with plaster extending down the leg with the knee in flexion in order to prevent the possibility of the head coming out of the socket. When, at the end of a month or two, the plaster is removed Sprengel suggested driving a steel nail into the great trochanter while an assistant maintains internal rotation. Through a small lateral incision the bone is divided and, while the proximal fragment is held in position by means of the nail, the distal fragment is rotated outward to lie in the plane of the body. On removal of the plaster there is then no reason for the patient to rotate the femur outward, but rather to rotate inward in order to walk properly, thereby making the reposition more secure. The development of the head affords a guide to prognosis since if this is approximately normal a good result may be expected.

78 Hydatid Pneumo cyst of the Lung

F. DAVIL (*Rev de Chir*, No 4, 1925, p 245) terms a partially evacuated hydatid cyst containing air or gas as well as fluid a "hydatid pneumo cyst". He maintains that hydatid cysts of the lung are much less rare than is commonly supposed, and that actually there are more recorded cases of hydatid cysts than of hydatid cysts of the liver. Dérivé has collected 71 cases of hydatid cysts of the pleura. Deves has collected 15 cases of hydatid pneumo cysts which simulated pyopneumothorax. He is convinced that the actual number is far greater, but he has found records of 31 or 32 cases of hydatid pneumothorax. In many cases the persistent cough, occasional haemoptysis, and progressive emaciation of the patient led to a diagnosis of tuberculosis, and in some cases it was evident that a secondary tuberculous infection had occurred. Hydatid cysts occur rather more frequently in the right lung (in ratio of 5 to 4). In almost every case the cyst spreads widely beneath the visceral pleura, reducing the layer of lung parenchyma to a thin fibrous or pyramaceous layer adherent to the costal pleura and without any trace of lung tissue. For this reason, at the time of operation, these cysts have frequently been described as "pleural". They are frequently very large, sometimes occupying two thirds of the lung. In those cases in which secondary infection by anaerobes has not occurred the cyst may rupture into a bronchus during an attack of violent coughing, with the evacuation of a considerable quantity of clear fluid. In other cases the fluid is frothy and contains white fragments of cyst wall and daughter cysts, if secondary infection has occurred the gas is horribly fetid and the fluid contents purulent. In numerous instances the diagnosis of serous pleurisy has been made and aspiration has yielded the characteristic limp fluid. Dérivé insists that, in spite of the fact that a certain number of these cases undergo spontaneous cure, every hydatid pneumo cyst of the lung should be operated upon as early as possible, since, while the cases submitted to opera-

tion show 65 per cent of recoveries, those on whom operation is not performed show 65 per cent of deaths. The ultimate prognosis is much more favourable than that of hydatid pneumothorax, as in the latter case a secondary pleural echinococcosis is almost certain to occur, in hydatid pneumo-cyst such a secondary infection is unknown.

Therapeutics.

79 Sanocrysin in Chronic Pulmonary Tuberculosis

L. NICOLAISEN (*Udvalgt for den Norske Laegeforening*, June 1st, 1925, p 553) has treated, at his hospital in Oslo, 20 cases of pulmonary tuberculosis, the course of injections of sanocrysin having been completed or prematurely discontinued in 12 cases. In the remaining 8 cases the treatment was not yet completed, but in some of these cases good results appeared likely. Of the 12 in the former class 4 discontinued the treatment early, either because their general condition was becoming worse or for other reasons. There were 2 deaths, one of which ensued within three days of the third injection, which was followed by severe vomiting and diarrhoea. The second death was that of a young man whose general condition was at first good. He tolerated the first injections well, but later he developed septicaemia, faecum with gangrene of a tonsil and high fever, which terminated in death three days later. This death was probably not due to the sanocrysin treatment. In the remaining 6 cases, in which the treatment was completed, no definite change in the physical signs was demonstrable except in one case in which the disease was of the pneumonic type and had lasted only five weeks. Four months later the sputum no longer contained tubercle bacilli, he had gained 17½ lb in weight the x-rays showed considerable diminution of the consolidation and his general condition was strikingly improved. The author considers that by giving smaller doses and allowing longer intervals between the intravenous injections than those originally recommended the treatment can be robbed of most of the dangers and discomforts described by its pioneers, and that many of the failures in the past were due to the selection of unsuitable cases. He prefers to reserve sanocrysin treatment for patients whose general condition is already good, and who show signs of disease which is only moderately progressive or is stationary. His initial dose is 0.1 gram, and this he increases gradually, allowing the reactions to determine the length of the intervals and the rate at which he increases the dosage. Having reached a dosage of 1 gram he repeats this dose as long as it gives rise to a reaction or a little longer. He is sufficiently impressed by the results he has hitherto achieved to want to continue this treatment, but he does not think it will be possible to gauge its value till at least five more years have passed.

80 A Rapid Method of Antirabic Treatment

A. HEMPT (*Ann de l'Inst Pasteur*, July, 1925, p 632) reports some favourable results which he has obtained in rabies by a new and more rapid method of treatment. Of recent years the method used in many cases of treatment has been the inoculation of "fixed virus", though satisfactory in most cases, it occasionally is followed by grave accidents. Alvisatos published his first experiments on the protective effect of etherized vaccine, which depended on the fact, first determined by Roux, that ether exerts an attenuating action on the rabie virus. By submitting the infected central nervous system of a rabbit to ether for a period of between seven and two and eighty four hours Alvisatos succeeded in producing a vaccine which protected patients who had been bitten seriously by rabie dogs or wolves—patients who would almost certainly have died. Stimulated by this work the author has made numerous experiments on the etherized vaccine, and has found that it is possible, by a short course of treatment, to confer on animals a degree of immunity such as could only be obtained by a much longer course with non-etherized vaccine, he then proceeded to adopt the method for the treatment of human patients. At first he employed it in conjunction with Hogyes's dilution method, but he now uses it alone. The dosage he prefers in adults who have been bitten is 1 to 2 grams in mild cases, 3 grams in serious cases, and 4 grams in the gravest cases. Vaccination is complete apparently in three or four days, and immunity is established in four to six days. In the last three years 6,000 persons have been treated by this method, with only three deaths of these, two occurred during treatment and one during the fortnight following treatment. The great advantage of the method appears to be its rapidity, a further point is that only in exceptional instances does it cause any unpleasant reaction.

81 **Treatment of Infantile Tetany by Artificial Sunlight**

A VALDAMERI (*Raggi Ultravioletti*, April, 1925, p 98) states that ultra violet rays have not only a bactericidal, oxidizing, sedative, decongestive, and disinfecting action, but also accelerate organic exchange, and have a favourable influence on the secretion of hormones and the production of phosphorus and calcium. After referring to a paper by Hoog, who successfully treated eleven cases of infantile tetany by ultra violet rays without any other remedies, Valdameri states that during the last three years he has employed this treatment in fifteen cases of infantile tetany, some of which were in a serious condition owing to the frequency and long duration of the attacks. In all these cases the action of the rays was rapid and decisive, reducing the number of the attacks from twenty to three or four after one or two applications, and causing them to disappear completely after three or four more. Valdameri records an illustrative case which shows that the cause of the spasms was to be found in deficiency of calcium and phosphorus and imperfect oxidation of the blood. The rays were applied for five minutes at a time to the front and back of the trunk at a distance of 50 cm. with a mercurial vapour Bach lamp.

Neurology and Psychology.82 **Huntington's Chorea.**

N. M. OWENSBY (*Journal Nerv and Ment Dis*, May, 1925, p 466) records a case of Huntington's chorea of three years duration in a twin, female, aged 7. The disease is rare before adult life. The patient's paternal great grandfather, grandfather, father, and an uncle and aunt developed the syndrome after reaching adult life and eventually became insane. The maternal ancestor gave no evidence of any nervous or hereditary disorders. The patient had four healthy sisters and her twin brother was apparently normal, she herself, though slightly later than her brother in teething, walking, and talking, was apparently mentally and physically normal until 4 years of age. Physical examination was negative except for choreic movements of head, neck, body, and limbs, sluggish indistinct speech, and stumbling gait. Her growth was retarded when the symptoms commenced, since when her twin brother outgrew her. Owensby points out that the symptoms were so distinctive that her mother and family recognized the condition at once. The author adds that the familial nature of the disease is evident from its having occurred in three succeeding generations of ancestors, and that support is given to the view that females are affected earlier than males. He considers that the retardation of mental and physical development coinciding with the appearance of the first symptoms and the relative slowness in beginning to walk and talk indicate some structural changes dating from embryonic life.

83 **Amaurotic Family Idiocy**

I. EPSTEIN (*Arch of Ped*, April 1925, p 236) records four cases of this condition in one family. The parents were Russian Jews who had had eight children with the following histories. The first child, a girl was normal in every way until about 7 months of age when she became helpless and blind, had many convulsions, and died when she was 18 months old. The second child, a girl now 15 years of age, is apparently well. The third child, a boy, was well during the first few months of life, became blind when about 6 months old, could not support his head or sit up, had many convulsions and died at 2 years of age. The fourth child, a boy, died of measles when 7 months old. The fifth child, a boy died two weeks after birth from some infection following circumcision. The sixth child, a girl was normal up to 6 or 7 months, then had frequent attacks of convulsions, became blind, and died at 22 months of age. The seventh child is a girl, now 6 years old, and seems to be quite well. The eighth child is a boy, aged 8 months, who was apparently well until 6 months of age when the typical symptoms began. Ophthalmoscopic examination revealed the cherry red spot in each eye. The Wassermann, tuberculin, and spinal fluid tests were negative.

84 **The Nervous Mechanism of Dyspnoea in Epidemic Encephalitis**

W. ALDEN TURNER and MACDONALD CRITCHLEY (*Pract*, March, 1925, p 72) review the literature dealing with respiratory disturbances in epidemic encephalitis and record in detail seven illustrative cases in patients aged from 15 to 55. They point out that these manifestations cannot be regarded as accidental or hysterical, but that they constitute a very definite clinical entity playing an important role in the symptomatology of the disease. The following classification

of these various disorders is proposed: (1) Disorders of the respiratory rate, which include tachypnoea, or rapid respirations, and bradypnoea, or slow respirations, which is much rarer. (2) Dysrhythmic, or disorders of the respiratory rhythm, consisting of sighs, apnoeic pauses, Cheyne Stokes respiration, bigeminal and trigeminal respiration, and breath holding spells. (3) Respiratory tics, which are particularly common in children, such as hiccup, yawning, tic like expiration of air through the nose (*soufflement*), and spasmodic cough. Any combination of these groups may be found. These respiratory phenomena may occur in the acute stage, as residua or as remote sequelae. They may be the only after effect, but they are more usually associated with other well recognized sequelae. After dismissing as inadequate the theories of the bulbar, thalamic, and peripheral origin of these respiratory phenomena, the authors come to the conclusion that their pathogenesis lies in a derangement of the involuntary psycho-motor control of respiration, which is maintained by various cortico-pontine pathways which are capable of anatomical demonstration. The lesion, therefore, is at a higher level than the so-called respiratory centres. The prognosis is grave when the symptoms appear during the acute stage, a large proportion of such cases ending fatally. When they occur as sequelae they persist unchanged for an indefinite period, no treatment being of any avail.

Obstetrics and Gynaecology.85 **Tetanus after Abortion**

ACCORDING to H. FLECHTNER and G. QUAST (*Zentralbl f Gyn*, May 2nd, 1925, p 975), remarkably few cases (22 in all) of tetanus following criminal abortion have been recorded in the literature. In such cases, as in puerperal tetanus infections, the incubation period is very short—about nine days on the average, the distance along the uterine nerves to the spinal cord is small, and the vascularity of the pregnant uterus may facilitate absorption of toxin through the blood and the lymph vessels. In two cases described by the authors the incubation periods were as short as five and two days respectively. One of these cases is noteworthy for the positive result of inoculating a mouse with fragments of spinal (lumbar) cord taken at the autopsy, the brain and cord tissues have generally the power of fixing and neutralizing the tetanus toxin. Not infrequently it is impossible to cultivate the tetanus bacillus from the uterine contents, but animal inoculation from these proves to be positive. The mortality is about 80 per cent. Treatment by antitoxin is probably more hopeful than total extirpation of the uterus, which has been recommended and occasionally performed with success.

86 **The Prognosis for the Child in Maternal Pyelitis**

H. NAUJOKS (*Zentralbl f Gyn*, May 23rd, 1925, p 1136) observes that pyelitis during pregnancy or the puerperium, though not necessarily fatal, gravely prejudices the survival of the child. Optiz has recorded 53 cases of maternal pyelitis. 20 patients went to full term, 23 were delivered prematurely, while abortion was induced in 10 cases. Albeck has treated 52 cases. 37 were delivered at full term, 9 births were premature, one aborted spontaneously, while in the remaining 5 premature labour was induced. Naujoks has seen 81 cases. 3 patients aborted in the third, fourth, and fifth months respectively. 34 were delivered between the seventh and ninth months. 43 patients went to full term. In one case premature labour was induced but the child died a few weeks later. Among the 43 full term infants 2 were stillborn and 2 died shortly after birth. Of the 34 premature children 2 were stillborn, 13 died shortly after birth, 2 lived for a few weeks. Among 5 surviving children 3 are well. Naujoks has been unable to trace the remaining 12 children. The mortality among the premature children was approximately 50 per cent while in 33 per cent of the children whose mothers suffered from pyelitis the prognosis was very grave. Induced abortion inevitably sacrifices the child's life and has now been largely abandoned in favour of other measures. In discussing the prevention of spontaneous premature or stillbirths certain facts must be considered particularly the oxytocic action of absorbed toxins or of febrile conditions, and the direct injury of the foetus by placental bacterial infection or by absorption of toxins. Optiz holds very definite views concerning the production of uterine contractions by toxins or by hyperpyrexia, especially when the fever is ushered in by rigors. Both these factors have a well recognized action upon unstriated muscle. Another important factor according to him in the production of uterine contractions is the increase of the carbon dioxide content in the blood as a direct result of pyrexia. In

two cases Fehling found *B. coli* in the uterine cavity, and Meyer discovered the same bacillus in the placenta and also in the foetal heart blood. Naujoks classifies 57 of his cases thus: Full term, 30, 8 febrile at time of delivery, 22 afebrile. Premature 27, 14 febrile at time of delivery, 13 afebrile. In the majority of febrile cases *B. coli* kidney and blood infections were found. In a small number of cases there was definite evidence that the *B. coli* infection had been transmitted to the unborn child. Fink records the case of a patient suffering from severe *B. coli* pyelitis who gave birth to a full term child. Shortly after birth the child developed very severe purulent ophthalmia suggestive of a gonorrhoeal infection. From the pus a pure culture of haemolytic *B. coli* was obtained. The child recovered quickly under non-specific treatment. Naujoks concludes that although the danger to the child is very serious and many pregnancies terminate prematurely a considerable proportion of mothers and children ultimately do well. The treatment should be conservative in the first instance, and induction of premature labour should be reserved for cases in which the mother's condition renders it improbable that the child will survive. Nephrotomy with drainage of the renal pelvis may be indicated in severe cases, but it is almost certain to be followed by spontaneous abortion.

87 Physiology of Ovulation

A. RÜHL (*Arch. f. Gynak.*, April 18th, 1925, p. 1) describes the microscopical characters of the corpora lutea at various stages of their regression, which lasts, he says, up to six months, instead of eight to ten weeks, as is usually stated. By examination of ovaries removed at autopsy or operation and comparison of the ages of the corpora lutea present on the right and left sides he has come to the conclusion that in physiological conditions ovulation occurs on the right and left sides in regular alternation. After conclusion of pregnancy ovulation appears to start in the ovary of the opposite side to that which gave rise to the fertilized ovum as indicated by presence of a corpus luteum of pregnancy. An attempt to find support for the view of alternating ovulation was made by observation of patients suffering from "Mittelschmerz." The pain in such cases is ascribed to ovulation, and has been reported by Fraenkel to occur on alternate sides in the successive intermenstrual periods, objective evidence, however, cannot be obtained. The fact that unilateral oophorectomy is not followed by an eight instead of four weeks periodicity is to be explained, it is said, by the compensatory hypertrophy of the remaining ovary which has been found by several observers to occur.

83 Ovarian Fibroma simulating Carcinoma

F. PAPIN (*Bull. Soc. d'Obstet. et de Gynecol. de Paris*, 1925, 4, p. 305) relates the case of a woman, aged 47, who was found to have oedema of the legs, ascites, and pleural effusion. A hard tumour extending from the abdomen was fixed in the pouch of Douglas. The serous effusion increased in volume and the patient manifested dyspnoea and advanced cachexia, so that a diagnosis of carcinoma seemed justifiable. At the operation a purely fibromatous tumour of the right ovary, partially intraligamentary and weighing about 4 kilograms, was removed. Eight days later the pleural effusion had disappeared and the patient recovered. That ovarian fibromata may present the clinical features of a malignant neoplasm is well known. Papin points out that this case shows that recovery may follow operative treatment in a certain number of cases that appear at first sight hopeless.

Pathology.

89 Chemotherapeutic Studies on Rabbits

M. J. HARKINS (*Journ. Amer. Med. Assoc.*, June 13th, 1925, p. 1797) found that when fixed rabbit virus was suspended in a 1 in 200 dilution of sulphar-phencamine, 1 in 500 dilution of fluoreum, and a 1 in 1,000 dilution of sodium oxymercurey orthomethylphenolate no germicidal effect was produced. I within thirty minutes at 38°C., as was shown by the production of symptoms and death after intracranial inoculation of rabbits. If the virus was influenced at all it was not sufficient to prolong the incubation period, which was the same in the control and the treated animals. No preventive or curative effect was observed following the injection of gentian violet, neo-naphtholamine, sulpharphenazine, potassium bismuth tartrate, ethylhydrocuprein hydrochloride, quinine and urea hydrochloride, or mercurochrome 220 soluble. No prolongation of the incubation period was noted even when some of the compounds were injected as early as from two to four hours after infection and the injections were continued daily until death.

275 D

50 Specific Action of Lead

W. BLAIR BELL, R. A. HENDRY, and H. E. ANNETT (*Journ. Obstet. and Gynaecol. of the British Empire*, Vol. 32, No. 1, p. 1) report investigations into the specific action of lead on the chorion epithelium of the rabbit as contrasted with the action of copper, thallium, and thorium. They found that lead has a selective affinity for the chorion epithelium and that abortion can be produced by its action on the foetal ectoderm without affecting the maternal organism, a coagulation necrosis occurring in the ectodermal tubules of the foetal placenta. With intravenous injections in rabbits of 0.1 per cent metallic lead in a colloidal form it was ascertained that from 10 to 12.5 c.c.m. produced abortion, while the lethal dose was found to be approximately double. Experiments with copper showed that it had no specific action upon the chorion epithelium and that abortion, when it occurred, was the result of haemorrhage into the uterus, this was also the case with thallium. Both thallium and thorium preparations were relatively atoxic and had no specific or toxic action upon the chorion epithelium.

91 The Hepatic Functions in Lethargic Encephalitis

G. PEDRINONI (*Gazz. d. osp.*, April 12th 1925, p. 342) states that the presence of profound hepatic changes in Wilson's disease (progressive familial lenticular degeneration), which in so many clinical and anatomical respects resembles epidemic encephalitis, induced him to study the changes in hepatic function in the latter disease. Of 16 cases examined between September, 1922, and March, 1923, 14 had contracted epidemic encephalitis in the outbreak of 1919-20 and two in January, 1923. None showed any obvious signs of a hepatic change apart from a slight enlargement of the liver in the majority of cases, diminution in its size in one instance, and some ascites in another case. His investigations were related to the production of bile, urica, and glycogen, and the formation and destruction of red corpuscles. Search was made for the presence of the abnormal pigments urobilin and uroerythrin, which indicates an anatomical and functional change in the liver cells. The results were as follows: Urobilin was found to be constant in 11 out of 16 cases, and uroerythrin to be constant in 10 cases, while in one case it was positive once and negative in the two following tests. Examination of the urogenic function of the liver showed that the production of uric acid was always below normal. The antitoxic function of the liver is indicated by the presence of indicanuria, which was present in all the 16 cases. The glycogenic function was normal in 9 out of 14 cases in which it was examined. As regards the haemolytic crisis 64 tests were performed in the 16 cases, a positive result was obtained in all, but the various elements of the test were always dissociated and incomplete.

92 The Diagnosis of Whooping Cough

E. KRAMÁR (*Monatssch. f. Kinderheilk.*, March, 1925, p. 697) records his observations in the epidemic of whooping cough in Budapest in the winter and spring of 1923-24, with reference to the bacteriological diagnosis of the disease and its prophylaxis and treatment by means of vaccines. Of 60 cases examined in the early stages 52 gave a culture of the Bordet-Gengou bacillus. 20 children suffering from other extrathoracic affections were also examined, but the Bordet-Gengou bacillus was not found in any of them. The results of bacteriological examination proved very reliable in the early diagnosis of the disease and in the recognition of atypical cases. For the cultivation of the Bordet-Gengou bacillus a medium composed of agar with 5 per cent defibrinated human blood added was found most serviceable. Kramár states that it is easily prepared and sets firmly, the whooping cough bacilli form visible colonies on it within twenty-four (or even eighteen) hours, so that it considerably hastens the laboratory investigation. He adds that for purposes of vaccine making the organism can be grown on this medium in great profusion. To 69 children who had not had whooping cough and who were closely exposed to infection were given prophylactic inoculations with a vaccine of the Bordet-Gengou bacillus, 53 of them remained well throughout the epidemic, the remaining 16 contracted the disease. In 78 cases of whooping cough vaccine treatment was given, and it was possible to follow the course of the illness in 65 of these. Most of them were children of about 3 years of age. Of those that were inoculated within a fortnight of the onset of the symptoms 86 per cent appeared to be benefited, the good effects showed themselves ten to sixteen days after the first injection. The dose is not stated. Given at the right time the vaccine was found to shorten the catarrhal stage by two or three weeks and to render the disease milder throughout its course. Vaccine treatment begun after the third week was useless.

cells per cmm. The patient's general condition rapidly improved and the pains disappeared. The spleen appeared to be slightly enlarged, and showed some thickening under the capsule with fibrous strands passing into its substance, the condition being similar to that found in some of the anaemias and in cirrhosis. Lecene concludes, therefore, that in certain types of anaemia accompanied by gastric symptoms splenectomy appears to be indicated and may give rapid relief.

93 The Importance of Early Operation for Appendicitis

R. MOHAMMAD (*Deut. med. Wochs.*, May 22nd, 1925, p. 855) publishes an analysis of his experience of appendicitis in the Rudolf Virchow Hospital in Berlin between 1919 and 1924 to show how greatly the prognosis is impaired by delay in operating. Of the total of 1,222 cases 1,173 were cured and 49 died, the mortality being, therefore, 4 per cent. Of the 988 patients who were operated on 940 were cured and 48 died (mortality 4.9 per cent). Of the 234 patients who were not operated on 233 were cured, only 1 patient dying (mortality 0.4 per cent). Of the 218 patients operated on within the first twenty-four hours 211 recovered and 7 died (mortality 3.2 per cent). Of the 153 patients operated on within the first forty-eight hours 148 recovered (mortality 3.2 per cent). Of the 180 patients operated on more than forty-eight hours after the onset of symptoms 154 recovered (mortality 14.4 per cent). Of the 84 patients whose appendicitis led to abscess formation 76 recovered (mortality 9.5 per cent). Of the 353 patients operated on in a free interval between attacks 351 recovered (mortality 0.56 per cent). The 2 deaths in this group were due to embolism and parametritis respectively. The author concludes from these figures that an early operation is much to be preferred to a late operation.

99 Aniline Dyes in the Prevention of Wound Infection

L. L. FERGUSON (*Med. Journ. of South Africa*, June, 1925, p. 327) as a primary application to wounds and as a skin sterilizer advocates the use of a blue solution of 1 per cent of a mixture of equal parts of crystal violet and brilliant green sulphate, zinc free, dissolved in 35 per cent of rectified spirit and 65 per cent of water, the powder being first dissolved in the alcohol and the water added. Bonozy and Browning (*JOURNAL*, May 18th, 1918, p. 562) called attention to the use of a mixture of crystal violet and brilliant green dissolved in equal parts of water and rectified spirit. Ferguson found that comparative cultivation tests proved its superiority to iodine, while clinically its use as a primary application to wounds and as a means of sterilizing the skin in hospital before operations was most satisfactory. In areas not readily sterilizable, such as the perineal region, healing was exceptionally good without nutrition, with a reduction in pain and shortening of convalescence. On immersion the blue colour is found to have penetrated into the deeper layers of the skin within a few seconds. There is an absence of any toxic effect and the dye does not appear in the urine. Ferguson considers that its penetrating power, distinct colour, high germicidal properties, and cheapness owing to the small quantities required, are among its chief advantages.

Therapeutics.

100 Malaria Treatment of General Paralysis

H. CLAUDE and R. TARGOWLA (*Bull. et Mem. Soc. Méd. des Hôp. de Paris*, June 4th, 1925, p. 795) have or are treating thirty cases of general paralysis by the induction of malaria. Two of these cases they report in detail besides the malarial injections they were given antisyphilitic treatment. While the authors do not believe that this treatment is a cure for general paralysis, they are convinced that it does materially improve the condition and in the two cases reported both patients were so much improved that they were able to leave the asylum and return to their duties. The mental symptoms usually become less marked, power of attention comes back, grandeur delusions disappear and the patient keeps himself in better order taking a growing interest in his treatment. They do not, however, return to their previous mental condition before disease set in, even in the most favourable cases. The physical signs do not change very much, although, like the mental, they show signs of improvement. No important changes were noted in the cerebrospinal fluid.

101 Chlorine in Colds

H. S. DICHL (*Journ. Amer. Med. Assoc.*, May 30th, 1925, p. 1623) investigated the value of chlorine in the treatment of colds by comparing the results of such treatment in 425 cases with medical treatment in 332 cases. The treatment was given in a small room of 680 cubic feet capacity through which chlorine gas mixed with air in an average

concentration of 0.015 to 0.0175 mg. of gas per litre of air was blown. Its beneficial effects were seen within the first day after treatment, the percentage of those recovering within one day being definitely higher than under medical treatment (19.5 per cent as compared with 12.5 per cent). Cases with acute rhinitis recovering within one day gave a percentage of 23.6 with chlorine treatment as against 6.7 recovering medical treatment, and it appeared to be more beneficial in this condition than in any other type of acute cold. The largest percentages of good results were obtained in those treated on the second or third day of the disease. Except in asthmatic subjects no ill effects were definitely attributable to the treatment. Dichl records encouraging results from the treatment in eight cases of whooping cough, five being definitely improved, but the cases were too few to be conclusive.

102

Treatment of Gout

K. HARPUDER (*Klin. Wochs.*, July 16th, 1925, p. 1408) advises colchicin in the acute attack, the structure of colchicin being of variable composition. Maximum doses are to be avoided as diarrhoea is not at all uncommon and may be severe. Scarcely anything is known as to the way in which colchicin acts, it probably does not affect the purin content of the system. In milder forms of the disease, or when colchicin cannot be borne, atophan is the substitute recommended, it is said to be also of service in combination, as an alternative, and in the after treatment, the best way to give it being two intravenous injections daily. Other drugs are rarely needed, though Ebstein advised salicylates early and in big doses, but is necessary only in severe attacks. The diet must be purin free and but slightly albuminous, with plenty of fluid. As soon as the pain abates the joint must be moved to promote function and elimination of urates, antispasmodics have shown that the latter may be complete. There follow then measures directed to the gouty constitution, lowering of the habitual purin intake, and, by means of atophan, the increased elimination of uric acid. Atophan, combined with salicylates or hexamethylenetetramine may be given by the mouth or parenterally, it has the additional recommendation of being a good analgesic in gout.

103 The Indications for Serum in Sanoecrysin Treatment

K. SECHLER (*Ugeskrift for Læger*, April 30th, 1925, p. 437) tabulates the indications for giving serum in the course of sanoecrysin treatment, as practised at the Department C of the medical side of the Bispebjerg Hospital in Copenhagen. He gives it nearly always by intramuscular injection, the usual quantity being 20 ccm. every day. Only in the most severe cases of sanoecrysin poisoning is this dose doubled. He gives serum (1) in all cases of albuminuria, its appearance being the sign. This is, after the albuminuria has almost completely disappeared—is superfluous and may even be injurious. (2) When the patient has been ill for a long time serum should be given before or on the same day as the sanoecrysin injections. (3) Serum is indicated when there is a certain febrile reaction (a temperature which rises for several days and then falls uniformly) with erythema. (4) Serum is indicated in those cases in which, even before sanoecrysin treatment is instituted, there is severe toxæmia, or in which this is anticipated. (5) Tuberculin shock is also an indication for giving serum. As a rule it would seem that patients who have suffered from tuberculosis only for a short time, and whose organs have not yet become much deranged, may undergo sanoecrysin treatment without the help of serum. But this is not the case with those patients whose organs, notably the kidneys, have been seriously damaged by the prolonged action of the toxins of tuberculosis.

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Protein Therapy of Peptic Ulcer

L. PRON (*Bull. Soc. de Mé.*, May 13th, 1925, p. 128) has treated fifteen cases of gastric or duodenal ulcer by protein therapy in the form of intragastric injections of milk twice a week. The diagnosis in each case was based on the clinical signs, radioscopic examination, and the presence of occult blood in the gastric juice in the fasting state. According to the reactions observed the patients were classified in three groups. In the first group, which consisted of three men, there was a complete absence of reaction, whether local or general. In the second group which consisted of six men and four women, the injections were followed by a moderate degree of fever simulating influenza, while in the third group, which consisted of two women, the febrile reaction was very severe. The results of treatment, which were about the same in each case—namely, suppression of the gastro-duodenal pain, improvement of the general condition, increase of appetite, and free action of the bowels—showed that the theory that the efficacy of protein therapy depended on the degree of febrile reaction was erroneous.

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Flumoria in Syphilis

J C FOX, jun, G H GILDERSLEEVE, and J F PRESTON (*Arch Derm and Syph*, June, 1925, p 768) discuss the value of flumoria, the sodium salt of hydroxymercurifluorescein, in the treatment of syphilis, based upon experience in twenty-four patients, to whom 185 injections of a 2 per cent solution were given over a period of eighteen months. The average dosage approximated 4 mg per kilogram of body weight, administered twice a week for a total of from eight to twelve injections. Rapid regression and healing of all secondary lesions and somewhat slower but steady resolution of tertiary lesions resulted, the drug having a fairly active spirochaeicidal value though not markedly affecting the Wassermann reaction. In one case relapse occurred under treatment, and in five cases toxic symptoms developed sufficiently to contra-indicate continuance. A striking result was obtained in one arsenic-resistant case in which there had been a relapse under previous arsphenamine therapy. Individual tolerance, not always predictable, varied considerably, necessitating a careful watch for toxic symptoms and routine examination of the urine. It is generally conceded that while flumoria is therapeutically inferior to the arsphenamine group it is superior to other mercurials, and that it should be used only in conjunction with the arsenicals or in cases intolerant or resistant to them. In early syphilis, in which intensive and sustained combined arsenic and mercurial treatment is so important, its superior value outweighs the economic consideration involved in incorporating bi-weekly injections in the interval between arsenical courses.

106. Goat Serum in the Treatment of Malignant Disease

A WILSON (*Edin Med Journ*, May, 1925, p 245) reports favourably on the treatment of malignant disease by goat serum, and gives details of eleven cases. Relief of pain was general, and in some cases it appeared that there was some arrest in the progress of the growth. The doses varied from half an ounce to six ounces given intravenously, and in some cases a marked reaction occurred, characterized by pyrexia, erythema, and rheumatic pains. The author believes that in the serum of the goat there exists some substance of a chemical nature which offers resistance to the growth of cancer.

Dermatology**107. Non suppurative Nodular Panniculitis**

T PARKES WEBER (*Brit Journ Derm and Syph*, July, 1925, p 301) records a case of relapsing non suppurative nodular inflammation of the subcutaneous fat (panniculitis) showing phagocytosis of subcutaneous fat cells by macrophages. A widow, aged 50 past the climacteric, and thin rather than fat gave a history of attacks of general fibrositic pains and headache accompanied by red patches at the back of the legs above the ankles which tended to disappear, leaving some induration. Four years previously she had been operated upon for cataract in the right eye. The inflammatory swellings involved the subcutaneous fat and were accompanied by slight fever and albuminuria with, on one occasion, tubercles. Histologically lipophagic macrophages were present around or within the large fat globules of the fat cells of the affected tissue. A subcutaneous, somewhat tender swelling about the diameter of a large orange appeared later over the sacrum, and the patient complained also of pain in the shoulders and the back of the neck. Under treatment by rest, sodium salicylate, sodium bicarbonate, and liquor arsenicalis she improved and the sacral swelling disappeared. Weber states that this condition of panniculitis may be due to various causes such as fibrositis or fibromyositis. It may affect all ages and both sexes whether fat or thin. He considers the case allied to Whitfield's type of erythema induratum in spite of the hitherto little known microscopic features, the relative acuteness of some of the swellings which left pea like nodules on subsidence, and the situation of the largest swelling over the sacrum.

109

Bowen's Dermatoses

C GUTMANN (*Dermatol Week*, May 20d, 1925, p 641) states that in 1912 Bowen of Boston directed attention to a hitherto unrecognized skin disease, characterized by atypical epithelial hyperplasia with persistent tendency to epitheliomatous transformation. The disease runs a very prolonged course, thus differing from the other "neoplastic dermatoses." Bowen's first patient, a man aged 49 had on the left buttock an erythematous eruption which had existed for nineteen years, commencing as a papular rash, it changed into a more intense papulo squamous form. The second patient was a man, aged 52, who had a somewhat similar eruption on the left leg, but the hyperkeratosis was of a nodulo papular type and had existed for nearly ten years. There was a persistent

erythema, as in the former case, but the discrete patches assumed a seriginous form, strongly suggesting a late secondary syphilide. The discrete nodules showed a tendency to coalesce. There was hyper and para keratosis, with proliferation of the rete, accompanied by cellular karyokinesis and mitosis, later cell vacuolation and nuclear clubbing occurred. Many abnormal cells appeared in the rete—some showed cornification, others were thinned out with vacuoles surrounding the nuclei. There was oedema of all the epithelial layers and scabbing of the surface. The vessels of the corium were dilated, and infiltration with definite separation of the plasma cells was present. Bowen found appearances suggesting cancerous degeneration in his second case, but this was not established definitely. Two years later Darier described three similar cases, in two of which carcinoma developed. Shortly after the publication of Darier's cases a considerable number of others were described by various authors in rapid succession, these were almost exclusively from foreign sources, but in 1921 German writers—Jessenr, followed by Langei, Grutz, and Back—described other cases. Gutmann finds that more than thirty cases of Bowen's disease have been published, but only seven have occurred in German countries. An exanthem was found only in a minority of these cases, the disease being characterized generally by the appearance of rose red or brownish discrete papules of rounded or more irregular form, their surface was slightly scaly and somewhat atrophic. Any part of the skin may be attacked. Gutmann adds that the regional lymph nodes are seldom enlarged until late in the disease, when the transformation into carcinoma is complete, possibly this is due to metastatic infection through the lymphatics. The disease appears to attack both sexes in equal numbers, the majority of cases occur between the ages of 40 and 70.

109

Paraphenylenediamine Dermatitis

R JACOBY (*Boston Med and Surg Journ*, April, 1925, p 852) reports a case of paraphenylenediamine dermatitis which confirms Roxburgh's findings as recorded by him in the *BRITISH MEDICAL JOURNAL*, March 24th, 1923 (p 534). In Jacoby's case, a woman, aged 29, who had had no previous skin trouble, purchased a coat with a fur collar late in 1923. Almost immediately after wearing it for the first time she felt an itching sensation and an intensely pruritic reddish rash appeared on the left side of her neck. The eruption subsided in a few days during which the coat was not worn. Four days later she began to wear the coat daily, and the skin lesions became aggravated and spread to the chest, arms, forehead, brows, and lips. Seven weeks later there was an erythematous eruption which involved the entire neck and extended slightly above the hair line, it involved also the chin face, and chest and the flexor aspect of the forearms many vesicles and crusts were present. She ceased to wear the coat, and the lesions disappeared almost completely after three weeks. A few weeks later the coat was again used, and even more severe lesions of an eczematoid character appeared in the same situations. Para phenylenediamine was found in the fur no arsenic was present. Jacoby adds that after the patient had finally abandoned the coat there was no return of the dermatitis.

Obstetrics and Gynaecology**110. Conservation of Menstruation after Hysterectomy**

E NOVAK (*Surg, Gynecol, and Obstet*, June, 1925, p 874) insists on the importance of trying to retain the menstrual function after hysterectomy in many cases in which the psychological effect of its loss would give rise to unpleasant symptoms. For this purpose a portion of the endometrial surface needs to be preserved in high subtotal hysterectomy, this can be achieved by the simple expedient of imputating the uterus a short distance above the internal os, so as to retain a considerable cuff of endometrium. In Bell's procedure the ovaries are always removed, with the fudus and tubes, so that ovarian transplantation becomes necessary if menstruation is to be preserved. Novak finds, however, that it is nearly always possible to leave at least one ovary in position, which he considers preferable to grafting the ovary elsewhere. The complicated operation of Beutner, which removes only the upper part of the fundus, seems to Novak to have no special advantages. The disadvantage of leaving a large uterine stump is that the anterior bladder peritoneal flap cannot be utilized so readily for covering the line of suture without some considerable degree of traction occurring at times, and a risk of post operative bladder distention. Novak, however, finds that such a risk is not so great as has been suggested. A common indication for supracervical hysterectomy occurs in uterine myoma where myomectomy

for some reason is impossible or inadvisable. A more frequent indication is furnished by chronic pelvic inflammation in young women, where preservation of the menstrual function seems desirable. Novak adds that in both cases only some of these patients are suitable for this form of operation.

111 Endometrioma of the Ovaries
J WIELOCH (*Arch f Gynak*, April 18th, 1925, p 53) records the case of a nullipara, aged 25, who complained of severe pain during and a few days after the menses, which lasted five days. Operated on for supposed myoma palpable in the left fornix, she was found to have "chocolate cysts" of both ovaries, the lining showing histologically endometrial tissue. In discussing the bearing of the case on the genesis of "chocolate" or perforating cysts, Wioloch quotes Laueho as having recently abandoned his adhesion to the theory that these cysts arise from scroful epithelium, and as strongly supporting the views of the English and American authors who believe them to come from penetration of the coelom by islets of endometrium. This tissue reaches the coelom by retrograde passage through the Fallopian tube and in the ovaries menstruates regularly, forming a dark blood cyst. Wioloch's case support for the existence of retrograde tubal conveyance of menstrual blood and endometrium was found in an unusual narrowness of the internal os, the enlargement of the cavity of the uterus, which measured $3\frac{1}{2}$ inches in a virgin, and the patency of both tubes in spite of many surrounding adhesions. Microscopically inflammatory changes were conspicuously absent. Direct evidence that organized tissue can pass upwards through the Fallopian tubes has been furnished by Sitzenfreys, who found free islets of uterine carcinoma tissue in their lumen, by Jagerroos, who in patients with carcinoma coli found fragments of healthy endometrium free in the tubal cavity, and by several other writers in America and elsewhere. Experimental evidence in favour of Sampson's theory has been given by Jacobson, who in animals produced endometrial adenomatous cysts by transplanting endometrium into ovaries and elsewhere.

112 Transfusion for Premature Infants
P GUENIOT and SEGUY (*La Gynécologie*, July, 1925, p 407) report nine cases of weak premature infants treated by transfusion of blood. Six seem to have reacted favourably, the vivifying effect in half of them having been remarkable. The other infants died, but from causes of which one at any rate—double bronchopneumonia—was extraneous to the treatment. The other two deaths were due respectively to intracranial effusion and a haematoma between the dura mater and the occipital bone. Transfusion was performed into the longitudinal sinus through the posterior fontanelle. The authors add that the treatment must not be deferred too late, they prefer it to injecting stimulating serums. Before introducing it they had at their hospital among 27 weakly infants 13 deaths before discharge, afterwards only 9 out of 36 died before discharge.

Pathology.

113 The Liver as a Source of Bacterial Agglutinin
I S JONES (*Journ Exper Med*, June, 1925, p 767) has made a number of experiments which seem to indicate that one of the main sites of production of agglutinins is the liver. Normal rabbits were killed by a blow on the head, the neck vessels severed, and the tissues drained as far as possible of blood. Various organs were then removed, ground in mortars, and dried over sulphuric acid *in vacuo*. The desiccated material was powdered and suspended in distilled water in the proportion of 0.2 gram of powder to 4 c cm of distilled water, extraction being allowed to proceed for eighteen hours at 38°C. After storage in the refrigerator for eight days, they were centrifuged and the supernatant fluid tested for agglutinin content to *B. subtilis*. In this way it was found that normal rabbits contained a small amount of agglutinin, which was generally in highest concentration in the blood serum— $\frac{1}{2}$ titre of 1 in 10 or 1 in 20. Rabbits were then given small quantities of a heat killed vaccine of this organism by intravenous injections over a period of two days, and were killed twenty-four to forty-eight hours after the last injection. It was found that the greatest concentration of agglutinin was present in the liver next came the lungs and kidneys, both of which usually had more than the serum. From those experiments it would appear that the agglutinin is actually formed to a large extent in the liver. It is possible, however, that the liver acts merely as a storehouse for the agglutinin. To test this a rabbit was injected intravenously

with 4 c cm of immune serum. The animal was bled at daily intervals for a week, when it was killed. Examination of the various organs showed that the serum contained ten times as much agglutinin as the liver, thus disproving this suggestion. It was thought that if the antigen could be injected in such a way as to come into contact with the liver before reaching other organs it might be possible to obtain a higher concentration of agglutinin in the liver than could be obtained after intravenous injection. This proved to be true. The vaccine was introduced into a mesenteric vein and the animal killed four days later. The titre of agglutinin in the liver was found to be ten times that present in the blood serum. From these experiments and from the general agreement of other workers as to the importance of the liver as a site of accumulation and destruction of bacteria entering the blood stream, the author concludes that it is probable that the liver is one of the main organs concerned in the production of agglutinin.

114 Chemical Substances Inhibiting Growth of the Tubercle Bacillus.

L KARWACKI and S BIERNACKI (*Ann de l'Inst Pasteur*, May, 1925, p 476) have tested a large number of substances in relation to their powers of inhibiting the growth of the tubercle bacillus *in vitro*. The particular strain used was one several years old, which was well adapted to a saprophytic existence, and was no longer virulent to laboratory animals. To 10 c cm of glycerine broth was added the particular substance to be examined, and the tube was then inoculated with a drop of a culture of the bacillus. Under normal conditions the organism grew so rapidly that it commenced to form a surface veil after two or three days. A total of 73 medicinal preparations and 52 dyes were tested. The results showed that not one of the drugs commonly recommended for the treatment of tuberculosis exercised any marked bactericidal action in a concentration which could be reached in the human body. Most of the metals in colloidal suspension, with the exception of zinc, proved quite inactive even in a 10 per cent concentration. Colloidal arsenic, however, was very active, it inhibited the growth of the tubercle bacillus in a concentration of 0.004 per cent. Thymol was active in a concentration of 0.01 per cent, and colloidal carbon in one of about 0.01 per cent. The substances which were most inhibitory were the dyes, thus thiocyanine acted in $\frac{1}{2}$ 0.0004 per cent and methylene blue in a 0.002 per cent solution. The authors hold that for therapeutic purposes it is essential to choose a drug which is pre eminently distinguished by its high bactericidal power. Hitherto none of the drugs employed, with the exception of thymol and methylene blue, were possessed of such a power. They suggest that the most active substance of all—namely, thiocyanine—should be tested pharmacologically.

115 Carbohydrate Metabolism of Brain Cells
BARBARA C HOLMES and ERIC G HOLMES (*Biochem Journ*, vol xiv, No 3, 1925, p 492) have made a comparative study of the amount of reducing substance that could be extracted from the brains of rabbits, some being normal and others suffering from a convulsant dose of insulin. They report that the administration of insulin does not produce any marked change in the amount of reducing substance, this confirms the previous findings of Coss and Takahashi. They find also that the reducing substance in cerebral tissue cannot give rise to lactic acid formation, although this is readily formed in similar conditions by the brain from added glucose. The reducing substance is said to consist in part of pentose and partly of another reducing substance the reducing power of which is greatly increased after acid hydrolysis—probably little or none of it is glucose. They add that there is a greatly reduced formation of lactic acid in the brains of rabbits treated with insulin, but that in neither "normal" nor in "insulin" brains is there an increase of lactic acid over the "resting" value after standing or incubation at body acidity.

116 Vegetable Vitamins and Bacterial Growth
I TALLO (*Il Polichimico*, July 13th, 1925, p 979) has conducted a series of experiments to ascertain the effect on bacillary growth of adding fresh vegetable extracts to the culture medium agar. In every case it was shown that the vitamins caused more regular growth. The vegetable extracts used were derived from lemons, fresh peas, and peanut oil, and the organisms tested were gonococci, *Weichselbaum's* meningococci, streptococci, and the bacilli of influenza and diphtheria. The subsequent growth of the culture was invariably better and more regular than when the various specific media were used. The influence of varying temperature was also marked. The vegetable extracts used showed a definite catalytic power in proportion to the vitamins present. An additional advantage noted was the preservation of transparency.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

117 Cat Ringworm in Man

G THIBERGE, P LEGRAN, and CH LEBLOIS (*Bull Soc Française de Derm et de Syph*, June, 1925, p 262) record two series of recent cases of human ringworm due to *Micro sporon felinum* infection by cats, one series of seven persons being infected by the same cat. This animal had been examined twice by a veterinary surgeon, who stated that it had no contagious disease. All the patients had extensive circinate pruriginous plaques on their chests, necks, arms, and hands. One patient was first believed to be suffering from varicella, the eruptious being bullous with an erythematous zone around each bulla, and subsequently pityriasis rubra was diagnosed. Examination of scrapings, however, showed groups of spores and mycelium of *M. felinum*. In another case the patient had numerous impetiginous plaques on her face and circinate plaques on her neck, chest, and arms, eight days after she had been scratched by a cat owned by her parents, who were subsequently found to be suffering from precisely similar lesions. The scrapings were examined and the parasite was found to be *M. felinum*. Thibierge believes that this parasite is common in England, and Sabouraud reports that the disease in the cat often fails to attract attention, though in the human lesions in the above cases the mycelial "felt work" was very dense and the parasites were easily demonstrated in the epithelial debris.

118 Pneumothorax and Maternity

A PELLÉ (*Bull Soc Méd de Paris*, June 11th, 1925, p 867) reports four cases of artificial pneumothorax in tuberculous pregnant women who proceeded to full term and gave birth to children without any bad effects on their pulmonary condition. (1) A woman, aged 32, was first seen in 1922, and after a small haemoptysis in 1923 artificial pneumothorax was induced, she became pregnant eight months later and gave birth to a healthy child in 1924. Refills of the pleura are being given about every two months, and the mother keeps well. (2) A woman, aged 22, first seen in 1923, was treated by artificial pneumothorax in June, 1924, and delivered of a healthy child in November, 1924. No adverse symptoms were noted in the mother. (3) A woman, aged 26, with phthisis of four years' duration, had artificial pneumothorax performed in December, 1922, and a tuberculous empyema developed in May, 1923. She became pregnant in November, 1923, and miscarriage followed in March, 1924, without aggravation of the pulmonary symptoms. (4) A woman, aged 39, had suffered from phthisis since 1922, an artificial pneumothorax was performed in August, 1922 and she gave birth to a healthy child in December, 1924, no deterioration in the lung condition being observed.

119 Facial Paralysis following Scarlet Fever

P N MITSCHMANN (*Journ Amer Med Assoc*, May 30th, 1925, p 1633) remarks that while facial paralysis following scarlet fever complicated by suppurative otitis media and cerebral abscess is not rare, he has found only one previous case in the literature, reported by Bny in 1918, of peripheral involvement of the facial nerve due to a parotid abscess unaccompanied by otitis media. He now records two cases, in a boy aged 8 and a girl aged 9, of unilateral peripheral facial paralysis which followed attacks of scarlet fever with only a moderate degree of glandular involvement. In each case there was enlargement of the right parotid gland with a purulent discharge from the duct, but without any change in the salivary secretion.

120 An Epidemic of Wells Disease

KÖRNER (*Deut med Woch*, May 8th, 1925, p 772) records an epidemic which occurred in July and August in a school at Burg near Magdeburg, when a large number of the scholars developed febrile jaundice and petechial haemorrhages. Though 76 in all were affected, only 26 had more or less marked jaundice. In only three cases in which the blood was examined could the diagnosis be established serologically. Köfner had no doubt that all the other patients had had an attack of Wells's disease. The epidemic was not confined to the school, but spread to the town of Burg, none of the cases ended fatally. Infection could be attributed with certainty to bathing, as no other source of infection, such as rats and vermin, could be incriminated, and all those affected had recently been bathing. The epidemic was at once

arrested as soon as the bathing was stopped. The bathing place was small and situated in a marshy district. The incubation period was usually eight days. The most striking symptom, which was found in even the mildest cases, was a more or less marked painfulness of the neck muscles, suggesting incipient cerebrospinal fever. Almost all the patients also had running from the nose, pharyngeal catarrh, and injection of the conjunctivae. In 15 cases there was more or less severe epistaxis. Three had severe bronchial catarrh. Enlargement of the spleen was not characteristic, being found in only 10 per cent. If the disease began with only a slight rise of temperature a mild course might be expected, but if the temperature rose to 104° F at the onset and there was severe pain in the head and back of the neck the course of the disease was usually severe. Treatment consisted in intragluteal injection of 5 c cm of a serum obtained by immunization of rabbits with Weil's spirochaete. A distinct improvement was usually noticed after the injection, especially a rapid relief of the often intolerable headache.

121 Length of Survival after Extensive Cerebral Haemorrhage

N W WINKELMAN and J L ECKEL (*Journ Nerv and Ment Dis*, June, 1925, p 593) studied 30 cases of extensive brain haemorrhage as to the duration of life after its occurrence, and obtained results similar to those of others. From the history and necropsy findings they conclude that cerebral haemorrhage, even into the pons or ventricles, does not cause death in less than one hour. In 22 of their cases the haemorrhage involved the ventricles, and in these the most early death occurred five hours later, one patient living for fifteen days. Unconsciousness was usually sudden or developed soon after the onset of haemorrhage, and in only four instances did the patient remain fully conscious for any length of time. The shortest length of life after the haemorrhage started was one hour in a patient with bleeding into the pons, in four other cases in which there was haemorrhage into other parts of the brain as well as into the pons the duration of life was respectively two, three, six, and forty eight hours.

122 Prophylaxis of Mumps

TEISSIER (*Bull Acad de Méd*, April 7th, 1925, p 369) comments on the recent communication by de Lérvergno and Florentin (*Epitome*, June 20th, 1925, para 600), and records the results of his researches during the course of eighteen months as regards the serum prophylaxis of mumps and of mumps orchitis. Of 172 mumps patients injected with the serum of convalescents 14, or 8.13 per cent, developed orchitis, but he adds that only 12 should be taken into account as two were injected too late. This result is compared with 41 cases of orchitis, or 23.29 per cent, among 176 controls who received no injections. Of 32 patients who were given 20 c cm of convalescents' serum 4 developed orchitis, while of 30 who received 40 c cm (20 c cm subcutaneously and 20 c cm intramuscularly) only 2 had orchitis. Serum prophylaxis of mumps was organized in an orphanage of girls aged from 6 to 18 years, where there had been 37 cases of mumps before serum had been used at all. No case of mumps occurred in a group of 20 girls who were injected with convalescents' serum, some receiving 10 c cm and others 20 c cm, whereas 4 of those who were not injected contracted the disease. Teissier concludes that the prophylactic injection of the serum of convalescents is the right method to apply for preventing mumps or protecting adolescents or adults from orchitis, since it presents no dangers or drawbacks.

123 Rheumatic Nephritis

J CHALIER and P DELORE (*Journ de Méd de Lyon*, April 20th, 1925, p 243) believe that a true rheumatic nephritis exists. The prognosis is usually favourable, but the condition indicates a serious rheumatic invasion and requires energetic treatment. The incidence of rheumatic albuminuria is estimated at from 12.5 to 40 per cent, salicylates are said to be not necessarily contraindicated, and severe nephritis is rare, occurring only in approximately 1 per cent of cases. Adult males appear to be more liable to this complication. Uzan found that nephritis occurred in 55 out of 55 cases of polyarticular rheumatism, and found symptoms of nephritis in 43 per cent of cases of acute rheumatism complicated by endocarditis, these symptoms occurred also in many cases with hepatic complications, such as congestion,

jaundice, and urobilinuria. The albuminuria is usually of slight degree and disappears after a few days, occasionally granular and hyaline casts are found, but renal efficiency is seldom impaired. Much more rarely haematuria and other signs of acute nephritis occur usually in the third week of the disease, but oedema is seldom seen. Lumbar pain is more intense than in other forms of acute nephritis. Usually the prognosis is good, but occasionally chronic nephritis supervenes. In occasional cases rheumatic cystitis occurs. The authors regard sodium salicylate as a specific in all forms of rheumatism, and prescribe it constantly in these cases. They emphasize the necessity for daily examination of the urine and discontinuance of salicylates if albuminuria does not decrease. Overdoses of sodium salicylate may produce an acidosis resembling naemia in many respects. The authors recommend the addition of sodium bicarbonate to the sodium salicylate mixture in all cases. Vidal believes that salicylates should be discontinued only when nephritis precedes the acute rheumatism, if nephritis follows acute rheumatism, salicylates should be prescribed.

124 Acute Lung Abscess caused by Vincent's Organisms.
R. A. SPANO (*Amer Journ Dis Child*, May, 1925, p. 621), who records an illustrative case, states that the most important and frequent lung lesions caused by fusiform spirillar infection are abscess and gangrene. They may occur at any age and in either sex, but are more frequent in adults (90 per cent) than in children, and in men (about 70 per cent) than in women. A case of combined fusiform spirillar pulmonary gangrene and miliary tuberculosis was described on June 13th, 1925 (*Epitome*, para 572). The relative rarity of the fusiform spirillar infection in children is attributed to the fact that predisposing causes are more numerous in adult life than in childhood. The following diseases may act as predisposing causes of lung abscess and gangrene by fusiform spirillar association: Vincent's stomatitis and angina, chronic bronchitis, pneumonia, pulmonary tuberculosis, alcoholism, cardiovascular troubles, diabetes, traumatic lung lesions, pulmonary thrombosis, and every other cause of pulmonary miopragia. Another predisposing cause is inspiration of oral secretion during general anaesthesia, especially in tonsillectomy. Spano's case was remarkable for the fact that it occurred in a perfectly healthy normal boy, aged 11, who had never had any affection of the respiratory organs. His mouth was healthy, and the throat had never been infected except by slight colds. He had never had general anaesthesia. Spano concludes that there may be a primary form of pulmonary infection by fusiform bacilli and spirilla in the same manner as any fusiform spirillar infection of the oral and pharyngeal cavities. Rapid and complete recovery followed intravenous injection of neosalvarsan twice weekly.

Surgery.

125 Splenectomy for Haematemesis
P. LOJABARD, DUMOLARD, and P. GOINARD (*Bull et Mem Soc Nat de Chir*, June 6th, 1925, p. 631) record a case where splenectomy was performed for infective splenitis accompanied by severe haematemesis. The patient was a male, aged 25, who after a short febrile attack had a grave haematemesis accompanied by enlargement of the spleen. Splenectomy was performed thirteen days later, but the patient became steadily worse and after severe melæna died twenty-seven days subsequent to the operation. Examination of the spleen showed a condition of infective splenitis with numerous infarcts, and thrombosis of the splenic vein. A bacteriological examination proved negative. Lecene points out that removal of the spleen is useful in certain conditions where the splenic enlargement is primary and not secondary, in such conditions as Banti's disease it gives good results. In patients where enlargement of the spleen has been associated with gastric haemorrhages its removal has also been followed by excellent results. In the present state of our knowledge, however, he thinks that it is difficult to state when removal is the suitable treatment. The immediate mortality of the operation is extremely low, but it is not improbable that some cases relapse after splenectomy. He adds that the operation appears likely to be successful in primary enlargement of the organ, but in other conditions it must at present be regarded rather as experimental.

126 Symmetrical Tubular Haematomyelia.
G. C. BOLLEN (*Nederl Tijdschr v Geneesl*, May 16th, 1923, p. 22-1) who records an illustrative case, states that haemorrhages into the spinal cord are rare apart from injury to the cord by dislocation of a vertebra or by pieces of a broken vertebra. For the occurrence of such haemorrhage a definite mechanism is necessary—namely, overflexion or over

extension of the vertebral column as the result of external violence. As the cervical column is most likely to be affected by overflexion, haemorrhages of this kind are most likely to occur in the cervical portion of the spinal cord from rupture of small vessels. When the haemorrhage occurs it does not extend uniformly in all directions, but takes the line of least resistance—namely, the long axis of the cord. The haemorrhages are consequently tubular or columnar in form and may extend a very considerable distance. They show a predilection for the anterior cornua, and not infrequently extend from their point of origin to the lower end of the cord. Tubular haemorrhage chiefly occurs in the grey matter, which is much more vascular and offers less resistance than the white matter. Rupture into the central canal of the spinal cord does not take place, as this canal is protected by a fairly firm wall and has only a very small lumen. Bolle's case occurred in a man, aged 23, as the result of a fall from a train in motion. Complete paralysis of the legs, abdominal muscles, bladder, and rectum followed, with loss of the knee and ankle jerks as well as of the abdominal cremasteric reflexes. Vertebral dislocation was excluded by the negative result of x-ray examination. Cystitis and testicles developed but gradual improvement took place, although the final issue of the case is not recorded. A diagnosis was made of two symmetrical tubular haemorrhages in the anterior cornua, extending from the first dorsal to the fifth sacral segment. Although complete recovery was improbable, a fairly favourable prognosis was given, as part of the symptoms could be attributed to collateral oedema, which would subside. Only a few cases of this kind have been described—namely by Lervier, Minor, and Oppenheim, who are agreed as to the prognosis being favourable. When death does not occur soon after the accident a slowly progressive improvement sets in as the destructive lesions in the cord are not extensive. The chief dangers arise from cystitis and bedsores.

127 Sudden Death after Mastoid Operations in Infants
G. CANUTT and J. TERRACOL (*Rev de Laryngol, d Otol et de Rhinol*, July 15th, 1925, p. 437) report the case of a child, aged 8 months, who was operated on for an abscess of the mastoid antrum. The anaesthetic consisted of a few drops of chloroform and the opening and curetting of the abscess only took a few minutes. The child quickly recovered from the anaesthetic, but about seven hours after the operation became very pale, the pulse rate was 140 and the temperature 104° F. The child grew rapidly worse and died eleven hours after the operation with an uncountable pulse and a temperature of 107°. An autopsy revealed nothing abnormal. The authors found on inquiry that this group of symptoms was not so very uncommon, being encountered in very young children and especially in operations on the face and head. A number of cases have been reported in which an eczematous condition was present, and the authors suggest the possibility of protein idiosyncrasy. General anaesthetics, they think, cannot be the sole cause, since cases have occurred without its use. Shock would appear to be an important factor and must therefore be reduced to the absolute minimum. During the first three days of life the child is apparently immune to such a catastrophe, but for the rest of its first six months it is particularly susceptible. The authors suggest that in these operations a local or no anaesthetic should be used, that the operation should be as brief as is practicable, and if possible be restricted to a simple incision, and that the child be given no milk for twenty-four hours. Treatment consists in cold packs and baths.

128 The Etiology of Hernia of the Large Intestine
J. FLEISSIG (*Zentralbl f Chir*, June 6th, 1925, p. 1249) describes the morphology of the peritoneal covering of the caecum, appendix, and ascending colon. In normal subjects the posterior surfaces of these portions of the intestinal canal are extraperitoneal and are closely attached to the fascia of the posterior abdominal and pelvic walls. In early embryonic life the alimentary canal is a short, almost straight, mesially placed tube which becomes bent into a series of sigmoid loops, in order to accommodate the growth of the intestinal canal to the few inches of mesenteric attachment. Many changes occur in the relations of the peritoneum, some portions grow rapidly, while those in other regions, such as the inguinal canal, after birth disappear. Fleissig suggests that a certain laxity of the subperitoneal tissue in certain regions, particularly the iliac and hypogastric, permits the development of ridges and folds which may be converted into (a) mesenteric attachments of a portion of the growing alimentary canal, or (b) into bands to which the peritoneal covering of the caecum, appendix, and ascending colon becomes attached. Such abnormal laxity might permit the formation of adhesions in the region of the internal inguinal ring into which the caecum or appendix or both might pass.

and become attached to the posterior wall of a patent inguinal canal or congenital hernial sac. This hypothesis would account for the origin of a meso caecum meso appendix, or meso colon. Flouissig, who quotes Finsterer's statement that "small hernial sacs are congenital, the larger sacs are acquired," has recently operated upon two patients, and the conditions found confirm his theory. A man, aged 20, had noticed a painless swelling at the right external ring for two years, but four or five months before the operation the swelling became painful and increased in size. It extended to the upper part of the scrotum, but there was scarcely any increase on coughing or straining. The sac contained the caecum and appendix, both being firmly united to the lateral wall of the sac. Barely half the circumference of the appendix was intraperitoneal, the other formed a well developed meso appendix with an abundant blood supply. A much smaller proportion of the circumference of the caecum was extraperitoneal. The hernial sac extended beyond the apex of the appendix to the middle third of the scrotum, no other hernia was present. In his second case, a man, aged 26, had noticed a swelling in the right groin for thirteen years. During the last month it had become larger and he had had severe pain occasionally. The swelling barely reached the scrotum, and there was very slight increase in size on coughing or straining. On opening the sac it was found to be congenital, the caecum throughout its entire length was firmly united to the lateral wall of the hernial sac, as was also the proximal half of the appendix, while the distal half lay free in the hernial sac. Flouissig believes that both these cases confirm Finsterer's statement and his own hypothesis of the origin of hernia of the large intestine.

129 Lesions of the Semilunar Cartilages

CHARLES LASSEUR and S. RADOEVITCH (*Journ de Med de Bordeaux et du Sud Ouest*, May 25th, 1925, p. 403) state that, though the treatment of lesions of the semilunar cartilages is still unsettled, these cases are now seldom diagnosed as "recurrent effusion" or "chronic arthritis." Many athletes' knees are immobilized in plaster of Paris, often without improvement, although it has been shown that complete removal of the damaged semilunar cartilages is both simple and efficacious when certain precautions are observed, especially the preservation of the internal lateral ligament, with out which the operation not only fails but also aggravates the disability. The authors divide these injuries into two classes: (1) Lesions of the semilunar cartilages (McNeill Love states that in 98 per cent. of these cases the internal semilunar cartilage is that involved). In the great majority of cases the whole or only the anterior segment of the cartilage is torn longitudinally, much more rarely the cartilage is split longitudinally into two or three strips. (2) Lesions of the "attachments, usually associated with tearing of the anterior cornu and its tibial and capsular attachments. The cartilage may be displaced outwards or inwards, or "doubled over," like the corner of a visiting card, as is well known the free portion frequently slips between the articular surfaces, causing pain and locking. Occasionally the "bucket handle" condition is found, the cartilage being held in place only by its anterior and posterior tips. Stripped from its capsular attachments the cartilage may twist on its antero-posterior axis and lodge in the intercondylar fossa of the femur. Under these conditions the loose cartilage becomes deformed, thinned, and fibrous, and its fragments constitute one type of "foreign body." When neglected these conditions lead to chronic synovitis and arthritis. The authors stress the distinctions between sudden traumatic hydro-haemarthrosis and the gradual effusion which increases slowly for eight days and which is absorbed in about fifteen days, leaving a sense of discomfort and insecurity in the joint. Recurrent attacks lead to lameness, muscular atrophy, and increased mobility of the bones in all directions. In atypical cases radiograms are very helpful, in some distension of the capsule with air aids diagnosis. In recent injuries conservative treatment is indicated in the majority of cases—reduction of the fracture or dislocation (if required), with or without paracentesis, followed by fixation of the joint for ten days. In old cases of recurrent dislocation all authorities agree that operative treatment is indicated. Three methods have been employed: (1) fixation of a dislocated or suture of a fractured cartilage, both difficult operations and now generally discarded, (2) partial, or (3) total ablation. The present authors condemn extensive and mutilating incisions and recommend the following technique. The knee is flexed at 50 degrees and placed with the inner condyle upwards, a crescentic parapatellar incision from the tibial tubercle is carried upwards and backwards, two fingerbreadths outside the patellar margin, from the centre of this crescent a transverse incision of 3 cm. is carried backwards. The capsule is opened by a transverse incision from the edge of the ligamentum patellae to the internal lateral ligament. This gives a full view of the semilunar cartilage and of its attachments. The authors

always use a pointed tenotome when dividing the anterior attachments, and a very short round pointed tenotome for the posterior attachments of the cartilage, they claim that these instruments can be employed where neither bistoury nor scissors can be used. The authors conclude with statistics from numerous authorities and an extensive bibliography.

Therapeutics

130 Local Vaccine Treatment in Puerperal Fever

LÉVI SOLAL and SIMARD (*Presse Méd*, July 22nd, 1925, p. 977) treat puerperal fever, directly the temperature rises, by packing the uterus and vagina with gauze soaked in a polyvalent streptococcal vaccine. The uterine pack, which must extend into the vaginal fornices and reach down to the vulva, is changed every twenty-four hours for four or five days. Usually, the authors claim, three packs suffice, at least three should be given, however, even if the pyrexia subsides after the first. They give details of eight cases, all quickly cured, in two of these the blood culture was positive before the start of treatment. In other two cases there was urticaria after the packs, and most of the patients noticed a peculiar taste in the month following their application, facts which the authors consider may be taken as evidence of the existence of a very large absorptive area represented by the uterine lesion. In various obstetrical procedures, such as embryotomy and version, they have successfully employed these packs as a prophylactic.

131 Treatment of Fulminating Meningococcal Infection by Adrenaline

FONTANEL (*Paris med*, June 6th, 1925, p. 528) has recently seen three cases of fulminating meningococcal infection in which the *post mortem* findings convinced him of the importance and frequency of haemorrhagic lesions of the suprarenals ending in the formation of a bilateral haematomata which caused rupture of the delicate cortical and medullary tissue. He advocates the treatment suggested by Maclean and Cooke, which consists in an intravenous injection of 20 drops of 1 in 1,000 adrenaline solution as soon as symptoms appear, especially those of cardio-vascular collapse. Intravenous injection of 10 drops should be repeated every four hours. Subcutaneous or intramuscular injection is not advisable owing to the slowness of absorption. Fontanel suggests that this physiological treatment may temporarily control the cardio-vascular collapse or intoxication until the appearance of the results of specific treatment, which should consist in large doses, such as 150 c.c. at a time, of polyvalent or monovalent serum given intravenously, or intraspinally if there is the slightest sign of meningeal reaction.

132 Trypsinamide in Neurosyphilis

U. J. WIRE and L. M. WILDER (*Journ Amer Med Assoc*, June 6th, 1925, p. 1710) describe the progress of 85 carefully selected patients with neurosyphilis treated by trypsinamide for about eighteen months. They received over 800 injections in addition to mercurial treatment, in the intervals between courses of trypsinamide. Among these 85 patients 32 were cases of general paralysis of the insane, 12 of tabo paresis, 7 of the dorsals, 33 had diffuse cerebrospinal syphilis, and the last was a case of acute basal meningitis. The authors observed an appreciable reduction in the cell count after treatment in 23 of the 31 cases of the entire group in which pleocytosis had been present previously. One patient had acute basal meningitis. Material reduction of the quantity of albumin and of globulin in the cerebrospinal fluid occurred in only 16 of the 79 patients who showed an increase in the amount of these constituents of the cerebrospinal fluid. In the 85 cases under observation only 6 patients showed a reduction of the Wassermann reaction from positive to negative, even after twenty-four injections or four courses of trypsinamide. Such a reduction occurred in 3 cases of cerebrospinal syphilis, in 2 cases of tabo paresis, and in 1 case of general paralysis, but many patients who showed the greatest clinical improvement had as strongly positive a Wassermann reaction at the end of trypsinamide treatment as before it. The "colloidal gold curve" was also but little influenced by treatment. Among the whole group of 85 cases 24 patients were considered to be improved clinically. Such improvement occurred in 7 cases of general paralysis, 2 of tabo paresis, 2 of tabo dorsalis, 12 of diffuse cerebrospinal syphilis, and 1 of acute basal meningitis. Ten cases of the entire group were asymptomatic, so no improvement could be expected. Lightning pains and gastric crises showed diminution in 5 cases out of 12. In every case with this clinical improvement there was also a gain in weight and in general nutrition. Out of 18 cases of general paralysis 7 patients were discharged from hospital to their homes, a few were able

to resume work, at least, for a time. One general parietic patient died after twelve injections during an epileptiform attack, and 5 other general parietics and 1 patient with tabo paretis grew worse. Four of the 85 patients died: one with general paralysis, one with tabo paretis, and one, who had cerebro spinal syphilis with spastic paraplegia, died five weeks after the sixth injection. The authors conclude that tripanamide was of value in producing clinical improvement in almost 30 per cent of a carefully selected group of cases. No serious or permanent optic nerve changes followed the treatment.

133 Spinal Drainage in Treatment of Neuro syphilis

C. E. ALLEN (*Urol. and Cut. Review*, May, 1925, p. 250) describes the following method which he has found of value in the treatment of neuro syphilis. The patient is prepared in the usual manner for salvarsan by free catharsis and abstinence from food for at least three hours before treatment. Sulpharsphenamine in 0.6 gram doses is then dissolved in 50 c.c. of freshly distilled water and injected intravenously. The patient is allowed to rest for an hour and then lumbar puncture is performed, the cerebro spinal fluid being withdrawn slowly until the pressure approaches zero as recorded by a mercury manometer. The patient then remains flat in bed for at least four hours, and is given a soft diet. After effects are very slight if any. The treatment is continued at intervals for a week until ten injections have been given. Then follow twelve bi-weekly intramuscular injections of mercury silicilate or intravenous injections of mercurous iodine. A tonic is usually ordered at the end of the mercurial treatment, and after one month serological tests are made on the blood and cerebro spinal fluid. Under this method of treatment the irritative symptoms promptly subside, not in frequently disappearing after a single injection of salvarsan followed by spinal drainage. Allen's conclusions are as follows: (1) Spinal drainage following injection of salvarsan offers the combined advantages of all other methods of intraspinal antisyphilitic treatment. (2) Less time and labour are expended with it than with any other method. (3) The technique is simple and the reactions negligible. (4) The method can be employed in clinics and dispensaries. (5) Drainage following sulpharsphenamine injections has proved more efficient than the injection of salvarsanized serum into the spinal canal.

131 X-ray Treatment of Hodgkin's Disease

D. J. STEENHUIS (*Nederl. Tijdschr. v. Geneesk.*, March 28th, 1925, p. 1393) records his observations on twelve cases of Hodgkin's disease treated by x-rays. Six were males and six females. The youngest was aged 16 and the oldest 58, the majority being between 16 and 30. The duration of the treatment varied considerably. Most had two courses of treatment with an interval of two months or more between the courses. In some cases the tumours disappeared very rapidly, and in others more gradually. Two cases were excluded from further consideration, as the treatment was insufficient. Four made a complete recovery, while the remaining six all showed an initial improvement, but soon had a recurrence which ended fatally. As regards the delayed effects of treatment the results were as follows: The lymphomatous disappeared very rapidly under treatment, though not so rapidly as sarcoma or leukaemic tumours. On microscopic examination the cells of the glands which had been irradiated showed a disappearance or degeneration of all the abnormal cells and their replacement by granulation tissue, which was converted finally into hyaline connective tissue. The fever usually increased after irradiation, some times reaching a very high level, but rapidly fell, especially after a large dose of the rays. The treatment had no direct effect on the red corpuscles, but had a decided influence on the white cells, as was shown by a rapid diminution of the lymphocytes and polymorphonuclears, and a transient or lasting leucopenia according to the dose of the rays. The effect of treatment on the spleen was that the organ first became much larger and then much smaller. In conclusion, Steenhuis states that the treatment should be very vigorous, and that the whole trunk should be irradiated.

135 Standardization of Thyroid Preparations

R. HUNT (*Arch. Intern. Med.*, June, 1925, p. 671) urges the standardization of thyroid preparations by the acetanilid reaction—that is, the increased resistance to acetanilid produced in white mice by the administration of thyroid extract. The results of this method agree with those of other methods, the best of which is probably the determination of the effects on basal metabolism in myxoedema or on thyroidectomized animals. The physiological activity of thyroid preparations was found to run closely parallel to their iodine content, and little or no physiologically inactive iodine was detected by this test in the thyroids of adult animals. By the use of aceto-

nitric very small amounts of non thyroid iodine in adulterated thyroid preparations could be detected, and it has the advantage over chemical tests of being applicable when only a few milligrams of material are available. Most of the thyroid preparations on the market were found to vary greatly in physiological and therapeutic activity, some tablets containing the equivalent of 15 little as 1/100 grain of fresh gland, while others contain 25 grains of fresh gland, since some thyroid preparations had five times as much iodine as others, and the physiological activity was closely parallel to the iodine content, one tablet might thus be physiologically equivalent to 12,500 other tablets. Hunt points out that no other iodine compound causes an increase in the resistance of mice to acetanilid at all comparable with that caused by thyroid extract, the mice recovering from 13.7 times the dose of acetanilid fatal to the controls.

135 An Antitoxin Treatment of Scarlet Fever

C. I. THENGBE (*Boston Med. and Surg. Journ.*, May 14th, 1925, p. 939) has treated 22 cases of scarlet fever with Doebe's antiscarlatina serum intravenously, and like Blake has come to the conclusion that it is a valuable therapeutic agent in the treatment of scarlet fever. The toxæmia accompanying scarlet fever can be combated effectively by administration of serum intravenously in smaller doses than are usually given intramuscularly. The intravenous administration of serum causes an immediate maximum concentration of antitoxin in the blood stream, its use being indicated in the moderate to severely toxic and septicæmic types of disease. Doebe found that it could be used without undesirable or untoward effects. Only two of his patients complained of a chilly feeling during or after the injection, none developed a skin chill, and only one had a serum rash. Lastly, the incidence of complications appeared to be lessened by the use of the serum.

Radiology.

137 Prevention of X-ray Sickness

E. H. ZWEIFEL (*Brit. Journ. Radiol.*, July, 1925, p. 267) discusses the prevention of the vomiting following irradiation of the abdomen, which is most severe after x-ray treatment on the stomach, liver, uterus, or ovaries, and is regarded by some as an unavoidable sequel. It is most frequently met with after intensive treatments where the whole series of exposures is completed in one day. The cause of the hyperemesis has been attributed to ozone and to uric acid, and the use of high well ventilated rooms helps in its prevention. Zweifel has obtained good results in treatment from the administration of 200 c.c. of salt solution either as an enema or subcutaneously. He adds that sickness can be prevented by encasing the tubes in lead boxes constructed to prevent the escape of all rays except those directed on to the lesion after first passing through a zinc or copper filter. During an experience over eighteen months of 200 such treatments of from four to six hours or more for fibroids or cancer, and for tumours of the liver and cancer of the stomach, no case of sickness occurred. He concludes that avoidance of vomiting is important in all cases, but that it is especially so in cancer, as it enables the patient more quickly to recover from the strain of the treatment.

138 Bronchial Skiagraphy

O. BECK and M. SGALITZER (*Zentralbl. f. Chir.*, July 11th, 1925, p. 1537) describe the use of the laryngeal catheter in bronchial skiagraphy. Their method is as follows: They anaesthetize the pharynx and larynx with a 10 to 15 per cent cocaine solution before passing a semi rigid catheter having a terminal orifice and a thin flexible metal stylet bent to correspond to the curvature of the larynx. The horizontal oral portion of the catheter passes through a block or gag which is fixed between the teeth. The catheter is sufficiently small to allow the patient to breathe easily throughout the examination. To the proximal end of the catheter is attached a small oil pump or Junker's apparatus, controlled by a screw valve which regulates or closes the calibre of the air tube of the apparatus thus regulating the flow of the 40 per cent iodipin solution. They recommend that if this solution causes coughing the rubber tube should be detached from the catheter and the interior of the larynx and trachea sprayed through the catheter with a cocaine-adrenaline solution. They report that the technique is simple and easy, that it remains throughout under the control of the operator, and that the iodipin does not come into contact with the mouth or pharynx. By means of the fluorescent screen the skiagrapher can watch the flow of the solution into each bronchus, the patient's position being varied to assist and regulate the

passage of the fluid. They believe that by this procedure the diagnosis and treatment of diseases of the lungs and bronchi, especially in regard to bronchiectases and tuberculous cavities, will be much facilitated.

139 X ray Treatment of Catarrhal Otitis Media

C. GRANDE (*Arch Ital, di Otol, Rinol e Laringol*, April, 1925, p 197) discusses the various attempts to cure deafness by means of x rays. Many writers had tried short exposures at short, often daily, intervals, and had given several of such courses. The results had not been very satisfactory and demanded a considerable amount of attendance on the part of the patient. The author in conjunction with Benini, a radiological colleague, has devised a technique which, he finds, is much less inconvenient and gives better results. He uses a current of 2 ma, a spark gap of 22 cm, with an aluminium filter of 3 mm and a diaphragm of 6 cm. His first exposure is of ten minutes or less according to the tolerance of the individual. He gives a second, third, and fourth exposure at intervals of five to six days, increasing the dose to fifteen minutes. Usually this course results in considerable improvement, but if there is none the treatment is not continued. If a moderate amount of improvement accrues another two doses are given, and after a month's rest the series can be repeated. Fifteen patients with catarrhal otitis were so treated five had a history of only six months, but all were markedly improved as regards tinnitus and acuity of hearing. Two patients with otitis with internal ear affection were treated and one showed improvement as far as tinnitus and vertigo were concerned, but with no gain in hearing. The other case was not traced. In two cases of resolved suppurative otitis no benefit followed. Of five cases of otosclerosis two were definitely improved as regards tinnitus but not as regards hearing. One patient was a married woman who was treated through pregnancy and parturition without any increase of deafness. One case of auditory nerve deafness treated was not improved. The author concludes that catarrhal otitis and some cases of otosclerosis can be greatly benefited, but that nerve deafness and the results of suppuration do not respond to treatment.

140 Indications for the Use of Ultra-violet Energy

L. C. DONNELLI (*Journal of Radiol*, May 1925, p 183) is the result of his experience and a study of the literature, has come to the conclusion that in ultra violet energy intelligently used the physician has under his control a force which is (1) a direct germicide, (2) an indirect germicide, (3) a counter irritant, (4) a means of producing increased resistance to infection, (5) an analgesic, (6) a means to depress metabolism, (7) a means to stimulate metabolism, (8) a means to stimulate the sympathetic nervous system, (9) a means to regulate mineral metabolism, (10) a means to balance endocrine secretions, (11) a means to overcome disturbances caused by vitamin deficiencies.

Obstetrics and Gynaecology.

141 Streptococcal Infection of the Uterus

C. W. BARRETT, A. I. LASH and I. PILOT (*Amer. Journ. Obstet. and Gynecol.*, June, 1925, p 797) have investigated streptococcal infections of the cervix uteri and Fallopian tubes with a view to discovering the predominating organism. The type of infection considered was that giving rise to clinical conditions extending over long periods with recurrent acute exacerbations. Prior to operation cervical cultures were taken and smears examined, and directly afterwards sections of the Fallopian tubes were studied microscopically and smears made of the exudate covering the endosalpinx. From these investigations and those recorded by others it would appear that primary or secondary infections of the Fallopian tubes may be carried in through the vagina or may come from the throat or intestinal tract, but that they rarely result from streptococci normally present in the vagina or intestinal tract. The authors think that the throat may be an important source, and it is possible that many infections, especially those due to hemolytic streptococci are exogenous from the vaginal tract or throat. The authors found streptococci in 40 per cent of chronic cervical infections and in 35 per cent of the Fallopian tube infections. *S. haemolyticus* occurred in 14 per cent of cultures of the Fallopian tubes and in 5 per cent of cultures from the cervix, while *S. viridans* occurred in 21 per cent of the Fallopian tube cultures and in 27.5 per cent of those from the cervix. No specificity for the Fallopian tubes was demonstrated, and no relation appeared to exist between the incidence of the organisms in the cervix and in the Fallopian tubes. The pathogenicity of the different strains was similar to that of

those isolated from various streptococcal infections, and their morphological and cultural characteristics resembled those of streptococci isolated from abscesses, peritonitis, and fatal streptococcal infections.

142 Diagnosis of Early Pregnancy

A. STRECK (*Zentralbl. f. Gynak.*, May 2nd, 1925, p 968) describes a method of diagnosis of early pregnancy which is dependent, like the Abderhalden reaction, on the detection in the blood serum of pregnant subjects of destructive antiferments acting on a substrate of placental extract. The serum is incubated with the extract for twenty-four hours and the protein breakdown estimated by means of the fluid interferometer. The use of this instrument in this connexion appears to have been suggested in the first instance by Hirsch, it is extremely sensitive and gives quantitative results. German veterinary surgeons have previously reported striking successes obtained by this method in the early diagnosis of pregnancy in several animal species. In 38 cases of women in various months of gestation after the first, Streck claims to have found the interferometric reaction positive in at least 81 per cent, the proportion of very early pregnancies is not specified. A substrate of animal placenta was as effective as one of human placenta. In 3 cases the reaction confirmed a diagnosis of tubal pregnancy. By using ovarian and testicular extracts as substrates a prediction of the sex of the foetus was made in 23 patients and was accurate in 72 per cent. It is admitted that the technique of the test is complicated and exacting. In a few cases it is claimed that myoma, carcinoma, and sarcoma substrates gave positive results after the interferometric test with the serum of a patient suffering from the corresponding tumour.

143 Subcutaneous Symphysiotomy in Labour

J. ORTIZ PEREZ (*Gynecol. et Obstet.*, June, 1925, p 411) reports sixteen cases of labour, thirteen in primiparae, where subcutaneous symphysiotomy was performed with success. All the mothers did well, but two of the children died. In two cases there was troublesome bleeding from a tear, and in two cases temporary incontinence of urine. No difficulty in walking followed. X-ray examination showed that the separation remained permanent, and the author refers to cases where subsequent labour has occurred without any necessity to repeat the section of the symphysis. He uses a pointed knife to cut the soft tissues and a blunt pointed bistoury to divide the cartilage. Ortiz Perez states that the operation is contraindicated when the foetus is dead and when the bony pelvis is less than 8 cm in diameter or 9 cm in the sacro-pubic line. The forceps he says, should be reserved for difficulties in the soft parts. No phlebitis or thrombosis was seen in any of the sixteen cases of which details are given.

144 Unrecognized Pregnancy carried to Full Term

R. BLOCKERS (*Bruxelles med.*, April 19th, p 843) records the following case in a married woman, aged 30, the mother of three children, aged 3, 4, and 5, who had no reason to conceal her pregnancy. One morning she found that her bedclothes had been soaked by a clear vaginal discharge. On examination she was surprised to learn that she was at full term, as she had menstruated regularly as usual for four or five days at a time and had felt no quickening, or had any digestive disturbances. Her abdomen and breasts had remained large since her last confinement. The patient gave birth to a normal infant the next day after expulsion of a considerable amount of amniotic fluid. The case is of interest from an obstetrical point of view owing to the persistence of the monthly periods throughout pregnancy and the hydramnios without any obvious explanation of it. The three former deliveries had been normal, the woman was not suffering from cardiac disease, and her Wassermann reaction was negative. The case was also of medico-legal interest, as errors of diagnosis in such cases may be made.

145 Conception with Intact Hymen

O. W. BISCHOFF (*Zentralbl. f. Gynak.*, May 9th, 1925, p 1034) states that modern medical teaching is unanimous in admitting the possibility of pregnancy in a woman whose hymen is intact. He quotes the observation of Marion Sims, who found in a patient suffering from vaginismus whose hymen was intact, four hours after coitus, a living spermatozoon in mucus taken from the cervix. Bischoff records a case in which the patient complained of pain and vaginal bleeding, coitus with intromission had not occurred during her seven years of married life and the possibility of pregnancy was not suggested. The hymen was free from tears and scars and admitted a pencil vaginal examination showed a dilated cervix, and was followed by expulsion of a two-months' foetus.

146 Myomectomy in Pregnancy

LOUBAT (*Bull Soc d'Obstet de Paris*, No 5, 1925, p 372) reports two cases of uterine fibroid successfully operated on during pregnancy without interrupting the pregnancy (1) Laparotomy was performed on a primipara, aged 32, three months pregnant, for the removal of a fibroid about the size of the fist. On section the tumour was seen to be undergoing extensive necrosis. Operation was undertaken because of severe pain in the tumour, which was thought to be a twisted ovarian cyst. The woman was delivered later of a full term child. (2) A multipara, aged 35, four months pregnant, was seized with severe pains and vomiting, and a lump was felt in the left iliac fossa. At the operation a necrosing fibroid as large as an apple was found on the anterior aspect of the uterus. After the operation there was troublesome colic for four days, but this passed off, and the remainder of the pregnancy was normal.

Pathology.**147 Production of Local Immunity by Diphtheria Toxin**

J A BROWN (*Journ Infect Dis*, June, 1925, p 501) has tried to determine by experiments whether it is possible to produce by inoculation a local immunity of a mucous membrane to diphtheria. Direct inoculation of virulent diphtheria bacilli on to the conjunctiva of a guinea pig is without effect, but if the conjunctiva be previously excoriated then a marked inflammation follows, accompanied by oedema, which results sometimes in total loss of the eye, and sometimes in death. The inoculation twice daily on to the normal conjunctiva of diphtheria toxin, or of a saline suspension of diphtheria bacilli killed by heat at 70° C for one hour, may produce profound systemic disturbance due to absorption of toxin, and after eight days may prove fatal to the animals, some, however, survive. To ascertain whether such animals have acquired immunity, it is sufficient to inoculate the scarified conjunctiva with living virulent diphtheria bacilli. Experiments made in this way showed that guinea pigs which had survived vaccination either with toxin or with dead bacilli were immune to infection with living bacilli. Other experiments seemed to indicate that this immunity persisted for at least two months. Further work was performed to ascertain whether the immunity was local or general. Vaccinated guinea pigs were inoculated with living virulent bacilli on to the shaven, scarified abdominal wall. After four such inoculations all showed local oedema and general systemic disturbance, one of the animals died. Two unvaccinated controls both died after the second inoculation. This experiment indicated that conjunctival vaccination with toxin or with killed bacilli gave rise to a low degree of general immunity, this was not nearly so marked as the local immunity affecting both eyes. Brown concludes that it would appear, therefore, that by treatment with diphtheria toxin or with heat killed bacilli it is possible to produce a local immunity of a mucous surface to virulent diphtheria bacilli.

148 The Susceptibility of the Skin to B anthracis

J BASSET (*C R Soc de Biologie*, June 5th, 1925, pp 1513, 1515, and 1517) has performed a number of experiments in connexion with the pathogenicity of the anthrax bacillus for guinea pigs and rabbits. Besredka has affirmed that the sensitivity of the guinea pig for *B anthracis* is strictly limited to the skin (see *Epitome*, July 5th, 1924, para 22), but Basset's work does not confirm this. He took a three day broth culture and determined the minimal lethal dose when injected in various situations. Given subcutaneously 1/120 c cm killed a guinea pig of 600 grams in two and a half to three days, given intracutaneously 1/60 c cm was fatal in three and a half to four days, given intramuscularly in such a way as not to infect the skin 1/60 c cm was fatal in two and a half to three days, while given by cutaneous inoculation, the culture being rubbed into the depilated skin, 2 c cm were required to prove fatal in four to five and a half days. From this it is seen that the skin, by which the author means the epidermis, has no special susceptibility, but rather the reverse, for it was necessary to use a dose 240 times greater than that required to produce death by subcutaneous inoculation. These results were confirmed by the use of spores instead of vegetative bacilli. A culture on agar four to five days old, consisting mostly of spores, was heated to 80° C for one hour to destroy any non sporing bacilli and their endotoxin, this culture was injected by various routes and the minimal lethal dose estimated. Given subcutaneously, this dose lay between 1/16 and 1/60 c cm given intracutaneously it was much the same, though the time before death was rather longer, given intramuscularly it was about 1/8 c cm while rubbed on to the depilated skin 1/8 c cm produced no effect. It may be concluded that the spores are not so pathogenic as the vegetative bacilli and that the most

susceptible tissues are, in order, the subcutaneous tissue, the dermis, the muscle, and lastly the epidermis. The peritoneum comes between the muscle and the epidermis. It was found that the pathogenicity of the spores could be increased if they were injected together with a solution of lactic acid in this way the subcutaneous minimal lethal dose was lowered from about 1/30 to 1/300 c cm. Lastly, Basset showed that mixture of the spores with a non pathogenic strain of staphylococci had very little effect, provided that sufficient spores are present the extra diapedesis of leucocytes caused by the staphylococci does not seem to be sufficient to interfere with the final result.

149 The Schick Reaction in the Newborn

A RONCHI and I REDLICH (*La Pediatria*, June 15th, 1925, p 617) review the literature on diphtheria in the first year of life and record their observations on the Schick reaction performed on 100 mothers and their children in the first eight days of life at the obstetric clinic at Rome. The reaction was positive in 14 and negative in 86. Positive reactions were obtained in 10 out of 60 males and in 4 out of 40 females. In a pair of twins the reaction was negative in both, as well as in their mother. The reaction was also negative in a premature child born at the seventh month and its mother. The test was performed on the first day of life in 13 infants before they had been put to their mothers breast. In 3 of these the reaction was positive and in 10 negative. Contrary to the opinion held by most investigators, the antibodies present in the serum of these 10 children must undoubtedly have been transmitted from their mothers through the placenta. A paradoxical reaction—that is to say, greater intensity of the reaction to inactivated toxin—was well marked in one case and less definite in another. The positive reaction in the mother differed from that in the newborn by the redness and infiltration being always more intense and extensive and of longer duration. Pseudo reactions—that is, reactions to inactivated toxin—were observed in 14 mothers and only 2 infants. The present authors' researches confirm those of previous investigators to the effect that most of the newborn possess a sufficient quantity of antibodies to protect them against diphtheria.

150 The Phosphorus Content of the Blood in Carcinoma

SCHAUDIG (*Zentralbl f Chir*, May 30th, 1925, p 1204) states that Gröbly had tried to facilitate the diagnosis of carcinoma by qualitative estimation of the blood phosphorus, a considerable increase of which occurs in carcinomatous subjects. Schaudig found that in most cases of carcinoma there was an enormous increase of the phosphorus content of the blood. The increase, however, was most marked in advanced and inoperable cases, whereas in those in which the diagnosis was most important, such as gastric and intestinal tumours, the method completely failed. It was also useless in incipient carcinoma. In other diseases, especially tuberculosis and metabolic diseases, results were obtained similar to those observed in cases of carcinoma, so that an increase in the phosphorus content of the blood cannot be considered to be indicative of carcinoma.

151 Neural Localization of the Virus of Herpes

LE FÈVRE DE ARRIG and M MILLET (*C R Soc de Biologie*, June 12th, 1925, p 45) have been working on the various factors which favour the localization of the virus of herpes in the central nervous system. It is known that for true infection to occur it is necessary for this virus to penetrate the nerve cells, but by what means it does this is not definitely certain. If the virus is injected into the blood stream of a rabbit it rarely gives rise to infection. But if a short time before the injection the animal be given a slight blow on the head, it contracts the disease and dies about six days later with the typical picture of encephalitis. This is true so long as the interval elapsing between the injury and the inoculation does not exceed six hours. In order to find out how the injury acts they performed a spinal puncture by the sub occipital route and found that in those animals which had received a blow on the head the cerebro spinal fluid, instead of being perfectly clear, contained a variable amount of blood, sometimes visible macroscopically, sometimes only microscopically. It was clear from this, and from sections of the brain, that some of the blood vessels—mostly those on the meninges—had been ruptured, thus breaking down the barrier which normally exists between the vascular and the nervous systems. The injection of the virus previous to the cephalic injury was without effect, in the quarter of an hour elapsing between the two procedures the virus was evidently reduced to such an extent that it was no longer able to give rise to infection. Other methods of causing the localization of the virus were found, such as simple spinal puncture or the intrathecal injection of distilled water or of hypertonic saline shortly before the introduction of the infective material.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

152

Serum Adenitis

H VADIER (*These de Paris*, 1925) states that adenitis, especially of the cervical and submaxillary glands, may be regarded as a serum phenomenon, as was first shown by Pirquet and independently by J D Rolleston in 1905. It may precede the other symptoms or follow them, and rarely appears as the only manifestation of serum sickness. When adenitis occurs at the onset of diphtheria, whether it persists or not until convalescence, the gland undergoes a sudden increase in size during serum sickness. Rapid and complete resolution is the rule, and suppuration is exceptional. Chronic enlargement is also very rare. In the pure form rapid and spontaneous disappearance of the adenitis occurs in three or four days. In the forms in which secondary infection plays a part the prognosis is not so good, but recovery without suppuration is the rule. Adenitis in convalescence from diphtheria, unlike the adenitis of the onset, has no prognostic significance. Serum adenitis appears to be more frequent after severe than after mild angina, but seems to be independent of the amount of serum employed. Although serum adenitis is particularly frequent in the course of diphtheria, diphtheria antitoxin has not a monopoly of this phenomenon, the heterogenic principles contained in the normal horse serum appear to be responsible. The specific toxin also plays a part and thus explains the localization of the adenitis.

153

Typhoid Fever in Children

L MORQUIO and J BONABA (*Anal de la Fac de Med*, No 2, 1925, p 83) record their observations on 1,440 cases of typhoid fever in children at Montevideo from 1908 to 1914. Nearly all lived in the suburbs where there was no proper drinking water or sewage system, whereas in the city of Montevideo typhoid fever has almost entirely disappeared. The disease was commonest between the ages 7 to 13, 968 of the cases occurring at this time. There were 130 deaths, a mortality of 9 per cent. The causes of death were malignancy of the disease in 48 cases, secondary infection in 31 cases, haemorrhage 18 cases, perforative peritonitis 13 cases, tuberculosis 12 cases, sudden death 6 cases, and diphtheria and cachexia one case each. The principal complications were broncho-pneumonia 30 cases, intestinal haemorrhage 25 cases, otitis 25 cases, perforative peritonitis 20 cases, meningeal reaction 20 cases, subcutaneous abscesses 20 cases, parotitis 9 cases and aphasia 7 cases. Treatment consisted in tepid baths, adrenaline by mouth or subcutaneously, and injections of normal saline or urotropine. Vaccine treatment had no effect upon the course of the disease.

154

The Diagnosis of Measles

E STEINERT (*Med Klin*, June 5th, 1925, p 846) states that though the most frequent localization of Koplik's spots is the mucous membrane of the lips and cheeks, especially at the corners of the jaw, they have also been observed on the vaginal mucous membrane and lacrimal caruncle. Steinert has recently seen several cases in which simultaneously with the occurrence of typical Koplik's spots on the buccal mucous membrane similar lesions were present on the nasal mucosa. Only slight extraversion of the tip of the nose was required to bring the corresponding part of the nasal mucous membrane into view. Steinert considers that this phenomenon represents an extrabuccal localization of Koplik's spots which may aid in the early diagnosis of measles in children who offer resistance to inspection of the mouth.

155

Pancreatitis in Mumps

A M STEVENS (*Arch of Ped*, May 1925, p 333) reports four cases of mumps in boys aged from 6 to 12 years complicated by pancreatitis. The onset was sudden on the fifth or sixth day of mumps, with rise of temperature to 102° or 104° F and rapid pulse. Pain was generally mild at the onset and referred to a point just below the xiphisternum. Prostration was out of proportion to the degree of pain and persisted for several days after the temperature had become normal. Vomiting was a prominent symptom, coming on within an hour of the rise of temperature, and persisting for two days. Constipation was the rule. Icterus was noted in two cases. The duration of the symptoms varied from one and a half to two and a half days, the attack ending with a rapid fall of temperature to normal and cessation of nausea. It was noted

worthy that none of the four signs described by Farquhar as characteristic of mumps pancreatitis in adults—namely, pain in the left hypochondrium, bradycardia, diarrhoea, and glycosuria—was present in these cases. The importance of excluding appendicitis, intussusception, and ileus is emphasized.

156

Subcutaneous Phosphatic Concretions

A GILBERT and L POLLET (*Bull Soc Med de Paris*, July 2nd, 1925, p 957) report a case of multiple subcutaneous concretions in a man aged 61. The concretions varied from the size of a pea to that of a small nut and were confined to the scrotum. There were thirty or more in all and they had been appearing for the last thirty years. They were quite painless, hard, and adherent to the skin. At different times they had been excised, but they usually returned, and sometimes evaded spontaneous excretion as chalky mass. There were no signs or symptoms of gout. On examination the little tumours were found to be made up of 63 per cent phosphates of lime and 7 per cent phosphates of calcium, no urates and no cholesterol were present. There was no albumin or sugar in the urine, but the phosphoric content was diminished. The blood showed a slight excess of phosphates.

Surgery.

157

The Treatment of Recurrent Dislocation of the Shoulder

M WULFING (*Zentralbl f Chir*, June 6th, 1925, p 1244) states that in 1917 E Joseph devised a new method of "mooring" the head of the humerus as a radical cure for recurrent dislocation. After widening the laceration in the capsular ligament, he drilled a hole through the head of the humerus, and having excised several strips of fascia lata each measuring 10 cm by 2 cm, he passed these through the passage in the bone, the capsule was then sutured, leaving a small opening through which the strips of fascia were brought out. These were then sutured to the periosteum and soft structures beneath the acromion. In 1919 Joseph modified his original operation. Instead of drilling through the head of the humerus, he removed a small area (1 cm square) of the articular cartilage, with three catgut sutures he attached the strips of fascia lata to the denuded bone, fixing the free ends of the strips to the acromion, as in the former operation. Schmieden has introduced a further modification without widely opening the capsular ligament he drills through the capsule and humeral head a straight "canal" from front to back of the bone. Another hole is drilled through the acromion from beneath. Strips of fascia measuring 20 cm in length are then passed through these canals and the ends are sutured over the acromion. Loeffler and Kirschner perform an entirely extracapsular operation; they drill through the base of the greater tubercle and the acromion and pass the strips of fascia through these holes. Joseph has published his results two or three years after operation. Schmieden reports good results attained by Joseph's method but more extensive observations on the results of this operation have not been published. According to Voelcker Schmieden's modification of the original operation has had disappointing results. Voelcker, Horfchirt, Haulc and Nissen report good results after Loeffler's operation. The ultimate results of Schmieden's and Loeffler's modifications have not been published. Wulfing has operated upon six cases of recurrent subcoracoid dislocation during the last year. In three cases Schmieden's technique was employed and in the others Loeffler's operation was performed. In two of the former cases the result was entirely satisfactory in the third case there was slight wasting of the shoulder muscles but otherwise the result was very good, movements being free and painless. Of the three latter cases the first patient complained of slight pain in the shoulder without objective symptoms, she was able to do her household work. The second patient was a hospital sister aged 29, two and a quarter years after operation she had had no recurrence although her occupation necessitated considerable muscular exertion. She had had occasional sharp pain in the shoulder and there was slight wasting, possibly from disuse. The third patient, a butcher aged 42, was readmitted to hospital three weeks after operation complaining of definite limitation of mobility of the right arm. No cause for this could be found. In regard to Joseph's operation Wulfing points out that the following

points deserve further consideration (a) the possible danger of serious septic infection of the opened joint, (b) the possibility of absorption of the strips of fascia, (c) the possible danger of osteo arthritis. He concludes that the number of cases hitherto reported is too small to permit of definite conclusions being drawn, but as the result of his own experience he prefers Schmieden's modification of Joseph's operation.

158 Multiple Paratyphoid Osteomyelitis

G L CARTINGTON and W C DAVISON (*Bull Johns Hopkins Hosp*, June, 1925, p 428) report a case of multiple osteomyelitis due to the paratyphoid B bacillus in a coloured boy aged 8, motile bacilli being found in fresh blood preparations. Although osteomyelitis and periostitis of one or more bones are not unusual complications of typhoid and paratyphoid fevers, no case has hitherto been reported in which the right humerus, radius, and ulna, both fibulae, the left ulna and scapula, and the third to ninth ribs on both sides were successively implicated at intervals during a period of two months. *B. paratyphosus B* was isolated from the pus of the lesions in the humerus, fibulae, and left ulna.

159 Sympathectomy for Tinnitus

E BRUNING and E FORSTER (*Deut med Woch*, May 22nd, 1925, p 860) prefix their account of an operation they have devised for the relief of tinnitus with a review of the present day treatment of this condition, which is probably due to a localized spasm of the blood vessels of the internal ear. Drugs which relieve such spasm may, indeed, banish tinnitus temporarily, but their effects soon wear off and ultimately the patient's general health and nervous system may suffer so severely that he commits suicide or becomes a drug addict. As angio spastic conditions in various parts of the body other than the internal ear have responded satisfactorily to resection of the sympathetic filaments supplying the parts concerned, the authors argued that such an operation might also be beneficial for tinnitus. The patient on whom they first performed this operation was a man aged 73, without a history of syphilis or of heavy smoking and drinking. He had suffered since June, 1924, from severe tinnitus on the left side. As the usual remedies had failed, and he was getting desperate, he insisted on an operation, although the dangers and possibility of failure of such an undertaking were put before him. On December 26th he was given a general anaesthetic, and an extensive resection of the sympathetic system in the left side of the neck was performed, the stellate ganglion and its connections were removed, and perivascular sympathectomy of the carotid artery was performed for a distance of 5 cm. The wound healed by first intention and two days after the operation the tinnitus had already become less loud. Horner's symptom complex was demonstrable and there was marked hyperemia of the left side of the face and head as well as of the left arm. When the patient was re-examined on March 4th 1925, his general health was vastly improved, and the tinnitus had abated so much that he noticed it only when he thought of it. The authors suggest that when further experience of their operation has been gained, it may not be necessary to resect the sympathetic system in the neck so radically as they did.

Therapeutics

160 Radiotherapy in Non-malignant Gastric Diseases

R BENSAUDF I SOLOMON and P OLRY (*Presse Med*, June 24th 1925 p 841) review the literature relating to the action of x rays on gastric ulcers and painful functional gastric disorders and report new investigations. They used the Royce et Ropiquet apparatus, which gave with a 25 cm spiral a current of 3 milliamperes. The focal distance was 20 cm, a 5 mm aluminium filter was employed and the ionometric dose was 500 R (2 H 5). One or two sittings were given every week each patient receiving a total of fourteen or sixteen irradiations of the gastric region after a preliminary screening. In the majority of patients a definite erythema was observed between the eighth and twelfth applications; this necessitated posterior instead of anterior irradiation. Variations in gastric secretion were the most obvious phenomena produced by irradiation; they were easily explained by the definite and almost elective action of x rays on the stratum of secreting cells. In one third of the cases it was found that a single dose of 500 R (2 H 5) produced a definite reduction of acidity occasionally suddenly but more usually one hour after irradiation. In almost every case the reduction was brief the acidity returning next day to its former ratio. In the remainder two thirds of the cases a single irradiation had no effect on the acidity and in no case was the percentage of pepsin modified by a single irradiation. After

several doses, at intervals of from three to eight days, variations in gastric secretion were more definite. In 55 per cent of the cases there was a great fall in acidity, in 25 per cent a slight fall, while in 20 per cent there was no perceptible reduction. In a few cases free hydrochloric acid disappeared entirely. Usually the reduction of acidity was delayed until between the eleventh and sixteenth irradiations, occasionally it occurred between the third and fifth. In a large proportion of patients, especially among those suffering from slight functional disturbances with approximately normal secretion, the evolution of acidity followed a very regular sequence. The first application increased the acid and pepsin secretion, subsequent irradiations diminished them both. The patients suffering from gastric ulcer with hyperchlorhydria were therefore those who derived the greatest benefit from irradiation; cases of hypochlorhydria were not improved. In the cases which showed the greatest modification of gastric secretion the effect of irradiation lasted for a few weeks only. Occasionally a second series of irradiations produced a more lasting effect. The authors found that the analgesic effect of irradiation was very inconstant, in some cases intense and chronic pain was relieved entirely, but the number of failures was approximately equal to that of the successes. Schultze Beiger has reported five cases of gastric irradiation a few days after profuse haemorrhage had occurred. Four patients had no recurrence, while the fifth patient had a haemorrhage a few months later. The present authors used no treatment other than x rays. 6 among 18 patients were greatly improved—pain disappeared, and they gained weight, being able to return to their normal mode of life.

161 Prophylactic Treatment of Measles

R DEBRE, P JOINNON, H BONNET, and J C DECAM (*Bull et Mem Soc Med des Hop de Paris*, May 14th, 1925, p 682) have performed more than two hundred prophylactic injections with the blood or serum of adults who have previously had measles, and by this method have checked the extension of the disease in several families or in communities where crowding facilitated contagion and would tend to aggravate the disease. The dose of serum was 12 to 15 c cm below the age of 2 years and 20 to 25 c cm above that age. It is advisable to mix the serum of several individuals, since the richness in antibodies of the donors is not known a priori. No bad results were observed. In practice the donors to be preferred are the parents of the children concerned without any notice being taken of the date when they had measles, since parents who have had measles twenty or thirty years previously have supplied excellent serum. The serum of a person who has had measles is obtained much more readily than convalescent serum and the method is willingly accepted, because parents gladly give their blood to save their children from a disease or to diminish its gravity. The serum of adults who have previously had measles may contain also the immune bodies of diseases frequently associated with measles and may in this respect be superior to convalescent serum. LESTER (*ibid*, p 689) reports that he has injected twenty children suffering from whooping cough with the whole blood of their fathers and mothers who had had measles in childhood. Intramuscular injections of 10 c cm were given three days in succession, six days of possible incubation and measles, which was abortive as regards both incubation and the general symptoms.

162 Treatment of General Paralysis

A MARIE and V KOHN (*Bull Soc de Hyg*, June 10th, 1925 p 198) claim to be the first to have employed inoculation of malvarin in France on a large scale for general paralysis, as they have subjected more than a hundred patients to this method at the St Anne Asylum in Paris and elsewhere. Recently they have had even better results by inoculation of relapsing fever and have inoculated thirty cases with *Spirochaeta duttoni*. Their results were as follows of 103 patients inoculated with malvarin, 12 died, 5 had remissions and 18 showed considerable improvement while out of 15 who had been inoculated with relapsing fever more than three months previously 9 showed remissions and none had died. The authors attribute the good results to the sudden high temperature accompanied by hyperleucocytosis which checks the growth of the treponemata. On the other hand, after febrile diseases accompanied by leucopenia such as typhoid fever, a remission of general paralysis is never observed. After three years' trial of various pyrogenetic agents the authors are convinced that the mildest, such as sterilized milk or sodium nucleinate should first be employed. If the patient does not react, and he has not obvious tuberculosis—a rare occurrence in general paralysis—injections of tuberculin in increasing doses should be tried alternately with bismuth. Patients who are capable of a reaction show a fever of 102.2° before reaching the dose of 10 to 20 mg. Advanced cases of general paralysis do not react even to

doses of 2 to 3 grams. After these methods have failed one may try inoculation of relapsing fever or benign tertian, if the patients are young and have no hypertension or pronounced renal, cardiac, or hepatic lesions. The attack, however, should be cut short at once if the patient shows signs of intolerance or collapse. When once a remission or improvement has occurred, two or three series of injections of bismuth, stovarsol, or triparasulide should be given every year.

163 Rashes produced by Veronal and its Allies

A TARDIEU and A BLOUDEL (*Rev. de Med.*, No 4, 1925, p 255) report a case of poisoning by dial, accompanied by very characteristic rash. They refer to several records of poisoning by veronal, luminal, dial, and other allied drugs where rashes followed. They state that the most striking thing about these rashes is their polymorphic character—bullous, pustular, morbilliform, scarlatiniform, or urticarial. Usually there is much itching and slight desquamation at the end, and sometimes in the scarlatiniform type the rash may be so varied and general as to make one suspect scarlet fever, especially as a sore throat is often present. In addition to these acute forms of toxic rash, the authors refer to a chronic type lasting for three years in a veronal taker, who lost the rash when she gave up taking veronal. As to the prevalence of these rashes, the authors say they found a rash in 20 out of 100 veronal takers. The rash is considered of favourable prognostic importance, as it usually occurs in subacute crises of veronal poisoning or in the convalescent stage of acute poisoning. These rashes are not thought to be specific, but probably occur mainly in people with a badly balanced vaso-motor system.

Laryngology and Otology.

164 Autoplastic Treatment of Small Perforations of the Septum

J B VAN NIEUWENHUISE (*Rev. de Laryngol., d Otol. et de Rhinol.*, June 15th, 1925, p 380) states that small perforations of the nasal septum are very often the outcome of old syphilis and serve as a diagnostic point, though they may be caused by many other conditions, of which trauma and ulceration are the most common. The formation of crusts on the margin of the perforation and repeated epistaxis from the free edges require treatment, and in other cases there is a whistling sound on ordinary quiet respiration due to the passage of air through the narrow hole. This is only met with in the smaller types of perforation. The author points out that before attempting any form of repair it is necessary to make sure that the cause of the perforation has become quiescent, and in cases of tuberculosis, syphilis, and lupus attention must be paid to the general and neighbouring manifestations of the disease. If, however, the condition is quiescent and there are no other contraindications various plastic measures may be adopted. In the method of Laurens the mucous membrane of both inferior turbinates opposite the perforation is dissected up and carried across to the septum, the edges being sutured to the margins of the perforation. In Scifert's method the surface of the inferior turbinate process is scarified and the septum is pressed over by packing in the opposite nasal fossa until it comes into contact. The turbinate process becomes adherent and fills up the perforation. The turbinate mucosa is incised round the margin of the perforation and a portion is left filling up the gap. Roy's method consists in dissecting up a flap from the septum, turning it back or forwards as the case may be, and suturing it to the freshened edges of the perforation. Other surgeons have turned up a similar flap from the floor of the nose. The author has recently had a case in which he undermined the mucosa round the perforation for a distance of 1 cm and then inserted a portion of the inferior turbinate which he resected for the purpose. He placed the graft so that the mucous membrane of the graft fitted into the perforation, with the fragment of bone to support it, the edge of mucous membrane around it was insinuated under the loosened edge of the septal mucosa. The result was very satisfactory and the technique was very easy.

165 Oto Laryngology in the Philippine Islands

A S FERNANDO and I ELISA NICHOLAS FERNANDO (*Journ. Trop. Med. and Hygiene*, June 1st, 1925, p 202) describe the special characteristics of tropical oto laryngological diseases, with particular reference to their work in the Philippine Islands. The most prominent features are the high incidence of acute rhinitis, tonsillitis, middle ear suppuration, and furunculosis of the ear. The relative frequency of atrophic rhinitis in young girls and women leading a sedentary life, and the comparative rarity of septal deviation, submucous resection being an unusual operation. Leprotic involvement

of the ear is common, and the authors suggest that the frequent atrophic condition of the nose resulting from leprosy is perhaps an important factor in the high incidence of tuberculosis among these patients. They find that the throat is only affected in advanced leprosy and when extensive destruction of the interior of the nose is present. Tertiary manifestations of yaws appear in the form of extensive infiltration and ulceration of the nose, pharynx, and palate, with bony destruction sometimes, and much deformity. Paralysis of the vocal cords, due to beriberi, has been reported, and the authors believe that this is due to neuritis rather than to pressure on the nerve.

166 Injection of the Spheno palatine Ganglion

J TERRACOT (*Arch. Internat. de Laryngol. et Otol. Rhinol.*, July-August, 1925, p 787) describes the anatomy and relations of the spheno palatine ganglion of Meckel in connection with injection operations. The posterior portion of the pterygo maxillary fossa contains the ganglion and the spheno palatine and palatine nerves, the anterior contains the terminal portion of the internal maxillary artery and its branches. He questions the usual description of the roots of the ganglion, agrees that there are often filaments leading from the ganglion to the spheno palatine nerve and its branches, but adds that these are very small and not always demonstrable. He suggests that the ganglion has no motor root, but that the great superficial petrosal nerve is a sensory nerve linking up the fifth and seventh nerves, and that the direction of the impulses is from the spheno palatine to the geniculate ganglion. The ganglion is also connected with the superior maxillary nerve, with the ciliary and optic ganglia and with the optic nerve. Terracot describes three methods of injecting the ganglion. The first or endo nasal can be performed in two ways: the needle, 8 to 10 cm in length, is passed under the middle turbinate and made to perforate the spheno palatine notch at the point of insertion of the tail of the middle turbinate. Sinder modified this method and passes the needle through the tail of the turbinate. These methods require much practice and there is some difficulty in hitting off the notch. In Cushing's method the needle is passed directly upwards from the lower margin of the zygomatic process. Terracot considers this a good method, but accuracy of direction is required. The third method, as practised by dentists, consists in passing a needle which has a right angle bend into the posterior palatine foramen and then up the bony canal. Once in the canal, Terracot states, nothing can go wrong and the injected fluid must reach the ganglion. He considers this the easiest and most reliable method.

167 Laryngeal Stridor with Dysphagia

D MCKENZIE (*Journ. of Laryngol. and Otol.*, May, 1925, p 285) describes a case of laryngeal stridor and dysphagia in a girl, aged 3. Inspiration was very noisy, especially during sleep when the respiration rate was remarkably slowed down to nine or ten a minute. The symptoms had gradually increased from the age of 9 months, and during this time difficulty in drinking with much coughing and spluttering had been noticed. Dyspnoea was considerable and the patient was rachitic and weak. The symptoms became so urgent that tracheotomy was performed. The stridor disappeared but the respiration rate remained very slow. After tracheotomy food began to appear through the tracheal cannula and food was henceforth administered by a nasooesophageal tube with considerable difficulty. Septic bronchopneumonia supervened and death followed four weeks after the tracheotomy. The necropsy showed that the upper part of the larynx had fallen in and the intrinsic larynx was of a cruciform shape between the doubled up epiglottis and the approximated arytenoids, which were all bunched up close together. This condition has been seen by many observers during life. The occurrence of dysphagia with the stridor has been but rarely mentioned before and receives careful study. The author dismisses the idea that there is any nervous innervation but he considers that there is a weakening and flaccidity of the upper part of the larynx and that during inspiration the arytenoid processes and the uvula and epiglottic folds are drawn inwards and downwards instead of being held away from the glottis. The condition progresses and becomes a vicious circle. The slowing of the respiration rate McKenzie describes as compensatory and its persistence after tracheotomy as a habit. The coughing and spluttering on drinking he considers as a reflex to prevent food from entering the weak and non-resistant laryngeal aperture. The fact that food entered the larynx he ascribes to the loss of the protective blasts of air which were diverted through the tracheal cannula. The author expresses the view that tracheotomy should be avoided when possible in congenital stridor, but if dyspnoea is very marked this risk must be taken.

Pathology.

Filterable Forms of the Tubercle Bacillus

171 Filterable A. DUTOURI (C. A. R. ARLOING and A. DUTOURI (C. A. R. 26th, 1925, p 165) have been working on the filtrate of the tubercle bacillus, and have confirmed to a certain extent the results of previous authors. Most of their experiments were made with pathological products from infant and children, such as pulmonary lesions, a subcutaneous nodule, tracheo bronchial glands, or cerebro spinal fluid, but a few were made on laboratory cultures of the bacillus. The material was passed through a Chamberland L3 filter and tested for sterility. If no contaminating organisms were present, glycerin peptone water and glycerin broth were inoculated with the filtrate, 2 ccm of which was also injected intraperitoneally and 2 ccm subcutaneously into guinea pigs which were killed from three to ten weeks later. The results were somewhat unexpected. No organisms were recovered from artificial cultures, but four out of five of the pathological products tested rendered guinea pigs tuberculous. The type of tuberculous appeared normal no caseation and no tubercles were seen, and the focal glands were unchanged, or only quite insignificantly enlarged. But on microscopic examination tubercle bacilli, indistinguishable from the usual type, were found in one or more groups of glands—generally the lumbar the tracheo-bronchial, or the submaxillary. The infection was exclusively a lymphatic one, and no appearance quite different from that following the injection of unfiltered tubercle bacilli. Filtrates of old laboratory cultures of tubercle bacilli were without effect on guinea pigs. H. DUPONT, 1925, p 439

172 SEVERAL workers have been successful recently in infecting animals with filtered tuberculous pus. H. DURAN and CHARCHANSKI (C R Soc de Biologie, July 24th, 1925, p. 439) report a similar observation. The fluid from a guinea pig pleurisy was filtered through a Chamberland L3 candle, and injected in 1 c.c. dose subcutaneously into a guinea pig. Three weeks later the animal was killed. No local lesion was then found and no evidence of tuberculosis in the spleen or viscera. But numerous tubercle bacilli. Reviewing similar cases that have been reported, the authors conclude that tuberculosis set up by filtered infective material follows one of two courses: either it gives rise to a local lesion with subsequent involvement of the local glands, or, as in this case and in those of Auloung and Coumont, it gives rise to discrete lesions having no apparent connexion with the site of injection.

173 **Vaccination by Means of the Bacteriophage** Monget and in the case of Allouin lesions having no apparent connection with the course of an epidemic of septicaemia amongst their stock rabbits A. GRATIA and DOLORE DOLE (C 1 Soc de Biologie, July 17th, 1925, p 452) isolated a lactose fermenting organism similar in many respects to *B. coli*. Injected in a small dose (1/1,000 c.c.m.) into a guinea pig, it gave rise to a septicaemia terminating fatally in about twenty hours. As the organism was very susceptible to an anti *B. coli* bacteriophage, the authors considered it suitable for vaccination experiments. Guinea pigs which were injected intraperitoneally with ten minimal lethal doses, and which were then given either subcutaneously or intraperitoneally 1 to 2 c.c.m. of bacteriophage, invariably survived but if the bacteriophage were given later than four hours after the infection, organisms the animals died. With these limitations the bacteriophage exerted a definitely protective action, and they work on an antistaphylococcus bacteriophage, and they to doubt the specificity of this protective action, as if their therefore made further experiments with guinea pigs. Suspensions held true with the anti *B. coli* variety. The same experiment was repeated with the substitution of the bacteriophage by an old filtered culture of *B. coli* entirely free from bacteriophage. These animals likewise survived. Again instead of the bacteriophage an old filtered culture of *V. cholerae* was given and again the protective action of the bacteriophage was deduced that the same effect could be obtained by the use of a specific filtrate of subcultured age. Again, it was found that by inoculating a guinea pig for some weeks with an anti *B. coli* bacteriophage it was possible to render the animal immune to the virulent coliform bacillus even though an indistinct principle had been formed and was present in the blood. The immunity in this case was specific. From all these experiments it would appear that the bacteriophage as such has no specific vaccinating power.

173 Vaccination by the course of an epidemic and

170 **Carcinoma of Body of Uterus** July, 1925 p 131), from a clinical and histological study of fifty cases of carcinoma of the body of the uterus, regards the condition as a disease entity rather than and distinct from, cervical carcinoma. He finds that even when the disease is advanced the cervical canal is rarely involved. The growth usually appears as papillary or polypoid outgrowths into the cavity causing some enlargement of the uterus. It tends to invade the body of the uterus and tubes and with secondary involvement of the ovaries and tubes the average age of the patients was 54 and nearly 70 per cent had passed the menopause over a year. The chief symptoms were hemorrhage and discharge frequently accompanied by colic pains, he states that these symptoms occurring after the menopause are pathognomonic of the condition. He adds that in all cases of doubt diagnostic curettage is important because of the frequent association of adenocarcinoma with myoma. He considers it a safe procedure provided that, if the curettings are positive, hysterectomy follows immediately so that the practical advantages of early disease does not follow the theoretical dangers of and certain diagnosis outweighing the theoretical dangers of dissemination of the growth. Total abdominal hysterectomy is he thinks the operation of choice as it affords a better means of dealing with metastatic complications though the vaginal route has advantages in the obese and aged. As matters of importance in operating Davis emphasizes (1) the avoidance of the use of tenacula traction (2) the preliminary ligation or clamping of the distal ends of the tubes by means of clamps on the broad ligaments and (3) preoperative disinfection and closure of the cervical canal by packing and sutures in order to avoid the possible exudation of infected material.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

174 Angina Pectoris in Mitral Stenosis

L. TELIA (*Arch des Mal du Cœur, des Vaisseaux et du Sang*, August, 1925, p. 531) discusses the precordial pain of mitral stenosis, which ranges from a sensation of pressure to a most severe attack of angina pectoris. Many French writers have attributed the pain to dilatation of the left auricle, and Castaigne published a fatal case in which one of the coronary arteries was blocked by an embolism and many areas of myocardial sclerosis and chronic endarteritis were present. Sternberg believes that anginal attacks in mitral stenosis are due to compression of the left coronary artery between the dilated and hypertrophied left auricle and the dilated pulmonary artery. Tolia now reports the case of a governess, aged 17, who had had repeated attacks of tonsillitis and of acute articular rheumatism with very definite mitral stenosis. At the autopsy the heart (especially the auricles) was enormously dilated and hypertrophied. The mitral valve was represented by a fibrous ring, hardly admitting one finger. The left coronary artery was slightly thinned. The tricuspid valve was normal in appearance, while the aortic and pulmonary valves were slightly thickened, and the pulmonary artery was dilated throughout its entire length. The great dilatation and hypertrophy of the right side of the heart had caused a rotation of the heart about its axis from right to left, which brought the ascending aorta in contact with the manubrium, while the left auricle touched the vertebral column. These findings support Sternberg's theory of compression of the coronary artery between the left auricle and pulmonary artery. The heart was so greatly enlarged that it occupied the whole of the mediastinum. Tolia has under observation two other young patients, aged 18 and 27, both have suffered from articular rheumatism repeatedly with attacks of angina pectoris secondary to mitral stenosis. Electrocardiograms show permanent arrhythmia, while in one case there are right ventricular extra systoles. Tolia thinks that treatment should be limited to free bleeding for the purpose of relieving the congestion of the right auricle. In addition to this, Sternberg recommends antispasmodics such as papaverine and novatropine.

175 Angina Pectoris in the Young

CASES of angina pectoris occurring in persons under 30 form less than 1 percent of all cases of angina. M. L. GALLAVARDIN (*Lyon Med*, May 3rd, 1925, p. 539) considers that it is possible that the unknown cause of non-syphilitic angina pectoris may exceptionally develop at an early age, but that it is probable that most juvenile cases are of syphilitic origin. Two cases in the literature, reported by (1) Nakaja and Ishiguro and (2) Vaquez, were undoubtedly due to acquired syphilis. The incubation period of the aortitis, usually twenty years or more, may occasionally be reduced to a few years. Gallavardin has seen angina pectoris develop at 31 in a man infected with syphilis at 25. Lunbry gives eighteen months as the incubation period in one case. The juvenile type may be due to infantile acquired syphilis with either normal or much reduced incubation period, but apart from these cases congenital syphilis as a cause must be taken into account. Gallavardin has seen 4 cases of angina pectoris occurring in patients between the ages of 20 and 30 years. In one of these the symptoms began at the age of 27. In the second case the patient, aged 30, was born when his father, who had had syphilis at 22, was 31. The Wassermann reaction was negative, but in neither case could acquired syphilis be absolutely excluded. The remaining two cases, however, were undoubtedly due to hereditary syphilis. One, a woman of 22 with aortic incompetence and a strongly positive Wassermann reaction, had had typical anginal attacks for six months. There was no family history of heart trouble, rheumatism, or choler. The mother's Wassermann reaction was strongly positive. The patient improved temporarily under intensive antisyphilitic treatment, but death supervened on a subsequent series of vaginal attacks. The other case, a man aged 29 with three months' symptoms, had no obvious cardiac lesion and the Wassermann reaction was negative. The father had had syphilis six years before the birth of the patient. In neither case were there any physical signs or stigmata of congenital syphilis. Gallavardin adds that many more similar cases must be recorded before congenital syphilis can indisputably be recognized as the causal agent in juvenile angina pectoris.

176 Diabetes Mellitus combined with Renal Glycosuria

P. VOGELENZANG (*Ned. Tijdschr. v. Geneesl*, July 25th, 1925, p. 446) defines renal glycosuria as an unduly easy permeability of kidneys unaffected by nephritis for sugar, the blood content of which is normal. In typical renal glycosuria the sugar excretion is small. Vogelenzang has been able to find few records of a large glycosuria, and thinks that in such cases the renal attribution is often made in doubt. He cites Stoussé's opinion on a case of renal glycosuria observed for some years, that the outcome of glucose diet tests indicated "the beginning of a metabolic disturbance" also the comment of another author on another case diagnosed at first as renal glycosuria, that by the same diet test the condition was later shown by repetition of the curves to be progressing to true diabetes. The author communicates two cases of his own in which, although the blood sugar was normal, addition of carbohydrate to the diet caused a slow but marked increase in excretion of sugar, and the blood sugar index varied according to the carbohydrate ingested, as is the case in diabetes. He concludes that, before deciding upon the treatment of a patient with glycosuria, it is necessary to determine the nature of the glycosuria by repeated blood sugar estimations.

177 Ulcerative Aortitis in Typhoid Septicaemia

G. VASILESCO POPESCU and G. LITARCZUK (*Picasso med*, June 17th, 1925, p. 806) record the case of a man, aged 48, who contracted typhoid fever in July, 1922. The disease pursued an ordinary course until August, when, instead of recovery ensuing, a subfebrile condition persisted for sixteen months interrupted by attacks of shivering, high temperature, and aggravation of the general condition. The possibility of one of the sequelae of typhoid was considered, such as polyneuritis or osteomyelitis, and it was only a few days before death that the appearance of a pulsatile tumour in the left flank suggested the persistence of typhoid infection localized in the aorta with formation of an aneurysm. Laparotomy, which was performed with the object of applying a ligature, showed a retroperitoneal pulsatile tumour which it was impossible to isolate, it involved the abdominal aorta and common iliac artery. Death occurred two days after the operation, being preceded by signs of rupture of the aneurysm. A sacular aneurysm of the abdominal aorta was found above the bifurcation, together with a large retroperitoneal haematoma from rupture of the aneurysm, cardiac hypertrophy, and chronic interstitial nephritis. There was no history or other evidence of syphilis, and the Wassermann reaction was negative. The formation of the aneurysm was attributed to the patient's hypertension as well as to the aortic lesions caused by the typhoid infection. This is the second case on record of rupture of an aneurysm of the abdominal aorta following ulcerative aortitis in typhoid fever. The first case was that of the Rumanian statesman, Take Jonesco, reported in 1923 by Marchisava and Nazari.

Surgery.

178 Prolapse of the Bladder in Whooping-cough

ROCHER (*Journ de Med de Bordeaux et du Sud-Ouest*, June 10th, 1925, p. 484) records the case of a female infant, aged 18 months, who developed a subtotal prolapse of the bladder through the urethra in the course of whooping-cough, the organ presenting the appearance of a mushroom-like bleeding growth. At times the vesical trigone could be seen, as well as the escape of urine from the ureteric orifices. There was also a prolapse of the rectum. Reduction was easily effected under an anaesthetic. The urethra was much dilated and readily admitted the little finger. In order to maintain the reduction Rocher sutured the labia minora together and no further prolapse occurred. As regards the pathogenesis, whooping-cough was not entirely responsible, but congenital dilatation of the urethra was the principal factor in the prolapse.

179 Blood Transfusion

J. F. BALDWIN (*Am. Journ. Med. Sci.*, July, 1925, p. 118) examines the present position of blood transfusion in order to determine its real value, dangers, and abuses. From a study of the literature, his own experience, and the results of replies to a questionnaire among surgeons, he concludes that the procedure is by no means free from unavoidable dangers, especially in acute sepsis. In chronic sepsis and in the chronic stages of brain he finds that its only value is in improving the advanced anaemia, in pernicious anaemia it

is of no ultimate value and is attended with risk. Ho considers it of value in profound shock or acute anaemia from some haemorrhages, such as post partum haemorrhage, and ectopic pregnancy, but it does not appear to be of much use in shock other than that resulting from acute haemorrhage. When administered immediately before or after an operation involving the possibility of acute haemorrhage transfusion is, he thinks, of special value, as also in the haemorrhages occasionally occurring in newborn infants, in which latter condition he states that it is not necessary to type the mother's blood, which can be at once injected in small quantities into a vein, or preferably into the superior longitudinal sinus. His own experience confirms the conclusion of Callen, who examined the gynaecological records of the Johns Hopkins Hospital for the previous twenty five years, that patients with a low haemoglobin content stand pelvic or abdominal operations fairly well and that transfusion in such cases appears therefore to be unnecessary.

180 Surgical Treatment of Subphrenic Abscesses

E. ORSÓS (*Zentralbl. f. Chir.*, July 25th, 1925, p. 1637) states that the mortality of subphrenic abscess is 85 to 95 per cent in the absence of operation, and between 21 and 33 per cent when operative treatment is employed. With a view to minimizing the risk of the occurrence of such sequelae as empyema and peritonitis Orsós has now adopted the following procedure. The tenth rib is resected for a distance of four and a half inches in the posterior axillary line, the parietal pleura is incised, and the closely approximated parietal and diaphragmatic pleural layers are then united by a continuous catgut suture which passes deeply through the pleura, subpleural fascia, intercostal muscles, and diaphragm. The free pleural edge is sutured to the diaphragm in the same manner. The diaphragm is then incised and the abscess cavity evacuated. Orsós claims that this method completely shuts off the pleural surfaces of the costo diaphragmatic angle and prevents the entrance of either air or pus. The deeply placed continuous suture will withstand the strain of the diaphragmatic contractions, and it will not be infected by the abscess contents, being effectually protected by the outer suture which approximates the pleural surfaces.

181 Surgery under Ultra violet Ray Antisepsis

VAN LIER (*Bull. et Mem. Soc. Nat. de Chir.*, July 18th, 1925, p. 809), a Dutch surgeon, reports having performed 800 operations with no other sterilization than ultra violet irradiation. The operations were of all kinds—some clean, such as for hernia and appendicitis, and some septic, many involved the skull and brain. The lamp used was a mercury vapour quartz one, fitted with a rheostat with which to graduate the light. First the surgeon's hands and the instruments were irradiated, no rubber gloves being worn but the eyes were protected by glass. Then the patient's skin was treated, the radiologist watching for any change of colour, as such would indicate harm to the tissues. Two other lamps, horizontally placed, sterilized the field of operation and the atmosphere above. Ultra violet light was the sole illumination. Van Lier states that the only organ showing special sensibility to the rays is the kidney. Application of the light is continued until the last (indicated) suture is in place. Results superior to those reached with ordinary methods are claimed. A note of warning is sounded regarding the care the radiologist must take to avoid an overdose of the light. Failing this precaution there may supervene in six or eight hours serious complications, which are generally fatal.

182 Epicondylitis

R. M. CARTER (*Journal of Bone and Joint Surg.*, July, 1925, p. 553) points out that epicondylitis constitutes a definite clinical entity which it is important to recognize. It is characterized by pain and tenderness on pressure over the lateral epicondyle of the humerus, the pain often passing down into the fingers. It is spoken of as "tennis elbow," "musician's palsy," or "sportsman's elbow." It occurs almost exclusively in adults between the ages of 30 and 50 years. In women more often than men, it seems to follow certain occupational or sport activities, particularly those in which the combined movements of supination and flexion of the forearm are employed. The characteristic feature of the condition is pain as described, usually with a complete lack of objective findings. It is probable that the majority of cases are due to a localized periostitis in the region of the external epicondyle the result of opposing muscle action frequently repeated. A few cases may be due to inflammation or calcification in a bursa which is found in this region. The ultimate prognosis is good, all patients eventually recover, but the course may be extremely chronic. The treatment usually necessary is prolonged rest. Diathermy may be of value while where an inflamed bursa is suspected or found, surgical intervention may be necessary.

Therapeutics.

183 Tryparsamide in Neurosyphilis

H. C. SOLOMON and J. R. VIFTS (*Journ. Amer. Med. Assoc.*, August 1st, 1925, p. 329) report very favourably on the treatment of neurosyphilis by tryparsamide. In addition to decrease in pleocytosis in the spinal fluid they have found improvement in the Wassermann reaction, colloidal gold curve, and the globulin content. They state that although a few injections of tryparsamide sometimes resulted in the spinal fluid becoming normal, in the majority of cases of parenchymatous neurosyphilis more than fifty injections were required to produce improvement in the serum reactions, and that it was often necessary to continue the treatment for a year or longer. Some patients, after being treated by arsphenamin and other methods without much improvement, responded well to tryparsamide. Cases of early paresis showed remissions which were maintained during the two year period of treatment. The clinical results were not so good with the later cases of tabes, with marked signs of degeneration of the spinal cord. Very few unfavourable symptoms, and none of any severity, were observed, occasionally a slight amount of nausea or even vomiting followed the injections. Amblyopia occurred in one patient with optic neuritis.

184 Mercurochrome in Obstetrics

H. W. MAYES (*Amer. Journ. Obstet. and Gynecol.*, July, 1925, p. 61) advocates the use of a 4 per cent solution of mercurochrome in vaginal examinations, the induction of labour and during delivery, or in preparation for Caesarean section. Believing that an attempt should be made to sterilize the birth canal before delivery and that an antiseptic in the vagina during labour reduces the chances of infection, Mayes adopts the following preparatory procedure. The inner sides of the thighs, buttocks, lower abdomen, and external genitalia are sprayed and the vaginal outlet and anal region painted with a 4 per cent solution of mercurochrome. One drachm of the solution is introduced into the vagina and worked well into the folds of the mucous membrane, round the cervix and the presenting part of the child. This treatment is repeated if more than one hour elapses between the vaginal examinations or between the vaginal examination and delivery. If possible, at least one hour should elapse between the treatment and the commencement of delivery or any operative measures. In Caesarean section in possibly infected cases the injection of the solution into the amniotic cavity is recommended. The advantages possessed by mercurochrome over iodine are said to be that its application is painless and non-irritating and that it can be used freely and repeatedly without harm to the baby. Mayes adds that it is not incompatible with mercury bichloride, does not coagulate protein, and can be applied to lacerated tissue. He believes that convalescence is more rapid with it than is the case with iodine, and recommends it particularly for induction of labour and in all deliveries associated with operative treatment. The staining of the linen and the hands is said to be its only objection and in practice is found to be almost negligible.

185 Tannic Acid in the Treatment of Burns

E. C. DAVIDSON (*Surg., Gynecol. and Obstet.*, August, 1925, p. 202) advocates the use of gauze dressings saturated with a 2.5 per cent freshly made aqueous solution of tannic acid in the treatment of burns. He states that by precipitating the poisonous material, their absorption is prevented and a protective coating is provided against chemical, bacterial, and mechanical action as well as against sensory and inflammatory irritation. After the administration of 1/4 grain morphine sulphate hypodermically the burned area is covered with dry sterile gauze pads held in position by sterile gauze bandages and this dressing is then soaked with the tannic acid solution. In order to avoid any deep caustic action inspection is made at the end of twelve, eighteen, and twenty-four hours by removing a small section of the dressing. As soon as the part has assumed a light brown colour all dressings are removed and the wound is left exposed to the air, being carefully protected from injury, chilling, and bacterial invasion by being covered by a cradle draped with sterile linen. He recommends as less efficacious but yet definitely beneficial, a 5 per cent tannic acid ointment made with equal parts of vaseline and lanolin, especially for burns about the eyes. Davidson adds that it is most essential to keep up the fluid balance of the body either by giving liquids, by intravenous infusion, or by removal of exudate by wetting the gauze with fresh solution. The initial dressing is analgesic, and with the subsequent exposure to the air lessens toxæmia and promotes comfort. The local astringent

effect prevents loss of body fluid and the dangers of secondary infection are reduced. The protective layer of coagulated protein was found to act as a scaffold for the growth of epithelial cells over the denuded surface, and the formation of scar tissue was notably less than that observed in other methods of treatment.

Ophthalmology.

185 Coloboma of the Mesodermal Layer of the Iris

J S FRIEDENWALD (*Arch of Ophthalmol*, July, 1925, p 349) describes a case in which one eye showed a typical coloboma of the iris and the other a symmetrically situated defect of the mesodermal layers of the iris, and discusses the interest of this occurrence from the developmental point of view. The modern theory of the origin of coloboma of the iris is that a persistence of the vascular connexions between the stroma of the iris and the hyaloid system at the back of the lens occurs. In order to account for the absence of the mesodermal layer in this case Friedenwald assumes that a vessel connecting the iris stroma with the hyaloid system persisted sufficiently long to prevent the proper formation of the iris mesodermal layer, but that the growth of the margin of the optic vesicle on either side of the vessel was sufficiently active to close in front of the vessel and so form a round pupil.

187 Oxycephalus

F A DAVIS (*Amer Journ Ophthalmol*, July, 1925, p 513) reports six cases of oxycephalus, which, he thinks, must be more common than is usually supposed especially in regard to milder degrees of the condition. He considers that it should probably be considered more a malformation than a disease. Premature fusion of some of the sutures of the skull is the pathological change which causes the condition, the basal and transversal sutures are more usually affected. The etiology of the condition is obscure, but heredity is thought to play a part, rickets, syphilis, meningitis, and prenatal osteitis have all been considered and more or less discarded as etiological factors. Davis thinks the condition must be considered as a developmental fault, and points out that other congenital malformations are often associated with it. Patients with the severe type of the deformity rarely reach maturity, but in the mild cases which do so there is usually a quite normal mentality. Davis deals at length with the signs and symptoms of the disease and gives details of his six cases.

188 Intraocular Steel Foreign Bodies

F ALLPORT (*Amer Journ Ophthalmol*, June, 1925, p 472) in this paper reviews the results of 223 cases of intraocular steel foreign bodies. In these cases 72 enucleations were necessary, but in the majority of these the eye was so severely damaged that there was little chance of a successful issue. In none of the series did sympathetic ophthalmia supervene. Allport is an advocate of the posterior scleral route with the use of a small magnet in cases where the foreign body is in the vitreous, rather than of the use of the giant magnet to draw the foreign body forward into the anterior chamber. He has never found that better results could be obtained by the method of Haab with the giant magnet. The curious fact is noted that intraocular steel foreign bodies sometimes prove unresponsive to the magnet, although after subsequent enucleation they appear to be lying free in the vitreous. He advises that the steel should be removed as soon as possible after entry. In 112 cases the point of entry was the cornea, in 90 cases the sclera, and in 21 the corneo scleral junction. The results appear to be very satisfactory, but many of the cases have been watched for only a few months.

Obstetrics and Gynaecology.

189 Injury to the Child at Birth

A STERN (*Arch f Gynakol*, July 25th, 1925 p 683) states that birth injuries, though very frequent, rarely leave permanent marks. In over 60 per cent of the deaths of infants up to the age of 5 weeks an autopsy reveals intracranial haemorrhage. Stern thinks that the start of many a case of infantile pneumonia may be thus explained, from lack of due nervous control of the vital functions. Recovery from similar central nervous lesions may be inferred from the common occurrence in the newborn of spontaneous nystagmus, which nearly always disappears in a few days. The incidence of these affections can be shown to be increased by conditions unfavourable to parturition—as, for example, in abnormal presentations, or premature rupture of the membranes. The author thinks that he has correlated the same difficulties in

labour with unduly heavy loss of weight after birth, indeed, he is inclined to ascribe this phenomenon, even when of normal extent, to recovery from trauma during birth. He adds that the experience of his own clinic is to the effect that premature infants show the stigmata of birth trauma almost three times as often as do full term infants, his explanation being that the premature foetus is particularly liable to injury.

190 Premature Separation of the Placenta

J W WILLIAMS (*Journ Obstet and Gynaecol of the Brit Empire*, Summer Number, 1925, p 259) considers that ante partum haemorrhage is almost as frequently associated with premature separation of the normally implanted placenta as it is with placenta praevia. The case is recorded of a woman, aged 33, who had previously had two normal deliveries, and in whom complete separation of the normally implanted placenta occurred, associated with concealed haemorrhage (retroplacental haematoma) as well as with a disorganization of the uterine walls caused by intramural haemorrhages, giving the organ a ligneous consistency and a characteristic mottled metallic appearance. He adds that his personal experience in forty cases indicates that the condition occurs most frequently in primiparae or in those who have had six or more children, it may occur in succeeding pregnancies. The etiology of the condition is unknown, and while in many of the severe cases such a condition as pre-eclamptic toxemia, eclampsia, or chronic nephritis, may precede the lesion, in 15 out of 37 patients albuminuria was entirely absent. Furthermore, traumatism, syphilis, inflammation of the decidua, shortness of the umbilical cord, and torsion of the pregnant uterus are rarely if ever factors in its production. The mortality was 75 per cent for the mother and 75.5 for the child. In treatment an expectant course is justified only if the bleeding is slight and the patient's condition good. Caesarean section should be performed if the bleeding is profuse or concealed and the patient shows signs of excessive loss of blood, the uterus being amputated if it remains flabby and presents the pathognomonic ligneous consistency observed in about every third case. Williams concludes that in any operative procedure for this condition the knowledge that a previously satisfactory pulse may suddenly become rapid and weak renders it advisable to be prepared beforehand for the transfusion of compatible blood.

191 Radiation Treatment of Cervical Cancer

F VOLTZ (*Klin Woch*, July 16th, 1925, p 1396), from a study of his own results and of the literature, states that the proportion of cases of cervical cancer in which there was freedom from relapse for five years was 16.9 per cent with radiation treatment and 26.9 per cent after surgical operation. In the case of operable cases the comparable figures were 41.9 per cent for radiation treatment and 39 per cent for surgical treatment. Voltz thinks that at the first glance these figures might favour the cry now often raised that exclusive radiation treatment is not justifiable. Such a conclusion, he maintains, would not be correct, for the following reasons. Clinics giving exclusive radiation treatment receive far more advanced clinical cases than do the surgeons. In the Erlangen, Munich, and Dresden clinics only about one-seventh of the cases coming for treatment are operable, whereas the lowest proportion, at clinics where they operate, is a half, at Jena and Berlin, indeed, over four fifths. Then the figures for radiation go back to the very beginning of that treatment, when it was undeveloped. There is further the disadvantage that a course of radiation may be interrupted or cut short, as was frequently the case in the bad economic conditions after the war. Regularly treated patients will yield, he concludes 74 per cent of cures in the operable stage, 41 per cent when on the border line, and 13 per cent when operation is out of the question.

192 Radical Treatment of Salpingo oophoritis

V MANNHEIM (*Zentralbl f Gynakol*, July 4th, 1925, p 1471) states that since 1910 at Ash's clinic at Breslau there has been an increasing preference for the abdominal as against the vaginal route in operations for chronic salpingo oophoritis, and also for radical rather than conservative operative measures. By radical operation is understood total extirpation, or supra-vaginal amputation of the uterus with the whole of both adnexa. The conservative method has been reserved of late years for about one third of cases—namely, those in which the naked eye morbid appearances of the adnexa are less extensive and less serious, and the adhesions to neighbouring organs less marked. Nevertheless, it is found that about 90 per cent of patients are discharged as cured after radical as against 65 per cent after conservative operation, 1 in 200 of the former group requires a second operation, against 1 in 10 of the latter. The percentage mortality was the same (3 per cent) in each group. A recent examination of the patients concerned, who were of the working classes

and in about one half of whom the adnexal disease was certainly of gonorrhoeal origin, showed that of those operated on consecutively 19 per cent were quite well, in addition to 35 per cent who were able to do their work, amongst those who had a radical operation the corresponding figures were much higher—namely, 35 and 47 per cent respectively. Unpleasant subjective symptoms attributable to the artificial menopause were absent or very slight in about 80 per cent of the radically treated patients aged under 30 and about 90 per cent of those above that age.

193 Spontaneous Lacerations of the Cervix

F. MONTUORO (*Riv. d'Ostet. e Ginecol. Prat.*, July, 1925, p. 323) emphasizes the importance of the recognition and treatment of lacerations of the cervix occurring during spontaneous labour. Factors favouring their occurrence are, he states: (1) pre-existing lacerations (the relics of previous labours), (2) defective development of the cervix, which is of the conical, infantile type, and may not undergo the usual anatomical rectification due to the hyperaemia and myometrial hypertrophy of pregnancy, (3) anatomical rigidity of the cervix, which is met with not only in aged primiparae, but also in young subjects aged from 14 to 16, (4) tumours and inflammatory sequestrations of the cervix, which often justify Caesarean section, (5) spasmodic rigidity of the cervix or uterine tetanus—here cervical lacerations are apt to become true uterine ruptures. The ultimate determining factors in lacerations of the cervix are anomalies of presentation disproportionate relative size of foetus and pelvis, and precipitate labour, to these Montuoro would add a fourth—namely, injudicious nursing instructions whereby the patient is urged to make violent expulsive efforts at a stage when cervical dilatation is still incomplete. Cervical lacerations demand immediate repair, and the practitioner is recommended by Montuoro to carry in his midwifery bag catgut, volsella, and a vaginal valve speculum.

Pathology.

194 The Complement Fixation Test in the Diagnosis of Gonorrhoeal Rheumatism

AFTER recalling the discoveries of previous workers, T. BEZANÇON, M. P. WEIL, and M. RUBINSKIN (*C. R. Soc. de Biologie*, July 3rd, 1925, p. 235) proceed to give their own results in connection with the diagnosis of gonorrhoeal rheumatism by the complement fixation test. The antigen they employed was an emulsion of six different strains of gonococci, made by washing off the growth from twenty-four hour ascitic agar cultures, centrifuging, washing the deposit, and suspending it finally in saline solution. It was then heated to 60°C for one hour. The sera of 14 patients, suffering from non-gonococcal infections of the joints, all gave negative results. On the other hand of 24 sera taken from patients who were undoubtedly suffering from gonorrhoeal rheumatism, no fewer than 21 gave positive results, a percentage of about 87.5. These figures are in fairly close agreement with those obtained by previous workers, and serve to show that, whereas a negative reaction does not exclude the presence of gonorrhoea, a positive reaction is very strong evidence in favour of it. The complement fixation reaction is of special value in the diagnosis of the nature of an obscure arthritis, for it is not uncommon for the joints to become affected in gonorrhoea long after all signs of the disease have passed away. The authors describe three cases, in which the joints were affected five, seven, and twenty-four years respectively after the primary infection.

195 Vaccination against Tuberculosis

J. WILBERT (*Ann. de l'Inst. Pasteur*, August 1925, p. 641), working under the direction of Calmette, has performed a number of experiments on the vaccination of monkeys against tuberculosis. The vaccine used was the living, avirulent "B.C.G." strain of Calmette and Guérin. It was given either in a single dose of 50 mg subcutaneously, or in five doses of 50 mg every other day by the mouth up to a total of 250 mg. The general plan of the experiments was to introduce into a single ergo vaccinated animals, animals artificially infected with a virulent human or bovine strain, and as controls unvaccinated and non-infected animals. After a number of months the mortality from tuberculosis of the three classes was calculated. The artificially infected monkeys were given either a single injection of 1/100,000 mg subcutaneously, or two doses by the mouth at forty-eight hours interval of 1/1,000 mg. No difference was found in virulence between the human and the bovine strains of bacilli nor between the susceptibility of different species of monkeys to the two types of bacilli. In the first series of experiments with chimpanzees there were 3 vaccinated, 5 infected, and 7 control animals. After about a year all the

vaccinated animals were alive and well, all the infected animals were dead of tuberculosis and of the 7 controls 4 were dead of tuberculosis and 3 of dysentery. In the second series, made with pithecius monkeys, there were 19 vaccinated, 20 infected, and 20 control animals. After five months of cohabitation 6 of the 19 vaccinated animals were still alive, and the remainder were dead of different diseases—malaria, dysentery, pasteurellosis, etc., none showed the least sign of tuberculosis at autopsy. All the infected animals were dead—19 of tuberculosis and 1 from intestinal obstruction developing a week after infection. All the control animals were dead—19 of tuberculosis and 1 from pasteurellosis. From these experiments the author concludes that it is possible to vaccinate monkeys of all ages and enhance immunity by the mouth against tuberculosis, that the protection afforded against the risk of contracting the disease by contact with tuberculous monkeys is complete and lasts for over a year, at the end of this period revaccination may be performed.

196 Hydrogen Peroxide and Bacterial Growth

THE disinfectant action of light has long been known, the deleterious effect of light on nutrient media has received much less attention. F. M. BURNET (*Australian Journ. Exper. Biol. and Med. Sci.*, June, 1925, p. 65) has shown that agar plates exposed to sunlight become unsuitable for bacterial growth. The reason for this appears to be that under the influence of light of short wave length hydrogen peroxide is formed in the medium, this substance exerts a strongly inhibitive effect on the growth of staphylococci—the organisms chiefly studied. So powerful is it that even in a concentration of 1 in 40,000 its inhibitive effect is noticeable. It was found, however, that staphylococci are able to produce substances to neutralize this hydrogen peroxide. These substances have not been identified, but it appears likely that they are of more than one kind. Some are thermostable, others are thermostable. They act as reducing agents, destroying the hydrogen peroxide. Burnet thinks that it is unlikely that they are enzymes for they are capable of diffusing out from the bacterial colonies. Thus in one experiment their radius of diffusion through an agar plate was found to be 3.35 cm after forty-two hours—a rate that could only be attained by substances of molecularly small dimensions. Not only are these substances able to neutralize hydrogen peroxide, they can also neutralize potassium cyanide. Both hydrogen peroxide and potassium cyanide interfere with the metabolic activity of the cell. How the former acts is not clear, but the latter apparently acts by paralyzing the peroxidases and thus allowing hydrogen peroxide to accumulate in the neighbourhood of the cell. When staphylococci are grown under anaerobic conditions they are able to withstand a concentration of cyanide that completely inhibits growth under aerobic conditions. This indicates that the metabolism of the cocci under anaerobic conditions is so altered that they no longer depend on the activity of their peroxidases, and are therefore no longer injured by substances that paralyze these enzymes. The author concludes that the presence of catalase and of the diffusible substances in the bacterial colony is an indication of a primitive means of keeping constant the immediate environment so as to allow of the type of metabolism most suited to the organism.

197 Unusual Sequelae of Tuberculous Tracheo-bronchial Adenitis in Children

J. M. SMELLIE (*Brit. Journ. Child Dis.*, April-June, 1925, p. 110), who has observed the presence of recent or old tuberculous infection in 47 out of 450 consecutive autopsies, records two cases of oesophageal perforation, two of oesophageal traction diverticula, four of bronchial perforation, and one of pericardial perforation, all resulting from erosion of the mediastinal glands. In neither of the two cases described did the oesophageal perforation occur as an isolated lesion but the first showed also a perforation into the left bronchus, and the second a minute perforation into the pericardial sac. Neither patient presented symptoms that could have enabled a diagnosis to be made during life. Of the two cases of oesophageal diverticula one was an accidental post mortem finding and the other occurred in a child who died of a primary tuberculosis. In both cases the diverticulum was small, and the line of direction was upwards, so that they gave rise to no symptoms. Of the four cases of bronchial perforation one showed also an oesophageal perforation, and in the other three the perforations were multiple. In one case the perforation probably occurred when the child suddenly coughed up an ounce of purulent material eighteen hours before death. The case of pericardial perforation—which is by far the rarest sequel of tuberculous tracheo-bronchial adenitis—occurred in a girl aged 8 years, and was associated with perforation of the oesophagus.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

198

Thyroiditis of Tonsillar Origin

B. SOLER and M. CALDERIN (*Arch de Med, Cir y Esp*, July 11th, 1925, p 49), who record an illustrative case, state that many cases of thyroiditis have been recorded secondary to infection by various micro organisms, such as the typhoid bacillus (Griesinger, Jeanselme, Lemicco and Lalbet, Sabrazes, Sabrazes and Grailly, etc) and the pneumococcus (Marchand, Léri, and Bensaude). Roger succeeded in producing hyperplasia of the thyroid by injection of typhoid cultures. Jeanselme has described thyroiditis as a complication of influenza, Bnscartels of gonorrhoea, and Vincent of rheumatism. Strumitis, or inflammation of a goitre, is rarer than thyroiditis and is more commonly met with in women than in men. The eumetric is a predisposing factor. Marañón has observed the sudden appearance of strumitis in an old goitre on the cessation of menstruation. Although almost all writers note tonsillitis as a cause of acute thyroiditis or strumitis, there are very few cases on record illustrating this etiological relationship. The authors' case was that of a girl, aged 20, who since the age of 14 had been subject to frequent attacks of tonsillitis with the appearance of a tender swelling in the thyroid region. When seen by the authors she also complained of headache, suffocative attacks, gastric pain, and amenorrhoea. A diagnosis of cystic goitre and recurrent strumitis of tonsillar origin was made. Tonsillectomy was performed and considerable improvement followed, as shown by disappearance of the headache, suffocative attacks, tremors, and loss of appetite, and by return of menstruation. It was obvious in this case that the thyroid was constantly being stimulated by an infection resulting in a state of functional deficiency. The authors conclude that an extensive operation on the thyroid may perhaps be prevented in many cases by a previous tonsillectomy.

199 Acute Delirium at the Onset of Typhoid Fever

COURTOIS SUFFIT and G. GARNIER (*Gaz des Hop*, June 27th, 1925, p 836) record the case of a previously healthy student, aged 22, admitted to hospital with acute delirium, hyperpyrexia (105.8° F.), and extreme tachycardia. Death occurred thirty six hours after admission, the illness having lasted a little more than a week. After infectious endocarditis, tuberculous meningitis, and cerebral rheumatism had been excluded, the diagnosis of acute delirium of typhoid origin was made owing to typhoid bacilli being found in the blood culture. There was no autopsy. The authors think that overwork was the predisposing cause, as the patient had been spending as much as fourteen hours a day in preparation for an examination, and consider that a massive infection with typhoid bacilli occurring in an unvaccinated subject was responsible for the severity of the attack. The unusual symptom of extreme tachycardia was probably due to an early typhoid myocarditis. In spite of the statement of Marchison to the contrary, the authors maintain that acute delirium is very rare at the onset of typhoid fever, especially when it is the only manifestation of the disease, as in their case. This is the first example of the kind that Courtois Suffit has met with in the course of twenty five years, during which period he has seen nearly four thousand cases of typhoid fever.

200

Prognosis of Diphtherial Conjunctivitis

BEAUVIEUX (*Gaz hebdomadaire de Bordeaux*, May 31st, 1925, p 340) remarks that membranous conjunctivitis, whether due to a variety of organisms or to a variety of organisms, such as the streptococcus and Klebsiella, can produce false membrane. Membranous conjunctivitis of diphtherial origin, however, is becoming increasingly rare as it is getting better known, and strict prophylactic measures are being taken as soon as its appearance is suspected. Conjunctival diphtheria may occur clinically in two different forms—namely, a superficial or croupal and an interstitial or deep. Some writers, including Sourdille, Coppez, Guistous, and Hass, describe a catarrhal form without false membrane, though Morax doubts its occurrence. Two types of croupal conjunctivitis may be described. The first is characterized by the appearance on the mucous surface of the tarsus of a membrane which can be easily detached, leaving the subjacent conjunctiva bleeding, the membrane soon reforms. In the second type,

which is called diphtheroid, the membrane is very thick and of a dirty white colour, extending not only over the tarsus but also sometimes over the whole conjunctival surface, and is accompanied by greater destruction of the epithelium. For the conjunctival mucous membrane to be infected by the Klebsiella bacillus or its toxins it must have been damaged previously in some way or another—as, for instance, by cauterization or by a previous infection such as measles or scarlet fever. The author adds that the prognosis of superficial diphtherial conjunctivitis is very favourable, for, as it is usually associated with a satisfactory general condition, it may be cut short rapidly by sordum treatment, and it is exceptional for involvement of the cornea to develop. In the interstitial form, on the other hand, the cornea is in danger from the first. The diphtheria toxin weakens the resistance of the epithelial barrier, and so facilitates admission for secondary invaders such as streptococci, pneumococci, and staphylococci. The use of diphtheria antitoxin is then of no avail, and perforation of the cornea ensues.

201

Sterility in the Male

K. M. WALKER (*Brit Journ Venereal Dis*, July, 1925, p 192) states that the treatment of a barren marriage should begin with the examination of the husband, not the cretting of the wife. In one set of statistics the male was found of impaired fertility (though not necessarily solely responsible for lack of offspring) in 167 out of 253 childless unions. Of 32 husbands referred to the author for a similar cause only 13 were quite normal. Remembering that an abnormality must be gross to be detected by the microscope or test tube, Walker believes that relative sterility is common in males and adds that blockage is the cause much more often than aspermatogenesis, the blockage is, unhappily, mostly permanent. Men with a history of bilateral epididymitis are sterile in 40 per cent of cases, according to Benzer's figures, and Walker thinks that this risk is unaffected by any particular treatment of the epididymitis. He has abandoned as useless excision of the block and anastomosis of the vas with the epididymis. In blockage of the ejaculatory ducts the chances of successful surgical treatment are much greater. Age counts as a cause of impaired fertility for much less in the male than in the female, Walker has seen active spermatogenesis in a non-german. He does not think that drugs have much effect on spermatogenesis. Treatment on general lines is recommended with the substitution of an outdoor life for a sedentary one and the selection of a diet rich in vitamins and fats.

202 Disturbances of Cystin Metabolism in Children

G. O. L. LIGNAC (*Nederl Tijdschr v Geneesk*, August 15th, 1925, p 819) refers to his previous paper (see *Epitome*, September 24th, 1924, para 222), in which he described three illustrative cases of disturbed cystin metabolism in children, and records a similar example in a girl, aged 14 months, who had developed hydrocephalus following an attack of cerebro spinal fever at the age of 3 months. Death followed from progressive atrophy. The necropsy showed bilateral nephro lithiasis and deposits of cystin in the various organs, especially the spleen, though in much smaller quantities than in the cases which he had previously described. Lignac states that the most striking clinical feature in these cases of disturbance of cystin metabolism is the defective or at least delayed growth, so that the latter may be regarded as the result of incomplete assimilation of cystin. The factors responsible for this incomplete assimilation are unknown.

203

Measles on an Immigrant Ship

F. MCCALLUM and G. A. BLUMER (*Med Journ Australia*, May 2nd, 1925, p 453) remark that records relating to maritime epidemiology seldom appear in medical literature, although the conditions in a ship at sea offer an almost unique opportunity for studying the natural history of any infectious disease. They report an outbreak of measles on an immigrant ship from London to Australia which contained a crew of 210, with 866 passengers, of whom 150 were children. Six days after leaving London an infant developed a measles rash, and during the next five weeks a succession of cases occurred. A total of 51 cases was discovered though it is probable that a number of cases were not reported to the ship surgeon. All the cases were mild subsequent recovery was rapid and uncomplicated. The authors recommend that the following measures should be taken on the discovery of a primary case on board ship: (1) Compilation of a census of all children on board, with name, cabin number, destination, age, sex, and history of previous attack of

mersles (2) Consultation with the master of the ship about provision for an outbreak, such as isolation in the ship's hospital or cabins situated preferably aft, away from the ship's general traffic (3) Daily record of each case, showing exact time of onset and nature of initial symptoms (4) The relationship in terms of cabin accommodation or possibility of contact of each patient to each of the previous patients (5) Daily inspection of all children under 15, particular attention being paid to the initial signs of mersles (6) Isolation of each patient on discovery of the initial symptoms and provision for dealing with susceptible contacts

203 The Growth of Diabetic Children

L. P. JOSLIN, H. I. ROOT, and PRISCILLA WHITE (*Journ. Amer. Med. Assoc.*, August 8th, 1925, p. 420) have watched the growth of 296 diabetic children, of whom 164 died, while 132 survived. They found that the gain in weight of the diabetic child treated with insulin resembled that of the normal child, but the weight of the diabetic child was less than the normal for his age, though not in proportion to his height. The child was generally less tall than the normal, whether his general condition was good or bad. There appeared to be no retardation of maturity when insulin was being given, though this was usual in untreated cases. The authors invite further investigation with a view to determining whether diabetic children under insulin treatment can achieve eventually healthy manhood and womanhood. They refer also to the evidence now appearing that regeneration of the pancreas is possible, more particularly in the later than the earlier years of the disease.

205 Acute Haematogenous Streptococcal Peritonitis in Children

J. L. RANSOHOFF and J. V. GREENBAUM (*Arch. of Ped.*, May, 1925, p. 315), who record two cases in a white boy, aged 10, and a coloured girl, aged 5, state that acute streptococcal peritonitis presents a clinical picture sufficiently characteristic to make diagnosis possible. The disease is characterized by a violent onset with acute pain and high fever. The abdominal rigidity is general and of a high grade intensity, quite unlike the localized rigidity accompanying appendicitis. Marked and persistent vomiting is present. The leucocyte count is usually higher than in any other form of acute intra-abdominal inflammation. The condition is seasonal in incidence, occurring in the winter or early spring months, and may occur with or without preceding tonsillar infections. As a rule streptococci may be isolated from the throat, blood stream, and peritoneal cavity. The treatment is surgical as soon as the diagnosis is made, the mortality being 100 per cent in cases with purely medical treatment. The operation consists merely in evacuation of the pus and insertion of numerous drains.

Surgery.

206 Surgical Sequels of Anterior Poliomyelitis

S. W. BOORSTEIN (*Surg., Gynecol. and Obstet.*, August, 1925, p. 149) records the results of operative treatment in 100 cases of anterior poliomyelitis since the beginning of 1917 and following the epidemic in 1916. Post-operative treatment consisted of the application of plaster and braces, massage, and muscle training, and he is convinced that every orthopaedic surgeon should personally supervise the after-treatment, since many valuable operations were discredited through want of this precaution. He considers astragalotomy for stabilization of the foot the best operation as regards both function and shape, and reports that after it all the muscles of the lower extremity greatly improve. Open instead of subcutaneous tenotomy is advised, and transplantation of the biceps for the quadriceps was found to give good results, as also Soutter's operation for transplantation of the hip flexors. He adds that Steindler's operation of transplantation of the plantar muscles gives satisfactory results if care is taken to stretch the foot thoroughly and to use a brace for a long time. While Gallie's operation of tendon fixation has not given him the results desired, he has found Jones's operation of transplantation of the longus hallucis satisfactory. It is pointed out that tendon transplantation is likely to fail if a weak muscle is expected to do the work of a strong one.

207 Multiple Cysticercal Infection

L. P. MARIANTSCHIK (*Zentralbl. f. Chir.*, June 6th, 1925, p. 1234) records the case of a railway man, aged 41 years, who complained of chronic dyspepsia—foul eructations and very frequent vomiting. Twenty years earlier he had had similar symptoms, which were found to be due to taeniasis. An

analysis of the gastric juice showed some hyperchlorhydria. Stagnations showed no definite abnormality, but there was a localized tender point over the region of the lesser curvature. Although the chemical and radiographic examinations were negative, the vomiting and persistent tenderness impelled Mariantschik to perform an exploratory laparotomy. On opening the peritoneum, very old adhesions were found between the liver, stomach, and parietal peritoneum. The gall bladder was attached to the abdominal wall by more recent adhesions. All these adhesions were divided, those between the stomach and abdominal wall evidently interfered with gastric peristalsis. On the posterior gastric wall in the pyloric region there was a sharply defined stellate scar. After the separation of the adhesions in the region of the lesser curvature much fibrous thickening with numerous punctiform haemorrhages and many nodules as large as pens were found. Posterior gastro-enterostomy (by Hacker's method) was performed. Some of the tissue removed showed typical cysticercus formation. Mariantschik remarks that cysticercosis of the gastric wall is very rare, more commonly cysticerci are found in the mesentery, liver, eye, brain, or meninges. The patient had suffered twenty years earlier from tapeworm (species unknown), Mariantschik thinks that he must have infected himself.

208 Haemangioma of the Spleen

H. NAHER (*Deut. Zeit. f. Chir.*, June, 1925, p. 87), who records an illustrative case, states that genuine tumours of the spleen very rarely call for surgical treatment. The most common form of splenic tumour seen by the surgeon is sarcoma. Only four cases of primary angioma of the spleen have been reported—by Moltrecht, Ombredanne, von Beckendorf, and Steden respectively—in which operation was performed. In Moltrecht's case the tumour weighed 3150 grams directly after its removal, death ensued on the following day. The other three patients recovered after operation. Steden's case provides the largest cavernous tumour of the spleen on record, the growth weighing 4,125 grams. A few other cases have been reported in which the growth was found unexpectedly at the necropsy. Thus Forster describes a case in which several haemangiomas of the spleen were found, each the size of a hazel nut, and Theile mentions a case in which three haemangiomas were discovered ranging in size from a bean to a cherry. In Langhans's case angioma of the spleen was accompanied by a similar growth in the liver. Nabel now records a case in a woman, aged 42, who had suffered five years from discomfort in the left hypochondrium, especially after food. Operation revealed a large haemangioma of the spleen weighing 2,500 grams and measuring 24 by 20 by 10 cm. Pulmonary emboli occurred in the second week after laparotomy, and three weeks after the operation symptoms of intestinal obstruction developed due to mesenteric embolism. Laparotomy was performed, and 30 cm. of the ileum was resected. Death occurred three days later.

209 Subacute Venous Septicaemia

C. LEGRAND (*Rev. de m. d.*, No 3, 1925, p. 169), who records an illustrative case in a woman aged 45, states that subacute venous septicaemia, first described by Vaquez and Leconte, is a rare condition characterized by the following clinical triad: (1) a tenderness which suggests the intervention of a process, which is relatively benign but of prolonged duration. Sometimes there is a history of a recent infection, such as influenza, as in the cases of Vaquez and Leconte, and Ponthieu, or of varicose veins and endocrine disturbance, as in Legrand's case. Women appear to be predisposed to the disease, but Ponthieu's patient was a man aged 36, and Roux's patient was a child. Fever which is never absent, is only slight, hardly ever exceeds 100.4°, and presents slight daily oscillations. The disease proceeds in successive stages separated from one another by intervals of improvement and sometimes by a complete but transient intermission. A segment of a vein may be involved or a whole limb, as in phlegmasia alba dolens, or all four limbs may be affected. The pain and oedema vary in degree in different cases. Vaquez and Leconte have described a form characterized by haemoptysis, apparently due to localization of the infective agent in the lung and manifested by dyspnoea, and an area of riles with or without haemorrhagic sputum and a slight rise of temperature. The gravity of the disease is due to its persistence. The joints become affected by false ankylosis, which is extremely obstinate. Considerable amyotrophy results and sometimes marked retraction of tendons. There is no specific treatment, though good results have been claimed by some observers from vaccine therapy or intravenous injection of collargol. Gentle mobilization of the limbs should be undertaken about three weeks after the fever and pain have subsided.

210 Thrombosis of the Mesenteric Vein

P R MICHAEL (*Nederl Tijdschr v Geneesk*, August 1st, 1925, p 584) records a case in a woman, aged 30, who for the last four weeks had suffered from anorexia, constipation, abdominal pain, and repeated vomiting. Owing to the sudden onset of violent pain in the region of the umbilicus she was admitted to hospital, where a diagnosis of purulent peritonitis was made and laparotomy was performed. Much yellow fluid was found in the peritoneal cavity and a large part of the small intestine presented a darkish discoloration. Nearly ten feet of the affected gut was excised, and a lateral anastomosis with the caecum was performed. Violent diarrhoea followed the operation, but gradually subsided under an appropriate diet. A month after the operation the pulse rate increased and the temperature rose. Signs of fluid were again found in the abdomen, the spleen became distinctly enlarged, and a painful swelling occurred in the region of the left femoral vein. The symptoms, however, gradually subsided without operation, and the patient was discharged well after three and a half months' stay in hospital. As regards the cause of the thrombosis, apart from congestion nothing remarkable was found on examination of the intestine, and in particular there were no ulcers. The mesentery showed thrombosed veins. The Wassermann reaction was negative. The acute enlargement of the spleen and the sudden development of ascites indicated obstruction of the portal vein, while the appearance of the left leg pointed to thrombosis of the femoral or common iliac vein. The patient, who was very anaemic, had thus an obvious tendency to thrombosis. The microscopical appearances and the clinical symptoms suggested that the condition was of an infective nature. Michael adds that in view of the woman having had a miscarriage four months previously it is possible that the uterus was the source of the mischief.

211 An Undescribed Symptom of Acromegaly

F HERZOG (*Klin Woch*, August 6th, 1925, p 1545) states that a normal person's hand cannot be bent dorsally until the long axes of the fingers are almost or quite parallel to the forearm, but that in acromegaly patients with no joint deformity or muscular atrophy, such as might be supposed to favour exaggerated passive movement, he has been able to produce the position described. The reason he ascribes is a pathological relaxation of the enlarged joint capsule and ligaments, and he supports this with a skiagram, taken while slight traction was being made on the middle finger, which shows a separation at the metacarpophalangeal joint of that digit of 4 mm. Without traction, Herzog adds, the articular intervals may be wider than normal, owing to the yielding capsule, so long as arthritis is not present, when passive movement may be often diminished. He has not found any account of this joint condition in the literature, and thinks it may play a part in the subluxations sometimes seen in acromegaly, and in the more frequent and almost typical scoliosis.

212 Primary Carcinoma of the Duodenum

G B EUSTERNAN, D M BEREMAN, and T S SWAN (*Ann of Surg*, July, 1925, p 153) report 15 cases of primary carcinoma of the duodenum from the Mayo Clinic, verified either at operation or autopsy, 6 were in the first or supra ampullary portion of the duodenum, 6 in the second or ampullary, and 3 in the intra ampullary. Twelve of the patients were males, the average age being 56. The majority showed the syndrome of duodenal ulcer, but the onset in later life, its rapid progress, and the presence of marked pyloric obstruction with frequent subacid or anacid gastric contents and the general appearance of the patient, pointed to a more serious lesion. The mode of onset was gradual in seven of the cases and sudden in eight with epigastric pain or discomfort, which was usually moderate, being severe in only two cases, in two thirds of the cases the pain occurred from one to four hours after meals. Except as a terminal symptom, jaundice was rare even in the ampullary cases, and flatulence, vomiting of the retention type, thirst, dehydration, toxæmia, and wasting were among the chief symptoms. A tumour was present in five of the cases, always in the supra ampullary and ampullary portions, and no palpable mass was found in the third or intra ampullary portion. X rays usually revealed a dilated stomach with considerable barium residue without any demonstrable gastric lesion, and gastric analysis showed free hydrochloric acid in subnormal amount or achlorhydria. Differential diagnosis rests between malignant and benign pyloric obstruction, carcinoma of the head of the pancreas or gall bladder involving the duodenum, carcinoma of the terminal portion of the common duct, duodenal obstruction from bands, inflammatory masses, peritoneal tuberculosis, and post operative adhesions. Since the toxæmia of high intestinal obstruction is so serious, it is held that a palliative gastro-enterostomy is justifiable after preoperative preparation, intravenous injections of sodium chloride and glucose in severe cases gave relief.

Therapeutics.

213 Toxic Sequels of Stovarsol Treatment

G IZAR (*Paris Med*, August 8th, 1925, p 139) gives details of four cases in which moderate doses of stovarsol, the sodium salt of acetyl amino hydroxyphenyl arsenic acid, given for the treatment of intestinal amoebiasis, were followed by severe symptoms, including vertigo, collapse, cyanosis, abdominal pain, pyrexia, and tachycardia, recovery in each case was not complete for a few days. Izar has not been able to find any reference to such toxic phenomena in the literature, even when large doses of stovarsol were employed. He is inclined to attribute the results in these cases to individual idiosyncrasy, in the form either of a lowered resistance or of sensitization, rather than to any fault in the drug itself.

214 Calcium Diuretin

K KAISER (*Klin Woch*, August 6th, 1925, p 1574) strongly recommends the use of calcium diuretin in chronic high blood pressure from arterio sclerosis or any other cause. Early in 1923 he suffered from slight attacks of cardiac oppression, pain down the left arm, and dyspnoea, brought on by going upstairs. In spite of treatment with iodine and diuretin, he became worse, exposure to cold or any excitement causing severe respiratory difficulty. The heart and aorta were scarcely enlarged and no signs of atheroma were found, but the blood pressure reached 150 mm (Riva Rocci). Neurosis was diagnosed, and calcium bromide was given intravenously for six weeks without any complete or lasting benefit. Calcium diuretin in ordinary dosage was given orally for six days and removed all symptoms except after heavy exercise had been taken. The pulse and blood pressure became normal and in three weeks improvement became complete. The benefit has now lasted six months, the patient taking every six or eight weeks a course of the drug for ten days or so, as a precaution.

215 Diathermy in Rectal Stricture

H PICARD (*Zentralbl f Chir*, August 1st, 1925, p 1709) prefers diathermy to dilatation or excision of the scar in rectal stricture, and claims that after diathermy the scar tissue becomes vascular, soft, and elastic. While excision or dilatation may have serious sequelae, diathermy is stated to be quite free from danger. Picard's technique is as follows. After preliminary dilatation with Hegar's dilators a double cathode is placed in contact with the stricture and two compound plates are applied externally—one in front over the hypogastrium, and the other over the sacrum. By using various external poles of large size the average temperature at the site of the stricture may be raised to 113–117°F. The strength of the current employed is about 1 ampere, and the treatment is given daily for fifteen to twenty minutes for about four to six weeks. Picard has treated fourteen cases of simple rectal stricture and two cases of anal stricture by this method, in five cases the Wassermann reaction was positive. He has seen only two relapses after diathermy during the last three years.

216 Active Immunization against Diphtheria

H ALDERSHOFF (*Nederl Tijdschr v Geneesk*, July 4th, 1925, p 6) discusses the question whether the time has come to replace toxin antitoxin by anatoxin. In view of the immunizing action of anatoxin, one might be inclined to answer this question in the affirmative, and follow the example of Loiseau, Park and Zingher, and others. Aldershoff, however, as the result of his experience at the Utrecht Serological Institute, is opposed to this change on the following grounds: (1) Undiluted anatoxin, though free from toxic action, produces, especially in older children and adults, who are generally allergic, a violent local reaction, which, though harmless, is a great obstacle to the general employment of anatoxin. (2) It is not decided whether anatoxin has a reliable immunizing action when it has been sufficiently diluted to prevent the appearance of a more violent local reaction than that caused by toxin antitoxin. (3) An anatoxin freed from proteins is not available.

217 Treatment of Sprue by Raw Pancreas

A CASTELLANI (*Journ Trop Med and Hygiene*, June 15th, 1925, p 230) reports that in some cases of typical sprue, with copious white motions and a sore mouth, the administration of raw pancreas seems to be beneficial. He now adopts a routine treatment in which the patient is kept at complete rest in bed on a strict milk diet. In most cases half a drachm or a drachm of sodium bicarbonate is given three times a day, or well diluted liquor potassae. Fresh sweetbread from lambs, sheep, or calves are minced and the stringy parts removed. At first a teaspoonful and later a tablespoonful of the chopped mass with the juice is given once or twice a day. Castellani

has also employed pancreas tablets and capsules, which he finds useful but not so active as raw pancreas. He adds that in three cases of spurs complicated by typical diabetes, the administration of insulin brought about disappearance of the glycosuria and polyuria, without alleviating the spur symptoms. In two of these cases raw pancreas given by the mouth benefited the spur condition, but did not control the glycosuria. In such cases, therefore, he advises the administration of subcutaneous injections of insulin, combined with raw pancreas by the mouth. He remarks that he sees no reason why this pancreas treatment should not be combined with Scott's parathyroid calcium lactate method.

218 Treatment of Chronic Albuminuria by Tonsillar Extract

M LAEMMER (*Bull Soc de Théor*, June 10th, 1925, p 170) states that it is well established that tonsillitis frequently gives rise to albuminuria, which may be transient only, but sometimes becomes very chronic. In the course of his study of chronic albuminuria in childhood and adolescence Laemmer found that it frequently originated in a chronic infection, not only of the tonsil, but of the whole of Waldeyer's ring. He has recorded cases in conjunction with Tarneaud to show that the obstinate albuminuria occurring in influenza or other infectious diseases was merely due to an infection of some part of the naso-pharyngeal lymphatic ring. He now reports two cases—in a boy aged 12 and a girl aged 20, respectively subject to attacks of tonsillitis and albuminuria—whom he successfully treated by injection of tonsillar extract containing 25 c cm of fresh pig's tonsil in 3 c cm of normal saline. If these results are confirmed by further observations, Laemmer suggests that there may be a special endocrine secretion in the tonsils.

219 Manganese Treatment of Tuberculosis

O HELMS (*Deut med Woch*, July 17th, 1925, p 1189) gives a brief summary of his experience with twenty-eight cases of tuberculosis treated with intravenous injections of manganese chloride in a Danish sanatorium, according to Walbum's principles, to which we have previously referred (*Epitome*, January 20th, 1925, para 51). Among the twenty-eight there were sixteen whose sputum contained tubercle bacilli. At the end of the treatment, the average duration of which was sixty days, ten of these sixteen were sputum negative, and seventeen of the twenty-eight were improved. The average gain of weight was 2.8 kg. The treatment was, on the whole, well tolerated, and a prolonged febrile reaction was very exceptional. The author is continuing his therapeutic investigations in conjunction with Walbum of the Serum Institute in Copenhagen.

220 Treatment of Hypertension by Sodium Nitrite

A MUZANI (*Rev Sud Amer de endocrin, immunolog y quimoter*, July 15th, 1925, p 409) reviews the literature and records his observations, illustrated by charts, of treatment by sodium nitrite of various cases of hypertension, including arterio-sclerosis, cardiac renal disease with compensation, and angina pectoris. On the first day 0.04 g was given, 0.01 g on the second day, and 0.02 g on the following days, in solutions of the strength of 1 and 2 per cent. The results were as follows: (1) A well marked fall of the maximum tension in a time not exceeding fifteen minutes, in one case there was a fall of the maximum tension to normal in not more than fifteen minutes. (2) The fall of tension persisted throughout the duration of the treatment, except from the second to the fifth day, when there might be an irregular stage of reaction. (3) The minimum tension showed only slight modification. (4) The pulse rate remained unchanged except in two cases in which three hours after the first injection it fell by 8 to 10 a minute. (5) There was no disagreeable symptom attributable to the drug. (6) In a case of angina pectoris the precordial pain permanently and entirely disappeared after ten days' treatment.

221 Prophylactic Use of Iodine in Goitre

ORATOR (*Wien Min Woch*, August 27th, 1925, p 974) says that the period necessary to estimate the effect upon endemic goitre of adding iodine to the diet runs into decades of years. It is, further, necessary to recognize at the outset those subjects in whom even small doses of iodine will bring on the symptoms of Graves's disease. The form of goitre against which prophylactic doses of iodine are specially directed is a juvenile enlargement consisting in a colloid-free parenchymatous hyperplasia suggesting compensatory enlargement at least in early stages, as though the gland originally were not equal to the demands upon it. When such goitres are already present the effect of prophylactic iodine would be to break down the parenchyma and favour an accumulation of colloid. Orator adds that when symptoms

of Graves's disease are precipitated epithelial proliferation and excretion of colloid result. The hypertrophy in these cases cannot be conceived of as an enlargement to meet increased demand, but as a gross overproduction, over functioning. This is the invariable action of iodine on the thyroid—primarily, increase of function—works sometimes for good, sometimes for ill. The author dwells on the need for better diagnosis to identify patients on the verge of exophthalmic goitre.

222 Sodium Salicylate in Lethargic Encephalitis

D DENLECHAU and J BARBARY (*Bull et Mém Soc Méd des Hop de Paris*, July 30th, 1925, p 1199) record a case of lethargic encephalitis in a woman aged 50, in whom the disease had a sudden onset with extreme headache, marked drowsiness, slight nuchal rigidity, and Kernig's sign, a temperature of 100.6°, and excess of sugar in the cerebrospinal fluid. There were no ocular symptoms or myoclonus. Treatment by sodium salicylate was at once instituted, the intravenous and intramuscular routes being simultaneously employed. An intravenous injection of 0.5 gram was given morning and afternoon, and 1 gram intramuscularly, or a total of 2 grams daily, for twenty-two days. The result was remarkable and extremely rapid. The temperature fell in forty-eight hours, the nervous symptoms disappeared after the first few injections, but a slight relapse occurred when one of the intravenous injections was omitted. Complete recovery ultimately occurred. The intravenous injections, of which forty-four were given, were well borne without any local reaction, but on two occasions they were followed by shivering and rise of temperature. The pain of the intramuscular injections was diminished by simultaneous injection of 1 eg of cocaine.

Diseases of Children.

223 Hypertelorism

D C MUIR (*Brit Journ Child Dis*, April June, 1925, p 107) records a case in a female infant aged 13 months of this congenital cranio-facial deformity first described by Greig (*Edin Med Journ*, 1924, xvi, p 560). The outstanding feature is a great breadth between the eyes, which is attributed to abnormal evolution of that part of the sphenoid which is developed in cartilage. The skull as a whole is square in shape, with a low forehead, a high vertex, and a flat occiput. The frontal eminences are prominent. Apart from the peculiar head Muir's patient was physically well made. There was no digital deformity as in Greig's cases, nor any peripheral vasomotor phenomena. The general appearance and responses of the child suggested mental defect, which was present in Greig's cases. The eyes were very wide apart, and the bridge of the nose markedly flattened. The tip of the nose was turned up, and the nostrils looked somewhat forwards. The palpebral fissure was wider than normal, and its direction markedly oblique from mesially downwards and outwards. A capillary naevus extended from the left temporal region on to the upper lid on the same side. The ears were large and stuck out abruptly from the sides of the head. The palate was narrow and high.

224 Craniotabes and Rickets

S J WILSON and M SEIDOWITZ (*Amer Journ Dis Child*, May, 1925, p 603) discuss the relation of craniotabes to rickets from clinical observations in a series of 469 babies under 1 year of age, of which 164 (35 per cent) had craniotabes and 121 (25 per cent) showed rickets. Of these latter 48 (39 per cent) had craniotabes, which coincides with its incidence in the entire series, and of the 164 with craniotabes 48 (29 per cent) either had rickets or developed rickets later. Since the association of craniotabes with rickets was found to be inconsistent it is inferred that such an association is merely a coincidence. A greater predisposition to craniotabes was observed in coloured than in white babies. The age incidence of craniotabes (the first four months of life) appears to be earlier than that of rickets. The seasonal incidence of craniotabes during the spring and early summer was apparent since the greatest number of cases appeared in babies born in May, June, and July, and the disease was almost absent during the winter. Of 106 patients with craniotabes 30 were treated with cod liver oil 3ss to 3i tds, 36 were exposed to direct sunlight for at least fifteen minutes twice a day, and in 40 cases the mother's diet was regulated so as to ensure an ample amount of milk, cream, butter fat, and leafy vegetables. The exposure to sunlight produced the most marked effect, the skull areas becoming calcified at the end of the first month in 42 per cent, and at the end of the third month in 91 per cent, whereas within the same period only a few cases resulted from regulation of the mother's diet and none from

reatment with cod liver oil. A definite seasonal influence was found, since 93 per cent were cured during August and September irrespective of the therapeutic agent employed, and season rather than age seems to be the main factor in the disappearance of craniotabes. The authors add that study of the calcium and phosphorus concentrations in the blood is important before arriving at any definite conclusion.

225

Diabetes in Children

A. G. MITCHELL (*Journ. Amer. Med. Assoc.*, May 30th, 1925, p. 1620) points out that in the treatment of diabetes mellitus in children insulin assists dietetic measures, but should not replace them. While adult diabetics can often be kept sugar free by diet restrictions alone, nearly all children are benefited by the addition of insulin, commencing with 1 or 2 units three times a day and increasing by increments of 1 unit until the urine is sugar free. Since the aim should be to give the smallest dose of insulin necessary the patient's nutrition and urinary sugar should be frequently examined so that changes in glucose tolerance may be met by corresponding changes in insulin dosage. The presence of diacetic acid indicates faulty fat metabolism and the danger of acidosis and coma, the fat in the diet should be decreased and the carbohydrate increased, with an approximate increase in insulin dosage by 1 unit for each gram of added carbohydrate. In threatened coma sufficient glucose should be given to produce the presence of sugar in the urine, and from 15 to 30 units of insulin administered according to the urgency of the symptoms, the age, and the degree of diacetic acid reaction. Since infectious lower the glucose tolerance the food intake during the acute stage of any infection should be reduced by one half or one third, and after the acute stage the glucose tolerance should be again ascertained before full diet is resumed. Mitchell suggests that for reference in an emergency patients or their attendants should be given written instructions upon the early symptoms and treatment of acidosis and hypoglycaemia, the indications for stopping insulin injections, and the danger of infectious

filled with olive oil and the catheter inserted about 6 to 8 inches into the rectum, the patient being directed not to press down while the enema is being given. The ether mixture is slowly added to the oil in the funnel and the remainder of the oil finally added, the whole procedure taking the intervals between from three to five prisms to complete. The clamped catheter should be kept in position for about fifteen minutes by a towel pressed against the anus. Directly after the instillation a third intramuscular magnesium sulphate injection should be given, as this tends to prolong the action of the ether. The author adds that, if the effect of this first instillation should wear off, a second, or even a third, may be given, each followed by magnesium sulphate injections, provided that only 10 grains of quinine are administered, and that not less than two and a half hours have elapsed between the instillations. Colitis, diarrhoea, and auditory disturbances are said to be the only contraindications for the method.

228

Scopolamine-Morphine Narcosis or Rapid Delivery by Pituitrin?

J. EVERSMAUN (*Zentralbl. f. Gynäkol.*, June 13th, 1925, p. 1297) compares the procedure of "twilight sleep" in labour with rapid delivery by pituitrin, and concludes that the former should be abandoned for the following reasons: (1) the duration of labour is prolonged, (2) there is a higher percentage of instrumental delivery, (3) as the result of (1) and (2) the danger of infection is increased, (4) the patient has often painful memories of her confinement, (5) the child incurs greater risk. Eversmann has given scopolamine at the beginning of labour in order to overcome initial nervousness and the pain due to dilatation in primiparae, but he finds that there is always some consequent retardation of uterine contractions, by the subsequent injection of pituitrin this retardation was quickly corrected. He believes that rapid delivery by the aid of pituitrin is the ideal method, and he agrees with Stein that it can be used at any stage of labour without anxiety regarding the result, as minimal doses are found to act with great uniformity. He believes that in 50 per cent or more of all cases the length of labour should be reduced by one third. Eversmann adds that this shortening of the period of labour may preserve the life of an endangered infant. Reifferscheid reported that pituitrin might produce tetanic uterine contractions, and that the atony resulting from the action of pituitrin produced occasionally to immediate or delayed postpartum haemorrhage. In Eversmann's opinion any such occurrence is unlikely if watch is kept for any irregularity in the pains, or if pituitrin is withheld when the regularity of the pains shows that its aid is not required. He thinks that postpartum haemorrhages, due to uterine atony, are less frequent than formerly, when patients were allowed to huddle for days with ineffectual and irregular pains, and also that the occurrence of postpartum haemorrhage is often due to mismanagement of the third stage of labour. Any indication of atony may be combated by a further dose of pituitrin. He concludes that "medicinal" rapid delivery is in the patient's interest absolutely to be preferred to "twilight sleep" it is easily employed by any physician in a private house and is entirely innocuous to both mother and child. He finds that it limits the duration of labour, thereby lessening the danger of infection and the probability of eventual operative intervention. While it does not render the patient unconscious, it alleviates the pains by reducing their duration.

229 Puerperal Septicaemia in a Malarial Subject.

AUDEBERT and RASCOL (*Bull. Soc. d'Obstét. et de Gynéc. de Paris*, 1925, No. 6, p. 501) describe a fatal case of puerperal streptococcal septicaemia which was attended with considerable difficulty of diagnosis. The patient, a 2 para aged 22, had a normal and spontaneous delivery, there was no pain and no pyrexia until the thirteenth day, and uterine involution was normal. From the fourteenth day rigors and remittent fever were noted, and were first attributed to malaria, from which the patient had suffered since the age of 10, the spleen, already enlarged, became larger and painful. Malarial parasites were not found in the blood. Death ensued on the twentieth day after a hyperpyrexial period, and culture of blood taken on the previous day showed streptococci; the lochia had contained staphylococci only. The autopsy showed a minute placental retention in one uterine cornu and visceral signs of pyaemia.

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Pregnancy and General Paralysis

G. SUSSTRUNK (*Zentralbl. f. Gynäkol.* June 27th, 1925, p. 1436) records the case of a primipara, aged 29 who had suffered during three months from morbid alterations of gut, speech, and mind, she was found to have general paralysis of the insane and to be seven months pregnant. Labour was rapid, spontaneous and unaccompanied by pain, the child had a positive Wassermann reaction without clinical signs of syphilis. The mother's malady became rapidly worse before

Obstetrics and Gynaecology.

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The Ovarian Lipoids in Pregnancy

H. EUFFINGEN and O. W. BADEN (*Arch. f. Gynäkol.*, June 3rd, 1925, p. 483) examined, for their lipid contents, 37 ovaries, 34 of which had been removed during pregnancy and 3 in the puerperium. The specimens had been obtained at laparotomies performed for extrauterine gestation, Caesarean section, and interruption of pregnancy in the early stages. The duration of pregnancy in the various cases ranged from four to forty weeks. The authors' conclusions are as follows: (1) The lipid content of the corpus luteum gradually diminishes as pregnancy advances. During the first two months a considerable amount of lipoids may be found, but at the end of pregnancy only traces can be detected. The lipid droplets are situated almost exclusively in the granular luteal cells. (2) The lipid content of the follicles is very scanty during pregnancy, and usually only traces of it can be found. (3) The chemical constitution both of the corpus luteum and of the follicles is mainly represented by cholesterol esters and cholesterol fatty acid mixtures. (4) During the puerperium the lipid content of the corpus luteum and of the follicles undergoes a considerable increase.

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Reduction of Pain in Labour

A. B. DAVIS (*Surg., Gynecol. and Obstet.*, June, 1925, p. 868) advocates the amelioration of labour pains by morphine-magnesium sulphate injections and ether introduced into the colon, a method used at the Lying in Hospital, New York. Within eight hours after an initial enema, and when strong pains are established, with the os dilated to the breadth of at least two fingers, 1/4 grain of morphine sulphate with 2 c.c. of a sterile 50 per cent solution of magnesium sulphate is injected intramuscularly into the gluteal region. This is followed half an hour later by 2 c.c. of the magnesium sulphate solution alone. If a sedative effect results delivery may take place before ether instillation is needed, which should in no case be given until strong contractions are again occurring every three to five minutes and the patient begins to complain again of pain. If, however, within twenty minutes after the second injection no sedative effect has been produced, then ether instillation may be employed, but, preferably, not before the cervix has reached the breadth of three fingers. Two bottles are required, one containing 20 grains of quinine by dibromat mixed with 3 drachms of alcohol, to which are added 2 1/2 oz. of ether and 4 oz. of olive oil, the other bottle contains 2 oz. of oil, and both should be warmed to body temperature. A funnel and catheter connected to 20 inches of rubber tubing by a glass connexion are

and after the birth of the child, and showed no improvement after treatment by malarial inoculation. Susstrunk states that conception, although admittedly possible even in advanced cases of general paresis of the insane, rarely occurs, he has found records of some sixty cases only in which paralytics became pregnant or in which the disease was detected during pregnancy or the puerperium. Morbid changes in ovulation may be inferred from the fact that more than one half of paralytics who have not attained the menopause show absence or diminution of menstruation, "from 20 to 40 per cent of pregnancies in paralytics end in abortion or premature labour." Pregnancy appears frequently but not invariably to be accompanied by rapid progression of the nervous disease. The author remarks that recent successes in some cases of malarial treatment afford grounds for the revision of the former opinion that general paralysis does not constitute an indication for induction of abortion—fore example, in patients who have improved after malarial inoculation and on discharge from institution have become pregnant. Here aggravation or recurrence are to be feared and it may be right to terminate the pregnancy.

231 Infection of Ovarian Cysts

ACCORDING TO P. BURGER (*Lancet Gynecol.*, June, 1925, p. 364), infection occurs in about 3 per cent of ovarian cysts and may follow gonococcal salpingitis, appendicitis, the acute exanthemata, or pneumonia. Post partum infection is comparatively frequent, and is less commonly haematogenous than is usually supposed, the infection spreading along the lymphatics of the broad ligament and through the hilus of the ovary. Diagnosis of infection of an ovarian cyst often presents considerable difficulty; general symptoms such as pyrexia may be inconspicuous, and the local symptoms (pain and tenderness, increase of size, increased tenderness), which are regarded as pathognomonic, may be absent. In one case described by Burger, a small soft ovarian cyst, not painful or tender, was detected on the ninth day of a slightly febrile puerperium, eighteen days after her discharge from the clinic in good condition on the seventeenth day the patient was found to have a greatly distended abdomen with well marked fluid thrill and to show considerable wasting. Malignant ovarian disease with ascites was suspected, but at the operation six litres of pus was found in one coeculus of a pseudo mucinous cyst. The temperature had not ranged above 100°. In a second case a primipara, aged 31, was found during manual extraction of the placenta after breech delivery to have a juxta uterine tumour, on the twenty-fourth day of a febrile puerperium a cystic tender tumour extending upwards above the umbilicus was found in the left fornix. Operation disclosed, instead of an infected ovarian cyst, an abscess in a large myoma in the posterior wall of the uterus.

Pathology.

232 Herpetic Encephalitis

J. BOUMAN and S. I. BOK (*Nederl. Tijdschr. v. Geneesk.*, May 30th, 1925, p. 2406) are the result of experiments on rabbits have come to the following conclusions: (1) The histological lesions of herpetic encephalitis are identical with those of epidemic or lethal encephalitis. (2) The perivascular infiltration surrounding the cerebral vessels and the diffuse infiltration of the cerebral meninges consist of lymphocytic elements, but in the earliest stage of the specific herpetic disease—that is to say, on the occurrence of herpetic meningitis—polymorphonuclear leucocytes appear for a time among the lymphocytic elements. (3) In the cerebral hemispheres (apart from the direct results of the injection) an infiltration of the pia mater is the first result of the herpetic infection. Perivascular infiltration of the cerebral tissue does not develop until much later, and it is only just before death that lesions of the actual cells of the nervous system appear. (4) On the other hand, in the mid brain the occurrence of changes in the glial cells and nerve cells (neurocytology) is not preceded by an infiltrative process. The contrast in the manner of development of the disease in the cerebrum on the one hand and in the mid brain on the other supports the view that damage to the glial cells and nerve cells in cerebral infection is, not the result of perivascular infiltration, but is directly due to the causal agent of the disease like the perivascular infiltration itself.

233 The Blood Pressure in Arterial Embolism

WIDHOFF (*Centralbl. f. Clin.*, May 30th 1925, p. 1185) describes the following results of his experiments on animals to determine the effect of embolism of the aorta and its principal branches on the blood pressure. (1) A piece of muslin placed as an embolus just above the bifurcation of the aorta caused a rapid rise of general blood pressure

(15 to 20 mm Hg), with a rapid fall to the normal level. Removal of the embolus after fifteen minutes caused a fall of about 15 to 20 mm Hg, with rapid return to the initial level. (2) If the embolus was left longer (one hour to seventeen or twenty-two hours) the general blood pressure rose considerably and the pulse rate became twice as quick, rising from 120 to 220 or 240. (3) In seventeen out of nineteen experiments the blood pressure on the peripheral side of the obstruction fell approximately to zero, the measurement being made in the femoral artery in Hunter's canal. (4) Attempts to prevent the rise of blood pressure and increase of pulse rate by exclusion of the vagus and sympathetic were unsuccessful. On the other hand, fall of blood pressure could be prevented by intravenous injection of suprarenal after embolotomy. The practical conclusions drawn from these experiments are as follows: (1) Embolotomy should be performed as soon as possible, because there is no other means of preventing severe damage to the general circulation, which is the most important sequel of arterial embolism. (2) The dangerous fall of blood pressure after embolotomy can be prevented by intravenous injection of small doses of adrenaline.

234 Hyperglycaemia following Injections of Killed Bacteria

ISOLDE T. ZECKLER and HELEN GOODALL (*Journ. Exper. Med.*, July, 1925, p. 43) have made some observations on the effect on the blood sugar of the intravenous injection of killed bacteria into rabbits. Agar cultures of various organisms were suspended in saline solution, killed by heat, and 1 c.c. of the suspension, containing about 2,000 million organisms, was injected intravenously into young rabbits. Blood was withdrawn from the carotid immediately before, and at short intervals after the injection. Sugar estimations were made on each sample by the Folin Wu method, and the leucocytes were counted, sometimes the rectal temperature was taken. It was found that certain organisms—notably *B. proteus*, *B. coli*, and *B. paratyphosus* B—produced a rapid rise in the blood sugar. From the normal figure of about 0.1 per cent it rose in two hours to a height of 0.2 or 0.3 per cent, occasionally it passed even this level. Soon after reaching its peak it fell, the fall was more gradual than the rise, so that the normal was not reached till six or eight hours after the injection. Accompanying the hyperglycaemia there was a diminution in the number of the circulating leucocytes from a normal figure of about 6,000 per c.c. mm they were reduced to 450 per c.c. mm in one experiment, and generally they fell below 1,000 per c.c. mm. The fluctuations in temperature bore little relation either to the blood sugar curve or to the leucocyte count. The systemic reactions of the animals were often severe, but did not appear to be due solely to the hyperglycaemia, some organisms produced considerable systemic reactions without giving rise to hyperglycaemia. It would appear that the increase in the blood sugar level is dependent on increased glycogenolysis, probably due to sympathetic stimulation.

235 Toxaemias of Pregnancy

H. J. STANDER, L. E. DUNCAN, and W. L. SISSON (*Bull. Johns Hopkins Hosp.*, June, 1925, p. 411) report the results of chemical analyses of the blood and urine in a large number of normal non-pregnant, normal pregnant, and abnormal pregnant women. They found that in normal pregnancy a slight decrease occurs in the non-protein nitrogen and in the blood urea nitrogen, that the CO_2 combining power becomes decidedly lower in pregnancy than in the normal non-pregnant state, and that the inorganic elements remain within normal limits. In nephritic toxæmia an increase occurs in the ratios between the blood urea nitrogen and the non-protein nitrogen, and between the blood urea nitrogen and the urea nitrogen percentage, though the inorganic elements remain within normal limits. In pre-eclamptic toxæmia no marked variations occur beyond a slight decrease in these ratios. In eclampsia there is a rise in the acid content of the blood and a decrease in the CO_2 combining power proportionate to the intensity of coma. The blood sugar is raised and remains above normal for an appreciable time after the cessation of the convulsion, and there is an increase in the phosphorus/calcium ratio due to a high inorganic phosphorus value, this suggests that there is some a scia tion between carbohydrate metabolism as well as a change in cell metabolism as a result of alterations in the nervous irritability in eclampsia may be produced by variations in the sodium/calcium, phosphorus/calcium, and other ratios such alterations being associated with the problem of foetal nutrition. They add that the hyperglycaemia in eclampsia is probably due to a variation in the hydrogen ion concentration in the liver cells rather than to muscular activity, and that it may be significant that both the sugar and the inorganic phosphorus content are raised in this condition.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

236 The Chronic Stage of Lethargic Encephalitis

J MENDEL (*Wien Arch f Klin Med*, June 15th, 1925 p 559) describes the following characteristics of the chronic stage of lethargic encephalitis. The first is the corpse-like attitude of the patient who lies motionless on his back in bed very rarely on his side, with an apparent absence of interest in his surroundings, and the eyes wholly or partially closed. In advanced cases the patient lies the whole day with his arms across his chest and his legs extended, and the feet in a position of equino varus. The second characteristic feature is that in spite of this absence of movement which may last for months, it is only rarely that extensive bedsores develop, in contrast with other severe chronic diseases of the central nervous system. This absence of susceptibility to bedsores indicates immunity of the trophic nerves or a diminished vulnerability of the skin, or an association of these two factors. The third characteristic is the patient's grip, in which the extensor type predominates. The head is drawn slightly back, and the vertebral column and scapulae are kept rigid. The spastic character of the gait is more or less pronounced. In an advanced stage the patient walks on the balls of his toes, keeping the rest of the foot in a position of equino varus. In milder cases the foot is brought to the ground with a stamp. The arms are kept in a position of adduction in walking, and slightly flexed at the elbow. Treatment of any kind, including protein therapy, injections of salvarsan, and inoculation of malaria has proved ineffective.

237 Diagnosis of Purpuric Small pox

K IKEDA (*Journ Amer Med Assoc*, June 13th, 1925, p 1807) states that at the Minneapolis General Hospital 48 cases were diagnosed as purpuric out of a total of 480 small pox cases, in the twelve months ending February 28th, 1925. Concurrently there were 131 cases of hemorrhagic pustular small pox. The diagnosis of purpuric small pox in general practice is an exceedingly difficult if not impossible task, especially if the case happens to be an isolated one. Ikeda maintains that examination of the blood gives findings of extreme interest and vital diagnostic value. The principal changes are in the numerical value of the platelets and leucocytes, and the morphological structure of the leucocytes and erythrocytes. Mailed and progressive thrombopenia is said to characterize the purpuric type in contrast with the steady and rapid rise in the platelets after the vesicular stage in all other forms of small pox. A rapid and decisive decline of the polymorphonuclear leucocytes is another significant finding. The disappearance of the polymorphonuclear elements is so sudden and complete that with a very high leucocyte count a leukaemic state, or acute benign lymphadenosis, might be diagnosed from the blood smear alone. Another striking condition is the appearance of normoblasts, basophilic stippling and polychromatophilia without clinical or laboratory evidence of severe anaemia or chronic sepsis. In the terminal stage bacteremia is intense, showing large Gram positive diplococci which on culture prove to be hemolytic streptococci. The haemoglobin and erythrocyte count are practically normal. Changes in the lymphocyte series are identical with those in pustular small pox—namely, the appearance of pathological forms such as atypical leucocytes, plasma cells, irritation forms of leukocytes and occasionally cells of a slightly immature type. In the leucocyte series myelocytes and metamyelocytes are found. The percentage of eosinophils and basophils remains unchanged throughout the course of the disease. The bleeding time is considerably prolonged. Tests for the coagulation time give inconsistent results.

238 The Electro cardiogram and Anatomical Findings

A DILLAYLE (*Chronic Circulation*, July, 1925 p 265) who records four cases illustrating the relations existing between the changes in the electro cardiogram and the lesions in the heart demonstrable on naked eye or histological examination comes to the conclusion that the electro cardiogram and anatomical findings mutually supplement each other. In many points the results are the same—as, for instance, the predominating action of a given segment of the heart is always confirmed by a demonstrable hypertrophy, the occurrence of extra systoles is associated with signs of stasis and the presence of inflammatory foci, and the inversion of the T wave in the first two leads by degeneration of the

myocardium. The author adds that the electro cardiogram gives a remarkable demonstration of the disturbances of conductivity and excitability (extra systoles) in cases where no special lesions are found on pathological examination. As a general rule it is possible to obtain a relatively accurate idea of the function and condition of the myocardium by the electro cardiogram and clinical examination, while the anatomical examination may in some cases be negative and in others confirm, explain, or add fresh information.

239 Diabetes Mellitus in Children

J C SCHIPPLIS (*Medicinal Lydschi v Geneesl*, May 16th 1925, p 2206) states that since his previous paper (*ibid*, 1915, ii, p 788) he has seen six cases of diabetes in children between 6 and 12 years of age, but that the disease is very rare in infants. Jeans in 1917 came to the conclusion that of 100 recorded examples of diabetes mellitus in infants only a few could withstand euthanasia. In 1913 Knop had found only 15 genuine cases in the literature. Schipplis now reports a case in a child in whom the disease started at the age of 4 months. With an appropriate diet and insulin treatment improvement occurred, although the patient did not become sugar free, but after an attack of acute pharyngitis at the age of 13 months there was a considerable increase in glycosuria, coma set in, and death followed.

240 Tuberculosis in Jews

I WEFNER (*Zeit f Tuberk* 1925, B1 25, p 130) recalls that before the war Jews were credited with a smaller morbidity and mortality from tuberculosis than those of other nations—conclusions supported by a communication in 1915 from the Jewish Hospital in Berlin. He now reports on 138 men and 87 women treated from 1920 to 1924. Just over one half of these patients were in the third stage of the disease, whereas the proportion in the 1915 cases had been under 10 per cent. Similarly the mortality had risen from 20 to almost 40 per cent, and nearly a fifth of Wefner's fatal cases occurred within a year of the commencement of illness. Tubercle patients also were encountered more frequently. The author considers these changes are obviously attributable to the hardships of the war and the bloodshed, but believes that even so the doctrine of the relatively small incidence and favourable course of tuberculosis among Jews still holds good. He suggests that the reason for this peculiarity is perhaps racial immunity required by the elimination of the less resistant throughout the generations of many centuries of urban life.

Surgery.

241 The Diagnosis of Calculi in the Bile Ducts

J LEVEUR and D BERGEAU (*Rev de Chir*, No 6 1925, p 422) recall that the diagnosis of gall stones in the common duct is rarely made except when jaundice is present. The type of colic met with in stones in the gall bladder or biliary passages is usually of the same character whereas, on the other hand, the clay coloured stools and appearance of bile pigments in the urine are usually only found in obstruction of the bile duct. The diagnosis of stone in the common duct under such conditions is usually simple particularly when associated with rigors and a rise in temperature. Again cases occur in which after death large stones are found in the bile passages though there have been no obvious symptoms during life. The presence of stones in the ducts causes a retrograde dilatation of the ducts often associated with hepatic insufficiency and in the patients operation only serves to precipitate a fatal ending. Various methods have been devised to diagnose the presence of gall stones prior to operation. Radiography is uncertain, the duodenal tube and search for the presence of the bile pigment and of cholesterol in the blood, have all been recommended. The present authors find that the detection of the biliary pigments in the urine of these cases is a valuable sign, and they have adopted the method of Dabbert. They state that if the urine is examined every two hours in these patients after an attack of colic it is usually possible to discover the biliary pigments in the urine. If the test is positive it has been shown by operation that gallstones are present in the bile ducts although jaundice may not have been found in the patient. They add that this test is of value in that it allows surgeons to diagnose the condition before the appearance of jaundice and thereby much improve the prognosis after operation in these cases.

242 Liver Abscess due to a Fishbone

E WILHEIM (*Zentralbl f Chir*, July 4th, 1925, p 1464) states that primary abscess of the liver is one of the rarest of surgical diseases and is usually due to the migration of ascarides, which reach the liver by the blood vessels or the lymphatics. He reports the case of a woman, aged 59, who had been in good health until six months previously, when she began to suffer from occasional pain in the hepatic region unrelieved by treatment at Karlsbad. A sudden attack of severe pain and high temperature followed. The pain was referred to the gall bladder region, but the liver was not enlarged, nor could the gall bladder be felt. On opening the peritoneum there was found on the convexity of the right lobe of the liver a fluctuating tumour as large as a hen's egg. An exploratory puncture was made, and about 9 oz of very thick offensive pus was evacuated. On exploring the abscess cavity, a fishbone two and a half inches long was found. The cavity was probed and the peritoneum drained with strips of gauze. A few days later rigors recurred, with vomiting and hiccup. There was very little discharge from the wound, but the patient was very ill and had intense pain in the hepatic region. The pulse was 120, the abdomen was soft, and faeces and flatus were passed. Puncture of the abscess cavity yielded a negative result and the patient died three days later. A necropsy was refused. Wilhelm believes that the fishbone had perforated the duodenal wall and had thus reached the liver. He gives details of a large number of cases of hepatic abscess, only a small minority of which were caused by foreign bodies such as parasites, calculi, and fishbones.

243 Splenectomy in Purpura Haemorrhagica

H Z GIFFIN and J K HOLIOWAY (*Amer Journ Med Sci*, Aug, 1925, p 186), in order to assess the value of splenectomy in purpura haemorrhagica, have collected twenty-eight cases from the literature and from the Mayo Clinic. They conclude that, while the uniformly favourable results point to temporary cure, the occasional recurrence of petechiae, the slowness with which the bleeding time becomes reduced, and the variability in connexion with the recovery of the retractility of the clot, indicate that although a change has been brought about by splenectomy sufficient to arrest gross haemorrhage the finer mechanism of coagulation requires a complex readjustment on the part of the organism, which may or may not become complete. They consider that only well marked cases of purpura haemorrhagica should be submitted to splenectomy, and correct diagnosis is thus especially important. Aplastic anaemia with haemorrhagic features provides the most likely diagnostic pitfall, but here, besides the haematological picture, the period of bleeding will have been preceded by a period of rapidly developing anaemia. They add that it must always be borne in mind that borderline conditions occur with confusing coagulation signs, in these the diagnosis between haemophilia and purpura is impossible.

244 Splenectomy in the Acute Stage of Purpura Thrombopenica

H HARTUNG (*Deut Zeit f Chir*, June, 1925, p 91), who records an illustrative case, states that that form of purpura known as purpura thrombopenica is rarely encountered and that extraordinarily good results may be obtained in it by splenectomy. Frank was the first to describe the condition of purpura thrombopenica, which consists in a diminution of the blood platelets. Their normal number is about 300,000 per c mm. In any case values below 100,000 may be regarded as pathological. Kaznelson and Eppinger are of opinion that in thrombopenia an increased destruction of blood platelets occurs in the spleen, while damage to the vascular endothelium must also be regarded as a factor. Hartung reports a case of thrombopenia in a man aged 45, characterized by bleeding from the gums, generalized skin haemorrhages, and asthenia. The red cell count was 1,630,000 per c mm, the leucocytes 8,300, the colour index was 0.9, the bleeding time fifteen minutes (that is, three times as long as the normal), the coagulation time being normal (forty-five seconds). The blood platelets numbered 100,000. The differential count was normal. Splenectomy was performed, but the patient died ten hours later. Engel has reported four cases of thrombopenia in which splenectomy was performed as a last resort in the acute stage. Three of the patients died very soon after the operation, so that there are now five cases on record of splenectomy during the acute stage of thrombopenia, of which four were fatal. On the other hand, out of twenty cases of chronic thrombopenia in which operation was performed eighteen patients recovered, one died from the anaesthetic and another from subphrenic abscess. Hartung concludes that splenectomy should not be performed during the acute stage of thrombopenia even as a last resort, but that it is quite justifiable in the chronic stage, when it yields excellent results.

Therapeutics.**245 Hexyl Resorcinol**

D C ELLIOTT and H G BARBOUR (*Canadian Med Assoc Journ*, August, 1925, p 787) describe a sensitive alkaline chloroform test for hexyl resorcinol. To 2 c cm of the fluid to be tested 0.25 c cm each of 40 per cent potassium hydroxide and chloroform are added and gently boiled until one minute after the chloroform has been driven off. A pink colour develops, most marked after standing for five minutes, any doubtful reaction being compared with an unboiled control test. With this test the presence of hexyl resorcinol can be detected in dilutions of 1 in 100,000 in distilled water, 1 in 50,000 in urine, 1 in 25,000 in serum, and a 1 in 5,000 dilution added to bile will show a pink colour in the foam after the reagents have been boiled. The authors state that in pyelitis and urological surgery hexyl resorcinol in 0.9 gram doses daily in olive oil capsules produced distinct improvement in over twenty out of forty cases investigated by them. When administered prophylactically two days before and daily after suprapubic and external urethrotomy operations the wounds remained healthy in spite of constant contamination by urine in which the drug was easily detected. In dogs when given by mouth hexyl resorcinol was absorbed throughout the small intestine, and in therapeutic doses in man it did not appear in any body fluid except the urine, the cerebrospinal fluid giving negative findings at the time when the urine was positive. Previous references to the therapeutic use of hexyl resorcinol have appeared in our *Epitome* columns (February 7th, 1925, para 146, and March 7th, 1925, para 240).

246 Serum Treatment of Scarlet Fever

T PONTANO (*Il Policlinico*, June 1st, 1925, *Sez Med*, p 265) has found that the serum of convalescents from scarlet fever, the serum of normal individuals, and normal horse serum are equally efficacious in scarlet fever when injected intravenously. The mechanism of all three serums appears to be identical as far as can be judged from the effects. The clinical picture following intravenous injection of a large quantity of serum is as follows: shivering, rise of temperature, hypotension and nervous symptoms such as depression or restlessness, and diffuse pains. This condition soon subsides and is followed by a rapid fall of temperature accompanied by a temporary or permanent recovery. Pontano considers that the effect produced indicates protein therapy and not a specific action of the serum. Owing to the stimulus supplied by the serum the organism becomes freed from the waste products resulting from the disintegration of the tissues due to the morbid agent, and the discharge of these products causes the feeling of improvement, or actual cure if the fall of temperature coincides with spontaneous recovery.

247 R H GRAHAM (*Journ Amer Med Assoc*, July 11th, 1925, p 95) gives an account of the prophylactic treatment by the unconcentrated Dochez serum of 27 persons exposed to scarlet fever. Of these patients, 21 developed serum disease ranging from slight urticarial eruptions to generalized oedema, and 6 showed signs of anaphylaxis within the first hour. The size of the dose did not appear to influence the reaction. Immunity was established in twenty-four cases treated on the day of exposure to infection. Serum injected the second day after exposure did not protect two patients out of three. Graham adds that therapeutic injections seemed to give little relief, in one advanced case no improvement followed the administration of 40 c cm of unconcentrated serum, and there was an immediate serum reaction with very marked oedema.

248 Treatment of Infantile Tetany

C O GUILLAUMIN and R A TURPIN (*Bull Soc de Ther*, April 8th, 1925, p 104) state that the investigations which they have been making for more than a year have led them to the conclusion that a disturbance of the acid base equilibrium of the plasma is responsible for latent and well developed tetany. Their results confirm the hypothetical views of Freudenberg and György as to alkalosis in tetany. The physico-chemical disturbance of the plasma seen in infantile tetany was also found during the stage preceding the attack in experimental tetany due to removal of the parathyroids, or that obtained by voluntary and prolonged hypopnoea. Experimental and clinical observations on the action of calcium chloride and inhalations of gaseous mixtures rich in carbon dioxide and ammonium chloride showed that the administration of these substances was followed by the production of marked acidosis and a rapid subsidence of clinical symptoms. In three cases similar results were obtained by the action of nitra violet rays. LESVE (ibid, p 103) states that these researches throw a new light on the pathogenesis

of spasmodic and tetany. In place of the vague idea of hypocalcaemia there is now the theory of a diminution of ionized calcium in the blood, and of an acid base disequilibrium in the blood with a definite tendency to alkalosis. The drugs which are successful in infantile tetany, such as calcium chloride and ammonium chloride, restore this equilibrium and increase the amount of ionized calcium. He adds that this mode of action of violet rays is complicated and almost mysterious. They appear to act, not only on the composition of the blood, but also on the general condition, by the agency of the nervous system, and on the secretion of the endocrine glands. Actinotherapy also has a simultaneous curative effect on rickets, which is so frequently associated with spasmodic tetany.

249 Treatment of General Paresis by Pooled Salvarsanized Serum

J G MARTHEUS (*Urol and Cut Rev*, July, 1925, p 403) records his observations on fifty eight cases of general paresis which had been treated at the Dayton State Hospital, Ohio, since February, 1920. The clinical findings were verified in each case by laboratory tests. At the end of this five years' period 43 per cent of the patients were still living, 20 per cent were outpatients and able to follow their usual occupations. In the three years previous to the opening of the clinic for the study and treatment of these cases the average duration of a case of general paresis was ten and a half months. As the result of treatment the lives of 43 per cent have been prolonged above any previous record in the hospital. The method used by Martheus consists in intravenous injection of nearsphenamine, followed next day by intraspinal injection of pooled serum fortified by arsenamine. The details are as follows. Half an hour after the patient has received an intravenous injection of arsenamine 45 to 60 c cm of blood are drawn from a vein in the arm into dry sterile 15 c cm centrifuge tubes, which are placed in the ice box for several hours and then centrifuged for ten minutes. The serum is poured off into other sterile centrifuge tubes and again centrifuged until all the red cells are excluded. Serums from twenty to twenty five patients who have received intense intravenous treatment are poured into a common beaker and thoroughly mixed, 10 c cm of this serum is poured into sterile tubes and put in a water bath at 56° C for half an hour to inactivate it. One hour before the patient is given an intraspinal injection the serum is fortified by the addition of arsenphenamine. After completion of a combined intravenous and intraspinal course of treatment mercurial fountains or mercury perchloride intravenously and potassium iodide by mouth are given for a month. After a rest of two months the patient receives intravenous injections of nearsphenamine followed by a few intraspinal injections as his condition requires.

Anaesthetics

250 Renal Irritation following Novocain Anaesthesia

R MORAN (*Zentralbl f Chir*, August 1st, 1925, p 1711) reported in 1915 the occasional occurrence of renal irritation after novocain adrenaline anaesthesia. He found that 5 to 10 per cent of his patients had albuminuria, seldom more than 0.5 per cent, with a few hyaline and granular casts, and blood corpuscles. In 1918 Flory found slight albuminuria in 6 per cent of patients after novocain anaesthesia in half of these cases casts were present. Yet Flory denies that novocain irritates the kidneys, as his remaining patients, some of whom had received large doses, were free from albuminuria, as were also three rabbits who were injected with very large doses. Moran concludes that although novocain is a renal irritant it does not produce a permanent lesion, and therefore he does not consider it necessary to abandon a valuable anaesthetic.

251 Local Anaesthesia in Abdominal Surgery

C F NASSAU (*Amer Journ Surg*, Anesth Suppl, July, 1925, p 81) considers that in many of the operations on the abdomen now generally performed under general anaesthesia the use of local anaesthesia results in comfort and lessened danger to the patient. The method is specially indicated in old people and for such operations as strangulated hernia in persons over 60, the anaesthetic risk is said to be reduced in the case of those suffering from organic diseases such as tuberculous, diabetes, and chronic renal or cardiac trouble. Its use was attended with much less liability to nausea and vomiting than is the case with a general anaesthetic, the shock of major operations was reduced, and there was less liability to complications in convalescence. Nassau states that the mode of administration depends upon the site of operation, direct local infiltration being all that is needed for slight conditions. Field block is indicated for minor opera-

tions and in combination with other types of infiltration for major operations so as to surround the operative field by an anaesthetized area. In nerve block the injection is made directly into the nerve or the neighbouring tissues. He finds that 0.5 per cent novocain solution, with or without adrenaline according to the nature of the operation, gives the most satisfactory results. He adds that good technique is essential. A wheel should be used in the skin through which the needle is inserted at right angles and the tissues infiltrated with a steady continuous flow. In operations upon the abdominal cavity through intraperitoneal anaesthesia must also be obtained.

252 Blood Pressure in Spinal Anaesthesia

W W BABCOCK (*Current Researches in Anesthesia and Analgesia*, August, 1925, p 222) comes to the following conclusions: (1) The fall in blood pressure with spinal anaesthesia is greater than with any known vasesthetic. (2) The vascular hypotension is especially dangerous to obese, asthenic, starved, shocked, anemic, or intubated patients, or those with myocardial degeneration. (3) With the loss in pressure in the coronary arteries and the stimulus of the sympathetic system the heart may cease beating. (4) The hypotension is better borne by the young and robust than by the aged and asthenic. (5) With the root anaesthesia blood in the sympathetic system in the dura mater, drugs acting on the central nervous system are valueless, and only drugs with a peripheral pressor influence are of value. (6) The drugs used should stimulate the heart, contract the vessels, and increase the pressure in the aorta and coronary arteries. (7) Adrenalin given intravenously is the most powerful antidote we have against the hypotension of spinal anaesthesia. (8) Spinal anaesthesia should not be employed if the blood pressure cannot be continuously watched during the period of anaesthesia.

253 Tongue Support in General Anaesthesia

BECKER (*Deut Zeit f Chir*, July, 1925, p 345) remarks that the usual manoeuvre for preventing the tongue slipping back in deep anaesthesia—namely, pressing forward the angles of the lower jaw with the thumbs—is inapplicable in operations on the neck, and in any case is productive of after discomfort to the patient. Anyone, he says, may convince himself by pressing at the point indicated that it is sensitive and as for forcible opening of the jaws and pulling the tongue out, that may damage the incisor teeth and give the patient a sore tongue for days. Becker's device is an elevator bent with the convexity forwards, so as to arch over the nose. The lower end rests inside the mouth, below the lower incisors and against the maxilla, farther up the shaft touches the upper incisors—not the upper lip—which act as a fulcrum. The upper extremity of the instrument, opposite the patient's forehead, is easily controlled by a finger of the hand in which the anaesthetist holds his mask. It is claimed that surprisingly little pressure is sufficient to keep the jaw and tongue well up, even in a resistant subject, that absence of the lower incisors or alveolar atrophy is no obstacle, and that the freedom of the anaesthetist's hands is enhanced.

Obstetrics and Gynaecology.

254 Tubal Pregnancy after Insufflation

LAURENTIE and MOUSSALI (*Bull Soc d Obstet et de Gynecol de Paris* 1925 No 6, p 492) reports the case of a woman, aged 30, who had been sterile since a gravely infected labour thirteen years ago. Insufflation of the Fallopian tubes by Rubin's method showed permeability with a pressure of 140 mm of mercury and was followed during a few days by pain in the abdomen and shoulder. The patient did not menstruate during the twelve weeks following the test, and during the third month there was abdominal pain, with obstinate constipation, some irregular haemorrhage, and considerable general weakness. Physical examination led to a diagnosis of extruterine pregnancy, and operation showed a large intraligamentary haematocoele from rupture of the gravid left tube, chronic inflammatory changes were noted in the tube of the opposite side. Uterine pregnancy following Rubin's insufflation has been reported in not a few instances, but no other case of tubal gestation seems to have been noted. The authors remark that their case is not to be regarded as contraindicating the use of a valuable therapeutic and diagnostic measure.

255 Treatment of Abortion

S KOBRIANSKY (*Canadian Med Assoc Journ*, August 1925, p 789) discusses the treatment of abortions as regards (1) prophylaxis, (2) when threatened and (3) when inevitable. In prophylaxis the constitutional and local causes require treatment, and in the idiopathic cases absolute rest in bed is

Blood and Tissue Changes in Cancer
 (Journ Trop Med an... the blood

259 **Blood and Tissue Changes in Cancer** *Ann. Trop. Med. and Hyg.*
J. A. SHAW MACKENZIE (*Journ. Trop. Med. and Hyg.*,
August 15th, 1925, p. 297) discusses the blood and tissue
changes in cancer with reference to diagnosis and treatment.
Studies with lipase, the fat splitting ferment of the pancreas,
show that when small amounts of the serum of healthy
people were added to pancreatic juice or extracts the fat
splitting action was increased, whereas when serum from
patients with sarcoma or carcinoma was added the action was
decreased, pointing to a deficiency of the fat splitting activity
present in normal serum. On improvement or recovery the
serum regained its normal or increased power. Carcino-
matous serum and extracts showed a separation of a thermo-
stable coenzyme which activated inactive lipase, but less in
degree as compared with normal serum and tissue extracts.
Shaw Mackenzie suggests that this would seem to correspond
to the "specific factor" from virus suggested by Gies
researches. The author states also that the difference
between normal and cancerous blood is associated with
defective enzyme action in the tissues, and especially with
defective tissue lipolysis, and that improvement and apparent
recovery from cancer are associated with increase of lipolytic
activity in the tissues. With a view to the restoration of
physiological balance and control Shaw Mackenzie recom-
mends treatment by the pancreatic coenzyme and other acti-
vators of lipase, with its normal fatty acid protective pro-
ducts, such as sodium oleate, and serum. Intravenous injections
of carcinomatous tissues and serum. Intravenous solutions
of 1 to 3 c.c. of 1 per cent sterile sodium oleate solution
weekly have been reported to be beneficial in some forms
of cancer. Though no clinical conclusions can as yet be
drawn from the use of normal, carcinomatous, and other
pathological tissue extracts, auto serums have given en-
couraging results, two inoperable cases apparently recovering
though in one case there was a recurrence after nine years of
good health.

260 The Action of Disinfectants in the Body
(Centralblatt für Bakteriologie, July, 1925, p. 28)

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The *Centra* f *Bail*...
R NODAKE (Centra f *Bail*...
formed some experiments on animals to test the tissue
action of certain substances when injected 0.2 cm of a
His general technique consisted in injecting 0.2 cm of a
1 in 2 dilution of a twenty four hour broth culture of a staphylo
cocci into the subcutaneous tissue of the abdominal wall
of a mouse. Directly afterwards 1 cm of a given dilution
of the disinfectant to be tested was injected in fractional
doses around the site of infection. This was repeated on a
number of different animals, using varying dilutions control
animals, which had been infected with staphylococci, were
injected with simple saline solution. Following on the second
injection two of the mice were killed, a piece of tissue cut out
of the infection site, and streaked on serum agar plates.
After twenty four hours the other mice were similarly dealt
with. The plates made from the mice killed directly after
infection showed a heavy, confluent layer of growth. If this
plates made from the mice killed after twenty four hours
varied according to the efficacy of the disinfectant. If this
proved inert, then a confluent growth resulted as in the
controls. If it proved active, the number of the colonies on
the plate was greatly reduced. The two disinfectant which
were tested were typhaine and rivinol, of these the former
had little or no effect in a 1 in 2,000 dilution. Rivinol on the
other hand, was shown to be active even at a 1 in 20,000
dilution. In this concentration it was able to kill off a certain
proportion of the staphylococci in the tissues. Used in a
1 in 2,000 dilution the number of colonies was reduced to
about ten. Similar results were obtained in guinea pigs
when a 1 in 1,000 dilution was employed. Further experi
ments showed the activating effect of temperature on the
disinfectant. If the animals were killed after injection and
placed in the ice chest for twenty four hours before examina
tion large numbers of organisms were still present in the
tissues. For this reason the author recommends that the
disinfectant should be injected in a solution that has been
warmed to 37° C.

Post-encephalitic Parkinsonism June, 1925, p 403
the pos

251 Histopathology of Post-encephalitic Parkinsonism
L B HOLTMAN (Bull Johns Hopk Hosp, June, 1925, p 403),
as the result of the study of twelve cases showing the post-
encephalitic Parkinson's syndrome, comes to the following
conclusions (1) There is evidence of moderate cell degenera-
tion in the corpus striatum with an intact globus pallidus
(2) There is a severe and profound destruction of the sub-
stantia nigra (3) Focal necroses are found in the cerebral
cortex both in the cells and in the fibres (4) There is
evidence of definite but very slight inflammatory changes
(5) There is very little glia increase

Uterine Prolapse

256 N A SPIEGEL *Arch f Gynkol*, July 25th, 1925, p 823)
relates that of 138 women suffering from prolapse of the
uterus in addition to other ailments, no fewer than 129 had
more or less laborious occupations, among which he includes
the duties of the lower class of housewife. Three examina-
tions by other authors, of nearly 300 cases, yielded even
higher proportions. Spiegel is inclined to incriminate par-
ticularly hard work in a half stooping position long duration
he thinks less important, for many of his patients worked
only a six or eight hour day. He adds that large scale
retreats of a civilian population carrying its property, as in
war time, were peculiarly productive of uterine prolapse.
After a review of the rather contradictory pathological
anatomy of this ailment, he suggests that the greater liability
of multiparae may be plausibly ascribed to their exertions in
tending a large family. As regards prophylaxis he recom-
mends that no feminine occupation should involve moving
a heavier weight than 65 lb

257 **Rectal Ether Analgesia in Childbirth** (1925, p 256)
J A HARRAR (*Amer Journ Med Sci*, August, 1925, p 256)
has given up the typical twilight sleep—namely, scopolamine
and morphine pushed to the degree required for perfect
amnesia—because of the depressing effect upon the child.
With the rectal ether analgesia he now recommends he does
not claim that the labour is quite painless, but great relief
from suffering is obtained. When labour is well established
the rectum is cleared with a soap enema and an ether in
oil introduced after an intramuscular injection
of morphine and magnesium sulphate has been given. The
woman is then kept quiet in a darkened room with cotton
wool in her ears, mainly for the suggestive effect. In half an
hour another injection of magnesium sulphate is given, this
time without morphine. Usually fifteen minutes after the
ether is given it may be detected in the patient's breath, and
slight excitement begins, drowsiness and light sleep follow.
The instillation may be repeated once, or even twice. The
author claims uniform good results in 2 000 trials, and that
the method suits home or hospital practice in about 70 per
cent of all labours.

258 **Foetal Prognosis in Hydramnios** (1537) states that 193 cases of hydramnios were treated during the last thirty years at the Breslau Universitäts Frauenklinik, of these 27 occurred in primiparae. Twin birth was so frequent that the number of children was 237. The total mortality among these was 50 per cent—among the twins 70 per cent, among the others 44 per cent. This high mortality is attributed (1) to the frequency of premature labour—60 per cent of cases, (2) to the frequency of abnormal presentations—10 per cent podalic, 22 per cent vertex presentations, (3) to the frequency of operative delivery which was necessary in over one half the cases, (4) to the high number of foetal malformations, especially in the head, (5) to the comparative commonness of intra-uterine foetal death and about 3 per cent were noted during the acute stage. As to the prognosis, only 50 per cent were fatal. On the other hand about 3 per cent of chronic thrombopenia in mends puncture of the bladder performed eighteen patients recovered so that the remote anaesthetic and another from subphrenic abscess. He adds that concludes that splenectomy should not be performed in the acute stage of thrombopenia even as a palliative. He adds that that it is quite justifiable in the chronic stage, and that excellent results

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

The Dick Intracutaneous Test

BROWN (*Brit Journ Child Dis*, July September, 1925, records his observations on 487 cases of the common infectious diseases—namely, scarlet fever, diphtheria, whooping cough, measles, German measles, and chicken pox—in the performed the Dick test. His conclusions are as follows: (1) The Dick test is an index of susceptibility and immunity to scarlet fever. (2) A well marked positive reaction in a person who has no previous history of the disease on presumptive evidence that immunity to scarlet fever is slight or absent. (3) The Dick test is a valuable aid to diagnosis, and a strongly positive skin reaction in the first eight hours should lead one to hesitate before making a diagnosis of scarlet fever. (4) When a patient with a strongly positive Dick reaction develops a scarlatiniform rash, the reappearance of the red area at the site of original inoculation confirms the diagnosis of scarlet fever. (5) Age susceptibility is highest at the pre-school age, whereas age tolerance is highest during the first few years of school life. (6) Shows that immunization, if adopted as a prophylactic measure in State medicine, should be carried out in the first years of life. (7) The well recognized fact that an attack of diphtheria increases the patient's susceptibility to scarlet fever is confirmed by the test. (8) The use of different dilutions of toxin may show widely divergent results. The use of a 1 in 6,000 dilution seems to underestimate the susceptibility, while the use of a 1 in 1,000 dilution tends to overstate the incidence. (9) A more reliable method of standardizing the toxin is necessary in order to obtain a uniformity of results. (10) Further investigations to elucidate the nature of the atypical forms of scarlet fever are necessary before a satisfactory explanation can be given of the apparently anomalous results of the test in this type of case.

Acute Leukaemia

53. DIMMEL (*Wien Arch f inn Med*, August 15th, 1925, p 1), records two illustrative cases, in a man aged 31 and a woman aged 16 respectively, remarks that the question is still undecided whether the disease described as acute leukaemia is really a leukaemia or a peculiar reaction to an infection. Engelberg, who maintains the latter view, regards all cases of leukaemia as the result of septicaemia, while most of the other haematologists consider that some at least of the cases described are examples of true leukaemia running an acute course. Dimmel himself is in favour of regarding acute leukaemia as a disease *sui generis* on the following grounds: The blood picture consists chiefly of immature and degenerated cells. The anatomical findings resemble those of chronic leukaemia apart from changes due to other causes, chiefly infection. In the severest forms of the disease with extensive leukaemic changes in the organs an infection cannot be demonstrated either directly or indirectly.

Peptic Ulcers treated by Rest

284. SMITHIES (*Journ Amer Med Assoc*, August 29th, 1925, p 674) reports the result of treating 470 patients with gastric or duodenal ulcer on the medical lines suggested by him in 1916, which aim at obtaining physiological rest. At first scarcely any food was given by the mouth, nutrient enemata were employed, and the patients were kept in bed. Gastric lavage and alkaline medicaments were found to be useless and even harmful. The average duration of retention in hospital was twenty-six days, and of confinement to bed about nine days. In 40 per cent of the patients all pain ceased within twenty-four hours of starting treatment, an additional 33 per cent obtained relief within forty-eight hours while 23 per cent required three days or more, in only 4 per cent of the cases were opiates necessary. Hyposecretion of gastric juice occurred in no more than 17 per cent of the patients, and was stopped in less than four days. Of the whole group of patients 361, or 77 per cent, appeared to have been cured, recurrences took place in 66 cases, and it is suggested that in some of these an operation may subsequently be necessary.

Encephalitis Lethargica in Children

285. H. S. REICHEL (*Arch of Ped*, May 1925, p 292), who records 23 cases in children aged from 23 months to 13 years, states that a history of an acute infection or an acute stage is by no means necessary for a diagnosis of lethargic encephalitis. The disease is protean in its manifestations and should be

kept in mind in all cases showing paralyses, especially of the cranial nerves, myotonus, or otherwise unexplained changes of character, with or without the lethargic complex. Paralysis in the child in the great majority of cases seems to be due to lethargic encephalitis only. Owing to the close resemblance of many of these clinical pictures to those produced by brain tumour, infantile paralysis, severe chorea, degenerative constitutional disease of the central nervous system, tuberculous meningitis, dementia praecox, and psychopathy, no one symptom can be regarded as conclusive. The diagnosis must be made partly on the combination of complexes and partly on the history and progress of the case. To a limited degree the examination of the cerebrospinal fluid may help, especially the sugar content.

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The Teeth and Tuberculosis

C. LIMA (*Revista dos Curios*, No 11, 1925, p 71) states that the tubercle bacillus often invades the organism through a carious tooth, as has been shown by the work of von Puquet, Engel, Hettenberg, Cook, Morgan, Gautier, and many others. Experimental proof of this has recently been furnished by Mendel Joseph of Paris, who made experiments on monkeys and rabbits. The technique of inoculation was as follows: The right upper central incisor and a left lower molar had holes drilled into them, and a platinum loop containing tubercle bacilli from a culture of bovine tuberculosis was introduced. Ten days after inoculation marked congestion of the gums was noted round the infected tooth. On the twentieth day there was an aggravation of the local condition, and the lesions had spread to the corresponding zone of the other incisors. In the lower jaw there was a collection of pus resembling an ordinary gumboil, but showing a pure growth of tubercle bacilli. The animal died in the fifth week much emaciated and with symptoms of violent dyspnoea, and the autopsy revealed generalized tuberculosis. In other animals which were inoculated showed enlargement of the submaxillary, cervical, and tracheo-bronchial glands. Lima adds that these experiments indicate that the campaign against tuberculosis requires the co-operation of the dental surgeon. Care of the teeth, which is indispensable in the adult, is of urgent necessity in the child owing to the high degree of receptivity of the vascular dental pulp for tuberculous infection at this age.

Surgery.

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Surgical Treatment of Angina Pectoris

S. P. PEDOROFF and **K. P. SAPOSCHKOFF** (*Zentralbl f Chir*, August 26th, 1925, p 1937) recommend resection of the depressor nerve in angina pectoris. They have collected 27 cases of resection of the cervical sympathetic, 13 other cases in which the depressor nerve was divided, and 3 cases of simultaneous resection of the depressor nerve and of the sympathetic trunk. They describe six variations in the origin of the depressor nerve, and state that it may arise from the vagus, from the main trunk of the external laryngeal nerve, or from its external branch, there may be a double origin from the vagus and sympathetic trunks. In about half the cases the depressor nerve was found to spring from the main trunk of the superior laryngeal nerve or from its external branch. The authors state that these variations necessitate an incision extending from the tip of the mastoid along the inner border of the sterno-mastoid to the level of the lower border of the cricoid, and a careful dissection of the anterior triangle of the neck. In searching for the depressor nerve it often happened that aberrant motor nerve bundles were divided, but this did no harm. Pedoroff found it quite easy to resect the ganglion nodosum of the vagus and the lower half of the superior cervical ganglion of the sympathetic, and also, as recommended by Hoffer, the descending branch of the hypoglossal nerve. He also found it possible to avoid any injury to the vagus or the superior laryngeal nerve in the course of the operation when searching for the depressor nerve. The authors describe an operation on a man, aged 56, who suffered from frequent and severe attacks of angina pectoris, the dyspnoea was so great that he could not speak when walking. The depressor nerve, which arose from the outer root of the superior laryngeal, was easily found, it was resected, together with the lower half of the superior cervical ganglion of the sympathetic, and the ramus descendens hypoglossi. No laryngeal complication occurred after operation. Nine months later the patient had had no

recurrence, he had gained weight and had no dyspnoea on exercise. He had previously had constant pain below the left scapula, but that had now disappeared entirely, as had also a transient left ptosis, and reddening and swelling of the left cheek. The authors agree with Bruning that it is necessary to divide the centripetal sympathetic branches, but they do not think it justifiable to resect the entire sympathetic trunk and all the cardiac branches of the vagus together with sympathectomy of the carotid and vertebral arteries. The total resection of the sympathetic trunk, including the stellate ganglion, is considered by them an unnecessarily severe operation.

Broncho biliary Fistula

268 P. PÉTRIDIS (*Bull et Mém Soc Nat de Chir*, July 4th, 1925, p 751) records a case of broncho biliary fistula in a patient aged 28, who had been treated medically for perforated duodenal ulcer eight months previously. He was now found to have a dull area on the right side of the chest which on exploratory puncture yielded a large quantity of sero sanguineous fluid. He later expectorated a bile stained fluid with a fetid smell. On opening the chest wall a large abscess was found lying above the diaphragm, it contained a single gall stone. No communication could be found through the diaphragm passing to a subphrenic abscess. The abscess was packed, and after draining bile for some weeks subsequently closed. It appears that in the first attack the patient had an acute cholecystitis due to a calculus. There was a suppurative perforation of the gall bladder accompanied by a suppurative pneumonia. The abscess then traced through the diaphragm and carried the gall stone and later communication became encysted in the pleural cavity and the passage of a bronchus, giving rise to the symptoms described. Robineau, commenting on this case, states that the passage of a biliary calculus through the diaphragm is rare—it usually passes into the intestine, below the liver, or in front of the kidney. He adds that the successful result of the operation makes the case one of unusual interest.

Thrombo angitis Obliterans

269 D. PERLA (*Surg, Gynecol and Obstet*, July, 1925, p 21) gives an analysis of a study of forty one cases of thrombo angitis obliterans, no etiological factor could be found, and syphilis did not occur in any of the cases. Tobacco or infections do not appear to play any part in the second. All the cases occurred in males, and usually in the second or third decade. Perla states that the process appears to be one of primary thrombus formation in the peripheral vessels and is distinct from atherosclerosis. The disease may be considered as a prolonged chronic infection characterized by acute exacerbations. It usually starts in the right lower extremity, and the most important physical sign is the absence of pulsation of the onset of gangrene. Gangrene usually develops within two to five years after the onset of symptoms. All four limbs may be involved in the disease. Death is generally due to an intercurrent infection, though thrombo angitis obliterans of the aorta and coronaries may occur. The disease must be distinguished from other causes of gangrene, principally Raynaud's disease, arterio sclerosis, and syphilitic endarteritis. Perla has little doubt as to its infectious nature, which is suggested by the inflammatory reaction, though no etiological organism has yet been found. The present treatment of the disease is, he adds, unsatisfactory.

Anal Fistulae and Tuberculosis

270 W. A. FANSLER (*Journ Amer Med Assoc*, August 29th, 1925, p 671) discusses the vexed question of the relation of tuberculosis to anal fistulae. Giant estimated that 10 per cent of all rectal fistulae were tuberculous. Hartman gives the percentage as 50, Dudley as 14, Gabriol as 20, and so on. Fansler insists that the diagnosis of a tuberculous fistula should not be made on the discovery of tubercle bacilli unless tuberculous lesions higher up the alimentary canal can be excluded. He takes as the criterion of diagnosis the fact that tuberculous lesions can be rightly regarded as logical appearance of fistulae cases can be 15 per cent of primary in fistulae and that probably only 15 per cent of fistulae in tuberculous patients are due to Koch's bacillus. He adds that the occurrence of rectal fistulae in patients who are under weight should be regarded as a definite warning of the presence of pulmonary tuberculosis, or of a tendency to it. A most careful general examination should therefore be made and be repeated periodically if negative results are obtained at first.

Therapeutics.

271 Rashes produced by Veronal and its Congeners G. CAUSSADE, A. TARDIEU, and J. LACAPÈRE (*Bull et Mém Soc Med des Hop de Paris*, July 9th, 1925, p 1042) point out that the dermatoses following the administration of veronal and luminal in about 5 per cent of patients deserve recognition, on account of the errors of diagnosis and treatment to which they may give rise. In the case of a woman, aged 25, who attempted suicide by diallyl malonyl urea, after she had recovered from the acute symptoms of intoxication, followed by rose red erythema, pruriginous and very polymorphic, affecting the left knee and left groin. It disappeared rapidly and was followed by a slight and transient desquamation. The authors state that these eruptions, being pruriginous, are often symmetrical, ephemeral, and very polymorphic, are capable of simulating all the exanthemata. A second case of dermatitis due to a 1½ grain dose of luminal was characterized by an extensive morbilliform erythematous eruption, which did not affect the face. There were mild toxic symptoms, headache, and nausea, but the patient continued to take the powders for about ten days, finding that they relieved her headache and insomnia. On the eleventh day after she had taken 17 grains a morbilliform eruption appeared which became confluent over the elbows and knees, on the seventh day of the eruption there was pruritus and itching of the arms and face, coinciding with a transient and slightly furfuraceous desquamation which entirely disappeared on the next day.

272 G. MILLIAN (*Bull et Mém Soc Med de Paris*, July 23rd, 1925, p 1090) records a case of erythema occurring on the ninth day after taking luminal. The author states that this type of erythema following the use of luminal and its allies usually sets in on the ninth day, and he describes it as infectious but non-toxic. Millian found that (a) in venereal disease chills these rashes were epidemic in patients treated with "914" or "606," the eczematous patients remaining immune. (b) Unvaccinated infants in the St Louis Hospital, though untreated by "914," acquired the rash. (c) The rash often took the form of rubella with characteristic glandular enlargement. (d) The polymorphic character of the rash seemed to indicate non-specific biotropisms and are not indicative of colloidoclastic shock. The author believes that these rashes belong to the group of biotropisms and are not indicative of colloidoclastic shock. He adds that after fifteen or twenty days immunity is regained, and the rashes do not recur.

273 Treatment of Rickets by Irradiated Milk B. KRAMER (*Amer Journ Dis Child*, August, 1925, p 195) reports a series of eight children suffering from rickets in whom the administration of irradiated milk produced healing in every case. Improvement was manifest by the end of the third week of treatment, and was very marked a week later. The ages of the children ranged from 5 to 39 months, the majority being less than 2 years. The diet consisted of milk irradiated by the mercury vapour quartz lamp, orange juice, and a cereal. The quantity of milk required for twenty four hours was poured into a large shallow dish, and was irradiated at a distance of two feet for not more than two hours. The milk acquired a peculiar taste, but little difficulty was experienced in persuading the children to drink it. With one exception, all the children gained weight during the period of treatment. In two cases investigated it was shown that there was a marked increase in the retention of calcium and phosphorus in the blood during the period when the milk was being irradiated.

Cibalgin

274 G. FLATAU (*Med Klin*, August 21st, 1925, p 1273), after trying cibalgine on fifty patients for more than six months, finds it valuable for limiting or replacing morphine and morphine derivatives. It has, he says, a combined analgesic and hypnotic effect, without habit forming or other undesirable secondary action. Its chemical composition is stated as dimethylaminoethyl dimethylpyrazolone dihydrochloride in solid or liquid form, by the mouth or parenterally. He finds that an intramuscular or intravenous injection of morphine advantageously replace a hypodermic injection of morphine. Intractable neuralgia is said to be its special field of application, but the author gives instances of benefit resulting from its use in the lightning pains of tetanus and in spinal haemorrhage, he has also had favourable reports from others in cancer, dysmenorrhoea, etc. Relief of pain is claimed for the smaller doses, and hypnotic effect for larger ones. The author asserts that the patient does not need to be kept under observation when taking this drug.

275 Vaccines in Whooping-cough

SOUTHBY (*Med Journ of Australia*, July 4th, 1925, p 11) has employed a mixed vaccine containing in each cubic centimetre 1,000 million Boidet Gengon bacilli, 500 million pneumococci, and 250 million *M. catarrhalis*. Four injections were spread over a period of two weeks, commencing with a dose of 1/2 c.c. and then increased to 1 c.c. and 2 c.c. respectively. Southby's series comprised 112 children, who were divided into two groups, one of which, consisting of 74 patients, was treated with vaccine, while the other, consisting of 38 patients, served as controls. The ages, duration of illness, and severity of the paroxysms were approximately similar in the two groups. Both children above and those below the age of 2 years showed a greater proportion of improvement, as regards the frequency and severity of the paroxysms, under vaccine treatment than those who had no vaccine treatment. The vaccine treatment, however, did not appear to have any effect in shortening the disease, except in very young babies, in whom it had a slight effect.

276 Ultra-violet Rays in the Treatment of Neuralgia

P. TARCHINI (*Raggi Ultravioletti*, June, 1925, p 176) records twelve cases in patients aged from 14 to 76 of neuralgia following herpes zoster successfully treated by ultra violet rays. The technique was as follows. The affected region was exposed to the direct action of the rays emanating from a quartz lamp. If the region to be irradiated was extensive a larger reflector was employed, the lamp being kept at a sufficient distance so that the irradiation might be uniform. If the region was circumscribed the rays were concentrated on the part affected. Tarchini states that the irradiation should be applied not only to the region of the terminal ramifications of the affected nerves but also to the region of the ganglia supposed to be affected. The treatment should be given every day or every other day, and last from half an hour to an hour and a half at a time according to the state of the patient. Radiation should be continued until the neuralgia and the skin lesions are cured, ten to fifteen days, as a rule, being required. Usually, however, the patient experiences improvement, especially as regards the pain, directly after the second or third sitting.

Neurology and Psychology.**277 Work in the Treatment of Mental Disease**

V. KUTORGA (*Medicina*, June-July, 1925 p 385) who records fourteen illustrative cases in patients aged from 20 to 45 suffering from chronic paranoia, dementia praecox, and hysteria, maintains that making the patient work is one of the most valuable methods in the treatment of mental diseases especially in chronic stages of schizophrenia and so-called functional neuroses. The only drawback to the method is that the patient does not possess any initiative. During the revolution in Russia the economic condition of the hospitals and asylums was very bad. Starvation was prevalent, and there was an almost complete absence of fuel, so that the patients in this respect were left to their own resources, and the medical attendants were completely helpless. In the Wsiech Skorbjaschtschik Hospital at Leningrad several patients, including some severe chronic cases, were given an opportunity of obtaining food by their own efforts. The results of this regime were, contrary to expectation, remarkably favourable, the general condition and activity showing a considerable improvement.

278 Amyotrophy in Epidemic Encephalitis

WINNER (*Presse med.*, July 8th, 1925, p 912) discusses the relations existing between amyotrophic lateral sclerosis and epidemic encephalitis. In the course of epidemic encephalitis he has observed seven cases with amyotrophy, which presented the clinical features of amyotrophic lateral sclerosis, namely, exaggeration of the reflexes, inflexions, Babinski's sign, and a slowly progressive course. J. TROMENT (*ibid.*) states that epidemic encephalitis is capable of producing a syndrome closely resembling amyotrophic lateral sclerosis with progressive muscular atrophy, a combination of diminished and exaggerated reflexes, fibrillar and fascicular contractions, glossolabio laryngeal paralysis, and a fatal issue within three years. In a case of the kind which TROMENT had observed there was an undoubted initial attack of epidemic encephalitis, the patient presented a subfebrile temperature, and, lastly, intravenous injections of urotropin, though they did not completely arrest the disease, caused a partial diminution of the amyotrophy and had a definite action on the temperature. TROMENT adds that it remains

to be seen whether the *post mortem* lesions in such cases differed or not from those of amyotrophic lateral sclerosis properly so called.

279 The Manic Depressive Syndrome.

J. MACPHERSON (*Med Journ of Australia*, June 13th, 1925, p 618) holds that the manic depressive syndrome depends upon an underlying hereditary temperamental disposition, of which the various symptoms constituting the malady are merely the outward phenomena. He considers that for a case of neurasthenia to be diagnosed as belonging to the manic depressive group it must manifest the features of depression, anxiety, suicidal tendency, gastro-intestinal disturbance, periodicity, and alternation. The depression is deeper than the loss of the ordinary feeling of enjoyment of life, and is associated with a psychomotor retardation, due, he considers, to some interruption at the cortical level of the reflex psychomotor arc. Periodicity is one of the most characteristic features, most patients exhibiting attacks of depression or of exaltation at intervals which may be regular or irregular. Alternation of these two states was manifested unmistakably in about 34 per cent of his patients, and he believes that it is actually more frequent. He considers that this syndrome is of more common occurrence among the general population than is generally supposed, the patient themselves are unaware of the significance of their symptoms and the diagnosis made is often "overwork," "neuronal breakdown," "neurasthenia," or "hysteria." The underlying condition is, he believes, irremediable in the present state of our knowledge, and the attacks appear, run their course, and end spontaneously. The treatment recommended includes rest in bed, the promotion of sound sleep, alleviation of the painful sensory symptoms by drugs, steadying of the vasomotor mechanism, and attention to the gastro-intestinal disturbances. In the early stages of an impending attack he believes that suggestion under a slight hypnosis may abort it, but when the sensory disturbances have become acute he finds that suggestion is useless until the distress has been allayed by other means.

Obstetrics and Gynaecology.**280 Maternal Eclampsia and Infantile Mortality**

L. NEUGARTEN (*Zentralbl. f. Gynäkol.*, August 29th, 1925, p 1938) discusses the injuries that may be inflicted upon mother and child in the process of delivery. Schwartz and Siegmund have reported more or less definite injuries to the brain substance which must have occurred at birth, such as microscopic punctiform haemorrhages with the formation of cavities and scars, these may be localized or diffuse, and the lesions may be peripheral or central. The children of mothers who suffered from eclampsia are stated to show a higher proportion of such injuries. Esch has estimated that 40 per cent of these children die before or during birth, as the direct result of visceral injuries, especially haemorrhages, and necrosis of the liver, kidneys, suprarenals, and brain. Hannes believes that foetal asphyxia during birth accounts for the higher percentage of idiocy among these children, and that when they survive their power of resistance to infectious and other diseases is materially lessened. Neugarten gives particulars of thirty cases of children of eclamptic mothers: these children succumbed in infancy or early childhood to bronchopneumonia, epidemic diarrhoea, whooping cough, diphtheria, and tuberculosis, meningitis.

281 Carcinoma of the Cervix treated with Radium

LILLIAN K. P. FARRAR (*Amer. Journ. Obstet. and Gynecol.*, August, 1925, p 205) describes the treatment of primary carcinoma of the cervix uteri by radium alone in 195 patients during the past six years. The procedure was that 100 mg. of radium salt in a glass capsule contained in a silver tube was enclosed in a brass tube 1 mm. in thickness. This was inserted into a rubber tube, the open end of which was tied with two strands of silk attached to two strands drawn through eyelets in the brass tube. After sterilization in alcohol the ends of the silk were tied to eighteen inches of 1/4 inch gauze preled into the cervical canal if sufficiently patent, and then fastened to a two yard strip of 2 inch gauze. After the tube had been placed against the carcinomatous growth in the cervix, one strand of silk threaded on a needle was passed through the cervix to ensure the radium remaining *in situ* the vagina being tightly packed with the wide gauze to keep the bladder and rectum as far from the radium as possible. Before the radium was placed in position pieces of tissue were removed with a punch for examination. The author states that preliminary general treatment should be given in the form of tonics and rest, or of blood transfusion.

in the case of anaemia. The patients were allowed to sit up as soon as possible, and daily douching with potassium permanganate was started the day after the radium had been removed, and after discharge from hospital supervision of the housing conditions of each patient was considered important. The initial test dose consisted of 100 mg left in the cervix for twenty-four hours with needles of the vagina, bladder, or rectum was involved. In women under 30 the tube was left in position for thirty to thirty-six hours. Subsequent dosage depended upon the amount of healing and cicatrization seen six to eight weeks later, and until complete cicatrization with marked contraction of the tissue had occurred the patient was not regarded as having had sufficient radium. It is pointed out that repeated doses may be necessary. Three years later 74.1 per cent of the operable patients were living and 43.6 per cent of the inoperable.

282 G. G. WARD and LILIAN K. P. FARRAR (*Journ Amer Med Assoc*, July 18th, 1925, p. 159) publish a statistical report of the treatment of cervical carcinoma by radium over a period of six years. They use the classification of pelvic cancer suggested by H. Schmitz (see *Lipitone*, January 31st, 1925, para 126). Of 17 patients with primary cervical carcinoma treated by radium alone 9 were living after five years or longer—a percentage of 52.9. In 31 cases of operable cancer treated by radium alone 21 patients lived for three years or longer.

The authors recommend a test dose of radium before, or at the time of, initial dose of radium should be a test dose to ascertain the degree of reaction of the malignant growth and the normal tissues. The subsequent dosage should be just sufficient to inhibit the tumour growth and to produce scar tissue which will occlude the blood vessels and arrest the cancer. They stress the importance of regular monthly supervision by the surgeon so as to ensure that treatment is continued as long as necessary, and consider that hysterectomy with its consequent risk of opening up the cicatricial barriers to the spread of the disease, should be avoided. They support this conclusion by a statistical comparison of the results of treatment by surgery, radium, and combined radium and x-rays in eleven clinics.

283 Postclimacteric Haemorrhage and Ovarian Tumours

R. MEYER (*Zentralbl f Gynäkol*, July 25th, 1925, p. 1662) has investigated the frequency of postclimacteric bleedings and uterine hyperplasia in association with ovarian tumour. Moulouguet Doléris has recently reported seven cases of uterine haemorrhage (with five instances of endometrial hyperplasia and four of mucous polypus) in patients who suffered, after the menopause, from ovarian tumours, mostly benign. Meyer finds that in the great majority of cases of malignant disease of the ovaries in aged subjects the uterus is strikingly small, and remarks that in cases of benign ovarian tumour the womb is seldom examined pathologically. Seven only of about 500 cases of endometrial hyperplasia in Meyer's pathological material occurred in women past the menopause; each patient had an ovarian tumour, which arose in three cases from connective tissue cells and in four from follicular epithelium. Meyer does not accept the view of Moulouguet Doléris that the endometrial hyperplasia is caused by trophic influences consequent on pressure by the ovarian tumours on the nerves at the hilus; he thinks that the association of the ovarian and uterine phenomena requires further investigation.

Pathology.

284 The Excretion of Sanoecrysin

H. HANSEN (*Læge Tidsskr* for Jaeger August 20th, 1925, p. 725) records investigations made at the Bispebjerg Hospital in Copenhagen into the fate of sanoecrysin in the body. After giving an account of the technique of the quantitative analyses of gold according to the system devised by Peterson, Goeb, and Morley, he gives the results obtained in sixteen cases treated with sanoecrysin. The examinations of the blood, pleural effusions, sputum, urine, and faeces for gold showed that from 15 to 25 per cent of the total amount excreted was demonstrable in the faeces. Most of the excreted gold was found in the urine. The sputum contained only a trace of gold. Ten minutes after an intravenous injection of sanoecrysin 45 per cent and after twenty-four hours 75 per cent had disappeared from the blood. But even twenty-four hours after an injection much more gold was still circulating in the blood than would be there if the gold were evenly distributed in the fluids of the whole body. It would

therefore seem that if at this stage sanoecrysin occurs in the plasma as sanoecrysin its ability to diffuse out into the organism must be limited. Hansen finds that as this supposition does not tally with Neelgaard's statements as to the diffusion of sanoecrysin in the body, it may be that the gold has formed in the blood a new combination with the proteins of the blood which alter its properties of diffusion for gold in the urine and faeces of patients who had discontinued sanoecrysin treatment for a month and a half to eight and a half months showed that gold was still definitely demonstrable. Yet none of the five patients concerned had suffered from renal disease before the treatment was started. The author concludes that the injected sanoecrysin rapidly changes its composition, and that the gold, like other heavy metals, is excreted very slowly and is, therefore, capable of causing serious metal poisoning. In this connection the author refers to the stomatitis and colitis which have been observed in the course of sanoecrysin treatment; three cases have sometimes terminated fatally, and may be due rather to metallic poisoning than to the liberation of tuberculous toxins.

285 Serum Diagnosis of Typhoid Fever

V. VANNI (*Il Policlinico*, Ser. Prat., July 6th, 1925, p. 9-2) describes a modification of Vidal's test, which, though slightly more complicated than the original method, possesses the following advantages: (1) The reaction appears some what earlier than that of Vidal. (2) The test can readily be performed with cultures which have become apparently unagglutinable. The test is performed as follows: Blood is collected in a sterilized tube, a drop of serum is allowed to separate and placed in a test tube containing 2 to 3 cm of sterile broth, to which a loopful of an agar culture of typhoid bacilli is added at the same time. Another test tube, which serves as a control, containing the same quantity of broth, is inoculated with the typhoid culture without the addition of the serum. The tubes are then placed in the incubator at 37°C for twelve hours. If the reaction is positive the contents of the tube are only slightly turbid and an abundant agglutinated typhoid bacilli is found. If the reaction is negative the fluid is uniformly turbid, as in the control tube. From his experience of a hundred cases Vanni is convinced of the diagnostic value of this reaction inasmuch as it precedes Vidal's reaction by two or three days, appearing immediately after a positive blood culture has been obtained, and is positive even when the strains of typhoid bacilli have become unagglutinable. Zeri has recently seen a case in which death was due to intestinal haemorrhage, when Vidal's test was negative, but the reaction described was positive.

286 The Varieties of *B. melitensis*

In a critical consideration of the Brucella group E. BURDET (*Arch Inst Pasteur de Tunis*, July, 1925, p. 2-7) discusses the relationship between *B. melitensis*, *B. paramelitensis*, and *B. abortus*. It is known that cases that are clinically indistinguishable from Malta fever and that have a positive blood culture do not always give a positive agglutination reaction. The proportion of such cases seems to vary in different countries; in Tunis it amounts to about 25 per cent. The reason for this, according to Burnet, is to be sought in the different antigenic types of the infecting organisms. The author has studied twenty-eight strains isolated from human patients and from goats suffering from *melitensis* infection, and has found that by agglutination and by absorption of agglutins they fall into two distinct types, which he names Type I and Type II. Though most easily distinguished by specific agglutination they were shown to differ in other ways. For example, Type I possessed a stronger agglutinating power when tested on the rabbit than Type II. In type I in similar doses into two series of rabbits it was found that the serums prepared against Type I had a considerably higher titre than the serums prepared against Type II. If suspensions of the two organisms were heated to 55°C those belonging to Type I remained stable, whereas those belonging to Type II flocculated—some in five to ten minutes, others not till twenty to forty minutes. Moreover, Type I was rarely agglutinated by normal human serum. Type II was frequently so agglutinated, often up to a titre of 1 in 100 or 1 in 150. Burnet thinks that it is evident that the two types are clearly distinguishable from one another, but the difference is almost entirely in antigenic one, no difference in pathogenicity to animals exists between them. The third component of the Brucella group, *B. abortus*, falls by agglutination into Type I but its pathogenic properties serve to distinguish it from *B. melitensis*. The diagnostic importance of this study is, Burnet claims, that it indicates the desirability of using strains of both types in testing the patient's serum.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

287 **Morgani Adams Stokes Syndrome in the Young**
M R CASTEX, J J BERETERYDE, and R L RAMIREZ (*Arch Mal du Coeur*, September, 1925, p 561) state that many cases have been recorded of young patients with usually normal pulse, but who at variable intervals have syncopal or epileptic attacks accompanied by slowing of the pulse, electrocardiographic tracings of these are rare. They give details of such a condition in a lad, aged 16, together with tracings that were taken. They think that there is obviously some excitation of the vagus, and probably also faulty conduction of nervous impulses, but that the exact pathogenesis has been insufficiently studied. Merely mentioning gross predisposing causes such as congenital syphilis, they conclude on clinical and experimental grounds that partial or complete heart block occurs, this comes on in transitory attacks and is of abdominal vagus origin. The immediate exciting cause is given as constipation, or, rather, distension arising from absorption of intestinal toxins, the remote action on the heart is probably determined by a predisposition of that organ to blockage. This predisposition is, they think, evidenced by the abnormal character of cardiac tracings taken between the attacks, and entails a bad prognosis, although the intensity of the attacks may be lessened by treating the constipation.

289 **Well's Disease in Holland**

W SCHUFFNER and O RUXS (*Nederl Tijdschr v Geneesk.*, August 29th, 1925, p 1020) state that since the first case of Well's disease described in Holland by Gondsint, Hammer, and Wolff (*ibid.*, 1925, 1, p 430), they have had the opportunity of examining two fresh cases, one of which came from Rotterdam and the other from Krommerie, in a man aged 37 and a woman aged 60 respectively. In two of the three cases the disease developed after a fall into a ditch, the incubation period being nine days in one and eleven days in the other. The third patient was a lighterman on a canal swarming with rats. The onset in all three cases was sudden with pain in the head and limbs, especially the calves and thighs, and severe malaise. In two patients the jaundice appeared on the fourth day, and in one on the fifth day, reaching a high degree in all. In two cases a severe relapse occurred on the sixteenth and eighteenth days respectively. Two of the three cases proved fatal—an unusually high mortality, which was not exceeded even in Japan, and may have been accidental or due to the fact that mild cases escaped notice. In the epidemic recently reported at Burg by Körner (see *Epidemic*, August 22nd, 1925, para 120) not a single case was fatal. In all three cases the leptospira was isolated—in one case after the patient's death on the ninth day from the liver, in one case from the urine, and in the third from the blood. The diagnosis in each case was confirmed by inoculation of guinea pigs and the serum test.

289 **Small-pox in Twins at Birth**

J A MARTIN (*Journal Amer Med Assoc* July 25th 1925, p 268) reports the case of a woman, the mother of four children who during a very severe attack of small pox gave birth to twins—a boy weighing 7 lb and a girl weighing 6 lb. Both were born in the papular stage of the disease. The boy, who had only twenty or thirty papules at birth, had a very severe attack, while the girl, who had ten or fifteen lesions, had rather a mild attack. At the time of publication the mother had recovered, and it seems probable that the babies, whose lesions were in the first stage of desiccation, would also recover.

289 **The Variations in Frequency of Mixed Chancre**

HUDELO and RABUT (*Presse med.*, August 29th 1925, p 1153) state that mixed chancre—first described by Rollet, whose centenary was recently celebrated at Lyons (see *JOURNAL*, November 22nd 1924, p 981, and January 31st, 1925, p 229)—is liable to considerable variations in frequency. The incidence of 2 per cent given by Puche and Fourmeur and of 6 per cent given by Rollet has been regarded by many writers as too low, especially since the war, when the development of syphilis in persons suffering from chancroid has appeared to be unusually frequent. Gougeot in 1912 stated that mixed chancre was much commoner in Paris than chancroid, and Crucher who used to teach before the war that every soft chancre should be suspected of syphilis, maintained before the Académie de Médecine in 1916 that it was exceptional

for a soft chancre to remain as such. In September, 1924, Vanderlind published statistics showing that mixed chancre constituted 58 per cent of all soft chancres and 38 per cent of all venereal chancres. On the other hand, Thibierge and Legrain in 1921 asserted that mixed chancre was not so frequent as was supposed, and their view is confirmed by the present authors, who among 173 cases of soft chancre treated at the Hôpital St. Louis in 1924 found only 23 examples of mixed chancre, or a proportion of 1 in 7. Their experience thus indicates a diminution in the frequency of mixed chancre, at least in Paris. This diminution cannot be explained by a parallel fall in the incidence of chancroid, which has actually increased in Paris since 1919. On the other hand, there is no doubt that there has been a considerable fall in the number of cases of syphilis since 1919, which accounts for the diminished frequency of mixed chancre.

281 **Non gonorrhoeal Urethritis**

A CASTELLANI (*Journal Trop Med and Hygiene*, July 1st, 1925, p 250) classifies non gonorrhoeal urethritis under three headings: (1) traumatic, (2) urethritis associated with animal parasites, protozoa or higher, (3) urethritis associated with fungi. He does not believe that the various cocci and diptheroid bacilli sometimes held responsible are more than secondary invaders. The fungus forms are the most important practically, he thinks, and he cites an illustrative case in which an abundant purulent urethral discharge, due to the fungus *Monilia*, was cured within ten days by irrigations with a solution of mercury perchloride 1 in 20,000, and a mixture containing potassium iodide, sodium bicarbonate, glycerin, and syrup of tolu.

Surgery.

292 **Compressed Fracture of the Spine**

M H ROGERS (*Boston Med and Surg Journal*, September 10th, 1925, p 494) records the results of eight cases of compression fracture of the spine without paralysis that were under treatment during 1924. Sufficient time, he thinks, has now elapsed to discuss the effects of this type of injury on the resumption of occupation. The psychological problem of industrial compensation did not introduce any complication into these cases, and all the patients seem to have been anxious to return to work as soon as possible. The treatment given was six weeks absolute recumbency, followed by complete fixation in a plaster cast or leather jacket for a further six weeks. Increasing freedom was then allowed gradually, a back brace being kept applied, and some work was started as soon as possible. In the present series of cases an average of six months elapsed before the symptoms disappeared, though many patients were at work before the end of this period. On examination after treatment scarcely any lysis or restriction of movement was observable. Rogers finds that when restriction of movement is a prominent symptom it is generally due to secondary changes, such as hypertrophic overgrowth in and about the fracture. He adds that the object of the immediate fixation, which is continued after the first symptoms of pain have disappeared, is to prevent the secondary changes which were so common previously. Radiological examination several months after the injury showed that in every case there was narrowing of the body of the injured vertebra. This appearance was not, as a rule, manifest in the x-ray photograph taken immediately after the injury. The narrowing evidently increased in spite of complete fixation, but without affecting the clinical results. Rogers insists that recumbency is an important part of the treatment, and that a jacket by itself will be insufficient in many cases. He adds that before the patient is given up wearing all braces and supports for at least a month without pain or weakness.

293 **Post operative Sequels of Gall bladder Disease**

W C CARROLL (*Minnesota Med.*, September 1925, p 583) discusses the symptoms which may follow gall bladder operations, even though properly and skillfully performed, with careful exploration and in the absence of organic lesions of the stomach, duodenum or appendix. Foci of infection in the nose, mouth and throat should be excluded, and constipation be corrected by diet and saline enemas. Carroll points out that an old syphilitic infection may sometimes

be concerned, and that posterior root pains have often been mistaken for organic abdominal disease. The Wassermann reaction of the blood and the spinal fluid should be ascertained in all doubtful cases. Painful scars will, he adds, usually yield to hot applications and massage or diathermy. Local heat and immobilizing the lower part of the chest will remove symptoms due to neuritis or myositis, the result of too vigorous pulling on the retractor during the original operation. Pain occurring deeper in the abdomen, or perhaps referred to the back, may be the result of adhesions about the duets, or to constipation or angulation of the common duct, these conditions usually require further surgical treatment. Abdominal tenderness may be a difficult symptom to relieve, but, in the case of scars with keloid tendencies, x rays or radium will often be beneficial. Heat, massage, and alcohol injections are useful when pinching of the small nerve filaments in the scar tissue has occurred. Very often the only post-operative symptoms referable to the stomach and are due to alterations in the acidity of the gastric juice, together with pylorospasm. In the case of the liver, diagnosis is usually made by the x rays, and it may be distinguished from adhesions obstructing the pylorus by a further x-ray examination after the administration of atropine. Jaundice beginning or recurring some time after the operation may be due to the formation of a new calculus in the duct, stricture or bonding of the duct by adhesions, carcinoma of the duct, or disease in the head of the pancreas. Epigastric pain or discomfort may be caused reflexly by such pelvic conditions as a large cystic ovary or an adherent retroflexion. Carroll remarks that in many cases the persistence or recurrence of symptoms is due to the fact that early operative treatment has not been possible, and thus adjacent structures, such as the pancreas, have become involved secondarily. He adds that pancreatitis very commonly follows chronic cholecystitis and clears up only very slowly after cholecystectomy, thus keeping up the symptoms for which the patient has received surgical treatment. Hepatitis may also be caused and act in the same way.

294 Torsion of the Omentum

D. POLLOSSON and H. COMTE (*Lyon Chir.*, July August, 1925, p. 513) describe an unusual case of torsion of the great omentum. A man, aged 62, had a right inguinal hernia which had been present for fifteen years and was controlled by a truss. He had recently noticed a swelling in the right inguinal region and serotum, and had suffered from frequent attacks of epigastric pain. The serotal swelling was diagnosed as a new growth of the testis accompanied by enlarged lumbar glands. On admission to hospital a mass was found in the right iliac fossa, it appeared to be connected with the serotal swelling. Laparotomy showed that the condition was one of torsion of the great omentum. The circumstances of the case whereby the omentum was fixed by its attachments above, while below it was adherent to the hernial sac, rendered it liable to torsion. With regard to the diagnosis of the condition the chief feature was the continuity between the abdominal tumour and the contents of the hernial sac, and traction on the abdominal tumour was transmitted to the testis. The authors add that this feature alone should enable a diagnosis to be made. The omentum was transected, ligatured, and removed at the neck where it was twisted, castration was performed and the hernial orifice closed. The patient made a satisfactory recovery.

295 Diet after Gastro-enterostomy and in Recurrent Gastric Ulcer

A. JAROTSKY (*Zentralbl. f. Chir.*, August 22nd, 1925, p. 1876) holds that a strict dietary is most necessary in cases of gastro-enterostomy, it will prevent much pain and lessen the danger of hemorrhage or perforation in cases of recurrent gastric or duodenal ulcer. At first milk, broth, and eggs are forbidden because they increase the hydrochloric acid in the gastric juice. The diet is restricted to vegetables cooked in butter or boiled in water without salt. Milk products, such as cream, cheese, and curdled milk, are prohibited, butter is said to be a good substitute for milk, having in small bulk a high caloric value, and patients are given half a pound daily. As a substitute for meat, vegetable soups (cabbage, beet, carrot, turnip) cooked with water and butter but without salt, are given. If this diet is well borne boiled potatoes, apples, carrots, and other vegetables are added to the list. The vegetables are passed through a sieve or mince machine and are served with butter. If the patient still remains free from pain the dietary is further extended to include minced outlets with potato puree, rice, barley, gruel, sugar, honey, fruit syrups or purees of apples, apricots, and plums. No fluid other than water is permitted, alcohol, condiments and tobacco are strictly forbidden. The author claims that this dietary not only relieves dyspeptic symptoms but the diagrams show that when gastroparesis is present it is greatly relieved.

Therapeutics.

296 Novarsuroil as a Diuretic

H. OERTING (*Minnesota Med.*, September, 1925, p. 592) gives an account of his investigation of the diuretic value of novarsuroil, a commercial mercurial preparation to which previous reference has been made (*Epitome*, April 25th, 1925, para. 413). Oerting records five cases in which the drug was very successful and five cases of failure. He believes that novarsuroil is a most valuable remedy for certain conditions, he recommends a dosage of 1/2 to 3 c.c. of the 10 per cent neutral solution of the drug supplied, and prefers the intramuscular to the intravenous route for its injection. An interval of three to seven days is allowed to elapse between injections. He agrees that renal oedema, nephritis, and enteritis are absolute contraindications, and thinks that the chief use of novarsuroil is in cases of inadequate cardiac compensation, in cardio-renal cases with fair functional activity, and in the treatment of the oedema and ascites due to cirrhosis of the liver, carcinoma, pleural effusion, and tuberculosis. Too large a dose may, he finds, bring on head-ache, salivation, nausea, diarrhoea, and pyrexia, but the diarrhoea, which seems to be the most serious complication, is stated to be easily controllable by bismuth and opium.

297 N. M. KIRTH, C. W. BARRIEP, and MARY WHELAN (*Journ. Amer. Med. Assoc.*, September 12th, 1925, p. 793) report a series of twelve cases of nephritis with oedema treated by ammonium chloride and novarsuroil. Ammonium chloride was given by the mouth in doses ranging from 5 to 16 grams each day, for a period of three to eighteen days. Novarsuroil was injected intramuscularly and intravenously in doses of 0.5 to 2.5 c.c. It seemed to be more efficient as a diuretic after the patient had taken sufficient ammonium chloride to render the urine decidedly acid. No untoward symptoms followed its use, but a preliminary intramuscular injection of 1/2 c.c. was always given as a test. In one case in which careful dieting and ammonium chloride had failed to produce diuresis, both chlorine and sodium being retained, the administration of novarsuroil brought about a prompt and large excretion of water and of both chlorine and sodium. The authors have found that this remedy, even if previously ineffective, will produce diuresis after the ingestion of ammonium chloride. They believe that the best therapeutic results in cases of nephritis with oedema are obtainable by a combination of diet, ammonium chloride, and novarsuroil.

298 The Value of Spinach

H. LECLERC (*Précis méd.*, September 12th, 1925, p. 1223) points out that spinach is relatively rich in nitrogenous substances, in hydrocarbons, and in iron sesquioxide, which last amounts to 3.3 per cent of the total ash. It is thus more nourishing than other green vegetables. Leclerc considers that it also has claims to form part of the diet in anaemia, not only on account of the contained iron, but also of the chlorophyll. Chlorophyll is known to have a chemical formula remarkably similar to that of haemoglobin, and it is stated that the ingestion of chlorophyll will raise the haemoglobin of the blood without increasing the formed elements. The plant contains from 10 to 20 parts per 1,000 by weight of chlorophyll. During the war wine fortified with spinach juice (1 in 10) was given to French soldiers weakened by haemorrhage. The author adds that this vegetable is contraindicated in patients with a tendency to gravel, because it is rich in oxalates. It is usually well digested, the percentage of cellulose present is only 0.87.

299 Treparsol in Amoebiasis

C. LEANDU (*Arch. de gastro-entérol. y nutrición*, May, 1925, p. 14) records cases of acute and chronic amoebic dysentery treated by treparsol, which is the formic derivative of meta-amino-pyruvic phenyl arsenic acid. The advantages of the preparation are said to be (1) Its high arsenic content, whereas novarsenohenzol contains only 20 per cent of metallic arsenic and stovarsol 27.2 per cent, treparsol contains 28.7 per cent. (2) A slower and more regular elimination of the drug than that of other arsenical preparations. Examination of the urine shows that the elimination begins on the first day of administration of the drug and becomes complete in three days. Its administration may be prolonged indefinitely with safety. (3) Its local and general action. Treparsol is broken up into soluble salts in the intestine and exerts a direct action on the parasites. Moreover, its action on the intestinal mucous membrane and its passage into the liver are an argument in favour of its being able to act on the lesions of hepatic amoebiasis. Lastly, the favourable action of arsenic on the general condition should also be taken into consideration, as dysenteric patients are often debilitated and anaemic. In acute amoebic dysentery treparsol

may cause a rapid disappearance of the symptoms and the anæsthesia. The author states that it is best to employ it with emetine hydrochloride, either concurrently or alternately. In the first method 8 cc of emetine hydrochloride is injected the first day in a freshly prepared solution, on each of the following six days 12 cc, and on the eighth day 8 cc. At the same time a tablet of 25 cc of trepanol is given morning and afternoon for the first four days in a little water. At the end of the course a tablet of trepanol is given for four days. In the second method, which Lindholm prefers, after eight days' treatment with emetine hydrochloride, four tablets of a grain of trepanol are given for the first four days of each week for a period of four weeks. This dosage is calculated for persons weighing 95 lb. In thin individuals three tablets are sufficient. The dose for children under 4 years is 10 cc, from 10 to 15 50 cc, and for persons above that age 75 cc to 1 gram, according to their weight and height.

300

The Use of Iodine in Goitre

I. H. LAHEY (*Boston Med and Surg Journ*, September 10th, 1925, p. 487) mentions the possibility of harm resulting from iodine treatment in certain thyroid disorders, a point referred to in the *Epitome* of September 19th, 1925 (part 221). While agreeing that the daily administration of 1 grain of sodium iodide for one week out of every six months, or the use of iodized table salt, has been shown to be of great value, and to have no injurious results, yet these are only to be recommended in regions where the iodine content of the drinking water is low and goitre is endemic. The employment of iodine in nodular or adenomatous goitre has been found to be very injurious, and non-toxic adenomas have been converted into the toxic form. Lahey urges, therefore, the necessity of care in determining carefully the type of thyroid tissue present before iodine is given for any considerable length of time, and that in no case should it be given if nodules can be felt in the goitre. He has now been using Lugol's solution (Liquor iodi, B. P., 1885) for twenty months in patients with exophthalmic goitre or primary hyperthyroidism as a preliminary to operation, and finds that post-operative thyroid reactions have thus been almost completely abolished. He finds it necessary, however, to stress the point that Lugol's solution is not a cure for exophthalmic goitre apart from operation. Another danger mentioned is the possible presence of thyroid toxicity in a border-line case, without goitre, exophthalmos, and other typical symptoms. Lugol's solution having been administered for some weeks operative treatment in such cases may prove disastrous. It is therefore necessary to bear in mind the intensity of the thyroidism prior to the use of Lugol's solution when determining the extent of operative treatment. Since using Lugol's solution in the clinic Lahey has observed a higher percentage of myxœdema following subtotal thyroidectomy than was the case previously. He believes that this is because the type of thyroid tissue remaining after thyroidectomy in patients who have had Lugol's solution is much less active than that remaining in patients who have not received this solution.

Dermatology.

301 Dermatitis produced by Chromium Compounds

H. J. PARKHURST (*Arch Derm and Syph*, August 1925, p. 253) calls attention to the occurrence of industrial dermatitis in the manufacture of blue prints as showing that erythematous vesicular and small papular dermatitis may result in susceptible persons from contact with potassium bichromate. He records the case of a girl, aged 19, employed in the process of blue printing, in whom a typical dermatitis venenata occurred on a diffusely erythematous and oedematous background on the forearms, wrists, the backs of the fingers, and the front of the neck, accompanied by itching and burning. While at work she was almost constantly in contact with a solution of potassium bichromate, and it was found that if she rinsed her hands every half hour in sodium bisulphite solution and then in running water, drying them subsequently, she remained free from dermatitis, neglect of this precaution resulted in recurrence. Parkhurst points out that such dermatoses may occur in industries involving the use of chromium compounds—such as tanneries, printing, wool cotton and "aniline blue" dyeing and the manufacture of Swedish safety matches and coloured glass. The risk occurs also in the "carbon process" in photography, among those handling cloth from which the bichromate used in dyeing has not been completely removed, and in sandpapering wool stained with bichromates. As a preventive measure Parkhurst suggests that where blue printing is done by

hand frequent rinsings with a saturated solution of sodium bisulphite and then with water should be adopted, or that the workers should wear rubber gloves.

302

Pemphigus

G. W. WENDE (*Arch Derm and Syph*, June, 1925, p. 782) records his experience in ten cases of the treatment of pemphigus with 0.065 gram iron cacodylate administered intravenously, and subcutaneous injections of 1.5 cc of a 3 per cent solution of coagulum on alternate days for several weeks. Three of his patients were adolescents, three in middle life, and four in old age. A clinical cure resulted in 62.5 per cent of the cases, with improvement in all. Wendé thinks that while the results might be the effect of injectin, a foreign protein and are unlikely to be coincidental with natural periods of remission of the disease, the prompt and prolonged relief afforded by the treatment gives it a prominent therapeutic value. The most striking cures were seen in a man, aged 75, with erosions from ruptured bullæ in the mouth and on the tonsils and scattered bullæ over the face, ears, trunk, and limbs, and in a woman, aged 66, in whom the disease affected the mouth, pharynx, and vagina.

303

Ringworm of the Scalp in Adults

H. FOX and R. W. FOWLERS (*Amer Journ Derm and Syph*, April, 1925, p. 445) report three cases of ringworm of the scalp in negroes aged 45, 26, and 36 years respectively. The lesions in two cases consisted of bald patches with broken hairs and slight scaling, and in the third of a lesion. Microscopical examination was positive in the hairs from the first two cases, and in the scales from the lesion case. *Microsporum audouinii* was grown from one case, and *Microsporum lanosum* from another. The authors have collected from literature 50 other cases of ringworm of the scalp in adults, whose average age was 33. Of 48 patients in whom the sex was stated 32 were females and 16 males, 25 of the cases were reported in England, 10 in France, 7 in the United States, 4 in Italy, 2 in Austria, Russia, and Australia, and 1 in Egypt. In 7 cases the lesion was a kerion, in the other patients the disease consisted of single or multiple patches, mostly non-inflammatory, which were smooth or scaly, with or without broken off hairs. Cultures were made in 29 cases. In 6, including 2 of the authors' cases, a *Microsporum* was obtained and in 21 a trichophyton. In one *Lepidomorphyton inguinale* was found, and in another an organism regarded as *Sporotrichum burmanni*. A source of infection was suggested in 16 cases. In 10 of the women the disease was doubtless due to contact with children, most of whom were suffering from ringworm, 2 patients had been infected by animals (horse and calf), one was a hat salesman who was accustomed to try all hats on his own head, and another had suffered from ringworm of the nails for seventeen years. In 3 patients the disease had existed since childhood or adolescence. In Japan ringworm of the scalp in adults is by no means so rare as in Europe or America. Of 678 cases of tinea tonsurans seen by Mine and Onuma at the University of Tokyo from 1901 to 1910 120 were in persons between 16 and 60, and 63 in persons over 21 years of age. The causes of the immunity in adults to ringworm of the scalp has not been discovered, but is probably due, as Sabouraud and others suggest, to some change in the soil at puberty which is unfavourable to the growth of the fungus.

Obstetrics and Gynaecology.

304 Ovarian Teratoma with Premature Puberty

R. W. HARRIS (*Surg, Gynecol and Obstet*, August, 1925, p. 191) reports the case of a girl who weighed 6 lb at birth and grew at a normal rate until she was 4 years of age. At the age of 5 years and 10 months she weighed 58 lb and was 49.8 inches tall, her weight and height being those of an average girl of 9 years of age. She was 20 lb above the average in weight and 8.3 inches taller than the average girl of the same age. When she was aged 5 years and 12 days she had a menstrual period, which was followed by six other periods of the twenty-eight day type, each lasting a week and profuse and painful in character. After the first period the breasts grew larger, the areolæ darkened, hair appeared in the axillary and pubic regions, and the whole body developed rapidly and symmetrically. At the time of the third period a small abdominal tumour was found which in the next six months grew to such a size that the patient had the appearance of being pregnant at full term. Pregnancy was suggested by the largeness of the breasts and abdomen by the missed periods, by the ease with which a vaginal examination could be made, and by nausea and vomiting, which were caused by toxic absorption and the large size of

the tumour. The normal uterus was easily palpated apart from the tumour, and there was no lactation. On laparotomy a large tumour of the right ovary was found, without any point of origin or glandular metastases. The right ovary and tube and appendix were removed and uneventful recovery took place. During the subsequent ten years the patient's mental and physical growth was normal. The tumour, which weighed 4 lb 4 oz, was composed of two masses of solid tissue separated by two large cysts. The larger part of the growth presented the appearance of adenocarcinoma showing in some places solid nodular masses of carcinoma with areas of necrosis. The tumour also contained embryonic lung tissue, neuroglia tissue, tissue resembling the gastro-intestinal tract, islands of cartilage, bones, and dermoid cysts with hair, sebaceous, and sweat glands.

305 Menstruation and Blood Pressure

M. L. LAWRENCE DILLHAIR (*Le Scalpel*, September 12th, 1925, p. 970) concludes as the result of systematic research that during the menstrual period the minimal blood pressures alter little, but on the whole tend to move in an upward direction. With regard to the maximum pressure three types are distinguished. In the first of these there is a rise between, a decline before, and a maintained fall during, the period. The second type differs from this only in showing a high level during the flow, while in the third type the lutemestrial rise is particularly rapid. The pressure is likely to be at its lowest at the period, but menstrual periods in the same woman were found to have individual differences. As special factors acting on the circulation during menstruation the author enumerates the following. The direct loss of blood is scarcely significant, but pure nervous reflexes originate in the follicle, the ovary, and in the various mucosae, the sensory part of the arc is the sympathetic. Nervous reflexes are also evoked by internal secretions ("chemical messenger"), to these are attributed cardio-vascular and vasomotor reactions. The pure nervous reflexes also act on the circulation, and the author thinks that the interplay of the two, complicated by the patient's disposition, gives rise to the above results.

306 Etiology of Pre-eclamptic Toxaemia

E. CARY (*Surg., Gynecol. and Obstet.*, August, 1925, p. 194) discusses the etiology of pre-eclamptic toxaemia from a clinical aspect and concludes that a toxic substance, or substances is elaborated during pregnancy which may cause eclampsia, such substances being probably an early split product of the protein molecule. He thinks that there is more than one source of this toxin, and that it may enter the maternal circulation from autolysis of degenerating placenta, from absorption through the large intestine of split products of bacterial origin, or from primary foci of infection. He believes that in eclampsia the power of the circulation to neutralize these toxins is diminished so that they can produce injurious effects. From the work of Obata the conclusion is drawn that eclampsia is an intoxication by placental poison made possible by a lowered neutralization capacity of the maternal blood. Cary has extracted a substance from placental tissues freed from maternal blood which was toxic to guinea pigs in 2 c.c. doses injected intraperitoneally, which appears to indicate that a substance is produced as the result of autolysis in the normal placenta which will cause eclamptic symptoms. He concludes that foci of infection other than the placenta may also be concerned, and that the symptoms are the result of an accumulative action.

Pathology.

307 Bender's Stain for Tubercle Bacilli

K. A. JENSEN (*Ugeskrift for Læger*, August 13th, 1925, p. 710) has tested at the Serum Institute in Copenhagen Bender's modification of the Ziehl-Neelsen method of staining tubercle bacilli. Bender's modification (accounts of which he published in 1921 and 1922) differs only from the Ziehl-Neelsen method in that he uses as a counterstain a 1 per cent aqueous solution of picric acid for half a minute. In his more recent publication in 1922 he recommended the use of equal parts of absolute alcohol and an aqueous solution of picric acid for counterstaining, and he claimed that his modification facilitated the distinction between genuine tubercle bacilli and other acid fast bacilli. Jensen is much impressed by the value of this modification, which is a great help to examiners who are apt to confuse red with blue colours and which shows up tubercle bacilli clearly, even when the field is crowded with cells, the diffuse yellow background not hiding a single tubercle bacillus. Jensen examined the sputum of 200 cases, employing both the original Ziehl-Neelsen method and Bender's modification.

thoroc. The former gave positive results in 39 cases, the latter in 43. The total time taken to find the tubercle bacilli in the 39 cases was fifty-six minutes, and in the 43 cases it was only eighteen minutes. In all but one of the 43 cases tubercle bacilli were found within five minutes of looking for them, whereas among the 39 Ziehl-Neelsen cases there were 5 in which tubercle bacilli were not found till they had been looked for for over five minutes. Jensen accordingly claims that Bender's modification not only gives positive results in more cases than does the Ziehl-Neelsen method, but it does so in a much shorter time.

308 Heat produced by Reactions of Antigens with Antibodies

S. BAYNE JONES (*Journal of Immunol.*, July, 1925, p. 563) has opened up a new field of chemical reactions between the differential microcalorimetry consists of two silvered vacuum thermos flasks enclosed in an insulated box, in one flask is placed the experimental fluid, in the other the control fluid. The flasks are then arranged differentially by placing one junction of a thermocouple in each flask, the terminals of the couple are connected to a galvanometer through a special potentiometer. In this way the current generated by differences in temperature at the junctions of the thermocouple can be measured in terms of microvolts. One of the drawbacks to this type of investigation in immunological methods is that the amount of reacting substances cannot be expressed gravimetrically, but this is possible the only alternative is to state the volumes in immunological units. For diphtheria toxin the author has used the L₁ unit of Glenn and Oehl, based on the work of Ramon, designating that amount of toxin which is required to cause complete flocculation of one unit of antitoxin. Studying the heat produced by the reaction between one unit of diphtheria antitoxin and one L₁ unit of toxin the author found that 0.0645 gram calories was liberated. The heat was evolved rapidly at first, and gradually slowed off, till after about an hour it ceased altogether. Studying the heat produced in the agglutination reaction, he found that a somewhat different curve was obtained. The reaction in question occurred between 190 c.c. of a saline suspension of typhoid bacilli and 10 c.c. of an agglutinating serum having a titre of 1 in 3,200. During the combination of the agglutinin and agglutino-gen heat was evolved, the maximum being reached after one hour. After this the curve fell somewhat, but commenced to rise again at four hours and reached its maximum at five hours, this second phase of heat production corresponded to the flocculation of the bacteria. In all, just over 40 gram calories of heat were liberated. From these experiments it appears that both the toxin-antitoxin and the agglutinin-agglutino-gen reactions are exothermic.

309 The Blood Platelets in Scarlet Fever

O. T. BONCIU (*C. R. Soc. de Biologie*, May 29th, 1925, p. 1453) studied the blood platelets in forty-six cases of scarlet fever in children aged from 5 to 16 years, with the following results. (1) Typical uncomplicated scarlet fever. During the incubation stage the number of platelets showed an obvious diminution, the number varying between 175,000 and 200,000. At the onset of the disease the number was below or slightly above normal (190,000 to 300,000). On the appearance of the eruption there was a sudden increase in the number of blood platelets, which became double or triple what it was at the onset. The height of the curve was reached during the first days of desquamation or on the preceding day. The number of platelets remained the same for some days during the second week and then began to fall, but very slowly, for even during the fourth week it was as high as 560,000 to 630,000 and values above the normal were found until the sixth or seventh week. The highest numbers found in simple scarlet fever varied between 720,000 and 950,000 in only two cases were they as high as 1,200,000 and 1,420,000. (2) Complicated scarlet fever. The number of platelets did not appear to be affected in these cases. In only one case, which was complicated by proctitis, was there a marked rise—namely, from 375,000 to 910,000. (3) Hyper-toxic forms. Like Aynaud, Bonciu found an intense thrombocytopenia in these cases. In three patients the number sank below 100,000. The lowest figures were 47,000 to 49,000 and were usually found on the day before death. Bonciu concludes by saying that the blood platelets undergo important numerical changes in scarlet fever which are in no way connected with the changes in the other elements of the blood. The diminution in their number during the incubation period as well as in the hypertoxic forms of scarlet fever confirms the view of Gowers that the blood platelets play an early and active part in the defence of the system, as they attack the foreign elements in the blood and disappear with them in the struggle.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

310 Tetany in Serum Disease

R. HOPMANN (*Klin Woch*, September 17th, 1925, p 1810) remarks that serum disease, experimental anaphylaxis, hypersensitivity, bronchial asthma, and certain other conditions are now recognized as nearly allied phenomena, though the nature and composition of the exciting agent is as yet uncertain. He reports a case in which serum disease supervened after antidiphtheritic serum, and a prominent symptom was tetany, the fingers being so cramped that the hands resembled paws. Rigidity of the muscles of the upper extremity to passive movement, heightened galvanic muscular excitability, and a positive Chvostek's sign were also present. In other cases he has found the galvanic excitability raised, the cathodic closure contraction in particular being of a characteristic tetanoid kind; he quotes from the literature only one case of coincidence of tetany and positive Chvostek's sign with serum disease, but more than one where increased electric excitability was found. The question, Hopmann thinks, is thereby raised whether derangement of the calcium potassium balance of the organism, which is regarded as a cause of increased electrical reaction, must not be concerned also in the phenomena mentioned above. He concludes that an initial alkalosis ushers in the electrical excitability, and that then acidosis follows, accompanied by a rash.

311 Constipation and Disease

A. C. JORDAN (*Med Journ and Record*, September 16th, 1925, p 328) describes seven cases of disease in which no progress was made until the presence of intestinal stasis was detected and appropriate treatment adopted. Synovitis of the knee occurring in a lad, aged 18, and preceded by repeated attacks of nasal catarrh, was cured within a fortnight after the chronic constipation had been overcome. An x-ray investigation with bismuth brought to light an elongated pelvic colon, a dropped transversus colon, distension of the gall bladder, and tight pyloric spasm, all of which had been previously unsuspected. Similar conditions were found in an apparent case of tuberculosis of the knee in a girl of 16, in asthma in a lad of 17, and a boy of 6, in a case of what appeared to be paralytic agita in a man aged 40, and a case of bronchial catarrh in a girl aged 7. The treatment recommended includes colloidal kolin, liquid paraffin, and belladonna, the use of a Curtis belt, daily massage and exercises, rest in bed before and after lunch, saline douching of the large intestine, and general rest and dietetic treatment. Jordan emphasizes the need for the use of x-rays and bismuth in diagnosing the cause of intestinal stasis, and adds that when there is a link producing constant tight spasms it must be freed by surgical treatment.

312 Apical Percussion in Pulmonary Disease

E. LADECK (*Wien Klin Woch*, September 17th, 1925, p 1039) finds that the slight degree of apical dullness present in early phthisis can be cleared away either by making the patient inhale deeply three or four times or if he coughs forcibly once or twice. Some physicians have stated that massage of the two apices brings back the dullness, but this, after trial, he cannot confirm. It is known that coughing will clear up a moderately obscured pulmonary field as seen radiologically, and the author states that, on screening those patients in whom dullness persisted after cough, there was likewise persistence of shadow after coughing. The most plausible explanation is, he thinks, that a diseased apex usually contains many small atelectases, which through exaggerated respiratory movements become expanded and aerated. In testing for this sign various possible fallacies must be remembered. The dullness of established disease is fixed, and thoracic asymmetries, fleshy or skeletal, have to be considered. In the absence of these, Ladéck ascribes to this sign a definite practical value, since it is easy to detect and can be quickly elicited.

313 Pulmonary Haemorrhage

F. M. ROTTENGER (*Amer Journ Med Sci*, September, 1925, p 420) believes that increased permeability of vessel walls is a frequent cause of pulmonary haemorrhage. He maintains that the great majority of such haemorrhages are not due to ulceration of vessels, rupture of aneurysmal dilatations, or injury to capillaries, since they are usually associated with weather changes, acute respiratory infections, or the

menstrual cycle, they often occur in the early morning hours, and are usually small in amount, persisting over several days with a tendency to recurrence. Recent investigations in biophysics and study of the physiology of the circulation seem to afford a rational explanation for such types of haemorrhage. Pottenger asserts that acute infections of the lungs tend to produce their greatest effect where the tissues are already injured by tuberculous disease, while weather changes, which affect all body tissues, react more particularly upon such injured tissues, and the increased activity in local tuberculous processes which occurs at the menstrual cycle is accompanied by increased permeability of the vessel walls.

314 Beri beri from a Diet of Raw Starch

E. J. KEPLER (*Journ Amer Med Assoc*, August 8th, 1925, p 409) reports a case of beri beri occurring in a coloured woman, aged 28. After a miscarriage, followed by severe vaginal bleeding, she had been recommended raw starch as a therapeutic measure, and, influenced by a superstition that this substance had a cosmetic value, she partook freely of it and gradually acquired a fondness for it. At the end of two years the habit had increased to such an extent that she was consuming from 1 to 2 lb daily, with a consequent diminution of food. Her health remained fairly good for four years, when the clinical picture of peripheral neuritis, with myocardial failure, developed. Marked improvement followed treatment with autolysed yeast, the peripheral neuritis gradually subsided and the patient was able to resume her housework.

315 Fungous Infections of the Lungs

A. CASTELLANI (*Military Surgeon*, August, 1925) describes the various forms of bronchomycosis, or infections of the bronchi and lungs, associated with the presence of fungi in the sputum. He states that the symptoms are similar whichever fungus is concerned. In mild cases there are signs of slight bronchitis, with mucopurulent expectoration, and in severe cases the patient presents the symptoms of tuberculosis, with hectic fever and blood stained expectoration. The prognosis varies according to the type of fungus. Milder cases may heal spontaneously, but the severe type may end fatally. The treatment recommended is potassium iodide in large doses (30 grains three times a day), with creosote.

Surgery.

316 Infiltrating Tumours of Brain

C. A. ELSBERG (*Amer Journ Med Sci*, September, 1925, p 324) discusses the diagnosis and treatment of infiltrating tumours of the cerebral hemispheres, with special reference to a new surgical procedure, whereby an attempt is made to lessen the number of major exploratory operations for supratentorial new growths by means of improved diagnosis between meningeal growths and subcortical infiltrating growths. He points out that valuable data can be obtained by studying rolograms of the ventricles into which air has been injected, since there appears to be a definite relation between the location of the tumour, the amount of distension of the anterior, posterior, and inferior horns of the contralateral ventricle, the degree of indus changes in each eye, and the disturbances in function on both sides of the body. By such means he states, it may be possible to define the position of an otherwise unlocalizable growth and to distinguish between meningeal and subcortical tumours. Instead of the major operative procedure of turning down a large osteoplastic flap in suspected subcortical tumours, Elsberg advises a primary short scalp incision under local anaesthesia, with the removal of a button of bone, and a small incision into the dura to allow the passage of a blunt brain puncture needle—a procedure similar to that for exploring a suspected brain abscess. Through such an opening the subdural space can be explored and, if firm resistance is felt, pointing to the presence of a meningeal tumour, a large osteoplastic flap can then be made. If no resistance is felt, the brain substance should be explored for the presence of a tumour, cyst, or abscess, if the cavity of a cyst is entered it should be aspirated and filled with air. Should no resistance be encountered, portions of brain tissue obtained by aspiration should be preserved for examination. A careful record being made of the direction and depth from which these portions were obtained the further procedure would depend upon the result of x-ray and laboratory findings.

317 **Varicose Veins and Flat foot**

G NOBL and F REMENOVSKY (*Wien Klin Woch*, August 27th, 1925, p 960) conclude that there is a strong coincidence observable in over 60 per cent of cases of tenderness to varicosity and flat foot. They believe that the two conditions do not stand to one another in the relation of cause and effect but are joint results of a common constitutional fault—namely, a weakness of the walls of the veins in one case and of the bones, ligaments, and muscles in the other. Stress and strain bring this multifiform weakness to light. They add that in some instances club foot may be the direct result of varicose veins, being caused by the induration and contraction of the skin, and that the action of similar complications may cause joints to become ankylosed. Another etiological sequence suggested is perlostitis and a peculiar form of bone atrophy following the chronic inflammation and ulceration of the skin found with varicose veins. In the case of other malformations, such as genu valgum and hallux valgus, no such associations with venous varicosity have been traced by the authors.

318 **Cervico medullary Tumour**

J FAVILL, D E FAXON, and D A PALMER (*Journ Nerv and Mental Dis.*, September, 1925, p 279) report a case of cervico medullary tumour occurring in a previously healthy woman, aged 29. Commencing on the left side of the body, generalized weakness gradually progressed until, four months later, she was helpless and had lost all power of movement below the neck. At times she had general pain, which was worst in the back of the neck, there was numbness of the arms and legs, and once a sensation of choking. There seemed to be no difficulty in swallowing, no disturbances of mentality, vision, taste, smell, or hearing, and no nausea, vomiting, tremors, spasms, convulsions, or abnormal involuntary movements. The respiration was intercostal in type. The liver, spleen, and kidneys were not palpable, but there was retention of urine. All muscle power was absent, and both extremities were markedly spastic on passive movement, the fingers were held in flexion with the thumbs flexed and adducted. There was considerable atrophy of the small muscles of the hands, throat, upper chest walls, and deltoids, and there was a lesser degree of atrophy in the lower extremities. All reflexes were exaggerated, except the abdominal, which could not be obtained, and there was a bilateral Babinski response. The cranial nerves and eyes were normal. The Wassermann reaction was negative and the spinal fluid normal, the cervical spino showed no abnormality on x-ray examination. No Kernig's sign developed, but during the last week of life peculiar sensory phenomena occurred, with difficulty in swallowing and excessive salivary secretion. The necropsy revealed an endothelioma the size of a hen's egg opposite the lower portion of the medulla in a right temporo lateral position beneath and adherent to the dura, it projected through the foramen magnum and pressed upon the medulla and upper cord. Notes are given of two other cases recorded in the literature. Special attention is drawn to the presence of atrophy of the upper extremities resulting from lesions exerting pressure well above the levels of the cord which supply the arm muscles, this must have resulted from some mechanical injury to the anterior roots, since the anterior horn cells at these levels were microscopically normal. The authors add that such injury might have resulted from torsion of the cord, or traction upon it when the tumour met the resistance of the foramen magnum, or from a direct tearing when the dural sac became displaced by the growth of the tumour.

319 **Abdominal Surgery in Diabetes**

D F JONES, L S MCKITTRICK, and H F ROOT (*Journ Amer Med Assoc*, September 12th, 1925, p 809) discuss in detail the special measures necessary when abdominal operation on diabetic patients are to be performed. They deprecated ether as an anesthetic, and recommended nitrous oxide or ethylene and oxygen when local or spinal anaesthesia is inadequate. They warn against the danger of depleting the glycogen content of the body to a dangerous extent, and think it desirable to relax insulin treatment so that there may be a little glycosuria at the time of the operation. Unless the operation is imperative it should be delayed until acidosis is controlled, and the authors find that testing the urine for diacetic acid affords a sufficiently adequate criterion in this respect. They consider that giving large doses of insulin is both unnecessary and unwise, since danger of hypoglycaemia is incurred. The post-operative treatment should include a double measure of watchfulness as compared with a non-diabetic case: the urine should be tested for sugar and diacetic acid at three or four hour intervals and insulin administered subcutaneously in accordance with the results obtained. At least 50 ounces of fluid should be given during the first twenty-four hours after the operation.

carbohydrates should also be administered. The authors conclude by stressing the importance of early operation in diabetic cases, since these patients do not react to pain or infection as do non-diabetics, and so grave complications may develop unnoticed.

Therapeutics.320 **Quinidine Sulphate in Auricular Fibrillation**

R A JAMESON (*Canadian Med Assoc Journ*, August, 1925, p 782) states that in 50 to 60 per cent of patients with auricular fibrillation the normal rhythm can be re-established by the oral administration of quinidine sulphate. He has used it during the last four years in forty-nine cases, thirty-one of these patients showed at least one of the signs of cardiac failure, such as oedema, passive congestion of the lungs, or hepatic enlargement. All had some limitation of cardiac reserve—the majority to a marked degree—and the previous duration of fibrillation ranged from a few days to about six years. A preliminary course of digitalis was given in most cases, though not concurrently with the quinidine. Jameson thinks, however, that the combined administration would allow the ventricular rate to be more readily controlled and obviate the tendency to an increased rate which occasionally occurs when quinidine is being given alone. The initial dose was 3 grains, and, if no toxic symptoms followed, it was increased gradually to the fourth or fifth day when the maximum dose of 25 to 30 grains might be given in each twenty-four hours. The best results seemed to be obtained from small doses of 3 to 4 grains, given at three-hourly intervals throughout each twenty-four-hour period. Of the forty-nine patients so treated twenty-six reverted to the normal rhythm, though fibrillation tended to reappear after some weeks, yet it was possible in cases where the normal had been re-established to maintain it by small daily doses of quinidine. Jameson urges the importance of carefully selecting the cases for treatment. The most important contraindication is, he thinks, a high degree of myocardial damage.

321 **Treatment of Meningococcal Septicaemia**

L MERLE (*Bull et Mem Soc Med des Hop de Paris*, July 2nd, 1925, p 1004) records a case of meningococcal septicaemia in a boy aged 15, accompanied by meningitis, arthritis, and iridocyclitis. Although antimeningococcal serum had a good effect upon the meningitis, the septicaemia was unaffected. An auto vaccine, prepared from the blood culture, was then injected. The temperature immediately fell, and, apart from loss of sight in the right eye, complete recovery followed. Merle believes that the eye might have been saved if a filtrate of a culture of the causal organism as Besredka recommends had been used as a dressing and as an intraocular injection with or without evacuation of pus from the anterior chamber.

322 **The Principles of Prescribing**

K SCHÜBEL (*Deut med Woch*, September 4th, 1925, p 1480) laments that, owing to the copious introduction of pharmaceutical specialties, the art of prescribing is on the wane. This is causing harm, he thinks, because therapeutic success sometimes depends upon a particular combination, to be found only by experiment. Certain points still require attention, and he remarks that the degree and duration of the effect of medicinal treatment are important, as also are habit formation and the possibility of cumulative action. Moreover, absorption from the stomach, intestines, and the rectum is essentially different from absorption after parenteral administration. Water solubility does not always mean ready absorption, on the contrary, some substances not water soluble are so readily affected by the juices of the body as to be quickly absorbed. Schübel points out that anaphylaxis is a danger after certain therapeutic measures, and often depends upon the tissues being deficient in calcium. Again, the state of the circulation seriously affects the action of drugs. With a failing heart not much result can be expected in an emergency except from intravenous injection. On the other hand, the danger of accumulation is enhanced in constipation, when the kidneys may be the only excretory organs available, if renal discasos exists, the risk is thereby increased.

323 **Yatren-Casein in Surgical Tuberculosis**

P BECK (*Wien Klin Woch*, August 20th, 1925, p 937) reports the following results. Of 18 patients with surgical tuberculosis treated with parenteral injections of yatren casein, 2 were cured, 5 much improved, 4 made better, 3 were unaltered, and 4 got worse. Treatment was then stopped, and in the ensuing eight months three further cures ensued. Almost all the patients who got worse were young subjects.

with tuberculous cervical glands, Beck thinks that they were overdosed, and states that no more than 1/10 gram should be given in a single injection. Yation is a preparation of iodoxy quinoline sulphonic acid. The rationale of the method is stimulative, and Beck describes in some detail the signs of an optimum reaction to an injection, which include rise of temperature. The intervals between injections should never be less than eight days, but the fitting dosage in each case is determined rather by varying quantity than frequency. He adds that no other specific treatment should be employed simultaneously with yation casein, and that caution is necessary with the dosage in order to avoid too strong focal reaction. Thus there is some risk of causing tuberculous glands in the neck to break down and discharge, the author deprecates this being brought about deliberately.

323

A Valerian Preparation

M NIENDORF (*Med Klin*, September 18th, 1925, p 1431) suggests that the first drug to be tried in such conditions as insomnia, neurasthenia, and dysmenorrhoea is valofin. This is stated to be a preparation of valerian root, infusions of which have been recommended in the treatment of excitement conditions, it is prepared by the Helfenberg firm in Dresden. Niendorf finds that on the stomach and intestine it has a sedative and carminative action, it tastes well and smells of peppermint. The dose is given as half a teaspoonful in water, or, for children, 15 to 20 drops, which, in one dose in the evening, has been found to relieve the restlessness of the milder forms of bronchopneumonia and gastro enteritis. Mixed with syrup the drug is recommended as a harmless prescription for night terrors in small children and for laryngismus stridulus. Previous valerian infusions contained bitter principles and impurities, but valofin, in which is present the active body, or etheric oil, of valerian root, is said to be free from these, and can therefore be given continuously.

325

Treatment of Trichinosis

J S GROVE (*Journ Amer Med Assoc*, August 1st, 1925, p 349) discusses the various methods of treatment that have been recommended for trichinosis. In addition to thorough evacuation of the gastro intestinal canal, glycerol, serum from convalescent animals, antonin, asphenamin, and other remedies have been tried with indifferent results. Grove gives clinical details of a case in which a woman, aged 35, was successfully treated by small doses of antimony and potassium tartrate. Intravenous injections of a freshly prepared 2 per cent solution in distilled water were given every second or third day in the proportion of 3 to 4 c cm for each 10 lb of body weight, the dose was gradually increased. Rapid improvement resulted, and within a week the patient was discharged cured. In this particular case the larvae were demonstrable in the blood stream. Grove adds that this treatment is not entirely free from danger, care must be taken to prevent the drug entering the surrounding tissues, as it produces intense pain and a tendency to inflammation and necrosis. He believes that the maximum effect of the drug is obtained before the parasites become localized in the muscles, early and diligent scrub, therefore, should be made in suspected cases for the larvae in the blood stream and spinal fluid.

Diseases of Children.

323

Haemorrhage in Early Infancy

C I T EAST, F COVE SMITH, and F O T STRANGE (*Brit Journ Child Dis*, April-June, 1925, p 128) report the clinical histories and post mortem findings of three cases of haemorrhage in early infancy. The first case, which occurred in an infant aged 14 days at the time of death, was characterized by bleeding from the rectum and vagina since birth. No haemorrhages were found in the skin, but four purplish areas resembling piles were noticed at the anus. Haemorrhages were found under the pleura, on the surface of the liver on the right side of the peritoneal cavity and pelvis in the bladder, cervix, and fundus uteri. In the second case death occurred on the second day of life after passage of a large quantity of blood per rectum. The intestine was found to be full of blood as far as the duodenum, in the first part of which an ulcer was discovered. Several erosions were also present in the gastric mucous membrane. The third case, which occurred in a child aged 6 weeks, was apparently one of Henoch's purpura. The abdomen was opened but no intussusception was found, and the child died shortly after the operation. At the necropsy haemorrhage was found in the coils of the intestine, behind the peritoneum, and in the lung. There was also abnormal bleeding from the lung. The authors remark that it is very unusual to find Henoch's purpura so early in life,

and suggest that its occurrence at this age links up the purpura of later life with crises of haemorrhagic disease in the newborn.

327

Lipodystrophia

VINCENT COATES (*Brit Journ Child Dis*, July-September, 1925, p 194) defines lipodystrophia as a disease especially liable to affect children from 5 to 8 years of age, in which there is a loss of subcutaneous fat of the face, neck, thorax, arms, and abdomen without assignable cause or gross symptoms of ill health. In females there is also an increase of subcutaneous fat below the iliac crests. Many theories have been advanced to explain the fat dystrophy. Syphilis, taberclosis, malnutrition, and abnormal fat metabolism can be excluded. Tests of pituitary disorder have been negative. As regards the thyroid gland, exophthalmic goitre in one instance, a tumour of the gland in another, and myxoedema in a third have been noted. The other endocrine glands cannot be incriminated. Parkes Weber suggests that there is a disturbance of the vegetative nervous system resulting in a redistribution of fat in the subcutaneous tissues analogous to that of pigment in the skin in vitiligo. Several cases have been reported following immediately on specific infectious diseases. The course of lipodystrophia can be divided into an active stage lasting from a few months to four years during which the disease is progressive, and a final stage in which there is a permanent cosmetic disability. With the exception of the case reported by Napoleon Boston no claim has been made of a cure or even of an arrest of the condition. Coates records two personal cases in boys aged 7½ and 7¾ years, and has collected all the previously reported cases in tabular form.

328

The Spinal Fluid in the Newly Born

M H ROBERTS (*Journ Amer Med Assoc*, August 15th, 1925, p 500) has studied the spinal fluid in 423 newly born negroes. Bilirubin was found present in every case, and it persisted until the ninth day, it was intensified if jaundice supervened. Roberts considers this condition physiological, and not necessarily indicative of intracranial haemorrhage. He found that the degree of coloration had no relation to the character of the labour or the condition of the child at birth, but, whereas in large full term babies the fluid was only slightly tinged, there was invariably marked pigmentation in premature infants, small full term babies, and twins. The condition is, he thinks, to be associated with the destruction of red blood cells which occurs during the first few days of life. Roberts reports also that intracranial haemorrhage in the newborn is of common occurrence, even in normal labours, but symptoms only appear in severe cases. He doubts the likelihood of later and permanent disabilities resulting from these haemorrhages.

Obstetrics and Gynaecology.

329

An Accessory Fallopian Tube in Tubal Pregnancy

F C VAN TONGEREN (*Nederl Tijdschr v Geneesk*, July 11th, 1925, p 257) reports the discovery of an accessory Fallopian tube in a woman, aged 39, who had been married for several years and had had two normal labours without any miscarriages. She was admitted to hospital with the diagnosis of ruptured extrauterine pregnancy. On laparotomy a rupture was found in the left Fallopian tube close to the isthmus. The tube was removed and complete recovery took place. On examination of the put removed a small tube 2 to 5 cm long was found on the lower aspect of the anterior part of the larger tube, which was 10 cm in length. It was impossible to pass a fine sound from the small tube into the lumen of the larger one. Microscopical examination of the Fallopian tube in the neighbourhood of the rupture showed distinct decidinal changes and portions of chorion, so that the diagnosis of ruptured extrauterine pregnancy was confirmed. Abnormal development of the Müllerian ducts may, as Webster has shown, be responsible for extrauterine pregnancy, as the ovum is supplied with a favourable nidus in the tube. Hoffman has reported a case of tubal pregnancy in which two accessory tubes were found, and in nine other cases of extrauterine pregnancy he found more or less distinct maldevelopment.

330

Peristalsis in the Fallopian Tube

ACCORDING TO R DRYOFF (*Centralbl f Gynakol*, August 22nd, 1925, p 1890) Coiner in 1923, was the first to demonstrate and register peristalsis in the Fallopian tubes of animals, the transport in them of corpuscular elements towards the uterus had previously been proved experimentally. Tubal peristalsis in the sow has recently been recorded cinematographically by Acl. Convincing evidence of the occurrence

of peristaltic movements in the human Fallopian tube has hitherto been lacking, in the present communication Dryoff publishes radiograms taken after the introduction (not under pressure) of oil into the human uterus. The spiracles and ampullae characteristic of peristalsis are visible, it is clear, however, that the direction of the waves is such as to convey the oil from the uterine to the ovarian extremity, whence it escapes into the pelvis. Flaskamp and the present author have also demonstrated and recorded peristaltic movements in the excised surviving human oviduct, the waves travelled towards the uterine end.

331 Anaemias of Pregnancy and the Puerperium

R. C. LARRABEE (*Amer. Journ. Med. Sci.*, September, 1925, p. 371) gives clinical notes of 17 cases of severe anaemia, which were classified on the basis of the blood pictures, the anaemia occurred during or shortly after pregnancy, and was attributable to the pregnancy itself and not to complications. Seven of these patients showed the blood picture of severe secondary anaemia, the average haemoglobin percentage being 35. The anaemia was not progressive, and they improved under treatment after delivery. Four patients were not transfused, transfusion was adopted in the other three to hasten recovery or to give greater safety for operative interference. In eight cases the blood picture was of the pernicious type. The disease was insidious in onset and slow in development, and the general condition of the patients was grave. Four patients recovered after transfusion, but of the four who were not transfused three died. In one case there was an aplastic blood picture with great reduction of platelets, and without any evidence of red corpuscle regeneration, the patient died in spite of transfusion. One atypical case in which repeated transfusions had failed ended in recovery after splenectomy. Larrabee considers that patients of the secondary anaemia type tend to recover under treatment with iron and arsenic, and that most of those with more severe anaemia recover, and may even go through subsequent pregnancies without recurrence if treated by transfusion, a single transfusion sufficed in most cases. As regards the advisability of emptying the uterus, the author does not consider it justifiable in mild cases of the secondary type, in the severer types the treatment in each case must be decided on its merits, having regard to the nature and severity of the anaemia, the stage of pregnancy, and the viability of the foetus.

Pathology.

332 The Site of Production of Agglutinins

D. VANNUCCI (*Lo Sperimentale*, June, 1925, p. 379) has made some experiments on dogs and rabbits to determine the site of production of agglutinin. In most of his work he injected a typhoid vaccine killed by heat into animals by various routes, and the agglutinin titre resulting from this antigenic stimulation was measured daily. In some animals a splenectomy was performed after the injection. He also examined histologically the spleen and bone marrow of certain animals. The results are briefly these. Injection of the vaccine intravenously into rabbits gives rise to a titre of between 1 in 5,000 and 1 in 6,000, injection into the cranial artery gives a titre of 1 in 5,000, injection into the mesenteric vein one of 1 in 3,000, and injection into the mesenteric vein of a rabbit, the spleen being removed forty-eight hours later, gives a titre of 1 in 2,000. From these results it appears that the highest titre is obtained by intravenous injection, using a systemic vein, if, on the other hand, a splenic vein be chosen, the resulting titre is considerably lower. It is also clear that splenectomy diminishes the reaction of the animal to the antigenic stimulus. Experiments in dogs gave somewhat similar results, thus the highest titre was obtained by injection into the femoral artery—even higher than into an ear vein. Splenectomy performed forty-eight hours after the intrafemoral injection diminished the agglutinin response, likewise after injection into the ear vein. Histological examination of the spleen showed that within forty-eight hours after the injection of typhoid vaccine great congestion and often haemorrhages appeared, followed later by oedema and cellular changes. The bone marrow showed congestion and, sometimes, small haemorrhages. After reviewing the work of other authors on the subject of the site of agglutinin formation, Vannucci concludes that it is the haemopoietic organs—particularly those parts which actually are engaged in forming the blood cells—that are responsible for agglutinin formation. The facts that splenectomy diminishes the agglutinin response, and that profound histological changes occur in the blood-forming organs after injection of the antigen, seem to be the reasons for this conclusion. The liver and kidneys, he considers probably excrete a considerable amount of antigen soon after its injection, this explains why injection by the mesenteric vein gives rise to a lower

titre than injection by a systemic vein. Finally, Vannucci is inclined to attribute the fall in the curve of agglutination which occurs ten days or so after injection to excretion of antibodies by the liver and kidneys.

333 Streptococcus haemolyticus in Scarlet Fever

OLGA BONCIU (*C. R. Soc. de Biologie*, August 14th, 1925, p. 722) examined twenty cases of scarlet fever, taking two throat swabs from each—one on the first day of the illness, the other a week after defervescence and making a blood culture at the same time. From eighteen of the patients she recovered *Streptococcus haemolyticus*, either at the first or the second examination, from the throat, and from two of them she recovered the same organism from the blood. She then tested the agglutinating capacity of the blood serum of convalescents. All the nine serums that she examined agglutinated haemolytic streptococci of scarlatinal origin to a high titre, while having a much poorer action on haemolytic streptococci of non-scarlatinal origin, and on *Streptococcus viridans*. Rabbit serums prepared with the haemolytic scarlatinal strains agglutinated these strains to a high titre, but had little action on streptococci of non-scarlatinal origin. Rabbit serums prepared against non-haemolytic streptococci of scarlatinal origin had little effect on haemolytic strains of scarlatinal origin.

334 The Cerebro spinal Fluid in Malaria

R. MONTELEONE (*Il Policlinico*, Sez. Med., September 1st, 1925, p. 470) states that since the cerebro spinal fluid is a valuable index of the changes in the cerebro spinal axis and its coverings it naturally follows that the fluid should show more or less marked changes in malaria in which nervous symptoms are remarkably frequent. In previous observations of the cerebro spinal fluid in malaria only those forms of the disease have been studied in which there were marked clinical signs of nervous disturbance, when it was found that the fluid generally showed an increase of pressure, excess of albumin, high percentage of urea, and frequently lymphocytosis. Monteleone examined the cerebro spinal fluid in about 50 cases of various forms of malaria and found that the results differed according to the stage of the disease. In the apyrexial forms of chronic malaria the fluid was perfectly normal. In the acute stage the changes were the same whatever the type of fever. In no case was there any change in the appearance or colour of the fluid, nor was there any formation of a reticulum or massive coagulation. The first change of interest was an increase of pressure which was closely associated with the rise of temperature, the pressure increasing as the temperature rose and falling as the fever subsided. The amount of albumin was almost always within the limits of the normal, though sometimes there was an increase in cases of pernicious malaria. An increase in the quantity of reducing substances was constant during the malarial paroxysm. Hyperglycaemia which was the first sign to appear and the most persistent, sometimes amounting to 1 per mille. The Wassermann reaction was always negative, even in those cases in which it was positive in the case of the blood serum. Cytological examination showed that red corpuscles were frequent, this finding being probably due to the haemorrhage caused by the passage of the needle. Lymphocytosis was occasionally seen but was not common.

335 Ultra violet Light and the Mineral Metabolism in Lactation

In a preliminary communication J. B. ORR, H. E. VAGET, and J. M. HENDERSON (*Biochem. Journ.*, No. 4, 1925, p. 569) report that irradiation of lactating goats by the carbon arc lamp reduces the loss of calcium from the body. Precautions were taken to ensure that the exact intake of calcium and phosphorus for each dry should be known (it may be noted that the appetite improved and the ration was increased from the sixth day of irradiation onwards), and the collection and analysis of excreta were continued for a total period of fifty-four days. From the thirteenth to the thirty-fourth day the animal was irradiated for four hours a day at a distance of 4 ft., about a sixth of the animal's body being exposed to the rays at a time. These experiments are quoted. In the first, under the influence of irradiation an average negative balance of 0.24 gram a day was changed to a positive balance of 0.16 gram, in the second a negative balance of 0.41 gram was reduced to 0.20 gram, and in the third a negative balance of 0.26 gram was reduced to 0.01 gram. The gain in calcium absorption and retention was almost entirely accounted for by reduced excretion in the faeces. Thus, under the influence of irradiation, there is either increased absorption from the intestine or decreased excretion into the intestine. The authors incline, with Telfer, to the belief that the calcium of the faeces is chiefly, if not entirely, unabsorbed residue, and suggest, therefore, that irradiation by the carbon arc lamp, like the administration of oils, causes an increased absorption of calcium from the intestine.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine.

336 The Probable Causes of Lateral Decubitus

I. DAUTOLO (*Bull. delle Sci. med.* July August, 1925, p. 257) states that there are numerous relations between the decubitus assumed by an individual and his digestive apparatus. While the right lateral decubitus favours the passage of the gastric contents through the pylorus (Serres d'Ues) this position, according to Wotfge, should not be adopted until one and a half hours after a meal, so as to prevent the passage of incompletely digested food into the duodenum. On the other hand, the left lateral decubitus, though it prevents this occurrence, may if prolonged cause dilatation of the stomach, especially in weakly persons. The prone decubitus, though it interferes with the movements of the thorax and organs contained therein as well as with the gastric movements, favours the passage of solids and gases through the intestinal canal, so that this position is sometimes recommended in cases of excessive meteorism. The most suitable decubitus for the liver is the right lateral, because in this position the organ rests on the solid surface provided by the inner aspect of the ribs and the muscular intercostal spaces of the diaphragm, and the flow of bile is more active, whereas in the opposite decubitus the liver, by slipping over to the left, drags on its ligaments and interferes with the stomach. In the supine decubitus the liver may press on the inferior vena cava. As the result of examination of several hundred cases in his father's oto-rhino-laryngological clinics at Bologna, Dautole found that the lateral decubitus was much the most frequent, and that the left, though not as common as the right, was not much less frequent. He found, moreover, that the lateral decubitus, whether left or right, and whatever the sex, was usually associated with a stenosis of the nasal fossa on the same side. This stenosis was due most frequently to hypertrophy of the inferior turbinal bone or to a pronounced angulation of the septum with a spur, and then in decreasing order of frequency to slight deviation of the septum with a spur and hypertrophy of the turbinates, with simple deviation of the septum, and finally to simple deviation of the septum only. In exceptional cases the lateral decubitus was associated with an imaginary sensation of diminished capacity in spite of a considerable amplitude of the nasal fossa.

337 The Jugular Pulse in Aortic Insufficiency

L. LOMBARDI (*Chiese e Circolazione*, August, 1925, p. 337), who has made a careful study of the jugular pulse in a case of aortic insufficiency in a man aged 37, has come to the following conclusions: (1) In aortic insufficiency with unstable compensation the jugular pulse, as was to be expected, varies according to the efficiency of the heart's action. (2) In the stage of failing compensation as shown by oedema, dyspnoea, and so on, tracings show that the various waves are barely indicated or differ only slightly in height from one another. The aortic wave is high in comparison with that of the ventricular, and the wave *h* appears, which is an expression of overdistension of the right ventricle. In the stage of moderate compensation the ventricular wave is still fairly low, but the aortic wave is more vigorous. The *h* wave has now disappeared, showing that the aortic contraction has become more energetic, and that the ventricular distension has been relieved. (3) In the stage of more or less complete compensation the distance between the waves *a*, *c*, and *v* and their size appear to be about the same as in the normal plethogram, and the *c* wave exceeds all the others in height, thus showing the vigorous contraction of the left ventricle.

338 Recovery in Pulmonary Tuberculosis

G. B. WEBB (*Journ. Amer. Med. Assoc.* September 19th, 1925, p. 867) points out that before the introduction of serial radiological examinations of the chest it was generally held that pulmonary tuberculous deposits undergoing healing were replaced by fibrous or calcified structures. It has now been shown that actual absorption of lesions may occur. He gives five case histories, illustrated by radiographs, to show that massive exudative tuberculous lesions have been absorbed, and he adds that some of the illustrations appear to indicate that caseous residues were replaced by apparently healthy lung tissue. In some cases the absorption of lesions was associated with a complete disappearance of riles. In other cases riles remained, possibly owing to a bronchiolectasis. He emphasizes the point that rest in pulmonary tuberculosis

should be prolonged for many months after the temperature and pulse have become normal and the sputum has disappeared. He found by his radiological examinations that tuberculous deposits generally started to clear up after six months of rest, but were not completely absorbed until after two or three years of rest. He believes that recurrence in pulmonary tuberculosis is often due to the fact that prolonged and complete rest has not been continuous, nor of sufficient duration.

339 Etiology of Pellagra

ACCORDING to R. S. MILLER (*American Med.*, April, 1925, p. 211), pellagra is due to an enzyme deficiency which disturbs the sugar metabolism, and he maintains that patients suffering from this disease need dextrose. He believes hypertrophy of the parotid glands to be a more constant sign than hitherto supposed, and that it represents a compensatory hypertrophy to replace a definite deficiency elsewhere, possibly of the pancreas. He suggests that the failure to reduce carbohydrates efficiently to their end products is responsible for the intractable diarrhoea associated with pellagra, and attributes the emaciation to the failure in glycogen production and the deficiency in its storage. A connexion is traced between the incidence of pellagra and the scarcity of dextrose-containing foods in such countries as Egypt, Italy, and America. He believes that the simplest way to remedy the deficiency is to supply such foods to all who are poor, engaged in hard manual labour, or exposed to cold and exhaustion. The relation between the consumption of maize products and pellagra is, he thinks, explicable by the inferiority of this cereal to all others, both in its original and in its cooked state, the dextrose content being very small.

340 The Sign of the Cutaneous Folds in Scarlet Fever.

C. BIFULCO (*Studium*, September 20th, 1925, p. 273) states that among the signs which have a considerable though not absolute importance in the diagnosis of scarlet fever is that described by Pastia. This observer in 1910 stated that he had found in 94 out of 100 cases a continuous linear exanthem of a more or less bright red colour on the flexor fold of the elbow. This exanthem, which was not found by Pastia in any other toxic or infective eruption, was in early sign, as it appeared at the beginning of the eruptive period and was present when all other signs were absent, persisted throughout the eruptive period, and sometimes could be found in the form of hyperchromic pigmentation after the scarlatiniform rash had faded. Bifulco in 1916 found Pastia's sign in 95 per cent of his cases of scarlet fever, and declared that not only did it bear no relation to the severity of the attack, but that it was also present in other eruptive fevers. Montefusco, who found it present in all cases of scarlet fever and absent in erythema scarlatiniforme, typhus, haemorrhagic small pox, and pelios rheumatica, attributed considerable diagnostic importance to the sign. Bifulco investigated it in 136 cases of scarlet fever, and found it constantly present, both at the onset of the disease, including cases in which the rash was ill marked, and also in those in which it had faded, when the sign was present in the form of intense pigmentation. Bifulco found the sign also present in measles, but not in any other eruption such as serum rashes or erysipelas. He also observed that the sign was present, not only at the fold of the elbow, but also in all the flexor folds where the skin was delicate, such as the popliteal space and groins. The cause of the phenomenon as of the Rumpel-Leede sign, is to be found in vascular hypotonia, which as the result of pressure or spontaneously, gives rise to hyperaemia or punctate haemorrhages.

341 Signs of Low Arterial Tension

A. DUMAS (*Journ. de med. de Lyon* September 20th, 1925, p. 527) describes the typical patient with low arterial tension as being in the prime of life with a recent history of mental and physical lassitude. Other symptoms are palpitation and extra systole following exertion (alleged) vertigo, and pains in the legs or a sensation of the heart beating down there. The pulse is rapid, irregular and with extra systolic intermissions. It is of low tension but the minimal figures are hard to determine. Oscillometry shows a good amplitude which in view of the low tension implies excess. The apex beat is rather violent, in the fourth or fifth space, and gives on palpation the suggestion of a thrill. There may be a functional systolic bruit, replaced in late stages of the disease by a true mitral incompetence murmur. The second sound—

whether pulmonary or aortic is not stated—is usually accentuated. Dumas thinks that these signs afford evidence of cardiac retraction and compensatory effort in face of an arterial laxity the strain of which is felt especially in diastole.

312 Banti's Disease

A. P. PONS (*Rev. med. de Barcelona*, August, 1925, p. 126), who records six illustrative cases in patients aged from 16 to 49, states that, in addition to an essential Banti's disease for which the most careful clinical examination is unable to detect a definite cause, there exists a syndrome with an identical clinical evolution and probably similar anatomical lesions, which is produced by well known causes, especially syphilis. During the period of hepatitis with cirrhosis the ascites secondary to portal hypertension may be absorbed spontaneously and the peritoneum may remain free from effusion for a long period, which is not a frequent occurrence in ordinary hepatic cirrhosis. The practical conclusion to be drawn from this fact is that operation is advisable and improvement is likely to occur even in the third stage of Banti's disease. Pons regards sclerosis of the Malpighian corpuscles in the spleen as one of the most typical lesions of Banti's disease. Clinically it is manifested by an abscess or only a slight degree of leucocytosis following injection of adrenaline, so that Malpighian sclerosis and absence of reaction to adrenaline form the most important complex in Banti's disease.

Surgery.

343 Abdominal Endoscopy

O. E. NADEAU and O. F. KAMPMEIER (*Surg., Gynecol. and Obstet.* September, 1925, p. 259), impressed with the practical possibilities which endoscopy of the abdomen offers in diagnosis, treatment and physiological investigation, describe their technique. At a point 3 cm. to the right of the umbilicus the skin and deeper tissues down to the peritoneum are anaesthetized with a 1 per cent novocain solution. A spinal puncture needle and obturator are passed through the abdominal wall until the peritoneum is pierced, and, after removal of the obturator, rubber tubing is attached to the needle and to a foot air pump. A short piece of glass tubing containing sterile wool for filtering the air is interposed near the needle end of the tubing. After sufficient air has been introduced into the peritoneal cavity to raise the abdominal walls from the underlying bowel the spinal needle is withdrawn, and along its track the trocar is pushed with its flexible cannula made of thin spiral steel spring covered with a sheath of rubber with a calibre fitting the tube of the cystoscope. After removal of the trocar a metal cap with rubber diaphragm is screwed on to the cannula, and through this the endoscope is introduced. It is claimed that the liver, gall bladder and ducts, and the anterior surface of the stomach and first part of the duodenum can be examined, in the lower abdomen can be seen the uterus, tubes, ovaries, bladder, and sigmoid, as also the appendix when it is not retrocaecal or hidden by adhesions. Practical familiarity with cystoscopic examination and an accurate knowledge of the normal and pathological appearance of organs are essential.

344 Appendicitis in a Femoral Hernia

W. F. K. GOUWE (*Nederl. Tydschr. v. Geneesk.*, September 12th, 1925, p. 1247) reports the case of a woman, aged 45, who was suddenly seized with severe pain in the right groin, abdomen and back. She gave a history of having had some vague abdominal pain during the preceding months and about six weeks previously had noticed a small swelling in the right groin, to which she had paid no further attention. On examination a small round swelling the size of a cherry was found in the situation of the femoral ring. It was very tender on pressure, and did not increase in size on coughing or bearing down. There was no typical tenderness at McBurney's point. The rectal temperature was 101° F., the pulse was normal. The diagnosis was either an inflamed lymphatic gland or inguinal hernia with slight symptoms of strangulation. In accordance with the first diagnosis she was confined to bed and treated with jalap for three days, but without any change in her condition resulting. A surgeon was then summoned, who made a diagnosis of strangulated omental hernia. On operation a right femoral hernia was found, its contents consisting of the gangrenous extremity of the appendix 3 to 4 cm. in length, lying in a sac full of pus. The rest of the appendix which was in the abdomen and 5 to 6 cm. long was healthy. Complete recovery followed appendectomy. It could not be determined whether the appendix had become accidentally infected after being some time in the hernial sac or whether it had become infected by being strangulated in the hernia.

345 Treatment of the Appendix Stump

J. J. MALO FI (*Annals of Surgery*, August, 1925, p. 250) discusses treatment of the appendix stump after removal of the organ. There are two essentially different ways of treating the stump—namely, the ligature and drop method which leaves the stump free in the peritoneal cavity, and the inversion or burying method. The author states that the first procedure has been used satisfactorily in a large number of cases. The advantages are its rapidity and ease, its adaptation to all cases, and the lessened percentage of faecal fistulae. It has been urged against this method that mucosa will not unite with mucosa, but it has been found that the ligature brings scrota into contact with serosa which causes firm healing, and there has been no case of post operative peritonitis. Maloney considers that any method of burying the stump in the caecal wall is unphysiological and unsurgical, and is followed by a greater percentage of complications and sequelae. By the method described the operation is more easily performed, with lessened mortality and morbidity rate.

346 Facial Bolls

R. MORIAU (*Deut. Zeit. f. Chir.*, September, 1925, p. 45) reports that of 103 cases of facial boil admitted to hospital 10 per cent died, and over 60 per cent had the boil on the upper lip. He remarks that a facial furuncle is initially no more serious than any other kind, but that as the facial muscles, which are attached to skin, become irritated reflexly, boils on the face are not allowed to rest, and so are easily extended into the canine fossa or into the inner angle of the orbit. Infection spreads by the veins, with or without thrombosis and phlebitis of the larger ones, the lymphatics have little to do in this respect. An unfavourable course is indicated by severe septic phenomena, with progressive thrombosis of the larger facial venous trunks, and formation of metastatic abscesses in the lungs, heart muscle, and kidneys. Moriau adds that for such cases no treatment expectant or operative, avails at all—the infection is too strong. The metastases may be fatal some time after the original boil has healed. In milder cases the most important thing is to keep the inflamed tissues at rest, silence must be enjoined and only liquid food be taken.

347 Diaphragmatic Hernia.

C. A. HEDBLON (*Journ. Amer. Med. Assoc.*, September 20th, 1925, p. 947) reports on the study of 378 cases of diaphragmatic hernia in which operations were performed. In about two-thirds of the civilian patients in whom the etiology was established the hernias were due to a penetrating wound or to rupture of the diaphragm by sudden increase in the abdominal pressure. In a large number of cases the diagnosis was unsuspected until the operation, though the symptoms had been present for many years. Hedblom suggests that a history of a penetrating wound of the lower thorax, of crushing, of collision, or of a fall, should give rise to the suspicion of diaphragmatic hernia in cases in which the diagnosis is doubtful. For differential diagnosis he recommends radiography of the thorax after administration of an opaque substance in a meal, though this examination may fail if there is a spontaneous temporary reduction or a failure of the opaque substance to enter the extruded portion. An exploratory operation is recommended after a positive diagnosis, even if the symptoms are slight, since very often obstruction develops, this complication more than doubles the post operative mortality, and limits the possibility of rupture of the hernia, necessitating secondary operations. Exploratory laparotomy is preferable if the cause of the obstruction is doubtful or has been shown to be parasternal. In cases due to a recent wound, with prolapse of omentum through the hernia, thoracotomy provides the most direct approach, and may be combined with a transdiaphragmatic exploration for injury to the abdominal viscera. In ordinary cases thoracotomy has yielded a somewhat lower mortality than laparotomy, and a larger proportion of successful closures. In more than 90 per cent of the patients operated upon no sac was present, thus obviating the objection that thoracotomy carried the risk of the development of an operative pneumothorax. Hedblom recommends the suture of the hernial ring if possible, since covering the hernial opening with an abdominal viscus has frequently resulted in recurrence of the hernia. A few large or recurrent hernial openings have been successfully closed by fascial or muscle transplants. After the operation, whether by thoracotomy or laparotomy, the air should be aspirated from the pleural cavity after this has been closed. Recurrences following rupture of diaphragmatic hernias were reported in about 5 per cent of the cases. The operative mortality was mainly due to the lateness of the operation in the presence of obstruction, to shock, and to respiratory failure.

Therapeutics.

318

Treatment of Rickets

S ROSENBAUM (*Monatsschr f Kinderheilk*, September, 1925, p 547), who remarks that it is particularly difficult to determine the success of treatment in rickets, selected as a criterion the occurrence of calcification in the long bones, which were examined at fortnightly intervals by skiagrams of the extremities. He examined 30 children, whose ages ranged from 12 to 20 months. Each method was tried on three or four patients, the duration of the trial being twenty-eight days. During this period the most successful treatment—namely, the mercury vapour quartz lamp—always produced calcification. The Hanau or Jesonek lamp, employed daily until marked pigmentation was obtained, invariably caused definite calcification after twenty-eight applications, and in half the cases at the end of a fortnight, the result corresponding with those obtained by Hildschinsky and most of the other observers. As soon as any other method proved inefficient, irradiation with the mercury vapour quartz lamp was applied to determine whether the case would respond at all to treatment. Mechanical stimulation of the skin by the combination of mustard plasters, massage, and gymnastics failed to cause calcification within twenty-eight days. Normal sunlight applied by exposure ranging from ten minutes to an hour proved efficacious, though it was not so satisfactory as the mercury vapour quartz lamp. Injection of blood which had been irradiated by the quartz lamp had no effect in the four cases in which it was tried, although twenty-eight intramuscular injections in doses of 5 c.c. were given. Rosenbaum comes to the conclusion that at present the mercury vapour quartz lamp is the only cure for rickets which is liable to be effective in a relatively short time, apart from natural sunlight, the therapeutic and prophylactic properties of which are limited by climatic conditions.

349 Glucose in the Treatment of Hyperemesis Gravidarum

P TITUS (*Journal Amer Med Assoc*, August 15th, 1925, p 488) gives directions for the procedure of treating hyperemesis gravidarum by glucose. He maintains that the therapeutic dose for an adult of average size is 50 to 75 grams, and that smaller doses than this are without effect. The substance must be chemically pure, and be given in a hypertonic solution, preferably about 25 per cent. Single injections are said to be safer than a continuous flow, but they should be repeated about two or three times daily. Titus reports favourable results in a series of 328 cases of hyperemesis treated by such intravenous injections or by a diet very rich in carbohydrates. He believes that glucose administration gives rest to the liver action and promotes the storage power of the hepatic cells, while at the same time it remedies the carbohydrate deficiency in the body which Titus believes to be the cause of the hyperemesis. He has not obtained any benefit from a combination of insulin and glucose treatment.

350 Prophylactic Treatment of Measles and Scarlet Fever

J BRATTER (*Polska gazeta lekarska*, September 13th, 1925, p 788) reports very favourable results obtained by prophylactic milk injections in patients exposed to infection from measles or scarlet fever. In 6 cases measles is believed to have been prevented by two injections of 1 to 2 c.c. of milk at intervals of five days in children of the ages of 19 months to 10 years, whilst in 14 other cases scarlet fever was similarly averted. Bratter adds that this prophylactic therapy is to be preferred to the correlative treatment of infectious diseases by parenteral administration of proteins.

351 Treatment of Syphilis by Bismuth

E MATEESCU (*Paris Med*, September 19th, 1925, p 233) gives an account of the treatment of 342 cases of syphilis in all stages by a combination of arsenic and bismuth named "bismysol" which he refers to as a new preparation. He states that this remedy is non-toxic, does not give rise to complications, and causes no local reactions of any kind, while removing syphilitic symptoms and converting a positive Wassermann reaction into a negative. Starting with an initial dose of 10 cg., he increases it rapidly until an amount of 10 to 15 grams has been given, without any unpleasant phenomena resulting, even in the most severe cases. Mateescu reports that in his cases the temperature remained normal, and, though polyuria occurred, no albumin was present or evidences of renal infection. No digestive trouble followed, even in the treatment of syphilis of the nervous system, when large doses were employed. In no case did the positive Wassermann reaction reappear after treatment, and no return of the disease was found though re-examinations were made at intervals of six months. The number of injections given to each patient was between fourteen and

twenty-four. Stomatitis only occurred in 10 per cent of the cases, and was severe in one only of these, in which there was an additional infection with fusiform bacilli. Mateescu gives short reports of six cases to illustrate his conclusions.

352. Calcium and Potassium Chloride in Arterial Hypertension

W L T ADDISON and H G CLARK (*Canadian Med Assoc Journal*, September, 1925, p 913), as the result of treating 45 patients, report that calcium and potassium chloride will produce a decided fall in blood pressure in a large percentage of cases of hypertension, with corresponding improvement of the patient's symptoms. The dose of calcium chloride ranged from 90 to 180 grains daily, and blood pressure readings were taken each week. If at the end of a month no fall in pressure had occurred potassium chloride in the same doses was substituted for calcium chloride. All the patients had an initial systolic pressure of 170 mm. of mercury or more, and the diastolic pressure ranged from 84 to 152. Of the 45 patients so treated, 26 reacted well with calcium chloride, and 6 with potassium chloride, the blood pressure being reduced and oedema disappearing. The results were better during the summer than in the winter. The main objection to calcium chloride was the gastro-intestinal disturbance, but it was found that a glass of milk taken after the calcium chloride relieved this. There appeared to be some slight possibility of producing symptoms of an inorganic acidosis, and the authors, therefore, insist that these salts should not be taken except under medical supervision.

353 Medicinal Use of Oxygen

C W GREENE (*Journal Amer Med Assoc*, August 29th, 1925, p 645), in a critical discussion of the value of oxygen in health and disease, states that air containing more than 60 per cent of oxygen may produce pulmonary inflammation by local action. He considers that oxygen administration has no physiological or clinical value in cases of haemorrhage, anaemia, or circulatory deficiencies, but that it may save life in pulmonary obstructions, oedemas, or other conditions in which the process of oxygen absorption is retarded, or the haemoglobin saturation of the pulmonary blood is incomplete. The experiments of Stadie with an oxygen chamber in grave cases of pneumonia showed how rapidly all symptoms could be alleviated, and also that there is a close correspondence between the blood oxygen content and the degree of respiratory and circulatory stress. In devising methods of giving oxygen Greene points out that face masks should be avoided, and the patient surrounded by an atmosphere enriched with oxygen. This can be effected by oxygen chambers, and, in ordinary practice, by tent devices. By experimental work Greene claims that it has been shown that in nitrous oxide anaesthesia the degree of anaesthesia depends less on the presence of nitrous oxide than on the deprivation of oxygen with its consequent action on the nervous system.

354 Dochez's Scarletinal Antitoxin

C L THENEBE (*Boston Med and Surg Journal*, September 10th, 1925, p 497) states that since his previous paper on this subject (*Epitome*, August 22nd, 1925, para 136) he has used Dochez's scarletinal antitoxin in 42 additional patients, with results similar to those previously recorded. In 32 cases the antitoxin was given intravenously and in 10 intramuscularly. There were no deaths. No patient who received unconcentrated antitoxin intravenously developed a chill; 7 had a chill, 5 of whom had concentrated antitoxin intravenously and 2 intramuscularly. Two received intramuscularly concentrated and unconcentrated antitoxin respectively, these two patients were both sensitized to horse serum when the injection of antitoxin was given. Fifteen of the 42 patients developed serum rashes 8 of them having had serum intravenously and 7 intramuscularly. The serum sickness was in some instances extremely severe. Thenebe's conclusions are as follows: (1) Unconcentrated antitoxin is the safer procedure for intravenous administration. (2) Concentrated antitoxin is the safer procedure for intramuscular administration. (3) The earlier the antitoxin is administered, the dosage being adequate, the less the incidence of complications. (4) Intravenous injection of antitoxin causes the earliest fall in temperature. (5) The quantity of antitoxin administered does not seem to affect the incidence of a chill or the development of a serum rash. (6) Further study is needed to prove the presence of bactericidal properties in the antitoxin, the serum probably representing an antitoxin only.

355 Ether in the Treatment of Asthma

S FAZIO (*Stadium*, September 20th, 1925, p 276) states that ether acts principally on the respiratory system and is eliminated like all volatile substances, by the respiratory tract. This suggests that its action is twofold—namely, partly on the pulmonary parenchyma and the respiratory

mucous membrane with which it comes in contact, and partly on the nervous system as shown by the sleep which it causes when given in large doses. Although the cause of the disease is obscure the author thinks it probable that asthma is due to a deep seated anatomical change in the alveoli or bronchial mucous membrane. He recommends that either should be given in asthma as in whooping cough, not by inhalation, when it would be diluted with air and therefore only superficial in its action but by intramuscular injection, the dose varying according to the age of the patient.

Radiology.

3.5 Radiological Diagnosis of Pulmonary Malignancy

P. KEELEY (*Brit Journ of Radiol*, September, 1925, p 333) remarks that, while the possibility of making a correct diagnosis in pulmonary malignancy from the clinical symptoms is poor fairly characteristic pictures can be obtained by radiography. He suggests the following classification while admitting the impossibility of distinguishing between benign and malignant growths or between carcinoma and sarcoma, from the x-ray plate. Primary sarcoma and non-malignant growths are, he adds, so rare in comparison with primary carcinoma that the matter is not of great importance. He describes six types of pulmonary neoplasms. The first type is the pneumonic form of bronchial carcinoma in which the affected lobe appears as a moderately dense shadow, which is invariably sharply limited by the interlobar fissure. The shadow is rarely dense enough to obscure that of the ribs, and lessens in intensity towards the apex and the lateral wall thus distinguishing it from tuberculosis which is, however, invariably present as a complication. His second type is the hilum form of bronchial carcinoma. In this the hilum is very dense and five or six times its normal size. It appears as a semicircle from which fine greyish wavy striations pass into the lung like a woolly infiltration. His third type is the nodular form of bronchial carcinoma in which large, rather sharply outlined, nodules appear on one side of the thorax, communicating with the hilum by thin or thick dense shadows. The fourth type is the cavernous which though exceedingly rare, should be suspected if one large solitary cavity in one lung is present. Fine striations may be seen running from it to the hilum. The fifth type is the metastatic in which the deposits may be isolated or disseminated. Finally, in disseminated carcinomatosis of the lungs the nodules, if of lymphogenous origin, appear a little larger than ordinary tubercles, and are arranged in relation to a fine network structure over both lungs. In sarcomatosis the nodules are large and the netlike lymphatics do not appear.

357 The Deglutition Method in Bronchial Skiagraphy

While studying the radium treatment of oesophageal carcinoma K. NATHAN and M. SEGALITZER (*Zentralbl f Chir*, July 11th 1925 p 1534) encountered a case in which after preliminary local anesthetization of the pharynx and larynx the patient swallowed a suspension of barium, and it was found that the liquid had entered the trachea and larynx instead of the oesophagus. The entire bronchial tree became visible, but the fluid was coughed up immediately by the patient and no complication followed. Local anaesthesia had abolished the laryngeal reflex, producing a transient paralysis of the laryngeal muscles. In other cases similar results were obtained owing to an ulcerating oesophageal carcinoma perforating the trachea but the filling of the bronchi was never followed by aspiration pneumonia or any other untoward result. The authors therefore recommend the following method of filling the bronchial ramifications with a barium suspension or lipiodol solutions. After thorough disinfection of the teeth and mouth a swab of cotton wool, saturated in a 10 to 15 per cent cocaine solution, is applied to the pharyngeal wall and glottis by long curved forceps. When anaesthesia is complete the patient is placed behind the fluorescent screen and slowly swallows the lipiodol or other solution. In most cases the fluid passes directly into the trachea and thence into the bronchial tree, and when in sufficiently small quantities can be seen entering the bronchioles. By adjusting the position of the patient the flow can be guided to any part of the lung desired. The authors add that when the fluid is introduced cautiously it seldom causes irritation and coughing during the examination though shortly afterwards the greater portion is coughed up, a little fluid may remain in the alveoli but will be finally absorbed. The authors claim that this method is widely applicable is not followed by any serious ill results, and that by watching the filling of the bronchi the flow of liquid can be directed and stopped as required.

358 X-Ray Treatment of Infected Tonsils and Adenoids
J. H. WESLEY (*Journ of Radiol*, June, 1925, p 221), who records ten illustrative cases in patients aged from 8 to 52, remarks that very many people object to surgery for the removal of tonsils, but readily consent to x-ray treatment as it is painless and leaves the throat in a normal condition instead of inducing the state of chronic pharyngitis following an operation. Patients past middle life and those debilitated by some chronic intercurrent disorder such as valvular disease with loss of compensation, arterio-sclerosis, diabetes, nephritis, gout, and advanced forms of rheumatism, are unsuitable cases for operation and are successfully treated by x-rays. The object of x-ray treatment of infective tonsils is the complete removal of all diseased tissue from the throat, leaving the parts in their normal condition and with permanent relief from the disease. During the last two years Wesley has treated a number of cases of infected tonsils by x-rays with good results. Most of the recurrent cases have been in children, probably on account of the large amount of lymphoid tissue in the tonsils of younger subjects and the consequent poor contraction of the fibrous stroma. Eight applications were given, with an interval of a fortnight between them.

Ophthalmology.

359

Cysts of the Iris

R. E. WRIGHT (*Brit Journ Ophthalmol*, September, 1925, p 454) describes a method of dealing with a cyst of the iris which he employed with great success in the case of an Indian woman. From a study of the literature of the subject he came to the conclusion that the great difficulty in dealing with these cysts was to get rid of the cells lining the cyst in their entirety. He decided that if he could fill the cyst with pure carbolic acid and then wash it out again he would accomplish his object. This he proceeded to do in the following manner. Two sharp syringe needles, one slightly larger in bore than the other were introduced into the cyst from opposite directions subconjunctivally. The needle with the smaller bore was connected with a syringe filled with normal saline solution. The one with the larger bore was connected with a syringe and the contents of the cyst were aspirated by means of it. The syringe was then detached from the needle, filled with a few minims of pure carbolic acid, and reattached the carbolic acid was thus introduced into the cyst. Then saline solution was introduced into the cyst by means of the syringe attached to the needle with the smaller bore and the carbolic acid was removed by the other syringe. This procedure was repeated several times until there was no more carbolic acid in the cyst. The needles were then withdrawn, syringes washed and a pad and bandage were applied and six months later the cyst had completely disappeared.

350 Acute Dacryodermatitis caused by Focal Infection

M. L. FOSTER (*Arch Ophthalmol*, September, 1925, p 450) describes a case of acute dacryodermatitis, a somewhat rare condition, the etiology of which is usually not very clear. In the present case, however, it would appear that the teeth were quite definitely to blame. A man, aged 27, woke one morning with intense pain in the left eye. On the bulbar conjunctiva two red vascular bands were found, which extended upwards and outwards to the fornix. On exerting the lid a red tender mass presented in the region of the accessory lacrimal gland. Hot fomentations were applied, and during the next few days the pain and swelling subsided. On the sixth day, however, a relapse occurred. An x-ray photograph of the teeth revealed abscesses at the roots of the two left upper incisors. These were extracted and a remarkably rapid improvement in the condition of the eye followed. There was no recurrence.

351

Sclerotic Scleritis

S. B. MURKIN (*Amer Journ Ophthalmol*, August, 1925, p 630), describes a case of this condition in which the unusual factors were the length of time the iron had remained in the eye before removal. The marked sclerotic changes which had occurred the successful removal of the foreign body after great difficulties, and the remarkably good visual recovery of the eye. The condition had been unrecognized from the first, and it was not until four months after the date of injury that an x-ray photograph was taken revealing the cause of the trouble. Extensive degenerative changes had taken place in the eye and the foreign body was so firmly encapsuled that it would not respond to a giant magnet. Eventually it was removed by means of a scleral opening and the introduction of a small hand magnet. The patient's vision is now 20/40, and is stated to be improving.

Obstetrics and Gynaecology.

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The Ovarian Hormone

S LOEWE (*Zentralbl f Gynaekol*, August 1st, 1925, p 1735) ranges himself with those who believe that it is possible to prepare from the ovary a hormone having specific effects on the female genital organs, he also furnishes an explanation for the scepticism with which clinical observers have regarded the results of administration of tablets of dried ovarian substance. Experimenting on mice, rats, and guinea pigs, he has confirmed the finding of Doisy and Allen that subcutaneous injection of ovarian extracts into castrated female animals produces an oestrus which lasts from one to five days, according to the dose, and the intensity of which is susceptible of fairly accurate measurement by microscopical examination of secretion withdrawn from the vagina. Other results of the injection are an increase in size of the genitalia of young animals and an increase in size of the nipples in the male. These three signs constitute, according to Loewe, a triad whose presence is essential as evidence of activity in ovarian extracts. He has found that oral administration also of ovarian extract constantly induces the phenomena described, the dose required, however, is twenty times greater than for subcutaneous administration. Taking into consideration the body weights of man and of the laboratory animals which he has used, Loewe calculates that to secure a marked therapeutic effect in the human subject would necessitate the administration of about 250 grams of dried gland, corresponding to enormous numbers of the ordinary tablets of commerce. Ovarian extracts from one animal are effective when injected into other species. The hormone appears to be present in small amounts in the circulating blood of the human female. ZONDEK and ASCHHEIM (*ibid*, p 1701), in a report to the Vienna Gynaecological Congress of June 1925, describe a series of experiments in which portions of animal and human ovaries were transplanted between the thigh muscles of castrated mice. The action of the ovarian hormone was indicated by the occurrence of oestrus. They report that the hormone is absent from the germinal epithelium, the stroma, and the primary follicles, but present in the mature follicle and its fluid. The hormone is demonstrable up to the time of menstruation but is absent from the post-menstrual corpus luteum. The noteworthy finding was made that the hormone, far from being in abeyance, was present in increased amounts during pregnancy. Oestrus in the mouse occurs after implantation of human as well as of animal ovary. Implants of liver, spleen, pituitary, thyroid, thymus, parathyroid, and suprarenal substances had negative results, the hormone appeared to be present, however, in human placenta.

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Menstrual Crises in Pregnancy

G REVELLI (*Riv d'Ostet e Ginecol Pratica*, August, 1925, p 349) reiterates the suggestion, formerly advanced by Bossi and others, that during pregnancy, at times corresponding to the suppressed menses, general and local (uterine) phenomena occur which are due to ovulation, and which are of importance in connexion with medical supervision of the early months of gestation. Clinical evidence of the continuance of ovulation during pregnancy is found in cases of coexisting uterine and extrauterine gestations of different ages, in the continuance of menstruation during pregnancy in one horn of a bicornuate uterus, and in the fact that in a certain number of cases of uterine pregnancy a menstrual flow occurs during the early months before decidua fusion is complete. Revelli believes that careful inquiry would show that the earliest signs of abortion appear (as in a number of cases recorded in the present paper) on a day exactly corresponding with that on which in the absence of pregnancy menstruation might have been expected to commence. He states also that even when there is no foetal danger it is not uncommon for pregnant patients to experience, beginning on the day of the suppressed menstruation, pains in the lower abdomen accompanied by an aggravation of the vaginal discharge of pregnancy. At this time the contractility of the uterus is increased, and fatigue or coitus is especially dangerous. The practical conclusion to be drawn is that, alike in the interests of foetus and mother, it is important to enjoin repose during these "menstrual crises."

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Degeneration of Uterine Fibromyomata

L SEED (*Surg, Gynecol and Obstet*, September, 1925, p 333) finds that gross degeneration occurs in about 13 per cent of uterine fibromyomata. During the year 1923, 200 cases of such gross degeneration were studied, and it was classified as hyaline in 24 cases, oedematous, cystic, or myxomatous in 80, red degeneration with total necrosis in 33, calcification in 39, infected, subserous, and interstitial in 3, and

submucous in 13. In 5 cases there was a thrombotic sinus, 1 was tuberculous, and 2 fibroepitheliomatous. Seed states that oedematous, cystic, and myxomatous degenerations are all part of the same pathological process, which is probably due to a gradual diminution in the blood supply. He found no special clinical symptoms in these cases. "Red degeneration" is the term he applies to an aseptic necrobiosis characterized by fatty degeneration, thrombosis, and extravasation of red blood cells and pigment. He adds that the condition is a "red infarction" due to a sudden complete vascular obstruction, chiefly of the venous system, and ending in fatty necrosis. In these cases local pain and tenderness were found, together with a mild toxæmia, but the occurrence of symptoms depends on the size of the tumour and the acuteness of the necrosis. Calcification occurred in two forms—namely, peripheral decomposition in a totally necrotic fibromyoma, and a homelike formation scattered through the tumour. The author adds that there is little evidence that the degeneration of fibromyomata has any toxic effect on other organs.

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Absorption from the Vagina

G D ROBINSON (*Journ Obstet and Gynaecol of the British Empire*, Autumn Number, 1925, p 496) describes an investigation designed to provide experimental evidence as to whether the human vagina possesses the power of absorption. He finds definite evidence that potassium iodide and sodium salicylate are rapidly absorbed and are found in the urine one hour after being placed in the vagina. Quinine, cane sugar, and phenol red were similarly absorbed from the vagina and excreted by the kidneys, though the process was less rapid. In the case of glucose it seemed probable that absorption occurred, but that oxidation was so rapid that its detection was rendered impossible. Methylene blue was apparently not absorbed, or only in very small quantities. Clinical evidence of the absorption of quinine was also obtained.

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Corrosive Sublimate Poisoning by the Vagina

C HOLTERMANN (*Zentralbl f Gynaekol*, September 19th 1925, p 2133) has found records of ten cases of poisoning by corrosive sublimate introduced in tablet form into the vagina. Amounts varying from 0.25 to 3 grams, inserted as anteconceptional, antisyphilitic, or abortifacient measures, or in one case accidentally, proved lethal (in from one to three weeks) in seven of these cases. Local necroses and ulcers were invariably present, especially in the posterior vaginal wall, in two cases they were so extensive as to lead respectively to vaginal colic fistula and to sloughing of the uterus. The symptoms of mercurial poisoning from the vagina do not differ from those of poisoning from the stomach or uterus or from intravenous injection, they consist chiefly of nephritis, stomatitis, and haemorrhagic colitis, with terminal uræmia. Since the poisoning is due to absorption of mercuric albuminate from the necrotic patches, immediate removal from the vagina of any remains of the tablets is of great importance, apart from local clearings of the mouth and vagina, treatment is in general expectant, although intravenous injections of grape sugar solution have been recently recommended. In a case described by Holtermann half of a 1 gram tablet was inserted in the morning, and tenesmus, diarrhoea, and melæna occurred the same night. Albumin was found in the urine on the second day, stomatitis and gingivitis were noted on the sixth day, and the patient, who had herself douched the vagina with salt solution at the appearance of the first symptoms, had completely recovered in three weeks.

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Intraperitoneal Haemorrhages of the Non pregnant Uterus

A SOLMARU (*La Gynecologie*, September, 1925, p 509) states that it is now admitted that apart from ectopic pregnancy, there are other intraperitoneal haemorrhages of genital origin that occur in women. These haemorrhages can flood the peritoneal cavity or form ante or post uterine haematoceles. The pathological conditions of the uterus which produce them may be congenital, traumatic neoplastic simple, inflammatory (acute or chronic), or specific inflammatory such as those of syphilis and tuberculosis. The commonest cause of tubal haemorrhage simulating extrauterine pregnancy is, according to Solmaru, ordinary chronic inflammation constituting a haemorrhagic pyelitis. Rupture of the tubes results in intraperitoneal haemorrhage which may flood the peritoneal cavity, but much more often, indeed nearly always, collects in the form of a haematocele. The differential diagnosis from ectopic pregnancy is impossible clinically; it can only be made by a thorough microscopical examination of all the uterine and ovarian elements, and also of the clots and membranes, with multiple sections, to exclude the presence of foetal and placental fragments.

Pathology.

368 Action of Radium Emanation on Tetanus Toxin

R FERROUX and S MUTERMILCH (*C R Soc de Biologie*, August 14th, 1925, p 608), exposed tetanus toxin to the various emanations from radium, and estimated the dose of each of these that was necessary to destroy its toxicity. The particular toxin used was one containing 10,000 minimal lethal doses for a mouse of 15 to 20 grams. The toxin was submitted to the action of the rays, then diluted a thousand times, and 1 cc of this dilution—that is, 10 M L D—was injected into one of the hind feet of a mouse. A control mouse was injected with the same dilution of a non irradiated toxin. Having determined that the toxin could be destroyed by radium, they examined the action of each of the different emanations—alpha, beta, and gamma. The total amount of radiated energy was measured by the quantity of emanation destroyed during its action on the toxin, and was expressed in millicuries or in microcuries. First the action of the beta and gamma rays together was studied. It was found that to alter the toxin so that a 1 in 1,000 dilution was no longer fatal to a mouse 0.9 millicurie was required for an exposure of twenty four hours, or 0.6 to 0.7 millicurie for an exposure of forty eight hours. The gamma rays acting alone were successful in a dose of 9 millicuries after forty eight hours. The alpha rays acting practically alone were successful in a dose of 15 microcuries after forty eight hours. Further work showed that the longer the time during which it was allowed to act the less was the dose of emanation required. The greater the concentration of the toxin, the greater was the amount of emanation required. Thus to destroy the toxin at 1 in 1,000 required 0.9 millicurie when beta and gamma rays were acting together, to destroy the toxin at 1 in 500 more than 1 millicurie was required, and for the more attenuation of the pure toxin 9 millicuries were required. In another paper in the same issue (p 611) S Mutermilch and R Ferroux state that they found it impossible to destroy the toxic group without simultaneously destroying the antigenic group of tetanus toxin. Radium would therefore seem to differ from the majority of physical and chemical agents, which usually act first by destroying the toxic group and leaving the antigenic group intact.

339 Experimental Achylia

K GLAESSNER (*Klin Woch*, August 20th, 1925, p 1635) states that the diminished secretion of acid and ferments in the stomach associated with an acute febrile disease has long been known, as is shown by Beaumont's observations on the stomach of Alexis St Martin in 1835. The question arises whether the diminution of gastric secretion is due to fever or to toxic causes. Clinical experience shows that gastric secretion may be unaffected in spite of the presence of high fever, as in many cases of malaria, septicaemia, and typhoid fever, while, on the other hand, no febrile morbid processes, such as chronic nephritis, may reduce gastric secretion. Glaessner has recently carried out a number of experiments to determine whether it is possible to influence gastric secretion by intravenous injections of bacterial toxins such as typhoid vaccine, gonococcal vaccine and tuberculin or by chemical agents such as nuclein, phlogetan, and vaccineum. He found that fever alone did not produce any definite change in gastric secretion, as was shown by injection of nuclein, vaccineum, and phlogetan. Gonococcal vaccine produced a slight effect, although no fever occurred. On the other hand, typhoid vaccine and tuberculin were extremely active, the effect lasting in the case of tuberculin for weeks, and in the case of typhoid vaccine soon diminishing.

370 Endocrinology of the Corpus Luteum

G SCHICKELE (*Gynecol et Obstet*, August, 1925, p 97) finds that before puberty and during pregnancy the Graafian follicles remain underdeveloped, but nevertheless control calcium and carbohydrate metabolism. The changes of puberty are set up when the internal secretion of the ovary is established. This is attributed to the elements of the growing follicle, as are the phenomena of rut in animals. In the rabbit it has been found that the early stages of pregnancy cannot go on in the absence of the corpus luteum. Schickele does not, however, consider it probable that the retrogressive changes following non conception in the lower animals or menstruation in primates depend upon the later evolution of the corpus luteum, although coinciding with it. The thecal glands also attain their maximum size during pregnancy, and shrink in the non gravid female and it is possible, the author thinks that these and other follicular elements may act by interplay. He maintains that Intermittent opotherapy is working in the dark, because the active principle of the corpus luteum remains unisolated.

774 F

371 The Serum Flocculation Reaction after Hydrotherapy

Z GORECKI and P DEMANT (*Polsha gazeta lekarska*, September 27th, 1925, p 831) have investigated the flocculation of the blood serum in 38 cases of different diseases, before and after the patients had been submitted to such therapeutic measures as cupping, enemas, and baths. They found that none of these treatments caused flocculation of the serum in patients whose colloidal balance had been stable previously. They report that this balance, however, may be easily disturbed by such treatments in cases where this disturbance is known to have occurred previously, the equilibrium being restored in mild cases, while in serious ones the disturbance will be increased.

372 The Serological Specificity of Pneumococci

In a previous paper Avery and Heidelberger showed that in the cellular substance of the pneumococci there were two bodies present—one a carbohydrate and the other a protein, both being intimately concerned with the serological specificity of the organism. O T AVERY and H J MORGA (*Journ Exper Med*, September, 1925, p 347) now report further work on these bodies. They show that from pneumococci of Types 1, 2, and 3, three different polysaccharides can be isolated, each chemically distinct and serologically type-specific. These non protein substances, though they react in very high dilution with serums prepared from whole pneumococci, are quite unable to give rise to antibodies on injection into animals. Besides the polysaccharides, it is also possible to extract a nucleic protein. This substance, when injected into animals, gives rise to a serum which contains neither type specific agglutinins nor precipitins. In fact, it fails to react either with the extracted polysaccharide or with whole pneumococci. But when added to nucleic protein extracted from either of the three types, or from type 4, it forms a precipitate. In a subsequent paper O T AVERY and J M NEILL (*ibid*, p 355) state that they have found that a serum containing agglutinins for the homologous type and precipitins for the type specific carbohydrate can only be prepared by the injection of whole cocci. If the organisms are broken up in any way so that the protein is devoid of formed elements, and then injected into animals, the resulting serum is devoid of type specific antibodies, it contains merely a non specific protein precipitin. It is concluded that in the whole cell the specific carbohydrate substance must be joined in some way with another body which confers antigenic properties upon it. With rupture of the cell this linkage is broken, so that the free carbohydrate fraction, though still retaining its property of reacting with type antibody, is itself no longer capable of initiating the formation of this same antibody.

373 The Function of the Great Omentum and Peritoneum

W GORDSCHMIDT and W SCHLOSS (*Monatsh Klin Woch*, September 10th, 1925, p 1006), having observed that in laparotomies a fluid in young persons a clear fluid frequently appears in the omentum in the course of the operation, examined twenty healthy dogs for the presence of this phenomenon, thirteen were puppies and seven adult animals. All the puppies, on some of which laparotomy was performed several times, showed a secretion of omental and peritoneal fluid, while none of the seven adult animals yielded any appreciable amount of omental or peritoneal fluid, although some underwent repeated laparotomies. The fluid obtained was tested for its bactericidal and phagocytic properties as well as for its digestive action on gelatin, smears were also made of the surface of the omentum for cytological examination. The results were as follows: (1) While the omental fluid possessed hardly any bactericidal power, the peritoneal fluid had a distinctly bactericidal action, though it might not be developed until after the third laparotomy. All the cases in which the peritoneal fluid showed a bactericidal action after the third laparotomy were in dogs which at this stage did not have any omental secretion. (2) After the first laparotomy, and still more after the second, the omental fluid showed an active phagocytic action, which was also present, though in a less degree, in the peritoneal fluid. After the third laparotomy the phagocytic action of the omentum began to decline, while that of the peritoneum increased. (3) The digestive action of the omental fluid reached its height after the second laparotomy, whereas the peritoneal fluid did not appear to possess any digestive power. (4) A smear of the omentum directly after it had been exposed showed firm threads almost exclusively some time later polymorphonuclear leucocytes appeared and a few large lymphocytes with pale protoplasm and a deeply staining rounded nucleus. Subsequently the polymorphonuclear leucocytes disappeared. It is stated that the significance of these findings will be discussed in a subsequent paper.

Medicine.

374 Acute Polymyositis with Polyarthritides

II SAETHRE (*Norsk Mag f Laegevid*, September, 1925, p 966) records a case, in a girl aged 16, of Heine Medin's disease in which the usual type of peripheral motor paralysis was combined with joint affections and severe and persistent spontaneous pain in the limbs. The patient was admitted to hospital five weeks after the sudden onset of complete paralysis of the lower limbs and marked paresis of the right hand, especially affecting the thumb. During the first week of the disease there had been moderate fever. On admission to hospital there was complete paralysis of both lower limbs apart from very slight flexion of the fourth and fifth toes of the right foot, with hypotonus, reaction of degeneration in the muscles, and loss of the tendon and cutaneous reflexes. There was weakness of the lower abdominal muscles and right triceps and pronounced paresis of the right hand with marked atrophy of the intrinsic muscles. There was no affection of the cranial nerves apart from very slight horizontal nystagmus. Superficial sensation was quite normal. There was excessive hyperaesthesia on deep pressure on the paralysed muscles. There was marked stiffness of the neck and upper part of the dorsal vertebral column with tenderness of the spine. There was no paresis of the cervical or dorsal muscles. The right elbow and right hip joint were swollen, and passive movements were very painful and limited to a few degrees. The proximal joint of the right thumb could not be moved passively, and the joint line was very tender on palpation. Both shoulder joints and the right knee were slightly affected. The patient complained of spontaneous pain of a continuous boring character in the right thigh and leg. The Wassermann reaction was negative in the blood and cerebrospinal fluid. Under salicyl medication the joint affections gradually improved and disappeared in nine to ten weeks after the onset, but the spontaneous pain lasted for seven months and often needed narcotics. The motor paralysis showed no improvement. Saethre regards the unusual symptoms as attributable to a meningeal affection and the joint manifestations as of haematogenous origin and due to the virus of poliomyelitis. The possibility of a spinal form of epidemic encephalitis had also to be considered.

375 Diagnosis of Lead Poisoning

F. HEIN DE BALSAC, E. AGASSE LATONT, and A. FEIL (*Presse Méd*, September 19th, 1925, p 1249), in view of the importance of accurate and early diagnosis of lead poisoning, especially in cases of "latent plumbism," when local symptoms are present but the patient's general health is as yet unaffected, discuss the three classic signs of plumbism: the "blue line" at the margin of the gums, haemophilia, and the presence of lead in the urine. In a previous report by two of the present authors (*Epitome*, August 4th 1923, part 90) the value of the blue line was stressed, but the authors now state that it is generally considered to be an uncertain sign, while the detection of basophil erythrocytes and of lead in the urine requires special apparatus and technical skill. Teleky stated in 1923 that weakness of the extensors of the fingers and wrists was an early and reliable sign of plumbism, especially when the weakness was unilateral. The present authors find, however, that there are many factors, such as osteoarthritis and prolonged heavy manual labour, which may vitiate the results, and that "Teleky's sign" is unreliable. This sign was absent in 58 per cent of patients with a blue line and in 27 per cent of those who had lead colic. They conclude, therefore, that the most valuable sign of lead poisoning is the presence of haemophilia, and they recommend periodical systematic examination of the blood of all workers in lead.

376 Malaria in Italy

A. LUSTIG (*Rev Sud Amer de Endocrin*, etc, August 15th, 1925, p 503) states that 12 per cent of the population of Italy (37,276,378 in 1923) are resident in malarial zones, and are therefore exposed to infection. A study of the mortality shows that 490 per million died of malaria in 1909, before the legislation relating to quinine (1900-1) while the subsequent mortality declined until it reached 57 per million in 1914. During the war period, and especially during the outbreak of influenza, there was a recrudescence, the mortality being 237 and 325 per million in 1917 and 1918 respectively. On the cessation of abnormal conditions the death rate fell to 78 per

million in 1923. The malarial mortality is not uniform throughout Italy, but two distinct districts may be distinguished in this respect—namely, one in the north and centre, where the disease is mild, and the other in the south and islands, where it is severe. The region most severely affected is Sardinia, where the campaign against malaria has been less successful than elsewhere. The incidence of the disease is best shown in the army and staff of the State railways, where prophylactic measures are carefully carried out and accurate statistics are most likely to be obtained. In the army the number of cases fell from 41.93 per cent in 1900 to 3.77 per cent in 1914, and the number of primary cases was reduced from 36.25 to 2.79 per cent during the same period. In the State railways staff improvement was shown by a fall from 24.65 per cent in 1906 to 6.03 per cent in 1914, the incidence of the primary cases falling from 6.47 to 0.38 per cent during the same period. The decline of malaria in Italy may be attributed to various factors, especially to drainage of swamps, social welfare schemes, economic improvement in the rural population, and appropriate legislation. In this connexion the following statistics are of interest. The consumption of quinine has increased from 188 g per 1,000 inhabitants in 1903-4 to 632 g in 1922-23. The subsidies voted have increased from 90,210 l in 1905-6 to 2,751,000 in 1923, and the amount spent on drainage at the beginning of 1920 has risen to 500 million lire.

377 Syphilis diagnosed as Tuberculosis

E. LIEK (*Klin Woch*, September 24th, 1925, p 1872) believes some of the successes of modern tuberculous therapy, in which iodine often figures largely, to be due to the fact that some of the patients are suffering from syphilis, and recalls Calot's finding at Betch sur Mer that out of 347 children sent in as cases of bone or joint tuberculosis, 68 had only congenital syphilis. Liek gives illustrative instances from his own practice. A girl, aged 19, was about to have enlarged cervical glands removed in the belief that they were tuberculous. A preliminary trial of x-rays caused a peculiar rash to come out in the neighbourhood of the treated area, thus arousing suspicion. Examination revealed a primary sore on the labium majus, and eight days later a secondary rash appeared over the body. Another patient, a man with a negative Wassermann reaction, had antituberculous treatment for years from a dermatologist for a rash on the face which was later cured by salvarsan. Liek adds that measures to improve the general health deserve more attention in the treatment of syphilis.

Surgery.

378 The Sequels of Gastro enterostomy

D. C. BALFOUR (*Annals of Surgery*, September, 1925, p 421) reminds us that of all operations for benign lesions of the stomach or duodenum gastro enterostomy has the widest range of usefulness. The results, however, are not perfect, and in certain cases a secondary operation, which usually includes the uncoupling of the anastomosis, may be required. Balfour reviews the result in 343 cases where this became necessary. In 131 cases the gastro enterostomy appeared to have been unnecessary in view of the return of the symptoms for which it was performed, the effect of the operation, and evidence that some extragastric condition was responsible for the symptoms. In 212 cases the primary operation appeared to be really indicated, the results were unsatisfactory owing to an imperfect anastomosis, an overlooked intra-abdominal disease, or a recurring ulcer. The most important cause of failure was the recurring or jejunal ulcer, which occurred in 5 per cent of the cases. Balfour states that where medical treatment fails to relieve the symptoms a secondary operation is advisable. Stomatal ulcer is characterized by the severe pain after food its localization on the left side and lower than the usual ulcer pain. When a secondary operation becomes necessary the anastomosis may be disconnected alone or combined with a pyloroplasty or gastro duodenostomy. Sometimes a partial gastrectomy may be best. To disconnect the anastomosis the incision is freed from the anastomosis from behind forwards by finger dissection. The stomach and intestine are then clamped and the anastomosis cut through with scissors. The jejunal opening is closed transversely with the stomach sutured, and the opening in the mesocolon closed.

favourable effect, whereas others, such as Freund, Hennig, Benice, Croom, Roberts, Hutchinson, Raymond, Sérénus, and Strümpell, have observed the first appearance or aggravation of Graves's disease during pregnancy. Of 98 cases of Graves's disease associated with pregnancy collected by Nowak and Seitz 60 per cent showed an aggravation of their condition due to pregnancy, and 40 per cent no change or a slight improvement. Zondek not infrequently saw aggravation of the symptoms follow abortion, and Kocher also regards induction of abortion as injurious in Graves's disease. All writers, however, are agreed that the symptoms may become so much aggravated by pregnancy that induction of abortion becomes imperative. Both Jülich's patients were examples of this kind. Considerable improvement, both in the symptoms and signs, followed the induction of abortion.

392 Septic Infection after Chl birth

I W BELUGIN (*Russkaya Klinika*, May, 1925, p 627) finds as the result of *post mortem* examinations that peritonitis is more frequent when abortion occurs in advanced pregnancy and in premature births than in early abortion and in full term births. Only very rarely did the infection spread by direct dissemination in the blood or into the peritoneal cavity without any localized infection. Parametritis, and especially salpingitis, were found to be complicated more often by peritonitis than by generalized sepsis. In almost half the fatal cases the infection spread into the peritoneal cavity, the commonest route being that of the Fallopian tubes, and next in frequency that of the lymphatic channels both of the uterus and parametrium. Simple peritonitis was found relatively seldom (14 per cent), usually it was accompanied by general sepsis, which was of the type of septicaemia rather than of pyaemia.

393 The Diagnosis of Syphilitic Stillbirth

J T TAYLOR and J FOREST SMITH (*Journ Obstet and Gynaecol of the British Empire*, Autumn No. 1, 1925, p 474), while agreeing that the discovery of the *Spirochaeta pallida* in the foetal tissues remains the only direct evidence of syphilis as the cause of stillbirth, point out, however, as the result of comparing definite syphilitic cases of stillbirth with non syphilitic cases, that certain signs are of great value in diagnosis. They find that syphilis is indicated by enlargement of the spleen, a splenic weight of over 0.45 per cent of the body weight being indicative of syphilis. The presence of chondro epiphysitis is also suggestive, as is a positive Wassermann reaction in the mother, especially if this persists some weeks after the puerperium. The authors state that a negative maternal Wassermann reaction does not exclude syphilis of the foetus. In the absence of maceration of the foetus, and if full term is reached, syphilis is contra-indicated. They add that no diagnostic evidence could be obtained from the length and weight of the foetus or the relative weights of the liver, kidneys, and placenta.

Pathology.

394 Influenzal Meningitis

DURING the course of about one year V SCHNIDER (*Ann de l'Inst Pasteur*, September, 1925, p 769) has examined seven cases of influenzal meningitis occurring in children aged from 9 months to 4 years. All but the oldest patient died. A study of the morphology of the bacilli isolated from the brain, the meninges, the throat, and from other situations, showed extreme variability, but as this variability was a feature of all the strains it was not possible to use it as a basis for classification. A similar variation in their virulence was also discovered. Some strains when injected intraperitoneally into young guinea pigs of 120 to 180 grams proved fatal in a dose of one third of a blood agar culture, others failed to kill in a dose of less than two to three cultures. Death occurred generally in from twelve to twenty-four hours. From the character of the lesions found at *post mortem* examination—a sero-purulent exudate into the peritoneum, congestion of the suprarenals, haemorrhagic foci in the lungs, small haemorrhages into the brain, and absence of splenic enlargement—it would appear that death was due rather to intoxication than to a true infection. Nevertheless cultures of the abdominal viscera, of the blood, and of the brain were positive. The lethal dose of the bacilli killed by heat or by ether was two to three times that of the living bacilli, but the lesions produced were identical. Rabbits were found to be susceptible to subdural injection into the cranial cavity. The strains recovered from the meninges showed no greater virulence than those from the respiratory passages. Complement fixation was unsatisfactory owing to the anti-complementary property of the bacilli. By agglutination it was found that the strains behaved with irregularity, some

agglutinating to titre, others to half titre, and others not at all, with the same serum. No constant difference was found between the respiratory and meningeal strains.

395 Growth and Persistence of Filterable Viruses

T M RIVERS and LOUISE PEARCE (*Journ Exper Med*, October, 1925, p 523), while attempting to produce chicken pox in rabbits, discovered a filterable transmissible pathogenic agent, which they named Virus 111. Injected intratesticularly into rabbits it caused lesions in the cornea, skin, and testicles, and led to the development of an immunity against subsequent infection with the same material. Though first regarded as bearing an etiological relationship to varicella, it was later found to be indigenous to rabbits. The interest of this virus lies in its close connexion with an epithelial tumour of rabbits which the authors have been studying. This tumour, when inoculated into the testicle, gave rise to a large primary lesion, followed in about 60 per cent of cases by metastases and in 20 to 40 per cent by death. It has been propagated at monthly intervals through a series of at least ten rabbits at a time, these rabbits are known as "stock tumour rabbits". The observation was made that these animals were immune to injection with Virus 111, and on further inquiry it became evident that the tumour was actually infected with the virus. Despite the immunity of the rabbits the virus multiplied in the tumour and survived for at least eight weeks. If, however, the virus was inoculated into a normal rabbit it apparently died out in less than a month. The inference is that the virus is able to multiply more easily in the tumour cells than in the cells of a normal rabbit. Whether the virus is essential for the propagation of the tumour is obviously a question of the first importance. The evidence so far acquired seems to the authors to be against this possibility, for a tumour has been obtained that is apparently free from the virus. Similar findings are reported on the ability of the vaccine virus to grow in this rabbit tumour. In a normal rabbit the virus lives for at most five weeks, in a stock tumour rabbit it can live for at least nine weeks. Summing up, it may be said that Virus 111 and the vaccine virus multiply in a transplantable rabbit tumour, that they are carried along with the tumour through an indefinite series of transplants, and that they survive longer in the tumour than in the testicles of normal rabbits.

396 The Glucose Content of Normal Urine

G S LUND and C G L WOLF (*Biochem Journ*, No 4, 1925, p 538) find themselves in agreement with Greenwald and his co-workers and Host that glucose is not present in normal urine, and thus are opposed to the views of Benedict and Osterberg. Lund and Wolf believe that the manometric method furnishes at present the most sensitive and selective means for detecting the presence of glucose in the urine, the reaction depending on the fermentation of glucose by yeast with the production of carbon dioxide. They used the larger differential manometer of Barcroft with mechanical shaking. In over a dozen samples of normal urine a positive pressure in the manometer was never obtained, though the addition to normal urines of a quantity of glucose equivalent to a concentration of 0.05 per cent showed a rise of 30 mm in the manometer after the addition of yeast. In another case, where glucose was excreted by the kidneys in such small amount that it could scarcely be detected by Benedict's reagent, a rise in the manometer of 131 mm was obtained.

397 Nitrogen Metabolism in Cancer

LABBE and MOUZAFFER (*Rev de Med*, No 5, 1925, p 321), in a short summary of the literature relating to the excretion of amino acids in cancerous subjects, note that most of the investigators found the excretion to be raised. The present authors have estimated the urinary content of ammonia and amino acids in 31 patients, 20 of whom had carcinoma of the alimentary tract, 3 of the liver, and 8 had other cancers. The outstanding feature of these comparative analyses was that the nitrogen totals were much higher in the case of the liver growths than in the others, whereas the amino aciduria was very little raised above the normal, though not enough so, the authors think, to fulfil the hopes of previous workers that this estimation might have some diagnostic value in suspected cancer. But the high totals, in hepatic metastases, of products indicating incompletely metabolized nitrogen, seem to them to point to functional derangement of the liver. To confirm this possibility they tested the hepatic insufficiency by estimating the degree of urobilinuria and diacetic acid. The results of this test were positive in the hepatic cancer subjects, and negative in the other cancer cases, with a few isolated exceptions, such as a high figure favouring hepatic insufficiency being found in a woman with uterine cancer. The conclusion reached is that amino aciduria points to functional liver disturbance, not to cancer.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine.

333 Pseudo Hermaphroditism

R V LOPEZ and J G SÁNCHEZ LUCAS (*Arch de med, cir y esp*, September 19th, 1925, p 529) state that while there are not more than six or eight cases of true hermaphroditism on record in which the presence of both sexual glands has been proved by histological examination, numerous examples have been reported of pseudo hermaphroditism—that is to say, individuals with the external genitals of one sex and the internal genitals of the other. According to Pozzi, pseudo hermaphroditism may be divided into two groups—namely, androgyneids, or women who appear to be men, and gynandroids, or men who appear to be women. The latter, of which the present authors' cases are examples, are the more numerous. They state that, as might be supposed, the genital glands of pseudo hermaphroditism are always in an atrophic state. Their three patients appeared to be women and sought advice for a supposed inguinal hernia. The first patient, who was aged 34, had well developed mammary glands, normal distribution of adipose tissue, and absence of hair on the face. The only unusual feature was the absence of hair on the external genitals. The supposed hernia was a swelling in the right groin the size of a small orange, and situated immediately beneath the skin. The vagina was only 4.5 cm long ending in a cul de sac without any uterine, the labia majora and clitoris were normal. In the second patient, aged 22 years, a testicle was found with a round ligament. No further examination of the genital organs was made. The third patient was a married woman, aged 28, with feeble mammary development. There was no uterus and the vagina was of ordinary size, doubtless owing to sexual congress. An operation was performed for double inguinal hernia and two testes were found. The specimens in the three cases were similar. The testis in each case was surrounded by a fibrous capsule, and on section presented the appearance of the normal organ. On microscopical examination a great abundance of interstitial cells was found, especially in the first two cases.

339 Sequels of Endemic Goitre

F A COLLIER (*Boston Med and Surg Journ*, September 17th, 1925, p 545) thinks that the importance of the cardiac damage in endemic goitre has been insufficiently appreciated. He finds that definite cardio-vascular damage appears in at least 25 per cent of patients with hyperthyroidism and in a smaller, but appreciable, percentage of those with normal metabolic rates. Hyperthyroidism caused by endemic goitre was found to increase in frequency in the age periods from the latter part of the third decade to the fifth and sixth, when at least a third of the cases showed it. Collier considers endemic goitre a precancerous lesion, with a malignancy incidence of at least 3 per cent. It causes many minor mental changes, and in patients with a psychopathic inheritance may give rise to mental abnormality. He reports that the goitre contains colloid and adenomatous elements the former predominating in early life the latter after the age of 25. He states that these changes are progressive and constant and will give rise to symptoms within measurable times. He therefore concludes that the removal of adenomatous goitres should be recommended in individuals over the age of 25.

400 The Epidemiological Importance of Diphtheria Carriers

J A DOULL and H LARA (*Amer Journ Hyg*, July, 1925, p 508), in a study of 758 clinical cases of diphtheria in Baltimore, found that of 2,799 family contacts who did not receive prophylactic injection of antitoxin, 59, or 2.1 per cent, contracted the disease later than one and not later than thirty days after the onset of the primary case. On the other hand, in 4,665 family contacts of 1,044 child carriers of diphtheria, only 14 cases were reported within thirty days of the discovery of the carrier. After making necessary allowances for differences in age distribution of the two groups of contacts, the authors estimated that the risk of attack was ten times as great for contacts of clinical cases as for those in similar association with known bacterial carriers. Comparison of the attack rates in families of carriers with the prevailing attack rates in the general public of the city indicated that during the first month after discovery of the carrier the attack rate in the family contacts was considerably higher

than would be expected in a random sample of the city's population of the same age distribution, whereas in subsequent months no such excess was indicated. The authors conclude that the families of known bacillus carriers incurred a risk of developing clinical diphtheria which, though small, was appreciably higher than that incurred by otherwise comparable families in which such carriers were not known to exist.

401 Diabetes Insipidus and Simple Polydipsia

R BAUER (*Wien Arch f innere Med*, September 25th, 1925, p 201) concludes, after investigation of the urine and blood concentration and thirst tests, and also by excluding hysteria, that at present there is no definite means of diagnosis between these two affections. "Cerebral" diabetes insipidus is caused by derangement of the hypophysis system which regulates diuresis, metabolism, and concentration of blood and of urine. The site and character of the derangement dictate the nature of the change produced, which is why cases of diabetes insipidus are so variable. Some of the cases called idiopathic diabetes insipidus are really nervous or hysterical polydipsia, others might preferably be called cerebral, because of the frequency with which a history of head injury is present. No lesion may be demonstrated, but that of itself does not exclude a minute trauma of the brain. This variable nature of diabetes insipidus increases the difficulty of diagnosis and unless and until one succeeds in curing a patient by the only means hitherto effective—namely, suggestion—the case must retain the unsatisfactory label of idiopathic diabetes insipidus.

402 Relapses in Measles

I H GOLDBERGER (*Amer Journ Dis Child*, July, 1925, p 55), believes that relapses in measles undoubtedly occur, though rarely. He maintains that the appearance of only one symptom, such as the rash, does not warrant a diagnosis of measles, but considers the reappearance of Koplik's spots definitely diagnostic. He reports three cases in which the relapses were as severe and lasting as the original attacks. The relapse followed the original onset after intervals of twenty five, eighteen, and seventeen days, which intervals Goldberger considers too sufficiently short to entitle the cases to be considered relapses rather than second attacks, thus disagreeing with Vergely (*Epitome*, August 15th, 1925, para 94).

Surgery.

403 Gangrene of the Transverse Colon

A DZIŁOSZYŃSKI (*Zentralbl f Chir*, September 19th, 1925, p 2121) states that gangrene of the transverse colon, first described by Laennec in 1832, has occurred after various abdominal plastic operations, such as gastro-jejunostomy and removal of succum of the head of the pancreas. Necrosis of the colon may follow ligation of the middle colic artery or of any of its principal branches, even when skillfully performed, it may be a sequel of operations for malignant disease involving the greater curvature of the stomach or the pylorus, or of large resections of the mesocolon without ligation of its blood supply. Dziłoszyński reports the case of a woman, aged 23 whose mother had died from pulmonary tuberculosis, and whose sister was then suffering from the same disease. In September, 1922, the patient had duodenal ulcer, for which an antecolic gastro-entostomy was performed. She made an untroubled recovery and was discharged on the twenty-fifth day. A year later she was admitted for peptic jejunal ulcer. This was resected and Kieulcin-Vidulich's gastro-jejunostomy and Braun's entero-anastomosis were performed. An abscess of the abdominal wall occurred after the operation, and the patient was discharged three months later with a small persistent fistula above the umbilicus for which she was readmitted six months later. In June 1924 the fistula was explored the infiltrated abdominal wall was adherent to two inflammatory swellings of the mesocolon each as large as pullet's eggs, within which old ligatures were found. The middle colic artery was carefully isolated and preserved, and the two omental swellings were excised between double ligatures. The artery was pulsating when the wound was closed. For a few days the patient's evening temperature rose to 100–102. Then necrosis of more than three inches of the transverse colon occurred and a large faecal abscess was opened. After three months treatment it was possible to

make a side to side anastomosis between the ileum and descending colon. The result was very satisfactory, and four days later faeces were passed per anum. Two months afterwards is the final operation for closure of two colic fecal fistulae was performed, and the patient made a good recovery. The author thinks that the case is of interest on account of the number of operations performed, the occurrence of necrosis although the middle colic artery was not ligatured, and also because no other case of recovery after such gangrene appears to have been recorded.

404 Hallux Valgus

E. PAYR (*Centralbl f Chir*, October 10th, 1925, pp 2289 and 2292) considers that hallux valgus is due to constitutional causes and that badly fitting boots are of only secondary etiological importance. He states that the majority of these patients, though asthenic, are heavily built and often obese, and that this constitutional debility induces the flat foot which is so often associated with hallux valgus. When the plantar arches begin to give way the whole skeletal structure of the foot is thrown out of alignment, the ligaments, subjected to abnormal stresses, become stretched and partially atrophied, and hallux valgus gradually develops. Secondary osteitis of the head of the first metatarsal, often increased by the pressure of a chronic infective bursitis, occurs and produces irregular bony thickening. This causes stretching of the internal lateral ligament of the metatarsophalangeal joint and displacement of the extensor tendons. Payr recommends a free exposure of the capsular ligament by a vertical incision over the extensor tendons, their sheaths are opened and the tendons are drawn inwards by a retractor. A large flap of the capsular ligament is reflected to expose the head of the first metatarsal and the base of the proximal phalanx. The lateral ligaments are resected and any cystosides or bony irregularities, as well as the pathological bursa, are removed. The capsular and skin incisions are then sutured, the great toe is forcibly adducted, and the wound is dressed, a tongue depressor serving as a splint for the great toe. The dressing is removed after forty eight hours, on the eighth day massage is started with warm water or hot air baths, and the patient begins to walk on the tenth day.

405 Duodenal Feeding in the Treatment of Gastric Ulcer

G. RAFFAELLO (*Rif Med*, September 7th, 1925, p 841) reports a case of gastric ulcer in a man, aged 34, successfully treated by duodenal feeding. The man suffered from "burning" gastric pain, blood was present in the gastric content, and there were clinical signs of partial pyloric stenosis. After a diet of partial pyloric stenosis with a dietetic and medical treatment he had a duodenal sound on a diet calculated to give 2,000 calories a day, this amount was arrived at by estimating the ratio of the weight to the skin area and reckoning the daily caloric loss per kilogram of weight and square decimetre of surface. The patient, weighing 70 kg, was given every day a meal of milk, bread, and egg, totalling 70.58 grams, and on the balance of gain and loss it was found he was 0.45 gram to the good. The meal was divided into three parts and given very slowly, the patient being kept in the right lateral decubitus so as to avoid regurgitation into the stomach. He was also given 10 grams of histamin substrate. From the outset the results were satisfactory, and at the end of a month the patient was taking food naturally without any discomfort and his general condition greatly improved. Frequent examination of the stomach contents never indicated an acidity greater than 1.37 per 1,000.

406 Functional Capacity of the Sutured Heart

E. HERSH (*Russkaya Akhika*, May, 1925, p 750) reviews 48 cases of heart sutures after wounding, in the light of permanent results and with regard to their functional capacity. The patients were operated upon in the Obshchov Hospital in Leningrad in the years 1903 to 1921, of the 48 cases 15 (31.25 per cent) recovered, while 33 died. The author also includes in his investigations 107 continuously observed cases in the literature. He states that suture of cardiac wounds yields 77 per cent excellent results, 22 per cent relatively good and only 1 per cent failures. Re-examinations with a view to working capacity showed that 79.3 per cent regained full capacity. The general health was found good in 89 per cent of the re-examined cases. He adds that wounds of the arteries produced hardly worse permanent effects than those of the ventricles, while ligation of the peripheral and descending branch of the coronary arteries had no injurious results upon the function of the heart. In the first few days after the suture had been performed there appeared a dry pericarditis, which with mediastino-pericarditis were the most frequent post-operative sequelae. Lost operative costal fistulae were found to be very chronic.

Therapeutics

407

Treatment of Coli Bacilluria

E. TANT (*Brussels Medical*, September 27th, 1925, p 1441) emphasizes the point that all patients who suffer from *B. coli* infection of the urinary tract have chronic constipation, which requires to be dealt with as part of the treatment. Roux has shown that the caecum and ascending colon are most important foci of infection, whereas stasis from the splenic flexure downwards is less serious on account of the desiccation of the faeces and the destruction of intestinal flora in these regions. The absorption of *B. coli* is particularly rapid during attacks of diarrhoea, this indicates the danger of treatment by violent purgation, which irritates the intestinal mucosa and opens the doors for the passage of *B. coli*. Bar and Vidal have shown that the infection is conveyed by the blood stream. In some cases the infection remains latent, in others it may attack any part of the urinary tract from the kidney to the urethral meatus. The most thorough clinical and radiological examination of the alimentary canal is as important as that of the urinary tract, but before attributing the infection to intestinal stasis it is very necessary to determine whether there is any cause of urinary stasis—urethral stricture, prostatic hypertrophy, vesical calculi or diverticula, renal calculus or hydronephrosis. As regards details of treatment, Tant recommends that the patient's diet should be that of acute colitis—temporary deprivation of all animal albumins and substitution of a carbohydrate diet. At the same time, stasis should be relieved by mild laxatives and any eutroptosis corrected by a suitable belt. When the urinary infection is acute, urinary antiseptics and general symptomatic treatment are indicated. In the sub-acute infections the same treatment should be prescribed, combined (in cases of pyelonephritis) with injections of 3 per cent silver nitrate or 20 per cent collargol solutions. Vincent reported that vaccine therapy was not only useless, but in some cases aggravated the condition. Serum therapy is sometimes useful in chronic suppurative pyelonephritis. Hydrotherapy has been found to be a valuable adjuvant treatment in many chronic cases.

408

X-ray Treatment of Whooping cough

H. K. FAER and H. P. STRUBLE (*Journ Amer Med Assoc*, September 12th, 1925, p 815) refer to the papers by Leonard on the treatment of whooping cough by x-rays (*Epitome*, November 29th, 1924, para 424, December 20th, 1924, para 491) and report the results of a study based on equal numbers of control and test cases. A series of 44 consecutive children in the prodromal stage of whooping cough formed the material for the study, 22 being treated by x-rays and 22 by antipyrin. It was found that the disease ran its average longer course in the irradiated series than in the controls. The authors conclude that x-ray treatment is without true beneficial effect upon whooping cough, and ascribe the occasional temporary exacerbations or inhibitions of attacks following x-ray treatment to psychic disturbance. Effects of greater extent or duration such as have been previously claimed for x-ray treatment are most probably apparent rather than real, and represent normal fluctuations in a highly variable disease.

409

Prophylactic Vaccination against Measles

P. ANNECCHINO (*La Pediatria*, September 15th, 1925, p 1005) reports a successful attempt to prevent the spread of measles. After a case of measles had appeared in an orphanage the author injected 41 children on three alternate days with 2 c.c. of a standardized vaccine prepared from the organisms recovered by Caronia. Eight children who had previously had measles were not injected. None of the 41 who were treated developed measles, although they were not isolated from the child who had measles. In 2 cases a slight febrile reaction followed the injection, but in the others there was no local or general reaction.

410

Ophotherapy of Diabetes Insipidus

H. ROTHMANN (*Med. Ann.*, October 29th, 1925, p 1535) records the use of testicular extract in the treatment of two male patients suffering from diabetes insipidus, in one case pituitary seemed to increase the symptoms. Testicular extract relieved in less than a fortnight the thirst, hunger, and headache, increased the weight, and lessened the quantities of fluid intake and of urine excreted. In one case an intake of 8,500 c.c., the urine measuring 8,300 c.c., was reduced in a fortnight to 6,200 and 5,700 c.c. respectively. Three months later return of sexual potency was reported by the patient, but the headaches were rather worse. Abdeihalden's combined hormone preparation was employed to begin with, but was soon discontinued in favour of testicular extract.

311 Gentian Violet in the Treatment of Thrush

H K TABLER and L B DICKIE (*Journ Amer Med Assoc*, September 19th, 1925, p 900) advocate the local application of a 1 per cent aqueous solution of gentian violet in the treatment of thrush. They have used this remedy in a series of 15 cases in infants, the number of applications being one in 4 cases, two in 5 cases, three in 5 cases, and nine in 1 case of a feeble, premature infant, with a particularly heavy infection, who received two applications daily. Complete disappearance of visible lesions resulted and though in three instances they reappeared after a few days, yet in each case a further single application of gentian violet proved finally effective. In one case slight regurgitation of food followed treatment, but was not repeated, and may have been coincidental. The cases treated occurred in the course of a mild epidemic, and prophylactic treatment with gentian violet was given to nine uninfected infants, none of whom required thrush.

312 Barium Chloride in the Stokes Adams Syndrome

A E COHN and S A LEVINE (*Arch Intern Med*, July 15th, 1925, p 1) describe the use of barium chloride in three cases of the Stokes Adams syndrome. The amount of barium chloride given was half a grain three times a day, and the treatment was only commenced after general therapeutic measures and the administration of epinephrin had failed to ward off attacks. In each of the three cases the patient was rapidly rendered free from attacks. The authors observed also that the barium salt increased ventricular irritability and prevented the long asystole. They suggest that this success should encourage others to try barium chloride in this condition. The drug was given by the mouth.

Diseases of Children.

313 Malnutrition in Cleft Palate

J A FOOTE (*Amer Journ Dis Child*, September, 1925, p 343) points out that much of the malnutrition in infants with cleft palate is due to partial starvation. The increased effort required for sucking causes early fatigue, so that only from a third to three quarters of the normal amount of food is taken, and, as a rule, the younger the infants the less is the amount. The increased and prolonged muscular action in sucking tends to widen the cleft, and the author believes that the resulting fatigue, together with an insufficient caloric intake, explains the malnutrition commonly found in these infants. Since internal obturators are unsatisfactory in preventing air from the nose entering the mouth through the cleft, Foote, after collaborating in experiments with C Gerhart, a dental surgeon, recommends a strip of dental rubber dam, 2 by 4 in., with tapes at each end so that it can be stretched and applied over the nostrils with its lower edge over the lip and nipple. By this means air, which might enter through the nose and cleft, is effectively excluded from the mouth, the necessary air for respiration is given by lifting the upper edge over the nose between sucking contractions, while older children learn to breathe through the mouth between the suckings. Pressure tracings showed a considerable rise in negative pressure in the bottle when this contrivance was used, and clinical evidence indicated a larger fluid intake with less fatigue. The best results were obtained when bare lip was not present, or when this had been repaired, the method was found to be of little value in premature infants with weak sucking reflex, and in those old enough to resent the nasal occlusion.

314 Cerebro spinal Fever in Infants

1 MOGILNICKI (*Arch de med des enf*, August, 1925, p 476) states that among 117 cases of cerebro spinal fever admitted to a children's hospital at Lodz, Poland, from January 1st, 1922, to January 1st, 1925, 85, or 72.6 per cent, were in the first year of life, 11 in the second year, and 21 in children aged from 2 to 14. Of the 85 infants only 51 were admitted in the first week of disease, 17 in the second, and 17 at later periods. The patients were often sent in with an erroneous diagnosis of typhoid fever, pyelocystitis, or pneumonia. Other observers especially German writers, state that the incidence of cerebro spinal fever in the first year of life is much lower—namely, 17 per cent (Göppert) and 12 to 17 per cent (Kassowitz). The onset of cerebro spinal fever in infants differs considerably from that in the adult and older children, in whom it is sudden, with shivering, vomiting, headache, and rigidity of the neck and limbs. High fever is present from the first, and in most cases (60 to 70 per cent) herpes labialis. In infants, on the contrary, an onset with convulsions, high temperature, and vomiting is rare. The disease usually begins insidiously without meningeal symptoms or

herpes. Some patients show manifestations of respiratory disease, which are followed later by meningeal symptoms. Of the 85 cases treated by serum 29, or 34 per cent, made a complete recovery, in 10 it was incomplete, and 46 died—a mortality of 54 per cent. Of 51 in whom treatment was commenced in the first week 24, or 47 per cent, made a complete recovery, 22, or 43 per cent died, and 5 made an incomplete recovery. Of 17 admitted in the second week only 3 made a complete recovery, and of 17 admitted during the third, fourth, and subsequent weeks only 2, or 11.8 per cent, recovered. Mogilnicki's conclusions are as follows: (1) Cerebro spinal fever is a disease especially frequent in early infancy. (2) The symptoms in infants differ as a rule from those seen in adults, but nervous excitability and abnormal tension of the fontanelles are almost always present. (3) Lumbar puncture is required for diagnosis. (4) Polyvalent serum should be given intraspinally as soon as possible, and an attempt should then be made to identify the type of organism, when the corresponding strain should be employed. (5) When the results of intraspinal serum treatment are unsatisfactory, intraventricular administration of the serum should be attempted. If there is still no improvement vaccine treatment should be combined with serum therapy. (6) The earlier specific treatment is begun, the better are the results.

315 Vaccine Treatment of Typhoid Fever in Children

A TUDÖS (*Jahrb f Kinderheilk*, September, 1925, p 24) employed Caroma's vaccine in the treatment of 19 cases of typhoid fever in children. Although this number is not sufficiently large to justify a final conclusion to be made as to the value of this method, Tudös thinks he is warranted in publishing his results. The patients were admitted between the sixth and twelfth days of disease. The vaccine was used only in severe cases. Intramuscular injection was useless, whereas intravenous injection produced remarkable results. In some instances the patient's temperature became normal after a single injection of 0.5 c.c., and recovery appeared to follow within twenty-four hours. If the vaccine was given within the first ten days the fever subsided after a more or less marked transient rise, the toxic symptoms disappeared, appetite returned, and the general condition improved. All these results are, he thinks, in favor of regarding Caroma's vaccine as specific for typhoid fever. No dangerous symptoms were ever observed, so that the method is apparently suitable for severe cases. Various theories have been put forward to explain the action of the vaccine. The simplest explanation seems to be that the toxins introduced by a parenteral route stimulate a more intense production of antibodies.

Obstetrics and Gynaecology.

316 Treatment of Eclampsia

H M VON MEGERSHAUSEN (*South African Med Record*, September 12th, 1925, p 387) remarks that the treatment of eclampsia is chiefly concerned with the elimination of toxins and the control of the fits. Special treatment of the plegnancy itself is not advised, induction of labour and Caesarean section is not recommended owing to the mortality statistics, and the only operative procedure favoured is the use of low forceps with a fully dilated os during delivery. For the control of the fits veratrine may be effective in mild cases, but for routine use he prefers hypodermic injections of 1/4 or 1/2 grain of morphine according to the frequency of recurrence. The injections should be repeated at half-hourly intervals until the fits are controlled; he has never found it necessary to give more than 1 1/2 grains in all. In order to eliminate the toxins the stomach should be well washed out with sodium bicarbonate solution and 2 oz of castor oil with 3 minims of clove oil left in it. This should be followed by efficient colon lavage. Each lavage should occupy about three quarters of an hour, 3 gallons of soap and water being used, this should be repeated every six hours until labour is advanced. The author believes that this colon lavage is a most important part of the treatment, and adds that on these lines the mortality of eclampsia has been reduced to 22 per cent.

317 Sterility in the Female

C. H. H. WILKINSON, *Obstet and Gynaecol of the British*

tion of the test capable of being applied in an out-patient department. It is necessary to ascertain first that the husband's semen is normal, that the adnexa and cervical canal are healthy and that the examination is made at a clear interval between two menstrual periods. Two nights before the test glycerine plugs

are inserted against the cervix. The patient is placed in the Trendelenburg first position, and the vulva, vagina, cervix, and lower cervical canal are dried with swabs and painted with iodine. With a volsella fixing the cervix, and after the two first dilators of a series have been passed through the internal os, a tapering hollow uterine dilator, the third in the series with the opening at the tip, is inserted and the bulb of a Juno's chloroform inhaler attached. The vagina is then filled with sterile saline solution and pumping of air slowly commenced until the reservoir bulb is filled and its net is under tension. If the tubes are patent the reservoir slowly deflates, and upon resuscitation over the tubes air can be heard passing through their fluted openings. When obstruction exists its site can be detected by the injection—after a week's interval to allow for the absorption of the air—of lipiodol through the uterine tube connected by a short length of rubber tubing with a Record syringe, the vagina being packed with gauze to prevent leakage during the radiological examination. A radiogram is taken as soon as pain is felt, since this is the result of tension and indicates that the lipiodol has reached the seat of obstruction. Forsdike considers that these two methods provide valuable data when estimating the advisability of an operation for sterility, since by their use the side and site of any obstruction can be accurately detected beforehand.

418 Pregnancy after X-ray Treatment.

E. GAUJOUX (*Bull. Soc. d'Obstet. et de Gynecol. de Paris*, No. 8, 1925, p. 589) records the case of a woman, aged 27, who was treated for large multiple uterine myomata by nine applications of x-rays at monthly intervals. Severe dermatitis followed, and menstruation became somewhat less profuse. Five years later the patient was delivered spontaneously of a recently deceased foetus, and the three myomata which were still present became rapidly smaller during the puerperium. The myomata had enlarged three years later when the patient was again pregnant this pregnancy, in spite of the existence of a marginal placenta praevia, terminated in the extraction by forceps of a live child weighing 9 lb. 10 oz. At least ten other observations have been recorded of normal pregnancy and delivery following x-ray treatment for uterine myomata, and it has been proposed to treat amenorrhoea and ovarian hypofunction by small doses of x-rays. On the other hand, a number of cases of abortion and foetal death have been reported and there is experimental evidence that the developing trophoblastic cells and oocytes are particularly sensitive to x-rays.

419 Caul flower Cervical Carcinoma.

E. O. SCHOCH (*Centralblatt f. Gynäk.*, September 26th, 1925, p. 2204) describes cauliflower cervical carcinomas as being macroscopically well defined of all sizes up to that of a child's head, very fleshy with everted edge and scirrhous base. During the last six years he has studied 91 microscopically proved cases of this condition in his radiological department. Excluding 3 patients who were not treated and 7 who attended irregularly, 13 were stated to have been cured (17 per cent), and 63 died from cancer within five years. Of the remaining 5, 2 were lost sight of and 3 died of intercurrent affections. The well known influence of age was apparent of 20 women under 39 years of age only 1 was cured. The number of times the woman had been a mother seemed to possess no prognostic significance. The factor of a poor social status was evident in the patients and still more so in the list of deaths. Schoch attributes this to the fact that richer patients came earlier for treatment. Of the patients who died, the average length of life from the beginning of treatment was fourteen months. About 14 per cent of the patients gave a family history of cancer.

Pathology.

520 The Action of Radium on Protozoa and Filterable Viruses.

R. BRUYNOGHE and A. DUBOIS (*C. R. Soc. de Biologie*, September 30th, 1925, p. 849) exposed a suspension of *Leishmania tropica* to the action of 4 mg. of radium enclosed in a platinum cell 1/5 mm. in thickness for twenty-four hours, and then inoculated it along with an unexposed control on to a culture medium. Similar growths were obtained in each case. The action of 10 mg. of radium for sixty hours caused a delay of one week in the growth of the organism. For complete sterilization an exposure of 4 mg. for seventy-two hours was required. A similar sterilizing effect was produced by radium emanation acting in a dose of 5 millicuries for sixty-two hours in a closed space. The same observation was made that though both the radium and the radon rendered the organism incapable of multiplying on a nutrient medium, they failed to destroy

its motility. With *Trypanosoma inopinatum*, a free parasite, the same results were obtained. The ability to grow on an artificial medium and the ability to infect frogs were both destroyed, but the motility remained intact. Again, with *Spirochaeta uterohaemorrhagiae* the results were similar. 8 mg. acting for twenty-six hours rendered the spirochaete incapable either of growing *in vitro* or of giving rise to disease in the guinea pig, but did not interfere with its motility. The authors conclude that the action of radium on protozoa and spirochetes consists essentially of interference with their power of division. In another paper in the same issue (p. 852) R. BRUYNOGHE and LE FEYRE DE ARRIC report their experiments on the action of radium on the filterable viruses. The suspension to be tested, either of the rabie, the encephalitic, or the herpetic virus, was diluted 1 in 100 or 1 in 1,000 times, and divided into two portions, of which one was exposed to radium emanation in a dose of 5 millicuries for about forty-eight hours. Both portions were then injected intracerebrally into rabbits. It was found that the irradiated suspensions were in each case unable to give rise to disease, whereas the control suspensions uniformly killed the animals in three to seven days. It would appear, then, that the filterable viruses are characterized by a similar susceptibility to the action of radium emanation.

521 Lactic Acid in Diabetes.

J. A. COLLAZO and I. LEWICKI (*Ann. de Med.*, August, 1925, p. 153) have investigated the percentages of glucose and lactic acid in the blood of diabetics under varying conditions of fasting, the ingestion of cane sugar, and insulin administration, control tests were made also on healthy subjects and on non-diabetic patients. The authors report that insulin always has the same effect on the lactic acid content of the blood whether the carbohydrate metabolism is normal or deranged, its action being analogous to that of glucose. They consider that this proves that there is no essential difference between carbohydrate metabolism in diabetes and non-diabetics. They find also that the presence of lactic acid in fasting men or animals is not increased by insulin and do not agree with some other investigators that reduction in the blood sugar after insulin is accompanied by increase in the lactic acid, but, on the contrary, that the latter is often diminished. They conclude that (1) among non-diabetics and diabetics when fasting the mean ratio of lactic acid in the blood is practically the same—in the former group 14.2 mg. per cent, and in the latter 15.9, (2) the ingestion of cane sugar produces an excess of lactic acid in the blood both of diabetics and non-diabetics, this occurs to a greater extent in the former, in whom the increase appears earlier and persists longer, (3) the ingestion of cane sugar and the simultaneous injection of insulin produces an increase of lactic acid in the blood in both diabetics and non-diabetics, (4) in both men and animals insulin given alone usually, but not always, diminishes the amount of lactic acid in the blood. The authors consider their conclusions of special value in view of the increased attention paid to lactic acid as a factor in the metabolism, not only of carbohydrates, but also of albumins and fats. They add that lactic acid plays a part in the synthesis of carbohydrates, and possibly also in that of fats and albumin, and may, therefore, be considered as an intermediate product linking up these three.

522 Action of Disinfectants on Bacteria.

H. GHOSH (*Indian Med. Gazette*, September, 1925, p. 423) describes the investigation of the action of weak solutions of germicidal agents on certain bacteria. His general technique was to add a given amount of disinfectant to a twenty-four hour broth culture of an organism—such as *Staphylococcus aureus*, *B. proteus*, *B. pyocyaneus*, *B. coli*, or *B. shigae*—to incubate the mixture, and to plate out 0.1 cm. quantities at intervals. It was found that up to a certain dilution of disinfectant all the organisms were killed and the plates remained sterile. Once, however, this dilution was exceeded the results became unexpectedly irregular. Instead of a few organisms surviving for an hour or two and then dying, it was found that plates made after one hour gave a growth, plates made after three to five hours were sterile, and plates made after twenty-four or forty-eight hours gave a growth. This phenomenon was encountered on the border line of disinfectant and antiseptic action—that is, in a dilution of about 1 in 1,000 of iodine in potassium iodide, 1 in 100 of potassium permanganate, and 1 in 1,000 of optochin. The explanation that the author advances is that probably most of the organisms are destroyed by the disinfectant. A few, however, that are more resistant, though not actually killed, are sufficiently attenuated to be deprived for a time of their power of multiplication, they pass into a condition of "shock" and, hence, when transplanted to a suitable medium they fail to divide. Later this shock passes off and the organisms regain their power of growth.

EPITOME OF CURRENT MEDICAL LITERATURE.

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Medicine.

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Arterial Hypertension

F. WAGNER (*Med. Klin.*, October 16th, 1925, p. 1575) remarks that although little is certain about hypertension, yet it is undisputed that there are cases connected with vascular and renal lesions, and characterized by great constancy of high blood pressure, for which there is an anatomical basis. There are also hypertensive patients who do not show the complications just mentioned and in whom the blood pressure is by no means so invariably high. Between these two seemingly opposed types—"anatomical" and "essential"—which it may be concluded that hypertension is a disorder of the blood vessels themselves, having in its early stages only functional signs and symptoms, but later giving a clear anatomical and pathological picture. Its origin may be traceable to the cerebral vasomotor centre and to the vegetative nervous system. The difficulties of research are increased by the fact that the vegetative nervous system is in the closest reciprocal relation with all the organs of the body, and especially with the endocrine glands. Treatment, therefore, remains symptomatic.

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Prognosis in Arterial Hypertension

C. SOLE P. DOPFF (*Revista Med. de Barcelona*, September, 1925, p. 278) states that the vascular changes accompanying arterial hypertension are of greater prognostic value than the hypertension itself. Cerebral haemorrhage, the most common accident in hypertension, is due to degenerative changes in the walls of the cerebral vessels. Nevertheless, hypertension, even if not the primary cause of the haemorrhage, determines its extent, the higher the degree of hypertension, the worse the prognosis. The presence of arterio-sclerotic lesions in the retinal vessels points to the same condition in the cerebral arteries, and many patients with retinal arterio-sclerosis die in consequence of cerebral lesions. The coincidence of retinal changes with renal insufficiency is of grave prognosis, since it indicates the likelihood of death before long. The author considers that the renal affection is the effect and not the cause of the hypertension. The prognosis is worse when renal insufficiency is complicated by permanent high pressure. The latter is no longer supposed to be a symptom, but rather the most important cause of generalized vascular sclerosis. Therefore systematic examinations of the diastolic rather than of the systolic pressure should be made in order to reveal arterial hypertension. The early appearance of hypertension as well as its rapid increase and persistence indicate a serious condition, and the cessation of good health so often accompanying hypertension does not imply that the disease is mild. The arterial pressure gradually increases with advancing age. When hypertension is associated with peripheral vasoconstriction, the oscillometric index being small, the fatal type cerebral haemorrhage is usually due to anaemia, but in the plethoric type cerebral haemorrhage is generally the cause of death. In either case a prognostic factor of the highest importance is furnished by the condition of the heart. Diminution of the functional capacity of the left ventricle manifested in frequent attacks of angina pectoris, the presence of a gallop rhythm, or any other sign of insufficiency, is of grave significance.

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Chorea Insaniens

O. H. PETTY and H. W. SCHAFER (*Journ. Amer. Med. Assoc.*, September 26th, 1925, p. 973) report a case of chorea insaniens, with recovery, in a girl aged 12. Her previous history included many attacks of tonsillitis, after the most recent attack the joints became painful and swollen. Seven days later choreiform movements started and increased in severity until her admission to hospital nearly two months after the onset of the illness. She was then delirious, with opisthotonos and contortions movements. She was unable to talk, but could utter shrill cries. The temperature was 106° F. The tonsils were enlarged, but not actively inflamed, there were no skin eruptions or subcutaneous nodules. The heart and joints were apparently normal. Large doses of hypodermics were required to produce physiological effects, and as much as 60 grains of barbitol and 81 grains of morphine were required to induce a few hours of sleep during the first four days, 71 grains of pralopin were given during the next four days, and barbitol in small doses controlled the choreiform move-

ments during the later days of the illness. Luminal and the bromides appeared to have little effect. For three weeks the girl was fed with large amounts of fluid by a stomach tube passed through the nose. The patient made a complete and rapid recovery, the temperature had returned to normal after thirty days in hospital, and she was discharged on the fortieth day. Six months afterwards she was leading a normal life and showed no signs of chorea. At no time during the illness was there any evidence of valvular disease.

426

Prophylaxis of Scarlet Fever and Measles

G. CARONIA (*Il Politecnico*, Sez. Prat., September 28th, 1925, p. 1357) finds from the statistics of the Italian Ministry of Health that there is an annual average of about 150,000 cases of measles with about 9,000 deaths and of about 25,000 cases of scarlet fever with 3,500 deaths. These figures, which underestimate the truth, because all cases are not notified, apply to Italy only. Scarlet fever affects about 30 per cent of all children, and measles nearly 100 per cent. In the course of two years 105 sanitary offices in 105 various centres (asylums, schools, and communes where epidemics were prevalent) have performed prophylactic injections with a vaccine prepared from the organism regarded by Caronia and Di Cristina as the specific cause of scarlet fever. About 7,000 children who had been exposed to infection were inoculated, and only about 2 per cent contracted the disease, the number of deaths being very low. In the city of Trieste alone, where a severe epidemic of scarlet fever occurred, 800 persons, consisting almost exclusively of children under 14, were inoculated with the vaccine, and none developed the disease. As regards measles, 539 who had been exposed to infection were inoculated with a vaccine prepared from the organism regarded by Caronia as the cause of the disease. None of the children had previously had measles and only 10 cases, or less than 2 per cent developed it. The method of inoculation consists in three injections, on alternate days of 2 cc. of a well developed culture, to which 0.5 per cent of carbolic acid has been added. The injections, which are given intramuscularly, do not cause any febrile reaction apart from exceptional cases, and produce only a slight local reaction.

Surgery.

427

Treatment of Acute Appendicitis

T. BRATRUD (*Minnesota Med.*, October, 1925, p. 634) finds that statistics from the most efficient hospitals still show the mortality of acute appendicitis as being 5 to 10 per cent. The cause of this high death rate is late diagnosis and delayed operation. Every case should be submitted to operation as soon as possible within the first forty-eight hours. After this period opinions differ. One group advises laparotomy and finds, another group recommends operation at once. Bratrud believes that more lives will be saved by conservative treatment after forty-eight hours. Some patients coming too late for operation may require gastrostomy or simple drainage and may then make a satisfactory recovery. In cases with a localized abscess operation is delayed till the abscess clears up. The incision advised is that over the outer edge of the rectus muscle. Drainage is employed where the appendix is black or green and in the presence of pus. The wound is strapped (wounds healed better by this method than when sutures were employed). Interoostomy is performed in the presence of peritonitis and gives gratifying results. Bratrud adds that if patients were operated upon within the first twenty-four hours there would be no deaths from appendicitis or its complications.

428

Vertebral Epiphysitis

J. BUCHMAN (*Journ. Bone and Joint Surg.*, October, 1925, p. 814) calls attention to vertebral epiphysitis as a cause of spinal deformity. The syndrome previously described by Andre Delbarye, appears between the ages of 10 and 21 and its onset may or may not be accompanied by slight fever. Pain and tenderness over the vertebral spines, the bodies of the laminae vertebrae and the iliac crests are associated with spasm in the muscles of the back and limitation of movement in all directions. Anomalies of position, form and tenderness are found in the superior and inferior epiphyses of ossification. The condition may explain many deformities of adolescence which result in kyphosis and scoliosis. Of

65 cases of so called idiopathic posterior and lateral curvature examined by Buchman 54 (83 per cent) gave evidence of epiphysitis. That the epiphysal involvement is primary and not secondary to the deformity is proved by the fact that it existed in three cases in which there was no clinical evidence of deformity. Buchman found that normally the superior and inferior vertebral epiphyses appeared at about 11½ years of age, and he concludes that any marked deviation from the time or order of appearance, and the presence of tenderness with abnormal x ray findings, are pathological and constitute a disease entity which manifests itself between 10 and 21 years of age, and is characterized by fatigue, head ache, and tenderness. Radiography shows that the epiphyses are enlarged, "moth eaten," frayed, and indistinct, while the intervertebral spaces appear cloudy, mottled, and irregular. Later the affected parts of the spine appear as a continuous fused mass. While the etiology is unknown, evidence seems to favour the belief that it may be due to a low grade infection, while stress and strain may be additional factors in the production of the secondary deformity.

429 Micturition in Two Stages

O MERCIER (*Journ d'Urol*, August, 1925, p 97) points out that while micturition in two stages is usually regarded as a characteristic symptom of diverticulum of the bladder, this condition may also occur in cases where the inter ureteric bar in the bladder is hypertrophied. He thinks that the mechanism of its production is probably somewhat similar to that seen in the case of bladder diverticulum. The hypertrophied muscular bar, combined with active contractions of the bladder produced during micturition, results in a depression where urine collects, and is later evacuated at a second act. For this to happen it is necessary that the muscular bar should be well developed and the bladder contractions should be well marked. The author adds that if the bar is not hypertrophied the obstacle is not sufficient to produce a depression to retain the urine. Where this condition is well marked a cavity is formed which may always contain a certain amount of residual urine. The diagnosis is easily made by a cystoscopic examination. A case is described in a patient, aged 71 years, in whom the condition was relieved by removal of the prostate.

430 Paratyphoid Cholecystitis

A LOWENTHAL (*Deut med Woch*, July 24th, 1925, p 1234) records two cases of cholecystitis occurring in the course of paratyphoid fever in a husband and wife respectively. Laparotomy followed by cholecystotomy was performed in each case, when peritonitis and cholecystitis were found and paratyphoid B bacilli were isolated from the bile. The man had suffered from enteritis in 1914 during the war, he may possibly have been a paratyphoid carrier since and so infected his wife. On the other hand, the woman, who had suffered from gall stones since her last confinement three years previously, may have infected her husband. In both cases the gall bladder, in which the formation of calculi had taken place, was the *locus minoris resistentiae* which led to the development of severe cholecystitis and peritonitis. In both cases paratyphoid B bacilli were found, not only in the pus in the gall bladder, but also repeatedly in the bile obtained by a biliary fistula. Both patients made a complete recovery. Cholecystotomy was chosen as the operation as it allowed the best possible drainage from the infected bile ducts, as well as a determination of the duration of infection by the possibility of bacteriological examination.

431 The Surgical Risks of Diabetes

A GUERRA and R PEREZ DE LOS REYES (*Rev med year de la Habana* August, 1925, p 469) state that of 385 cases of diabetes admitted to the Massachusetts General Hospital 14 per cent required operation (Fitz), while Joslin's figure was 11 per cent among 903 cases. Phillips estimates the operative mortality in diabetes at 36.37 per cent if there has not been any preparation before the operation, and at 17.7 per cent when the patient has been specially prepared. Fitz classifies diabetic patients into two distinct groups from the surgical standpoint—namely, (1) those whose lesion is related to diabetes and (2) those in whom the lesion is not connected with it. The first group includes cases of diabetic gangrene, furunculosis, carbuncle, and according to Berlmann affections of the bile ducts, pancreas and thyroid. The chief cause of the high operative mortality in diabetes is infection. In a group of 45 cases operated on at the Massachusetts General Hospital 20 who had gangrene or other acute infection showed a mortality of 50 per cent, whereas the mortality was only 12 per cent among 25 in whom there was no infection. The study of recent literature shows a progressive diminution in the operative mortality among diabetic patients, so that at present it is almost the same as that of the non diabetic. The factors in the fall in the mortality are the

following: (1) Pre operative treatment, which consists in freeing the patient from sugar and acidosis by a saltable regimen. (2) Judicious choice and administration of the anesthetic, nitrous oxide and oxygen, or a local anesthetic, being the best. (3) Correct operative technique, especially avoidance of shock, and rigorous asepsis. (4) Appropriate post operative treatment.

Therapeutics.

432 Dietetic Treatment of Peptic Ulcer

A JAROTZKI (*Presse Méd*, September 26th, 1925, p 1228) bases his dietetic treatment of peptic ulcer on the researches of Pavlov and his school. He rigorously bans milk, as its cream clots in the stomach, the passage of the least quantity into the duodenum causes a closing of the pylorus (Pavlov), and it excites an abundant secretion of gastric juice (P Chugue). In order that the stomach may have rest he feeds his patients on egg albumen and butter, given separately, the former fixes hydrochloric acid and excites no gastric secretion, it is given in the morning, without salt, and is not beaten up. Commencing with the albumen of one egg a day, the patient increases his ration by another one each day to a maximum of ten. The meal of butter, also without salt, is given at 3 p.m. Butter has a high calorie value, and, like all fats, inhibits the secretion of gastric juice. The ration is just under an ounce the first day, increasing by two thirds of an ounce daily to a maximum of 6 ounces. The author stresses the fact that the white of egg and the butter should be given separately, as a mixture of the two is retained in the stomach for many hours and excites a free flow of gastric juice (Piontkowski, Gordceff, etc.). Further, he forbids water altogether—by the mouth, as an enema, or as a saline injection. This is the treatment for serious cases, and is continued for eighteen days. Then soups, prepared with rice, pearl barley, semolina, and purées of vegetables, such as potato, carrots, cabbages, and turnips, with butter, but no salt, and passed through a sieve, are given with the afternoon meal of butter. The cereals may be sweetened and given with purées of fruit, such as apples and plums. In less serious cases rice soup is given with the afternoon meal from the beginning.

433 Spinal Drainage in Early Poliomyelitis

J C MONTGOMERY and W C C COLE (*Journ Amer Med Assoc*, September 19th, 1925, p 890) suggest that early and rapid subarachnoid drainage is a valuable therapeutic measure in poliomyelitis. In a series of cases they performed lumbar puncture as soon as the diagnosis was made, and if there was a definite increase in pressure of the fluid (with or without increase in the cell content) it was repeated at intervals of twelve or twenty-four hours until the pressure had definitely subsided. In sixteen cases lumbar puncture was performed not later than the third day, and in six cases between the fourth and the tenth days. In the first group paralysis only occurred in one patient and consisted of no more than a slight temporary weakness of the palate. In the second group paralysis occurred in all except one, and was permanent in four patients. The authors therefore emphasize the importance of beginning this treatment early. They give clinical details of their five cases. They add that marked improvement of the symptoms always followed the treatment, there was invariably cessation of vomiting and diminution of hyperaesthesia and rigidity of the neck and spine. This improvement was also apparent in four other cases in which the punctures were only begun in the second week of the illness, and after paralysis had already appeared. In two of these cases the paralysis was permanent, in one it disappeared, and in the fourth it was definitely lessened.

434 Silver Nitrates in Gonorrhoea

H HAXTHAUSEN (*Ugeskrift for Læger*, September 17th, 1925, p 815) has carried out experiments *in vitro* and has compared the clinical results obtained with various silver salts in the treatment of gonorrhoea with a view to determining their relative values. The experiments were made on a bouillon gelatin ascites culture of coliform bacilli, the capacity of silver salts to diffuse to a certain depth and arrest the growth of the culture being determined for each salt in various concentrations. In the case of silver nitrate it was found that the diffusion depended in a curious way on the concentration of the solution, the diffusion of concentrated solutions dwindling from a maximum to a minimum when the concentration was reduced to about 0.25 per cent. When the concentration was further reduced, the diffusion increased, decreasing with still further dilution. After discussing the possible explanation of this phenomenon the author notes that certain other silver preparations, such as protargol, behaved in the same way as silver nitrate, whereas complex

silver salts, such as argyrol, showed a diffusion capacity that increased directly with the concentration of the drug. At the optimum concentration of each silver salt it was found that silver nitrate had the most penetrating effect. The clinical investigations consisted of comparing the results obtained in 50 cases of early uncomplicated gonorrhoea treated with silver nitrate, in 50 similar cases treated with protargol, and in 50 similar cases treated with albugin in the Rigshospitalet in Copenhagen. This comparison also resulted in favour of silver nitrate, and the author concludes that this salt is superior to the numerous other silver preparations which have been recommended during the past thirty years as substitutes in the treatment of gonorrhoea.

435 Actinotherapy in Syphilis

P. RAVALT, BASCH, and LAMBLING (*Ann de Derm et Syph*, August September, 1925, p. 518) recommend the application of ultra violet rays in combination with the usual chemotherapeutic treatment in syphilis. Although there is no acceleration of the disappearance of the clinical symptoms and alteration of the blood reaction, this combined treatment exerts nevertheless a highly favourable influence upon the general health. The administration of eosin or methylene blue before irradiation was found to increase the therapeutic effect of the latter. The cerebro spinal reaction seemed also to change more rapidly under the combined treatment. The authors are careful to add that actinotherapy alone, even if intensified by photodynamic substances, while benefiting the general health, does not take the place of specific treatment.

436 Risks of Iodine Treatment in Graves's Disease

F. REDLICH (*Monatsh. f. Hoch*, October 8th, 1925, p. 1102) recalls that iodine in the form of burnt sponge was used for goitre even in Greek days. With the growth of more exact observation a number of facts have been collected which are unfavourable to the use of the drug. Results have generally been best when the dose was smallest. For the last century the drug has been used systematically, and it has been recognized that administration of iodine, even a singleunction, may cause enlargement of the thyroid, and a serious increase of the symptoms. A few patients have derived benefit from iodine treatment, but the claims of Plummer and others that such favourable cases can be detected before the start of treatment have received very little confirmation. It is improbable, too, that iodine has value as a pre-operative measure. Redlich adds that a source of error worth remembering is giving potassium iodide for suspected syphilis to a patient with a slight goitre. He cites one such case in which serious loss of weight ensued, necessitating prolonged rest in bed.

Radiology.

437 Dyes in Cholecystography

R. B. WHEELER and I. K. BOGAN (*Boston Med and Surg Journ*, October 8th, 1925, p. 676), following other workers, have given intravenous injections of sodium tetraiodophenol phthalein in 20 cases of suspected gall bladder disease. This drug, excreted by the liver cells, increases the visibility of calculi, and the procedure is apparently harmless. They found that the gall stones might be usually distinguished from renal calculi and from calcified lymph nodes. The emptying time of the gall bladder could be determined, and the authors suggest that delay may indicate disease. The dye occasionally failed to appear in the gall bladder, pointing to disease in the tract or obstruction of the duct, though it is added that such failure is perhaps likely to occur if the drug be given by the mouth instead of intravenously. The authors believe it possible for a large low gall bladder to exert sufficient traction on the common duct to produce symptoms simulating gall bladder disease.

438. Transcerebral Ionization in Late Hemiplegia

G. BOUFFIGUON (*Paris Med*, October, 1925, p. 280) claims to have had good results with this treatment in cases of hemiplegia with contracture. He places the positive pole, moistened with a 1 per cent solution of calcium chloride in distilled water, on the closed eye on the side opposite to the hemiplegia, and the negative pole, moistened with pure water, on the neck at the occipito vertebral junction. He uses at first a current of 2 to 3 milliamperes, raising it in two days to 4 to 5 milliamperes, which is his maximum. Treatment is continued for thirty minutes at a time, and is given six times in the first week and three times in each of the second, third, and fourth weeks. It is interrupted then for three weeks. The author states that he has seen contractures diminish, movements performed that were previously impossible, aphasia considerably improved, crises of Jacksonian epilepsy disappear, and in certain cases a lessening of the

exaggeration of reflexes. In specific cases he has found it preferable to use an iodine ion. Faradism of the muscles opposing those involved in the contracture is further claimed to be of value as an adjuvant.

439 Radium in Angioma Cavernosum

O. N. FRAZIER (*Acta Derm et Syph*, October, 1925, p. 505) reports a case of angioma cavernosum in a baby, 4 months old, in whom the condition appeared a few days after birth and rapidly enlarged. Occurring most frequently on the face or scalp, the lesion appears as a soft elevated subcutaneous tumour with frequently a superficial naevus vasculosus in the overlying skin. In the case recorded the tumour was situated at the left side of the nose and extended over the inner half of the left eyebrow, lid, and cheek, and upon to the forehead, it was very soft, with an ulcerated area at its lower outer quadrant. Radium treatment was applied 90 mg of radium element being placed in four tubular applicators (two containing 25 mg. and two 20 mg.) and fixed at 2 cm. from the surface of the skin so that the rays might enter at different angles. The 25 mg. applicators were screened with 1 mm. each of silver, brass, lead, and hard rubber, while each of the 20 mg. applicators was composed of two 10 mg. needles screened with 0.4 mm. of an alloy of which the density was 8.7, and 1 mm. each of brass, lead, and hard rubber, the surrounding area being protected by 1 mm. of lead with 1 cm. of gauze between the lead and the skin. One single exposure of twenty three hours was given. No visible superficial reaction occurred, but the angioma, after three weeks, gradually decreased in size, and eight months later had completely disappeared. Beyond some scarring, the cosmetic result was very good, with but little deformity of the nose, and there was no evidence of any damage to the eye.

Obstetrics and Gynaecology.

440 Post climacteric Metrorrhagia and Ovarian Cancer

J. SCHIFFMANN (*Zentralbl. f. Gynäkol*, October 3rd, 1925, p. 2229) says that although metrorrhagia is well known as a danger signal yet the particular connection with ovarian cancer is insufficiently appreciated. The reason assigned for this are lack of textbook mention and the slight and temporary character of the flow, which stops when the ovarian tumour gets bigger. The author quotes five cases to show that even if the patient seeks advice at the time of the bleeding nothing is detected even if uterine tissue be excised for examination, a precautionary hysterectomy is naturally of no avail. Glöckner and Lippert, the two first writers to call attention to this symptom, reported the following figures. Of 635 cases collected there were 31 patients who had return of the menstrual flow long after the climacteric, of these 31, uterine tumour, innocent or otherwise, was found in 8 and of the remaining 23 no fewer than 14 patients had ovarian malignant disease, mostly carcinoma. It is suggested that the pathogenesis of the haemorrhage is comparable with that of carcinoma of the ovaries of female children, which is known sometimes to induce menstruation and premature sexual development, the initial effect of the tumour formation being the stimulation in some way of the function of the organ affected.

Diabetes and Pregnancy

H. HENFBERG and G. BRÜCKEL (*Gynecol et Obstet*, 1925, xii, 1, p. 72) state that fewer than 1 per cent of diabetic women are capable of becoming pregnant. Their general wasting, the impregnation of the tissues with sugar and the sexual frigidity arising from then complaint are all general conditions favouring sterility. Locally there is a progressive sclerosis of the ovaries and not infrequently chronic atrophic endometritis. Menstruation is completely absent in about one half of diabetics. Diabetes in pregnancy must be distinguished (1) from lactosuria (2) from alimentary glycosuria, which is transitory, easily controlled, and uncomplicated by polydipsia or polyuria, (3) renal glycosuria—a benign affection without hyperglycaemia, but sometimes associated with minor crises of acidosis. There must be some reserve in the prognosis of these forms, for occasionally benign glycosurias of pregnancy are followed during later gestations or in the non gravid state by the development of rapidly fatal diabetes. True diabetes in pregnancy leads in about one half of cases to death before or within a few months after term, the prognosis, however, is probably more hopeful since the discovery of insulin. The authors relate the case of a primipara, aged 22, who suffered from grave diabetic symptoms with incipient coma and air hunger, vigorous insulin treatment from the eighth month brought about rapid improvement but the foetus was born dead after spontaneous labour. Three months later the nurse was free from sugar and acetone

442 Primary Lymphoblastoma of the Ovary

G. PETTA (Il Policlinico, Sez. Chir., September 15th, 1925, p. 437) records the sequel to a case previously reported (*ibid.*, January 15th, 1924) in a girl, aged 18, who was operated on for lymphoblastoma of the left ovary on February 10th, 1923. The tumour was of the size of a foetal head and weighed 1,700 grams. The right ovary and paratortic glands were found to be normal at the time of the operation. The patient left hospital in excellent condition on March 6th. On June 2nd she was seized with severe pain in the left lumbar region, and subsequently rapid loss of flesh and asthenia developed. When she was seen in August a hard swelling was found on palpation of the abdomen connected with the lumbar vertebrae. Under radiological treatment the swelling became less and the pain was relieved, but in May, 1924, the swelling and pain increased, and the lower limbs became swollen. Death followed in June, and the autopsy showed a tumour in the right ovary the size of a large orange, metastases in the retroperitoneal and mediastinal lymphatic glands, and multiple nodules scattered throughout the peritoneum and pleura on the right side. Microscopical examination showed that the growth was a lymphoblastoma. The case illustrates the great malignancy of primary lymphoblastoma of the ovary. The evolution of the disease was rapid, the duration being eighteen months from the onset of the first symptoms in December, 1922.

443 Puerperal Septicaemia

W. D. GATCH, H. M. TRUSLER, and J. L. OWEN (*Journ. Amer. Med. Assoc.*, September 19th, 1925, p. 834) point out that patients with septicæmic conditions such as those arising from infection during labour will frequently recover if they can be kept alive during the first few days of the illness. Post partum sepsis, even though treated conservatively and complicated by pulmonary infarcts and peritoneal involvement, is not necessarily fatal if the primary bacterial invasion is not overwhelming. They therefore view with some scepticism the alleged curative effects of gentian violet and mercurochrome. As a result of experimental work they find that a large dose of either drug injected during a grave infection may hasten death, though in smaller doses a temporary inhibition of bacterial activity is produced, thus assisting the natural resistance. They therefore advise caution in prescribing these remedies in puerperal sepsis.

Pathology.

444. Infection of Various Sugars in Insulin Hypoglycaemia

D. CALTABIANO (Il Policlinico, Sez. Med., October 1st, 1925, p. 489), as the result of experimental work, concludes that in insulin hypoglycaemia the administration of glucose has a specific effect: it suppresses very rapidly the nervous phenomena due to the hypoglycaemia, and the free sugar level in the blood is raised. On the other hand, no benefit was found to follow the intravenous injection of saccharose, maltose, or lactose during convulsive crises produced by insulin; this form of administration being used with the view of promoting rapid absorption and a high concentration. The author attributes this to their transformation into glucose such a transformation under normal conditions, but it is prevented by the presence of insulin. When these sugars were injected in the hypoglycaemic, but not yet convulsive phase, they were found to delay for about an hour the outbreak of convulsions, and hence the fatal termination.

445 Streptococcal Virulence

T. D. BECKWITH and E. J. ROSE (*Journ. Infect. Dis.*, September, 1925, p. 277) claim to have correlated the virulence of a haemolytic streptococcus to rabbits with its rate of multiplication in nutrient media and its susceptibility to heat. A certain strain of streptococcus has been maintained over a period of five years in two different ways. One portion, known as the stock culture, has been subcultured on blood agar slopes; the other, known as the passage strain, was passed monthly from rabbit to rabbit by intrapleural injection. After the death of the animal in four or five days the pleural fluid was withdrawn and kept in a sealed tube, a twenty-four hour broth culture inoculated with this was used for the next injection. By comparing the growth of the two strains in plain broth it was found that the passage strain grew more rapidly than the stock strain. Thus after twenty-four hours the number of viable bacteria in the former was 264 million per cubic centimetre, in the latter only 165 million. The two strains were tested for their virulence to rabbits by intrapleural injection of a twenty-four hour broth culture. Of the passage strain less than 300 organisms sufficed to kill, of the stock strain even 165 million failed to

kill. Thus the passage strain grew more vigorously in broth and was over half a million times more virulent than the stock strain. On the other hand, the stock strain proved to be considerably more resistant to heat. Whereas it was not killed by 65°C in half an hour the passage strain was killed by the same temperature in fifteen minutes. A series of experiments showed that the stock strain had a thermal death point about 5°C higher than that of the other. Both strains exhibited the same susceptibility to disinfectants. The authors consider, therefore, that they have established a positive correlation between vigour of growth in vitro and virulence to rabbits, and a negative correlation between virulence to rabbits and susceptibility to heat.

446 A Chinese Antiscarlatinal Serum

T. H. TSEY and P. Z. JING (*National Med. Journ. of China*, August, 1925, p. 224) report the preparation of an antiscarlatinal serum in a way different from that of Dochez and Dick. The Chinese antigen consists of a saline suspension of the washed whole bacterial bodies of haemolytic streptococci recovered from the throats of scarlet fever patients. Twelve doses of dead cultures were used first in immunizing the horse, and were followed by fourteen doses of living cultures of gradually increasing amounts. To test the serum a virulent strain of haemolytic streptococcus isolated from a case of erysipelas was used, and it was found that one-fifth of a cubic centimetre of the serum protected a mouse against a thousand times the fatal dose of this organism. In the same issue (p. 219) S. P. CHEY reports favourably on the clinical use of this serum, which he finds has a decidedly curative effect in severe cases of scarlet fever, preventing life and warding off serious complications. The serum was not tried in mild cases, but the valuable results obtained in the more severe types were so striking that this preliminary publication of the results was thought advisable.

447 Blood Groups and a Persistent Wassermann Reaction

A. STRASZYLSKI (*Arch. Hoch.*, October 8th, 1925, p. 1952) reports that it has been made that an inheritance of is linked with inheritance of one of the four blood groups. He is convinced that there exists a correlation between the blood group and the rate of disappearance of a positive Wassermann reaction in patients under treatment for syphilis, and confirms a previous statement by Amsel and Halber to this effect. In a series of syphilitic patients collected by Straszylski the Wassermann reaction remained positive in 43 per cent in the case of one group, whereas in another the corresponding figure was 25 per cent. It is admitted that further investigation is required before final conclusions can be drawn.

448 Antidiphtheritic Immunization

C. ZOELLER (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, August 6th, 1925, p. 1216) has found that very young guinea pigs are not so easy to immunize against diphtheria as older ones. Two different litters were taken. In one the animals weighed from 70 to 90 grams in the other from 150 to 230 grams. Each animal was given two injections, at a fortnight interval, of 0.5 c.c. of anatoxin three months later each animal was tested by the injection of a lethal dose of diphtheria toxin. Though none of them succumbed, the young animals in the first litter showed a characteristic local lesion, whereas the older animals in the second litter showed no local lesion at all. From this it would appear that immunization of young animals is more difficult than that of older animals. In England, Glennie and his collaborators have made similar observations. To immunize young guinea pigs they found that twenty successive injections of diphtheria toxin were necessary for older animals thirteen sufficed. Zoeller remarks that if the same finding is true of children it will be important to ascertain the best age for immunization.

449 The Blood Platelets in Banti's Disease

N. ROSENTHAL (*Journ. Amer. Med. Assoc.*, June 20th, 1925, p. 1887) considers Banti's disease a definite clinical entity and finds that there is a marked alteration in the blood platelets, and that there is a marked present and in their functions. He distinguishes two forms of the disease. In the first, the thrombocytopenic group, the blood platelets are diminished after splenectomy there may be a temporary increase followed by a return to approximately normal. Diminution of the platelets appears to be associated with haemorrhages. In the second group, termed "thrombocytæmic," the platelets are in normal or subnormal numbers before splenectomy, but after this operation they show an enormous and permanent increase. This increase is associated with repeated thrombosis. The results from splenectomy are stated to be very good in the first group, but in the second very little improvement is obtained. He therefore recommends the examination of the blood platelets as a means of prognosis in Banti's disease.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

450

Brachial Neuralgia

C LOIX and J A CHAVANY (*Journ de Med et de Chir Prat*, September 10th, 1925, p 618), describing the various brachial neuralgias, remark that rheumatic, or essential, neuralgia has many points of resemblance to sciatica—it often has a preparatory phase of flying pains, stiff neck, and general malaise followed by sharp pains. The preparatory phase rarely lasts more than forty-eight hours. When the neuralgia is well established the aspect of the patient is often characteristic. The pain may be spontaneous or provoked, the slightest movement will excite the pain, and its character is very much the same as that of sciatica or zoster. Its severity usually decreases after four or five days, but the pain may last for five or six weeks. The distribution of the pain is along the arm, especially on the external aspect, and the attacks sometimes come on slowly and disappear slowly. Hyperaesthesia is common, also paraesthesia, especially of the index finger or thumb, which persists after the acute phase has passed. The painful points described by Vallery, although often present, are sometimes not clearly defined. Mobility is unaffected, but the muscular power is much reduced, the reflexes are not much altered. Stiffness of the neck is felt, with pain on lateral pressure of the cervical column and on turning the neck on the sound side. Sometimes brachial neuralgia sets in with apoplectic form suddenness. In addition to essential neuralgia the authors describe various symptomatic forms, such as post-traumatic (often associated with a burning pain and glossy skin), pressure of tumours on bone, syphilitic, diabetic, encephalitic, zoster, Pott's disease, axillary tumours, reflex, and neuropathic. Treatment depends largely on the cause of the neuralgia. In the acute stage morphine may be necessary, heat is usually beneficial.

451 Remission of Diabetes Mellitus in Children

A HEINYAN TROSEY and H HIRSCH KAUFMAN (*Klin Woch*, October 15th 1925, p 2016) record the case of a girl, aged 14, who was admitted to hospital in November, 1924, in deep diabetic coma. Benefit was obtained from insulin, but large doses did not remove all the sugar and acetone from the urine, while on the other hand the general condition was too poor to allow the diet to be reduced drastically. Later with a diet of 1,250 calories and 110 grams of carbohydrate the insulin was reduced, and the child was discharged with the urine clear and a gain in weight of 4½ lb. after a seven weeks' stay. Insulin and the dietetic treatment were continued at home. In the following March the child was readmitted for a slight recurrence which soon yielded to a little more insulin. At the end of the month the urine was clear. In the absence of insulin treatment or definite diet restriction, a condition persisting to the present time, during which pubertal changes and great bodily development occurred. The impression derived from this and a similar case incline the authors to attribute the final good result to islet stimulation from the general endocrinological interplay of puberty. In other cases reported young children with catarrhal jaundice have developed severe diabetes, which soon disappeared after a little insulin temporarily, or even with diet restriction only. They agree that more investigation is needed to define the bearing of these observations upon prognosis and the question of spontaneous cure of diabetes in children.

452 The Vital Capacity of the Lungs in Pneumonia

J H ARNETT (*Journ Amer Med Assoc*, September 26th, 1925, p 986) has estimated the vital capacity of the lungs in thirty-two cases of pneumonia, examinations being made, both before and after the crisis, during periods in some cases of as long as four hundred days. He found that the vital capacity was greatly reduced early in the disease, and states that a reduction to less than 50 per cent is a valuable diagnostic point. As a rule the greatest reduction occurred shortly before the crisis, and he therefore thinks it possible to predict the advent of the crisis by this method. After the crisis in cases of uncomplicated lobar pneumonia the vital capacity was found to increase rapidly, but not always steadily, for about five to ten days, averaging 131 c.c. a day, in bronchopneumonia the daily rise was about 112 c.c. In cases of delayed resolution and empyema, however, the average daily rise was only 87 and 41 c.c. respectively. Arnett therefore believes that the routine estimation of the vital capacity in pneumonia would enable early information

to be obtained of the occurrence of these complications. After the primary rapid increase in the vital capacity the rate was found to slow down. Some patients regained their normal capacity in about 150 days, while others took 1 year, in many cases, however, the previous normal is probably never reached.

453

Chorea

L BABONNEIX (*Journ de Med et de Chir Prat*, September 10th, 1925, p 609) discusses the nature of chorea, and concludes that, while a rheumatic chorea does exist, some choreas are really manifestations of encephalitis lethargica, probably the chorea of pregnancy is of that nature. The anatomical lesions are very much the same as those found in encephalitis, so that, apart from the preceding history, it would not be possible to distinguish the two forms of chorea by an anatomical examination alone. The movements in rheumatic and encephalitic chorea are more or less similar, but in rheumatic chorea there is a previous history of rheumatic pains which is not found in encephalitic chorea, and in the latter there are associated symptoms, such as ptosis, paresis, myoclonus, and salivation, which are not present in rheumatic chorea. The sequelae are also different—endo carditis in the one case and mental or Parkinsonian symptoms in the other. As a rule there is no difficulty in distinguishing the two types.

454

Encephalitis following Measles

J BONABA (*Arch Lat Amer de Ped*, No 6, 1925, p 858), who records an illustrative case, remarks that nervous complications are not frequent in measles, encephalitis in particular being a rare event. Although some textbooks mention measles as one of the chief causes of encephalitis, Bonaba states that on closer study it will be found that this acute exanthem is rarely responsible for the cerebral condition, as is shown by the fact that among 62 cases of encephalitis reported by Comby in 1921 there were only two following measles. Bonaba's case was in a girl, aged 13, who three weeks after an attack of measles developed generalized convulsions, most marked on the right side and followed by right hemiplegia and aphasia. The hemiplegia gradually subsided, leaving only a slight hemiparesis, and the aphasia slowly improved. It was impossible in this case to incriminate arteritis, arterio-sclerosis, thrombosis, embolism, or haemorrhage, which are the usual causes of hemiplegia at other age periods, but are rare in childhood.

Surgery.

455

Resection in Gastropotosis

B MARTIN (*Zentralbl f Chir*, October 3rd, 1925, p 2226) claims that gastropotosis is due to stretching of the cardiac portion of the stomach. The majority of these patients are debilitated, and consequently the gastric musculature loses its elasticity and its contractile power to a considerable extent. The abnormality may commence at puberty and is not necessarily associated with a pendulous abdomen. Martin traces the origin of gastropotosis to an embryonic defect. The alimentary canal is divided, morphologically, into three portions: the first part terminates at the junction of the cardiac and pyloric portions of the stomach, the second part at the junction of the pylorus and duodenum. The upper end of the first part (pharynx and oesophagus) has a powerful musculature, while the lower end—that is, the cardiac portion of the stomach—is relatively thin and weak. Martin finds that in gastropotosis there is a definite contrast between the cardiac and pyloric portions, the musculature of the latter (including the pyloric ring) being much stronger than that of the cardiac portion, this is but an exaggeration of the differentiation common to the stomachs of all vertebrates. He gives diagrammatic illustrations of two types, which he calls "cachalot stomach" and "hare stomach", in the former the cardiac portion forms a thin vertical flask-shaped sac, while the pyloric portion is a rather thick and narrow tube. In the "hare stomach" type the cardiac orifice is close to the commencement of the pyloric portion, while the thin cardiac part forms a balloon-like sac to the left of the oesophagus. He recommends resection of the cardiac part, when thinned and dilated, and appendix diagrams showing the position of a test meal in stomachs before and after resection.

954 B

462 **Treatment of Impacted Fae** 25
F. PICCININO (*Rinascenza medica*, October 1st, 1925, p. 445,
who records an illustrative case in a man aged 26, musician,
that electro galvanic irrigation of the intestine with the battery
employed in very many cases of intestinal obstruction, has
never failed when the obstruction was due to impacted faeces.
The only instruments required are a battery, a galvanometer,

an irrigator, and a metal sound. The method is indicated in intestinal obstruction following obstinate and prolonged constipation, paralysis or paresis of the intestine secondary to compression or lesions of the spinal cord, falls on the abdomen or on the buttocks with lesions of the conus or cauda equina, or in other cases of severe disease of the spinal cord such as tabes or disseminated sclerosis. In short, he believes that, apart from cases in which there is obviously an anatomical obstruction, electro-galvanic irrigation of the intestine is always indicated in intestinal obstruction, even in doubtful cases. As the treatment is harmless it is worth while making trial of the method, which may avert a dangerous operation. As a general rule in cases of obvious or suspected myelopathy associated with intestinal obstruction the irrigation may be repeated with success and without ill effects for several days. It is particularly in lesions of the conus and cauda equina that systematic irrigation on alternate days has proved successful and rendered the use of purgatives needless.

463 The Action of Quinine and Cinchonine on the Heart

G. MELDOLESI (*Chronic circolazione*, September, 1925, p. 353) studied the action of quinine and cinchonine in a series of twelve healthy adults who showed no organic or functional disorders of the circulatory system. The drugs were given intravenously in doses of 0.25 and 0.30 g. per kilo of body weight. The results were as follows. Both drugs had a decidedly exciting action on the cardiac activity, the mechanism of their action being twofold. During the first stage they act by stimulating the sympathetic, increasing in particular the activity of the formation of stimuli and the tone of the myocardium, while their action on excitability and conduction is appreciable only in exceptional cases. In the second stage they act directly on the heart, causing a remarkable improvement in the circulation, which is shown by improvement in the quality of the pulse, by causing a slowing in the frequency of the cardiac contraction and an increase in the myocardial contractility and tone. The action of quinine is exercised particularly on the ventricular activity, while the action of cinchonine is extended to the auricles as well, but while the tonic action is very pronounced in the case of quinine it is practically negligible in the case of cinchonine.

Dermatology

Lupus Erythematosus

464 N. DYSON, *Id. + Tox. Derm. and Syph.*, October, 1925, p. 401. of lupus erythematosus by treating ointment and 8 cases with streptococcal ointment. A positive reaction was obtained in 68 per cent of those tested with tuberculin ointment and in 35 per cent of those tested with streptococcal ointment. Another group of cases did not react locally to either human, bovine, or streptococcal toxin, and autogenous streptococcal vaccines produced no change in the lesions, though in one severe constitutional symptoms were produced. Dyson concludes that the lesions are sensitized to certain bacterial toxins, and, should further investigations prove that these reactions are specific in individual cases, he considers that it would be justifiable to regard the toxin to which it reacts as the same as that which originally produced the sensitization. A. M. H. GRAY (*ibid.* p. 406), discussing the etiology of lupus erythematosus concludes that the disease is a definite clinical entity and an infective disease due to the local activity of a specific micro-organism, but that there is not sufficient evidence to show that this organism is the tubercle bacillus. Since tuberculosis is a common accompaniment of lupus he regards the latter as either predisposing to tuberculous infection or as lighting up pre-existing tuberculous infection, tuberculous subjects may be specially liable to contract it. He points out that streptococcal infection is a frequent terminal manifestation, especially in acute cases, and may also complicate the less severe types.

465

Cancers of the Skin

S. LABORDE (*Journ. de Radiol. et d'Electrol.*, September, 1925, p. 385) states that the methods of treatment of cancer of the skin differ in accordance with their histological type and clinical aspect. He divides these cancers into three principal types: the spino-cellular, the baso-cellular, and the intermediate. He distinguishes also a 'naevic' form, which requires treatment by electrolysis rather than by radiotherapy. While the baso-cellular tumours are particularly radio-sensitive, the spino-cellular type is radio-resistant. Darier and others have considered that the latter class is unsuitable for radiotherapy, although some authors now hold that spino-cellular epitheliomata are as radio-sensitive as those

of the baso-cellular type, or even more so. This recent view appears to Laborde to be incorrect, as, apart from the early lymphatic invasion and the rapid extension of the tumour, which render the spino-cellular cancers unusually serious, it is certain that they require a more stringent technique and more accurate dosage than any other epitheliomata of the Malpighian layer—they offer greater resistance to the radium emanations. A small spino-cellular epithelioma is more easily cured than an extensive infiltrating tumour of the baso-cellular type. Laborde gives details of extensive cancers of the intermediate and spino-cellular types. In a case of the first occurring on the face of a woman, aged 74, the introduction of radium needles and the application of radium to the skin resulted in cure. A spino-cellular epithelioma on the posterior surface of the right ear of a man, aged 75, who had previously been treated with x-rays without benefit, was similarly removed by radium. The author, recognizing the difficulty of curing these tumours when they have become in some sense resistant to x-rays, insists on the importance of the histological examination as a guide to prognosis. When previous irradiation has damaged the stroma of the neoplasm, the scar tissue then produced is often only temporary; the appearance of these tumours, either resistant to treatment or exhibiting local recurrences, is almost always the same—a chronic atonic ulcer, with or without necrotic areas indicating connective tissue deficiency and feeble attempts at cicatrization. On the contrary, when the stroma remains healthy, treatment is effectual in the majority of cases, in spite of previous irradiation of the tumour. Laborde adds that x-ray dermatitis may be improved considerably by applications of radium. The hyperkeratosis and the painful fissures disappear completely after the application of radium emanation through a moderately thick filter. Papillomata which exhibit signs of commencing malignancy and epitheliomata when still limited in extent may, he states, be cured definitely by the same method in from six to eight days. The treatment of metastases in the lymph nodes necessitates the use of considerable quantities of radium closely applied to the contours of the part by means of some carefully moulded plastic material.

466

Recklinghausen's Disease

H. SCHNEIDERMAN (*Arch. Derm. and Syph.*, October, 1925, p. 483) reports four cases of Recklinghausen's disease which, in his opinion, fail to reveal any evidence of that endocrine deficiency which some dermatologists have recently suggested as being its cause. He believes that the disease is to be attributed to some embryonic disturbance in the ectoderm, and that there is a distinct hereditary factor in the majority of cases. He is also of opinion that more evidence of heredity could be obtained if it were not for the low intelligence of many of these patients and their ignorance about their relations. He explains the association of endocrine disturbances with Recklinghausen's disease as being due to the whole nervous system being attacked and to the skin and other organs being predisposed to tumour formation. The endocrine glands may thus be attacked simultaneously, either by some structural or functional nervous disturbance, or by tumour formation. He believes that the disease starts as a developmental defect of the ectoderm, and he draws support for this etiology from Halsey Bagg's experimental production of deformities in embryos by the application of physical and chemical agents. Schneiderman, therefore, deprecates the incrimination of the endocrine system in this disease, and advises further biological study of the hereditary and developmental factors.

Obstetrics and Gynaecology.

Uterine Fibromyomata

467 J. G. CLARK and F. B. BLOCK (*Amer. Journ. Obstet. and Gynecol.*, October, 1925, p. 560) discuss the treatment of uterine fibromyomata based upon the study of 422 cases treated either by operation or with radium. They hold that either form of treatment should be undertaken by gynaecologists familiar with both, so that hysterectomy can be immediately undertaken if, on examination under anaesthesia, some contraindication to irradiation not previously discovered presents itself. Such contraindications are, in their opinion, tumours larger than a four months pregnancy, those complicated by adnexal disease or causing pressure symptoms for which irradiation would be too slow in its action to afford quick relief, those of rapid growth, large submucous tumours, and, with few exceptions, patients under 35 years of age. In their hands the mortality from radium treatment has been nil, and satisfactory results were obtained in 90 per cent of the cases after one treatment. In those cases requiring operation the authors conclude from a study of the literature

that myomectomy is attended by no higher mortality than hysterectomy, and the fact that it may be followed by pregnancy in a sufficient number of cases warrants its adoption in young women, especially when the growth is single and intramural or subperitoneal. Should hysteromyomectomy be decided upon, the authors consider that the vaginal route is unsuitable except in very rare cases in which the tumour is small with an associated prolapse, and they strongly advocate the abdominal route with a subtotal hysterectomy unless the cervix is badly diseased. In their experience carcinoma does not develop in the retained cervical stump with sufficient frequency to warrant risking the higher mortality and morbidity which they consider the total operation entails. In their series no death occurred after operation in uncomplicated cases, and in complicated cases the mortality was 3 per cent, the end results were satisfactory in about 95 per cent of the cases, the mortality and morbidity being usually due to complications.

468

Phlegmasia Alba Dolens

E COUDERT (*Journ de Méd et de Chir Prat*, October 10th, 1925, p 701) discusses the etiology of phlegmasia alba dolens, and concludes that immobilization should be commenced at the earliest opportunity, if possible before the clot has fully formed, and when only such symptoms as untoward temperature, quickened pulse, and slight cramps and pains in the legs exist. The leg should be supported evenly on a broad cushion of chaff which stops short of the heel, this is thus raised to 6 or 7 inches above the bed, the foot being kept at right angles to the leg. Should the phlebitis incommence, the limb should be surrounded by a layer of wadding, which is not changed unless severe pain supervenes, in which eventuality hot compresses can be applied twice or thrice a day, good nursing is needed to minimize movements of the limb. Since the lochia will not have ceased, and the patient will require enemas, and in view of the fact that she will remain in bed for six weeks at least it is much better to obtain an invalid's bed with mechanical facilities. Immobilization lasts three weeks, after which, if all symptoms have abated and the oedema does not increase, passive movements may begin with light massage, avoiding the course of the veins. This must be discontinued should the symptoms recur. No active movement is allowable before the thirtieth day, and the patient should not sit up until ten days later. The oedema does not decrease much until walking begins.

469

A Round Ligament Operation

G L CARRINGTON (*Surg, Gynecol and Obstet*, October, 1925, p 507) describes a round ligament operation for the surgical cure of uterine displacement in selected cases. After referring to the numerous procedures already in vogue he calls attention to those occasional cases in which the round ligaments are so attenuated as to consist of only a few strands of muscle fibre covered by a fold of peritoneum. Notes of a case are given in which, when performing a Simpson suspension, one of the round ligaments was torn in two in an attempt to bring it outside the peritoneum for suture to the rectus sheath. With an Anspach round ligament needle passed through the rectus sheath and the anterior surface of the broad ligament the free end of the proximal half of the torn ligament was drawn through and sutured to the rectus sheath and the distal half then sutured to the anterior surface of the uterus, the two halves were then sutured together where they lay parallel and in close proximity to each other. The procedure was then repeated upon the ligament of the other side. By this means a double round ligament support and a double peritoneal support is obtained, giving to the uterus practically the combined support of a Simpson and a Coffey suspension. The procedure can be varied by carrying the distal portion through the broad ligament and suturing it to the posterior surface of the uterus, thus performing a sling operation combining a form of the Simpson and Baldy Webster operations.

Pathology.

470

Detection of Hepatic Insufficiency

V C CRIADO and J C MELENDRU (*Arch de méd, cir y esp*, September 26th, 1925, p 583) describe a test based on experimental work at the Institute of Physiology of Borno University. They concluded that (1) If rats poor in carbohydrates were given large quantities of fat a small increase in carbohydrates occurred in these animals. (2) Administration of fat was followed by an elimination in the urine of acetone, diacetic acid, and beta oxybutyric acid. (3) The elimination of acetone was in inverse proportion to the increase in carbohydrates. (4) If carbohydrates in the form of saccharose were added to the fat administered a consider-

able increase occurred in the carbohydrates, out of proportion to the quantity of sugar administered, and coinciding with this increase the elimination of ketone bodies entirely ceased. As the result of these experiments and those of Embden and his collaborators on the origin of acetone and its place of production the authors concluded that a fairly high percentage of the fat in the organism undergoes metabolism in the form of carbohydrates, that the site of this transformation of fat into carbohydrates is the liver, and for this transformation to be effected the liver must contain a small quantity of glycogen, without which incomplete transformation gives rise to the formation and elimination of ketones. They have therefore devised the following test. Fat administered in the form of fresh butter in doses of not less than 130 grams combined with carbohydrate in the form of bread, and the urine is examined for the presence of ketones as determined by Lieber's test. Positive results were obtained in some cases of obvious disease of the liver, and in one where a hepatic affection was probable, whereas in four healthy individuals the test was negative.

Immunity of the Thyroid Gland to Tuberculosis

S R GLOYNE (*Journ Path and Bact*, July, 1925, p 451) has conducted a series of experiments on various animals with a view to discovering whether any reason can be given for the apparent immunity of the thyroid gland to tuberculosis. He refers to the well known fact that in man the thyroid gland only rarely is so infected, and finds that even in the guinea pig it is difficult to produce thyroid lesions experimentally. It is further shown that thyroid substance has no bactericidal effect on tubercle bacilli either *in vitro* or when used therapeutically in infected guinea pigs. It was found that the high resistance to tuberculosis of albino rats and axolotls was not reduced by thyroid feeding. Gloyne obtained no evidence to support the suggestion that has been advanced that the thyroid gland had any antitoxic action in tuberculous infections, or that it was in any way associated with the development and progress of tuberculosis. He considers it possible that the anatomical position of the thyroid gland protects it from this infection, and he instances the relative immunity of the heart and voluntary muscle. In all these cases, he adds, this immunity may be explained conceivably by histological considerations.

Leptospira icterohaemorrhagiae.

E W WALCH and G B WALCH SORSDRAGER (*Nederl Tydschr v Geneesk*, October 3rd, 1925, p 1535), as the result of the examination of rats (*Mus decumanus*) at Baltimore for the presence of *Leptospira* came to the following conclusions: (1) of this organism in rats microscopic as tests as to its on animals should be performed. (2) of this organism in rats microscopic as tests as to its on animals should be performed. (3) The development of agglutinins and lysins in the serum of experimental animals cannot be used to determine whether the injected material from a rat contains leptospirae of little virulence. (4) No leptospirae were found in a Berkefeld filtrate of leptospirae even after concentration on an agar filter. (5) Leptospirae were found in Berkefeld filtrates of cultures. (6) Leptospirae were frequently found in *Lovaditia* sections of the livers of guinea pigs which had died with all the symptoms of spirochaetosis icterohaemorrhagica, but in which no leptospirae could be found on dark field illumination. (7) While the above facts militate against the existence of a granular phase, it cannot be altogether excluded.

Diaplyte Tubercle Vaccine

J S C DOUGLAS, J W EDINGTON, and F W SIMSON (*Journ. Path and Bact*, October, 1925, p 633) produce evidence that in guinea pigs the diaplyte vaccine introduced by Dreyer is without beneficial effect on the progress of tuberculosis. Guinea pigs were infected by the subcutaneous injection of 0.01 mg. of a human strain, and either before, simultaneously with, or after the infection the animals were given weekly doses of diaplyte vaccine, made from the same strain as that used in provoking the disease. The dose of vaccine given was 0.1 mg. of the extracted bacilli. The animals were weighed daily, and their average life was the same as that of control unvaccinated infected animals. No marked difference was found between the two sets of guinea pigs, but in one batch the average survival time of the vaccinated animals was 138 days of the controls 160 days. No difference was found post mortem between the extent of the lesions in the two sets of animals. The authors conclude that the diaplyte vaccine given in the doses indicated, whether prophylactically or curatively, is of no value in combating tuberculosis in guinea pigs.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine.

474 Atypical Tabes Dorsalis

A. L. BENNETT (*Amer Journ Med Sci*, October, 1925, p. 538) calls attention to the incomplete or atypical (*forme fruste*) type of tabes dorsalis which in gastric crises sometimes leads to errors in diagnosis and the performance of unnecessary abdominal operations. The chief sources of error appear to be that cases with crises are usually not typical, that examinations are incomplete with failure to realize that the root pains of cerebro spinal syphilis may simulate almost any abdominal lesion, and that the spinal fluid is not examined with sufficient frequency. In most cases spinal fluid examination will settle the diagnosis. Notes of a case are given in which five major abdominal operations had been performed in various hospitals without relief until a bilateral chordotomy for section of the antero lateral columns was performed. Gastric crises occur in from 10 to 20 per cent of all cases of tabes dorsalis, and reliable reports indicate that needless operations are performed at least once through mistaken diagnosis in more than 10 per cent. In approximately half the early cases the classical signs of tabes may be absent when abdominal pains are present. The knee jerks are normal or increased in at least 25 per cent of early cases, and about 10 per cent remain atypical throughout the course of the disease. Bennett urges that a complete history should be obtained, and careful neurological and spinal fluid examinations should be made in cases presenting the slightest diagnostic doubt, and in order to decrease the frequency of unnecessary operations upon tabetics be considers that the possibility of an atypical form of tabes as the cause of recurrent abdominal attacks should be impressed upon the surgeon.

475 Meningitis due to a Mixed Infection

L. APPELBAUM (*Arch of Ped*, September, 1925, p. 607) records a case of meningitis in a male infant aged 7 months, who was taken suddenly ill with a high temperature followed by convulsive seizures and attacks of projectile vomiting. When the child was first seen by Appelbaum, after the illness had lasted three weeks, there was marked rigidity of the neck with retraction of the head and mild optic neuritis in both eyes. The diagnosis lay between epidemic cerebro spinal meningitis and tuberculous meningitis. By lumbar puncture 35 ccm of cloudy fluid was withdrawn under increased pressure. The fluid showed a great increase of cells, which were mostly polymorphonuclears. Gram negative cocci were found in the smear, and on cultivation proved to be meningococci. Some improvement followed two injections of anti meningococcal serum, and no organisms were found in the smear, but a twenty four hours' culture showed a Gram negative bacillus which by its morphological and cultural characteristics and the agglutination reaction proved to be the paratyphoid B bacillus. In spite of intraspinal injections of a mixed vaccine of both meningococci and paratyphoid B bacilli the child became progressively worse and died. No mention is made of a necropsy.

476 Problems associated with Diphtheria

VERNEUVE (*Rev de Laryngol, d'Otol et de Rhinol*, October 15th, 1925, p. 651) recalls how, between 1884 and 1894, the discovery of the diphtheria bacillus was followed so rapidly by the preparation of the toxin and then by the antitoxin, with the production of a remarkable series of successful results, that it was thought that little more remained to be done. Since that time, however, certain problems have arisen which complicate what appeared to be a very clear issue. Diagnosis is still a matter of difficulty. In a true case it is essential to begin treatment at once, and yet undesirable to give unnecessary injections. It is dangerous to wait for the twenty four hours necessary to isolate the organism, and the diagnosis has to be made on clinical observation, hence elaboration of technique is to be avoided. The method of injecting the antitoxic serum requires some consideration. Absorption by the intradermic method is the slowest, by the subcutaneous route it is quicker, and the intravenous administration reaches the maximum of rapidity. On the other hand the elimination of the antitoxin varies in the same order as the absorption. The maximum concentration of the antitoxin in the blood occurs at once by the intravenous method, in about twenty four hours by the intramuscular route, and in about three days by the intradermic method. The intravenous method

is advised when the patient is in a serious condition owing to delayed diagnosis or a very acute infection, while the other methods can be best employed in cases of a lower grade of severity. The dose required is another matter of difficulty, and depends to a large extent on the clinician's estimate of the severity of the infection. This is inexact, and the resulting doses given vary from 2,000 units in many cases to such enormous doses as 100,000 units, given by Danish clinicians. Anaphylaxis is an accident of some importance, and is said to be due to the presence of serum albumin and englobulin, the actual antitoxin being a pseudo globulin. Scrums have been prepared from which the two forms have been removed by fractional precipitation. The administration of suprarenal extract definitely neutralizes the toxin, and its use is becoming more frequent in the treatment of diphtheria. Another difficult problem is set by the carrier, especially one who has a diphtheritic ulcer deep in his nasal cavity, here the Schick test is of value, but must be confirmed by the laboratory tests and cultures. The treatment of paralysis is another difficult problem, and very early injections of antitoxin appear to act as a prophylactic, but later when the paralysis is established they have no effect. Some authorities give intradural injections in the early stages of paralysis, but there is said to be grave risk of anaphylaxis in this procedure.

477 Nervous Complications of Varicella

P. GALLI (*La Pediatria*, July 1st, 1925, p. 681) reviews the literature and records two cases in a boy aged 5 and his sister aged 2 years, who within a week after the onset of varicella developed symptoms of acute cerebellar ataxia. The boy, in whom the symptoms were most pronounced, suffered from vomiting and vertigo, and presented an ataxic gait and slight nystagmus, while the girl had an ataxic gait only. In both cases these symptoms entirely disappeared in the course of a fortnight. The cerebro spinal fluid was normal. Acute alcoholic intoxication, meningitis, and astasia abasia could be excluded, and Galli attributes the condition in both cases to the toxins of varicella, which gave rise to the syndrome of acute cerebellar ataxia.

Surgery.

478 Lymphaticostomy for Peritonitis

C. H. WHITEFORD (*Brit Journ Surg*, October, 1925, p. 302) discusses lymphaticostomy—the operation of exposing and draining temporarily the cervical portion of the left thoracic duct—in the treatment of peritonitis. This operation aims at preventing the blood stream from receiving bacteria and toxins from an inflamed peritoneum and intestines. In Costan's procedure under general or local anaesthesia a 3 inch incision is made along the lower posterior border of the left sterno mastoid muscle, and the jugular vein is rolled forwards to expose the thoracic duct. This is tied with catgut close to its termination, a narrow strand of rubber being passed into it through a half inch incision in its long axis. In order to preserve the lumen of the tube and to provide a method of stopping the escape of chyle through the fistula without further operation, Whiteford recommends using a cannula retained in the duct by a half tied catgut ligature round it, this ligature can be completely tied after the cannula is removed should it be necessary to stop the escape of chyle, or if unwanted it can then be removed. Permanent or prolonged obliteration of the duct appears to accentuate the risk of a flow from the fistula, causing death by starvation and the preservation of the lumen is important in order that the chyle may be permitted later to resume its original route. Costan, who first performed the operation in 1922 considers that it is indicated in secondary peritonitis as an adjunct to local treatment, when symptoms of continued septic absorption persist after abdominal operation, and in primary peritonitis especially due to pneumococcal infection. A COOKE (*ibid*, p. 309) gives four case reports in which the operation was performed for general peritonitis. Assuming that it is of value when a general peritonitis is of such severity as to warrant its performance, in addition to the removal of the cause he points out that between the extremes of a moribund patient and one in whom the prognosis is good under ordinary methods of treatment there is a fairly large class, in which the mortality may be ranged as over 10 per cent, for whom the operation may afford a chance of recovery.

479 Disarticulation at the Hip Joint

V SANCHIS PERPINA and R DIAZ SARASOLA (Madrid) (*Zentralbl f Chir*, October 17th, 1925, p 2338) describe the stages of their method of disarticulation at the hip joint as follows. An assistant extends and slightly adducts the hip joint, the surgeon divides at one stroke the skin, fascia, and muscles down to the inner aspect of the joint capsule. The skin incision extends from the tuber ischii to a point two thirds of an inch below and to the inner side of the centre of the groin, the pectineus, inner part of rectus femoris, all the adductors and the obturator externus are thus divided. The blood vessels are seized with artery forceps and ligatured. The capsule of the hip joint is opened, the head of the femur is luxated, and the ligamentum teres is divided, if intact, as well as the Y ligament. The femoral vessels are seen at the upper and outer angle of the incision, these are divided between double ligatures and the remainder of the front of the capsular ligament severed. The next step is section of the posterior portion of the capsular ligament and of the soft tissues, disarticulation being completed by cutting the attachments of the muscles to the trochanters and shaft of the femur. Finally an outer flap is cut sufficiently long to permit retraction of about two inches. The authors claim that this method is superior to Verneuil's operation, both in regard to safety and the ease and rapidity with which it can be performed. As the important blood vessels are identified and secured at each stage of the operation the loss of blood is very slight. The long posterior flap gives a good covering to the tuber ischii, the upper limb of the scar being parallel to and $1\frac{1}{2}$ inches below the groin, and the lower shorter portion being over the divided adductor muscles, freedom of the scar from any pressure is ensured.

480 Chronic Appendicitis

H BARDY (*Finsha Loharsallshapets Handlingar*, June, 1925, p 562) has studied the after histories of those of his hospital patients who, though they suffered no acute attacks of appendicitis, had certain vague signs and symptoms which, by a process of exclusion, led to the removal of the appendix. Between 1902 and 1921 there were 45 such cases operated on, and as many as 40 of the patients were women. The after histories of 24 were obtained, and it was found that as many as 20 were completely rid of their symptoms. Among these 20 cases there were 4 in which the appendix was linked, 7 in which it contained faeces, 3 in which it showed adhesions, 1 in which it was attached to a mobile caecum, 1 in which its mesentery was short, 1 in which its serous lining was injected, and 3 in which no marked changes could be found. A classification of these 20 cases, according to their most prominent signs and symptoms before operation, showed that there were 13 patients who complained of abdominal discomfort, which was most marked in the right side and greatest after exertion. There were 4 who complained of dyspeptic and nervous symptoms, and 3 who complained of pain in the lower abdomen. In 14 cases there was a record of slight tenderness on deep palpation. The author concludes that there exists a chronic form of appendicitis which is not punctuated by acute attacks, and that the most common symptoms are a sense of discomfort in the right abdomen, tenderness on deep palpation, and that appendicectomy rids such

Therapeutics.

481 Treatment of Congenital Syphilis in the Infant

M PINARD (*Presse Med*, October 17th, 1925, p 1379) states that in treating infantile syphilis inoculation still holds its place. Blue ointment or calomel ointment may be used. The suckling is also affected by drugs given to its mother, for vomiting may occur regularly in the child on the day the mother is given salvarsan. This intermediary treatment is not, however, to be depended upon. Mercury lactate is the best drug for oral use, arsenic being risky unless under careful supervision. Up to the age of 3 months the daily dose of 1 in 1,000 solution of mercuric lactate may be 12 drops per kilogram of body weight, after 3 months, 10 drops. Rectal medication is convenient, although Pinard adds, no radical treatment can be thereby effected. By injection the benzoin or bimodide of mercury may be given, but arsenic is much more active than either or than bismuth. Neosalvarsan is given in slowly increased doses, eight or ten injections, followed by a three weeks' interval. The final doses should not be less than $1\frac{1}{2}$ cg per kilogram of body weight. If no contraindication exists intravenous administration is best being the least painful and the internal jugular and epitrochlear veins are recommended for the injection. Absorption by this method is some hours quicker than by any other.

482 Vaccine Treatment of Whooping cough

G J BLOOM (*Arch of Ped*, August, 1925, p 485) has employed vaccines in the prophylaxis and curative treatment of whooping cough since 1912. Out of 383 cases immunized only 4, so far as he knows, developed the disease. The routine employed is as follows: (1) A mixed vaccine is prepared containing 8,500 million bacteria, of which pertussis bacilli number 5,000 million and influenza bacilli 3,500 million. (2) The vaccine is given within ten days after it has been prepared. (3) 1 c cm is given on alternate days for three doses, then 1 c cm every second year if the complement fixation test justifies it. (4) In cases of marasmus, congenital syphilis, bronchial asthma, convalescents, and infants under 1 month of age half the specified amount should be given. For therapeutic purposes a vaccine not more than one month old should be used, one prepared within ten days being best. The initial dose should be a maximum one, and subsequent doses of the same amount should be given provided there is no marked reaction, a reduction of $1\frac{1}{4}$ c cm is then made in the succeeding dose. (5) The injections are given on alternate days until the more pronounced symptoms are subsiding. (6) The number of doses should not be limited, but as many should be given as are indicated in a particular case. No examples of anaphylaxis were seen, and only a few cases of reaction with fever seldom exceeding 102° and lasting only a few hours. The local reaction was trivial. (7) Usually no drugs were given in association with vaccine treatment, but in a few instances they were prescribed to facilitate sleep. Out of a series of 374 cases 286 were cured within twenty days, and 317 were discharged within thirty days. The patients were given from two to six doses, the average being four doses for each case. The only deaths which occurred in a series of 458 cases were one from thymic asthma and one from tuberculous meningitis. No other case of tuberculosis had developed in the series.

483 Treatment of Hypertrichosis.

E SAAFIELD (*Dermatol Week*, October 24th, 1925, p 1565) finds diathermy superior to electrolysis in the treatment of hypertrichosis. He uses an insulated needle holder (with or without a contact breaker) and therefore a rubber glove is not required. By means of an amperemeter in the circuit it is possible to ensure accuracy in the dose and thus to avoid unnecessary pain. Saafield uses a circular metallic electrode 5 cm in diameter, which is applied to the front of the neck or to the upper part of the chest wall. After the passage of the current for two or three seconds the hair can be removed with epilation forceps, while electrolysis requires the passage of the current for fifty to sixty seconds before the hair follicle is destroyed. The pain produced by diathermy is trifling, and the author adds that patients who have been subjected to both methods of treatment prefer diathermy.

484 Sodium Chloride in Bromism

J SLEVENSON (*Arch of Derm and Syph*, October, 1925, p 525) has used sodium chloride in the treatment of skin eruptions due to the retention of bromides in the body, and reports that, if given in appreciable amounts, intravenously or by mouth, the excretion of bromides is hastened. This action, he states, is not due to diuresis, but to the chloride replacing the bromide by mass action. He gives once a day a dose of 60 grains of sodium chloride in salol coated tablets. The skin eruptions and the other manifestations which owe their chronicity to the slow excretion of the bromides clear up rapidly. He adds that nephritis is a contraindication to this treatment, and suggests that conditions of iodism might be benefited similarly.

485 Antiseptic Baths in General and Cutaneous Diseases

L COLANGELO (*Il Morgagni*, September 20th, 1925, p 1192) states that the drugs employed for antiseptic baths are potassium permanganate in doses of 5 to 6 grams for adults and half as much for children, hydrogen peroxide neutralized with sodium carbonate, sulphate of copper, or zinc in doses of 15, 25, or 50 grams per bath, zinc chloride, iron sulphate, and sublimate in doses of 5 to 10 grams for adults and 1 to 2 grams for children. The duration of the bath is fifteen to twenty minutes, the temperature ranging from 89° to 93° F. Antiseptic baths are particularly indicated at an early stage of general diseases, especially in the eruptive fevers. In varicella a potassium permanganate bath (5 to 6 grams per bath) is useful in all stages of the disease, and should be continued until the epidermis is restored to its normal condition. The same may be said of antiseptic baths throughout the course of scarlet fever and rubella. In typhoid fever antiseptic baths may prevent the occurrence of cutaneous complications due to pyogenic and other microorganisms. The baths are also of value in erysipelas, especially the migratory form. In skin diseases antiseptic baths are useful for purposes both of prophylaxis and treatment.

In pyodermit baths containing potassium permanganate, copper or zinc sulphate, or sublimate, have a remarkable effect. In case an antiseptic bath is most suited for the chronic and puriginous lesions, especially in cases of secondary infection due to pyogenic microorganisms. In psoriasis they are indicated for preventing pyodermita. In exfoliative dermatitis, accompanied by pruritus and nervous symptoms such as insomnia, antiseptic baths produce relief and finally a cure. In burns of a superficial and extensive character potassium permanganate baths are suitable. In frost bite local baths are indicated, containing 5 per cent solution of calcium chloride.

Laryngology and Otology.

486 Paroxysmal Rhinorrhoea

J FREEMAN (*Journal of Laryngol and Otol*, September, 1925, p 561) describes the peculiar sensibility of the nasal mucosa of certain people to proteins of various nature—egg albumen and grass pollen being two common examples. He has been able to sensitize his own and his colleagues' nasal mucosa to various proteins and to produce attacks of rhinorrhoea at will. In cases of hay fever he has found that injection of the pollen into the dermis only produces local symptoms, but by giving pollen in the food, vomiting, diarrhoea, and giddiness were induced. He injected pollen into a vein and produced massive urticaria, headache, and asthma, but only a moderate amount of rhinorrhoea. If the serum of a sensitive man is injected into the subcutaneous tissues of a healthy man the overlying area of skin will become sensitive for some weeks. Sensitivity is sometimes hereditary, and Freeman reports two families which illustrated this most clearly. He considers that protein sensitivity is the most important factor in paroxysmal rhinorrhoea, but he recognizes that there is a nervous element and that traumatic and pathological conditions in the nose may have a part in causing the disease. A BROWN KELLY (*Ibid.*, p 563), discussing the condition from the clinical point of view, states that hypertrophic conditions of the turbinates and mucosa, the formation of polypi and such conditions have usually been present for some time before the onset of the paroxysmal attacks, but in some cases these may not appear until the rhinorrhoea has been in force for some time. He finds that in a large proportion of the cases there is a marked hyperaesthesia to touch and other stimuli. J. Adam considers that asthma and hay fever may be caused by toxæmia, by errors in diet, and by abnormal conditions in the nose, such as deflected septum. Treatment should aim at removing all sources of toxæmia and abnormalities and at instituting a healthy régime in the patient's life. Margaret Ford has followed up over two hundred patients with asthma upon whom operations had been performed. She found that removal of tonsils and adenoids (tubotomy), and submucous resection of the deflected septum were followed by the best results. Removal of nasal polypi and of adenoids was productive of only very moderate results, and cauterization was particularly disappointing.

487 Ear Infections due to the Enterococcus

A. P. MISSORICI (*Arch Ital di Otol, Rinol e Laringol*, September, 1925, p 555) reports a case of otitis due to the enterococcus, which has been found in cases of peritonitis, meningitis, urethritis, septicæmia, and other conditions. A man aged 48 complained of pain in one ear and was found to have a bulging and swollen drum, which was incised. Shortly afterwards the other drum underwent the same changes and was also incised. These followed a most profuse mucopurulent discharge with swollen drums and some stenosis of the external meatus. As there were no signs of abatement, and examination of the pus showed the presence of the enterococcus an autogenous vaccine of this organism was given, the dose being gradually increased from 25 to 300 million organisms without any improvement. From the fortieth day injections of 500, 800, and 1,000 million were administered, with very rapid amelioration and cure, the discharge ceasing and the tympanic membranes healing. Calceoli and Vaglio published three cases which began as enterococcal otitis the first developed thrombosis of the cavernous and the inferior petrosal sinuses, the second a localized meningitis and a thrombosed lateral sinus, and the third a diffuse meningitis and a thrombosed sinus. Citelli has also described a case of otitis due to this organism which was complicated by a thrombosed lateral sinus and septicaemia. Missorici points out the very severe nature of the infections caused by this organism, and refers to the possibility of it lying dormant as spores. He states that the presence of the organism may be readily detected by the agglutinating power of the patient's serum and confirmed by direct culture.

488 Disturbances of the Otolith Apparatus in Ear Disease

G. TENAGLIA (*Arch Ital di Otol, Rinol e Laringol*, May, 1925, p 257) states as his experience after observing many cases that disturbance of the otoliths occurs more often and more markedly in acute lesions, and particularly in acute exacerbations of chronic lesions, whether the exciting condition be inflammatory, traumatic, or toxic, and that the disturbance persists as long as the acute condition is present. The signs are more usually connected with the otoliths of the saccule and are associated with some loss of hearing, while affections of the otoliths of the utricle are associated with some disturbance of the function of the semicircular canals. It has been shown that the operations and other treatment which remove the cause of vestibular irritation also terminate the subjective symptom of vertigo and the past pointing phenomena, these signs must thus be classed as reflexes to irritation of vestibular origin, it being a well known fact that the cristae of the ampullary ends of the semicircular canals are stimulated by movement and not by the position of the head. The disturbances of the "lapillae," or otoliths of the utricle, can be estimated by the deviation of the forefinger in the past pointing tests in the horizontal plane, and the disturbances of the "sagittae," or otoliths of the saccule, by the deviation of the finger in the sagittal plane. The author remarks on the great value of these tests in the localizing of lesions in the labyrinthine portion of the ear.

Obstetrics and Gynaecology.

489 Syphilis in Pregnancy

J. N. NATHANSON (*Sury, Gynecol and Obstet*, September, 1925, p 322) found evidence of syphilis in 29 per cent of 413 pregnant women (in only 2 of the 413 was a clinical history of syphilis obtained), this figure agrees with the evidence of other investigators. As the result of careful study of his cases and of the literature he comes to the following conclusions. He believes that Colles's statement that it is possible for a mother to bear a syphilitic infant without herself showing any signs of the disease, and that she is immune to infection by her own child is neither proved nor disproved, although the maternal theory of infection appears to be the more likely. A positive Wassermann reaction in the mother during pregnancy does not necessarily mean that the child will develop syphilis. A positive Wassermann reaction in the blood and the umbilical cord should not be made the sole basis for diagnosis of syphilis in the newborn, and routine microscopic examination of the placenta for evidence of Frankel's disease affords more conclusive evidence of syphilis. Nathanson agrees that pregnancy may cause definite alterations in the course of maternal syphilis, although the mechanism of this is at present obscure. He thinks that syphilis is of little importance in the production of abortions or miscarriages during the first two thirds of pregnancy, but is a most prominent cause of premature births and stillbirths in the last third. He adds that syphilis cannot be regarded as a specific cause of congenital malformations or of monstrosities.

490 The Blood Changes in Pregnancy

J. E. R. McDONAGH (*Journ Obstet and Gynaecol of the British Empire*, Autumn Number, p 512) has investigated the changes occurring in the blood during pregnancy, and concludes that the toxæmias of pregnancy and of the puerperium are due to physical changes in the protein particles in the plasma. He says that the protein particles become dehydrated in pregnancy, and since similar changes occur in certain pathological conditions of the female generative organs and are not with a slight degree during menstruation, the primary cause would appear to be maternal and not foetal. These changes may account for a positive Wassermann reaction appearing in a pregnant non-syphilitic woman. They are not pathognomonic of pregnancy since they are also produced by anaesthetics, the changes responsible for eclampsia are the same as those causing uraemic and diabetic coma. When these changes are of slight degree some of the protein particles merely lose their adsorbed constituents (electrolytes, salts, sugar, amino nitrogen, and fat) and pass into true solution. In other cases these particles either increase in number as much as to occasion gelation or else they grow in size agglutinate, and become precipitated. The author accordingly classifies the toxæmias of pregnancy under three headings: (1) hyperemesis gravidarum, due to an excessive number of protein particles in the plasma (gelation), (2) eclampsia occasioned by many of the protein particles going into solution while others collect in the renal and cerebral capillaries (gelation by distention), (3) the toxæmia caused by the

Indications for Temporary Sterilization
of Gynil, October 31st, 1925, p 2488)

Sarcoma of the Uterus

Pathology.

1040 D

49%. Malignant Endocarditis and the Wassermann Reaction

The Etiology of Mumps

295

1. KERMORGANT (*Compt rend hebtt de l'Acad des Sci*, April 27th, 1925, p 1293) states that the infective power of the buccal secretions of mumps patients has long been known. Troussens, Rilliet, and Gueneru de Vussy even suggested the possibility of a localization of the mumps infection in the buccal mucosa in the form of stomatitis or tonsillitis. Experimental proof of the presence of the virus in the saliva of mumps patients has been furnished by Gruenta (1908), Mervyn Gordon (1914), and Wollstein (1916-18). Kermorgant employed the virulent material obtained by lavage of the buccal cavity with saline solution in preference to serous fluid from the parotid of the organism. The centrifugized could be obtained with its virulence already attenuated by the defensive reaction of addition of normal saline in the dose of 1/10 ccm into monkeys. The incubation period of seven days by inflammation of the submaxillary and lacrimal glands and a marked meningeal reaction accompanied in the material and inoculation of a mixture of the medium consisting of horse serum diluted to a fluid of normal saline solution showed the symbiosis of *M. simius* with bacterium and a spirochaete. Inoculation of all the 1/10 ccm of the culture produced a disease with all the characteristic features of mumps—namely, bilateral parotitis, inflammation of the submaxillary glands, orchitis, and a meningeal reaction. Inoculation of the testis of a rabbit or monkey with 1/10 ccm of the culture produced, after an incubation of twenty four to forty eight hours, an orchitis which never ended in suppuration, but always in sclerosis. The spirochaete factor in the etiology of the experimental disease was also confirmed by its constant presence in the glandular lesion, the presence in the serum of endotoxin in culture. Lastly, the presence in the serum of endotoxin affords further confirmation. One attack of the infection conferred immunity on animals and Kermorgant has been able to vaccinate rabbits by injection of cultures of spirochaetes of attenuated virulence.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

396 Typhus in Children

A MEZBOURLAN (*Arch de méd des enf*, September, 1925, p 558) states that in 1917 an epidemic of 885 cases of typhus occurred at Ouzoun Keupru, a small town on the Balkan railway line leading to Gallipoli, 84, or 19.15 per cent, were in children under 16. The male sex was most affected, 53 being boys and 31 girls. Infants aged a few days or months were affected as well as older children. Although the disease may occur in children of any age, the symptoms are slighter and more transient in infancy, when larval and abortive attacks are almost the rule. Moreover, it must not be forgotten that in epidemic times an indisposition or transient fever in infants is often attributed by the parents to a chill, bronchitis, or gastro-intestinal upset, whereas it may be really a mild attack of typhus. In older children from the age of 5 to 12, and still more so from 12 to 16, Mezbourlan almost always found, as in adults, a fever of fourteen days' duration, with a period of onset lasting three days, a fastigium of seven or eight days, and a period of decline of two or three days. Contrary to what is the rule in infectious diseases such as measles, scarlet fever, and typhoid fever, the temperature in typhus is no guide to the prognosis. A relatively mild form may kill the patient, while an attack accompanied by a high temperature may end in resolution on the fifteenth day. Another peculiarity of the disease in children is an attenuation of the principal symptoms in the puerile and anaemic, and their aggravation in big children with a strong constitution. In contrast with the eruption in adults, the rash in children aged from 5 to 16 is pink, morbilliform, or of a scarlatinal tint, and of short duration. Ecbymotic and purpuric eruptions are very rare. Delirium, somnolence, hebetude, the typhoid state, and restlessness may occur in the typhus of children, but are less pronounced than in adults.

397 Scalp Ringworm in Adults

V BORKOWSKI and F KRZYSZTAŁOWICZ (*Ann de Derm et de Syph*, October, 1925, p 597) say that while favus of the scalp is not rare in adults, ringworm in most countries undoubtedly is. Ringworm of the beard state the authors, whose experience is drawn from a Warsaw clinic, is not uncommon. One form of scalp ringworm in adults presents lesions partly on the hairy scalp, partly on the uncovered skin. These lesions may be seen as rings of vesicles which disappear spontaneously, but usually suppuration is observed. The fungus responsible is that one which in children develops colourless partly among the hair, partly on smooth skin. Ordinary scalp ringworm will vanish spontaneously at the age of 15, as the region affected then seems to become a medium unfavourable to the fungus, such change being possibly due to the action of the newly elaborated genital hormones. According to Sabouraud, however, some strains of fungus can persist after puberty. In three years the authors saw four women with scalp ringworm, the patients ranging in age from 40 to 65 years. As they were all Jewesses, prevented from emigrating by reason of their ailment, the authors think that in this class of the population the lesions under notice may not be very rare.

398 Leptospirosis Icterohaemorrhagica

J SAILER (*Amer Journ Med Sci*, September, 1925, p 332), who records two illustrative cases, states that leptospirosis icterohaemorrhagica, or Weil's disease is probably not uncommon, as many cases of icteric jaundice may be mild forms of this affection, and possibly myositis without jaundice and accompanied by intestinal manifestations may also be due to the leptospira. Confirmation of suspicions can easily be obtained by examination of the blood by dark field illumination. Blood examination may be positive as late as the tenth day, as in one of Sailer's cases, but should be performed as soon as possible. In the early stage guinea pigs should be inoculated with the patient's blood and later with the sediment of the urine, collected as aseptically as possible. The leptospirosis of guinea pigs is characteristic. An emulsion of the liver of a guinea pig dying of or killed during the disease will infect other guinea pigs, and the leptospira can be maintained indefinitely. The cases recorded by Sailer, which occurred in men aged 51 and 44, were of special interest as being the first cases occurring spontaneously to be recognized in Philadelphia and its environs.

399 Familial Dercum's Disease

G O BOLTON (*Nederl Tijdschr v Geneesl*, September 26th, 1925, p 1433), who records an illustrative example, remarks that adiposis dolorosa or Dercum's disease rarely occurs in several members of one family. Von Koczynski has given a description of a family in which the members for four generations showed a painless obesity which became converted into a painful lipomatosis at the time of menstruation. Bolton reports four cases of Dercum's disease in two generations, all occurred in women, the male members of the family being entirely unaffected. As a general rule the syndrome is much commoner in women than in men. Not infrequently alcoholism plays an important part in the aetiology, and usually the symptoms first appear in women at the menopause. Bolton's cases were unusual in that there was no history of alcoholism, and that the disease appeared long before the menopause, when the patients were 35 or 36 years of age. It is only rarely that the disease begins in childhood, as in the case reported by Hale White in this JOURNAL (December 2nd, 1899, p 1533).

500 Meningitis caused by B paratyphus B

M B BRADY (*Arch of Ped*, August, 1925, p 550) records a fatal case of meningitis in a female child aged 13 months, in whom the disease commenced with slight gastro-intestinal disturbance. Lumbar puncture gave issue to turbid fluid under considerable pressure from which a single bacillary strain was isolated. It formed red and grey in glucose broth, and neither acid nor gas in a lactose medium. Agglutination reactions with *B paratyphus B* serum was positive in dilutions up to 1 in 2,700. There was no autopsy. Meningitis due to *B paratyphus B* is a rare disease. Brady has been unable to find a similar case in English literature, but has collected eight cases of paratyphoid meningitis reported by French or German observers. One of these was due to *B paratyphus A*, six to *B paratyphus B*, and in one the type was not differentiated.

Surgery.

501 Carcinoma of the Colon and Rectum

J FRIEDENWALD and L J ROSENTHAL (*Med Journ and Record*, October 21st, 1925, p 447), discussing the diagnosis of carcinoma of the colon and rectum, remark that it is only by most painstaking investigations, aided by proctoscopy and x-ray examinations, that cancer of the colon and rectum can be recognized sufficiently early to afford a reasonable expectation of radical cure from operation. A progressive secondary anaemia and an irregular type of temperature may be early signs, and symptoms of gastric disturbance with absence or diminution of free hydrochloric acid may occur in early cases together with local and general abdominal discomfort with pain and colic. Constipation, sudden or gradual in onset, is frequently the earliest sign, and this, combined with the presence of occult blood in the stools, in a patient over 40 years of age is very suggestive of carcinoma of the colon and rectum. An x-ray examination often affords the only means of making an early diagnosis, and this, together with procto sigmoidoscopy, should never be neglected in all chronic bowel disturbances. Symptoms of obstruction the presence of a palpable mass, the discharge of blood stained mucus and pus and oedema are among late manifestations. It is stated that in carcinoma of the gastro-intestinal tract a characteristic blood sugar tolerance curve exists differing from that seen in carcinoma of other regions, this may be of value in the differential diagnosis between carcinoma and other gastro-intestinal diseases. The difficulties and importance of early diagnosis are evident seeing that in the authors' opinion operation offers the only cure, and that only when an early diagnosis has been made.

502 Brunnerian Tumours of the Stomach

E POZZI and R PILAZZO (*Rev Sua Amer de Endocrin*, September 15th, 1925, p 598), who record two illustrative cases, state that these tumours were first described by Hyem in 1899 under the name of Brunnerian polypadenoma because they assumed the type of Brunner's glands. They have hitherto been reported only in France, where seven cases have been published, no example having been recorded in English or German literature. The disease pursues a slow and insidious course, and does not attract attention until

the formation of a tumour has manifested itself. It is not exceptional for the growth to undergo carcinomatous degeneration. Menetrier has described two forms—namely, a polypoid form and a form *en nappe*. In the polypoid form there are a number of excrescences varying in number from a few to a hundred, distinct in form and shape, scattered over any part of the mucous membrane, but most abundant in the neighbourhood of the pylorus. In the form *en nappe* the growth extensively invades the mucous membrane, which it thickens, and gives rise to large folds which may attain four or five times the normal size. The growth presents all the features of a benign tumour, the glandular hypertrophy never passing beyond the limits of the mucosae. The authors first case occurred in a man aged 62, in whom the disease had lasted for two years, being characterized by epigastric pain and vomiting. A diagnosis was made of carcinoma of the stomach. Laparotomy was performed and a tumour was found involving the pylorus and antrum, which were resected and an anastomosis was established. Recovery followed. The peritoneum showed considerable thickening of the mucous membrane, and a microscopic examination presented the appearance of normal Brunner's glands, apart from a marked lymphocytic infiltration. The second case occurred in a man aged 40, who had suffered for fifteen years from gastric disturbance, which had increased considerably during the last four months. Laparotomy was performed and the findings and outcome were similar to those of the first case.

53 Post operative Pulmonary Complications

C. RAUSCHE (*Deut. Zeit. f. Chir.*, October, 1925, p. 349) has studied the treatment of pulmonary complications following surgical operation by injections of the blood of the patients. In a series of 348 operations 36 instances of pulmonary complications occurred, most of these were in men, and it is suggested that this greater frequency is attributable to their occupation being mining. In 23 of these 36 cases the treatment used was that of blood injection, the remaining 8 patients being treated by ordinary methods in order to serve as a control. The conclusions reached after this and other similar investigations were that, while blood injection after an operation had no prophylactic value against bronchitis or other pulmonary complications, yet used for treatment this method seemed to favour total defervescence. Rausche reports also that the rapid mortality from pulmonary complications was less than in the previous year when no patients received this special treatment and the difference was even more in favour of the patients treated in this way as compared with others. The duration of illness seemed to be shortened also. The author ascribes the effect of the injected blood to stimulation of metabolism and of the sympathetic system as a result of the introduction into the system of protein substances, which, under these conditions, acted as foreign bodies.

54 Diaphragmatic Hernia in a Child cured by Gastrotomy

J. ABADIE (*Bull. et Mem. Soc. Nat. de Chir.*, October 24, 1925, p. 868) records an unusual case of diaphragmatic hernia in a child apparently cured by a simple operative procedure. The patient, a girl aged 2½ years, had the symptoms of a left-sided pleurisy simulating a pyo-pneumothorax, but without any elevation of temperature. This was confirmed by the clinical signs present. Radiography showed what appeared to be free fluid in the thorax with an extensive pneumothorax above it. To confirm or modify the diagnosis the child was given a bismuth meal which was easily followed down the oesophagus into the abnormal pocket, the remainder of the meal passing on into the stomach. The diagnosis of a trans diaphragmatic hernia of the stomach was then made. The difficulty of treatment and the severity of a transthoracic operation was explained to the parents, who at first refused operation. Later, as the child's condition became worse, with marked vomiting, emaciation, and severe epigastric pain it was decided to try the palliative effect of a simple gastrotomy to enable the child to take nourishment and to improve her condition for a more radical operation at a later date. Under general anaesthesia a laparotomy was performed and the stomach was drawn down as far as possible into the abdomen. When as much of the organ as possible had come down the stomach was fixed and a gastrotomy performed. The post-operative course was uneventful. Radiograms showed that the stomach had returned above the diaphragm and the reduction of the hernia appeared permanent. The cardiac orifice returned to its normal position. Abadie considers that the case is of exceptional interest as showing how such a satisfactory result was obtained by a very simple operation.

1095 B

Therapeutics.

55

Treatment of Syphilis

BERNARD (*Bruzelles Medical*, October 4th, 1925, p. 1457) advises routine examination of the cerebro-spinal fluid in all cases of syphilis. In 200 cases he found that simultaneous treatment with arsenic and mercury gave much more favorable results than arsenic alone. These 200 patients were of various ages and in different stages of the disease. In almost every case the Wassermann blood reaction had been negative for at least six months, but on examination of the cerebro-spinal fluid it was found that only 82 patients gave negative results, in the remainder the spinal fluid gave evidence of abnormality. Bernard observes that this high percentage of positive or suspicious reactors who showed, nevertheless, no other syphilitic lesions indicates the inadvisability of pronouncing any patient "cured" after a single negative Wassermann test of the blood. He states however that he defines as abnormal every cerebro-spinal fluid, whether the Wassermann reaction is positive or not, which contains more than two lymphocytes per cubic millimetre and more than 0.25 percent of albumin. Bernard's tables show a considerable predominance of normal spinal fluids among patients who have received combined treatment, as compared with the number of those who received arsenobenzols alone. Of 175 patients 99 were treated by arsenic alone and 76 by both arsenic and mercury simultaneously or alternately. Of the 93 patients the spinal fluid became normal in 14 whereas of the 76 patients it became normal in 59. Bernard believes that insufficient treatment with arsenic alone is responsible to a great degree for meningeal recurrences. He adds that recent investigations appear to indicate that silver, mercury and bismuth have a retarding effect upon arsenical preparations. In his treatment he mixes the arsenobenzol and mercurial solutions in a Levy Biog syringe and injects the mixture intravenously.

56 Chemotherapy of Tuberculous Skin Diseases

G. NOBL (*Wien. Klin. Woch.*, October 23rd, 1925, p. 1197) reviews the success of copper preparations in lupus. Unfortunately the same success has not attended the use of gold preparations. A combination of potassium, gold and cyanogen recommended by Koehl and von Behring as stopping the growth of tubercle bacilli in dilutions even of 1 in a million, was found to be greatly impaired in efficacy by contact with the serum globulin of the blood. Then the action of gold as a dilutor of the cellular excretions while theoretically advantageous in facilitating access to the tuberculous area, necessitates much caution in its use. The mixture of a gold preparation and tuberculin failed in lupus. Another gold preparation, aurocyanan was too toxic and irrsolgan was therefore prepared on the lines of a soluble blood it was found practically inert in lupus vulgaris and also in lupus erythematosus as was also the case with a later modification triphal. A regards arsenobenzol enough evidence has not yet been obtained but the probability is that its action, possessed by many gold salts as a capillary poison, will far outweigh any therapeutic effect.

507

Sanocrysin Treatment of Tuberculosis

A. von BORSCHOFF (*Insta. Talar. Allst. d. Chir. Harar*, 1925, September, 1925, p. 785) has treated at the Annamela Sanatorium 49 cases of tuberculosis, all but 2 of which were pulmonary, since December 1924. By August 15th the treatment, or at any rate a series of injections, had been completed in 49 cases. The initial dose was usually 0.5 gram, the second and third doses given after an interval of three or four days, were 0.75 or 1 gram and the fourth and subsequent doses were 1 gram at 10 intervals of a week. The cases were thus classified: (1) Five fatal cases which were hopeless at the beginning of the treatment. (2) Two cases in which the disease was limited to a small area of the lungs but was of an exudative pneumonic character. In both cases the treatment had to be discontinued because of the rapid progress of the disease. (3) Four cases all of which seemed more or less suitable for the treatment but which responded to it with such serious complications that it had to be discontinued. In one of these cases the treatment proved fatal, probably on account of metallic gold poisoning. (4) Twenty-nine cases including 2 of tuberculous adenitis, in which it was possible to complete the treatment of five to ten injections. In one of the 27 cases of pulmonary tuberculosis a pneumothorax area of infiltration broke down and a pneumothorax had to be induced. In 9 cases no appreciable benefit could be demonstrated and in 17 cases marked improvement effected the sputum diminishing or disappearing altogether. Bacilli and tubercle bacilli often ceased to be demonstrable.

they did not disappear in every case, and in some cases they reappeared. All except one of these 17 patients were afebrile at the completion of treatment, although only 5 of them had been so before its commencement. The author concludes that, with the present dosage, salicylism is a very dangerous drug for the tuberculous, it is contraindicated in advanced and exudative pneumonic cases, but in comparatively early cases, with or without fever, and with a comparatively good general condition, salicylism often effects a recovery, the rapidity of which can only be compared with that of the surgical treatment of pulmonary tuberculosis.

508 Gentian Violet in Chorea and Encephalitis

J. W. FISHER (*Journal of Nerv and Mental Dis*, October, 1925, p. 376) has obtained good results in chorea and encephalitis by giving intravenous injections of gentian violet. To a boy, aged 6, with subacute endocarditis and early chorea, 8 c.c. of a 1 per cent solution of gentian violet was given intravenously. Marked improvement followed, and three weeks later a second similar dose was given, after which he had no more fever but improved rapidly in every way. No other treatment was used. In three cases of encephalitis after typhoid fever cerebral symptoms developed in the third week of the disease, and in each case one injection of a 1 per cent solution of gentian violet was given intravenously—3 c.c. to a girl aged 6, 10 c.c. to a boy aged 17, and 10 c.c. to a girl aged 11. Definite improvement was apparent in eight to thirty-six hours. This improvement was maintained, and in the last two cases the speech and mental reactions became normal within a week. In the first patient it was noted at the end of six months that, though her speech was still very slow and her enunciation imperfect, she was otherwise normal. No febrile or other reaction followed the injection of the drug, which was entirely non-toxic in the dosage used. The author advocates further trial of this drug in similar obscure infections.

Neurology and Psychology.

509 Flexion Paralysis of Spinal and Cerebral Origin

A. GORDON (*Journal of Nerv and Mental Dis*, October, 1925, p. 354) records four cases of paralytic flexions of the extremities. Brubinski described the following symptom group in 1911: flexion of the lower extremities caused by contractions, increase of the defence reflex, absence of exaggeration of the knee jerks or else their total abolition, without anatomical lesions in the pyramidal tract. The "defence reflex" consists of retraction movements which can be brought out by stimulating the skin of the dorsum of the foot, the foot promptly enters into a dorsal flexion, the leg flexes over the thigh, and the thigh over the pelvis. Relaxation and return to the original position follow. Brubinski's cases were due to compression of the spinal cord. In the present author's series one case was caused by compression of the spinal cord, and three were of cerebral origin, the clinical picture in the latter group being confined to one side of the body. The flexed attitude of the limbs might appear at the onset or develop later in the course of the disease. The defence reflex was always exaggerated, and the tendon reflexes either diminished or abolished. The plantar reflex might be extensor throughout (Marie Foix), at first flexor or later extensor (Alajouanine), absent or extensor (author). Gordon believes that flexion paralysis is very probably due to an extrapyramidal involvement while extension paralysis is a purely pyramidal affection. There are mixed cases, in which the latter is subsequently transformed into the former, such a transition being of grave prognostic omen, as it points to an extension of the lesion.

510 The Brain in Mongolian Imbeciles

A. GANS (*Nederl Tijdschr v Geneesk*, August 22nd, 1925, p. 922) states that the brain in Mongolian imbecility possesses all the features of the Chinese brain described by Kappers, but in a more marked degree—namely, a pointed extremity of the base of the frontal convolutions, an inclination towards each other of the temporal lobes, a short corpus callosum, of which the posterior end is directed downwards like a hook, and a gaping condition of the Sylvian fissure, leaving the island of Reil exposed. All the peculiarities so connected with brachycephaly. Wilmarth, as long ago as 1890, stated that the pons cerebellum, and medulla oblongata in Mongolian idiots were too small. Gans also found that the weight of the cerebellum of the Mongolian idiots which he examined was below the normal. He made a microscopic examination of the brain of Mongolian idiots, commencing with the cerebellum, pons, and medulla, because he always found them under weight. In two cases fibrae tectonicæ externae aberrantes were present, and in very many cases there was a large inclusion cerebelli posterior. In four cases in which he

examined the cerebellum microscopically he found a peculiar formation consisting in a nodule of nervous tissue which was principally composed of gray matter, but also contained cortical fibres. It was always situated in the same place on both sides medial to the flocculus, and he therefore gave it the name of tuber flocculi. In the microscopical sections of the cases examined it was visible to the naked eye. The nodule consisted of islands of the cerebellar granular layer, surrounded by the cerebellar molecular layer, with a few Purkinje cells both in the granular and molecular layers. In van Gieson preparations these cells had almost the same form as those of the cerebellum. Gans thinks that this nodule has been described before under the name of cerebellar heterotopia. He has found an homologous formation in the cerebellum of the chimpanzee.

511 Vasomotor Reactions in Mental Disorders

ISABELLA MCD ROBERTSON (*Journal of Mental Science*, July, 1925, p. 386) investigated the vasomotor reactions in mental disorders, with special reference to the haemoclastic crisis in 100 normal adults, 90 certified, and 275 uncertified early psychotic and neurotic patients. The haemoclastic crisis is characterized by leucopenia, lowered blood pressure in venous of the leucocytic formula, hypercoagulability of the blood, and diminution of the refractive index of the serum. It follows the ingestion of milk by patients with hepatic disease and in certain anaphylactic conditions. The test consists in noting the leucocytes and differential leucocytes and the blood pressure prior to and at twenty minute intervals after the ingestion of half a pint of milk by a patient who has fasted for five hours or since the previous night. In the normal subject there is a hyperleucocytosis, while the blood pressure remains unaltered or tends to rise. In those showing the haemoclastic crisis the phenomena reach a maximum about forty minutes after taking the milk, and this is followed by a phase of hyperleucocytosis and hypertension one and a half hours later. Robertson found that the crisis occurred in 94 per cent of dementia praecox patients, in 85 per cent of melancholics, in 75 per cent of chronic mania cases, and in over 60 per cent of early psychotics and neurotics. The leucopenia was not confined to the periphery, and it was accompanied by a comparatively slight decrease of erythrocytes. The normal subject responds to reflex cold by a vasoconstriction and to reflex heat by no alteration, while the abnormal responds to both reflex cold and heat by a vasodilatation. Adrenaline and atropine prevented the occurrence of the haemoclastic crisis, while thyroid caused its reversal in both normal and abnormal subjects. In 90 per cent of the normal subjects change of posture caused a leucocytosis, while in 87 per cent of the mentally defective a leucocytosis resulted.

Obstetrics and Gynaecology.

512 The Circulatory System in Myomatous Patients

ACCORDING TO F. STRASSMANN (*Zentralbl f Gynak*, September 19th, 1925, p. 2157), clinical and post mortem observations have established that morbid conditions of the heart, such as dilatation, hypertrophy, fatty degeneration, and brown atrophy, are present in from 30 to 50 per cent of patients suffering from uterine myoma characteristic symptoms or signs of a "myoma heart" have not, however, been established. That cardiopathy in myomatous subjects is not secondary to anaemia from menorrhagia and metrorrhagia nor due to mechanical pressure of the tumour on blood vessels and nerves is shown by the fact that cardiac weakness is present in 35 per cent of myomatous patients who have no excessive bleeding, and is equally as frequent in cases of small as in those of large tumours. That myomatous patients have a higher blood pressure than others has been found by many investigators, but has recently been denied by American writers. Strassmann has made the following observations on 70 myomatous and 70 other patients, whose circulation was carefully studied for six to twelve months. Conflicting reports regarding the influence of myoma on vascular tone may be explained by the increased blood pressure, on the average 20 mm. which is shown during the climacteric by all women, whether myomatous or not. Strassmann's findings, however, point to a considerable increase in the blood pressure of myomatous patients before the menopause, this was considerably more marked in those who did not suffer from excessive bleedings. Cardiac enlargement was present in 50 per cent of climacteric and 35 per cent of menstruating myomatous patients, as compared with 38 and 18 per cent respectively in the non-myomatous. So far from the bleedings being the cause of a "myoma heart," their effect is to diminish the vascular hypertension and cardiac enlargement. For Strassmann the "myoma heart" is completely explicable by an increase in blood pressure, due to endocrine ovarian influence.

513 Adnexal Tuberculosis

A. RICARD and H. COMBE (*Gynécologie et Obstet.*, 1925, xii, 1, p. 48) state that tuberculous disease of the Fallopian tubes and ovaries leads to acute peritoneal symptoms more often than is generally supposed, and that diagnosis is then difficult. Acute appendicitis is imitated very closely by acute exacerbations of tuberculous adnexal disease, and the true nature of the symptoms may only be made evident, several months after appendicectomy, by the clinical history and the findings at a second operation. In certain cases the acute pelvic pain, abdominal rigidity, vomiting, and marked pyrexia simulate an acute salpingitis, the tuberculous nature of the lesion is suggested in the early stages by the relatively good pulse and general condition, and later by the poor response to treatment, by repeated relapses, or by persistent fever. Tuberculous adnexal disease sometimes leads, especially in the newly married, to hypercortical symptoms which resemble those of acute gonococcal salpingitis, acute symptoms developing in the puerperium or after abortion are sometimes due, not to infection from the uterus, but to a lighting up of tuberculous foci in the adnexa. Abscess (whether in the pouch of Douglas or the iliac fossae) from tubo-ovarian tuberculosis may be acute rather than cold, and the true cause may be suspected only when a chronic fistula, faecal or otherwise, becomes established later. A mixed infection is probably present in such cases. Careful study of the history is of great diagnostic value, an antecedent dysmenorrhoea, especially preceding the menstrual flow, or amenorrhoea, which may be primary, is a sign pointing to tuberculous adnexal disease.

514 Age and the Course of Labour

G. SCHAANNING (*Norsk Mag. f. Lægevidenskab*, October, 1925, p. 1075) has studied, at the University Gynaecological Hospital in Oslo, the influence of age on 3,457 primiparae so far as the course and prognosis of their confinements were concerned. This material included only normal patients, cases of deformed pelvis, placenta praevia, premature detachment of the placenta, and other abnormality were excluded. It was found that after the age of 36 the prognosis was much improved for both mother and child. Labour had to be artificially aided in only 3 per cent of the primiparae between the ages of 17 and 20. This percentage rose to 27 for the primiparae between the ages of 31 and 35, and to 46.8 per cent for the primiparae between the ages of 41 and 45. The maternal morbidity rose from 4 per cent between the ages of 21 and 25 to 20 per cent between the ages of 36 and 40. The maternal mortality for all the primiparae was 0.17 per cent, whereas it was 1.48 per cent for the primiparae between the ages of 36 and 40. The infant mortality rose from 1.38 per cent between the ages of 17 and 20 to 12.9 per cent between the ages of 41 and 45. It was found also that the number of face and breech presentations increased with the age of the mother, and that the ratio of twin births rose from 0.82 per cent under the age of 30 to 1.66 per cent above this age. The author considers that his findings are a cogent argument in favour of extending the indications for Caesarean section in the case of elderly primiparae.

Pathology.

515 Creatinuria in Tuberculosis

J. V. LAMBEA (*La Medicina Ibera*, October 10th, 1925, p. 321) states that the creatin in the urine is derived from two sources, being partly endogenous or a product of proteolysis, and partly exogenous or originating in the meat ingested. Exogenous creatin has little effect on the total amount of creatin in the urine, which remains at a fairly constant level when the subject under observation is on a diet poor in creatin. Benedict and others have shown that fasting causes the appearance in the urine of a larger quantity of creatin than is present normally, and that the excess of creatin disappears on ingestion of carbohydrates. When pathological metabolic changes occur creatin appears in the urine. The suprarenals play a part in the metabolism of creatin, and their removal produces creatinuria. The occurrence of suprarenal degeneration, which laboratory and chemical examination has shown to be a common occurrence in tuberculosis, and the frequency of specific lesions of these glands in this disease explain the disturbances in the metabolism of creatin met with in tuberculosis. Tuberculous infection, especially in certain cases, causes intense proteolysis. Consequently galloping forms of tuberculosis are characterized by an accentuation of the phenomena of autolysis as is shown by an increase of the total nitrogen. Besides these rapid forms certain slowly advancing tuberculous affections have an action from the first upon metabolism causing a destruction

of the tissues. Acute tuberculosis increases the amount of creatin in the urine, as is shown by the fact that one of Lambear's patients eliminated 2.80 grams in the twenty-four hours and another 3.02 grams in the same period, as compared with the normal amount of 1.70 to 2.10 grams. In chronic tuberculosis the results vary. While in six out of eight cases studied by Lambear the creatinuria was fairly high, Hofmann, in an apyrexial case, found a diminution of the creatin in the urine, and in four cases examined by McClure the amount was slightly raised in some and in others was very low. In fifteen cases reported by Raphael and Liddridge there was as a general rule a slight fall, and it was the patients who had but slight fever and constitutional disturbance who eliminated amounts of creatin somewhat above the normal.

516 Tuberculosis and Vitamin C Deficiency

ACCORDING to G. MOURIQUAND, A. ROCHAUX, and L. DODDART (*C. R. Soc. de Biologie*, October 23rd, 1925, p. 901), tuberculosis in guinea pigs spreads at first much less rapidly in animals fed on a dietary lacking in vitamin C than in those fed on a mixed diet. A series of twenty-four guinea pigs was given a mixture of barley, corn, and lemon juice heated to 120°C for one and a half hours, and watched for one hundred days, by which time signs of vitamin starvation were very marked. Each animal was then injected with 10 million virulent tubercle bacilli, a similar series fed on a mixed diet received the same dose. The experimental and the control animals were carefully compared to ascertain the rapidity with which the disease advanced. For nearly three weeks after the injection the scorbutic animals continued to put on weight, whereas the controls lost steadily from the start. Moreover, judging by the extent of the lesions in the animals that were occasionally killed for examination, it was evident that the tuberculosis was spreading more rapidly in the control than in the scorbutic animals. After the twenty-third day the positions were suddenly reversed, the weight of the scorbutic animals falling quickly and the disease spreading more extensively than in the controls. The mean survival time of the scorbutic guinea pigs was fifty-five days, of the controls seventy days. Another series was injected with a very small dose of bacilli (400 organisms). The result was different, no initial delay in the spread of the disease being noticeable in the scorbutic animals, in fact from the very first the spread was more rapid in this group. The mean survival time of these animals was sixty-eight days, and of the controls ninety-six days. The effect, then, of a dietary deficient in vitamin C appears to depend to a certain extent on the dose of bacilli injected. With a moderate number the scorbutic animals exhibit a preliminary phase during which they are more resistant than normal animals, after three weeks this resistance suddenly fails, and the disease goes on apace. When only a small number of bacilli are given, the disease spreads more rapidly from the start in the scorbutic animals.

517 Neuro vaccine

H. PAIN (*Thèse de Paris*, 1925, No. 17) states that while as a rule ordinary vaccine lymph has an affinity only for the skin, it may in special circumstances acquire an affinity for the nervous system like the virus of herpes, epidemic encephalitis, rabies, and acute poliomyelitis. Lervadti and Nicolson have given the name of "neuro vaccine" to a form of vaccine virus prepared by growing it on the brain of a rabbit, and claim that it is almost as virulent for man as ordinary calf lymph and that it has the advantage of being free from secondary contamination. Pain employed this vaccine on 176 infants aged from 4 weeks to 10 months at the Farmer Clinique, Paris, with the following results: of 109 infants who could be kept under observation 91 gave a positive result, while in 18 the vaccination was unsuccessful, 9 showed severe reactions, similar to those observed with ordinary calf lymph, and in 2 the reaction was very intense. Of the 18 negative cases 8 had been unsuccessfully vaccinated with ordinary calf lymph at birth, and in 41 of the positive cases calf lymph had also been used without any result at birth. On the other hand, out of 61 children who had been inoculated with a vaccine which had been kept for a month at ordinary temperature only 46, or 75.4 per cent, gave a positive result, whereas by using a strain which had been kept in the ice chest the number of successful vaccinations was 93.7 per cent. Pain attributes the smaller proportion of successes obtained by vaccination with neuro vaccine than that obtained with ordinary calf lymph to two causes: (1) the use of strains which have grown old by being kept under unfavourable conditions, (2) the use of excessive dilutions of the vaccine. Contrary to what has been alleged by Burnet and Conseil, the investigations of Pain, as well as those made in Spain on 30,000 persons, show that neuro vaccine does not present any dangers. It can be prepared in all latitudes, as the rabbit is a prolific and ubiquitous animal.

Medicine.

518 Angina Pectoris in a Youth aged 18

S C JAMISON and G H HAUSER (*Journ Amer Med Assoc*, October 31st, 1925, p 1398) report a case of angina pectoris in a youth of 18 who was first admitted to hospital complaining of pain in the right lower quadrant of the abdomen. A tentative diagnosis of chronic appendicitis was made, but no operation was performed as the condition cleared up in a few hours. Nine days later he was admitted to the same hospital on account of agonizing pain over the whole chest and epigastrium. This pain was not referred to the arms or to any other part of the body, it was constant in presence but not in severity. He sat up in bed with the body bent for wards, his face was flushed and covered with sweat, his expression was anxious, but there were no other symptoms. There was no history of previous illness. The father had died of an aneurysm, the mother had a congenital miosis of both pupils, but no evidence of circulatory disease, and her Wassermann reaction was negative. The patient's pupils were also miosis and did not react to light or accommodation. Except for a moderate degree of rigidity of the epigastrium, physical examination revealed nothing abnormal. A diagnosis of angina pectoris was not even considered, on account of the patient's age, so he was given morphine to relieve the pain, but with little success. There was repeated vomiting of frothy mucus, and the patient died suddenly the next morning during a severe paroxysm of pain. The organs at the post mortem examination showed an acute toxic inflammation with a small abscess in the liver secondary to an infection of the appendix. The sudden death was due to changes occurring in the heart and its vessels. The heart weighed 240 grams, the coronary arteries were tortuous and rigid, and showed yellow and grey areas of sclerosis. Near the origin of the right coronary artery there was an organized thrombus which had undergone calcareous degeneration. The myocardium was light brown and of firm consistency, in some parts there was evidence of healed infarcts. The endocardium showed a few small plaques of sclerosis about the base of the tricuspid valve. Microscopical examination showed proliferating endarteritis, some of the vessels were atheromatous. The myocardium contained areas of cloudy and fatty degeneration with fibrosis and scar formation. The authors suggest that the post mortem findings in this case strongly support the belief that angina pectoris is due to changes in the coronary arteries, and to a certain extent refute the syphilitic theory of its origin.

519 Apyrexial Paratyphoid Fever

C BIFULCO (*Studium*, October 20th, 1925, p 311) states that since 1870, when the first case was recorded by Frantzel during the Franco-Prussian war, until today only about thirty cases of apyrexial typhoid fever have been reported. So far as he can ascertain, no case of paratyphoid A fever with an apyrexial course has hitherto been published. He now reports a fatal case in a man aged 56, who was admitted to hospital on about the tenth day of disease with a temperature of 97.6°, slight clouding of the sensorium, coated tongue, enlargement of the spleen, and bronchial catarrh. The serum test was negative for typhoid, positive for paratyphoid B in 1 in 50, and for paratyphoid A in 1 in 300. Death, preceded by delirium, occurred eight days after admission without the temperature having risen above 98.2°. There was no necropsy. During the first three days of the disease the temperature was 102.2°, it fell to 99.4° on the fourth day, becoming normal next day. The patient, however, remained in a state of profound asthenia, with yellowish green diarrhoea. No satisfactory explanation has yet been given for the occurrence of apyrexial enteric fever.

520 The Etiology of Herpes Zoster

M ARTON and P FORNARA (*Il Policlinico*, September 21st, 1925, p 1309) agree that there is a varicellous form of zoster, but they distinguish it definitely from the so called essential zoster. They hold that there are no good grounds for considering the latter a specific disease, and add that in any case its virus is unknown and appears to be quite distinct from the virus of varicella or herpes. They compare zoster with peripheral facial paralysis, which may be due to different causes and yet presents a similar symptomatology whatever the cause. They cannot trace any specific factor in the etiology of zoster and point out that the changes in the nerve ganglia are those of a trivial inflammatory affection.

521

Prophylaxis of Measles

E KOVACS (*Deut med Woch*, October 9th, 1925, p 1703) states that during an epidemic of measles in a children's home at Szecyed in Hungary 40 children who had never had measles were inoculated with the whole blood of adults, as recommended by Rietschel. The blood was usually taken from the mother, and in the case of motherless children from a person with a negative Wassermann reaction. The dose was 20 ccm, which was injected into the muscles of the thigh. The results were very satisfactory. Of 25 infants and 4 children injected, 21 infants and 3 children escaped entirely, 3 infants had abortive attacks in which the fever lasted only one day, and only 2 had definite though mild attacks of measles. One case was a child aged 3 years, who was not injected till the eighth day of incubation, and the other an infant of 5 months who was inoculated at the proper time. The failure in this case being due to the mother never having had measles. The injections were well borne, and in only two cases were there slight rises of temperature which lasted only two days. Kovacs comes to the conclusion that Rietschel's method is a very useful and practical one in the prophylaxis of measles.

522 Typhoid Carriers in the General Population

S W WELCH, S A DEHLER, and J C HAVENS (*Journ Amer Med Assoc*, October 3rd, 1925, p 1036) state that the incidence of typhoid carriers in various localities where the disease is not unduly prevalent has been estimated at from 0.3 to 0.8 per cent, these results having been based on a single faecal examination. The authors have made an examination of both the faeces and urine of 1,076 healthy persons, of whom 1,004 were men and 72 women, employed in the dairy industry of Alabama, 39 typhoid carriers, 13 paratyphoid A carriers, and 3 paratyphoid B carriers were found, making a total of 55 carriers, or 5.1 per cent. The incidence of faecal and urinary carriers was as follows: faecal typhoid, 21 cases or 1.95 per cent, urinary typhoid, 18 cases, or 1.65 per cent; faecal paratyphoid A, 8 cases, or 0.75 per cent, urinary paratyphoid A, 5 cases, or 0.43 per cent, faecal paratyphoid B, 3 cases, or 0.27 per cent. The high number of urinary carriers indicates the importance of examining the urine as well as the faeces in a search for carriers. The present study differs from previous ones in that not only were specimens of urine as well as of faeces examined, but that repeated examinations were made, the urine and faeces from each person being investigated an average number of two to three times.

Surgery.

523

Renal Tuberculosis

M PERSSON (*Annals of Surgery*, October, 1925, p 526) has made a clinical study of 295 cases of renal tuberculosis dealt with at Stockholm between 1890 and 1920. Of these patients 205 received surgical treatment, and all except 12 (8 operation cases) were kept under close observation after treatment for a period which was never less than three years. Perisson reports that the frequency of renal tuberculosis in men is almost double that in women, and that hereditary influences were traced in 25 per cent of the cases. Two thirds of the patients were in the third and fourth decades of life. The right kidney was affected more often than the left in the proportion of 109 to 88, and the coexistence of tuberculosis elsewhere was revealed in about half the cases, in 22.4 per cent pulmonary tuberculosis was also present, and genital tuberculosis in 15.6 per cent of the male cases. Irritability of the bladder was the first symptom in 74 per cent of the patients and pains in the kidney area in 18.5 per cent, serious haematuria appeared as an initial sign in only 5.5 per cent. Later symptoms included bladder irritation, almost invariably, and obvious haematuria. Incontinence was rare (2.7 per cent), and usually occurred in advanced disease in women and children. Pyuria was constantly present, and tubercle bacilli were found in 85.6 per cent of the cases. A palpable tumour was detected in 25 per cent of the patients, and tenderness without such a tumour in 9 per cent. Perisson notes that the condition of the bladder was correlated closely with the post-operative mortality, slight ulceration trebling the mortality while severe ulceration was present the mortality was very great (8 cases 6 deaths). The after history of patients not subjected to operation showed a mortality rate of 82.6 per

cent. Nephrectomy and kidney resection were not followed by favourable results, and all the patients with bilateral renal tuberculosis died in less than two years. The total operative mortality in nephrectomy of one kidney was 7.3 per cent, the male mortality rate being twice that of the female. Of the deaths occurring at a later date 44 per cent were due to tuberculosis of the remaining kidney, 35 per cent to pulmonary tuberculosis, 13 per cent to miliary tuberculosis, and 8 per cent to other diseases. Complete restoration to health followed operation in 57 per cent of all patients, while 5 per cent, though not cured, showed striking improvement. Peissner recommends that in nephrectomy the ureter should be ligatured and burnt off by the thermo cautery below the kidney pelvis. The stump is allowed to drop back and primary suture of the wound follows. In only 2 out of 64 cases thus treated did abscess formation occur. In women otherwise healthy the operation of nephrectomy did not interfere in any way with pregnancy and parturition.

524 **Fractures of the Lower End of the Humerus**
G. CAIRO (*Il Politecnico*, Sez. Chir., October 10th, 1925, p. 479) emphasizes the importance of making an x-ray examination both before and after reposition for the setting of fractures at the lower end of the humerus, and mentions the difficulty sometimes experienced in diagnosis in children owing to ossification. As a general rule immobilization of the joint by plaster should not extend beyond twelve to fifteen days. All manipulations must be performed very cautiously lest osteophyte vegetations or obstinate traumatic arthritis should arise. Great attention should be paid to the condition of the circulation of the fractured region before and after the application of the plaster. Reposition and fixation of the fragments are best effected under anaesthesia, the most comfortable position of the joint having been previously noted. In fractures without dislocation of the elbow should be fixed at a right angle and in comminuted fractures the lower fragment, beginning at the shoulder and ending at the wrist, splinted together with the forearm has been dislocated back, while in supracondylar fractures with a forward dislocation the elbow joint should be fixed to an acute angle. Traction must be exerted in the direction of the axis of the arm. In fractures with hyperextension, the forearm must be fixed at an acute angle in forced flexion by a plaster dressing, the joint being dislocated backwards, later by bringing the joint into a right angle, in which it should remain till union is obtained. With hyperflexion the permanent traction should be exerted to a right angle being gradually followed. The correction to a right angle being union is obtained by weights and suspension of the joint and abducted joint, the correction is also suitable for fractures with vertical or lateral dislocation of the fragments, also for comminuted fractures. The splint dressings which will keep the joint in a rectangular position. In cases which do not respond to conservative treatment operative measures become necessary.

525 **Hepatic Abscess in Scarlet Fever**
D. MASTRANGELI (*Rivista di Med.*, October 1st, 1925, p. 449) records a case of typical scarlet fever in a man, aged 32, complicated by nephritis and an hepatic abscess which rapidly healed after surgical intervention. No bacteriological examination was made of the pus. Mastrangeli excludes the idea of a primary abscess of the liver in the presence of an infection such as scarlet fever, which represents a true septicæmia and is capable of giving rise to various inflammatory lesions. He has been unable to find any other cases on record of scarlet fever complicated by hepatic abscess.

526 **Adsorption Treatment of Wounds**
O. ACKLIN (*Zentralbl. f. Chir.*, October 31st, 1925, p. 2470) has made experimental studies of the treatment of wounds infected by earth containing tetanus spores. He used various adsorbents, including colloidal aluminium salts, concentrated sodium silicate solution, and blood charcoal. The aluminium preparations were followed by healing without abscess formation and there was little or no pain. Sodium silicate treatment was followed by sepsis, but when blood charcoal was used the wound healed without suppuration or pain. Acklin concludes, therefore, that it is possible to save the life of an animal with a very virulent infection of a wound by means of purely adsorptive methods. He found that charcoal gave more favourable results than disinfectants containing chlorine.

Therapeutics.

527 **Medicinal Treatment in Mental Disease**
In their annual review of the progress in psychiatry A. BAUDOUIN and N. PÉRON (*Paris Med.*, October 17th, 1925, p. 305) discuss the use of malaria infection, and of various proprietary substances, somnifens and gardenal, in mental disease. Gardenal is said to be the French equivalent of luminal, somnifens also is a hypnotic and sedative drug. Loy injects subcutaneously into general paralytics 5 c.c.m. of blood taken in the afebrile period from a patient with active benign tertian malaria. In the general paralytic pyrexia develops in from nine to twelve hours, and after eight to ten of these attacks quinine is administered. In some cases Loy gives in addition a course of injections of novarsenobenzol. Donaggio, however, does not advise this use of arsenic. In general 30 to 45 per cent of the patients recovered sufficiently to be able to leave the asylum, but those remissions were not associated with any material change in the cerebro spinal fluid or the Wassermann reaction. Witzel and Prussak report 11 remissions and 10 deaths in 22 cases, though the deaths were not attributable to the treatment. In cases of mental excitement Cronzon and Lomairo find somnifens a useful sedative, and obtain an effect comparable with chloroform narcosis, with doses of less than 10 c.c.m. there is sleep for ten to fifteen hours, followed by a period of drowsiness during which food can be administered and the excretions passed. Better results were obtained in the intoxications and confusions than in the manic depressive psychoses. Loret, Quercy and Lancelot report a death following on the intramuscular injection of 10 c.c.m. of somnifens in a melancholic aged 65. At the necropsy an area of deep seated pneumonia was found. They suggest that the drug should be used with caution in the aged for fear of prolonged administration of the drug, also report a death thirteen hours after the intravenous injection of 10 c.c.m. After prolonged administration of the drug, by the month Flaudin finds that vertigo and lack of memory occur, which, however, rapidly disappear on withdrawal of the drug. The action of gardenal has been particularly studied in cases of epilepsy. Tiénel and Cuel describe a case of epilepsy in which the drug suppressed motor convulsions but caused maniacal excitement. Godard and Légal suggest that in the treatment of epilepsy gardenal, atropine, caffeine, and strychnine should be combined. They claim disappearance of the attacks in 22 per cent of the cases in 70 per cent an improvement in the motor phenomena, which are occasionally replaced by vertigo, and failure in only 8 per cent. Dupony and Montassut have tried the drug in anxiety states. Their method consists in giving 1 c.g. hourly, the daily dose not exceeding 0.2 gram. The results are stated to have been excellent in anxieties and obsessions, not so good in melancholias and negativisms. Mignard and Durand Saladin report satisfactory results in cases of excitement and of anxiety from the administration of a stable solution of gardenal.

Artificial Heliotherapy

528 **G. DUVE (*Le Scalpel*, October 24th, 1925, p. 1039)** reports brief details of 17 cases of various diseases treated by radiations from mercury quartz lamps. In a case of alopecia of five years' duration, after fourteen exposures, new hair appeared, thyroidin and salvarsan were also given. Another case of generalized alopecia, which had resisted various treatments, was cured after twenty six irradiations, and a patient who had had alopecia for twenty years regained normal growth of hair after thirty two exposures, thyroidin also being given. Out of four cases of acne, two gave excellent results, one was a failure, and in another there was partial improvement. Three cases of lupus were treated by general light baths and by local application of light, each showed some improvement, but none was completely cured. One infant with gonorrheal staphylococcal infection and pustular eruption recovered after two months' treatment by light baths. One case of sciatitis was completely cured after four sittings. Among the surgical cases treated were sluggish wounds, tuberculous peritonitis (improved), and enlarged glands.

529 **Ambrine in the After-treatment of Ear Operations**
T. H. STIBBE (*Nederl. Tijdschr. v. Geneesk.*, October 31st, 1925, p. 1979) states that it is well known that the difficulties in radical operations on the ear often begin only with the so called after treatment. This always requires much patience on the part of the practitioner and is generally at first extremely unpleasant for the patient. Hitherto no method has been devised to shorten the duration of after treatment or render it less painful. Stibbe claims to have

found in the French preparation ambaine a means of shortening the duration of the treatment and of diminishing the sensitiveness of the wound. This method was first introduced by Daure and Liébault, but has hitherto found no support. Ambaine, well known to medical officers during the war, is a brown coloured substance of firm consistence composed of paraffin and resin, it was originally intended for burns and accidental wounds. Before use it should be melted in a water bath at about 104° F. Unlike Daure and Liébault, Stibbe does not apply the ambaine until after the stitches have been removed on the eighth day, when it is dropped into the operation wound until the whole cavity is filled up. The dressing is removed after two days, when the wound is found to be much less sensitive, the granulations are not exuberant and bleed but little. This treatment is repeated five times every two days, at the end of which time the secretion from the wound will have almost ceased and a flaccid layer of epidermis formed.

530 Antitoxin Treatment of Scarlet Fever

F G BLAKE and J D TRASK (*Boston Med and Surg Journ*, October 8th, 1925, p 659) report on 112 cases of scarlet fever treated by intramuscular injections of Dochez's unconcentrated antitoxin. Fifty seven of these were uncomplicated cases, which were promptly cured within twelve to thirty six hours irrespective of the severity of the disease at the time of treatment. Forty eight were complicated cases, all but one of which were promptly and permanently cured of the specific toxæmia, as was shown by fall of temperature, rapid fading of rash, and prompt neutralization of the toxin in the blood. The septic complications, however, were not immediately cured, but subsided more or less rapidly according to their nature, duration, and severity. Seven were examples of post scarlatinal sepsis, and in these no demonstrable benefit was derived from the antitoxin. The authors recommend that, to be therapeutically efficient, an antiscarlatinal serum should contain at least 12,500 minimal bleaching doses of antitoxin per cubic centimetre, or be able to neutralize at least 10,000 skin doses of toxin per cubic centimetre. The amount of antitoxin required to cure scarlet fever promptly and with certainty by intramuscular injection varies from 3,000 to 12,000 units, according to the size of the patient and the severity of the disease. For the best results the full amount of antitoxin required in each case should be estimated and given at once.

531 Indications for Diathermy Treatment

F W EVERHARDT (*Journ Amer Med Assoc*, October 10th, 1925, p 1111) points out that heat transmitted by convection and conduction barely penetrates beyond the dermis, that radiant heat goes a little deeper into the tissues, but that diathermy, in which the heat results from the conversion of electricity, is a means of warming the deeper tissues, since the high frequency current passes directly from one electrode to the other and affects whatever tissue intervenes. The result of the application of heat to a part is to control muscular spasm, relieve pain, and increase the arterial flow. Everhardt has given 70,000 treatments by diathermy at the Washington University School of Medicine, and has found it to be of great value in the early stages of fracture and joint injuries, since by the relief of spasm better apposition is possible. Moreover, the increased blood supply promotes the absorption of exudates and lessens the tissue tension due to extravasated fluid. By means of diathermy he has materially shortened convalescence after fractures, and suggests its use in post-operative bone and joint conditions, acute sprain, fractures, bursitis, acute and chronic arthritis, contractures, and fibrositis. He considers that diathermy is contraindicated where there are localized pockets of pus without drainage, when there is danger of hæmorrhage, in tuberculous joints, and in suspected malignancy.

Anaesthetics.

Propylene as an Anaesthetic

L K RIGGS and H D GOULDEN (*Anaesthesia and Analgesia*, October, 1925, p 299), having studied the physiological action of propylene upon white rats, recommend its adoption as a general anaesthetic. Its potency being high, it may be administered with as much oxygen as may be desired. It was found to resemble ethylene in producing no nervous symptoms or excitement stage. It is apparently not highly toxic, since the respiratory centre resists for long periods the action of concentrations considerably greater than those required to anaesthetize. Its action is upon the respiratory centre rather than upon the heart, and a striking feature of respiratory failure induced by it was the ease with which

the animals were revived after respiration had ceased for thirty seconds. The authors add that the range of concentrations which may be used with safety is very wide, the analgesic range is relatively large, and the relaxation obtained is excellent. In the experiments upon white rats its physiological action was studied quantitatively, the various concentrations required to produce respectively analgesia, anaesthesia, and respiratory failure being measured, and it was found that a gas mixture of 70 per cent propylene, 25 per cent oxygen, and 5 per cent nitrogen induced analgesia in one minute, anaesthesia in two minutes, and respiratory failure only after sixteen to twenty minutes.

532 Anaesthesia and Eye Troubles

J BLOWFIELD (*Brit Journ Anaesth*, October, 1925, p 66) considers that eye troubles following anaesthesia have not received sufficient attention. They are almost entirely preventable, and, though usually slight and transitory, they may be serious and lead to litigation, and he thinks they have become more common since open methods of administration have tended to supplant closed methods. It would appear that acute conjunctivitis may be caused by the vapours of chloroform, ether, or mixtures of them. Frequent examination with the finger should be avoided, and during open administration the eyelids should be kept closed. Keratitis with subsequent corneal scarring is the most serious damage that is likely to occur. Experimental evidence supports the general view that anæsthetic vapour alone can scarcely cause corneal ulceration, which is due rather to some of the anæsthetic entering the eye or the cornea being abraded by the examining finger or by some part of the anaesthetist's apparatus. Such damage, however, has been attributed to the vapour when it supervened after operation upon a man with severe toxæmia. While the instillation of a drop of castor oil prior to anaesthesia, or irrigation with boric lotion afterwards, have been recommended as preventive measures, Blowfield advises keeping the lids carefully closed during anaesthesia as the surest method of averting trouble.

533 Ethylene Anaesthesia

C L HEWER (*Amer Journ Surg*, October, 1925, p 119), from observations on 120 administrations of ethylene for anaesthesia, considers that it has advantages over other anaesthetics, especially in minor operations of moderate duration. It was administered in three different ways: (1) with an in the usual gas apparatus, the nasal method being employed for prolonged anaesthesia, (2) with oxygen and partial rebreathing, by which an indefinite length of anaesthesia can be maintained on a mixture of 80 to 85 per cent ethylene and 15 to 20 per cent oxygen, and (3) with oxygen, providing for absorption of the carbon dioxide and complete rebreathing through a metal chamber containing granulated soda lime. Endotracheal administration is risky on account of the danger of explosion, and for cases in which complete relaxation is required the addition of ether is necessary. The average time of induction was one minute fifty seconds, the duration of anaesthesia from two to fifty eight minutes, and the age of the patients was from 2 to 62 years. No case gave rise to any anxiety, and in 110 of the cases ethylene or ethylene oxygen only was used. There was a marked absence of distressing after effects, and if the anaesthesia did not exceed ten minutes most patients were able to walk without assistance three minutes after removal of the face piece. Comparing it with ethyl chloride for dental extractions in children, while 75 per cent vomited after ethyl chloride no vomiting occurred in those anaesthetized with ethylene.

Obstetrics and Gynaecology.

535 Acute Appendicitis complicating Labour

D N BARBER and J R MILLER (*Boston Med and Surg Journ*, October 15th, 1925, p 720) report a case of acute appendicitis occurring in the course of labour. A primipara at full term was admitted to hospital at 8.45 p.m. with indeterminate pains which had started at 3 p.m. that day in the right lower quadrant. Soon after 3 p.m. labour pains commenced, and two hours later there was a definite sharp attack of pain, which later became constant. On admission the temperature was 98.4°, pulse 104, respirations 24, the membranes were unruptured, and the general physical conditions were normal except for abdominal tenderness, which prevented the position of the child being determined. Acute and continuous pain was localized near McBurney's point and was quite distinct from the irregular labour pains. The foetal heart was heard just below and to the left of the umbilicus. Rectal examination showed the cervix was not fully open or dilated,

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

542. Reactions following Immunization against Diphtheria

DENES (*Deut Med Woch*, October 2nd, 1925, p 1655) states that owing to an outbreak of diphtheria in a children's home at Schlenburg near Cuxhaven 44 children had the Schick test performed upon them. With 5 exceptions all gave a positive reaction. Of the 44, 31 were inoculated with toxin antitoxin, as well as 10 other children in whom the Schick test had not been performed. Of the 41 inoculated 4 showed no reaction and 3 a slight reaction, while in the rest the reaction was very marked. With two exceptions the general condition was little affected, and symptoms in the form of infiltration or regional glandular swelling were slight except in one case. The most striking manifestation was a rash which was usually scarlatiniform and generalized, including the face. In 6 cases there was a recrudescence of the Schick reaction on both arms. In two children, twins aged 2 years, the general reaction was very violent, being characterized by cyanosis, loss of consciousness, general oedema, and an almost imperceptible pulse in one case, and in the other by a generalized eruption and oedema, as well as by a feeble pulse. The reaction in both cases was an anaphylactic shock suggesting a familial congenital hypersensitivity. H. KLEINSCHMIDT (*ibid*, p 1657) states that the unpleasant reactions following injection of antitoxin as described by Denes are not unparalleled. In 1919 40 cases at Dallas in Texas developed severe reactions after immunization, characterized by fever, vomiting, and local inflammation, and five deaths took place. Kleinschmidt also refers to the six fatal cases which occurred in the home for infants and young children at Baden, near Vienna (*JOURNAL*, October 24th, 1925 p 757). In these circumstances he makes the following proposals: (1) The preparation and preservation of toxin antitoxin should be under State control. (2) A test intracutaneous injection of 0.1 cc of toxin antitoxin should be performed, even when neutral mixtures are used, in cases likely to show hypersensitivity. This phenomenon may be expected in a considerable proportion of otherwise healthy children of school age and adults, especially those suffering from tuberculosis, neuropathy, eczema, and asthma.

543. Gastro intestinal Disturbances in Neuro syphilis

M. FREMONT SMITH and J. B. AYER (*Journ Amer Med Assoc*, October 24th, 1925, p 1282) have studied the gastro intestinal symptoms in 50 cases of neuro syphilis, and find that there are various degrees of these disturbances. They range from the typical gastric crises to milder forms with only occasional vomiting, pains occurring in any part of the abdomen, or merely epigastric discomfort with or without eructations. Other forms of disturbance are diarrhoea, constipation, and rectal tenesmus. Owing to the mildness of some of these symptoms, they are often treated without any suspicion arising of neuro syphilis. The authors believe that crises are rare in the absence of other distinctive signs of tabes, of which they found pupil abnormalities to be the most common. They agree with Edsall in that they regard a negative Wassermann reaction as being of no significance in eliminating the possibility of neuro syphilis. Out of 24 cases in which barium meals were given 15 showed abnormalities, and of these only 5 were correctly attributed to some gastric or duodenal pathological condition, the remaining 10 being probably due to muscular spasm. They therefore conclude that irregularity of the pylorus and duodenum, as demonstrated by x-ray examination, is a common occurrence in neuro syphilis, although there may be no obvious pathological condition present locally. They add that such irregularities, in order to be considered as presumptive evidence of the presence of an ulcer, must be confirmed after thorough atropine saturation.

544. Endophlebitis Hepatica Obliterans

E. BÖTTIGER (*Acta Paediatrica*, October 22nd, 1925, p 144) records the case of a previously healthy girl, aged 3 years, who was taken ill with vomiting and rapidly developing ascites. The liver was much enlarged. Jaundice was not present. The ascitic fluid, which was evacuated several times, had at first a somewhat high albumin content, but gradually lost the qualities of a transudate. Guinea pigs which were inoculated with the fluid did not develop tuberculosis. No enlargement of the spleen could be detected. The other organs appeared normal. Subsequently cerebral

symptoms supervened in the form of unconsciousness, convulsions, and paralysis, and death occurred after about two months' illness. The necropsy showed that the cause of the circulatory obstruction in the liver was well marked vascular disease with formation of thrombi. It was difficult, or even impossible, to tell from the histological appearances which of the two was the primary process. In some vessels of moderate size there was isolated vascular disease without evidence of thrombosis, so that Böttiger is inclined to regard the vascular disease as primary. The condition was first described in 1899 by Chiari, who reported three cases. Since then many other examples have been reported, so that there are now 31 on record. Nothing definite can be stated as to the etiology of the disease. In the present case there was no clinical or pathological evidence of syphilis. The disease generally occurs in early and middle life. It may be preceded by indefinite symptoms or develop suddenly in the midst of good health. Jaundice is usually absent, but may be present in a slight degree. A definite diagnosis of the condition has never been made before death.

545. Rickets and Craniotabes

J. A. HÖJER (*Acta Paediatrica*, October 22nd, 1925, p 16) reviews the literature and records his observations on 70 cases of craniotabes which he found by examining 600 children in welfare centres near Stockholm. In most of the cases there was no evidence of rickets, so that Höjer was inclined to regard the craniotabes as physiological. A remarkable fact was the familial occurrence of the phenomenon, which was present in twelve children belonging to six families. Höjer therefore agrees with the older observers in regarding a constitutional thinness of the skull as the cause of craniotabes.

Surgery.

546. Chronic Pancreatitis

J. W. HINTON (*Surg, Gynecol and Obstet*, October, 1925, p 422) draws attention to the fact that acute exacerbations of upper abdominal pain occur in some patients after cholecystectomy. The explanation of these attacks is difficult, and the first impression is that a calculus in the common duct has been overlooked. Laparotomy may be performed and reveal no stone present. Hinton states that some of these attacks are due to acute exacerbations of chronic pancreatitis, and then are usually met with in the first few weeks following the cholecystectomy. Pain is present in the upper abdomen, and there may be nausea. Vomiting is usually found and persists during the attack. Jaundice, probably due to compression of the bile duct by swelling of the head of the pancreas, is quite frequently encountered in severe cases. The diagnosis is arrived at by a process of elimination, renal and biliary calculi must be excluded. Surgical treatment in these cases does not seem to cure the condition or prevent subsequent attacks. Some of the patients spontaneously recover if given the opportunity.

547. Treatment of Duodenal and Jejunal Fistulae

R. PAMPERL (*Zeit f Chir*, October 24th, 1925, p 2402) points out that in many cases of duodenal and jejunal fistulae the progressive inanition of the patient renders a radical operation unsafe, while there is usually severe excoriation and secondary infective dermatitis of the abdominal wall adjacent to the fistula, due to the escape of the gastric and pancreatic juices. This dermatitis may produce a serious secondary infection if a radical operation be attempted. He claims that in many cases his modification of the treatment suggested by Ahrens results in permanent closure of the fistula without operation. Pamperl has discarded Kehr's 'T' drainage tube, which Ahrens employs, and he now uses a piece of rubber drainage tube, cut longitudinally and with the angles rounded, it is held in position by two stout silk threads passed through the whole thickness of the rubber in its middle third. This rubber plate is passed through the fistula into the lumen of the bowel, the silk threads being secured outside the opening. A roll of gauze is then placed over the fistula and the silk threads are drawn taut and tied over this, thus closing the fistula and preventing the escape of the intestinal contents. For the prevention of dermatitis and eczema Pamperl recommends Hensner's solution of iodine in benzene and paraffin, this is applied to the adjacent skin. Lauenstein states that his best results have followed the use

of "dermatol paste"—that is, bismuth subgallate 2 per cent, zinc oxide and stearic acid 25 per cent, lanolin 30 per cent, linseed oil 18 per cent. M. KAEHLER (ibid., p. 2418) describes a similar technique which he has adopted in the treatment of these fistulae, with the exception that instead of the roll of gauze over the fistula he ties the silk threads over a piece of thick rubber drainage tube, thus securing the approximation of the bowel to the abdominal wall and sealing up the fistula. Kaeher agrees that the "rubber plate" is preferable to the "T" tube, as with the former there is a greater probability of contraction and ultimate closure of the fistula than when the "T" tube is employed.

548 Chronic Cicatrizing Parinephritis

V. J. O'CONNOR (*Journ. Amer. Med. Assoc.*, October 10th, 1925, p. 1118) reports two cases of perineal sclerosis, and states that this condition may apparently manifest itself at some considerable period after the acute perinephric infection. A chronic low grade infection following an acute illness may cause the fibrous and fatty capsules of the kidney to become replaced by a fibrous cicatricial shell. The contraction of this cicatrix about an otherwise normal kidney gives rise to pain and lowered renal efficiency. Both O'Connor's patients complained of a dull lumbar pain which did not radiate, and which was markedly increased when the daily fluid intake exceeded three quarts. There was no evidence of stone, tumour, or urinary obstruction, uretero pyelograms showed nothing abnormal. Function was deficient on the affected side, as shown by the fixed low specific gravity of the urine, the diminished excretion of urea, chlorides, and total solids, and the delayed excretion of phenolsulphonphthalein. Decapsulation of the damaged kidney relieved all pain, and normal function was completely restored later in both cases.

559 Intranasal Dacryocystostomy

J. S. FRASER (*Journ. of Laryngol. and Otol.*, November, 1925, p. 725) remarks that by the time the average hospital patient comes to the eye department for advice in cases of dacryocystitis there is usually considerable dilatation of the sac or there is an abscess in and around the sac. The old method of dilating the tear passages by stylos and threads is inefficient. The popular method of excising the tear sac is obviously far from ideal, and the patients suffer from permanent epiphora. In conjunction with his ophthalmological colleagues at the Edinburgh Royal Infirmary, Fraser has observed and operated upon 42 patients, in 5 cases bilaterally. Most of the patients had had courses of dilating and washing out the punctum and canaliculus, and 5 actually had abscesses at the time of operation. Where there was a deflected nasal septum a submucous resection was performed at the same time. The mucosa over the frontal process of the maxilla is cocaineized and a D shaped piece of the mucosa—curved side anteriorly—is completely removed from the outer wall of the nose so as to expose the bone over the sac. This area of bone is gouged away, and the sac is at once seen and often bulges into the nose. An anterior ethmoidal air cell which may be exposed has a pale pink mucosa, and can be easily distinguished from the dense bluish white tear sac. The sac is further cocaineized, the punctum is dilated, and a probe passed into the sac so as to make it hinge into the nose. The inner wall of the sac is now completely removed with scissors, forceps, or a bistoury. Difficulties commonly met with are the occasional extra thickness of the nasal process of the maxilla, and free haemorrhage when this bone is being removed. No after treatment is necessary, and in most cases the tears flow into the nose from the operation. There was complete cure in 65 per cent of the cases followed up, in the remainder epiphora persisted, and in one case continued abscess formation. In several there was, however, a patent track through to the nose, and there had been no dilatation of the sac. Fraser does not consider that patients without dilatation of the sac are likely to derive much benefit from this operation. In cases which relapse probably too little of the inner wall of the sac has been removed, this can be easily remedied at a second operation.

550 Rectal Carcinoma

SCHWARTZ and RICHARD (*La J. Med.*, October 16th, 1925, p. 1656) discuss the treatment of carcinoma of the rectum, and remark that, in contrast with cancer of the cervix, x-ray and radium treatment is very rarely successful. As a result of a study of the literature they conclude that when the condition is operable surgical intervention is always preferable. In the case of inoperable cancer surgical treatment combined with x-rays is recommended, but metastases, cachexia, or senility must be considered as contra-indications. When x-rays are employed the iliac route is best, and the irradiation of the tumour should proceed slowly and over a large area. Such irradiation sometimes renders an inoperable tumour favourable for surgical treatment.

Therapeutics.

551 Sodium Nucleinate in Lobar Pneumonia

F. DAUBENTON (*South African Med. Record*, October 24th, 1925, p. 463) records a severe case of lobar pneumonia in a woman, aged 29, successfully treated with sodium nucleinate. In spite of regular injections of camphor, lobeline, adrenaline, and digitalinatum, her condition became worse, the respirations rising to 60, the pulse to 164, with unconsciousness on the ninth day and a leucocyte count on the eleventh day as low as 5,900 per c.c.m. While apparently moribund 50 mg. of sodium nucleinate was given intramuscularly and sodium bicarbonate added to the rectal feeds. On the following day the leucocyte count rose to 9,000, the temperature was lower, and the pulse and respiration rates dropped respectively to 130 and 48, and the next day, after another injection of sodium nucleinate the leucocyte count rose to 14,000 with further improvement in temperature, pulse, and respiration. On the following day the temperature fell to normal and the patient regained consciousness, from that time her recovery was uninterrupted. Daubenton considers that so striking an improvement can scarcely be attributed to anything else than the action of the drug, and suggests its trial by others.

552 Treatment of Boils

A. BUSCHKE and E. LANGER (*Med. Klin.*, November 6th, 1925, p. 1675) state that when treating boils the first duty is to look for contributory causes, what is overlooked more often than general diseases such as diabetes is the existence of local skin conditions—prurigo, irritant eczema, pediculosis, etc.—leading to scratching and auto-infection. Attention to diet is specially necessary in the furunculosis of diabetics and of infants, the specific advantage of insulin in the former case is a little doubtful. In infants daily baths of potassium permanganate are useful. The authors recommend painting the boil with tincture of iodine or 10 per cent formalin solution, internally they favour ichthyol or salicylic. Many authors have recommended local applications such as flavins, such are of particular use in the dangerous form of furunculosis following salvarsan dermatitis. The present authors prefer sinflavin, a lately prepared colourless substance that does not stain the clothes. In isolated boils compresses are valuable, resorcin or 20 per cent spirit being added to them. Facial boils call for conservative measures and absolute rest. Lately x-rays have been supplanting surgery. If vaccines are tried they must be autogenous.

553 Specific Treatment in Cardio-vascular Syphilis

B. I. GOLDBERG (*Boston Med. and Surg. Journ.*, October 22nd, 1925, p. 768) writes to refute the impression that specific treatment of demonstrable cardio-vascular syphilis is useless, and adduces evidence to show that amelioration of symptoms may result from such treatment, especially in early cases. In quite an appreciable number of patients presenting definite evidence of cardio-vascular syphilis the Wassermann reaction is negative, so that reliance must be placed upon the other factors in diagnosis. In early cases arsphenamine or the allied arsenicals were found most valuable, but since these cases could only rarely be diagnosed with that certainty that applies in chancre or secondary manifestations Goldberg advises a preliminary course of six mercury or bismuth intramuscular injections, followed by six to ten weekly arsphenamine intravenous injections. Potassium iodide should be administered concurrently in gradually increasing doses. Should there be intolerance to arsphenamine neo-arsphenamine may sometimes be tolerated. In advanced cases, he adds, more caution is needed, and the use of the arsenicals is less general, mercury and bismuth being preferable. Standardization of treatment is to be avoided, each case being treated individually as far as possible.

554 Calot's Solution in Otitis Media.

V. FOTIADE (*Arch. Internat. de Laryngol., Otol. et Rhinol.*, November, 1925, p. 1038) holds that a discharging ear persists either owing to inefficient treatment or to the virulence of the infection. He states that a discharging ear behaves just like a fistula, and is treated like one in that the visible parts are cleaned and disinfected, whereas the unseen and deeper parts are untouched, only a small portion of the tympanum is reached by the various lotions—the attic and the Eustachian tube are left untouched. Calot's solution consists of guaiacol, creosote, and iodoform dissolved in sulphuric ether, it induces a great flow of white blood corpuscles, which are then killed, fat-splitting and proteolytic ferments being set free. At first the discharge increases in volume, becomes more yellow, and loses its fetor, as the result of diapedesis and the destruction of leucocytes and bacteria. The sulphuric ether dissolves the purulent and mucoid fluids, and the epithelium is also excited to renewed growth. Ten drops

of the solution are applied to the ear after syringing, four times daily, pressure on the tragus is applied and released alternately. In this way the fluid is introduced into the attic and the Eustachian tube, and after the first one or two treatments finds its way into the pharynx, showing that the tube has been thoroughly cleaned. Granulation tissue and polyp must be cleared away before the treatment is commenced. Of 64 cases of suppurative otitis 61 were cured by this method, the other 3 consisted of one tuberculous patient who died of pulmonary disease, while two did not continue to have the granulations removed. The hearing was almost always restored. Otitis media the vapour of the solution is blown into the tympanum by using the apparatus for thermo cautery with the solution in the container and a Eustachian catheter instead of the cautery point. Some very good results have been achieved with this line of treatment, and the author claims that it is much more satisfactory than iodized ether.

555 Treatment of Infantile Syphilis

BRUCK (*Polsha gazeta lekarsha*, September 13th, 1925, p 790) describes the treatment of syphilis in newborn infants and young children. Since the Wassermann test has not in these cases the same value as in adults, the clinical picture should be the deciding factor for the commencement of antisyphilitic treatment. Bruck commends as a routine in infants the taking of blood from the crural sinns, in restless subjects it may be taken by cupping. Intramuscular injections of neosalvarsan into the fascia lata and of mercuric chloride or bismogenol were given alternately twice a week, beginning with one or two injections of bismogenol (0.1 to 0.5 c cm) or mercuric chloride (mercuric chloride 0.2 gram, sodium chloride 0.2 gram, distilled water to 10 grams) and proceeding with neosalvarsan (0.045 to 0.075 to 0.15 c cm) as above. The treatment consisted of eighteen injections, which in cases of recurrence were repeated. The results of this therapy were generally good. Where the children were exposed to such intercurrent infections as measles, influenza, and pertussis the author employed, with very good results, prophylactic injections of a polyvalent vaccine (0.1 to 0.5 c cm according to the age and weight) together with caseosan (0.1 to 0.2 c cm) every other day.

Diseases of Children.

556 The Blood Pressure in Children

THOMAS (*Schweiz. med. Woch.*, September 24 b, 1925, p 896) reviews the literature, and records his observations with the Vaquez-Lanby instrument on the blood pressure in 627 school children, aged from 7 to 14, who were either in perfect health or had mild forms of glandular tuberculosis, goitre, and hypothyroidism. The measurements were always made in the morning between 9 and 10 on an empty stomach with the child in a recumbent position. As a general rule, the blood pressure was higher in boys than in girls. On the other hand, at the time of puberty it was higher in girls than in boys. In boys aged from 7 to 11 the differential pressure was 3.7 cm, and 3.6 cm from 11 to 14, while in girls of the same age it was 3.8 and 4.3 cm respectively. It was therefore lower on the average by 1/2 to 1 cm of mercury than that of the adult, if the blood pressure of the latter be taken as 12 cm for the systolic and 9 cm for the diastolic pressure. In the case of children with glandular or pulmonary tuberculosis sufficiently mild to allow them to attend school the blood pressure was lower than in the normal state, but only during the period 11 to 14. In goitrous subjects the blood pressure was a little higher than in subjects of hypothyroidism.

557 Post Influenzal Cardiac Dilatation in Childhood

J. LUKACS and K. WALTNER (*Monatsschr. f. Kinderheilk.*, October, 1925, p 72) call attention to a sequel of influenza which they frequently observed among school children during the epidemic of influenza last spring. After they had had an attack lasting from five to eight days accompanied by moderately high fever, and had been out of bed for several days, the children were brought for medical advice again by their parents. The complaint was that the child had not quite recovered, having still a slight rise of temperature, loss of appetite, and being easily tired and sweating on walking or other movements. On examination the child was found to have a subfebrile temperature and a coated tongue. The cardiac dullness was distinctly increased both to the right and to the left, the heart sounds were somewhat indistinct, but there was no murmur. The heart was very excitable, the slightest movement causing a considerable rise of the pulse rate. A ray examination confirmed the percussion findings,

the heart shadows being larger and broader than normal. Treatment was very simple and successful. The children were sent to bed again and the symptoms subsided. The tired feeling and sweating disappeared at once, the anorexia in a few days, and in about a fortnight the heart resumed its normal size.

558

Exanthema Subitum

J. VON BOKAY (*Deut. med. Woch.*, October 9th, 1925, p 1687), who records 11 cases in children aged from 5 months to 2 years, states that this name was first given in 1921 by Veeder and Hempelmann to a condition described by Zahorsky in 1910 under the title of "roseola infantilis." It is characterized by a sudden onset, with fever and languor lasting for four days, but there are no other symptoms, and even in cases with high fever the general condition remains fairly good. As soon as the temperature falls the characteristic eruption appears and the patients become more lively. During the febrile stage there is a characteristic blood picture consisting in a well marked leucopenia with a lymphocytosis of 80 to 90 per cent. The rash develops rapidly, reaching its height in twelve hours' time, and fades without leaving any trace in twenty-four to forty-eight hours. There is no desquamation. Morphologically the rash resembles measles. On the trunk, where it usually first appears, the rash is thicker than on the face and limbs. It is very rarely confluent. Von Bokay is of opinion that exanthema subitum is a hitherto unknown disease, usually occurring in early childhood, and of apparently infective origin but minimal contagiousness.

Obstetrics and Gynaecology.

559

Tubal Abortion

A. PONJOAN (*Ans. Medica*, October, 1925, p 118), who records 23 cases of tubal pregnancy observed in the gynaecological department of the Santa Cruz Hospital during the last four years, comes to the following conclusions: (1) It is only very rarely that the gynaecologist can diagnose tubal pregnancy during the early stage before the development of such complications as apoplexy of the ovum, tubal abortion, or rupture of the tube, as the patients do not seek advice, being either not aware of their pregnancy or regarding it as a normal one. (2) The sudden development of undoubted signs of internal haemorrhage is the chief diagnostic feature in rupture of the tube. (3) Retro uterine haematocoele is a frequent termination of tubal pregnancy, being noted in 8 of Ponjoan's cases. (4) Colpotomy is the treatment for infected haematocoele and in haematocoele of old standing in which the haemorrhagic process is definitely quiescent. (5) Expectant treatment is only justified when the patient is in a surgical ward where everything can be ready in case of a recrudescence of haemorrhage. (6) Unless the haematocoele is encysted and of very small size conservative treatment is unjustifiable. Colpotomy is indicated when the haematocoele is retro uterine, but in other cases the abdominal route should be chosen. (7) Another indication for the surgical treatment of recent haematocoele is to favour its absorption and to prevent the persistence of peritoneal adhesions. (8) The syndrome of peritoneal shock which accompanies tubal abortion or rupture is transient, and the danger of it being confused with persistence of internal haemorrhage should prevent the gynaecologist leaving the patient who is in a general condition, especially the frequency and tension of pulse, does not improve within a few minutes under treatment with caffeine and camphor. (9) Salpingostomy, removal of the tube, or unilateral ovariectomy, if the ovary cannot be isolated, is the order of conservative technique that should be followed. (10) Ponjoan has observed a case which he believes is unique in gynaecological literature, of two ruptures within a single tube.

560 Sterilization by Ligature of the Fallopian Tube

B. WASER (*Zentralbl. f. Gynäkol.*, October 17th 1925, p 2327) states that at the Zürich University Frauenklinik for the purpose of inducing sterility excision of the Fallopian tube has been abandoned in favour of the Friedmann-Madlener procedure—namely, the crushing of a loop of the tube by means of a Doyen's clamp followed by the application of a tight silk ligature. Madlener found no record of subsequent pregnancy in the 89 women (84 were married) in whom he performed this operation. At Zürich the operation has been employed 225 times since 1920, with only one subsequent conception, the abdominal route only is used. In about one-fourth of these cases sterilization was the primary object of the laparotomy, in about 40 per cent the operation was undertaken on psychiatric grounds, in about 37 per cent on obstetrical indications, and in about 10 per cent for medical reasons—chiefly pulmonary or bone tuberculosis, or cardiac pathology associated with valvular disease or hyperthyroidism.

The Fallopian Tubes and Sterility

561 S. H. GEIST and M. A. GOLDBERGER (*Surg., Gynecol. and Obstet.*, November, 1925, p. 646) have investigated the course and lesions of the Fallopian tubes with reference to their share in the production of sterility. The method of investigation consisted in the insufflation of the uterus and tubes, removed by operation, and the intramural portion of the tubes was examined microscopically. As a result they are able to substantiate the findings of Hermannstein that the intramural portion of the tube is variable. In about 40 per cent of cases the tube passes in a slight direct curve with the convexity upwards, in a few cases this curve is somewhat sharper, and in the remainder this curve is not simple and direct but tortuous, either traversing the uterine wall in a series of convolutions or its course is marked by decided angulations. The variations, they suggest, may offer a bar to the progress of spermatozoa or ova. They point out that these variations may account for the marked differences in the pressure required to obtain a positive insufflation test. They state also that a sharply kinked intramural part of the tube may result in the test being negative if the uterine muscle is contracting at the time, though a positive result occurs when the muscle is relaxed. The authors further assert that a normal tube may be patent for gas under pressure but not necessarily so for spermatozoa or ova. They conclude, therefore, that an operation designed to make patent the abdominal portion of the tube may prove clinically valueless if the obstruction is intramural, and therefore it is essential to locate the site of obstruction before performing any such operation.

An Early Sign of Pregnancy

562 T. LONNE (*Zentralbl. f. Gynäk.*, October 24th, 1925, p. 2406) describes the following sign of early pregnancy, which he has elicited in the same period as that in which Hegar's first and second signs are present. The bladder having been emptied, a bimanual examination of the uterus by light pressure on the hand steadies the anteverted uterus by light pressure on the fundus and posterior wall, while two fingers of the vaginal hand palpate the anterior wall of the uterus through the apposed anterior vaginal wall. Through the softened parts in pregnancy, fluctuation in the fluid distended amniotic cavity can be detected by the two fingers. It is claimed that this procedure is free from the danger of inducing abortion which has been said to impair the value of Hegar's signs. The sign depends on the volume of the liquor amnii exceeding that of the embryo during the early months of gestation, their respective weights, according to investigations made at Munich, are 9.1 during the first month, 5.1 during the second month, and about equal by the twelfth week.

Pathology.

Ultra filtration in Medicine and Biology

563 L. VILLA (*Arch. di Patologia Clin. Medica*, September, 1925, p. 425) summarizes the methods and the practical importance of ultra filtration—a process which is now of as much utility to the biologist, bacteriologist, and zymologist as the gravimetric balance is to the chemist. Of the three main methods that he describes, he considers that for simplicity and reliability the one invented by Bechhold, depending on the permeability of a porcelain filter with colloidal or gelatin, is the best. This has the great advantage that the filters can be sterilized in the autoclave. Moreover, by measuring the permeability of the filters to water and to air it is possible to calculate the size of the pores, rendering it possible to increase the concentration of the substance that is being filtered to the particular purpose required, and to estimate the magnitude of the particles of the substance. It is found that filtered. Thus, if gelatin be employed, it is found that to retain colloidal platinum it is necessary for the membrane to have a concentration of 2 per cent, and to retain donkey albumose a concentration of 4 per cent, and to retain hemoglobin a concentration of 10 per cent. In the separation of a chemistry ultra filtration has its uses in the separation of the split protein products, thus replacing fractional precipitation, and in the study of many protein and carbohydrate bodies. In bacteriology it can replace the old Berkefeld and Chamberland candles in the filtration of broth cultures. It can be used in the study of the colloidal nature of substances and antibodies, and in the separation of these substances from each other. Its chief value, however, is in the work on the filterable viruses. Thus Betegh has shown that the viruses of rabies, herpes, and encephalitis consist of smaller particles

than those of tetanus toxin or serum complement. It should likewise be of use in the study of the bacteriophage. Finally, in the examination of ferments it can render most valuable service. A bibliography is appended.

Diphtherial Toxaemia and Hyperglycaemia.

534 S. MIKAMI (*Tohoku Journ. of Exper. Med.*, September 18th, 1925, p. 299) adduces experimental evidence to show that intravenous administration of diphtheria toxin invariably causes hyperglycaemia in the normal rabbit, if the quantity injected is so large that the rabbit dies within twenty-four hours. The blood sugar content begins to increase immediately after injection, reaches the maximum in three to five hours, and then decreases gradually. The intoxication brings about depletion of the epinephrin storage of the suprarenal glands. The loss is small at first, is greatest about the sixth hour, and then decreases again. Double splanchnectomy is capable of arresting the hyperglycaemia as well as the epinephrin exhaustion, these are therefore of central origin. When the quantity of toxin injected is such that the rabbit, though moribund, survives for a day or more, there is not only no hyperglycaemia on the day of the injection, but twenty-four hours, or later, after the injection hyperglycaemia develops, at the same time the suprarenal epinephrin and liver glycogen diminish markedly. Double splanchnectomy does not prevent these three diminutions.

The Action of the Bacteriophage.

565 C. ZORLLER and MANOUSSAKIS (*C. R. Soc. de Biologie*, November 6th, 1925, p. 1091) deposited a colloidal sac containing live Shiga bacilli in the peritoneum of a rabbit to which had been given twenty-four hours previously 20 c.c. of Shiga bacteriophage by the mouth. The following day the sac was found to contain the bacteriophage, which had passed through the wall of the sac. This diffusion was not due to any specific affinity for the Shiga bacilli, for it occurred equally well when other organisms were substituted. To ascertain whether the bacteriophage was active in the body the authors prepared a mixture of Shiga bacilli and anti Shiga bacteriophage, and filled a number of colloidal sacs, which were placed, some in large tubes of broth in the incubator. The sacs were withdrawn at times varying from eight to twenty-four hours later. Those that had been kept in the incubator contained a fluid that was perfectly limpid, those that had been in the peritoneum contained a fluid that was turbid, *in vitro* it was found that the bacteriophage was still present in the peritoneum had been active in the peritoneal cavity, but that it would not have been within the body the strain that had been act only on a fresh strain, towards the strain that had been primarily incubated with it it had no action. It would appear, then, that while in the body the strain of Shiga had undergone some modification which rendered it resistant to the bacteriophage. Further experiments showed that if Shiga bacilli and bacteriophage were placed in sacs in the animal body the bacteriophage disappeared within a month, leaving the Shiga bacilli alone. The authors conclude that a bacteriophage that is active *in vitro* is not necessarily active *in vivo*. Indeed, the advantage seems to rest with the organism on which it acts, for either this may vary so as to become resistant, or it may survive and ultimately outlive the bacteriophage.

Relations between Herpes Febrilis and Small pox.

566 E. GILDEMEISTER and K. HERZBERG (*Deut. med. Woch.*, October 2nd, 1925, p. 1647) allude to their previous paper (ibid., January 16th, 1925, p. 97) in which they had shown that herpes febrilis could be transplanted on to the soles of guinea pigs, (2) that the herpes virus could be cultivated in passage through the soles of guinea pigs, (3) that though originally non virulent it might change so much in character during this passage that inoculation of the cornea of a rabbit might kill the animal with typical symptoms of herpes encephalitis. In the present paper the authors describe their attempt to determine if any relations existed between the cause of herpes febrilis and that of small pox. They found that between the two viruses a distinct partially specific cellular and humoral immunity could be demonstrated as follows: (1) The rabbit's cornea, which is immune to herpes, possesses partial immunity to cow pox and small pox. (2) This immunity to small pox appearing after inoculation of a rabbit's cornea with herpes has a specific character. (3) The degree of immunity to cow pox and small pox of a rabbit's cornea is shown by the amount of small pox virus which the cornea is immune to. (4) The degree of immunity to small pox is shown by the amount of small pox virus which the cornea is immune to. (5) The serum of rabbits immune to herpes is able to destroy the virus of herpes but also that of small pox. (6) Guinea pigs can have their soles completely immunized against herpes. (7) The soles of the guinea pig, which are immune to herpes, are also partially immune to small pox.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

567 Collapse in Cardiac Oedema

IVAN MAHAIN (*Arch des Mal du Cœur, des Vaisseaux et du Sang* October, 1925, p 647) remarks that the possible causes of the often serious and occasionally fatal collapse in the course of rapid reduction of cardiac oedema are cerebral congestion or ischaemia, acute cardiac dilatation due to excretion or poisoning by the sodium chloride of the absorbed fluid, and some condition like anaphylactic shock. Vaguez, while recognizing the probability of several of these explanations prefers the last. He has found that collapse occurs prior to diuresis. It is most common among aged persons suffering from renal disease, and is absent when the fluid is removed by paracentesis. He recalls the fact that in certain patients a single intravenous injection of their own serum will produce anaphylactic shock. The author reports the case of a woman aged 74, who had cardiac dilatation and severe anasarca extending upwards to the umbilical level. Several needle punctures had been made in the lower limbs and a large quantity of fluid was removed in the course of five or six days. Light days after the paracentesis of the lower limbs, when the needle punctures were about to close the patient awoke, feeling very ill with severe dyspnoea and a sense of impending death. There was intense cyanosis and the pulse was too weak and rapid to be counted. The punctures were quite dry. A subcutaneous injection of 4 mg of adrenaline was given, and in twenty minutes the dyspnoea disappeared. Nine hours later the patient felt much better and the radial pulse could be counted (130 a minute). An intravenous injection of 0.15 gram of digitalin was given and on each of the four following days 0.1 gram was administered. Thirteen days after the collapse the patient was passing 2 litres of urine daily. Theobromine and digitalis infusion were given on alternate days. At the end of thirty-three days there was no trace of oedema, the pulse had fallen to 96 but there was complete anisothymia. The urine was copious and contained no trace of albumin or of bile pigment.

568 Primary Actinomycosis of the Penis

R. W. SMITH (*Urol and Cut Review*, October 1925, p 576) reports what is apparently the first case on record of primary actinomycosis of the penis in a farmer. The organ was enlarged, oedematous, and tender, with a red streak along the dorsal veins. The inguinal glands were enlarged on both sides. Retraction of the prepuce showed a small ulcer in the sulcus, within a quarter of an inch of the os, with a hard base and slight serous discharge. Subsequently the glands in the left groin broke down and formed an abscess and ulcers formed at the base and in the middle of the shaft of the penis. The inguinal abscess was opened and several ounces of greenish gelatinous pus were evacuated. The Wassermann reaction was negative both in the patient and his wife. Injections of sodium iodide were given intravenously and iron and arsenic subcutaneously. A diagnosis of sporotrichosis was made owing to the presence of chronic multiple ulcers connected by lymphangitis. The negative Wassermann reaction, and the improvement caused by iodide. A culture, however, showed the presence of actinomyces. Treatment by x-rays and iodic light was followed by complete recovery. It was noteworthy that, though the patient continued sexual relations with his wife during the existence of the lesions, she was not infected.

569 Thrombosis of the Coronary Arteries

J. W. McNEE (*Quart Journ Med*, October, 1925, p 44) states that the thrombosis of the coronary arteries is but lasting longer and of varying degrees of severity. The free wall coloured underneath and cyanosed on the surface. Inward the cardiac hepatic, renal and pulmonary signs of heart failure. A pericardial rub (inconstant but pathognomonic), fever with increase of polymorphonuclears and abnormalities in the electrogram. The condition most likely to be confused with this syndrome is acute abdominal disease, especially if the pain be limited to the upper part of the abdomen. The course and prognosis are most variable. Many patients die at once or within a few weeks but others undoubtedly make a fair recovery and live on for a number of years. It has been shown that when the coronary obstruction increases gradually a compensatory anastomosis may be developed as with uterine occlusion elsewhere. Treatment follows the ordinary lines in angina pectoris.

570 The Endocrine Factor in Digestive Disorders

B. C. LOCKWOOD (*John Amer Med Assoc* October 3rd 1925, p 1032) considers that while the alimentary canal like the other organs of the body, is affected by disturbances in the functioning of the ductless glands the extent and frequency of its involvement has been exaggerated. Such action on the alimentary canal is possibly twofold—namely, through the sympathetic nervous system and as a result of changes in the general nutrition. Gastrointestinal disturbances are rare when the endocrine disorder is of slight degree. Lockwood finds that the stomach acidity is generally decreased in hyposecretion of the thyroid, pituitary, and suprarenals. Hyperthyroidism also tends to reduce the acid content of the gastric secretion, and absence of the hydrochloric acid is frequently found in exophthalmic goitre, together with alimentary disturbance. He adds that gastric ulcer is rare in obvious endocrine disease, for it has been observed only four times in 126 cases. The intestinal disturbances associated with endocrine abnormality are of a spastic rather than an atonic type. In gastrointestinal conditions other etiological factors should be excluded before the endocrine system is suspected.

571 Blood Transfusion

OPITZ (*klin Woch* November 12th 1925 p 2185) thinks that success in blood transfusion depends on the technique and the choice of donor. In grouping the blood samples he prefers the agglutination test to the longer hemolytic method. The blood of relatives does not appear to have any special advantage. Laboratory tests must, he adds, be supplemented by a trial injection of 10 to 20 c.c. of the blood, because haemoglobinuria sometimes occurs even though the laboratory indications are favourable. A slight use of temperature is said to be no contraindication. In children, shaving, or rubbing the skin with alcohol, will generally reveal a scalp vein. The external jugular should be avoided for injecting larger quantities of blood on account of the risk of overloading the right auricle. A sinus should also be avoided when possible. The author uses 2.5 per cent of sodium citrate with the blood, and states that keeping the blood for twenty-four hours in an ice chamber is allowable. In 200 cases observed no death followed or transmission of tuberculous. Opitz thinks that it is almost certain that the emboluses introduced continue to live and that one valuable sequel of transfusion is increase in the patient's power of resistance.

Surgery.

572 Laryngeal Carcinoma

G. TERRILLI (*Arch Internat de Laryngol Otol et Rhinol* September-October, 1925, p 897) thinks that frequency of prolapse of the ventricle of Morgagni in men partly explains the comparative rarity of intrinsic cancer of the larynx in women. Terrier concludes, however, that no hypothesis so far is based on sufficient grounds to assist in determining the etiology of the treatment. He insists on the necessity of very careful diagnosis from clinical observation and biopsy, as the results of histological examination are not always reliable. He regards laryngo-fissure as the operation of choice in doubtful cases, since it does not destroy any function of the larynx is a good method if the growth should be benign or of the squamous variety of cancer and enables an accurate diagnosis to be made. Should the growth be of the cylindrical-celled variety which is more malignant total laryngectomy is still possible. No differences of technique in treating male and female patients have yet been formulated and laryngologists are still in great doubt as to the best methods. In the light of present knowledge Terrier favours the use of radium. Intensive and deep radiotherapy must be applied with caution as in some cases an excitation of malignancy may take place or toxic absorption may be increased. So many patients refuse the mutilating operation of laryngectomy that tracheotomy and therapeutic measures are the only ones available. Terrier adds that since the resistance of the cells of women to x-rays is less than that of men this treatment is more dangerous in women. Radium can be applied by passing the tube through the mouth into the larynx or by incorporating the radium carrier in an O'Dwyer's tube. Radium can also be applied from a tracheostomy wound but in some subglottic cases a laryngo-fissure is necessary.

between pregnancy nephropathy ("pregnancy kidney") and chronic nephritis leading to severe symptoms in pregnancy is very difficult, probably the latter condition is diagnosed much more often than is justifiable. Considerable use of blood pictures, the presence of erythrocytes in the urine, and albuminuria, results, all of which have been regarded as pointing to chronic nephritis, may equally be found in cases of "pregnancy kidney." The appearance of renal signs and symptoms in the lead (unless the contrary of pregnancy nephropathy antecedent history of eclampsia or pregnancy kidney, if the current pregnancy is multiple, or if the patient is primiparous. On the other hand, it is in the early months of pregnancy as a rule that chronic nephritis is complicated by acute renal complications—recurrent nephropathies of pregnancy, however, as well as those following eclampsia in previous pregnancies or associated with hydatidiform mole are also apt to lead to acute renal symptoms during the early months after conception. Absence of haematuria and of increase in blood pressure favour a diagnosis of pregnancy nephropathy. Hypertrophy of the left ventricle points, although by no means conclusively, to chronic nephritis. The author adds that it is usually difficult to obtain trustworthy accounts of the past medical history, but previous renal symptoms in pregnancy point to pregnancy kidney, those occurring in the absence of pregnancy to chronic glomerular nephritis.

586 Simple Adenoma of the Breast

A. E. BOTHÉ (*Amer Journ Med Sci*, November, 1925, p 731) reports a case of simple lactating adenoma of the breast, and discusses this rare condition. In his patient, a negress aged 24, a small lump in the right breast appeared nine years previously. It remained stationary in size until the onset of pregnancy one year before admission to the hospital, when the mass gradually enlarged, until at the time of delivery it was the size of a chicken's egg and was slightly tender. At the onset of lactation it grew rapidly, and three months after delivery reached the size of a large orange. The tumour possessed a well marked capsule and was easily separated from the tissue. It was reddish yellow, soft, and lobulated. A thick, cream coloured fluid, with the appearance of condensed milk, oozed from the surface. Bothé mentions other cases in the literature, and states that the average age for the development of this condition is between the fifteenth and thirtieth years. Such adenomata give rise to very few symptoms, except during menstruation, pregnancy, and lactation, when they increase rapidly in size, and may become painful owing to retained secretion. Differential diagnosis, though impossible by clinical procedures, is of but little importance, since treatment of the different kinds of adenomata is always excision.

587 Temporary Sterilization

P. HENDLY (*Zentralbl f Gynak*, October 24th, 1925, p 2404) suggests that in cases where it is desired to induce temporary sterilization a doubling of the vagina may be induced by a special method of colporrhaphy. The interior and smaller vagina opens just below the urethral orifice and serves for egress of the uterine and cervical secretions and menstrual blood, the wider posterior one for coitus. When the need for avoidance of conception is past, the septum dividing the two passages can be removed. Hendly has twice tried this procedure: in the first case with the object of replacing an absent urethra, and in the second in a patient with myocardial insufficiency. In one case the sutures failed to unite, but it is stated that Zomakhon who devised a similar operation independently, has had a successful result.

Pathology

588 Basal Metabolism in Experimental Cancer

A. REMOND, M. SPENDRILL, and L. ASSALDI (*C R Soc de Biologie*, October 30th, 1925, p 979) have made observations on the changes in the rate of basal metabolism in rabbits suffering from experimental carcinoma. The estimations of the metabolic rate were made in a large chamber kept at constant pressure. Before and after the experiment the area of the animal was calculated by Meeh's formula, and the quantity of heat given out being estimated as a function of the respiratory quotient it sufficed to translate it into terms of area and time to arrive at the figure of the basal metabolism. Eight animals were examined. The results showed that in the pre-neoplastic stage there was a rise in the metabolic rate followed in the stage of full development by a marked fall. In one case in which the tumour retrogressed a rise followed a very pronounced decline, and

reached a figure considerably above that of the normal animal. Since no variation took place in the weights of the rabbits, the authors conclude that the fall in the metabolic rate during the cancerous stage could not have been due to malnutrition. They consider it rather to have been dependent on underactivity of the thyroid. Several investigators have shown that endemic goitre predisposes to carcinoma, and Korenehevsky has found that thyroidectomy increases the rate of proliferation of neoplasms in the dog. The authors conclude from their experiments that the nature of the soil "is of importance in the development of cancer."

589 A Delicate Colour Test for the Presence of Vitamin A

O. ROSENHEIM and J. C. DRUMMOND (*Biochem Journ*, 1925, vol. 19, No 5, p 753) have found that arsenic chloride gives with cod liver oil a brilliant ultramarine blue colour. The test is performed by adding 1 c.c. of pure arsenic chloride to one drop of the oil, and shaking the test tube immediately. The oil dissolves to form a clear blue solution in a few seconds it assumes a purple tint which gradually fades. The reaction is characterized by a well defined absorption band extending from $\lambda 550$ to 590 . The sensitiveness of the reaction may be gauged by the fact that it is given by 0.05 mg. of oil in the crude state, and by a 1 in 2,000,000 dilution of the unsaponifiable cholesterol free fraction. The reasons for believing that the colour reaction is distinctive of vitamin A are that it is given by the same fraction of the oil as is known to contain the vitamin, that it persists in undiminished intensity after distillation with superheated steam in a nitrogen atmosphere, that it is destroyed by oxidation when a current of air is passed through the oil at 100°C , and that in a series of tests on over thirty oils and fats a complete agreement was found between the colour intensity and the growth promoting activity as tested by animal experiment. This colour reaction makes it possible also to distinguish between the growth promoting vitamin A and the antirachitic vitamin D. From the analogy between the colour reactions of arsenic chloride with cholesterol, and from the possible relation between sterols and lipochromes and their general association with vitamin A in plant tissues, it is suggested that the arsenic chloride reaction is concerned with a substance derived from these types of synthetic plant products under the influence of sunlight. By means of this colour reaction it will now be possible to estimate the amount of vitamin A in various substances by a simple colorimetric method instead of by the tedious mode of animal experiment. A description of such a method is given.

590 The Widal Reaction in the First Week of Enteric Fever

T. OSTER (*Deut med Woch*, October 2nd, 1925, p 1653) states that in typhoid fever the Widal reaction is positive in 66.07 per cent according to Schmitz and in 69.2 per cent according to Kalthoff in the first week of disease. Uhlenhuth gives approximately the same figures as regards the abdominal form of paratyphoid B fever during the first week, while in gastro enteritis paratyphosa no specific agglutinins are formed during the first days of the disease. In about 33 per cent of the early cases the Widal reaction does not confirm the clinical diagnosis, partly because no agglutinins at all are formed and partly because agglutinins are formed for other organisms. Oster records the results of investigation of the Widal reaction at the Hygiene Institute of Heidelberg University since 1910. In 240 out of 444 cases of typhoid fever, or in 54.2 per cent, and in 18 out of 50 cases of paratyphoid B fever, or in 36 per cent, the Widal reaction confirmed the clinical diagnosis in the first week of the disease, whereas no clinical conclusion could be drawn from the condition of the reaction in 28 cases of gastro enteritis paratyphosa at this early stage. These results are in approximate agreement with those of previous observers.

591 The Active Principle of Chaulmoogra Oil

L. F. HIRST (*Ceylon Journ of Science*, Section D, November 2nd, 1925, p 107) refers to the contradictory views as to the value of chaulmoogra oil in the treatment of leprosy, investigators in India and the Philippine Islands reporting favourably, whereas others in South Africa and Ceylon have been disappointed. Hirst thinks that the failures may be due to the therapeutically inactive oils used having lost their active principle, which is possibly a photosynthetic product of "high energy chemistry" due to solar irradiation. Baly (see *Journ Med*, November 21st 1925, p 961) suggested that vitamins were not specific chemical substances, but compounds in a state of high energy content and Hirst considers that the antileprotic powers of active hydnoceps oils are due to their retention of such a vitamin factor. He mentions that irradiated olive oil requires antirachitic powers (see also *Epitome* 1924 vol 11 para 505), and hopes that his hypothesis may be submitted to experimental trial.

THE
British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

SUPPLEMENT

CONTAINING

CURRENT NOTES ON THE WORK OF THE ASSOCIATION

REPORTS OF CONFERENCES

MEETINGS OF BRANCHES AND DIVISIONS

THE GENERAL MEDICAL COUNCIL

MEDICAL BILLS IN PARLIAMENT

NATIONAL INSURANCE PROCEEDINGS

NAVAL AND MILITARY APPOINTMENTS

CORRESPONDENCE, Etc

VOLUME II, 1925

London.

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LONDON, SATURDAY, JULY 4TH, 1925

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British Medical Association.

NINETY-THIRD ANNUAL MEETING, BATH, JULY 21st to 24th, 1925.

Patron HIS MAJESTY THE KING

President J BASIL HALL, M.Chir., F.R.C.S., Consulting Surgeon, Royal Infirmary, Bradford

President Elect FREDERICK GEORGE THOMSON, M.A., M.D., M.R.C.P., Physician, Royal United Hospital, Bath

Chairman of Representative Body HENRI BRITTON BRACKENBURY M.R.C.S., L.R.C.P.

Chairman of Council ROBERT ALFRED BOLAM, M.D., LL.D., F.R.C.P.

Treasurer N BISHOP HAPMAN, M.A., M.B., F.R.C.S.

PROVISIONAL PROGRAMME.



BATH ABBEY

THE incoming President, Dr F G Thomson, will deliver his address to the Association on Tuesday, July 21st

The ANNUAL REPRESENTATIVE MEETING will begin on Friday, July 17th, at 10 a.m., and be continued on the three following week days

The statutory ANNUAL GENERAL MEETING will be held on July 21st at 2 p.m., and the adjourned general meeting at 7.45 p.m.

The Annual Dinner of the Association will take place on Thursday, July 23rd

The Conference of Secretaries will be held at 2.30 p.m. on Wednesday, July 22nd, and the Secretaries' Dinner at 6.30 the same evening

The Annual Exhibition of surgical appliances, foods, drugs, and books will be opened by the President Elect on July 21st at 9.30 a.m., and will remain open on July 22nd, 23rd, and 24th

A Popular Lecture will be delivered by Sir W H Bragg, K.B.E., F.R.S., on Friday, July 24th, at 8 p.m.

Saturday, July 25th, will be given up to excursions to places of interest in the neighbourhood

THE SECTIONS

The Scientific Sections will meet from 10 a.m. to 1 p.m. for papers and discussions, and it is hoped that laboratory and clinical demonstrations will be arranged for the afternoons of July 22nd, 23rd, and 24th

The following Sections will meet on Three Days—Wednesday, Thursday, and Friday, July 22, 23, and 24

MEDICINE

President The Right Hon Lord Dawson of Penn., G.C.V.O., K.C.M.G., C.B., M.D., F.R.C.P. (London)
Vice President: E J CANN, M.D., F.R.C.P. (Bath), T R ILLIOTT, D.S.O., C.B.E., M.D., F.R.C.P., F.R.S. (London), Professor J A NIXON, C.M.G., M.D., F.R.C.P. (Bristol), Professor ADAM PATRICK, M.D., M.R.C.P. (Dunlee), W N WILSON, M.D. (Bradford)

Honorary Secretaries: JAMES LINDSAY, M.D., M.R.C.P., The Circus Bath, F G CHANDLER, M.D., F.R.C.P., 1, Park Square West, Portland Place, London, N.W.1

The following provisional programme has been arranged

Wednesday July 22nd—Discussion: Rheumatoid Arthritis: Its Causation and Treatment. To be opened by Sir HUMPHRY ROLLESTON, Bt., followed by Dr RUPERT WATKINSON (Treatment), Sir ROBERT JONES (Surgical), Dr J M H MONRO (Bacteriology), Mr A G TIMBIELL FISHER (Pathological), Mr W R ACKLAND (Dental), and Sir WILLIAM H WILCOX. Mr A C Timbiell Fisher will exhibit drawings and specimens illustrative of the pathology of chronic arthritis

Thursday July 23rd—Discussion: Hyperpiesia. To be opened by Lord Dawson, followed by Professor I H STAPING, F.R.S., Dr H BATTY SHAW, Dr OTTO MAY, and Dr GIOFFILLY LANS

Friday July 24th—Discussion: The Uses and Abuses of Indocaine Therapy. To be opened by Dr W LANGDON BROWN and Professor SWALT VINCENT, followed by Dr H GARDNER, H.H.H., Mr FENNETHY M WALKER, Dr H W C VINES, and Professor T S LAMBERT. Paper: Dr I I SPIEGGS: Diverterculosis of the Intestine illustrated by lantern slides

SUPGEY

President Sir BECKLEY MONTAGHAN, Bt, K C V G, C B, M S, L D F R C S (Leeds)
Vice Presidents A H BURGESS, M B, F R C S (Manchester),
 HIDEPICK LACE F R C S (Bath), H S SOUTTAR C B E, M Ch,
 I I C S (London), C F WALTERS F R C S (Bristol)
Honorary Secretaries A D L BLATHWAY M R C S L R C P,
 6 Brook Street Bath A L FULLER F R C S 9 Gay Street,
 Bath R W VICK, O B E M Chir, F R C S, 152, Harley Street,
 London, W 1

The following provisional programme has been arranged

Wednesday, July 22nd—Discussion Carcinoma of the Stomach To be opened by Sir W L DE COURCY WHEELER, followed by Dr E I SPRIGGS (Clinical Manifestations and Early Diagnosis), Dr A F HURST (Auxiliary Methods of Diagnosis Radiological and Chemical), Professor M J STEWART (Pathology General relation of carcinoma to ulcer mode of spread and frequency of secondary deposits in liver) Mr J SHEPHERD, Mr JOHN MORLEY, Dr J A NIXON and Mr A H BURGESS

Thursday July 23rd—Discussion Acute Intestinal Obstruction To be opened by Sir WILLIAM TAYLOR followed by Mr W SAMPSON, HANDLY and Mr D P D WILLIAMS A general report and statistics from various hospitals for the past five years will be presented by Mr H S SOUTTAR (London Hospital), Mr R I ROWLANDS (Guy's Hospital), Mr C MAX PAGL (St Thomas's Hospital), Mr R M VICK (St Bartholomew's Hospital), Mr L R BRATHWAITE (Leeds) Mr G GREI TURNER (Newcastle), Mr A H BURGESS (Manchester), Mr A RENALE SHORT (Bristol), and Mr A B MITCHELL (Belfast)

Friday July 24th—Combined discussion with Orthopaedic Section Treatment of Fractures with special reference to its Organization and Teaching To be opened on the Surgical side by Mr G E GASK followed by Mr S W DAW Mr H WADE, Mr H H SIMPSON and Mr A W SHLEY, and on the Orthopaedic side by Sir ROBERT JONES followed by Dr R OSGOOD (Boston, U S A) Mr H PRATT Mr H A L LAMBANK Mr C MAX PAGL, and Mr G YNNE E O WILLIAMS

OBSTETRICS AND GYNAECOLOGY

President Lady BARRETT C B E, M D M S (London)
Vice Presidents H S DAVIDSON, O B E M B I R C S E d (Edinburgh), LADNELL L HOLLAND M D F R C P F R C S (London), W F RAWSON, F R C S E d (Bristol), D C RAINER, I R C S (Bristol)

Honorary Secretaries W H DUNCAN F R C S E d 13 Gay Street Bath J BRIGHT BANISTER, M D, M R C P, 39, Harley Street, London, W 1

The following provisional programme has been arranged

Wednesday July 22nd—Discussion (a) The Problem of Uterine Cancer Opening address by Professor B P WATSON (Lundbury, h) (b) The Surgical Treatment of Malignant Disease of the Pelvic Organs To be opened by Mr VICTOR BONNEY and Mr S J CAMPBELL The following will take part in the discussion Professor C OLDFIELD Mr H J D SMITH, Dr R S S STATHAM, and Professor W C SWANNE

Thursday July 23rd—Discussion The Treatment of Inoperable Cancer of the Pelvic Organs To be opened by Dr JAMES HALLMAN (Stockholm) followed by Mr PERCIVAL P COLE and Mr VALCOLM DOALANCO Paper Dr D C HARE Preliminary investigation into the Circulatory Changes in Normal Pregnancy

Friday July 24th—Discussion The Role of Surgery in the Treatment of Bacterial Displacement of the Uterus To be opened by Miss M H FRANKS M B S followed by Dr H RUSSELL ANDREWS Professor J M MUNRO KERR Mr R H PARSONS, Mr D C L WATTS Mr D SHANNON and Sir HENRY J F SIMON Paper Dr C I STILGACH The Pathology and Treatment of Cervical Erosion

PATHOLOGY AND BACTERIOLOGY

President Professor J C G LINGHAM, C M G D Sc, M B, F R C I I R S (London)

Vice Presidents J A BLANTON HICKS M D M R C P (London), Professor L H KETTLE M D (Cardiff) RUFLETT WATERHOUSE, M D M R C P (Bath)

Honorary Secretaries Lieut Colonel JAMES COWAN M B I A M C (ret) 44 Combe Park Bath C C OBEY M B W R C I Wellcome Physiological Research Laboratories Langley Court Beckenham Kent

The following provisional programme has been arranged

Wednesday July 22nd—Discussion Filter passing Viruses To be opened by Dr W E GIBB followed by Mr J F BARNARD F R S Dr MERVIN H COLDON I R S Dr S P BEDSON and Dr J F MCCARTHY

Thursday July 23rd—Discussion The Pathological Basis of Tremor in Paralysis To be opened by Professor S RUSSELL followed by Dr F S STANGEWICK Miss M E HUME Dr A VANCE and Dr I C CANTY

Friday July 24th—Discussion The Present Position of Pathology and Bacteriology in this Country with special reference to the research to be opened by the President of the Section Professor J C G LINGHAM F R S

NEUROLOGY AND PSYCHOLOGICAL MEDICINE

President Sir MURPHY CLARK C B E M D F R C P (London)
Vice Presidents EDWIN BLANFORD M D F R C I (Lundbury, h) Mr J HURST M D I I C I A C O NIXON LAYLES M D L L S A B WILSON M D I F C P (London)

Honorary Secretaries RAY EDGEMOND M R C S L R C P 29 Gay Street Bath, EDWARD MAPOTHERI M D, M R C P, Maudsley Hospital, Denmark Hill, London, S E 5

The following provisional programme has been arranged

Wednesday July 22nd—Discussion Causation and Symptomatology of Multiple Neuritis To be opened by Dr T GRAINGER STEWART followed by Dr JAMES S COLLIER Dr WILFRED J HARRIS, Dr W JOHNSON, and Dr F J NAITRASS

Thursday, July 23rd—Discussion Treatment of Insomnia To be opened by Dr ROBERT HUTCHISON followed by Dr HARRIS GIBBELL, Dr HENRY DEVINE, and Dr C P SIMONDS

Friday, July 24th—Discussion Prophylaxis of Mental Disorder To be opened by Sir HUMPHRY ROLLESTON followed by Dr A HELL A BOYLE Dr BERNARD HART, Dr EDWARD MAPOTHERI, and Dr T A ROSS

THERAPEUTICS (INCLUDING BALNEOLOGY AND RADIO-THERAPY)

President Professor L B WILD, M D, F R C P (Chimley Derbyshire)

Vice Presidents PRESTON KING M D (Bath) W MITCHELL M B, C M (Bristol), NATHAN MITCH M D I R C I (London)

Honorary Secretaries CECIL H FLURY M B F R C S E d, 15 The Circus Bath, DOROTHY C HARL C B E, M D, M R C P, 1, Beekenhall Mansions London, W 1

The following provisional programme has been arranged

Wednesday July 22nd—Discussion Treatment of Asthma To be opened by Dr W LANGDON BROWN, followed by Dr L I POLITON and Dr P HAMIL

Thursday, July 23rd—Discussion Treatment of Chronic Arthritis To be opened by Sir THOMAS HORDLER, Bt, followed by Dr PALSTON KING (Balneology), Dr N MITCH, and Dr C L HEARD

Friday July 24th—Discussion Therapeutic Value of Light To be opened by Professor W E DIXON F R S followed by Dr C E M JONES (Clinical) and Dr G H LANCASHIRE Paper Dr NEWMAN NILD The Uses of Posture for Bronchial Drainage

Members wishing to contribute to the discussions should notify the Local Secretary of the Section

LARYNGOLOGY OTOTOLOGY AND RHINOLOGY

President ARTHUR H CHEATLE, C B E F R C S (London)

Vice Presidents NEIL MACLACH M B (Newcastle upon Tyne), IRWIN MOORE M B C M (London), SIDNEY R SCOTT, M B, I R C S (London)

Honorary Secretaries H NORRIS BARNETT, F R C S E d 27 The Circus Bath R SCOTT BREWSTER, M D, 39, New Cavendish Street London, W 1

The following programme has been arranged

Wednesday July 22nd—Morning—Discussion Overlooked Cases of Foreign Body in the Air and Food Passages To be opened by Professor CHEVALIER JACKSON (Philadelphia), followed by Dr THOMAS McCRAE (Philadelphia), Sir SCLAIR THOMSON, Sir WILLIAM MILLICAN, Dr G WILLIAM HILL, Dr IRWIN MOORE, Mr HERBERT LILLEY Mr P B WAGGETT, Mr D A CLOW, Mr G LWARF MARTIN Mr W IRANK WILSON Mr A J WRIGHT Professor CHEVALIER JACKSON (ii) Demonstration of mechanical problems of bronchoscopic and oesophagoscopy extraction of foreign bodies, (b) Cinematographic demonstration of bronchoscopic aspiration for suppurative diseases of the lung of other than foreign body origin Dr J McCRAE Bronchoscopy for disease **Afternoon**—Mr J F NEGUS (a) Evolutionary factors in causation of pharyngeal diverticula (b) Comparative anatomy of nose and throat Dr IRWIN MOORE An outline of the history of endoscopy

Thursday July 23rd—Morning—Discussions (i) Operative Treatment of Chronic Middle Ear Suppuration To be opened by Mr G J JENKINS followed by Mr SIDNEY SCOTT Mr J C FRASER and Mr J BOWRING HORGAN, (2) Treatment of Chronic Non suppurative Middle ear Deafness (excluding Oto sclerosis) To be opened by Sir W MILLIGAN followed by Dr J KEAR LOVE, Sir ROBERT WOODS Mr NEIL MACLACH and Mr H N BARNETT **Afternoon**—Cases Mr G J JENKINS Operative treatment of middle ear suppuration, Mr H N BARNETT Results of (a) conservative operative treatment of chronic middle ear suppuration (b) treatment of chronic non suppurative middle ear deafness

Friday July 24th—Morning—Discussion Occupational Diseases of Ear Nose and Throat and their Prevention To be opened by Mr F H WESTMACOTT followed by Surgeon Commander S W GIFFINWARR R N Wing Commander D RAYNES, R A F M S Mr J JEFFERSON LAULNER Mr C A SCOTT RIDOUT, and Mr T PITCHIE PONGER (Hull) **Afternoon**—2.30 Dr I WATSON WILLIAMS Demonstration of investigation of the nasal accessory sinuses

On Friday at 4.15 there will be a garden party at Newton Parl Bath by invitation of Earl and Countess Temple Those wishing to attend are asked to make early application to the local secretary of the Section

An Endoscopic Museum is being formed consisting of post mortem specimens showing foreign bodies in situ foreign bodies and radiogram or drawings of such bodies from the air pass ages and oesophagus Members of the Section desirous of contributing to this museum are asked to communicate with Dr Irwin Moore 3 A Wimpole Street W 1

The following Sections will meet on Two Days**DISEASES OF CHILDREN**

President ROBERT HUTCHINSON, M.D., F.R.C.P. (London)
 Vice Presidents: CARL I. COOMBS, M.D., F.R.C.P. (Bristol),
 P. T. CRAMBLE, F.R.C.S. (Belfast), CHAILES MCNEIL, M.D.,
 F.R.C.I. (Edinburgh), ROBERT H. MILLER, M.D., F.R.C.P.
 (London)

Honorary Secretaries: VINCENT COATES, M.C., M.D., 10, The
 Circus, Bath, R. A. RAMSAY, M.Ch., F.R.C.S., 123, Gloucester
 Terrace, Hyde Park, London, W.2

The following provisional programme has been arranged

Wednesday, July 22nd—Joint discussion with the Section of
 Public Medicine: Rheumatic Infection in Childhood—Early Dis-
 posals and Preventive Treatment. To be opened by Dr. F. J.
 LLOYD and Dr. R. A. ASKINS (M.O.H. Bristol), followed by
 Dr. CARL I. COOMBS, Dr. REGINALD MITCHELL, Dr. J. A. GLOVER
 (Ministry of Health), and Dr. VINCENT COATES

Thursday, July 23rd—Discussion: Treatment of Empyema. To
 be opened by Dr. H. C. CAMERON and Mr. H. S. SOUTTAR, followed
 by Dr. I. G. CHANABALL, Mr. W. H. C. ROBERTS, and Mr. T.
 TWISTINGTON HIGGINS

OPHTHALMOLOGY

President W. MARION BEALMOND, M.R.C.S. (Bath)
 Vice Presidents: R. WALLACE HILL, M.D. (Leicester), A. W.
 OLMOND, C.B.E., F.R.C.S. (London), C. H. WILKIE, F.R.C.S.
 (Bristol)

Honorary Secretaries: R. COLLIER, M.B. DOUGLAS, 30 The Circus,
 Bath, P. G. DOWLE, M.B. F.R.C.S., 8, Hailey Street, London, W.1

The following provisional programme has been arranged

Wednesday, July 22nd—Discussion: Eye Injuries and Inter-
 stitial Keratitis. To be opened by Mr. W. J. HOLMES STEVEN-
 PETERS, Mr. A. W. OLMOND, Visual Hallucinations of Sane
 People, Mr. A. BISHOP HILLMAN, Phlyctenular Conjunctivitis and
 Keratitis—Causes and Prevention, Dr. R. WALLACE HILL,
 Instrument for Recording Light Minimum and Light Difference,
 Mr. R. COLLIER, Case of Perforating Wound of Eye with Retention
 of Piece of Glass

Thursday, July 23rd—Discussion: Ocular Pain. To be opened
 by Mr. A. IRVING LINDSAY, Papers: Mr. C. H. WALKER,
 Amblyopia, Mr. LINDSAY PEARCE, Treatment of Ocular Syphilis,
 Mr. J. BUNDOO COOPER, Conservative Treatment of Glaucoma,
 Mr. A. S. PERCIVAL

ORTHOPAEDICS

President: Professor L. W. HILL GROSS, M.S., F.R.C.S.
 (Bristol)

Vice Presidents: NAUGHTON DUFF, M.B. Ch.B. (Birmingham),
 G. R. GIRDLESTONE, M.B., F.R.C.S. (Oxford), L. MUIRHEAD,
 LITTLE, F.R.C.S. (London)

Honorary Secretaries: J. S. LEVINS, M.C., M.B., 20, Gay Street,
 Bath, T. TWISTINGTON HIGGINS, O.B.E., F.R.C.S., 27, Hailey
 Street, London, W.1

The following provisional programme has been arranged

Thursday, July 23rd—Discussion: Tuberculous Disease of the
 Spine. To be opened by Sir HENRY GUYER, followed by
 Mr. G. R. GIRDLESTONE (Oxford), Mr. W. T. G. PUGH (Carlisle),
 and Mr. JAMES RUSSELL (Glasgow). Paper: Mr. R. OLLENSCHAW
 (Manchester): Observations on the Osgood-Schlatter Disease.
 Friday, July 24th—Joint discussion with Section of Surgery on
 the Treatment of Fractures with special reference to Organization
 and Teaching (See above)

PUBLIC MEDICINE

President: T. EUSTACE HILL, O.B.E., M.B., D.H. (Durham)
 Vice Presidents: T. W. NAYLOR BARNOR, O.B.E., F.R.C.S.,
 F.I.C.P. (Wallsend), J. F. BLACKETT, M.D. (Bath),
 W. A. BRIDGES, M.D. (London), S. NOR SCOTT, M.R.C.S. L.R.C.P.
 (Plymouth)

Honorary Secretaries: R. E. THOMAS, M.D., 11, Durlington Place,
 Bath, A. NEVILLE COX, M.D., M.R.C.P., 21, Cornwall Gardens,
 Preston Park, Brighton

The following provisional programme has been arranged

Wednesday, July 22nd—Joint discussion with the Section of
 Public Medicine: Childhood—Early Disposal of Children—
 To be opened by Dr. F. J. LLOYD, School Medical

Thursday, July 23rd—Discussions: (1) Food Manipulation in
 Relation to Health. To be opened by Dr. W. G. SAVAGE, M.O.H.
 Somersetshire. Dr. C. E. GODDARD will speak with special
 reference to Accidental Contamination. (2) Influence of Sunlight
 and Artificial Lights on Health. To be opened by Dr. LEONARD
 HILL, F.R.S., followed by Dr. G. B. DIXON (Lardley Road Sanato-
 rium, Birmingham) who will speak particularly on the Influence
 of Light on Tuberculosis and Dr. DONALD C. COLLEBROOK (North
 Islington Infant Welfare Centre)

The following Section will meet on One Day**MEDICAL SOCIOLOGY**

President: CHARLES D. S. FLEMING, M.R.C.S., L.R.C.P.
 (Bradford on Avon)

Vice Presidents: J. W. BOVEY, M.B. Ch.B. (Luton), WILFRED
 BUCKLEY, C.B.E. (London), G. P. MALE, M.R.C.V.S. (Reading),
 E. A. STURLING, M.B., M.Ch. (Tunbridge Wells)

Honorary Secretaries: C. A. MARSH, M.D., The Roseries, English-
 combe, Bath, C. J. BUCHAN, M.B., 326, Brownhill Road, Catford,
 London, S.E.6

The following provisional programme has been arranged

Friday, July 24th—Morning—Discussion: What should be the
 to be opened by Dr. R. STENHOUSE, point of view of the bacteriologist
 (Worcestershire) from the point of view
 and Dr. ERIC PRITCHARD (London)
 from the point of view of the dietist. Afternoon—Discussion: What
 Means can Pure Milk be Obtained and at What Cost? To be
 opened by Mr. WILFRED BUCKLEY (National Clean Milk Society),
 as a producer, Mr. G. P. MALE, or
 and Mr. J. H. MAGEE (chairman) u,
 Two films will be shown with t of
 certified milk on an English farm" and "Handling and distribution
 of milk in New York City"

At 3.45 p.m. visitors will leave the Abbey for Great Chalfield Manor
 where, by invitation of Major Robert Fuller, tea will be provided and
 guests will be shown the production of Grade A certified milk

The Honorary Local General Secretary for the Annual
 Meeting is Mr. W. G. MUMFORD, O.B.E., F.R.C.S. (British
 Medical Association Committee Rooms Assembly Rooms
 Bath), and the Honorary Assistant Secretary is Dr. R. G.
 GORDON

TRAVELLING ARRANGEMENTS

To members intending to be present at the Bath Annual
 Meeting the railway companies have agreed to issue return
 tickets at the cost of a single fare and a third. The con-
 cession applies to all railway companies in Great Britain
 (but not in Ireland), and the tickets will be available from
 July 15th to July 27th. They will be issued only upon
 production of a special voucher signed by the Financial
 Secretary of the British Medical Association, Tristram
 Squire, W.C.1, to whom application should be made

For the convenience of members residing within a radius of
 fifty miles of Bath the railway companies have undertaken to
 issue from Bath on presentation at the booking office of the
 Official Member's Card

1 Return tickets available for the day of issue or following
 day or from Sunday to Monday at a single fare and a third—
 minimum 1s per passenger fractions of 3d reckoned as 3d

2 Season tickets for not less than six days allowing for more
 than one journey per day (Sunday being a *die non*) at a charge
 not less than the accumulated fares per day (see Clause 1)
 minimum 1s per day fractions of 3d reckoned as 3d on each
 day free

The Official Member's Card will be obtainable in the
 Reception Room at the Banqueting Hall, Guildhall

Members should use the railway ticket they obtain in
 exchange for the voucher for the first journey to and the
 last journey from Bath. For all intermediate journeys the
 reduced tickets can be obtained by exhibiting the Member's
 Card to the booking clerk at Bath

HOTEL ACCOMMODATION

A considerable amount of hotel accommodation is avail-
 able in Bath. The terms are indicated in the table printed
 below. It should be noted that the bookings at the Grand
 Pump Room Hotel and the Empire Hotel for the period of
 the Annual Meeting are now complete and no further rooms
 in either of these hotels can be obtained. Members
 desiring accommodation should write immediately to Dr.
 R. G. Gordon, British Medical Association Committee Rooms,
 Assembly Rooms Bath

Name of Hotel	Bed and Breakfast
Pulteney	10/6
Francis Queen Square	7/6 to 10/6
Francis Bennett Street	7/6 to 10/6
York House	10/6
Spa Hotel	10/6
Landown Grove	10/6
Pratt's Hotel	10/6
Farmley	8/6 to 10/6
Christopher	7/6 to 10/6
Angel Hotel	7/6
Edgar Hotel	7/6 to 10/6
Southbourne	7/6
Westbourne	7/6
Carlton (Private)	7/6
Rockiffe (Private)	12/- per day
Royal Hotel	10/6 per day
Grosvenor Hotel	7/6 (25/3s per week)
Carlton Hotel (Private)	25/3s per week
Cleveland (Private)	7/6
Waldron's Hotel	7/6
Harris's Hotel	8/6
Weston Hotel	10/6
Lamphey Stoke Hydro (several miles out of Bath)	

There are also several boarding houses and private rooms the
 terms for which may be had on application

THE PATHOLOGICAL MUSEUM

The committee responsible for the organization of the Pathological Museum is anxious to secure the co-operation of the officers of the various scientific Sections at the forthcoming Annual Meeting in Bath of the British Medical Association. The committee will be glad to take charge of, and place in the museum for exhibition, any specimens, casts, photographs, diagrams, or microscopic slides during the time they are not required by those who are reading papers or taking part in the discussions. Every care will be taken of specimens, and the contents of the museum will be insured.

THE ANNUAL EXHIBITION

In connexion with the Annual Meeting at Bath, the exhibition of surgical instruments, appliances, x-ray apparatus, drugs, books, foods, etc., will be held in the Market Hall from Tuesday, July 21st, to Friday, July 24th, inclusive.

ANNUAL DINNER

The Annual Dinner of the Association will be held at the Assembly Rooms, Bath, on Thursday, July 23rd, at 7 p.m. Full evening dress will be worn, with decorations. The accommodation is limited to 400, including ladies. The price of the dinner ticket is 12s 6d, exclusive of wine, and 41s with wine. Those intending to be present are requested to address their applications to Mr. A. de V. Blithin, 1st, 6, Broad Street, Bath.

GOLF COMPETITIONS AT THE ANNUAL MEETING

THREE CUPS FOR COMPETITION

The British Medical Association holds each year a golf competition wherever the Association happens to be holding its Annual Meeting. In the past members have only had the privilege of playing for two cups—namely, the Ulster Cup, presented to the Association by the Ulster Branch, and first played for during the Annual Meeting at Belfast in 1809, and the Childs Cup, presented by Mr. C. P. Childs at the Annual Meeting at Portsmouth in 1923.

There is now, however, a third cup, called the Treasurer's Cup. Mr. N. Bishop Truman, the Treasurer of the Association, generously presented this to the Council for competition at the December (1924) meeting of the Council.

It will be remembered that the Secretaries' Conference at Bradford approved a proposal for a golf competition to be played during the year throughout the Divisions and Branches of the British Medical Association in England, Ireland, Scotland, and Wales. Below will be found the rules drawn up by the committee appointed at the Conference which govern the competition this year. The cup will, of course, only be held for one year. It must be understood that the rules are for this year only and will be reconsidered in the light of the experience of this year's competition. The competition is in three stages: (1) a knock-out competition in the Divisions (the winners' names were given in the SUPPLEMENT of May 16th), (2) a knock-out competition in the Branches (due to be completed by June 1st) and (3) the final stage, to be played off on Friday, July 24th during the Annual Meeting of the Association at Bath.

RULES AND REGULATIONS FOR PLAY

The Ulster and Childs Cups

Both cups will be played for during the same round. The Ulster Cup is open to all members of the Association, the maximum handicap allowed being 18, the Childs Cup is open to all members of the Association who have a handicap of 10 or over, 18 being the maximum again allowed. Play in both cases is against bogey. If the Ulster Cup is won by any competitor with a handicap of 10 or over the Childs Cup will be presented to the player (with a handicap of 10 or over) with the next lowest score.

Conditions of play are as follows:

1. One round of 18 holes to be played on Thursday, July 23rd, by kind invitation of the Bath Golf Club at their course.
2. Competitors are not permitted to put in previous play on the course on the day of the competition.
3. Intending competitors are required to furnish with their entry a certificate signed by their club secretary stating (a) their handicap, (b) the bogey score of their own course and (c) the length of their own course.

4. Entries to be made at the Reception Room before 6 p.m. on Wednesday, July 22nd.

5. Competitors may choose their own partners, although partners will be arranged for by the committee on notice being given at the time of entry.

6. Play to commence at 9.30 a.m., no cards to be issued after 3.30 p.m.

Treasurer's Cup

To be played in three stages. Entrance fee 2s 6d. Open to all members of the British Medical Association.

First Stage—Entries to be handed in to the Secretary of the local Division by November 15th. Arrangements for the eliminating rounds to be in the hands of a special Golf Subcommittee or, failing this, the Executive of the Division. Competition to be a knock-out competition under handicap rules, members' club handicap to be accepted. Once a handicap has been settled by the Division Executive or Golf Subcommittee no alteration can subsequently be made. Draw to be arranged by the Golf Subcommittee first round to take place by January 1st. Matches to be played upon ground mutually agreed upon by the players. Failing agreement the matter to be referred to the Golf Subcommittee for decision. Subsequent eliminating rounds to be arranged so that first stage will be completed by March 15th.

Second Stage—Division winners in the area of the Branch to engage in knock-out competition. This stage to be completed by June 1st. Committee in charge—the Branch Council or special Golf Subcommittee appointed, arrangements as in first stage. For the purposes of this competition the Metropolitan Counties Branch Inner and Outer Groups will count as separate Branches.

Note—In some Divisions or Branches it may be convenient to play one or more of the rounds on one day—making a "field day" for golfing members of the Division or Branch.

Third Stage—The successful forty-four competitors will play off under medal play conditions (handicap) on the Friday (July 24th) during the Annual Meeting of the Association at Bath. Winner to be the one who returns the lowest score under handicap. Arrangements for this stage to be made by the Central Committee appointed by the Secretaries' Conference.

All disputes to be settled by the Committee responsible for completion of each stage. Dates must be strictly adhered to. No extension of time can be given.

LADIES' SPORTS

Those responsible for the arrangements for the comfort and convenience of members and the ladies accompanying them are anxious to have information which will enable them to satisfy everybody. Ladies accompanying members and lady members of the Association are to be made honorary members of the local golf and tennis clubs, and it will greatly assist in the arranging of matches and competitions if intending players will send their names in advance to Mrs. Doveton, 16, Queen Square, Bath, who is Chairman of the Ladies' Sports Subcommittee.

ACADEMIC DRESS

Academic dress will be worn in connexion with several functions during the meeting. Messrs. Edie and Ravenscroft, the official robe makers for the Association, have a large selection for hire. The prices for the week are shown below. Communications should be addressed to Messrs. Edie and Ravenscroft, 83 and 84, Chancery Lane, London, W.C.2.

M.D.	15s 6d	own hood and cap
M.B.	10s 6d	own hood and cap
F.R.C.S.	12s 6d	own and cap
M.R.C.S.	10s 6d	own and cap

Plus 1s carriage for each set

GARAGE ACCOMMODATION

Members requiring garage accommodation for the whole or part of the period of the meeting are requested to make early application to Mr. C. Terry, F.R.C.S., 15, The Circus, Bath.

PROVISIONAL TIME-TABLE

FRIDAY, JULY 17TH
9 a.m.—Ladies Club Opens

SATURDAY JULY 18TH

Body

SUNDAY JULY 19TH
11 a.m.—Services at various places of worship
2 p.m.—Excursion to Stonehenge

MONDAY JULY 20TH
9 a.m.—Council Meeting
10 a.m.—Receptantive Meeting
10.30 a.m. and 2 p.m.—Excursions etc. for Ladies
8.30 p.m.—Gala performance at Palace Theatre

TUESDAY JULY 21ST
 9.30 a.m. — Opening of Annual Exhibition
 10.15 a.m. — Representative Meeting
 9.30 a.m. to 5 p.m. — Pathological Museum open
 10.30 a.m. — Exhibition etc. for Ladies
 2 p.m. — Annual General Meeting, followed by Representative Meeting
 4.30 p.m. — Official Reception Service in the Abbey
 7.45 p.m. — Adjourned General Meeting and President's Address
 9.30 p.m. — President's Reception and Dance

WEDNESDAY JULY 22ND
 9 a.m. to 6 p.m. — Exhibition open
 9 a.m. to 5 p.m. — Pathological Museum
 10 a.m. — Sectional Meetings
 10 a.m. — Lunch for Ladies
 1 p.m. — Lunch for Ladies
 1.45 p.m. — Various Excursions
 2.30 p.m. — Secretaries Conference
 6.30 p.m. — Secretaries Dinner
 8.30 p.m. — Civic Reception by Mayor and Dance

THURSDAY JULY 23RD
 8 a.m. — Tennis and Picnic
 9 a.m. to 6 p.m. — Exhibition open
 9 a.m. to 5 p.m. — Pathological Museum
 9.30 a.m. — Golf Competition for Ulster and Childs Clubs
 10 a.m. — Sectional Meetings
 10 a.m. — Lunch for Ladies
 1.45 p.m. — Various Excursions
 2.15 p.m. — Demonstration of Cases of Pneumatic Diseases
 2.30 p.m. — Demonstration at Ear, Nose and Throat Hospital
 7.15 p.m. — Gala Performance at Theatre Royal
 7.45 p.m. — Gala Dinner
 9 p.m. — Exhibition Smoking Concert
 10 p.m. — Reception Dance and Concert Bath Division

FRIDAY JULY 24TH
 8 a.m. — Holy Communion at the Abbey
 8 a.m. — Medical Missionary Breakfast
 9 a.m. to 6 p.m. — Exhibition open
 9 a.m. to 5 p.m. — Pathological Museum
 10 a.m. — Sectional Meetings
 10 a.m. — Morning Excursions
 1 p.m. — Rotarian Club Lunch
 2 p.m. — Golf Competition for Treasurer's Cup
 2 p.m. — Demonstration of Cases at Pensions Hospital
 2 p.m. — Various Excursions
 8 p.m. — Popular Lecture Sir W. H. Bragg KBE FRS
 9 p.m. — Ladies Ball

SATURDAY JULY 25TH
 Various Excursions

NOTICES OF MOTION BY DIVISIONS FOR THE ANNUAL REPRESENTATIVE MEETING, BATH, 1925

Hospital Policy of Association
 By WEST BROMWICH That (with reference to the second recommendation contained in para 168 of the Annual Report of Council) the suggested new paragraph for insertion in the Association's Hospital Policy be amended to read as follows

Contributions to hospitals by employers of labour or massed or periodic contributions by employees or contributions by Approved Societies should be considered as contributions for service rendered or to be rendered only when such contributions are calculated on the number of cases treated

Coroners Law and Death Certification
 By WEST SUFFOLK That (with reference to the Recommendation contained in para 101 of the Annual Report of Council) para 8 (2) "Certificates of Stillbirths" of Appendix III be amended by the insertion, in the fifth line, after the word "that," of the words "I was informed that," it being stated in a footnote to the certificate that these words should be erased except in cases where the practitioner was not in attendance at the stillbirth

By NORTH EAST ESSEX (1) That (with reference to the Recommendation contained in para 101 of the Annual Report of Council) para 26 of Appendix III be deleted, and (2) that the following provisions be inserted in that Appendix

(a) That the usual medical attendant of the deceased should be called to give evidence at a request and (b) that in case of an inquest being held the coroner shall give the medical practitioner called at least twenty-four hours' notice

Locumtenents Bureau in Teaching Centres
 By NORTH EAST ESSEX That the Recommendations contained in para 46 of the Annual Report of Council be referred back for further consideration

Payment for Health Certificates for Elementary School Children

By NORTH EAST ESSEX That the Recommendation contained in para 119 of the Annual Report of Council be rejected and that Min 156 of the Annual Representative Meeting, 1920 (quoted therein), be amended by the substitution of "should" for "shall" in the last line

Salaries for Combined Public Health Posts
 By NORTH EAST ESSEX That inasmuch as the Recommendation contained in para 166 of the Annual Report of Council does not cover the case of combined appointments in Essex, this recommendation be referred back for further consideration

British Medical Association.

CURRENT NOTES

Workmen's Compensation Act and Assistants in General Practice

THE Medical Secretary occasionally receives inquiries as to whether those practitioners who employ assistants ought to insure themselves against claims under the Workmen's Compensation Act. The question is one depending entirely upon salary. The 1906 Act did not include persons employed otherwise than by manual labour whose remuneration exceeded £250 per annum, and as the salary of assistants was often considerably above this figure the question did not arise. In 1923 the income limit was raised to £350, and doctors who are employing assistants whose total remuneration does not exceed this sum would be well advised to protect themselves by insurance against possible claims under the Act.

Supplementary Report of Council Correction
 In the Supplementary Report of Council, which appeared in the SUPPLEMENT of June 27th, an error was made in a date under the heading "Naval and Military." The date of the meeting at the War Office between the Secretary of State for War and a deputation from the British Medical Association should have been June 30th, not July 30th.

Association Notices.

NOTICE OF ANNUAL GENERAL MEETING

NOTICE IS HEREBY GIVEN that the Annual General Meeting of the Association will be held in the Concert Hall, Grand Pump Room, Bath, on Tuesday July 21st, 1925, at 2 p.m. Business: (1) Minutes of last Meeting (2) Appointment of Auditors (3) Report of Election of President for 1925-26

ALFRED COX,
 Medical Secretary
 L. FERIS SCOTT,
 Financial Secretary and
 Business Manager

NOTICE OF EXTRAORDINARY GENERAL MEETINGS

NOTICE IS HEREBY GIVEN by Order of the Council that an Extraordinary General Meeting of the British Medical Association will be held in the Concert Hall, Grand Pump Room Bath, in the County of Somerset on Friday, the 17th day of July 1925, at 4.45 o'clock in the afternoon when the following Resolution will be proposed as an Extraordinary Resolution, namely

That the Articles of Association of the British Medical Association be altered in manner following—namely
 (a) By inserting immediately after Article 36 the following new Article—namely

Affiliation
 (1) The Association may admit to affiliation with it any Medical Association or similar body established outside the United Kingdom on such terms and with such privileges as may in each case be approved by resolution of the Representative Body passed after consideration of a report by the Council

(2) The Association may terminate any such affiliation (after due notice on either side) by resolution of the Representative Body, passed after consideration of a like report

(3) Any resolution of the Representative Body under this article shall be final and shall not require to be approved under Article 34

(6) By inserting in Article 34 immediately after the word Body in line 7 the words

'except as otherwise expressed in the Regulations'

Should the above Resolution be passed by the requisite majority it will be submitted for confirmation as a Special Resolution to a further Extraordinary General Meeting, and such meeting will be held at the British Medical Association House, Tavistock Square, London, W.C.1, on Tuesday the 4th day of August 1925 at 2.30 o'clock in the afternoon for the purpose of considering and, if thought fit, confirming such Resolution as a Special Resolution accordingly

Dated this 22nd day of June, 1925

By Order of the Council

ALFRED COX,
Medical Secretary

L. FERRIS SCOTT
Financial Secretary and
Business Manager

British Medical Association House,
Tavistock Square, London, W.C.1

CHANGE OF AREAS OF DERBY AND CHESTERFIELD DIVISIONS

The following change has been made by the Council and takes effect as from the date of publication of this notice

That the Baslow and Bunnell Urban District, and the Civil Parish of Elym in Bakewell Rural District, be transferred from the Derby to the Chesterfield Division

CHANGE OF NAME OF LAMBETH DIVISION

NOTICE is hereby given to all concerned that the Council has changed the name of the Lambeth Division to 'Lambeth and Southwark' Division, the change to take effect from the date of publication of this notice

TABLE OF DATES

July 13 Mon	Opening of the New House of the British Medical Association by His Majesty King George accompanied by Her Majesty Queen Mary
July 17 Fri	Annual Representative Meeting opens at Bath. Nominations for election of 12 members of Council by grouped Representatives must be received (at 4 P.M., Bath) by this date
July 18 Sat	Annual Representative Meeting Bath
July 20 Mon	Council and Annual Representative Meeting Bath
July 21 Tues	Annual Representative Meeting Annual General Meeting Bath. President's Address
July 22 Wed	Council Meetings of Sections Conference of Honorary Secretaries Bath
July 23 Thurs	Meetings of Sections etc Bath
July 24 Fri	Meetings of Sections etc Bath

ALFRED COX, Medical Secretary

BRANCH AND DIVISION MEETINGS TO BE HELD

BORDER COUNTIES BRANCH—The fifty-fourth annual general meeting of the Border Counties Branch will be held in the Cumberland Infirmary, Carlisle, on Friday July 10th, at 3.45 p.m. Agenda: Branch Council report and financial statement; election of officers for 1925-26. Mr Norman MacLaren, T.R.C.S. Eng., will deliver his presidential address entitled 'The Cumberland Infirmary—past, present and future'. The Branch Council will meet at 3.15 p.m. Tea. The annual meeting of the English Division will follow.

CAPE OF GOOD HOPE (WESTERN) BRANCH—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday August 28th at 8 p.m. when there will be a symposium on the diagnosis of intracranial tumours arranged by Mr D. J. Wood. Among the contributors will be Dr J. D. M. Claassen, Mr F. F. Petersen, and Dr A. W. S. Sichel.

EAST YORK AND NORTH LINCOLN BRANCH—The sixty-ninth annual meeting of the East York and North Lincoln Branch will be held at the Cumberland and District Hospital on Friday July 10th at 3 p.m. when the President Elect, Dr W. Wallace, will be in the chair.

as President for the coming year. Business: Annual report and financial statement; election of officers. The President will deliver the inaugural address.

METROPOLITAN COUNTIES BRANCH ST PANCRAS DIVISION—The inaugural meeting of the St Pancras Division will be held at the Midland Hotel, St Pancras, on Tuesday, July 7th, at 8.45 p.m. Agenda: To approve the election of officers, representatives and executive committee; adopt organization rules. Address by Mr Bishop Harman, T.R.C.S., on some common eye conditions.

NORFOLK BRANCH—The annual meeting of the Norfolk Branch will be held at the Norfolk and Norwich Hospital on Wednesday July 8th, at 3.15 p.m. Agenda: Annual report of Branch Council and financial statement; induction of new President, Mr Cecil Jeffery Muriel; election of President Elect and two Vice Presidents; address by His Honour Judge Herbert Smith, LL.D., County Court Judge for Norfolk on the law and procedure under the Workmen's Compensation Act. At 4.30 p.m. tea in the hospital grounds by invitation of Mr and Miss Muriel.

NORTH OF ENGLAND BRANCH GATESHEAD DIVISION—A special meeting of the members of the Gateshead Division will be held at 9 Walker Terrace, Gateshead, on Monday, July 6th, at 9 p.m. In view of the importance of the business of this meeting, it is hoped that members will make a special effort to be present. Agenda: To consider (a) suggested agreement with miners' lodges to undertake responsibility of collecting contributions of an employed miner; (b) memorandum with reference to co-operation between the State medical officer and the general practitioner; (c) Supplementary Report of Council (British Medical Journal Supplement June 27th 1925), and to instruct Representative thereon; (d) various motions for Annual Representative Meeting published in the Supplement since the Annual Meeting, and to instruct Representative thereon, to receive resignation of honorary secretary and treasurer and elect their successors.

NORTH WALES BRANCH—The annual meeting of the North Wales Branch will be held at Carnarvon on Friday, July 10th. The President will deliver an address.

OXFORD AND READING BRANCH—The annual meeting of the Oxford and Reading Branch will be held at the Radcliffe Infirmary, Oxford, on Friday, July 10th, at 3 p.m. Agenda: Election of officers; paper by Mr J. E. H. Roberts, O.B.E., F.R.C.S., Modern chest surgery. In the morning the Collier golf cup will be played for at Linford Heath against bogey. Competitors take three quarters of their best handicap. Transport from Oxford Station can be arranged on application to the honorary secretary, Dr William Stobie.

SUFFOLK BRANCH WEST SUFFOLK DIVISION—A combined clinical and social meeting of the West Suffolk Division will take place on Thursday August 6th, when Dr Wood has very kindly offered to entertain the Division once more at Woolpit. Tea in his garden will follow a clinical meeting at the Institute.

Meetings of Branches and Divisions.

METROPOLITAN COUNTIES BRANCH

Annual Meeting

The seventy-third annual general meeting of the Metropolitan Counties Branch was held at the British Medical Association House, Tavistock Square, on June 23rd, when the Past President (Dr SANDERS) occupied the chair in the absence of the President (Dr Charles Buttar).

The following officers were declared elected for the ensuing session 1925-26:

President—Mr Comyns Berkeley. President Elect—Dr F. W. Good.
Dr C. J. B. Buchanan and Dr Percy B. Spurgeon.
Harold S. Beadles, Honorary Secretaries.
and Dr C. F. T. Scott.

The annual report and financial statement for the year 1924-25 were adopted together with the report of the four Representatives of the Branch on the Central Council. A vote of thanks to the Representatives was passed with acclamation.

Mr E. B. TURNER, in moving a hearty vote of thanks to Dr Buttar for his services as President of the Branch, drew attention to the enormous amount of work which he had done for the Association in the past, both as a member of the Central Council and in connexion with the Central Medical Welfare Committee. The motion was supported by Mr HERBERT TANNER and Mr BISHOP HARMAN and carried unanimously. On the motion of Dr GOODSON, seconded by Dr PATERSON, a hearty vote of thanks was recorded to Dr Ernest A. Worley, the retiring honorary secretary of the Branch for his services during the past four years. Dr GOODSON drew attention to Dr Worley's work in resuscitating certain Divisions of the Branch and his untiring efforts as Honorary Secretary of the City Division.

The CHAIRMAN, on behalf of the retiring President, inducted Mr Comyns Berkeley into the Presidential Chair and Mr Comyns Berkeley then delivered his presidential address entitled 'Save the women and children'. A vote of thanks to the President for his able and interesting address proposed by Mr McADAM ECCLES, and seconded by Dr BRACEGIRDLE, was carried with cordiality.

that if the Association honoured Edinburgh in 1927 the meeting would be as great a success as the previous ones. Another reason why it should be held there in 1927 was that that year would be the centenary of Lister's birth. Lord Lister read a paper at the meeting in 1875 on 'The effect of the antiseptic treatment upon the general salubrity of surgical hospitals'.¹ It was even then in his mind that something could be done to make things better. For some years Lister studied and worked in Edinburgh. In 1860 he went to Glasgow as professor of surgery where he remained for nine years, coming back to Edinburgh in 1869. In 1865 he for the first time began to think of carbolic as antiseptic, and it was in that year that Pasteur entered into his life. From 1865 onwards he developed the theory which was gradually to evolve into the aseptic methods of today. The work was begun in Glasgow and came to fruition in Edinburgh. This was surely a strong reason why at the centenary of his birth the Association meeting should be held in their academic town. Sir David Wallace then moved the following resolution:

That this meeting of the medical profession resident within the area of the Edinburgh Branch approves the proposal that the British Medical Association should hold its Annual Meeting in Edinburgh in 1927.

Professor LORRAIN SMITH, in seconding the motion, said that the Faculty of Medicine of the University took the view that the resources of all the medical organizations in Edinburgh must be pooled to make this meeting as brilliant a success as those of 1875 and 1898. So far as the Faculty of Medicine was concerned, whatever resources the University had would be placed at the disposal of the meeting. 'Though the Association has many other interests besides looking after the scientific and clinical side, it certainly is our most important post-graduate school.' Professor Lorrain Smith added the interesting point that it was after the 1875 meeting that Edinburgh led the way in founding a school of public health.

Professor G. LOVELL GULLAND (President of the Royal College of Physicians of Edinburgh) said that the idea had the support of the Council and the Fellows of the College, who all heartily concurred in the proposal that the Annual Meeting of the British Medical Association should be held in Edinburgh in 1927, and promised to do their best to make it a success. The College had always, he said, been very much in sympathy with the British Medical Association, and recognized to the full its capacity for good for the medical profession.

Mr. MILES (Secretary of the Royal College of Surgeons of Edinburgh) said he was present to offer the apology of his President (Sir Harold Stiles) for his absence. The Royal College of Surgeons was in accord with everything that had already been said. It supported the proposal very cordially, and, as on previous occasions, would do everything in its power to make the meeting a success.

The motion met with the whole-hearted approval of the meeting and was carried with acclamation.

Professor ROBERTSON explained that there were certain other preliminary steps to be taken, two of which required to be undertaken that day—nomination of the President Elect and appointment of a General Committee. It was probably known to all that the choice of President Elect had fallen upon Sir Robert Philip. The President, continued Professor Robertson, must possess many qualifications: he must be prepared to face a very large amount of committee work among other things, and no one could do this work better than Sir Robert Philip. The President must also be one of the recognized leaders of the medical profession, and no one in Edinburgh was better known or more highly respected than Sir Robert Philip. His election to the Presidentship of the Royal College of Physicians for five years in succession marked him out as a man in a thousand for such a post. Moreover, Sir Robert had already done a very great deal of work for the British Medical Association. He acted as Secretary for the 1st Annual Meeting in Edinburgh (1893), thereby contributing greatly to its success. His fine organizing powers, his exceptional tact, and his driving force would be exceedingly useful to the meeting in 1927. The meeting having expressed its unanimous approval of the appointment, Professor Robertson called upon Dr. Mann of Sellart, an old and respected member of the medical profession, who proposed the following motion:

That the members of the medical profession present at this meeting shall constitute along with the members of the Council of the Edinburgh Branch of the British Medical Association a General Committee with power to add to its numbers for the purpose of giving effect to the above resolution.

It would be a very large committee, and would probably have to be subdivided. He trusted the 1927 meeting would mark an epoch in the records of the British Medical Association. Dr. Mann seconded the motion, which was adopted.

National Insurance

MEDICAL BENEFIT AND THE PENSIONS BILL

WE publish below the correspondence that has recently passed between the Medical Secretary of the British Medical Association and Sir Arthur Robinson, K.C.B., Secretary of the Ministry of Health, on the subject of the new Pensions Bill in relation to medical benefit under the national health insurance scheme.

It seems almost certain that the practical incorporation of the present definition of insured persons in an additional Act of Parliament must, in fact, make any alteration more difficult, but it is satisfactory to have the assurance that the Minister of Health does not bind himself to this definition, and that the Government will consider its modification if so recommended by the Royal Commission. It is well, also, to have secured an authoritative statement that Section 12 (3) of the National Health Insurance Act is regarded as applying to all voluntary contributors under the new Pensions Bill, for this is by no means clear from Clauses 13 (1) and (3), 14 (5), and 15 (5) (a) of that bill. If there is any possible doubt about this under the wording of these clauses it should be safeguarded. Even so, the fact remains that certain classes of persons, many of them of a fairly well-to-do type, may be readmitted to insurance, and if readmitted will be required to insure for medical benefit also. How many such persons will avail themselves of this privilege is, of course, uncertain. It depends on how far they appreciate the principles of insurance, for there can be no doubt that what they will obtain is worth, actuarially, considerably more than they will have to pay. It still seems simpler to admit these persons to insurance for pensions purposes only.

British Medical Association House

Tavistock Square, W.C.1

June 22nd, 1925

Sir,

In amplification of the representations made to the Minister of Health at our interview with him on June 18th I am directed to send the following note:

It will be remembered that the Insurance Acts Committee, at its interview with the Minister on June 18th, referred to one point in which the new Pensions Bill appears to affect somewhat seriously the conditions of the national health insurance medical benefit. The Committee thinks it may be well to set out specifically the points which it thinks should receive consideration with a view to amendment of the Bill.

It is probably generally accepted that there are a number of persons compulsorily included in the national health insurance scheme who are economically capable of providing medical advice and treatment for themselves without the aid of such schemes, and many others who are excluded from the scheme who have great difficulty in providing, or find it economically impossible to provide, for themselves without some such aid. The difficulty is to draw for administrative and practical purposes a satisfactory line of inclusion and exclusion. This is one of the important problems which a Royal Commission has been set up to consider, and the Council of the British Medical Association has given evidence before that Commission both as to the impropriety in some respects of the present definition of insured persons, and as to the possible methods of adjustment. It seems unfortunate that in these circumstances the new Pensions Bill should, by stereotyping this definition, make it much more difficult to secure any alteration thereof even if such alteration is accepted as desirable.

In any case, whether or no the Bill is easy to amend in this respect, it should be easy to amend it so as to prevent further complications in regard to insured persons. The Bill permits any person, other than a married woman, who has at any time hitherto been an insured person consecutively for a period of two years, to come within the benefits of the pension scheme, and compels such of those persons who elect to do this to become insured persons for medical benefit purposes also. The Insurance Acts Committee and the Council of the Association express no opinion as to the desirability of such persons being admitted to the advantages of pensions insurance, but they have hitherto not been admitted to the scheme of medical benefit, and almost without exception belong to the class which is able to provide medical advice and treatment for themselves, and who would wish to do so. It is therefore submitted that the provision requiring these persons to be insured also for health purposes is undesirable, and this submission is made with the greatest confidence in that it is clear that even as

Experience in the outpatient department of a large general hospital had revealed the undoubted fact that a considerable number of patients included in the insurance scheme required specialist treatment. In these days of well defined specialism such patients secured at the hospital the best advice obtainable and in large towns a workable scheme of close co-operation with voluntary hospitals to cover these cases should be well within the bounds of possibility, in scattered districts the deficiency could be met by establishing specialist clinics at convenient centres. The absence of any organized provision for general institutional treatment was a serious impediment to the carrying out of an insurance scheme to its logical conclusion. Here again full use should be made of the advantages which the voluntary

... it rained in very real doses. If we
... to be a good story of his training, are we
... to make a more general practitioner at all?

The purpose of the present project was to make a study of the method of the optical system which appears to be the most effective in producing the desired effect. The project was carried out in the form of a series of experiments. The first experiment was to determine the effect of the optical system on the human eye. The second experiment was to determine the effect of the optical system on the human ear. The third experiment was to determine the effect of the optical system on the human nose. The fourth experiment was to determine the effect of the optical system on the human mouth. The fifth experiment was to determine the effect of the optical system on the human skin. The sixth experiment was to determine the effect of the optical system on the human hair. The seventh experiment was to determine the effect of the optical system on the human nails. The eighth experiment was to determine the effect of the optical system on the human teeth. The ninth experiment was to determine the effect of the optical system on the human bones. The tenth experiment was to determine the effect of the optical system on the human muscles. The eleventh experiment was to determine the effect of the optical system on the human nerves. The twelfth experiment was to determine the effect of the optical system on the human blood. The thirteenth experiment was to determine the effect of the optical system on the human lymph. The fourteenth experiment was to determine the effect of the optical system on the human sweat. The fifteenth experiment was to determine the effect of the optical system on the human tears. The sixteenth experiment was to determine the effect of the optical system on the human saliva. The seventeenth experiment was to determine the effect of the optical system on the human urine. The eighteenth experiment was to determine the effect of the optical system on the human feces. The nineteenth experiment was to determine the effect of the optical system on the human excretion. The twentieth experiment was to determine the effect of the optical system on the human reproduction.

BRITISH DENTAL ASSOCIATION

Evidence was tendered on behalf of the British Dental Association by Mr John H Brodcock (president), Mr E Y Richardson, and Mr Bryan Wood. It was stated that up to the passing of the Dentists Act, 1921, the association represented roughly three fifths of the practising members of the profession, it had not so far admitted to its membership the 1921 dentists."

The association was in favour of a substantial extension of dental treatment under the insurance scheme and considered that the Public Dental Service Association might form a suitable framework for the establishment of a dental service as a normal benefit. This association was formed as a combination of the panels of dentists who undertook to treat insured persons for whom dental treatment was provided as an additional benefit by approved societies, and it now numbered nearly 7,000 members of the dental profession. The dental treatment at present given as an additional benefit was unsatisfactory in its limited application its varying scope and its administrative arrangements, whereby some of the poorest of the insured population were often deprived of a benefit to which they were justly entitled owing to the fact that some of the societies paid as little as 25 per cent of the total cost.

The complete service which the British Dental Association proposed would include (1) dental treatment at maternity and child welfare clinics (2) treatment during school age, and (3) treatment for adults (and for dependants if dependants were brought in for medical benefit) under an insurance scheme. It was very important that dental benefit for insured persons should be made available upon entrance into insurance in order that the valuable work already done by the school dental clinics should not be lost. Dental benefit should be a permanent benefit, coextensive with medical benefit, with free choice of dentist administration by the body which administered medical benefit and adequate dental representation on the Insurance Committees and other bodies controlling administration. Dental panel committees and dental service subcommittees should be established, and regional dental officers should be appointed to act for groups of Insurance Committees.

With regard to the investigation of complaints Mr Richardson claimed that purely professional matters should be examined by a professional committee reporting to the dental service subcommittee, which would have to decide what was to be done. In reply to Mr Jones who asked if they thought it reasonable that the dental profession should ask for something that the medical profession had not got, Mr Wood said he did not think it was. He thought it was suggesting something that did exist in the case of medical benefit.

The scope and nature of the suggested treatment would be the extraction of teeth under local or general anaesthetics, the scaling of teeth and the treatment of inflammatory conditions of the mouth, the filling of cavities in serious teeth, and the provision and repair of partial and complete artificial dentures. Adult dental treatment for some considerable time must consist largely of the extraction of septic teeth and roots and their replacement in due course by artificial substitutes. In view, however, of the large demands which would be made under any system of permanent benefit until the effects of an extended system of school dental treatment were felt it was recognized that the cost of a complete scheme under present conditions might be prohibitive and should conditions of expense make such a scheme impossible of adoption in its entirety it might be modified so that dental treatment included (1) operative treatment only (2) operative treatment and such dentures as might be certified by the competent authority as necessary for health or vocational reasons and (3) operative treatment with part payment for dentures. Miss Tuckwell a member of the Commission thought it an impossible proposition that dentures should be left out, and she wished the witnesses had been courageous enough to recommend the entire scheme irrespective of expense. The witnesses replied that so much had been heard about economy in various departments that they had hesitated to put forward a costly scheme but on grounds of national well-being they certainly advocated the scheme in its entirety. In any case the necessitous person ought to be supplied with dentures when he required them from the point of view of health.

The witnesses were convinced that a sufficient number of dentists would be available to work the scheme. Some discussion arose on the question of the status of the 1921 dentists and Miss Tuckwell wanted to know if these people who were on the *Dentists Register* were all of them good enough from the point of view of the witnesses to treat anybody. Mr Richardson replied that that was an extremely difficult question to answer, and of course, the witnesses did not like to cast any slur.

The panel system was preferred to the clinic system although a panel system did not exclude clinics in certain localities and if the clinics were properly run with free choice of dentist and professional control preferably with part time officers paid on a fee per session basis there would be no objection to them. But in general the panel system was preferable. A capitation fee did not appear to be practicable simply on account of the scarcity of data for establishing such a fee at present. A careful analysis of a full treatment and two thirds of that amount on the present basis would be required for the provision of dentures. This latter cost would drop and the operative cost rise as the insured population became educated to the value of operative treatment and treatment in the remote future when all arrears were worked off would be possible.

The witnesses were against a State whole time salaried dental service which they said would be objected to by the dental profession on the ground that it interfered or would be likely to interfere, with the responsibility of the dentist to his patient.

THE ROYAL COMMISSION

Session in Scotland

The thirty third meeting of the Royal Commission on National Health Insurance was held in Edinburgh on June 23rd, Professor Alexander Gray in the chair.

Evidence on the question of the supply of medicines and drugs in Scotland under the insurance scheme was given by Mr Rutherford Hill on behalf of the General Council of Panel Chemists of Scotland. The National Farmers Union of Scotland, represented by Mr J C Henderson, submitted evidence as to the position of agricultural societies in the scheme and the need for reducing the rate of contribution for agricultural workers in view of their higher standard of health. Dr Asher of Thurso gave evidence on various aspects of the medical service under the Act in rural areas.

The thirty fourth meeting was held at the Home Office Whitehall, on June 25th, Lord Lawrence of Kingsgate in the chair. Evidence was submitted on behalf of the Queen Victoria's Jubilee Institute for Nurses by Miss Peterkin, Mr Bruce Richmond, and Major H F Cadell, the College of Nursing by Miss Watt, Miss Viney, and Miss Bremner, the Incorporated Midwives Institute by Miss Doubleday and Miss Gilhgan, and the Scottish Midwives Association by Miss Barker. Thereafter Mr J L Cohen of the Department of Economics, Cambridge University gave evidence on the structure of the insurance scheme and the need for fundamental alterations in certain directions.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE

Surgeon Lieutenant Commander J F Hayes to the *Argus*. Messrs W G F Murray and J G Maguire have entered as Surgeon Lieutenants and appointed to R N Hospital Haslar for course.

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Lieutenant T W Drummond to R N Hospital Haslar for fourteen days training. Probationary Surgeon Lieutenants R H Tincker to the *Truro* and A T G Thomas to the *Champion* for twenty eight days training.

ROYAL ARMY MEDICAL CORPS

Captain J A Cowan retire receiving a gratuity.

ROYAL AIR FORCE MEDICAL SERVICE

Flight Lieutenants J A Perdrau to No 39 Squadron Spitigate. J S Wilson to R A F Depot on transfer to Home Establishment. Flying Officers P D Barling, to R A F Depot H W D Mackenzie to Central Flying School Upavoo. B Pollard to No 5 Flying Training School Seaforth. R F G Dickson to No 24 Squadron Kenley.

INDIAN MEDICAL SERVICE

Lieut Colonel W R Batten DSO is granted leave on average pay for six months with effect from May 7th.

Lieut Colonel J R J Tyrrell is posted as Administrative Medical Officer in Central India and Residency Surgeon Indore with effect from May 7th.

The services of Major H L Batra MC are placed permanently at the disposal of the Government of Assam.

The services of Major E E Doyle DSO are placed permanently at the disposal of the Government of Bombay for employment in the Jail Department.

Lieutenant G H Fitzgerald to be Captain. The following officers have retired: Lieut Colonel E C C Macosell. F D S Fayrer and A Leventoo CIE.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Major D M C Church (IMS ret) to be Major. Captain R F Linton re-igns his commission and retains the rank of Captain.

Captain G S Lewis (late R A M C SR) to be Captain with precedence as from December 5th 1919.

Colonel G W Robinson

Colonel (Brevet Colonel) D J Graham OBE for tenure of command and retain his rank. Supernumerary for service with the OTC—Captain P B Green (late R A M C SR) to be Captain with precedence as from April 18th 1919 for service with the medical unit Durham University OTC. Jam Whillis to be Lieutenant for service with the medical unit Durham University OTC.

COLONIAL MEDICAL SERVICES

Dr C I Kibble appointed Lady M O Malayan Medical Service. Dr G D A Waldron appointed M O Nigeria. Dr J Enn appointed M O Kenya. Dr J Laudi promoted M O H Sanitary Department. Dr E M Frazer and O G Wilde appointed M O Gold Coast.

POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION
 1st Lecture - Street W - Lectures given to members of the medical pro-
 fession Thurs 530 p.m. Gall stone Ileus - a Pitfall for the 1 practitioner
 Queen's Hospital for Children Hackney Road E2 Special Course deals
 from 10 a.m. morning and afternoon sessions covering Demonstration
 Ward Round Out patient Department and Operations St Let's
 Hospital Henrietta Street W C2 Special Course in Urology Clinical
 Work every afternoon Lectures Mon. Genito-urinary Tuberculosis
 and Calculi Wed The Technique of the Surgery Thurs
 Non tuberculous Infections of the Urinary Tract Fri Urinary
 Obstruction

HOSPITAL FOR SICK CHILDREN, Great Ormond Street W.C.1.—Thurs 4 p.m.
Diet after the Period of Infancy

LONDON SCHOOL OF DERMATOLOGY St John's Hospital, Leicester Square
WC2—Tues 5 p.m. Occupational Dermatoses

NORTH EAST LONDON POST GRADUATE COLLEGE Prince of Wales General Hospital Tottenham N15—Tues 4.30 p.m. Diagnosis and Treatment of Functional Nervous Disease. Fri 4.30 p.m. Heariness its Causation and Treatment. Daily Inpatient and Outpatient Clinics, Demonstrations Operations etc.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL Marylebone Road N W 1—Thurs,
3 p.m. Obstructive Labour

SOUTH WEST LONDON POST GRADUATE MEDICAL ASSOCIATION, St James Hospital, Ouseley Road, Balham SW — Fri, 4 pm I Ray Diagnostics in Urinary Disease

Reference and Lending Library

As announced last week at page 288 of the SUPPLEMENT the Reference and Lending Library is closed until July 15th, when it will reopen at Tavistock Square

Subscription & Advertising (Financial Secretary and Business Manager) Telegrams Articulate Western London)
Medical Secretary (Telegrams Medical Western London)
Editor British Medical Journal (Telegrams Pathology Western London)

Telephone numbers of British Medical Association and British Medical
Journal Museum 9851 9852 9853 and 9854 (internal ex. ang.
four lines)

SCOTTISH MEDICAL SECRETARY 6 Drumsheugh Gardens Edinburgh (Telegrams Associate Edinburgh Tel 4361 Central)

IRISH MEDICAL SECRETARY 16 South Frederick Street Dublin (Telegram Bacillus Dublin Tel 4737 Dublin)

Diary of the Association

JULY

3 Fri	London Committee on Drug Addiction	3 p.m.
6 Mon	Gatehead Division	Special Meeting 9 Walker Terrace
	Gateshead	9 p.m.
7 Tues	London Science Committee	2.0 p.m.
	St Pancras Division	Inaugural Meeting Midland Inn
	St Pancras Address by Mr Bishop	1 minute on Soap
	Common Fire Conditions	9.45 p.m.
8 Wed	Norfolk Branch Annual Meeting	Norfolk and Norwich Hospital Address by His Honour Justice Herbert Smith, on the Law and Procedure under the Workmen's Compensation Act
		3.15 p.m. Tea 4.30
10 Fri	Border Counties Branch	Annual Meeting Cumber and Infirmaries Carlisle 5.45 p.m.
	Oxford and Reading Branch	Annual Meeting Padbury Infirmaries Oxford 3 p.m.
		Collier Cup Competition during the morning
	North Wales Branch	Annual Meeting Carnarvon
	East York and North Lincoln Branch	Annual Meeting (Luncheon and District Hospital 3 p.m.)
13 Mon	Opening of the new wing of the British Medical Association by His Majesty King George accompanied by Her Majesty Queen Mary 3 p.m.	

Ta 1 1077 Cl 10 POP FUNCTIONAL NERVE CASES 51 Tav 1066 Square W C 1
-Tu 5-2 p.m. Analytical Methods

W-T Lo 10 a.m. In with Post Gr Dr 11 a.m. COLLECT Hammer with W - Mon
12 noon Applied Anatomy Tues 11 a.m. Electrical Department Wed
2 p.m. 1st and 2nd Thurs 2 p.m. Orationals Fri 12 15 p.m.
Modern Medical in Medicine Sat 10 a.m. Medical Dr 12 p.m.
Childen's Book 10 a.m. to 6 p.m. Sat 10 a.m. to 1 p.m. In and Out
paen's Operation Special Departments.

DENTISTRY UNIVERSITY CLINIC & BOARD—At General Hospital Tue⁹
 3.30 to 5 p.m. Foreign Bodies and Cancer of the Oesophagus

GL 60" POSTGRADUATE MEDICAL ASSOCIATION.—At Western Infirmary: Clinical (Gynaecology Tues and Thurs 3 p.m. Dermatology Mon and Wed 9.15 to 10 a.m. and Tues. 2.30 to 3.0 p.m. At Royal Hospital for Sick Children Daily (except Saturday) 9.15 to 11 a.m. Diseases of children.

The charge for inserting announcement of Births Marriages and Deaths is 2s which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue

DEATH

DEATH
STEDMAN — On June 24th at Leighton Buzzard after a short illness Percy
Taylor Humphrey Stedman M B Lond DPH JP aged 43

Axis o 4 Square in the Parish of St. Pancras, in the County of London

Diary of the Association

This list of teneans is comp'd from our advertisement columns where full particulars will be found. To ensure notice in the columns alterations must be received not later than the first post on Tuesday morning.

[illegible]

T. J. T. and the Annual Meeting
 Society of Scientists and Artists
 (1) The Annual Meeting of the Society of Scientists and Artists
 (2) The Annual Meeting of the Society of Scientists and Artists

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BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, JULY 11TH, 1925

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British Medical Association

CURRENT NOTES

ROYAL OPENING OF THE NEW HOUSE

THE arrangements for the opening on Monday next of the New House by the King, who will be accompanied by the Queen, are now complete. Their Majesties will be attended by the Right Hon. Neville Chamberlain, M.P., Minister of Health. The tickets of admission to the ceremony have now been sent out, and it is important to note that no person can be admitted to the premises without a ticket. Certain instructions have been issued with the tickets of admission, but it may be well to repeat here that at the afternoon ceremony morning dress, or morning dress with academic costume, will be worn without decorations. For the evening reception, evening dress is to be worn, with miniature decorations.

Members and guests who come in cars should note that motor cars will enter the private roadway from the north-east corner of Tavistock Square and proceed through the Memorial Gates, depositing guests according to the colour of their tickets. Cars then pass through the covered driveway into Burton Street, where they will be parked under the direction of the police. Similar arrangements will obtain on the evenings of both the 13th and 14th July. Under no condition can cars return through the Memorial Gates on the afternoon of the 13th before 4.30—that is to say, after the departure of Their Majesties.

Factory Medical Service

The British Medical Association has for some time been endeavouring to obtain an opportunity of discussing matters connected with the proposed Factories Bill with the Home Secretary, and on June 3rd the points which the Association desired to raise—namely, those which appeared in para. 127 of the Annual Report of Council (BRITISH MEDICAL JOURNAL SUPPLEMENT, April 11th)—were placed before him in a letter.

On July 2nd the Home Secretary received a joint deputation of the British Medical Association and the Society of Medical Officers of Health consisting of the following:

Representing the British Medical Association: Dr. R. Wallace Henry (Chairman of Parliamentary Subcommittee B.M.A.), Dr. H. B. Brackenbury (Chairman of Representative Body), Dr. R. A. Bolam, LL.D. (Chairman of Council), Dr. T. Ridley Bailey, Mr. E. B. Turner, F.R.C.S.

Representing the Society of Medical Officers of Health: Dr. R. A. Ivister (President), Dr. T. W. Naylor Barlow, O.B.E., Dr. C. W. Hull.

together with Dr. Cox, Medical Secretary, and Dr. Lord Assistant Medical Secretary, of the Association, and Mr. G. S. Elston, Executive Secretary of the Society.

The deputation was introduced by Dr. Wallace Henry, and the various points were dealt with chiefly by him and by Dr. H. B. Brackenbury and Dr. R. A. Ivister. The Home Secretary promised to give the points his careful consideration.

Association Prizes for Essays by Medical Students

The Council of the British Medical Association proposes to award in March, 1926, prizes of £10 each for the best essays by final-year medical students on the disabilities that may be directly due to simple fracture (excluding separation of an epiphysis)—(a) of the femur, (b) of the tibia, (c) of the fibula, (d) of the tibia and fibula (simultaneously injured), and the means to be adopted in the treatment of such cases in order to prevent or minimize these disabilities—namely, one prize in each of the following groups of medical schools:

Group 1—University of Aberdeen, University of St. Andrew (University College Dundee)

Group 2—Queen's University of Dublin (Trinity College), Ireland (University College Cork, Uni. Galway), Royal College of Surgeons in Ireland (Schools of Surgery).

Group 3—University of Birmingham, University of Bristol, University of Wales.

Group 4—University of Durham, University of Leeds, University of Sheffield.

Group 5—University of Edinburgh, School of Medicine of the Royal Colleges.

Group 6—University of Glasgow, Anderson College of Medicine, Queen Margaret College, School of Medicine for Women, St. Mungo's College.

Group 7—University of Liverpool, Victoria University of Manchester.

Group 8—London: Charing Cross Hospital Medical School, King's College Hospital Medical School.

Group 9—London: Guy's Hospital Medical School, London Hospital Medical College.

Group 10—London: London (Royal Free Hospital) School of Medicine for Women, University College Hospital Medical School.

Group 11—London: Middlesex Hospital Medical School, St. Mary's Hospital Medical School.

Group 12—London: St. Bartholomew's Hospital Medical College, St. George's Hospital Medical School.

Group 13—London: St. Thomas's Hospital Medical School, Westminster Hospital Medical School.

Group 14—Medical Schools in the British Empire outside the United Kingdom.

The prizes will be awarded to the authors of the essays deemed by the examiners to be the best sent in from the respective groups, but if no essay received from a group is considered deserving of a prize, no prize will be awarded in respect of that group. The essay which must not exceed 5,000 words should be clinical in nature, and must include concise notes of three cases personally observed by the student. Essays should be plainly written or typed on foolscap paper (one side only), and must reach the Medical Secretary, British Medical Association House, Tavistock Square, London, W.C.1, not later than January 16th, 1926.

Each essay must be signed by a pseudonym and be accompanied by a sealed envelope marked on the outside with the pseudonym and containing inside a signed and dated statement that the essay has been the bona fide work of the competitor, and that he or she has not yet passed the final professional examination, together with full name, address, and medical school. The essays received will be adjudicated on by examiners appointed by the Council from among

members of the Association not resident in the area of the particular group. The decision of the Council will be final. Notices in regard to the essays have been sent to the deans of the medical schools with a request for exhibition on the notice boards, as well as to those hospitals concerned with the education of medical students, and to the honorary secretaries of the Divisions and Branches of the Association in whose areas the respective schools are situated. A new feature of the competition on this occasion is the tentative formation of a group for the medical schools in the British Empire outside the United Kingdom.

TREASURER'S CUP GOLF COMPETITION

SECOND STAGE

The following are the winners of the second (or Branch) stage of the Treasurer's Cup golf competition

Bath and Bristol—Dr W V Wood M.C.
Birmingham Central—Dr H E Collier M.C.
Border Counties Branch—Dr F W Clark, M.C. (w.o.)
Cambs and Hunts—Dr W H Sturge
Dorset and West Hants—Dr C H Ackland (w.o.)
East York and North Lincoln—Dr A S Plant, M.C. (w.o.)
Edinburgh—Dr H R Dodson (w.o.)
Essex—Dr N F Norman
Glasgow and West of Scotland—Major E C Whitehead, R.A.M.C. (ret.)
Gloucestershire—Dr A Alcock
Kent—Dr G R Stilwell, O.B.E. (w.o.)
Lancashire and Cheshire—Mr Garnett Wright, F.R.C.S.
Metropolitan Counties
Inner Group—Dr G C Anderson,
Outer Group—Dr W McElroy
Midland—Dr J Mowat
Norfolk—Dr F P Bush (w.o.)
North Lancashire and South Westmorland—Dr L A Wilson (w.o.)
North of England—Dr J B T Keswick
North Wales—Dr C Robertson (w.o.)
Oxford and Reading—Dr W Stobie O.B.E. (w.o.)
Shropshire and Mid Wales—Dr G Laurence
South Wales and Monmouthshire—Dr J P J Jenkins
Staffordshire—Dr G E Dias M.C.
Suffolk—Dr H G Kulner (w.o.)
Surrey—Dr J A Lewis
Sussex—Dr F J Cutler (w.o.)
Ulster—Professor A Tullerton C.B. M.G.
Worcester and Hereford—Mr N Duggan, F.R.C.S. (w.o.)
(w.o.=walk over)

The final stage of the competition will be played on the Ludlow Golf Club Course at Brith on the afternoon of Friday, July 24th, commencing at 2 p.m.

Association Notices

PROPOSED CHANGE OF AREAS OF SOUTHERN AND SURREY BRANCHES

NOTICE is hereby given to all concerned of the following proposal made by the Surrey Branch

That the Urban District of Aldershot and the Civil Parish of Bramshott in the Rural District of Petersfield be transferred from the Winchester Division of the Southern Branch to the Guildford Division of the Surrey Branch

Written notice of the proposal has been given to the Southern Branch and the Winchester and Guildford Divisions, and the answer will be determined in due course by the Council. Any member affected by the proposed change and objecting there to is requested to send a statement of the fact, and of the reason therefor, to the Medical Secretary, British Medical Association House Tavistock Square, London, W.C.1, to reach him no later than August 11th, 1925.

TABLE OF DATES

July 17 Fri.	Annual Representative Meeting opens at Bath. Nominations for election of 12 members of Council by grouped representation must be received (at A.M. Bath) by this date.
July 18 Sat.	Annual Representative Meeting Bath.
July 19 Sun.	Council and Annual Representative Meeting Bath.
July 20 Tue.	Annual Representative Meeting and Annual General Meeting Bath. Pre-arranged Address.
July 21 Wed.	Conference of Secretaries. Conference of Honorary Secretaries. Bath.
July 22 Thu.	Meeting of Secretaries at Bath.
July 23 Fri.	Meeting of Secretaries at Bath.

ALFRED COX, Medical Secretary

BRANCH AND DIVISION MEETINGS TO BE HELD

BORDER COUNTIES BRANCH—The fifty-fourth annual general meeting of the Border Counties Branch will be held in the Cumberland Infirmary, Carlisle to-day (Friday, July 10th), at 3.45 p.m. Agenda: Branch Council report and financial statement; election of officers for 1925-26. Mr Norman Maclaren, T.D., F.P.C.S. Eng. will deliver his presidential address entitled 'The Cumberland Infirmary—past, present and future'. The Branch Council will meet at 3.15 p.m. Tea. The annual meeting of the English Division will follow.

CAPE OF GOOD HOPE (WESTERN) BRANCH—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday, August 28th, at 8 p.m. when there will be a symposium on the diagnosis of intracranial tumours arranged by Mr D. J. Wood. Among the speakers will be Dr J. D. M. Claassen, Mr F. T. Petersen, and Dr A. W. S. Sichel.

EAST YORK AND NORTH LINCOLN BRANCH—The sixty-ninth annual meeting of the East York and North Lincoln Branch will be held at the Grimsby and District Hospital, to-day (Friday, July 10th) at 3 p.m., when the President Elect, Dr W. Wallace, will be installed as President for the coming year. Business: Annual report and financial statement; election of officers. The President will deliver the inaugural address.

KENT BRANCH ISLE OF THANET DIVISION—The next meeting of the Isle of Thanet Division will be held on July 14th, at 3.45 p.m., at the Kent County Mental Hospital, Chatham Down. When Dr Hugh Raven will take the chair. A communication on the malarial treatment of general paralysis will be made by Mr M. A. Collins, the medical superintendent, and Dr G. T. Baker. A tour of the hospital with a demonstration of type of dementia praecox and other interesting cases, will follow.

NORTH WALES BRANCH—The annual meeting of the North Wales Branch will be held at Carnarvon, to-day (Friday, July 10th). The President will deliver an address.

OXFORD AND READING BRANCH—The annual meeting of the Oxford and Reading Branch will be held at the Radcliffe Infirmary, Oxford to-day (Friday, July 10th) at 3 p.m. Agenda: Election of officers; paper by Mr J. E. H. Roberts, O.B.E., F.R.C.S. Modern chest surgery. In the morning the Collier golf cup will be played for at Fildford Heath against hockey. Competitors take three quarters of their lowest handicap. Transport from Oxford Station can be arranged on application to the honorary secretary, Dr William Stobie.

SOUTH MIDLAND BRANCH BEDFORDSHIRE DIVISION—The annual meeting of the Bedfordshire Division will be held at the Swan Hotel, Bedford, on Wednesday, July 15th, at 3 p.m., when Dr G. F. Birks will preside. Business: Annual report, election of officers; nomination of president of South Midland Branch for 1926. Dr Farquhar Buzzard will give an address on some problems in prognosis. The chairman kindly invites members to lunch at the Swan Hotel, Bedford, at 1.15 p.m. Reply postcards should be sent to the honorary secretary not later than July 13th. An executive committee meeting will be held at 2.30 p.m.

SUFFOLK BRANCH WEST SUFFOLK DIVISION—A combined clinical and social meeting of the West Suffolk Division will take place on Thursday, August 6th, when Dr Wood has very kindly offered to entertain the Division once more at Woolpit. Tea in his garden will follow a clinical meeting at the Institute.

Meetings of Branches and Divisions.

KENT BRANCH

The twelfth annual meeting of the Kent Branch was held on June 11th at the Royal Naval Hospital, Chatham, by kind invitation of Surgeon Rear Admiral C. Marsh Beadnell, C.B., R.N., and Surgeon Captain R. J. MacKewen, O.B.E., R.N. The chair was taken by Colonel C. Pryor, C.M.G., M.D., President, who, when the result of the election of new officers had been declared, vacated it in favour of Dr A. W. G. Woodforde (Chatham). The usual votes of thanks having been accorded to retiring officers, and formal business completed, Dr Woodforde gave a valuable address on hypertrophy of the prostate gland, for which a very hearty vote of thanks was accorded to him.

The President then conveyed to Surgeon Rear Admiral Beadnell and Surgeon Captain MacKewen the thanks of the Branch for their hospitality for the annual meeting. This was carried with great acclamation and both officers responded. During the afternoon members were shown the x-ray biochemistry, massage and electric treatment and other departments, and also the system of electric cookery. They were also entertained to tea. Dr Woodforde entertained about sixty members and their wives to luncheon in most agreeable open air surroundings, and twenty-three members dined together at the Sun Hotel under his presidency. The Tennison Smith golf challenge cup was won this year by and presented to Dr Linton, M.O.H. Tunbridge Wells. The exertions and the hospitality of the 'service' members at Chatham largely contributed to making this a most successful meeting.

LANCASHIRE AND CHESHIRE BRANCH

Annual Meeting

THE eighty ninth annual meeting of the Lancashire and Cheshire Branch was held in the Music Room, Werneth Park, Oldham (kindly placed at its disposal by Dame Lees and Miss M. Lees), on June 18th. After an excellent luncheon, generously provided by the Oldham Division, Dr W. HIRST BATEMAN occupied the chair. The annual report and balance sheet were adopted. The annual report showed a steady increase of membership and of the activities of the Branch, especially with regard to the holding of successful scientific meetings in various centres throughout the Branch.

The Mayor of Oldham, Alderman FREN BROADBENT, J.P., gave a hearty civic welcome to the Branch. He said that if only the factory chimneys could be removed Oldham might become a health resort. He spoke of the great esteem in which the new president, Dr Thomas Fawcitt, was held by the whole people of Oldham. The honour of the Freedom of the Borough had been conferred on two citizens only, Dame Lees and Dr Fawcitt, both of whom had done great and valuable work in Oldham.

Dr Fawcitt, who is the doyen of the medical profession probably in the whole of Lancashire, gave a presidential address entitled "Conditions affecting health," basing his remarks on the progress of sanitation in Oldham, where he had spent the whole of his life. He began his apprenticeship in 1862, at which time the town had grown so rapidly that the sanitary conditions had not kept pace with the increase in the population. Infectious diseases were extremely prevalent and of a bad type, and the mortality was very high. In 1872 there were 505 deaths from scarlet fever out of a population of 84,000. Dr Fawcitt was a member of a committee of the medical profession which in that year approached the corporation and urged upon them the need for greater efforts to improve the sanitary conditions and thus diminish infectious disease. Prompt action was taken, and in 1873 the first M.O.H. was appointed. Continuous progress had taken place and the corporation of the town had always welcomed suggestions from the medical society. The death rate had fallen from 31 per mille in 1872 to 13.7 last year. Dr Fawcitt described the work that had been done in clearing away all cellar dwellings but he regretted that there was still overcrowding. He spoke on the low vitality among women and children and on the menace of the smoke nuisance. Conditions of work in the mills had greatly improved in consequence of the introduction of dust extractors and of shorter hours of labour, and deaths from phthisis was thus continually falling. The medical profession in Oldham had all along been imbued with public spirit and he knew that the British Medical Association had done a very great work in the progress of prevention of disease. His long experience had shown him that while it promoted preventive medicine and medical research it radiated the honour and interest of the profession and fostered a feeling of friendship amongst all its members.

On the motion of Dr W. HIRST BATEMAN, seconded by Professor MURRAY, a hearty vote of thanks was accorded to the President for his address.

Professor G. R. MURRAY (Manchester) and Dr J. C. MATTHEWS (Liverpool) were appointed Vice Presidents for the year. Dr A. C. STURROCK was re-elected Honorary Secretary, and Dr J. D. EWART and Dr S. COLLEY SALTER were re-elected Honorary Auditors. Votes of thanks were passed to Dame Lees and Miss M. Lees to the retiring officers of the Branch and to the Oldham Division for their kind hospitality. After the meeting the members separated some to golf on the course of the Saddleworth Golf Club and other parties to the works of Messrs Platt Bros. Ltd. and to the cotton mill of the Wye Mill Ltd. Shaw. An enjoyable tea party brought a very useful and successful annual meeting to a close.

National Insurance

THE ROYAL COMMISSION

THE thirty fifth meeting of the Royal Commission on National Health Insurance was held in Edinburgh on June 30th, 1925, Professor Alexander Gray in the chair.

Evidence as to the provision of dental treatment for insured persons was given by the East of Scotland Dentists' Panel, represented by Mr Ernest Miller and Mr William Arbuckle. Mr William Thomson, secretary of the Scottish Co-operative Friendly Society, gave evidence as to the desirability of extending the scope of medical benefit and providing dental and other treatment benefits for insured persons, and also as to various matters in connexion with the administration of benefits by approved societies. Mr John Reid, representing the Chartered accountants of Scotland, gave evidence as to the audit of accounts of approved societies, and urged that this work should be entrusted to chartered accountants in general practice rather than to a special Government audit department. Mr Matthew Reynard, clerk to the Association of Parish Councils of Scotland and clerk to the Glasgow Parish Council, gave evidence as to the relations between health insurance benefits and Poor Law relief. Mr T. J. Adley, secretary of the Scottish Professional Assistants Society, and Mr R. Williamson, secretary of the Independent United Order of

Scottish Mechanics, gave evidence on behalf of the Edinburgh, Leith, and District Friendly Societies Council.

The thirty sixth meeting was held at the Home Office Whitehall, on July 2nd, 1925, Lord Lawrence of Kingsgate in the chair. Evidence as to the work of the British Social Hygiene Council was given by Mr E. B. Turner, Dr Otto May, Mr P. A. Clements, and Mr Leonard Bowden. The Cambridgeshire Tuberculosis After-care Association, represented by Dr Varrier Jones and Mr I. Bunnell, submitted evidence on the need for special benefit arrangements under the insurance scheme for persons suffering from tuberculosis. Similar evidence was given on behalf of the London County Council by Mr G. H. Walmisley. The National Council of Agriculture, represented by Mr James Donaldson and Mr Denton Woodhead, gave evidence as to the undesirability of pooling the insurance funds of societies. Thereafter the Society of Apothecaries, represented by Dr A. D. Brenchley and Dr Reginald Wall, and the Association of Certificated Dispensers, represented by Mr Graham Bott and Mr A. Wager, gave evidence as to the qualifications of the holders of the society's certificate for insurance dispensing.

Volume I of the Minutes of Evidence covering the period from October 16th, 1924 to January 8th 1925 (the first to twelfth days inclusive) is now on sale in its final form and may be obtained from H.M. Stationery Office, Adastral House, Kingsway, London W.C.2, 28 Abingdon Street, London S.W.1, York Street, Manchester 1, St. Andrew's Crescent, Cardiff 120 George Street, Edinburgh, or through any bookseller. Price 10s. 6d. net and postage.

Part II of the Appendix to the Minutes of Evidence containing the statements submitted by certain approved societies, insurance committees, dental societies, representative bodies etc. on which the oral examination was based is now on sale in final form and may be obtained as above. Price 10s. 6d. and postage.

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

SURGEON COMMANDER W. W. REID CMG to be Surgeon Captain. Surgeon Commander D. G. Addison Scott to the President 101 R.N. Recruiting Headquarters. To be Surgeon Lieutenant Samuel Morrow.

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Commander T. Turner to the Victory for R.N. Barrack Portsmouth, for fourteen days training. Surgeon Lieutenant Commanders to be Surgeon Commanders D. D. F. Macintyre, T. B. Dixon, L. S. Ashcroft. Surgeon Lieutenant Commander H. J. C. Martin to the Dolphin for fourteen days training. Surgeon R. N. Hospital to be Surgeon Captain for twenty one days training. Probation H. Willoughby to the Victory for R.N. Hospital.

ROYAL ARMY MEDICAL CORPS

Lieut Colonel (now Colonel) R. W. Knox D.S.O. to be temporary Colonel from November 23rd 1925 to November 11th 1926 while employed as Assistant Director of Medical Services in Egypt. Lieut Colonel C. C. Thomson D.S.O. retires on account of ill health. Captain R. C. Atchison retires receiving a gratuity. Captain J. Stephenson M.C. half pay his late R.A.M.C. retires on account of ill health and is granted the rank of Major June 1st 1925 (Substituted for notification in the London Gazette of June 5th).

ROYAL AIR FORCE MEDICAL SERVICE

Air Commodore David Munro C.B. C.I.E. to be Air Marshal. Flight Lieutenants A. C. Ransford to the Electrical and Wireless School, Flowerdown. M. Coghlan to R.A.F. depot. School Flowerdown. M. Coghlan to the Engine Repair Depot, Egypt. W. A. Flying Officers A. Harvie, to the Engine Repair Depot, Egypt. W. A. Beck to School of Army Cooperation, Old Sarum. P. D. Larina, to Aeroplane and Armament Experimental Establishment, Northampton Heath.

INDIAN MEDICAL SERVICE

The services of Captain Jamal ud Din are placed temporarily, at the disposal of the Government of the Punjab. The provisional promotion of C. R. Henderon to the rank of Captain is confirmed. Lieutenant R. F. W. Stoney to be temporary Captain. Lieutenant M. Prasad has been re-elected to the Active List from the Temporary Non-Effective List with effect from March 6th 1925.

MILITIA

ROYAL ARMY MEDICAL CORPS
Captain F. L. Tulloch to be Major.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS
Major C. S. Wink resigns his commission and retains his rank. Captain G. M. Brown (late R.A.M.C.) to be Captain with precedence as from January 23rd, 1919. Captain A. Angus (late Northumberland Fusiliers) to be Lieutenant, and relinquishes the rank of Captain. Captain W. D. Carruthers resigns his commission and retains his rank.

SUPPLEMENT
TO THE
British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

LONDON SATURDAY JULY 18th 1925

OPENING OF THE ASSOCIATION'S NEW HOUSE BY H M THE KING
Monday, July 13th, 1925



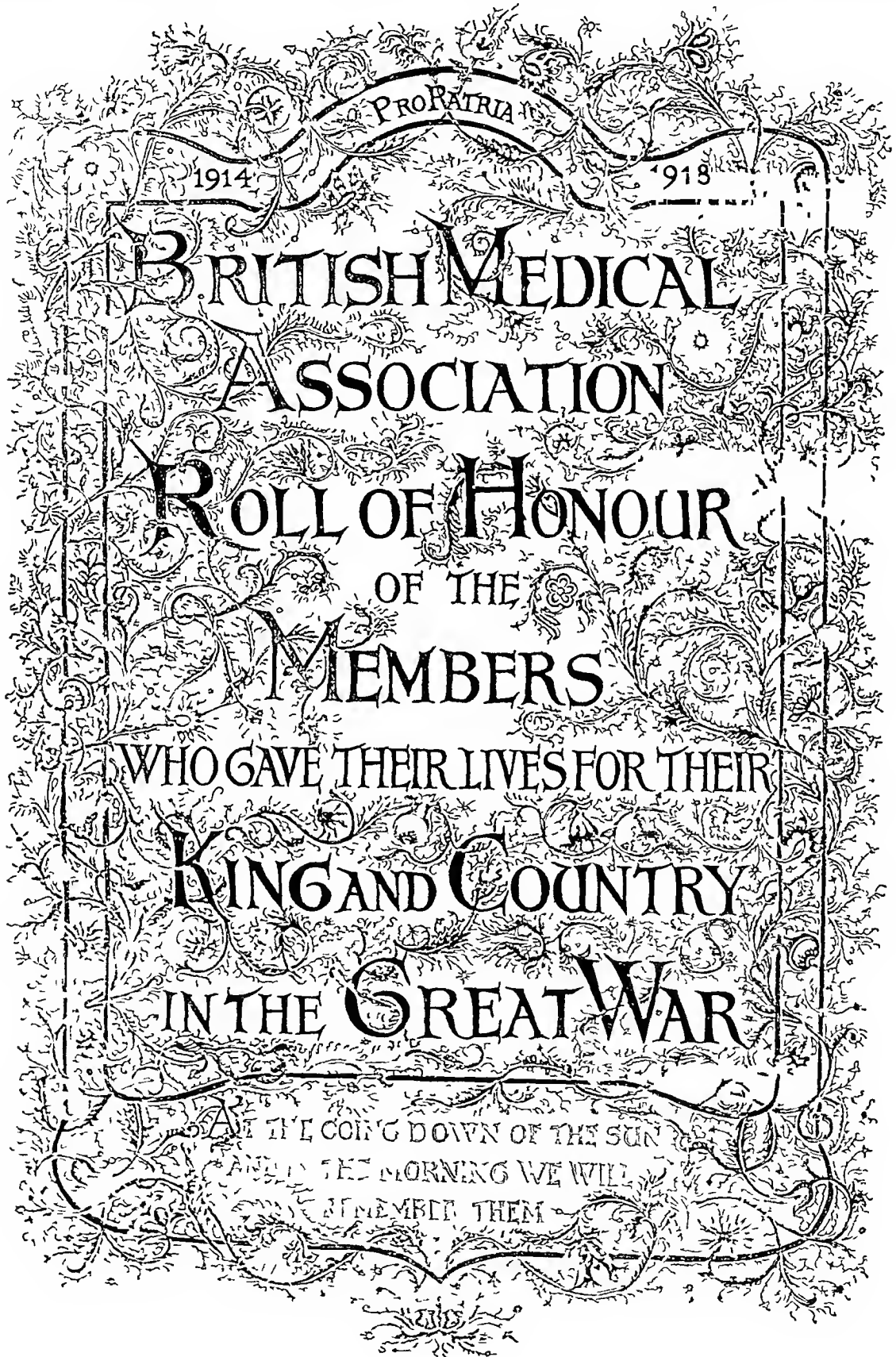
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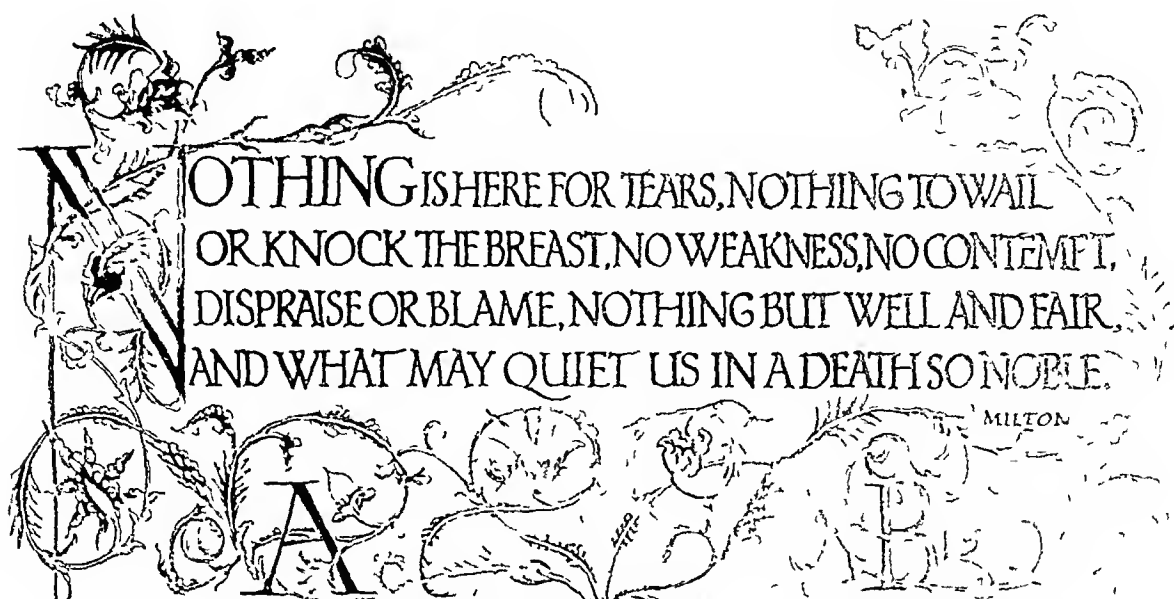
THE COURT OF HONOUR, WITH THE MEMORIAL GATES

[C. M. H. I.]

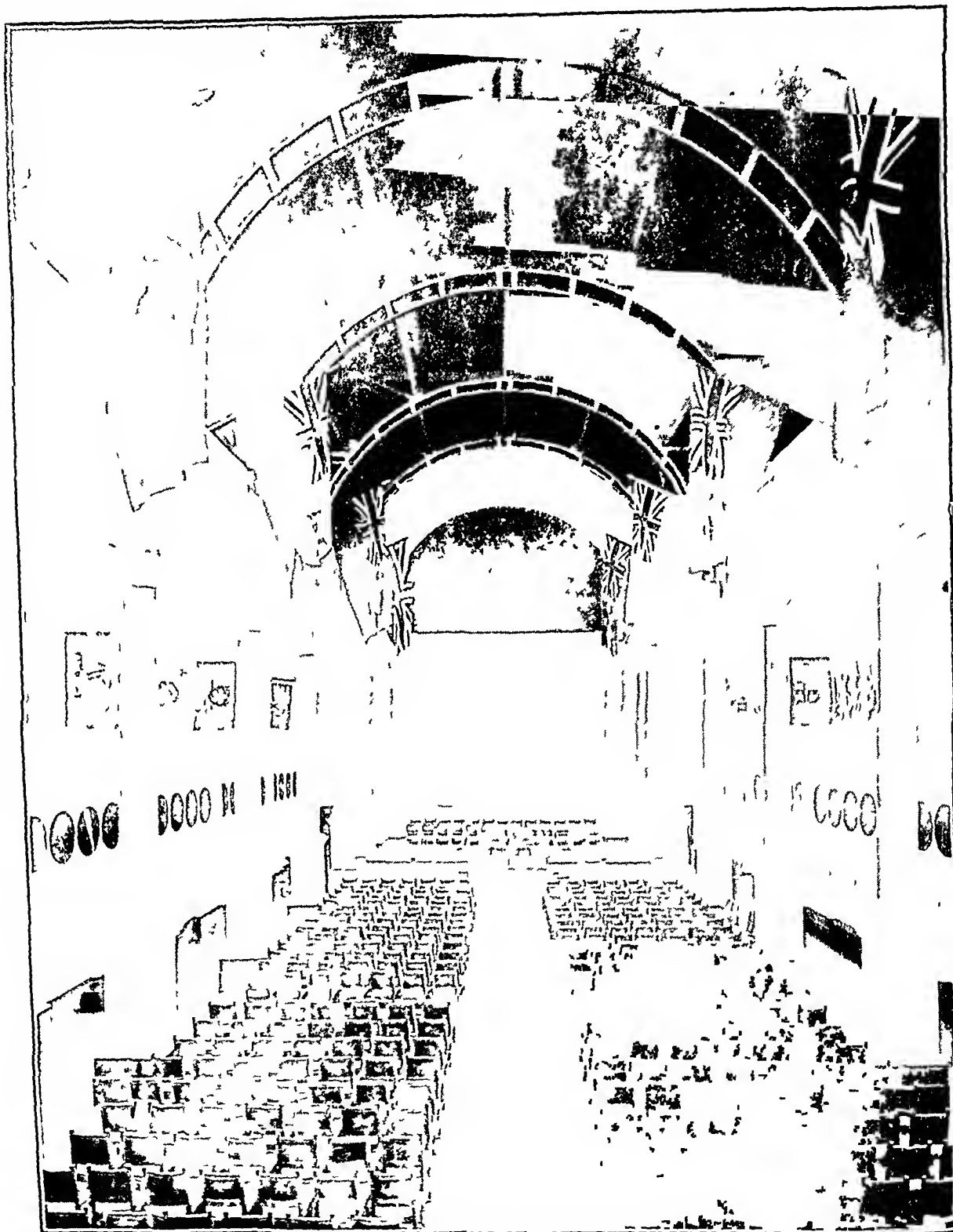
SPECIMEN PAGES FROM THE ROLL OF HONOUR,
Containing the Names of the 574 Members who gave their Lives in the War

DESIGNED AND
ILLUMINATED BY
FREDERIC G HALLETT
LETTERING AND GOLD BY,
MELINDA M. BAKER.
LONDON, 1924





ACKROYD HAROLD, V.C	BAILEY, GUY BROOKE
ACLAND, JOHN HENRY DYKE	BAILEY, JAMES CONNOR MAXWELL
AITKEN, JAMES	BAKER, CECIL ROBERT MOORSHEAD
ALMOND, GEORGE HETH HUTCHINSON	BALDWIN, FRANCIS JOHN AUGUSTUS
ANDERSON, GEORGE GRANTHAM	BALL, SIR, CHARLES BENT
ANNESLEY, JAMES FERGUSON ST JOHN	BALL, MALCOLM EDWARD
ARMSTRONG, ARTHUR KEITH	BARKER, ARTHUR EDWARD JAMES
ARTHUR, DAVID	BARNES, RAGLAN WYKEHAM
ASH, PERCY ROBERTS	BARR, HUGH
ASPINALL, WILLIAM ROBERT	BATCHELOR, FERDINAND CAMPION
ATKINSON, AMBROSE	BATTERSBY, JOHN
ATKINSON, CHARLES MASON	BAXTER, ALEXANDER KIDD
AUSTEN, THOMAS	BEALE-BROWNE, THOMAS RICHARD
AUSTIN, ELFRED CHALMERS	BEAN, HAROLD KNOWLES
AUSTIN, JOHN HENRY EDWARD	BEARBLOCK, WALTER JAMES
AYRE, FREDERICK JOHN	BEGG, CHARLES MACKIE



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THE GREAT HALL FROM THE GALLERIES

[Topical Press

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, JULY 25TH 1925

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British Medical Association: Annual Meeting, Bath, 1925.

ANNUAL REPRESENTATIVE MEETING.

Friday, July 17th

The Annual Representative Meeting opened in the Concert Hall, Grand Pump Room, Bath, on Friday, July 17th, at 10 a.m. There was a large and early attendance of representatives.

Dr H. B. BRACKENBURY (Chairman of the Representative Body) presided, supported on the platform by Dr R. A. Bolam (Chairman of Council), Dr C. O. Hawthorne (Deputy-Chairman of the Representative Body), Mr N. Bishop Harman (Treasurer), the Medical Secretary, the Deputy Medical Secretary, the Financial Secretary and Business Manager, and the Solicitor.

The CHAIRMAN was greeted with hearty applause on moving the first resolution, that the return of election of representatives be received.

Standing Orders

Certain amendments to the standing orders were agreed to relating to the publication of the minutes, and to the simplification of the procedure on election returns. New standing orders were adopted for the election of members of standing committees. These provide that representatives alone shall be eligible for nomination to the Finance, Journals, and Public Relations Committees and that no representative shall be eligible for nomination for election by the Association as a member of more than two committees, and no person not a representative as a member of more than one committee.

Illness of President-Elect

The CHAIRMAN said he regretted to have to announce that the President-Elect (Dr F. G. Thomson) was seriously ill and would be unable to take part in the proceedings. He was sure that at the outset of the meeting the members would wish to send to Dr Thomson a message of sympathy and condolence, and accordingly proposed that that be done.

This was agreed to.

Election of President for 1926-27

The CHAIRMAN OF COUNCIL moved that the Annual and Supplementary Reports of Council (published in the SUPPLEMENT of April 11th and 18th and June 27th respectively) be received and this being agreed to, he moved, as a recommendation of Council—

That Mr Robert George Hogarth, C.B.E., F.R.C.S. Eng. be elected President of the Association for 1926-27.

This was agreed to with applause.

Mr HOGARTH said that as he would have the pleasure of addressing the meeting on the following Tuesday he only desired on the present occasion to thank the representatives very warmly for the great honour they had done him, and to assure them that he would endeavour to carry out his duties to the best of his ability. On behalf of Nottingham he offered a hearty welcome to the meeting there next year.

Annual Meeting 1927

It was also agreed that the Annual Meeting 1927, should be held at Edinburgh and so form part of the Inter-Centenary celebration.

Election of Vice-Presidents

The CHAIRMAN, in moving that Mr C P Childe, B A, F R C S, M R C P F (President of the Association, 1923-1924), be elected a Vice-President of the Association, said that the election of Past-Presidents as Vice-Presidents was one of the ways in which the Association could show its gratitude for the services they had rendered. He was sure that in the case of Mr Childe the proposal would be warmly received.

The motion was agreed to with applause.

The CHAIRMAN also moved that Alexander Primrose, C B, F R C S, M D, and Frederick Newton Gisborne Starr, C B E, M D, both of Toronto, be elected Vice-Presidents of the Association.

The CHAIRMAN OF COUNCIL, in supporting the motion, said that the Association had consummated its affiliation with the Canadian Medical Association during the present year, and there was now in this country a very important delegation of medical men from across the Atlantic, two of the outstanding members of which were Dr Primrose, the Dean of the Medical Faculty of Toronto and Chairman of the Council of the Canadian Medical Association, and Dr Starr, who was honorary secretary of the 1926 Annual Meeting and was well known in this country as a Canadian representative. The Council felt the Association would wish to take advantage of the opportunity so presented to appoint two Vice-Presidents from Canada.

The motion was agreed to with applause.

Election of Honorary Member

The CHAIRMAN moved, as a recommendation of the Council, that Mr Frederic G Hallett, O B E, be elected an honorary member of the Association. He said that reproduced in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL for the current week was some of the magnificent artistic work which Mr Hallett had put into the *Roll of Honour*, deposited in the Library at the Association's new House, and inspected by Their Majesties on Monday last. It must be seen to be appreciated. This was not the first time Mr Hallett had done work for the Association. The only way in which the Association could honour a layman was by electing him as an honorary member.

This was agreed to with applause.

Other Preliminary Business

The CHAIRMAN OF COUNCIL, in moving approval of the remainder of the Supplementary Report of Council under "Preliminary," said that during the past year the hand of death had been heavy on the Association, particularly in the case of those who had been intimately associated with the central work of the Council. Dr Haslip had passed away, but had left the fruit of his wise judgement in the Association's financial affairs. The Council had also lost members who were carrying the burden of the work last year. Dr Bolam went on to refer to the new fund which had been established by the generosity of one of the members of the Council, Colonel Rait, and his wife, for giving assistance when urgently needed without formality. This would not interfere with the activities of the existing benevolent funds. The Council hoped that Colonel Rait's example would result in the formation of a fund which would redound to the credit of the Association. With characteristic modesty he refused the suggestion that it should bear his name, asking the Council to agree to call it after the name of the Association's founder, Sir Charles Hastings.

The CHAIRMAN, before putting the motion, referred to the paragraph in the Report stating that the Council had awarded the Gold Medal of the Association to Dr Bolam (Prolonged applause). He did not enlarge upon it, because there would be other opportunities.

Affiliation between the Association and the Canadian Medical Association

Dr Morton Mackenzie (Chairman of the Organization Committee) moved approval of the affiliation of the Association with the Canadian Medical Association on the conditions set out in the Annual Report of Council and more fully in the report of the delegates to the Canadian Medical Association presented to the Bradford Representative

Meeting. Dr Mackenzie said that this was the final and formal stage of negotiations which had arrived at a very happy termination. It was hoped the affiliation would prove of lasting benefit to the profession, both in the Mother Country and her Dominions.

The motion was carried with applause.

Dr Morton Mackenzie then moved the approval and adoption as an article of association of a draft new article relating to affiliation of medical bodies outside the United Kingdom, which article was to be submitted to Extraordinary General Meetings of the Association for adoption. The article was as follows:

(1) The Association may admit to affiliation with it any medical association or similar body established outside the United Kingdom on such terms and with such privileges as may in each case be approved by resolution of the Representative Body passed after consideration of a report by the Council.

(2) The Association may terminate any such affiliation (after due notice on either side) by resolution of the Representative Body passed after consideration of a like report.

(3) Any resolution of the Representative Body under this Article shall be final and shall not require to be approved under Article 34.

A verbal amendment was also necessary, and was approved, in Article 34.

The New House of the Association

The CHAIRMAN OF COUNCIL moved that the Report of Council under "New House of the Association" be approved. He went on to say that, as the Chairman had remarked, the Gold Medallist had no chance of saying even "Thank you" at the formal function when the Medal was presented. He (Dr Bolam) took the opportunity of thanking members of the Representative Body for doing what was quite out of the usual run of proceedings. He valued the appreciation shown in conferring the Medal more than almost anything that could come from any section of the profession. That the Association should have followed the advice of Bacon, "Honour your friends while they live with you," was a thought that he should always treasure. As to the New House itself, owing to the great amount of energy expended by Mr Ferris Scott, it had been possible to get things ready in time for the function last Monday. The occasion was one which would be memorable in the history of the Association, and many of those present at it considered that it was the finest function in which the Association had been privileged to participate. The New House would be of untold value to the Association. It would provide a rallying point for the members in the kingdom and the empire. Such a rallying point had been greatly needed in the past. He wished to utter one word of caution. It might be that those who had been active in the arrangements hitherto would not see the final completion of the programme that they had in their minds, and he wanted those who had the opportunity of continuing the work not to become fearful at any time as to the extent to which the Association could launch out in regard to its settled headquarters and its activities in them. Matters should not be spoilt by fear at the last moment. The Association had behind it an energy and a financial strength which should not be underrated. He hoped that, while exercising all due care for economy, those responsible would look with a generous eye upon provision for the future even though it might need some self-denial on the part of members at the time.

A Resolution of Thanks

Mr McADAM ECCLES moved the following:

The Representative Body desires to place on record its deep appreciation of the services rendered by all in connexion with the selection, preparation and opening of the British Medical Association House in Tavistock Square, London W C 1. While it is difficult fully to gauge and invidious to differentiate the individual labour which each has so efficiently given to the work, the Representative Body specially wishes to thank:

- 1 The Chairman of Council Dr R A Bolam, O B E for his acumen in selection of the premises, his assiduity in watching over their preparation and his aptness in presenting the Address to His Majesty the King at the opening.
- 2 The Treasurer Mr N Bishop Harman for his care of finance and most helpful suggestions.
- 3 The Financial Secretary Mr L Ferris Scott for the way in which he has met the extra and heavy burdens thrown upon him during the whole period.

- 4 The complete body of office workers for their splendid co-operation
- 5 The Architect Sir Edwin Lutyens R.A., for his art and skill
- 6 The Contractor Mr F. J. Walton, for the promptness with which the work of adaptation was carried out
- 7 The Foreman Mr G. E. Staples and the workmen through their representative Mr W. Reynolds for their good and timely work

The motion was seconded by Mr E. W. G. MASTERMAN, Dr H. G. DAIN (Birmingham) thought that there were two members of the staff who should be mentioned in the resolution. He referred to Dr Cox, who had done a tremendous amount of extra work in advising and helping the Editor, Sir Dawson Williams, who had carried on and had brought out the JOURNAL with such promptness, in spite of all the difficulties to be encountered, and had had all the extra trouble entailed in giving the members in account of what had been happening. (Applause)

Mr McADAM ECCLES said that he would be only too pleased that these names should be mentioned in the resolution.

The CHAIRMAN said that none of the members would forget the extraordinarily good work by their predecessors in securing the old building nor the extraordinarily good work that was done in it while the Association occupied it.

Sir JENNY VERRALL said he was glad to have the opportunity to speak as to the good work which had been done in getting into the new building, all the more because his memory went back to the time before the entry into of the very few members left who remembered the original house in the Strand. The splendour of the present building must bring before the world at large all the good the Association wished to do, and the thanks of the Association were due to all those who had had the duty and the pleasure to do their share of the work involved.

CIVIC WELCOME TO BATH

The proceedings were interrupted at this point for a civic welcome. The Mayor of Bath (Alderman Cedric Clivers, J.P.), who was accompanied by Mr W. G. Mumford (Honorary Local Secretary and Acting President-Elect) and Dr R. G. Gordon (Honorary Assistant Secretary).

The Mayor said that it was both his duty and his great pleasure to offer a very sincere and hearty welcome to the city on this occasion. As in the olden time on the visit of other notable people, the Abbey bells had been rung that morning to acclaim their coming. The British Medical Association was among the most distinguished as it was the largest, company which had ever at one time so honoured Bath. The city was very glad to have this opportunity to recognize the immenso service, and, indeed the value of the work of the medical profession. More especially did all who were engaged in public affairs regard with the utmost gratitude, both expectant and retrospective, all that the medical profession was doing, not only to cure human ills, but in preventing disease, helping towards a healthier, happier, and prolonged human life. What Bath offered to her medical guests would be bounded only by the limits of space at her command. Continuing, the Mayor said it was his chief and sole concern that morning to do what he could to make the members of the Association feel heartily welcome and to assure them that first and foremost the city's desire was to make their stay memorable for its success and pleasure. (Applause)

The CHAIRMAN, in thanking the Mayor on behalf of the Association, said that the Representative Body, and indeed the whole Association, had looked forward for some years with pleasurable anticipation to their visit to Bath. The members appreciated very highly the unlimited offer of service. He was sure that not only the civic authorities, but all the inhabitants of the city, were extending to them such treatment as would make every member of the Association remember all his life the charming historic, and beautiful city of Bath, which was renowned for the two things—health and education—for which the Association primarily stood. (Applause)

The Mayor then withdrew.

THE NEW HOUSE (resumed)

Dr J. A. MACDONALD who was received with hearty cheers, said it was difficult for him to express what he desired. He could not help feeling very deeply that he was drawing near the end of his long connexion with the Association ("No, no!") It was twenty-five years since he started work for the Association. When the old building had been pulled down in the Strand he had stated his opinion that the property was worth from 15 to 20 per cent more than before. That estimate had been received with jeers, but one of the greatest rating authorities at the time had said that his estimate was, if anything, too low, and that the figure should have been 25 to 30 per cent. A step had been taken towards making the Association what it ought to be—the greatest association for the good of the people and for the advancement of medical science in the world. (Applause)

The CHAIRMAN suggested adding to the resolution the words "The Editor, Sir Dawson Williams, and Medical Secretary, Dr Alfred Cox, for the admirable way in which the work of the Association and the conduct and publication of the JOURNAL have been carried on during the difficult time of transition."

The resolution, so amended, was agreed to.

Mr McADAM ECCLES further proposed that the resolution be sent to those mentioned in it and that it be engrossed, framed and hung in a suitable place within the British Medical Association House.

Mr MASTERMAN seconded the motion, which was carried unanimously.

The CHAIRMAN OF COUNCIL said many of those who deserved mention had been passed over in silence, but on his own behalf and on behalf both of those who had and who had not been mentioned, he wished to thank the meeting for putting on record its appreciation of the services they had rendered. In a body like the British Medical Association it was only a question of time and place and circumstance if one person rather than another had been in a position to render those services. The devotion displayed by the staff, including the lay officials, during the times of stress through which they had passed should be a cause of pride to all the members of the Association. (Cheers)

The Supplementary Report of Council under this heading was agreed to.

FINANCE

The TREASURER (Mr Bishop Harman), in submitting the balance sheet, said it revealed a very satisfactory position. His predecessor had budgeted for a surplus of £5,000, but the surplus realized was over £8,000, and that in spite of the fact that the expenditure—£113,000—was a "record" for the Association. In each of the three preceding years both income and expenditure, due to increasing membership, had increased by about £5,000. The Reserve Fund stood at £29,000 on December 31st last, but there had since that date been a slight fall in the value of the securities held. That fund had been instituted to provide for an extension of the Association's premises, and the Finance Committee had power to realize it, when advisable, to pay off the costs of the new building. The Loan Account from which the expenditure on the building had in part been met, stood at a very low figure because current subscriptions had been largely used to finance the expenditure, and instead of being put on deposit had been employed to reduce the overdraft at the bank. Subscriptions in arrears were rightly shown as assets, since the greater part of their value had been realized. The Council had increased in size and Council meetings had increased in number and there had therefore been an increased expenditure on railways fares. The Secretaries' Conference had been less expensive not because of a smaller attendance but since so many secretaries were also representatives. Salaries had increased according to the scale proposed by the Council and approved by the Representative Meeting. Extra copies of the JOURNAL to the number of 120,000 had been supplied during the year but the advertising revenue had increased and the expensiveness of production had been kept down through the installation of linotype machinery. There had budgeted for an increased expenditure of £2,791 on the new premises.

because the upkeep would be more expensive than in the old. The estimated total revenue for next year was £125,000, and the total expenditure £121,000. He was assured of the financial stability of the Association, despite the heavy liabilities it had undertaken.

In reply to a question by Dr L. A. PARRY (Brighton) the TREASURER proceeded to give details of the expenditure incurred by the Association upon the new premises.

Dr JENNIFER VERNALL asked whether, when the extension took place, there would not be an opportunity of getting a financial return by letting part of the building. The TREASURER replied that he hoped that a large part of the present building would be a source of revenue. The Great Hall must be one of the most desirable meeting-places in London.

Dr J. H. THOMPSON (Nottingham) asked what was the length of lease and was there an option of purchasing the freehold.

The TREASURER said that the lease was for 200 years, and could not be broken. There was no option on the freehold.

The CHAIRMAN or COUNCIL agreed with what the Treasurer had said. It might be found practicable to use the present building so as to bring in a yearly return, without accommodating members or interfering with their privileges. He put the value of the present building and the lease at about a quarter of a million, and he believed that in six or seven years, if the Association took a broad view, it would have buildings worth half a million ("Hear, hear"). Money laid out there sensibly and with restraint would prove a good investment, and if those who were arranging the details during the coming years had liberty in varying the plan of building the new wings, the return would be very satisfactory. It might be that the return would come through one wing being made, say, a hostel for empire post-graduate work. It might be that some of the return should be sacrificed because it would be a legitimate expenditure on behalf of the Association to further that purpose ("Hear, hear"). There were a number of possible developments, and he hoped the matter would trustfully be left fluid with those who had to carry out the details, due oversight being taken in the way of reasonable expenditure and care.

Dr H. S. BEADLES thought that the Representative Meeting should have a certain amount of control over finance. He was in dread of the Council moving into the extension of the new building room by room, and of the upkeep expenditure that would arise from such a procedure. The letting of a portion was the correct principle upon which to proceed.

Dr C. E. DOUGLAS criticized the acoustic properties of the Great Hall.

Dr JOHNSON SMYTH (Bournemouth), speaking on the Financial Statement, considered that before the Association launched out on any serious further expenditure the membership should be allowed to become more stabilized. As to the Superannuation Fund, as far as he knew no provision had been made for the superannuation of the Editor or of the Medical Secretary. He hoped the Finance Committee would study this matter sympathetically. He congratulated the Treasurer on his very lucid statement.

Dr D. C. KIRKNOFF (North Middlesex) asked how the figure of £170,848 6s 3d as the total of the Surplus Account and the Reserve Account was arrived at.

The TREASURER, in reply, said that this figure represented the addition of all the assets of the Association after all the liabilities had been paid or provided for. It included the Reserve Fund of nearly £30,000. It might be taken that the figure represented what the Association was worth at the present moment. The Chairman of Council had projected further expenditure. If it was to be productive expenditure the Finance Committee would report on it favourably to the Council. Dr Beadles had emphasized the necessity of control by the Representative Body over finance. He entirely agreed with him. Dr Douglas had criticized the acoustic properties of the Great Hall. He (the Treasurer) had made some tests, and the results of those tests were satisfactory. As to the criticisms made by Dr Johnson Smyth, he hoped that the membership of the Association would never be stabilized. Stabilization

rather suggested fossilization. He would like to see the membership go up, as it was doing at present, year after year. If it did not go up he would like to see it go down and give a jolt to the executive so that something would be done. He believed that it would increase. With regard to the matter of pensions, this was receiving the consideration of the Council. Certain memorandums had been submitted, and it was proposed to lay a report before the Council shortly.

The CHAIRMAN invited Dr Kirkhope to put his question again if he thought his point had not been fully answered.

Dr KIRKNOFF said he found in the Report under "Finance"—

"The Reserve Account stands at the same figure as last year. It is invested in first class securities of a market value at 31st December, 1924, of £29,683 10s. The Surplus Account including the surplus for the year 1924, stands at £143,601 8s 9d, making with the Reserve Account a total of £170,848 6s 3d."

That was an addition, the Reserve Account was added to it.

The TREASURER said that in the Reserve Account the figure given was the figure of cost, which was less than the value by £3,000, which accounted for the difference. The profit had not been realized, and therefore it could not be put down.

The Annual Report under "Finance" was then unanimously approved.

THE "BRITISH MEDICAL JOURNAL"

Dr J. A. MACDONALD (Chairman of the Journal Committee), in moving approval of the section of the Report under "Journal," said the Association was to be congratulated on the continued progress of the JOURNAL, which he believed was the most effective medical publication in the world. The main point in the Supplementary Report of Council under "Journal" was the proposal that the Association should undertake the publication of a subsidiary journal dealing with the subject of children's diseases. It had been thought that the important work done by pediatricians in this country was not at present adequately represented. The matter had been discussed by the Journal Committee and submitted to the Finance Committee, who considered that it would be proper to risk a possible cost of £600 a year, and the Council recommended that the publication of such a special journal should proceed. It had been asked whether the proposal would interfere with the BRITISH MEDICAL JOURNAL in any way. His own view was that it would not do so in the least. Articles which were suitable for the JOURNAL would be published therein, and those more particularly suitable for specialists would be put in the proposed special journal.

Dr H. ROSE asked whether the new journal was for specialists and not for the general practitioner at all.

Dr MACDONALD replied that it was not to be thought that the matter dealt with in the proposed journal would not be of interest to the general practitioner. The new journal of pediatrics would be independent of the BRITISH MEDICAL JOURNAL so far as subscriptions were concerned, and it was hoped that it would pay for itself.

The Annual Report under "Journal" was then unanimously adopted.

Reports of Committee Proceedings

Dr L. A. PARRY (Brighton) moved to instruct the Council to arrange, when considered advisable, for the publication in the SUPPLEMENT of the fullest reports of the meetings of the standing and other committees, as at present members had little or no opportunity of judging for themselves the very great amount of detailed work done on their behalf by these committees.

Dr JOHNSON SMYTH (Bournemouth) opposed the motion on the ground that an expansion of the size of the JOURNAL would result in a serious increase in the cost of postage.

The CHAIRMAN or COUNCIL, while expressing sympathy with the desire of the Brighton Division to know more about the work of the committees, agreed with Dr Johnson Smyth that the question of postage was a serious matter. He thought that until conditions became less stringent the committees would have to be content with

relative obscurity. He was reminded by the Medical Secretary that the results of the work of the committees were covered in the reports to Council, and the Council's work was reported to the Representative Meeting, so it was necessary to consider carefully whether a good deal of repetition would not be caused by publication of the work of the committees.

Dr MACDONALD, speaking as Chairman of the Journal Committee, said the suggestion from Brighton was not a practical proposition. If the JOURNAL were enlarged it would come outside the postal rate, which meant a heavy additional expenditure.

Mr E B TURNER said that, as Chairman of the Medico-Political Committee, he wished to point out that in many cases the reports of that committee required very careful editing before publication. What could be published was sent out under "Current Notes," but it would be undesirable to give full particulars of difficult and delicate negotiations before they were finally completed. The members should be made cognizant of the work of the Medico-Political Committee, and have the opportunity of approving it or otherwise, but as much was already being done in that direction as was possible.

Dr PARRY, in reply, said he had never suggested that full reports should be published, and the words in the resolution, "when considered advisable," disposed of the point raised by Mr Turner. He had not, moreover, suggested that the JOURNAL should be increased in size, or that additional expenditure should be incurred. What he proposed could be accomplished by cutting out some of the matter now printed, he suggested the JOURNAL should be slightly decreased in size and the SUPPLEMENT correspondingly increased. The publication of proceedings and reports of Council did not meet the case, as they did not contain particulars of the detailed work done by the committees. All the resolution asked was that the members should be better informed of the good work which was being done on their behalf.

The CHAIRMAN said the resolution had been represented by Dr PARRY as perfectly harmless, and if Dr PARRY's view of it were accepted it might be said that all he wanted was being done already, so that the resolution was superfluous, but if it meant what those who opposed it took it to mean the meeting would have to consider whether it was possible or advisable to carry it out.

Dr E R FOTHERGILL asked whether the Chairman of Council would agree to take the proposal into consideration.

At this point a motion was carried to pass to the next business.

SCIENCE

Dr C O HAWTHORNE (Chairman of the Science Committee) moved approval of the report of Council under that head. The report, he said, did not contain any formal recommendation to the Representative Meeting, it merely recorded the scientific and educational activities of the Association during the year, activities which, it would be agreed, formed by no means the least important part of the work of the Association. The first part of the report recorded work undertaken in response to direct instructions from the Representative Meeting. In 1923 the Ophthalmological Section passed a resolution urging the Council to call the Government's attention to the importance of certain research undertakings to the work of the combatant services. The Council thought it impossible to take valuable practical action, but were again instructed to take the matter up by the 1924 Representative Meeting, and thereupon wrote to the various Government departments in the sense desired by the Ophthalmological Section. With the exception of the Admiralty, the departments addressed had replied to the effect that they were giving consideration to the matter. Reference was also made in the report to the Sir Charles Hastings Prize. It was the wish of the last Representative Meeting that the awards in connexion with that foundation should not necessarily be restricted to a single candidate. The Council had accordingly decided that more than one prize might be awarded should the merit of the essays sent in warrant such a course. Essays had to be submitted before December 31st of the present year, and it was hoped that the prize—the first to be awarded for clinical work conducted in general practice—would excite

considerable attention and lead to a number of essays being submitted. The promotion of scientific research by the Association had gone forward. The expenditure of money there referred to had been fully justified by results, the work submitted was of high quality. In particular, he wished to refer to that performed by the Ernest Hart Memorial Scholar, Dr A J Copeland, as a result of whose investigations the profession would shortly be put in possession of a local anesthetic which had all the virtues and none of the perils of cocaine hydrochloride. That would redound to the credit, not only of the worker himself, but of the Association through whose support the work had been in part accomplished. (Applause.) All the work of the research workers was supervised or inspected by experts in the various departments, who sent confidential reports to the Science Committee. The inspection or visitation was very responsible and important work, and the Association was heavily indebted to those gentlemen who undertook it. With those remarks he associated the names of the judges, on whose considered verdict the Middlemore Prize had been awarded. Coming to the Library, he said personal attendances there had greatly increased, and within the last few years the number of books sent out on loan had more than doubled. With the new facilities offered by the Association's new home, the Library activities would considerably increase.

Mr H S SOUTHWICK bore testimony to the admirable work done by the Science Committee and also by the prize-winners. When a scholarship was given to Dr Copeland it was scarcely hoped that such a brilliant result would follow. At present there was practically only one surface anesthetic—cocaine—and this was an exceedingly dangerous substance to use. It was practically certain that by next year, as a result of Dr Copeland's work, there would be available an anesthetic of almost the power of cocaine, and of a little toxicity as novocain. Such a brilliant discovery redounded to the credit of the Association. Besides this, Dr CUNN, as a result of the work he did for the Association, had received the great honour of a Hunterian professorship at the Royal College of Surgeons.

Mr E B TURNER corroborated what Dr Hawthorne had said, but thought the Association ought to be ashamed of itself that it allocated only about £1,000 to these matters. Something had been said about the ratio of the medico-political to the scientific work of the Association, in regard to money the difference was tremendously on the other side. He believed even the Treasurer would look with sympathy upon giving an extra twopenny or threepenny a member in extra grants for research and scholarships. Last year the Science Committee was at its wits' ends how to strike a just balance between the extraordinary excellence of the candidates for scholarships and grants, and the very limited amount of money available. It ought to be very carefully considered whether the Association could not double the amount it gave for the promotion of research in medical matters on scientific lines.

Dr J L LIVINGSTON (Winchester) asked whether the Library could not extend the present time for which books could be kept. A fortnight was not long enough, especially for men living in the country. Occasionally an extension could be got, but application had always to be made before the end of the fortnight. Dr C E DOUGLAS supported the last speaker. Certain books in the Library could not be read in a fortnight. Dr HAWTHORNE said that the question raised had been considered more than once by the Science Committee. The present regulation was that a book must be returned within fourteen days, but a reader who desired to keep it longer could send an intimation to the Librarian, and unless there was a demand for the book it would be granted. The desire was to make the Library useful to members of the Association as a whole, and the present arrangement conducted to regular and systematic working. Dr FOTHERGILL asked whether the arrangement for keeping a book longer than fourteen days appeared in the rules and if not asked that it be inserted. Dr LIVINGSTON suggested that the time limit should be four weeks instead of two. Dr HAWTHORNE read the rule in question and said that if there was any ambiguity in the wording of it he would see that it was put right.

This portion of the report was approved.

24 JULY 25, 1925]

Annual Representative Meeting

[SUPPLEMENT TO THE
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felt that, having regard to the retrospective nature of that binding resolution, it would not be wise or politic to put the powers of the Association into motion. But that transitional stage was probably ending, and those crises of retrospective action would not occur in the future. Therefore every man who, after the binding resolution, accepted a post not under the terms of the scale would be dealt with simply as a recalcitrant member under Rule 6 and the following and consequent rules. Rule 6 was the ordinary rule which governed the complaints as to ethical misconduct against any member. If this motion was therefore unnecessary, then certainly it was undesirable. If Rule 5 were altered for the sake of this unnecessary object, all the ethical rules of the Divisions would be thrown into the melting-pot again, and it took nearly a year—probably more than a year—to get all the Divisions all over the country to readopt all these ethical rules. They were only “drawing their own teeth” by this suggested alteration of the rules. Further, Rule 5 might still be wanted for the sort of cases for which it was originally devised. When these rules were devised the Association was taking no action with regard to public appointments. All that it was really concerned with at that time was appointments held at clubs and institutions where the terms and conditions had perhaps for years been unsatisfactory. The lawyers had advised that it was only fair that the person complained of who held that appointment should have in common justice the alternative of being entitled to exonerate himself from blame by bringing the terms and conditions of his appointment into harmony with the new view.

Dr FOTHERGILL asked if Rule 6 did not require that the individual member must start the complaint, not the Division.

Dr LANGDON-DOWN said that the secretary of the Division could act in his official capacity.

The Solicitor to the Association (Mr W E HEMPSON) said that, if he might speak quite frankly, the one nightmare of his life for the last twenty-five years had been the ethical rules. (Laughter.) He had them brought before him week by week. He would say now what he intended to say at the end. He begged the representatives not, in a meeting like the present, to set about altering the ethical rules, because they did not know where a small alteration would lead. He maintained that these rules had been settled with the utmost care. They represented not only the sweat of his brow, but also that of two counsel who had been engaged upon them. He thought there had been a misconception. It was quite evident that the mover of the resolution had not been through the mill to the extent that he (the speaker) had been in connexion with the rules.

The Solicitor continued

It has been decided, as one of the fundamental principles of your present constitution, that there should be local autonomy, as far as Branches and Divisions are concerned. As has been said, you are not yet agreed on a definite scale for these salaries, but you are arriving much nearer that point at this meeting than you have hitherto done. I do hope to see that when once the scale for the salaries is arrived at, it will be adopted by each individual Division throughout the length and breadth of the Association. If that be the case, then you will have a new plan on which to work. The autonomy of your Branches and Divisions has been so fundamental that it has been left to the Branches and Divisions practically to decide for themselves as to whether they shall pass binding resolutions. You all know what a binding resolution is. When that binding resolution is brought into being anyone who then applies for an appointment which is not on the scale dealt with by the binding machinery is committing an ethical offence for which you have machinery provided to deal with, and the mere fact of his applying for it brings his conduct into question, and you can proceed accordingly under your ethical rules. It seems to me now that you must have some such rule as Rule 5, because there must always be a period at which your binding resolution is brought into being, even though you have one given fixed scale running throughout the length and breadth of your Association. It may be, and I think probably will be, that in certain Divisions when that time arrives there will be appointments then filled, and it is as to those appointments then filled at the time when your binding resolution becomes operative that the necessity arises for Rule 5. What does Rule 5 provide in that respect? It provides that those members who then hold those appointments must do one of two things—take the necessary steps to

terminate their appointments, or take the necessary steps to bring their engagements up to the terms which the scale provides. I do not quite know why the mover of this resolution to day, and those who are supporting him, want to cut out one thing and leave the other. They are prepared to cut out the part which enables him to get his appointment put upon terms which will not bring him into conflict with the ethical rules, but they leave him with the part that says he must terminate his engagement. When the practitioner accepted the appointment he was not placing himself in the wrong, because there had been no binding resolution in his Division which dealt with the matter. We only bring this under our rules to meet contingencies which do arise, and which may, I think, arise in the future, and give the man involved two ways of getting out of it. I really think, as your legal adviser, that you had better leave it as it is. (Applause.)

Dr FENNISON SMITH. As far as my knowledge goes, the binding resolution was passed before the appointment was made.

The CHAIRMAN. Then you act on the other rule, and not on this one.

Dr FENNISON SMITH. We are acting on the advice of the central office.

The CHAIRMAN. Very likely. I am not saying that the central office is always perfect.

The Chairman added that he was anxious that the meeting should clearly understand what it was voting on. By keeping the rule as it was there was an alternative the practitioner could either resign or get the authority to bring the appointment up to the scale. That contingency had to be provided for in some way. The Solicitor had advised that if the contingency arose which was spoken to by the supporters of the motion, it could be dealt with by proper action by the Division under a different rule.

Dr RENTON, in reply, said that after conferring with the seconder he agreed that if what the Chairman had said was right the rules could be left alone, but he was not quite convinced that what the Chairman said was correct, and would like the matter put to the Representative Body to get their opinion. (Cries of “Vote”.)

The Dartford motion was lost.

The Practice of Psycho-analysis by Medical Practitioners

Dr A LYNDOX (Surrey Branch) moved to instruct the Council to consider certain practices alleged to be prevalent among some medical men practising psycho-analysis, and to report. He contented himself with moving the resolution, leaving his seconder (Dr Parry) to explain it further.

The CHAIRMAN said the motion had presented some difficulty to him. He was quite sure it was in order, and therefore it could be moved, and no doubt there would be some discussion on it. But it was in vague terms. He would like the mover to tell the meeting when he wished anything not reported by the press, if there were such things.

Dr PARRY said if any good were to result from the discussion it must be held in public. The CHAIRMAN said it was for the meeting to decide whether the proceedings should be reported or not. Dr FOTHERGILL asked if Dr Parry could outline what he was going to say, so that the meeting would know what attitude to adopt on the question of publicity. The CHAIRMAN suggested the press might be allowed to report the proceedings on the understanding that they submitted to him what they proposed to publish. Members of the lay press present indicated that such a condition would be unacceptable.

The CHAIRMAN said the position was a difficult one, some of the things which might be said might only be of value if recorded publicly, others it might be undesirable to mention. Dr PARRY said he did not intend to intend to publish, and he was sure the press could be relied on to exercise discretion. The CHAIRMAN said if a point was reached where it became obvious that publicity was undesirable he would have to offer the press the alternatives either of reporting nothing or of submitting to him what they proposed to publish. Dr BARNETT ANDERSON (South Africa) said if the proceedings were to be reported speakers might be obliged to refrain from saying certain things they might wish the meeting to hear.

Dr PARRY said the resolution had received very careful consideration from the Sussex Branch Council, which had taken the advice of some of the leading members of the Association before putting it on the agenda. It was not intended in any way as an attack on psycho-analysis as such, but only on some abuses of which certain practitioners were guilty, and which it was suggested should be investigated by the Council with a view to its taking such action as it thought fit.

Dr J A MASON, interposing, called attention to what Dr Parry had just said, which meant that the British Medical Association was to investigate the manner in which a practitioner conducted his practice. The CHAIRMAN said it was perfectly in order to put such a proposal before the meeting. The meeting had chosen to deal with it.

Dr PARRY, continuing, outlined cases which, in his opinion, showed the necessity for the resolution, which, moreover, only asked the Council to investigate the matter. A judge of the high court recently commented on one such case, and referred to the filthy practices which were taking place, and articles to the same effect had appeared in the newspapers. When judges and journalists took the matter up it was time, he thought, for the profession itself to put its house in order. Dr Parry gave certain specific instances, and contended that he had made out a prima facie case for investigation.

Dr LANGDON-DOWN said if the meeting decided a prima facie case had been made out he was sure the Council would consider it and give such advice as it could. What was under discussion was whether it was worth while to do that. The thing complained of was an offence on the part of certain practitioners in the form of their practice. There were two ways in which a medical practitioner might be held to offend in that respect. It might be said that he held a wrong judgement about medical matters—that he held medical views and doctrines with which his colleagues disagreed. That could only be made an offence by the Association if the whole question were considered and a rule laid down as to what was correct practice and what was incorrect. The other offence which might be alleged was that a doctor did not hold wrong views but deliberately acted against his own judgement. That, except in the rarest cases, was a proposition it would be extremely difficult to produce evidence about, much less prove. Either, therefore, some standard of orthodoxy must be set up for the medical profession, which would be a disastrous thing for the Council or the Representative Body to attempt to do, or, on the other hand, it would be necessary to show that a man did not believe in the doctrine he was teaching and practising, which was almost impossible to prove. A similar position arose in dealing with the question of homoeopathy, so far as mistaken judgement was concerned, and the Association then said it did not profess to decide whether the doctrines of homoeopathy were true or false, it merely laid it down that a man should not, by reason of his alleged belief in homoeopathy, take undue advantage of his fellow practitioners. If those methods were impossible surely the right methods of promulgating truth in medical matters were the Association's scientific meetings, local and general, and the medical press. Most questions of medical conduct related to misconduct alleged by one practitioner towards another. As a general rule, where an individual medical practitioner committed an offence against a member of the public, the remedy lay with that person, and it was no part of the Association's duty to act for the individual member of the public where he had a legal remedy of his own against a member of the profession. On the general question they were more entitled to intervene. He doubted whether it was worth while sending the motion up to the Council.

The CHAIRMAN pointed out that though speaking with all the prestige of chairmanship of the Ethical Committee, Dr Langdon-Down had intervened as an individual member. He had not concluded the discussion by his remarks. He added that it would be a mistake to try to investigate details there and then. If the resolution were passed the Council might possibly bring up a report somewhat in the terms Dr Langdon-Down had mentioned—and it might not. Could Dr Parry define exactly what was meant by "to consider certain practices alleged"? Did he mean cases alleged by him that afternoon or was it a

wandering commission over the whole area of psycho-analysis? It was a vague term which he thought would put the Council in a difficulty if the resolution were passed.

Dr BANCROFT ANDERSON said it was not clear to him that what had been described by Dr Parry, as far as he understood the English language, was either medicine or surgery. It seemed to him to be outside both.

Dr C L DOUGLAS (Life) hoped the resolution would be adopted. The speaker had brought forward some exceedingly important and very serious suggestions or allegations, which were too difficult to be dealt with by the Representative Body. Some of them had not begun to understand the case put before them, because they had not had one-tenth of the evidence for or against to enable them to come to a proper judgement. All that they were asked was to refer the matter to the Council, and in the circumstances that was the soundest thing they could do. The Council could ask for evidence if it desired to have it, and could give what was needed—a considered report for further guidance (Applause).

Dr C O HAWTHORNE said that the suggestion had been made by Dr Langdon-Down that the matter was one which came within the authority of the Science Committee. He repudiated that suggestion. Science was associated with liberty of thought, and not with an endeavour to impose restrictions. His principal objection to the reference of the matter to the Council was that there were already existing tribunals by which indictments of the sort put forward by Dr Parry could be investigated. In one of the cases a medical practitioner did not appear to be concerned. If there was an offence committed by an individual who was not a medical practitioner it was a case for the police and not for the Association. If there was evidence against medical practitioners competent to support the charges which were suggested by Dr Parry the investigation could surely be conducted by the General Medical Council. He appealed to the meeting to say that, on the whole, the best thing to be done was to leave such charges to be dealt with by the proper authorities.

The CHAIRMAN of the Council agreed with the ideas put forward by the Chairman of the Scottish Committee, Dr Douglas, but he could not help feeling that the form in which the resolution was at present drafted rather went further than some would wish. It would bind the Council to investigate certain matters the details of which were at the moment, for very good reasons, left vague. Many cases were matters for the legal authorities and others were matters for the General Medical Council. There might be some residuum that could be dealt with internally by the British Medical Association, or which might be dealt with by the Association arranging to put forward representations in other quarters. The object aimed at would surely be met by Dr Parry's resolution being referred to the Council. If that were done, the Council would not be bound. The meeting would be expressing the opinion that the matter was one that might be referred to the Council so that it might investigate it and see in what way action could be taken. On cognate subjects the Association took action in many directions which were not reported in the annual proceedings from year to year. If it could be so arranged that Dr Parry's resolution was referred to the Council or to an appropriate committee, Dr Parry and other people might give evidence that would enable the Council or the committee to decide whether the Association could usefully and safely take action. It seemed to him that it would be hazardous to go beyond that.

Dr PARRY in reply said that he was very grateful to Dr Bolum for his suggestion. He asked the meeting not to allow itself to be led astray by the chairman of important committees. Both Dr Langdon-Down and Dr Hawthorne had he thought drawn red herrings across the track. He had never attempted to suggest to the Council that it should set up a standard of orthodoxy, nor had he attempted to curtail liberty of thought in any way. All that he wanted the Representative Meeting to do was to ask the Council if it considered it advisable to give further consideration to the subject. If the Council said "We do not think that we can do anything" that

would be the end of the matter so far as the Council was concerned. The Association would be committed to very little if the resolution were adopted, but it would be keeping a hand on a matter in regard to which, if it did not move, it would be led by outside bodies. It was necessary for the Association itself to do something or it would have it done for it.

The CHAIRMAN said that the line between passing the resolution as it stood and referring it to the Council was a little thin, but it was important. He understood the mover and the seconder to consent to the resolution being referred to the Council. He would therefore put the resolution in the following form: "That the motion standing in the name of Sussex be referred to the Council for consideration."

This motion was carried.

THE NON-PANEL COMMITTEE

Dr J STUBBS (Chairman of the Non-Panel Committee) moved approval of the section of the Report of Council under that head. He said that his committee had applied itself very assiduously to the consideration of evidence which might be given before the Royal Commission. It had not been able to convince the larger committee to which the preparation of evidence was entrusted of the rightness of its case, it was overborne by *force majeure*. At the same time, he saw some distinct signs of grace in the Memorandum of Evidence as presented, and he hoped that when some future memorandum was put forward the views of his committee would be more fully represented.

This section of the report was approved.

NATIONAL HEALTH INSURANCE

Dr H G DAIN (Chairman of the Insurance Acts Committee) moved the approval of the portion of the Report and Supplementary Report under "National Health Insurance." The Insurance Acts Committee had taken its share in the preparation of a report which was presented to the Royal Commission. That was the work of a separate committee and was the subject of a separate report. One or two rather important matters had been dealt with during the year. The new regulation providing for ophthalmic benefit through approved societies had been put into force during the present week. The Association had set up a list of ophthalmic surgeons who were prepared to accept the fees under that scale, and there were now nearly 600 names on the list. With regard to the burning question of the disciplinary action of the Ministry, there had been some difficult cases. Last year, as members were aware, the Association had taken serious exception to a case in which two practitioners were fined £1,000. The Insurance Acts Committee had succeeded, by its representations to the Ministry, in obtaining a remission of the remainder of the fine imposed upon those gentlemen in Lancashire, and a sum of about £400 which had been paid was considered by the Ministry to be a sufficient penalty for the offence, and no further deduction would be made from their emoluments. The Committee had had a personal interview with the Minister, and at that interview it laid before him four definite principles which it considered should cover all cases on which the Ministry had to issue judgement. Those principles were set out in paragraph 42 of the evidence before the Royal Commission, and the Ministry had agreed that the principles set out were, on the whole, quite fair. The Insurance Acts Committee had, by its action, very usefully drawn attention to what it considered to be infractions of those principles, and that might cause more care to be exercised in future to see that regard was had to them before judgements were issued. Dr Dain went on to say that the balance sheet showed a net increase of some £13,000 in the funds of the National Insurance Defence Trust, bringing those funds up to about £56,000 at the end of last year. The figure to-day, he believed, was about £73,000. The Committee had considered the uses to which that money should be put, and had decided that the interest from it should be used to a greater extent in defraying the expenses of the Insurance Acts Committee and certain activities of the Conference. The time was not far distant when that Committee would have to consider at

what amount the fund should be considered sufficient for organization purposes, but meanwhile it was hoped that the Panel Committees—and particularly those which were late in starting to subscribe—would continue their contributions, so that the time when no further subscriptions were required might be brought nearer. He did not know what sum should be fixed, but in any case it would be some time before that position was reached. Some committees had provided a great deal and some very little, he hoped the latter would try to make up their leeway.

Practitioners' Right of Appeal to the Courts

Dr H J M MILBANK-SMITH (Chichester and Worthing, and Horsham) moved to instruct the Council, when consulting Divisions with regard to any suggested amendments of or additions to the policy of the Association in reference to the Insurance Acts, to include for consideration the following proposal:

That in addition to the right now enjoyed of appeal to the courts on the ground of improper procedure appeal to the High Court shall be legitimate against any penalty other than removal from the panel, imposed upon a practitioner by the Ministry.

Some might consider, he said, that the resolution was unnecessary, since the Association had just given its evidence to the Royal Commission, and that evidence was the result of a meeting in London with representatives of the Panel Committees. The reason the resolution was put forward was that certain things had happened since which had caused a great deal of distress amongst insurance practitioners generally. The fact that the finding of the Ministry was often not in accordance with that of the committee which had carefully considered the case was a grievance which was deeply felt, and in his opinion the evidence offered by the Association might have been quite different had the motion by Chesham, which was only lost by a small majority, at the last Annual Representative Meeting been accepted. Had the two London cases which had been mentioned been published in the press prior to the meeting at which it was considered, he felt certain the motion put forward by Chesham would have been passed by the necessary majority. He would have liked the resolution to be stronger. The words "other than removal from the panel" had been inserted because the Association's recommendation to the Royal Commission was that before a practitioner was removed from the panel the matter should be referred to a tribunal of the medical profession. That, if it could be achieved, would be satisfactory. The result of a recent appeal completely reversed the whole practice. Exactly the same thing would apply in the case of any reference to the High Court where an appeal was upheld. On the other hand, the Ministry would be extremely careful before he gave decisions which might not be upheld by the appeal. Through recent representations to the Ministry the position was very much more satisfactory than it was before, but there was no certainty of continuity. Ministers changed ("Heu, heu"). The passing of the resolution would make it known to the medical profession that the matter would be under the consideration of the Council and would be referred back to it when the report of the Commission was published.

Dr L J PIERCE (Chester and Crewe) said that while his committee was keen upon this matter he received no specific instructions to support the motion. The recent interview with the Minister (SUPPLEMENT, June 27th, p. 280) made such a considerable change in the situation that they might possibly be influenced to drop the matter, but he trusted the question would be kept alive. An appeal to the High Court made the position clear, and he could not follow the argument that that appeal was unconstitutional. He understood that the judges of the High Court themselves did not regard the matter as closed. National health insurance had convicted private practitioners, not into Statism, but into people who had a new relation to their patients. If that relation were so altered as to make the patients interfered with, so to speak, by a third party, it would alter the whole principles of justice between the two contracting parties—who were not the Insurance Committee or the State but the doctor and patient—and eventually

the common law of the land would be brought to adjust the differences between them. What was needed was the right of appeal to the High Court in the last event. Machinery of a special character ought to be erected, and the recommendations of the Council tended to create it, but in view of the recent legal cases that machinery would not deal with all possible eventualities. Right of appeal to the High Court was essential as a safety valve. He instanced a recent case in which the Minister was about to give his judgement, but the patient appealed to the common law, and he withheld his judgement pending the result. That was a one-sided state of affairs, because it gave to the patient a right which the doctor had not. At present the profession was deprived of a right of citizenship which they ought to enjoy. (Applause.)

Dr FOTHERGILL asked Dr DAIN whether, if the matter were sent down for consideration, the pros and cons, so far as they could be obtained, would be fully set forth. The CHAIRMAN said that, as the question was one of order, it should be addressed to him. If the motion were carried, he would have to rule that it bound the Council to send down to the Divisions the exact form of words used and no others for their consideration. They would not be asked to give their opinion upon the whole subject. Dr FOTHERGILL submitted that the Council might put in other considerations also. The CHAIRMAN reported that if the resolution were carried its exact proposition and no other would have to be submitted to the Divisions.

Dr DAIN asked the representative of Chichester and Worthing and Harsham to withdraw the resolution, because the whole profession—not only the Representative Meeting, but the Conference of Local Medical and Panel Committees—had agreed on certain things which were given in evidence before the Royal Commission—that where it was a question of the removal of a doctor from the panel, before judgement was made effective the case should be submitted to a purely medical tribunal, and where the fine was considered to be excessive he should have the right of appeal to the courts. The profession had formed and expressed its opinion, and the passing of such a resolution as was before the meeting would not serve any useful purpose.

The CHAIRMAN said that it was important that the Representative Body should not get into such a position that it was asking something different from that which the Conference of Local Medical and Panel Committees had done—namely, that there should be an appeal to the courts only in those cases in which the resolution said there should be an appeal. As there was no danger of the matter being lost sight of, he asked the mover and seconder of the resolution whether they were content with the assurance of the Chairman of the Committee and were willing to withdraw the resolution.

The mover and seconder of the resolution declined to withdraw it.

Dr J. CANTLEY (Salford) moved an amendment, that the words after "penalty" ("other than removal from the panel imposed upon a practitioner by the Minister") be deleted.

The CHAIRMAN said the amendment was in order, but what had been read out was not the full resolution before the meeting moved by Dr Milbank-Smith. That resolution prescribed the exact form in which the Council was compelled to submit the resolution to the Divisions.

Dr DAIN hoped that the Representative Meeting would not accept the amendment. As the result of the Conference, a policy had been arrived at which the Association was proceeding to put forward—the policy that there should be a right of appeal to the courts in cases of an excessive pecuniary fine and that cases of removal from the panel should be dealt with by a medical tribunal. To reopen that policy and to refer it back again and to find out whether the Divisions wished to have it altered was not desirable having regard to the fact that it had just been agreed to. The policy was a perfectly sound one, and its adoption would very much improve the position of insurance practitioners.

In answer to a question by Dr J. A. MACDONALD Dr DAIN said that the power of removal could not be used until after the opinion of a medical body had been obtained. The

CHAIRMAN said that the desire of the Association was to go further. It asked that the Minister should not have power to remove from the panel except with the acquiescence or the medical tribunal.

Dr Cantley's amendment was put and lost.

Dr MILBANK-SMITH, replying on the discussion, pointed out that the fine in each of the two cases which had become public property quite recently was a very small one, and that an appeal on the amount would have been ridiculous. The insurance practitioners wanted to know that he had the safeguard that, if a similar case occurred again, he would have the power of appeal.

Dr Milbank-Smith's motion was lost by a very large majority.

Dr MOTHERSOLE (Bolton) moved

That the Representative Meeting strongly protests against the action of the Minister of Health in penalizing Dr X for an alleged offence of which the Committee of Inquiry has declared that Dr X was not guilty and that the charge ought not to have been brought.

He said that his Division wished him to bring the motion forward because of its importance to the members of the profession, not only as medical men, but as citizens of the freest country in the world. The case was that of a doctor who did not take a swab from a throat. The *Times* was moved to a leader on the subject called "Perils of the Panel." The *BRITISH MEDICAL JOURNAL* also had a note entitled "Acquitted—but fined." Everybody had heard of a famous brand of justice called "Jedburgh justice," under which a man was hanged first and tried afterwards. The Minister of Health had provided a new kind of justice. It was new, though the furious or infamous Star Chamber might have had some connexion with it. When the deputation from the Insurance Acts Committee was interviewing the Minister of Health, it spoke of the strong feeling existing in the profession, and the Minister of Health said that he wanted to see the basis of the statement made. It was only right that the Representative Meeting should show to some extent what was the feeling in the profession on the point.

Dr DAIN did not think that the mover of the resolution could be congratulated on the accuracy with which he had presented the case. It was not accurate to say that the doctor was found not guilty of not having taken a swab. What he was found not guilty of was gross negligence. In the recent interview with the Minister the particular case was used as an example of the principle that the Association could not consent to any authority setting up standards of treatment, that the professional standard was laid down by the General Medical Council, and that the Association would not consent to the judgement of the practitioner being made subject to consideration by officials of the Ministry who had not even heard the evidence, but had only read the report of the case. The principle that was then enunciated was accepted by the Minister of Health. The resolution really came too late. A strong protest had been made against the action of the Ministry. The resolution asked that such a protest should be made. The Minister, in the presence of his officers and with their advice, had accepted the principle which had been laid down. Before any further steps were taken by the Association it ought to see what effect resulted from the interview which had taken place. He hoped the Representative Meeting would not ask the Council to make any further protest with regard to this particular case.

The CHAIRMAN said that the protest which had been made based upon this particular case emphasized the principle which it was desired to establish. That principle had been accepted by the Minister.

Dr JOHNSON SMITH desired to move that the meeting proceed to the next business, the matter having been thoroughly ventilated.

Dr WALLACE HENRY thought that if a resolution to proceed to the next business were moved it might be misunderstood. He moved and Dr J. F. WARRER seconded, that the meeting approve the action of the Insurance Acts Committee in protesting in this particular case.

Dr MOTHERSOLE agreed with this course and was willing to withdraw his motion in its favour. He had, he said, been dealing merely with the injustice of penalizing a man

after he had been tried and found not guilty. His resolution was intended to support and strengthen the hands of the Insurance Acts Committee.

The meeting signified its assent to the withdrawal of Dr. Mothersole's resolution.

The CHAIRMAN said that some who were present at the interview with the Minister of Health were of opinion that what the Minister felt most was that he personally was being accused of doing something more objectionable than previous Ministers had done, and that was something which it was certainly not desired to convey.

Dr. DAIN remarked that the evidence given before the Royal Commission was not finally the business of the Insurance Acts Committee at all, but was the responsibility of the Council.

The CHAIRMAN said that Dr. Wallace Henry had elaborated his resolution so that it read as follows:

That this meeting approves the action of the Insurance Acts Committee in protesting in the case of Dr. X and welcomes the declaration of the Minister of Health that he accepts the principle put forward by the deputation.

The motion in this form was carried.

The Evidence before the Royal Commission

On the general motion to approve the Report, Mr. E. B. TURNER wished to draw the attention of the meeting to a precedent which had been set up in the presentation of the evidence to the Royal Commission, which seemed to him and many others extremely dangerous, and likely to destroy the democratic constitution of the Association. The Representative Meeting was the supreme body of the Association, and alone had the power to give expression to the opinion of the Association, to put the imprimatur or the Association upon acts done, and to determine the policy. The Council was the executive body of the Association, working under the Representative Body. The Council could express an opinion of its own, but it was the opinion of the Council, not of the Association. The Council might initiate new policy on the reports from the standing committees or from *ad hoc* committees set up by itself, which policy must come before the Divisions and before the Representative Meeting before it became the policy of the Association. It was right for the Council to take action, and take action promptly, within its powers and within the policy of the Association, but the evidence which had been laid before the Royal Commission had not been submitted to the Representative Body as such. It was submitted to a body consisting of the members of the Representative Body disembodied, and diluted with a very strong infusion of the Panel Conference—a body possessing no statutory authority whatever in the Association. He was very jealous of the rights and privileges and offices of the Representative Meeting.

The CHAIRMAN OF COUNCIL said he would be glad to have a confirmation of the impression he had at the time the meetings in question were taking place—namely, that the Representative Body entered with cheerfulness and alacrity into the method by which an endeavour was made to obtain the views of the whole profession ("Hear, hear"). There might be some who thought that the technicalities of a constitution should override the necessities of an occasion such as that which had arisen, but he was not one of them. The Association had many times disregarded the strictly legal rights of one or other of its bodies in order to be sure that there should be no vestige of suspicion that it was endeavouring to put forward, as the view of the profession as a whole, something in which people outside might conceivably have had no voice and the procedure adopted on the occasion now under discussion was eminently calculated to elicit the opinion of all sections of the profession. He believed the Commission and the Government departments who were interviewed were satisfied that the Council had obtained the views of the profession as a whole. The members of the Representative Body took part as individuals in the Conference and expressed their views and the occasion was obviously one when the Association threw aside all narrow restrictive conditions and tried to find out the opinion of the medical men of the nation ("Hear, hear"). If the Council had acted unwisely the meeting

should say so, but it was his firm conviction that it had acted properly, and that the Representative Body would unhesitatingly approve.

The CHAIRMAN said he could, he thought, be trusted not to give away any of the privileges or powers of the Representative Body. The evidence before the Royal Commission was presented, not as the evidence of the Representative Body, but as the evidence of the Council arrived at after adopting a certain procedure and calling a special conference. The consultation of the Divisions and of the whole profession, the calling of the special conference, and the fact that the Representative Body did not sit alone, but with others, were all set out in the preamble to that evidence, and the Royal Commission asked certain questions about it. It was made clear to the Commission that the evidence was presented to them on behalf of the whole profession, so far as any body could speak on its behalf, by the Council of the Association, after it had taken immense trouble to go through the particular procedure designed to ascertain that opinion. The Council now presented a report of what it had done, and it was for the Representative Body to censure or to endorse its action. To endorse it did not mean to endorse every item of the evidence submitted, but to approve the way in which that evidence was procured, the way in which the Council formed its opinion on it, and the fact that it presented that evidence to the Royal Commission, not in the name of the Representative Body, but of the whole profession. By approving the motion submitted by Dr. Dain that would be done.

Mr. TURNER wished to ask the Solicitor whether everything he himself had said with regard to the powers of the Representative Body was not correct. The CHAIRMAN said that as far as he could recollect, Mr. Turner had said nothing which was against the proper interpretation of the constitution of the Representative Body. Mr. TURNER said he had stated that the Representative Body was the only body which could give the imprimatur of the Association to any evidence or in any way go to work contrary to the previously declared policy of the Association. The CHAIRMAN said he had already mentioned that it was made clear to the Royal Commission that it was the Council of the Association which, after adopting a certain procedure, tendered the evidence given.

Dr. J. W. BOVE asked whether it was not a fact that a Special Representative Meeting, consisting of the representatives themselves, was held as a preliminary to the joint conference and authorized the action taken by that conference. The CHAIRMAN said that meeting merely authorized the sitting of members of the Representative Body in a conference with representatives of other people. Dr. BOVE said that that made the position legal.

The report of the Council under "National Health Insurance" was approved.

Dr. MOTHERSOLE submitted the second part of his resolution, the first part of which he had already withdrawn. It read:

That the Minister of Health be invited to state what are the functions of a committee of inquiry, and how far its findings are binding on himself.

He did not wish to embarrass the Insurance Acts Committee, and would be willing, if the Chairman of that Committee could assure him that the information could be obtained by other means, to withdraw it.

The CHAIRMAN said the functions of a committee of inquiry were laid down in the regulations.

The amendment was by leave withdrawn, and approval was given to the sections of the Report under "National Insurance."

Co-operative Societies and Insurance Prescriptions

Dr. C. J. KIRK (Darlington) moved:

That the action of the co-operative societies in allowing the prescriptions presented by patients under the Insurance Acts when the patients are also members of the co-operative societies, to rank for dividend is entirely opposed to the spirit of the Acts. It is calculated to encourage malingerers to throw unnecessary work upon the practitioners and mistaking the medical benefit and to bring the work of the Insurance Acts into disrepute.

He asked that the Council might be instructed to press the Minister of Health to remove this abuse. Some months

ago the Darlington members discovered that the local branch of the co-operative society was giving dividend warrants for every prescription handed in by insurance patients. A protest was made to the Insurance Committee, which in turn protested to the local branch of the co-operative society, and received the reply that pending a legal decision on the question the giving of such dividend warrants would be suspended. No warrants had been given since, so that it might be the society had seen the error of its ways. It was felt that was calculated to throw unnecessary work on practitioners administering the Insurance Act, especially if, as was contemplated, that Act was extended to cover dependants.

Dr DAVY asked whether Dr KIRK would consent to an alteration to refer the resolution to the Council, which would pass it to the Insurance Acts Committee for investigation and, if necessary, lay the facts before the Minister.

Dr KIRK accepted the suggestion to refer the resolution to the Council, and in this sense it was agreed to.

The meeting adjourned at 6.15 p.m.

Saturday, July 18th

The meeting resumed at 10 a.m., under the chairmanship of Dr BRACKENBURY.

ORGANIZATION

The Membership of the Association

Dr MORTON MACKENZIE (Chairman of the Organization Committee) said the membership of the Association the previous day stood at 29,680 (Applause). There was an increase in 1924 of 2,300, and a further increase of 1,250 in the last six months. The membership was now 3,000 more than ever before. When, as Chairman of the Propaganda Subcommittee, he inaugurated the chart of membership hanging above the platform, he never expected to see the figures go right off the chart as they had done. The increase was most gratifying, but he must not be expected to be able to continue to report such enormous increases. The entries into the profession, in the natural course of events, would not be so numerous in the next few years as they had been in the last five. By the efforts of the Propaganda Subcommittee nearly every non-member who might reasonably be hoped to join the Association had become a member. The increase was due to various causes. It was due not only to the very good work, and the increasing amount of work, done at headquarters, but also to the tremendous field for recruiting which had been discovered among the newly qualified. That was a field which ten years ago had not been explored as it ought to have been. It was owing to his predecessor, Mr Russell Combe, that it had been explored. It had proved a very prolific source. He wanted specially to mention the names of four areas and the names of certain gentlemen connected with them who had done very good work for the Association in this regard. The names were Newcastle, Dr Farquhar Murray, Glasgow, Dr Allan and Dr McCutcheon, Liverpool Dr Matthews, and Sheffield Dr Barr.

Bureau for Locumtenents and Assistants

Dr MORTON MACKENZIE then moved as a recommendation of Council:

That a bureau for the provision of locumtenents and assistants with power for further expansion be formed under the auspices of the Association to operate in such centres as may be deemed desirable and that the organization be set up under the control of the Association by means of (a) a separate limited liability company or (b) a society registered under the Friendly Societies Act whichever may be found the more suitable.

He said that this concerned a new activity of the Association. It was a rather radical suggestion perhaps that the Association should start this fresh work, but the proposal had not been put forward without very good reason. Last year the Council did not feel quite able to embark on it, but this year the Council and the Organization Committee had unanimously decided to ask the Association to take the matter up. The great reason why the work should be undertaken was that it was necessary to do

something for the newly qualified man. The Association, in connexion with its arrangements with the Society of Medical Officers of Health, was asking its younger members to refrain from applying for posts which meant a great deal to them, and it was providing little in return. There was a real need for such bureaux in provincial centres. Newcastle and Edinburgh had set up bureaux of their own. Manchester had set up a bureau on somewhat different lines under the auspices of the Local Medical Committee. Newcastle and Edinburgh were acting under the auspices of the Association, and their legal position was a little uncertain. It was hoped that it would be regularized by the adoption of the proposals he was about to make. Another factor in the situation was the work of Dr Farquhar Murray in Newcastle, which could not be spoken of too highly. Dr Farquhar Murray was an enthusiast, he had devoted an enormous amount of time and trouble to the matter. He ran the bureau almost without charge to its clients purely as propaganda work for the Association, and it had produced a tremendous effect in the Newcastle area. Another reason for the proposal was that there was a growing feeling that, with the removal to the New House, the time had arrived when the Association should undertake everything for medical men. What were the disadvantages connected with the proposal? The Association could not legally undertake the work itself, but, thanks to the suggestions of the Financial Committee, it would be possible practically to perfect an organization which, while under the control of the Association, would be a separate entity. If the resolution were adopted it would be possible within a very few weeks to register a limited liability company which would be able to do the work for the Association. A difficulty in the way was that of finding the voluntary workers, but there was in view in every area a man who, it was hoped, would take up the work. The adoption of the resolution he was now moving would merely authorize the registration of a limited liability company. It was hoped that the agencies in Newcastle, Edinburgh, and Manchester could come in when the company was registered, and it was hoped to establish bureaux in Birmingham, Bristol, Leeds, Liverpool, Sheffield, Belfast, Dublin, Aberdeen, Dundee, and Glasgow, and, later on, Cardiff. There were certain details which he was going to ask the Representative Meeting to leave to the Council to decide.

Dr MACKENZIE said, in reply to questions, that after careful exploration of the question the Organization Committee was unanimously convinced that a limited liability company offered better means than a society registered under the Friendly Societies Act.

Dr J. STEVENS suggested that the word "bureau" be used instead of "a bureau," and that the words "to operate" be left out.

The CHAIRMAN said he would ask Dr Stevens to move an amendment after the amendment on the paper had been dealt with. In the absence of the representative of North-East Essex, the Chairman moved on behalf of that Division that the recommendation be referred back for further consideration, and, after calling for a show of hands, announced that the amendment was "lost unanimously."

Dr STEVENS then formally moved as an amendment his suggestion to substitute "bureau" for "a bureau" and to delete the words "to operate." Dr P. MACDONALD formally seconded. The amendment was lost.

Dr J. A. MACDONALD proposed instead of the words "to operate" the phrase "with branches" ("that a bureau be formed in such centres"). Dr STEVENS said this suggestion met his point and seconded Dr MACKENZIE's suggestion and the amendment was agreed to.

Dr F. C. MANNING said the proposal was to set up an organization under the control of the Association, but he did not see how the organization was going to control it unless the Association kept all the shares in it to itself. Even so he had a great dread of bureaucracy, and feared lest the working of the company should never come before the Representative Meeting at all. He wanted some safeguard to ensure that the Representative Meeting should be able to exert some control and that the company should communicate with the meeting and let it know what was being done.

Dr MACKENZIE said the proposed company would be under the Association's control, so far as it could be provided for under its Articles. Most of the shares would be held by the Association, and most of the directors would be members of the Association, but there might be some outside directors. As regards the control by the Representative Body, the annual meeting of the company would be held during the session of the Representative Meeting so that members of that body could be present at the annual meeting of the company.

Dr JOHNSON SMITH asked whether the proposed company would be a private or a public limited company. There was, he said, a great deal of difference between the two.

The FINANCIAL SECRETARY said the intention was that it should be a private limited liability company with shares of two classes, the "A" shares having the voting power and being held by officers and officials of the Association.

Dr E. R. FOTHERGILL said the members of the Representative Body, not being shareholders of the limited liability company, would have no power to be present at or take part in the meetings of the company, so it was difficult to see in what way the Representative Body could control the company.

The FINANCIAL SECRETARY said the voting power would be held by officers and officials of the Association, and the Representative Body could get rid of them if it disapproved of their action.

Dr JOHNSON SMITH said if it was to be possible to reappoint the directors then shares would have to be held on transfer. He agreed with Dr Fothergill that the Association could have very little control over the directorate.

Dr J. A. MACDONALD asked whether, should an office be transferred to someone else at the next election, his votes would be transferred also, or whether they would be retained by the person who already held them.

The FINANCIAL SECRETARY said the votes would be transferred with the shares. There was nothing to prevent a man holding shares and signing a blank transfer which could be used by the directors when required. One of the advantages of a private limited company was that the shares were at the disposal of the directors.

Dr BARCROFT ANDERSON thought all objections would be met if it could be arranged that there were as many bearer shares as there were members of the Representative Body, so that all those attending the Representative Body meetings would be shareholders.

Dr H. C. BRISTOW asked whether the directors could be got rid of as directors without depriving them of their positions as officers of the Association.

The FINANCIAL SECRETARY said the answer was in the negative. The suggestion that every member of the Representative Body should be a shareholder was impracticable, because the number of shareholders in a private limited liability company was restricted by law to fifty.

The CHAIRMAN said that the first point on which the Committee would like to have the opinion of the Representative Body was whether it wished a bureau of the kind suggested to be established under the auspices and, as far as possible, under the control of the Association. (Cries of "Yes.") The discussion recently had been confined to the details of how that should be done, there had been no discussion on the principle, which seemed to be accepted. He would like the debate to be directed in the first place to the question of principle—whether the bureau should be set up or not.

Dr T. R. DAVIES (South-West Wales) thought there was every prospect of the company acquiring a monopoly in the agency business. There was a subsequent motion dealing with the remuneration of assistants in general practice, and the two questions were connected. If the Association laid down a minimum for the payment of assistants in general practice, and at the same time acquired a monopoly in the agency business, it could enforce that minimum, but it was doubtful whether, in view of the various circumstances which might prevail, it was desirable to enforce even so moderate a minimum as that suggested.

Mr E. B. TERNER said the Association should be absolutely certain before proceeding further, that it was on a sound legal basis, because it was attempting to do in a

roundabout way what it was not allowed to do. He wondered whether the precautions taken for that purpose would not be swept away by a judge if the question came before a court of law.

Dr C. J. KIRK (Darlington) said that doctors preferred men of experience as locumtenents. The fact that the bureau it was proposed to establish would be in competition with other bureaux providing locumtenents might lead to its having to provide, as the others did, men with a certain amount of experience, thus interfering with one of its primary objects, the helping of the newly qualified man. If the bureau reported only to the limited liability company, and not to the Representative Meeting, he did not see how the Representative Meeting could safeguard the interests of the newly qualified man.

Colonel J. W. F. RAIT regarded Mr Turner's suggestion, that the matter should be referred to the Solicitor, as most important. With his legal skill he would be able to find some method by which the Association would be able to undertake the duty proposed, and by which the profits, if any, would all fall to the benefit of the Association.

Dr MORTON MACKENZIE said the Association had a first-class business man in charge of its business affairs, and he was taking every possible step to safeguard its interests, an Organization Committee, which had been checking very carefully what he did, and a Solicitor, to whom the articles and memorandum of the company would be sent directly the proposal was passed. As far as was humanly possible, what everybody desired was going to be done.

The CHAIRMAN said the Solicitor's view was that the meeting must first approve or disapprove the principle. When the exact form of words of the memorandum was submitted to him it would be very closely scrutinized from a legal point of view.

Dr F. RADCLIFFE asked to whom the articles of association would be submitted before adoption—to the Representative Body, the Council, or whom?

Dr MACKENZIE said that must be left to the meeting, but he might express the Committee's preferences. It was very important that the company should be registered as quickly as possible. If the meeting was not confident the Committee could cope with the matter they were prepared to submit it to the Council, but that would mean a delay of three months. If it was to be submitted to the Representative Body that would hang it up for a year, which would be the greatest possible mistake.

Dr FOTHERGILL: If to neither the Council nor the Representative Body, to whom will it go?

The CHAIRMAN said that if the meeting approved the principle, without saying anything else it wished done, everything was in order for the principle to be carried into effect as rapidly as possible, with proper legal and business safeguards.

Sir JENNIFER VERRELL said that at this time of day it was a little late for the Association to trouble itself about details. Years ago they were told by many people that by means of a limited liability company the Association could do many things that it could not do by itself. He suggested the meeting should content itself with accepting the principle, and leave the whole matter in the hands which had always proved reliable. (Applause.)

Dr D. C. KIRKHOPE doubted whether the meeting could accept the principle until it was satisfied that the Association was legally able to control a limited liability company.

The TREASURER (Mr Bishop Harman) said the Association owed it to the younger brethren to adopt the principle. The only question was as to ways and means. The law was most accommodating, and allowed all well disposed persons to carry out their business to the widest possible extent, with the least hindbound principles. The Solicitor would confirm that. (Laughter.) There was no difficulty in carrying the matter through in a perfectly legal and straightforward way. The Association could control a limited liability company in the same way as it controlled the several trusts already established under its regis. He urged the meeting to pass the principle and leave details to the proper officials. At first he was strongly biased in

favour of a friendly society, but had been convinced of the superior advantages of a private company.

The CHAIRMAN said the proposition committed the meeting to the principle of establishing a bureau in various places in the country, and left the officers of the Association to carry the matter through on sound legal and business principles, without reporting details to the Representative Body. Was that agreed? ("Agreed.")

The motion was carried with one dissident.

Dr MACKENZIE further moved that the questions of confining the activities of the bureau to provincial centres, of the bureau subsequently taking over the work of transfer of practices, and of limiting the activities of the bureau to newly qualified practitioners up to the end of the fourth year after registration, be reserved for further consideration by the Council. He asked the meeting to delegate the decision on these details to the Council, because they would have to be settled before the Representative Body met next year. The time was not ripe for a full discussion of the details, and the matter should not be delayed, because bureaux were being formed, and every fresh one formed independently increased the difficulty of co-ordination. Referring to the question of confining the activities of the bureau to provincial centres, he said that the question whether to open in London or not was a very difficult one. The advantages rather appeared to outweigh the disadvantages. Whether the Association should open on its own account or whether it should do the work through any existing agency was also a matter of discussion and of delicate negotiation. The desire was to give the Branch bureaux as much local option as possible. As to the limitation of the activities of the Association to men in the first four years, a little consideration showed that such a limitation would be practically impossible. He did not think that the Organization Committee would recommend the Council to go further into that matter.

The motion was carried.

Dr MACKENZIE finally moved that in any such scheme instituted as above, preferential treatment be given to members of the British Medical Association.

Dr R. D. MOTHERSOLE (Bolton) asked whether preferential treatment referred to financial treatment only or whether it covered wider matters. Dr MACKENZIE said that it was suggested that the matter should be left to the decision of each bureau.

The motion was carried with three dissidents.

Individual Medical Defence

Dr MORTON MACKENZIE moved

That the Council be authorized to prepare a draft scheme (as to a separate medical defence organization as outlined in the Annual Report of Council) on the basis of an annual subscription of £1 in order to a certain number of members who desire the initiation of such a scheme and would be prepared to join in its membership.

Dr F. C. MURLEY raised the question whether this motion was in order, in view of the fact that it had been the subject of a decisive vote at the last Annual Representative Meeting. The CHAIRMAN said that it was perfectly in order.

Dr MACKENZIE, proceeding, said that there was a full discussion on the subject last year at Bradford, and the year before at Portsmouth. On both those occasions the matter was raised by the Warrington Division. In 1923 it asked the Council to get the articles and by-laws altered, and in 1924 it brought forward a motion on somewhat similar lines. On each occasion the Council felt obliged to resist the Warrington proposal. In 1923 the proposal made by the Warrington Division was lost by a small majority, and in 1924 a proposal by Manchester was lost by 53 votes to 76. It was obvious that there was a very large number of who earnestly desired that the Association should undertake medical defence. The Organization Committee persuaded the Council to allow it to explore the whole subject, and it had been explored as it had never been before. Mr Ferris Scott had been most carefully into the financial question. The history of the whole movement had been gone into most fully by Mr Lawrence (the Intelligence Officer), whom he would like to congratulate on what appeared in the JOURNAL about 18 or 20 the previous day

(July 18th, p. 135) (Applause). Dr Cox and he had gone into every detail of the varieties of medical defence. They had carried on a triangular correspondence with Mr Ferris Scott. Eventually a special meeting of the Organization Committee was held which went into the whole subject in a very thorough manner. The argument about the Association undertaking medical defence had been going on for fifty years. Dr Brown said in 1894 that he had been wrestling with the Council on the subject for the preceding twenty years. He (Dr Mackenzie) hoped that in twenty years' time his good friends Dr Manson and Dr D'Ewart would be able to say, "It is twenty years ago since we and the Council came to an agreement about medical defence." In 1886 the Essex District of the East Anglian Branch suggested that a small sum should be contributed by every member to a defence fund. In the same year the Medical Defence Union was started in Birmingham and enrolled about sixty members. The suggestion made by the East Anglian Branch fell to the ground on the opinion of the Association's Solicitor and of the two counsel who were consulted that the matter was *ultra vires* as regards the Association. Eight years then passed by, and in 1894, on the recommendation of Dr Sussan, the Council appointed a committee to consider the matter. That committee tried to shift the individual defence on to the General Medical Council, and when its report came up at the 1895 meeting Dr Arthur Welsford opposed it, and brought up a resolution passed by an independent meeting in London. Dr Welsford also stated that he had already got 19 of the 40 Branches then existing to support the resolution—namely, that the Association should undertake medical defence. After discussion Dr Welsford's resolution was passed, and the Council again appointed a special committee, whose report was considered at a special meeting in Birmingham, and after much discussion it was decided by the necessary two-thirds majority to alter the memorandum. The second meeting necessary to alter the memorandum was called at Chislehurst, and a committee was again appointed to prepare a definite scheme for medical defence. This committee reported in favour of an optional scheme, and the Council decided to send it to the Branches, 19 Branches reported in favour and 30 against, and the Council decided not to proceed further, mainly on the ground that only 10 per cent of the members had voted. This raised a storm, and 100 members sent in a requisition for a special meeting, which was called, and after a somewhat stormy discussion Dr Welsford's original resolution was carried by one vote, and it was decided to take a referendum of the whole Association by post. Of the 8,000 who answered, 6,000 were in favour and 2,000 against. The Council decided by 25 to 22 that as only one-third of the members had voted in favour it would take no action. At the next annual meeting, in 1898, this was vigorously opposed, but an amendment to compel the Council to act was lost by 89 votes for and 108 against, and the Council's action was approved. People by that time were getting tired, and in 1899, at Portsmouth, a resolution was passed that the resolution should lie on the table. In 1903 interest was once more aroused in connexion with the constitutional changes. Sir Victor Housley again came on the scene, with others, and a new committee was appointed to consider the matter. The committee reported in favour of a scheme of co-operation with the existing societies, and the voting in the Divisions was again close—45 for and 39 against. Counsel advised that the best means was not to alter the articles of association, but to apply for a charter. That was turned down, and in 1913 and 1914 it was decided by a special meeting of the Representative Body to form a special unlimited fund for medical defence, but the war intervened and nothing had since been done. In reply to those who said it was illegal to bring forward the resolution at all, it was enough to say that the resolution of 1914 had never been repealed. Since then efforts had been made to co-operate with the existing societies, but without success.

There were several varieties of possible medical defence. First, there was full medical defence, such as that afforded by the existing societies for all members. That could be done in two ways—either in conjunction with the existing

societies or in opposition to them. Another possibility was optional full medical defence—optional for such members as desired it, and for them only. Then there was partial medical defence, including that form which one medical society provided at present, by which every legal help was given as far as the doors of the court only. Another suggestion which had been brought up by Dr. Forthgill in 1923 was that the Association might pay such expenses as were not paid by the existing societies. A third suggested form of partial defence was the provision of a legal bureau at the offices of the Association. With a view to shortening the discussion he wished to lay down certain propositions which he thought were incontrovertible: first, that if there were no existing defence societies the work of defence was a work which the Association ought to undertake; secondly, that the Association could not undertake the work under its existing Articles and Memorandum but, as in connexion with locumtenent bureaux, it could be done by a separate organization; thirdly, any form of co-operation with the existing societies was out of the question (this last was a solution for which he had always worked); fourthly, that it was impossible to impose provision for full medical defence on all members, and finally, that none of the forms of medical defence he had outlined was preferable. What was left? There remained the question of full optional medical defence. The advantages of that scheme were that it would satisfy the existing agitation, it would not disquiet members who were satisfied with the existing societies, they would not pay an increased subscription and would not be interfered with, and the Association would be saved a good deal of difficulty in the collection of the extra subscriptions because they could be collected at the same time as the ordinary subscriptions. He could see very few disadvantages. The main disadvantage, in his view, was that the existing societies would not like it, but frankly he had no sympathy with them—they had had the chance of co-operating, and had turned it down. He did not think they could do much harm. Another disadvantage, of which he was not very frightened, was that both the London defence societies had accumulated reserve funds, while the Association's society, on starting, would have no reserve fund, but it would have the backing of the Association, and he thought the backing of the great Association was worth as much as the reserve funds of the societies (Cheers). There were people who thought the Association could not do the work as well as the societies, but the brains in the office of the Association were quite as good as the brains in the offices of the societies.

The crux of the question was finance. He did not think it possible to charge a larger subscription than the societies charged. Mr. Ferris-Scott estimated that £6,500 would be sufficient, but personally he thought £7,000 would be safer, as the new society might have to face a possible future reduction of subscriptions by the existing societies. In order to make certain that there would be sufficient support forthcoming before the society was launched, it would be necessary to circulate a scheme and enclose a stamped postcard to find out whether or some maintained and others doubted, there were 6,500 or 7,000 members who desired to take optional medical defence at an extra subscription. (Applause.)

Before the merits of the question were discussed,

Dr. A. LYNDON (Guildford) moved that the Representative Body express the opinion

That the action of the Council in formulating proposals for the individual medical defence of members being undertaken in connexion with the Association is unconstitutional in view of the decisions of the Representative Body at the Annual Representative Meetings, 1923 and 1924, and a serious encroachment on the rights and privileges of the Representative Body to the general control and direction of the policy and affairs of the Association as defined in Article 31.

He said that this amendment did not raise the question whether it was wise or not wise for the Association to undertake individual medical defence. But it did impugn the action of the Council in bringing forward on its own authority this report this year. In 1923 the Council definitely advised the Representative Body that no action should be taken as regards individual medical defence and

that the work should be left to the existing societies. The Representative Body accepted that advice and rejected the resolution by Warrington and St. Helens "that this meeting is of opinion that the individual defence of members in professional matters should be one of the functions of the Association, and instructs the Council to prepare statistics on the work and cost of ensuring medical defence." In 1924 the Representative Body rejected by 58 to 76 the instruction to the Council by Manchester to formulate a scheme for individual defence. In face of its own considered judgement in 1923 and of the opinion expressed in 1923 and 1924 by the Representative Body, the Council had taken action as regards individual medical defence and had formulated proposals which it suggested should be sent round to the Divisions—all of which things the Representative Body in 1923 and 1924 refused to allow it to do. In Article 31 it was laid down that the general control of the affairs of the Association should be vested in the Representative body. The Representative Body definitely had told the Council that it did not wish this work to be done, and in face of that the Council had brought forward this report. He pressed it upon the meeting that the Council had exceeded its authority, and was encroaching upon the privileges and rights of that meeting.

Mr. E. B. TURNER said that he intended to speak and vote against the Guildford motion. The Council had behaved correctly and constitutionally. The Representative Body was the directing and controlling authority in the Association, but there was no law whatsoever by which a decision made one year stood permanently beyond such time as the Representative Body desired to rescind it. In this matter the Council was absolutely right, and he was certain that anyone who studied the constitution of the Association with an intimate knowledge of its work would vote against this resolution, though not as expressing any opinion on the merits of the discussion afterwards.

Dr. J. S. MARSON (Warrington) said that Dr. Lyndon had brought a serious indictment against the Council, but that had been completely answered by Mr. Turner, and he need not say anything about it.

The CHAIRMAN: But that is the only thing we are at the moment discussing. (Laughter.)

Dr. MARSON went on to say that the indictment was also against the decision of the Representative Body a good many years ago—in 1906 Dr. Mackenzie had said something about the charter. In 1903 the constitution of the Association was altered, and in 1906 the Representative Body found that it could do very little owing to the legal constitution of the Association. It attempted to get its freedom by the method of applying for a charter, and with this charter it hoped it would be able to get individual medical defence amongst many other objects. If this motion were passed it would be a censure on the position of this very body in 1906—because the charter for which it applied was deferred, not by anyone in the Association, but by outside bodies who opposed the application of the Association for the charter. He maintained that this motion by Guildford was of the same character as the opposition that was offered to the application for the charter in 1906.

Dr. J. T. D'EWART (Manchester) said that they were reinstated in the Representative Body to very definite discussion on the things brought before them, and they did not consider that they were bound down by resolutions which were passed some indefinite period ago. They were now told by Guildford that they must be bound down, but why? For several years this resolution had come forward. It met the usual response which fell to the lot of other resolutions. The first year a resolution was listened to, the second year it received a certain measure of support, the third year a good deal of support, and the fourth year it passed. This Guildford proposal was simply a means of bunking discussion in this fourth year. This subject had been dealt with by the Representative Body with increasing thoroughness. They had discussed it from A to Z. The minority in favour of it had gradually increased. Last year, because the Representative Meeting did not instruct the Council to do something, therefore, said Guildford, the meeting told the Council that that thing must not be done. (Laughter.) Which particular decision in which particular

year was to hold good? The years 1923 and 1924 suited Guildford. But what about 1914, when the Council was given specific instructions that it must do certain things which until this year it had not done? He did not blame the Council for not having done what it was instructed to do in 1914. The war excused not only the Council of the Association, but the Government of the county and many other people, for doing things that otherwise they would have done. The Representative Body was quite competent to deal with the matter—let it do it effectively (Applause).

Dr JOHNSON SMITH recalled the days when the Association tried to obtain a charter, chiefly because it wanted to do the very thing resisted by Guildford. At that time a great majority of the members of the Association evinced a desire for what was now proposed, but the charter was not obtained, and the matter hung fire from year to year. Personally he was content with the present arrangement, but a great many men were not. The Council had been perfectly in order in trying to ascertain what support its scheme would obtain. His Division wished the matter to be dealt with in the simplest possible manner.

The CHAIRMAN OF COUNCIL said it was only fair that the constitutional conscience of Guildford should be perfectly satisfied before the Representative Body voted on the resolution. While control of the general policy and affairs of the Association rested with the Representative Body, there must be an executive to watch events between its sessions, so as to direct the attention of the Body to changing circumstances and conditions. He considered the Council would be guilty of a dereliction of duty if it did not from time to time bring forward matters such as the one under discussion.

The amendment by Guildford was lost. Four voted in its favour.

The meeting then came back to the main proposition, which, the CHAIRMAN said, simply was that the Council be authorized to detail a draft scheme and to circulate it, in order to ascertain how many members would be likely to adhere to such a scheme. There were two amendments, one by Liverpool and the other by Cardiff, and it was for the meeting to decide which should be taken first. (Cries of "Cardiff.")

The meeting gave permission for the amendment of Liverpool to be withdrawn.

Dr E COLSTON WILLIAMS (Cardiff) then moved

That as the matter of individual medical defence is being competently dealt with by existing bodies and as it does not appear that the Association could conduct medical defence in any cheaper or better manner and as the provision of individual medical defence is not within the present powers of the Association the Representative Body is of the opinion that the matter should be dropped and that the expense of the proposed referendum of the profession be not incurred but that the Association should bring to the notice of all practitioners especially those recently qualified, the urgent necessity of joining one of the medical defence bodies.

He admitted that if his Division had been as well informed as it would have been had it known all the facts given that morning by Dr Morton Mackenzie, the amendment would have been framed differently. He thought that what was proposed was in principle eminently desirable, but as, according to the report of the Council, a separate organization might be a success if it could get 6,500 members out of a possible 7,000 non-included insured persons, there was so narrow a margin of success for recruitment that the proposition seemed a little doubtful. Having expressed his opinion on that point, his Division would probably be willing to reconsider the matter on its merits.

The CHAIRMAN: Do you withdraw the Cardiff motion?

Dr WILLIAMS: I cannot do that, Sir.

Dr P MACDONALD (York) said that at last year's meeting he spoke in favour of the Association taking up individual medical defence, but he had since become doubtful about the proposal, because there was a disadvantage which the Chairman of the Organization Committee had not touched. Sometimes it would mean defending conduct which was indefensible. That item would be small in the total amount of medical defence, but it would blink so largely in the public eye that it might be a great disadvantage to the Association.

On the other hand the Association might have to decline to concern itself with the defence of certain of its members, and that again would react to its disadvantage. He was supporting the recommendation of the Council, because he agreed it ought to be ascertained what number of members of the Association wished individual medical defence to be undertaken under its auspices.

Mr McADAM ECCLES (Maireboure) raised points which concerned those who taught in the large medical schools and had frequently to direct the young qualified practitioners. When students who passed through his hands at the hospital qualified, he always advised them as to what they should immediately do. It was extraordinary that a number of qualified practitioners forgot that the first thing they should do was to register. The second piece of advice which he always gave was to join a medical defence society, the third was to join the British Medical Association. He put that third because the other two points were so important that he thought that they ought to come first. One question that he was constantly asked was "But cannot I, by joining the British Medical Association, get the advantages of a medical defence society?" Unfortunately the answer he had had to give to that question was "No." He thought the Association could and should take up medical defence. As one of the older members of the profession, he had done his share in supporting a medical defence society, and that society had done its share in helping him. He had belonged to one of the medical defence societies for thirty-five years, and he was exceedingly thankful for all the help that it had given him. If the British Medical Association had had a medical defence side he would have been covered for those thirty-five years, because he had been a member of the Association for that period. He was certain that if the Association took the matter up quite a large number of the young members would say, "It is now worth while to write one cheque only instead of two, and to transfer from the medical defence society to the British Medical Association." It might be thought that a little ingratulation to the existing medical defence societies would be involved, but time was moving on. It was time that the British Medical Association took all the matters concerning the medical profession under its own control.

Dr MACKENZIE said that Dr Fothergill had asked for certain information, and he was now able to give some figures, but they were only estimates, and he could not vouch for their accuracy. The estimated number of members of the British Medical Association in practice in the United Kingdom, if all forms of practice were included, was about 27,000. It was not possible to say how many of those were in medical defence societies. The membership of those societies was somewhere about 20,000. That figure included a large number of dentists. It was from the difference between the two figures that the 7,000 who were estimated to be uninsured would come. Those 7,000 must not be confused with the 7,000 or 6,500 who, it was estimated, would be necessary for the proposed society. Probably many members of the existing medical defence societies would transfer to the new body.

Mr E B TURNER said that he had been instructed to oppose the proposal. He quite agreed that it would be a beautiful and ideal thing for the Association to take over the defence of its members if that were possible, but there were a great many practical difficulties in the way. In the first place it might be found difficult to obtain the 6,500 members. Supposing that they were obtained, there would be £6,500 to commence with but there would be a certain amount of overhead expenditure for salaries, staff, and housing, and the result would be that the £6,500 would be very considerably cut down. Later on upon the agenda there appeared a motion asking the Council to inquire into the causes of so many cases being brought against medical men at the present time. All that sprang from the gigantic damages given in the Hallett case. That case was financed all the way through by one of the medical defence societies from its reserves. Had such a case arisen in the first year or two of that society's existence it would have gone bankrupt or, at any rate, it would not have

been able to finance the case in the way in which it financed the Harnett case. Ever since there had been an insurance society he had been insured in it, and he considered that it would show a very great lack of gratitude if he discontinued his subscription after it had protected him for so many years. He should feel very disinclined to withdraw his subscription from a society with a substantial reserve and put it into one which was commencing with practically no reserves at all, and he thought that a very large number of the members of the Association would share his opinion. If the proposed defence society was formed, then in any case in which it was implicated which came before the General Medical Council, every one of the members of the Association who was on the General Medical Council would have to retire while it was heard.

Dr J. C. MATTHEWS (Liverpool) said that the meeting would have gathered from the withdrawal of the Liverpool amendment that those in charge of it intended definitely to support the amendment from Cardiff. The Liverpool amendment was intended to be in direct opposition to the proposal of the Council. He only withdrew it because of the decision of the Chairman that the wording of it might be taken as a blessing of the Council's scheme. It was very improbable that anything like a sufficient number of members to support the scheme would be obtained. It was estimated that at present there were only 7,000 undefended medical men in the country, and practically the whole of that number would be needed for the scheme. The number of transfers from the existing societies might be small. The members of those societies were content with the moral and financial backing which the societies could give them. In the moral backing of the Association they had every confidence, but the financial backing would, at first, be rather slender. Another difficulty was the prominence that would be given to the name of the Association in certain actions. It was obviously undesirable, whatever might be the case with regard to civil actions, that the British Medical Association should appear in defence of a man brought before the General Medical Council. The medical defence societies had great experience in their work, while there were points in regard to medical defence concerning which the staff of the Association naturally had little experience. His Division therefore opposed the proposal of the Council to pursue the matter further.

Dr DAVID LAWSON said the proposal entailed a fundamental departure from the previous policy of the Association. It meant that a body founded originally to promote the honour and interests of the profession would take up ordinary commercial business. He was not impressed by the assurance that the staff of the Association could run an insurance business successfully. Many insurance offices which started with strong financial resources and were run by men of outstanding ability and a staff whose time was wholly devoted to the work had gone bankrupt. If the organization it was proposed to set up went bankrupt, was it proposed to use the funds of the Association to make up its losses? The reserves held by the Association were not accumulated for that purpose. Many members might wish to have their contribution to an insurance scheme included in the sum they paid to the Association, but that might be effected if the Association would find out how many were prepared to pay the extra amount required and then approach a commercial company and ascertain how much they would take off their rates for these men. If the Association could provide 10,000 or 20,000 clients, it should be able to secure a satisfactory reduction in the terms. That would get over the danger of the Association imperilling its reserves and allow it to remain a professional body and not become a business concern.

Dr JAMES NEAL said he spoke in the capacity of representative of the Hendon Division—(laughter)—and nothing he said must be taken as representing his own views, and still less those of the particular medical defence organization of which he was an official. He was instructed by Hendon to oppose the recommendation of the Council and support the amendment proposed by Cardiff. His Division considered that the requirements of the medical profession in the matter of individual medical defence were fully met by the existing arrangements. An attempt to set up a new

society would be a doubtful experiment from a practical point of view, it offered no advantages, and it might weaken the prestige and influence which, to the great advantage of their members, were possessed by the existing societies. The question had been discussed by the Representative Meeting before, but usually in a somewhat different form—either that the Association itself should undertake the work, or that it should co-operate with existing societies. The issue to-day, however, was whether the Council should be instructed to draft a scheme for a new body, outside the Association but in some way linked with it, a body with no experience of the work and no reserve fund, which would be in competition with organizations already supplying the needs of some 20,000 members of the medical profession. There was no suggestion of co-operation there. He challenged the statement of the Chairman of the Organization Committee that the existing societies had been asked to co-operate and had refused. They had never been asked to co-operate. In 1920 they were asked to grant lower rates of subscription to members of the Association, and in 1922 they were asked to exempt members of the Association from payment of an entrance fee—not a word about co-operation. It was said they returned an abrupt reply to the latter request, but he wished to read a letter written by the Council of the Medical Defence Union to the Council of the Association which controverted that statement.

Dr NOR SCOTT asked if Dr Neal was entitled to give evidence, not as representing the Hendon Division, but on behalf of another organization. The CHAIRMAN said a representative could properly place before the Representative Meeting any information at his disposal which was relevant.

Dr NEAL said the information had been published. The letter read:

'The Council of the Medical Defence Union has debated anxiously and earnestly the suggestion contained in your letter of the 2nd November, 1922. The Council recognizes with gratitude the intention of the British Medical Association to induce medical men who are not yet members of the medical defence societies to become members. It holds that when such intention is translated into action the British Medical Association will be conferring a great benefit upon the profession. The Council of the Medical Defence Union much regrets, however, that it is unable to accede to the suggestion put forward by the British Medical Association, and the reason for this decision is quite simple. The Council conceives, rightly or wrongly that it has a duty to perform to the whole body of the profession and it is unable to satisfy itself that it would be acting in this spirit if it granted a pecuniary advantage to members of the British Medical Association. The Council trusts that this decision will not in any way hinder the very friendly co-operation of the British Medical Association, which it desires to foster, to maintain and to increase.'

That could not be described as abrupt. His Division felt that the present position should be left undisturbed, and that the British Medical Association should continue its work of the collective defence of the profession, leaving to the existing defence societies the work of individual medical defence.

Dr C. SANDERS (Stafford) said all that was proposed was the collection of information. Why the Association, as a scientific body out to do all it could to improve its position, should go out of its way to avoid spending a little money on obtaining definite information on which action could be taken he could not understand. The Association must consider the interests of the medical profession of the future, and of the young men who were coming into it. If as a result of inquiry some scheme were adopted by the Association, although he had no complaint against the medical defence society to which he belonged, he would, as a matter of principle, join the society instituted by the Association.

Dr J. F. WALKER (South Essex) strongly supported the amendment, on the ground that if a defence society were started it would be looked upon as an integral part of the Association, and the Association would lose prestige with the public. If the proposition of the Chairman of the Organization Committee was accepted it would be another case of the wooden horse of Troy, which, under the guise of a gift, proved to be of the most deadly peril.

Dr C. E. DOUGLAS (Fife) thought that the recommendation of the Organization Committee ought to be carried out, and that the amendment of Cardiff should be rejected.

It was a sound proposition that the Council should undertake on behalf of the Association the experiment to find out whether the scheme would be sufficiently supported. He fully sympathized with those who, like himself, were seniors in the profession, who had depended for thirty or forty years upon the existing societies, and who felt a loyalty to those societies, but there were other men coming along, and it was the younger men who would have to do the thing if it was to be done at all.

Dr J LOCKHART LIVINGSTON (Winchester) said he was instructed by his Division to vote against the Council's recommendation, but afterwards he asked for discretion to vote according to his views after he had heard the arguments put forth, and he proposed to exercise that discretion. Most of the speakers seemed to think that they were being asked to commit themselves to a medical defence scheme straight away, whereas all that was being asked for was a preliminary inquiry. There was a considerable body of opinion in the meeting in favour of medical defence being afforded by the Association ("Hear, hear"). There need be no hostility between medical defence undertaken by the Association and the existing medical defence societies, there was room for both ("Hear, hear").

Dr CHRISTINE MURRELL said the proposed new society would either be very closely connected with the Association or it would not. If it was, the practical difficulties would be considerable and might be disastrous to the Association. If it was not, would they not be simply setting up a third medical defence society? ("Hear, hear"). They would all be in favour of doing that if they were dissatisfied with the present societies, but, judging by the discussion, they were not, the general opinion seemed to be that they were doing their work very well. If that were so, was there any point in public policy in setting up a third society—that was to say, if not closely associated in name and prestige with the Association? It would be a considerable advantage to a member who belonged to a protection society that, if he got into professional trouble, he could go to the protection society quietly and get redress without the matter becoming known in his professional and scientific association. Therefore there was an advantage to the individual in having the two things divorced. (Applause.)

Dr A LYMON (Guildford) said he had been instructed by his Division to support the amendment by Cardiff. He repudiated the suggestion that he was in any sense representing the Medical Defence Union. He was as loyal a member of the Association as anybody in the room. Believing that it would be a very unfortunate step for the Association to undertake the work proposed, he was bound to support the Cardiff amendment. It was obvious that legally the proposed new society must be distinct from the Association, and therefore would simply add one more to the societies now existing, which meant another set of offices and paid officers, and the money would have to come out of the pockets of the profession. In the first few years the new society's reserves would be very small. It was only within the last ten or twelve years, during which they had been able to accumulate large reserves, that the Medical Defence Union and the London and Counties Medical Protection Society had been able to carry on their work with conspicuous success. If the proposed society were started it must in the nature of things be in opposition to the existing societies, which would mean one society of medical men fighting against another. No society undertook to defend a member in any year in which his subscription was not paid. Moreover, if a member of one of the existing societies resigned and joined the new one, and he was afterwards accused of an offence taking place two or three years previously, he would be left without legal defence against that action. The Representative Meeting had already decided upon one big new venture—namely, the setting up of local bureaux. If another big scheme was embarked upon there would be the risk of piling a great deal of work upon a limited number of men, and there would be a danger that the work would be concentrated in the hands of men who lived in the South of England, to the exclusion of men who lived farther afield. Also it would tend to get into the hands of the very senior men. He felt very strongly that it would be to the disadvantage and

detriment of the Association if it undertook the work, and he should be compelled to vote for the amendment from Cardiff.

Dr H G DARY (Birmingham Central) said that his Division was strongly of opinion that the proposal of the Council should be opposed, and he was instructed to support the amendment proposed by Cardiff. He wished to mention one point that was relevant to the subject—namely, the position of the Association in the eyes of the public and in the eyes of the profession. The Association had striven to increase its influence and it had been very successful in doing so, largely because it had always been able to maintain the position that anything it did must first of all be in the interests of the public. Directly it attempted to deal as an Association with individual defence it would run very considerable risk of losing its influence and prestige. It was possible to work amicably with the societies which dealt with medical defence. They were carrying on their own work. They had learned it, and they had funds behind them. The Association could work with them in the way the Cardiff amendment suggested. He considered that it would be better not to enter into competition with them but to help them.

Dr W J LEIGHTON (Preston) said that he was instructed by his Division to vote in favour of the resolution as put forward by the Council. It was rather doubtful of the wisdom of the resolution, but it thought that at any rate there would be no harm in finding out how many men were likely to join such an organization as that suggested. The opponents of the resolution objected that it would involve interference with vested interests, but if the Association had never interfered with any vested interests it would not have been able to rebuild 429, Strand, or to expand to Tavistock Square, and it would have been in the position in which it was forty or fifty years ago. A great deal had been said about the prestige of the British Medical Association. The British public did not know the difference between the British Medical Association, the Medical Defence Union, and the General Medical Council. (Laughter.) It thought that they were all one and the same thing. The Association might lose prestige if it lost a case in the courts, but what would that be compared with the prestige that it would gain from the enormous number of cases that it would win? It had been said that the society would have no reserve funds, but he thought that there was no doubt that Dr Morton Mackenzie and Mr Ferris-Scott could devise a means of paying a premium to an insurance company to protect the society for the first few years during which the scheme was in operation.

Dr J S MARSON (St Helens and Warrington) said it had been stated that it was unlikely the new scheme would be any better than the facilities provided by existing societies, but that was a matter of opinion. There were some cases, it was said, which could not be taken up, being indefensible, but injustice might result to those whose cases were not taken up, and under the Association's scheme before a case was turned down it would be possible to get the support of the Division in whose area it occurred and get its advice as to whether it should be taken up or not. That safeguard did not exist at present, but that was the principle on which the French societies acted in defending their members. The duty of a defence society was to protect the individual, but individuals were not so fully protected at present as they might imagine. He knew of one case where a locum tenens made a blunder for which his principal was sued, and the principal's defence society declined to take the case up because the locum tenens was not a member of it. There were many such instances where the Association's scheme would afford additional protection.

Dr S NOX SCOTT (Plymouth) supported the Council's recommendation. If the information sought was not obtained, the representatives would be voting in ignorance of the feeling of the members generally. As secretary of a large constituency, he was often asked what the Association did to defend its members, and had to answer that it did nothing. The principle was now accepted that the Association should look after the financial interests of its members. The future of the profession as an organized

body depended on getting the younger members into the Association, and nothing was more likely to attract them than the assurance that the Association would defend them if necessary.

Dr J T D'EWART (Manchester) said it was not often he found himself defending the Council, which was frequently accused of not being democratic enough, but to-day the Council was suggesting that the Divisions should be consulted, while the Representative Body was being advised by some speakers to say that that must not be done. It was impossible to imagine why the Divisions should not be consulted. No definite scheme had been brought forward, once such a scheme was elaborated the details could be discussed and the wishes of the members ascertained. In spite of continual pressure by the Association many thousands of its members did not belong to defence societies, and such individuals were a potential source of weakness to the profession as a whole. Many of them, however, would join a defence society conducted by the Association. Those who would not join the Association usually asked what it would do for them personally. They took no interest in the welfare of the profession as a whole. If they could be told that it would defend them in individual cases that would be a powerful argument in persuading them to join. With regard to the newly qualified, only last week he addressed some of those who were about to qualify, and told them they must first of all register, then join a medical defence society (and that in spite of what had been said as to lack of co-operation between the Association and the defence societies), and thirdly, join the Association. It was not right that he should have to put the Association third ("Hear, hear").

Dr C O HAWTHORNE (Maitlebone), in supporting the amendment, said that if the referendum were taken and some 7,000 members could be obtained in favour of the scheme, then the Association would be morally bound to go forward with a scheme of defence. The second point emerged from a speech by Dr Manson in which he revealed one of the dangers which was likely to follow if an organization, British Medical Association in substance but not British Medical Association in name, took up the individual defence of members. Dr Manson said that the decision as to whether an individual member should be defended or should not be defended would be in the hands of the local Division of the Association, for the Division would know the good qualities he possessed. It might happen that the local Division would be in favour of the defence while the central organization was against it, and that was a source of danger. He agreed with the point Dr Landon had made, that the work of the chief officers of the Association was already very heavy.

The TRAFALGAR (Mr Bishop Human) said the Association could not say it would leave the individual to one society and the profession as a whole to another. He had only to refer to the Harnett case to show that if it were not for individual defence the profession would be in a perilous state. To fight for the individual was to fight for the profession at large. If the Harnett case had not been won there would have been many lunatics wandering about at large to do, to their own danger as well as to that of the public. On the night of the publication of the result of the trial before Mr Justice Lush the editor of one of the London papers had chided him (Mr Bishop Human) about the failure of the profession, and he had rejoined: "In a month's time you will be regretting that intensely, for no doctor will be certifying any lunatic in future." With regard to students, he met many post-graduates who said they must join something, and what was it to be? He was bound to reply, with great reluctance, that they should first join one of the defence societies, and afterwards the British Medical Association. If one looked at the reports of the societies one saw that they were trenching upon the job of the Association in giving advice on general matters. When the matter had come before the Organization Committee on the last occasion he had read with great interest the memorandum which had been prepared by Miss Lawrence, the Intelligence Officer, and he had been shocked to see that there had been such an intense desire on the part of a large number of members for individual

medical defence and that the Council had completely smothered it. Now Dr D'Ewart and Dr Manson were following, and he was impressed by the duration and intensity of the agitation, and he wanted to know, as an officer of the Association, what was the width and the depth and the volume of the opinion behind it.

Dr E R FOTHERGILL (Brighton) said his Division had gone carefully into the question, and did not want a referendum on the scheme which was now practically in the office. The foundation of a good defence society was the solicitor's department. It would be necessary to train a firm of solicitors, and that could not be done in a day. He suggested that the only way to get co-operation was to raise the subscription to the Association and tell the members to join any one of the three reputable societies, and for the Association to pay their subscriptions.

Dr MACFARLANE said that some speakers had assumed that the proposed defence society would necessarily undertake the defence of any member, whatever he had done. That was a mistake. The society would reserve the right to decline to defend anybody for sufficient reasons. If the referendum proposal had been passed much of the discussion at the meeting would have taken place better next year when the figures were known. The Council wanted to fill up the one gap in the information obtained. It was known what was the feeling in the Representative Meetings at Portsmouth and Bradford, 43 per cent of the representatives, approximately, were in favour of the proposal, and 57 per cent were against it, but it was not known what was the feeling among members generally. That could not be ascertained without taking a postal vote. If a large proportion wanted it, that would influence some of the waverers, if only a small number wanted it, those who had been so persistent in bringing forward the motion year after year might come to the conclusion that it was not worth while going on with it, at all events not for some years. The question was, not whether the Association should undertake medical defence or not, but whether the Council was to have permission to take a referendum—which it might have taken without permission had it wished. He did not agree with Dr Hawthorne that if the resolution was passed the Association would be morally bound to go on with its medical defence scheme, whatever the result of the referendum. The motion was for taking a referendum to find out what weight there was behind the agitation which had been going on in the Representative Meeting for several years and in the Association for fifty years in favour of the Association undertaking medical defence.

Dr COLSTON WILLIAMS, replying on the Cardiff amendment, said that he was a new-comer to the Representative Meeting, and when he spoke that morning he was insufficiently furnished with the facts. He admitted that he had gained additional information from the Chairman of the Organization Committee. But, living as impartially as possible to weigh the question on its merits, he could not see that anybody had answered what to him was the essential and crucial point of the whole position. To make a society which was essentially identified with the Association undertake the defence of its members would be to make it responsible for certain very difficult and complicated decisions. For instance, if the Association were contesting a matter of national negotiation, and owing to the position it took up it was the target for critical comment in the press, and at the same moment it undertook the defence of a weak case on behalf of a member of the Association, would not his case be prejudiced by its defence by the Association, although under another name? Any counsel who knew his job would bring before the jury the fact that the defendant was being defended by the British Medical Association as such. He admitted that that possibility worked two ways, backed by the Association, the defendant might be much better off than he would be without it. But it must be remembered that the Association might be forced into the defence of cases which it did not wish to take up. Members of the Association now had the advantage of receiving advice and help, if they were in serious difficulty, from members of the Association's office staff. With the assistance of a legal defence association

their position was stronger than it would be if they were in the hands only of the Association. The possibilities of co-operation had not been fully explored, because junior members could be influenced to join existing defence societies if it was the judgement of the Association that these societies were doing their job soundly and well.

The CHAIRMAN, in summing up the discussion, said that the proposition before the meeting was that the Council should be allowed to formulate a scheme and then ask members of the Association how many of them would wish to join a scheme of that kind. The amendment of Cardiff was in effect a reasoned negative to the proposition, with an alternative suggestion, and for that reason, as a matter of order, the one could not be separated from the other. If representatives thought that the dangers were so great that the results so certain that the proposal ought to be turned down at once, they would vote for the amendment of Cardiff. Neither proposition ruled out the possibility of exploring methods of co-operation ("Hear, hear"). What was proposed was not a referendum in the ordinary sense of expressing an opinion on the main issue, it was an inquiry as to how many members would like to join such a scheme.

Dr LYNDON demanded that the vote be taken by roll call, and, a sufficient number of members supporting him, the vote was so taken. There voted

In favour of the Cardiff amendment	97
Against	72

The Cardiff amendment was then put as a substantive motion, and, on a show of hands, the CHAIRMAN declared it to be definitely carried by a large majority. No count of numbers was called for.

Dr BANCROFT ANDERSON asked whether the carrying of the motion meant that the meeting was satisfied that individual medical defence was being competently dealt with at present.

The CHAIRMAN: The amendment by Cardiff was carried, and representatives must put their own interpretation upon it.

Constituencies for Election of Members of Council

Dr MORRIS MACKENZIE moved the adoption of the Council's proposal for an altered grouping of constituencies for the election of the Council for 1926-27.

With regard to the election of the twenty-four members of Council, it was proposed that the North Wales and Shropshire and Mid Wales Branches be made a separate group for the election of one member, that the South Wales and Monmouthshire Branch be similarly a separate group, and that the independent grouping of the Munster Branch be discontinued, this Branch to be added to the group formed by the Connaught and South Eastern of Ireland Branches. With regard to the election of the twelve members of Council it was proposed that the two Welsh groups, together with the Birmingham and Staffordshire Branches, should constitute Group IV, that the Connaught, South Eastern of Ireland, Leinster, and Munster Branches should constitute Group XI, and the Ulster Branch Group XII.

This was agreed to.

THE TWENTY-FIRST ANNIVERSARY OF THE REPRESENTATIVE BODY

Presentation of Badge of Office

The further discussion on organization was interrupted for a report by the Committee on the commemoration of the twenty-first anniversary of the Representative Body.

Dr C O HAWTHORNE stated that, as the result of the suggestion made at the Bradford meeting that each member be asked to contribute the sum of 10s to the fund to commemorate the twenty-first anniversary of the Representa-

tive Body, a total of £78 10s had been received. A Badge of Office for the Chairman of the Representative Body had been obtained at a cost of £70, and the balance was proposed to be paid into the Association's Medical Charities Fund if and when established. Dr W Douglas, who has been the representative of the Maidstone Division continuously from the inception of the Annual Representative Meeting in 1903 to the present, was asked to invest the Chairman with the Badge, and Dr Hawthorne, on behalf of his committee, transferred the Badge—a very beautiful medal—to the custody of the Representative Body.

Dr W Douglas, who was received with applause, said it gave him great pleasure to make the presentation. He congratulated the Chairman on receiving it at a time when the Association had reached so high a degree of success.

When he himself joined the Association some forty-six years ago its membership numbered 7,810 and it had an income of £15,978. To-day it had nearly 30,000 members, its income was £122,000 per annum, and its assets were estimated at £200,000. Many distinguished men had occupied the position of Chairman of the Representative Meeting, and it would be true to say they had so conducted themselves in the office as to set an example to their successors (Applause). Those who were connected in the earlier years with the Representative Meeting would, he thought, agree that there were two names which stood out prominently. The first was that of Sir Victor Horsley (Applause). Those who sat under him when he occupied the chair would know that a very great debt of gratitude was due to him. Then Dr James Alexander Macdonald, his successor, was a man who had rendered most exceptional services to the Association, especially during the war (loud applause). He then invested Dr Brackenbury with the Badge, amid acclamation.

Dr MILLER MOORE (Lewes and First Ginstard) said that he had been a member of the Association since 1869-70. He did not know whether he could claim to be the oldest member or whether Dr Crowe, who was presented to the King at the previous Monday's ceremony, was the oldest. He believed that he was right in saying that the membership at the time of the Plymouth meeting in 1870 was 4,000. He had been a constant

admirer of the Association and he had tried in every possible way to persuade members of the profession to join it.

The CHAIRMAN said that on behalf of the Representative Body he had great pleasure in accepting the Badge. When one came of age he was supposed to have greater judgement and discretion than he had in former years. He did not know whether that applied to a collective body as much as it did to the growing human individual. At all events the Representative Body must let the Badge be a sign that that at least was expected of it. He was sure that he might say on behalf of the members that they had been delighted to hear the venerable members who had presented the Badge to him. The Badge was a very beautiful piece of work and he hoped that whoever sat with it in front of him would feel that the awe of the Badge would prevent undue use of the hammer.

ELECTION OF CHAIRMAN AND DEPUTY CHAIRMAN

Before a brief adjournment the MEDICAL SECRETARY announced amid applause that Dr Brackenbury had been re-elected unopposed as Chairman of the Representative Body. Dr BRACKENBURY, in thanking the members, said he would do his best to maintain not only the honour and interests of the profession but those of the Representative Body.

At a later stage the MEDICAL SECRETARY announced that Dr C O Hawthorne had been re-elected Deputy Chairman (Applause).



The Badge of Office of the Chairman of the Representative Body (Designed and executed by Allan G Wyon)

OTHER ORGANIZATION ACTIVITIES

The discussion on "Organization" was resumed.

Dr MORTON MACKENZIE continued his summary of the work of the Organization Committee during the year. A great deal of help was given to individual members, and he had been surprised to hear from Dr Macpherson, one of the assistant secretaries, how wide a field was covered. Members came in and asked questions such as how to open a banking account, how to get married—(laughter)—how they could get rooms in London, where they should start in practice, and many asked about post graduate work. Post-graduate work in London was not organized in a way commensurate with the opportunities which that city afforded. The Association was unique among professional organizations in having established branches in the Dominions and Colonies, and, as Sir Jenner Verrill and Dr Cox had confirmed after their visit to Canada last year, Canadians looked to the Association to organize post graduate work in London so that they could take advantage of it when they came over. He had been glad to learn from the guarded words of the Chairman of Council that he also recognized that there was a great opportunity. The problem of post graduate work was one which had been often tackled but never yet solved. Among the other activities of the Committee were two publications. With the *Handbook*, no doubt, all members were familiar. Efforts were constantly made to keep it up to date, but not to enlarge it. The other, the *Handbook for Recently Qualified Medical Practitioners*, had proved a great success. A new edition was under preparation, the first being exhausted. Quite accidentally, when first printed it was put on sale as well as issued, and the sales had more than paid for the whole preparation and printing of the handbook. He hoped the new edition would prove a source of income to the Association. With regard to Dominions organization, it would be remembered that a great deal of time had been spent on the arrangements for the South Australian Branches to incorporate themselves. Queensland, of which Dr Robertson was the representative at the meeting, was the first body to take advantage of the opportunity of incorporation, and it had duly incorporated itself and become able to hold property in Australia. In South Africa no decision had been come to at all about the offer the Association had made about sharing the expense of a Medical Secretary there, but from the information he had the Association need not be dissatisfied with the trend of opinion in South Africa towards the British Medical Association. The Organization Committee was anxious that fresh men should put up and try to get elected to the standing committees, as the work was very heavy. The Propaganda Committee had recommended a standard badge for the Chairmen and Secretaries of Branches and Divisions, which could not be paid for out of Association funds. The Council recommended it as a good move. It felt that it would invest the office of Chairman with a little more formality than it had at present, and that the handing over of the badge would tend to enhance the dignity of the office. The central office would be glad to assist any Branch in getting the badges. The Financial Secretary had the drawings of the badge, and it was not a very expensive article. In gold it would cost about £4 with its case. This concluded his review of the work of the Organization Committee during the previous year. (Applause.)

Dr C. G. H. MORSE (Bournemouth) drew attention to post graduate work in Bournemouth during the three years previous to last year. Application to the Association for financial assistance brought the reply that the work must be done through the Division. But the Division organization was not sufficient, the work had to be done through the local hospital, and the Association's offer had to be turned down and private subscriptions obtained. He hoped the Council would try to make the scheme of post-graduate work more elastic, and not look upon London as the only place for post-graduate work.

Dr JOHN STEVENS (Edinburgh) said Edinburgh had had a very successful post graduate course for many years, and it would shortly be resumed. By the munificence of the Chairman of the Edinburgh and Leith Division the officers would shortly be provided with badges, and he suggested

there should be miniature badges for permanent retention by office-bearers after quitting office, as an interesting memento of their service.

Dr MORTON MACKENZIE said this could be done.

The report under "Organization" was then approved.

THE POLICY OF THE ASSOCIATION AND OF DIVISIONS

Dr E. R. FOTHERGILL (Brighton) moved to instruct the Council to prepare and issue a memorandum to explain the relative constitutional value of policies as adopted by the Association and by a Division respectively, and to advise what action should be taken centrally and locally in order to co-ordinate such policies. He said the problem was exceedingly important. The question were constantly coming up, What is the value of a policy adopted by this body? What relation has it to a Division? Is it effective, or what has to be done to make it effective? What is a Division policy? A memorandum put before the Association in 1915 supplied answers to some of those questions, but he wanted the Association to go a step further, because instances had occurred lately where failure to turn the ideal Association policy into a local Division policy had caused great trouble to the profession in the areas concerned. Those who founded the new constitution determined that every Division should be a little local medical society absolutely independent and able to have its own policy. The only central control was through ethical procedure and organization rules. It was also determined that the Representative Body should form from time to time a policy of the Association, the ideal policy on any problem. That policy did not run in any Division until it had made it its own. From time to time policies had been formed centrally, such as a tariff of salaries for whole time medical officers, and in the near future there would have to be a tariff of salaries for medical officers attached to municipal hospitals, consultants, and specialists, and probably salaries at voluntary hospitals. If a Division had not adopted the central policy and a man took a post contrary to it, the Association had no control over him. If the local Division suddenly woke up, called a meeting, and adopted the central policy, and asked the man to resign, and he did not, and he was turned out of the Association, legal difficulties might arise. Every Division had its own personality, and consequently its own policy. When a policy was adopted by the Representative Body, the Council had to meet within a certain period to consider whether it really represented the views of the members of the Association or not. If they thought it did not, they must resort to the referendum. He wanted something done on the same lines. There were two great dangers—one, the insidious, almost secret, attack on the liberties of the profession by organized State administration, and the other, that, however well the head office acted, there was a tendency to administrative control, and areas unconsciously accepted central control.

Dr NOR SCOTT (Plymouth) feared Dr Fothergill's proposal, if carried to its logical conclusion, would lead to chaos. If in Plymouth the scale laid down for public appointments by the central authority had not been adhered to, and the backing of the central authority obtained, men would have accepted those appointments at salaries 25 to 30 per cent below what they ought to receive. The Association should be cautious before allowing the Divisions to become autonomous in every way.

The Chairman of Council said the Divisions could not expect to be in a position which would allow them to send representatives to take part in moulding a general policy which would be the decision of the Association and then exercise a discrimination as to what sections of that policy they should apply. If their representatives agreed on a policy, the Divisions were in honour bound to carry it out as far as possible. Circumstances might arise when the policy of the Association could not be put into effect in certain districts, but it was dangerous to encourage Divisions to select and discriminate. On the other hand, progress would be slow if every representative had in mind that the decisions taken by the Representative Meeting might bind his Division and act disadvantageously in his own locality. A working method had been evolved, how-

ever, with which it would be better not to interfere. He would be sorry if the Council had to undertake the task Dr Fothergill wished to impose on it—namely, the explanation of the relative value of the policies adopted by the Association and by the Divisions respectively. Divisions adopted minor variations of policy within, and sometimes in advance of, the policy of the Association, and need appreciate no interference in that regard, but the Council would not welcome the task of defining the position in hard and fast language. He thought it was desirable to leave well alone.

Dr J. A. Macdonald said if the Representative Body laid down a policy which the Divisions took no steps to adopt as their own the question arose as to how far it was binding on them. If, for example, the Association laid down that the minimum salary for a certain appointment should be £500 a year, and a Division did not adopt that policy, could the power of the Division be applied to a recalcitrant member who accepted a lower salary? Dr Fothergill raised the question of whether the Association should not warn Divisions that unless they took the proper steps they would be left in a difficulty when dealing with recalcitrant members.

The Chairman said that, while there were those who thought that difficult problems should not be brought up when things were working satisfactorily, it was true that at any time an acute difficulty might arise if there was no firm general understanding of how far the decisions of the Representative Body, when taken with sufficient notice and by a sufficient majority, were operative. If it were true that decisions so arrived at were not binding on anybody who did not choose to adopt them, the effectiveness of the Association as a medico-political body disappeared. It might be said that the discussions of the Representative Body would still retain a certain moral and persuasive power and would thus influence the members, but it scarcely seemed worth while to maintain all the machinery of the Representative Body for that purpose. Everyone desired to maintain, so far as was proper and possible, the autonomy of the Divisions, but a policy properly enunciated by the Representative Body under the conditions he had mentioned must be made effective throughout the Association if the Association was to have any power at all. His own view as to the autonomy of Divisions differed from that of Dr Fothergill. It might be said that that was an argument in favour of the resolution, as showing the necessity for an official pronouncement on the subject, but an official pronouncement in black and white became more or less stereotyped and was more definite than might be desirable. His own view was that when, after proper notice and by a due majority, a resolution of the Representative Body became, according to the by-laws and articles, a decision of the Association it was binding on all the Divisions, the Divisions merely possessing the right to say how far, if at all, they would take ethical procedure with regard thereto. It would be impossible for the Association to lay down a scale of minimum salaries for certain appointments if a Division could set up an alternative scale which would be operative in its locality, and if advertisements in accordance with that local scale could be inserted in the Journal. It would be a breach of the arrangement which had been arrived at with the Society of Medical Officers of Health. The Association had united with that society on the matter of a joint scale of salaries. If it said to the society "Come and co-operate with us, become closely associated with us, organize with us, give up your medico-political activities into our hands, we will conduct them all for you, but every Division can have its own scale of salaries," that it would not be implementing the bargain which had been entered into. The Association had, he thought, arrived at the extreme autonomy which could properly be left to the Divisions. If the Representative Body, after due notice and free discussion, passed resolutions with large majorities, there must be some safeguard that they should be operative throughout the Association and should receive the backing of the Association but at the same time there should be given to the Divisions such autonomy as was compatible with general associated action. What he had said might or might not be the true interpretation. It certainly was not the inter-

pretation adopted by Dr Fothergill. The Representative Meeting might think it desirable that there should be a further investigation into the matter, or it might think it desirable to wait until something happened which had not hitherto happened which made it difficult to go on, but as Chairman of the Representative Body he wanted to emphasize the point that if the members of that body met and consulted together and formulated a general policy, that policy should be adopted throughout the Association.

Dr FOTHERGILL thought that it was most unfortunate that the Chairman had taken such a strong line on the matter, he dissented from the Chairman's view. It would be useful if the meeting could hear the Solicitor's opinion.

Dr WALLACE HENRY (Leicester and Rutland) considered that it would be extremely undesirable for the meeting to give a definite instruction to the Council to prepare a memorandum without there being a greater opportunity of considering the difficulties which might arise in the way than there had hitherto been. He moved as an amendment that the question of the desirability of preparing a memorandum on the points mentioned be referred to the Council for its consideration.

Dr FOTHERGILL stated that he was perfectly prepared to accept the amendment.

The Chairman said that the Solicitor wanted to know exactly what was the question that was put to him. He (the Chairman) would put it in the following form: "To what extent does the autonomy of the Divisions extend in reference to the resolutions of the Representative Body carried by the requisite majority after due notice?"

Dr FOTHERGILL said that he would like to put the question in the form in which it came before the Representative Body in 1915. The Report of the Council on that occasion said: "It will thus be seen that the degree of freedom of self-government thus conferred on the local units of the Association allows them to take their own line in respect of the ideal which is laid down by the Representative Body."

The Solicitor said:

This is a complex question dealt with under a variety of articles and by-laws in your constitution. It involves two aspects—the legal aspect and the ethical aspect. In its main, general aspect I endorse, and am prepared to accept, the explanations which you, Mr. Chairman, gave to this meeting. I would refer the members, in order to make the matter clear to them, to where the powers are erected. They arise in the first place, under Article 31, which provides that the general control and direction of the policy and affairs of the Association shall be vested in the Representative Body. Then you pass on to Article 33 where it is provided that resolutions carried in a certain manner therein prescribed shall be decisions of the Association. There are subsequent provisions contained in these articles and by-laws, which form your constitution, in regard to the autonomy of Divisions and Branches. Those were designedly left upon an elastic basis. I can say that personally because I carried out your new constitution in its legal bearings. I should firmly confirm what your Chairman stated in the remarks which he has just addressed to you. I think it would be extremely improper and wrong for a Division or a Branch to set up, and put into force anything which was in conflict with a decision of this Representative Body arrived at as prescribed by your constitution. That would clearly be wrong. Coming to the question of the ethical procedure, your Divisions and your Branches should, in my opinion, adopt as decisions of their own after each Representative Meeting those decisions which are and can be operative in their areas. I think they ought to do that. But there may be certain things arising out of those decisions which they feel cannot be made applicable to the local areas which they control, and they therefore do not adopt them as decisions of the Branch or Division. The reason for these matters being decided in this way is to enable the ethical procedure to flow and if a man acts contrary to those things which have been made decisions of the Branches or Divisions by binding resolution is then he can be proceeded against under the machinery which is provided for that purpose. We must not lose sight of the fact that we have one general controlling provision contained in the by-laws by which powers are given to the powers that be, in the event of a disorganized or inactive Branch not doing its duty toward the Association. My view, broadly put in reference to this matter is expressed in the memorandum which you had before you in 1915 in which it is laid down that these decisions of the Association are decisions which every member of the

Association should observe, and to which he should not in any sense act contrary. You, as the Representative Body in general control of the affairs of the Association, have put your imprimatur upon them. You have had representatives from your Branches and Divisions throughout the whole country come up and vote upon them. It is not, in my opinion, within the power of any Division or Branch (nor should it be allowed) to set up a policy which is contrary to the policy enunciated by themselves and passed with the machinery which is provided.

Sir JENNER VEIRALL said that the Association seemed to him to be between Scylla and Charybdis. On one side was the risk that the debates in the Representative Body should become futile, which would follow if it became the custom for Divisions to set at naught that Body's conclusions, and on the other was the risk, if that were insisted on too strongly, of taking away what was valuable and what was provided for in the by-laws and articles—the opportunity for the Divisions to set themselves a little outside the full intent of what had been decided by the Representative Body. Dr Fothergill was an old friend of his, who had the defects of his qualities, and if he might say so with great respect, he thought Dr Fothergill was a little disposed to push things to their logical conclusion. (Laughter.) There were some things that could not be pressed to a logical conclusion, and he suggested that between Scylla and Charybdis the Association should do what the ancient mariners did—sail down the middle!

The CHAIRMAN said that as he understood the situation, a decision of the Association—that is, a resolution of the Representative Body moved at after due notice and by a requisite majority—was binding upon the whole Association, but that before ethical procedure could be taken thereupon against any individual in any Division, that Division must have passed a binding resolution stating that anyone who acted contrary to that decision of the Association was acting against the honour and the interests of the profession, or whatever the proper phraseology might be. He would like to ask the Solicitor if that was a correct statement of the position.

The SOLICITOR said that that practice had been adopted under his advice. In general terms the Chairman had most clearly enunciated what the policy should be, and it was one which he should advise them to continue. He wished to emphasize a remark made by Sir Jenner Veirall. The machinery was obviously made elastic, and to try to tighten it up too much would in a big Association like this be extremely unwise. There must be some give and take, and the machinery had been found adaptable for the purpose.

Dr FOTHERGILL said if it was referred to the Council, the Council might refer it to an appropriate committee, and then decide to do nothing in the matter, or that it would elaborate the document of 1915, or suggest a new document.

The motion "That the question of the desirability of the Council preparing a memorandum be referred to the Council" was put and lost.

PARLIAMENTARY ELECTIONS

Dr E. K. LE FLEMING moved the approval of the Report of Council under "Parliamentary Elections." At the last general election the Association had a sum of about £300 at its disposal, and the report showed what support in various ways had been given to certain candidates. He would only mention one name in connection with the election, which would gratify the members—that of Sir Richard Luce—"hear, hear"—a very able member of Council and chairman of one of the committees, who was successful in an unexpectedly difficult contest at Derby. The Association was anxious to allot the money at its disposal more or less equally between the three chief political parties, but it would be seen from the Report why the Association had not been able to give financial support to a Labour candidate. It was because, although the Association had no political bias, it could not support those who did not subscribe to the broad lines of the policy of the Association. The Labour party supported a State medical service and State-aided hospitals, and the Association could not subscribe to that. The profession was now in a more favourable position with

regard to the representation of its views in Parliament. What the profession desired was always for the good of the public, but sometimes things were said from medical mouths in the Houses of Parliament which were not strictly in accordance with the views held by the profession generally. He hoped for a few years in which to accumulate a reserve, which at present stood at the low figure of £666. There must come a time when another Government would put a different complexion on medical views in Parliament, and if the Association's views were to be put before Parliament the fund must be increased. A shilling a head per year from members of the Association would enable much more to be done. It was not much to ask, but it was a great deal to get. The Association wanted in Parliament a sufficient number of medical men, whatever their political views, able to give on purely medical matters the opinion of the Association. The total number of subscribers since the fund was instituted was only 828 in seven years. That was a disgrace to the profession. The fund was instituted at a Representative Meeting, and he repeated what he said last year—"Get on with it, or do away with it." (Applause.)

Dr P. MACDONALD asked if the Parliamentary Elections Committee had considered the question of asking the Defence Trust Fund to make a grant to the Parliamentary Fund.

Dr JOHNSON SMITH said that a resolution he brought before the Representative Body some years ago was the beginning of the Parliamentary Elections Committee. Long before that the question of a parliamentary fund was a hardly annual. Medical interests were continually in conflict with Government departments. He entreated members to add to their subscriptions to the Association an extra guinea for the Parliamentary Fund, and also to encourage their friends to support it. Ministers had a habit of taking advice from permanent officials, and if there were not in Parliament men to protect medical interests, cases went by default.

The CHAIRMAN, answering Dr Macdonald's question, said the matter had engaged the attention of the Committee, but the question must be decided at the Panel Conference. It was not put before it last autumn because the Conference was then busily engaged on other matters. He hoped it would come before the Conference in October.

The motion approving the Report under "Parliamentary Elections" was carried.

The question was then raised as to how the balance remaining after the purchase of the Chairman's Badge—£8 10s—should be used. The decision on this matter was held over until the report on "Medical Benevolence" was taken at a later stage, and the meeting rose at 6.15 p.m.

ANNUAL GENERAL MEETING

THE ninety-third Annual General Meeting of the Association was formally opened in the Grand Pump Room, Bath, on Tuesday, July 21st, at 2 p.m. The business, which included a report from the Representative Body that Mr Robert George Hingarth, C.B.E., F.R.C.S., senior surgeon to the General Hospital, Nottingham, had been elected President of the Association for the year 1926-27, will be reported in a subsequent issue. The meeting adjourned until 7.45 p.m. at the Palace Theatre, Bath, when Mr W. G. MURFORD, O.B.E., F.R.C.S., Acting President, took the chair. Among those on the platform were Mrs Mumford, the Marchioness of Bath, Lord High Sheriff of the County of Somerset, Alderman Cedric Chivers, Mayor, and Madame Sarah Grand, Mayoress of Bath, and the Ven. the Archdeacon of Bath. Mr Mumford was supported by the Past-President (Mr Basil Hall), the President-Elect (Mr R. G. Hogarth), the Chairman of Council (Dr R. A. Bolam), the Chairman of Representative Meetings (Dr H. B. Brackenbury), the Treasurer (Mr Bishop Haiman), Sir Robert Jones, many members of Council, and the chief officials of the Association.

INTRODUCTION OF NEW VICE-PRESIDENTS

Dr R. G. GORDON, Honorary Local General Secretary, introduced to the Acting President, amid cheers, two of the new Vice Presidents of the Association—Dr Alexander

Primrose and Dr F N G Starr, both of Toronto Mr C P Childe of Portsmouth, who had also been elected a Vice-President, was unable to be present

DISTINGUISHED FOREIGN GUESTS AND OVERSEA DELEGATES

Dr Gordon then introduced the following distinguished guests from abroad Professor James Heyman (Stockholm), Professor Bugge (Amsterdam), Dr W G Haggard (President of the American Medical Association), Dr de Schweinitz and Dr Howard Fox (delegates from the American Medical Association), Dr L J Austin, Dr A T Bazin, and Dr H S Bunkitt (from the Canadian Medical Association), Dr W N Robertson (Australia), Dr A J Oronstein (South Africa), Dr W Nunn (Bombay), Dr C J Gomes (British Guiana), Dr H Bell Walker (Cape of Good Hope), Dr A M de Silva (Ceylon), Mr F C Madden (Egypt), Dr E F Hatton (Ghana), Professor H G Earle (Hong-Kong), Dr J Foleman (New South Wales), Major T J Hallinan (Mesopotamia), Dr H E Lee and Dr L Mileston (New South Wales), Dr W A Anderson, Dr C E Maguire, and Dr A J Hall (New Zealand), Lieut-Colonel Birdfield (South India and Madras), Dr Stoddart Barr (Tasmania), Dr H I Holmes (Victoria), Dr C Morlet and Dr Tregonning (Western Australia).

Dr A J HALL said he was requested by the President-Elect and the Executive of the second triennial Australasian Medical Congress, to be held in Dunedin in February, 1927, to convey to the members and Council of the British Medical Association a most cordial invitation to attend the Congress.

The ACTING PRESIDENT said he would be very pleased to forward the kind invitation to the Council and asked Dr Hall to convey the best wishes of the Association to the New Zealand Branch.

PRESENTATION OF MIDDLEMORE PRIZE

The Middlemore Prize, consisting of an illuminated certificate and a cheque for £50, was presented to Basil Graves, M C, M A, M R C S, L R C P, London, for the contribution he has made to the knowledge of ophthalmologists of microscopy of the living eye, especially in relation to the use of the slit-lamp.

PRESENTATION OF THE ASSOCIATION'S GOLD MEDAL TO THE CHAIRMAN OF COUNCIL

The next business was the presentation of the Association's Gold Medal of Merit and an illuminated address, awarded to Robert Alfred Bolam, LL D, M D, F R C P, for his distinguished services to the Association and the medical profession, and in special commemoration of his work in connexion with the acquisition of the new House of the Association, 1624 25.

The following was the text of the testimonial

To ROBERT ALFRED BOLAM, O B E, Hon LL D Glas, F R C P, M D

Chairman of Council of the British Medical Association since 1910
Direct Representative of the Medical Profession of England and Wales on the General Medical Council since 1920
Member of the Consultative Council to the Ministry of Health on Medical and Allied Services,
Member of the Voluntary Hospitals Commission

In calling you to take your place amongst those whom the Association has chosen for its highest honour the Council feels that it has the cordial assent of every member. The Association awards its Gold Medal to those who have conspicuously raised the character of the medical profession, whether by scientific work, by extraordinary professional service, or by special services rendered to the Association. On all these grounds your title to the Gold Medal of the Association is beyond dispute.

In connexion with your own University of Durham you have filled important and responsible posts, including the Professorship of Medical Jurisprudence, the Lectureship in Dermatology, and membership of the Senate. Your contributions to the branch of medicine in which you are specially interested have been recognized in various ways, including your selection to be a Vice-President of the Section of Dermatology of this Association and to be Corresponding Member of the Société Française de Dermatologie.

Your services to your profession have been great and varied

In your own home district there are few positions of responsibility in which you have not been placed by those who know you best. We are glad to feel that in bestowing this honour on you the Association will give pleasure to your colleagues in the North of England, who, by their choice of you as a leader and adviser, prepared you for the high offices you have since been called upon to fill.

When we come to the central work of the Association we note that you became a member of the Representative Body in 1913 and from the first made your presence felt. You came into the Council in 1915 and took an interest in many of its Committees, including specially the Hospitals Committee, of which you were Chairman during the year 1919-20, and the Central Medical War Committee, of which you were a hard working member during the whole of its existence. In the Representative Body, in the Council, and in Committee your words have been few but have always carried great weight.

In 1920, at a time when the state of your health might well have excused you from undertaking further responsibilities, you accepted the office of Chairman of Council. The duties of that office, always onerous, have been specially exacting during the past few years, and it has been a source of wonder and admiration to your colleagues to note the way in which living at a distance of over 250 miles from London and engaged in active practice, you have been able not only to direct the business of the Council, but to take an effective part in the work of the Committees, of all of which you are *ex officio* a member. In 1923 you were unanimously re-elected Chairman of the Council for a further period, and have signified this by taking the outstanding part in the acquirement and adoption of the new House of the Association. Your name must always be intimately associated with a step which marks an epoch in the history of our Association.

As a sagacious counsellor and a wise and courageous leader, possessed of a most persuasive personality and the gift of inspiring affection as well as respect, we ask you to accept the British Medical Association's Gold Medal for Distinguished Merit. We ask you to accept with it the gratitude of the Association for the splendid services you have rendered to your profession and to the Association.

J BASIL HALL,
President

F G THOMSON,
President Elect

H B BRACKENBURY,
Chairman of Representative Body

N BISHOP HARMAN,
Treasurer

Mr BASIL HALL, in introducing Dr Bolam, said: It is now my pleasing duty to introduce to you Dr Robert Alfred Bolam, in order that he may receive the Gold Medal of the Association—(applause)—and I do not know anything that gives me more pleasure than to feel that at the termination of my year of office I have the privilege of presenting this Medal to Dr Bolam, of whom we think so much. (Applause.) You have in your hands a copy of the engrossed testimonial which has been presented to him with the Medal, and it sets out many of his qualities and valuable services, for which we are all deeply grateful, but it omits what I may perhaps call the outstanding quality he possesses, and that is just that he is "Bolam" (Cheers.) When I had the privilege in the Council of turning him out of the chamber for a few moments in order to move that the Medal be presented to him I said I did not know whether Dr Bolam had a family motto, but if not the motto he ought to adopt is "Service and not self" ("Hear, hear.") While we appreciate all his valuable services, we appreciate still more his sterling character. He has endeared himself to every member of the Council, and I have great pleasure and great pride in presenting him to you, Mr President, to receive the Gold Medal at your hands. (Applause.)

The ACTING PRESIDENT Dr Bolam, it is with very great pride and pleasure that I invest you with the Gold Medal of the Association and present you with this illuminated address, which I feel sure you will treasure.

Dr BOLAM, who was received with loud applause, said: Mr President, it is the custom that the recipient of the Gold Medal shall not express his thanks, but on this occasion I would just say that this is a very proud moment in the career of my service for the Association, and that I feel the atmosphere of kindness and affection behind it which will remain to me always a source of pride.

PRESIDENT'S ADDRESS

The CHAIRMAN OF COUNCIL said I have now to make an announcement with regard to the Presidential Address which is of a very unusual character. Most of you know that through sudden illness Dr F G Thomson has been unable to fulfil the duties of his office, and in regard to presiding at meetings we have been able to call upon Mr Mumford, whose services as Honorary Local General Secretary have been superhuman—(applause)—and who now adds to his burdens at the special request of Dr Thomson and his local colleagues. But in the case of his Presidential Address Dr Thomson expressed a wish that his son, Mr Malcolm Thomson, should deliver the Address. The Address is of such a nature that it can be read satisfactorily by one who, like Mr Malcolm Thomson, is not a medical man. I have much pleasure in calling upon Mr Malcolm Thomson to read his father's address.

The Presidential Address, which is printed at page 153 of this week's JOURNAL, was then read by Mr MALCOLM THOMSON, and was illustrated by lantern slides.

At the close a vote of thanks to the President was moved by the Chairman of Representative Meetings.

Dr BRACKENBURY said It is my happy privilege to propose to you that we send to our President, Dr Thomson, a message of thanks for the Presidential Address which has just been delivered, and I think I may on your behalf add to that a sentence of thanks to his son for the way in which it has been delivered. ("Hear, hear") On these occasions it is customary not to discuss in any way the matter of the Address. On some occasions that is a more important custom than it would have been to night, because the address could scarcely be described as in any way controversial. But the innovation which was remarked at the beginning of the Address in presenting us with pictures as well as with words may possibly be referred to as a happy innovation. At all events, there have been times in previous years when some of the audience would have welcomed such a procedure. We have been suffering during this meeting from the unhappy withdrawal of the personality of our President, Dr Thomson, but those words of his have brought us into closer touch with him, and we hope to have the privilege of seeing him among us later on, and that he will make a speedy recovery and be able to take his full part in the work of the Association. It must have been clearly necessary for Bath physicians to cultivate some organization which would attempt to regulate such things as indirect advertising and the relationship between consultants and general practitioners. (Laughter) We are all of us delighted to listen to this address, and you will wish to support a resolution of thanks. (Applause)

The Venerable the ARCHDEACON of BATH, in seconding, said that Dr Thomson had paid a compliment to Bath in making the history of the city the subject of his address rather than taking a medical topic. That was not surprising: the city's history was very interesting. In seconding the vote of thanks he wished to express the general admiration at the ability and grace with which the duties of the lecturer had been discharged.

The vote was carried with acclamation.

Sir JAMES VERRILL, in moving a vote of thanks to Mr Mumford for presiding, said that however much they regretted that their President was unable to be with them, they were glad that Mr Mumford had been able so worthily to fill his place. In spite of a spell of ill health, he had started out to fulfil the duties of secretary, and then without hesitation he took up the new post which was thrust upon him—a post carrying with it very onerous duties for in the wheel that spun on these occasions the hub was always the President. He must make one personal allusion. He wished to say what pleasure it gave him, after living for many years in Bath and making so many friends there, that he was able to congratulate the citizens in the absence of the President in finding a substitute for him who could be so thoroughly counted on to contribute to the success which many months of preparation thoroughly deserved. (Applause)

Mr BRIDGES, in seconding the proposal, said there was a proverb in the vernacular which might be

known to some of them—"Handsome is that handsome does." Their Acting President that evening was undeniably handsome, as all could see, and that he had done uncommonly handsomely he could assure them from his own personal observation. To be the successful General Secretary of an Annual Meeting was no small job, but they expected British Medical Association workers to work like that, yet to be suddenly precipitated into the limelight was a trial to anyone, and Mr Mumford had succeeded handsomely in his efforts.

This vote also was carried with acclamation.

The Acting President, in reply, said he wished once more to express his regret that Dr Thomson had been so unfortunately prevented from fulfilling his duties as President, and that he was not present to return his personal thanks for the way in which they had received his address. It was with the greatest reluctance that he had consented to take over Dr Thomson's duty, and he was very grateful to them for the forbearance with which they had condoned his obvious shortcomings. He would not like to go away without paying a tribute to the memory of the one who first had the idea of inviting the Association to Bath—their late lamented colleague Mr Forbes Fraser, who should have been present occupying that chair. (Applause) No one could have been more fitted for the office than he. The Forbes Fraser Hospital, which he hoped all would take an opportunity of visiting, was entirely the creation of his brain, and was a piece of work which was second to none that had been set about and brought to fruition in this country. (Applause) In conclusion, he thanked the mover and seconder of the proposition, and said he felt proud of having acted as deputy if only for a few days. (Applause)

The company afterwards attended the President's Reception at the Assembly Rooms, where dancing took place.

EXTRAORDINARY GENERAL MEETING

At 4.45 p.m., on July 17th, an Extraordinary General Meeting was held, the CHAIRMAN OF COUNCIL (Dr R A Bolam) taking the chair.

The MEDICAL SECRETARY read the notice convening the meeting, which appeared in the SUPPLEMENT of June 27th (p. 223).

The CHAIRMAN moved the resolution for altering the Articles of Association which was set out in the notice, so as to admit of the affiliation of the Canadian Medical Association.

The motion was then put from the chair, and was declared to be carried by the requisite majority.

The proceedings of the Extraordinary General Meeting were then concluded.

ANNUAL DINNER OF THE REPRESENTATIVES

At the conclusion of the first day's Representative Meeting the members of the Representative Body dined together at the Grand Pump Room Hotel, under the chairmanship of Dr BRACKENBURY. Music was provided by the Bristol Glee Singers (a male voice quartet), and one of the representatives, Dr J S Muir of Selkirk, gave two recitations in excellent style.

The one toast to which there was any speech making was that of "The Chairman."

Dr C E DOUGLAS said that Dr Brackenbury was scarcely familiar to them yet as Chairman of the Representative Body, he was better known simply as Brackenbury, a power in the Association. When the speaker was asked to propose the toast, he was told that it was his opportunity for revenge upon Dr Brackenbury, who lately, in a visit to Scotland, proposed his health. But there was no question of revenge here and Dr Brackenbury were very good friends, and it was just as well to be friends with Brackenbury. For the man they honoured was a fighter, and fighters they loved in Scotland. In debate the profession had not his equal. Some almost forgotten words of Huxley came into his mind, referring to the bad old days when, if one had any theological opinion differing from Holy Church, it meant probably being burned at the stake. In those days, said Huxley, when a mistake in logic involved combustion not only in the next world but in this the framing of syllogisms acquired a peculiar interest. So it was when one measured swords

with Brackenbury. In Scotland they were all fighting men, and that day and on the morrow Dr Brackenbury was in the hands of the Douglas (a reference to the fact that not only was a Douglas in charge of the toast, but another of the clan, Dr W Douglas of Maudstone, was on the next day to invest the Chairman of Representative Meetings with his new badge of office to commemorate the twenty first year of the Representative Body). There was an old saying—it would be remembered better in England than in Scotland—that the mothers of English children used to send their babies to sleep with the lullaby, "Hush, my baby, do not fret thee, the black Douglas will not get thee." The old time story had it that a certain man, a fighter in his day—like Brackenbury—was a figure so much dreaded that, said one Archibald Douglas, "we must bell the cat." And on the morrow history would repeat itself, and a comrade and compatriot, another Douglas, would "bell the cat" in the Representative Meeting (Laughter). But whereas in the old time story the impulsion was fear, here it was love and respect for great qualities. There was no man in the profession who did not owe a debt to him. Let lawyers in the courts of justice measure their length intellectually with this champion, they all knew what would be the result. Those who in the profession were less skilled in advocacy might at least copy Brackenbury in his devotion to the best ideals of the profession, which in the last resort were the best ideals for the community at large.

The toast was given with musical honours.

Dr BRACKENBURY, in reply, said that hitherto he had always rejoiced in his purely English ancestry—he came from the prosaic Eastern Counties which had produced the stolid yeomen of England, though on his mother's side he had a connexion with Somerset. But whenever he heard Dr Douglas—and also on some other occasions—he was tempted to wish that he had been a Scotsman, because in Scotland the clan tradition was strong, and afforded in its legends such ample material for after dinner speeches. Dr Douglas had rather distressed him by his personal emphasis. As Chairman of the Representative Body he felt that he had a certain claim to respect, if not to dignity, but when it came to honouring an individual named Brackenbury he was frankly puzzled. In their kindness they had attributed qualities to him which he was wholly unconscious of possessing, and which he believed to be fictitious, although the continual repetition of the statement made it difficult for him to maintain his disbelief (Laughter). To one thing he did plead guilty—to a constant and zealous desire to promote the best interests of the profession, which were also the best interests, from all sorts of aspects, of the public.

The proceedings closed with "Auld lang syne," thus maintaining the Scottish atmosphere to the end.

EXCURSION TO STONEHENGE

On the afternoon of Sunday, July 19th, a very large party of members of the Representative Body, with their wives, sisters, and daughters, went on an excursion from Bath to Stonehenge. A fleet of charabancs awaited them at 2 o'clock on the Grand Parade beside the Abbey. Rain had threatened in the morning, but the afternoon was delightfully fine. The outward journey was by way of Steeple Ashton, Bratton, and Shrewton, one of the few villages on Salisbury Plain. At Stonehenge the party were met by Dr and Mrs J P Williams-Freeman, who had come from Andover. Dr Williams-Freeman conducted the party round these prehistoric monuments, and out of his wealth of archaeological knowledge gave a deeply interesting account of the stones, their arrangement, measurements, and probable significance, and of the outcome of recent researches. For most of the details and measurements Dr Williams-Freeman said he was indebted to Mr Stone's recently published book.

The Stones of Stonehenge

Standing well away from the stones in the axis of the monument, the lecturer first described the main features of Stonehenge which call for investigation.

1 A circular bank and ditch which surrounds the monument, the bank being outside the ditch like that of a defensive earthwork, and not inside, as in other megalithic monuments such as Avebury.

2 The stones themselves, consisting of (a) an outer circle of large sarsen stones, native to Salisbury Plain (b) An inner circle of small "blue" stones, which are foreign to the district (c) A horseshoe of five large trilithons of sarsen stone (d) A horseshoe of single blue stone.

3 The so-called altar stone, lying flat in the focus of the horseshoe.

4 The 'stations' just inside the earthen bank—namely (a) Two stones, still standing, on opposite sides of the great structure (b) Two shallow pits near them, also opposite to one another, and the same distance from the centre.

5 The so-called 'slaughter' stone, just inside the line of the bank a large sarsen now prostrate, but which evidently stood a few feet south of the line of the axis.

6 The 'helo' stone, still standing, though at a somewhat dangerous slope, six feet south of the axis. This is the furthest stone from the centre, about 120 ft beyond the 'slaughter' stone.

Dr Williams-Freeman explained that the monument although unique in design, must be considered in connexion with other stone and earth circles which were found, of all sizes and degrees of complexity, throughout England, and could be traced from India, through Arabia, Northern Africa, and Western Europe to the British Isles. Dealing with the axis of Stonehenge, he pointed out the two shallow banks and ditches which bound the avenue and run in a straight line for a quarter of a mile in a north-easterly direction. The centre line of this avenue corresponds with the axis of Stonehenge. The azimuth of the axis is $49^{\circ} 34' 18''$. The azimuth of midsummer sunrise in 1901 was $50^{\circ} 26' 30''$. According to the most recent astronomical tables of the changes of the obliquity of the ecliptic the azimuth of midsummer sunrise corresponded with the axis of Stonehenge about B.C. 1840. The possible error allowed by Sir Norman Lockyer owing to want of precision of data and the small size of the angles dealt with was ± 200 years. Despite all criticism of these findings, it was impossible to ignore them as furnishing a certain degree of astronomical evidence of the age of the structure.

Dealing with the archaeological evidence of the age of Stonehenge, the lecturer pointed out that all the excavations of Professor Gowland in 1901, and all those of Colonel Hawley during the last four years, had not furnished a single item of evidence that the use of metal was known at the time of its construction. It is incredible that if the builders had possessed metal tools, weapons, or ornaments, not a single specimen had been lost, hidden, or left on the site of the structure. All the numerous tools used in dressing the stones, the deerhorn picks found in great numbers in the ditch, belong to the Stone Age, and the single stave of copper carbonate found on a fragment at the base of one of the stones by Professor Gowland was not now thought by competent archaeologists to be evidence of contact with metal at the time Stonehenge was constructed. But the most convincing evidence of all was the fact that a piece of blue stone of considerable size had been found forming part of the structure of a typical Neolithic long barrow in the near neighbourhood. The archaeological evidence all pointed to a date very nearly corresponding with that of Sir Norman Lockyer.

Conducting the party to a point inside the outer circle, the lecturer pointed out the extraordinary accuracy of plan relieved by the builders. The outer circle of large sarsens is placed tangential to a circle of exactly 97 ft in diameter. The inner circle of blue stones is tangential to a circle of 76 ft 6 in. diameter with the exception of the two on each side of the axis, which are set back so that their outer sides correspond with the circle. The four stations just inside the bank are absolutely symmetrical in plan. A line drawn between the two outlying stones and the two shallow pits in which stones formerly stood intersect in the centre of the monument at an angle of 45 degrees. Moreover, a line drawn at right angles to the axis exactly bisects this angle. In passing, it was pointed out that these outlying stones do not correspond with either sunset or sunrise of winter or summer solstice. The accuracy of spacing between the thirty stones of the outer circle is precise. The stones vary in width, but the distance from centre to centre is 10.55 ft, and the average space between them is exactly half their average width. There is one exception to this—the stones on each side of the axis are slightly wider apart, the symmetry being made up by the slightly narrower space on each side of them. The inner circle, which consisted of forty stones, is 6 ft from centre to centre.

With regard to the stones themselves, the large stones of the outer circle, which stand 13 ft 6 in. above the ground, are dressed on all sides, but the most careful dressing is on the inner face. They taper about 9 in. in each diameter from the bottom to the top, giving them an obelisk shape, and there is a very slight curve or entasis in addition. The weight of each is about 26 tons.

With regard to the lintels or cap stones, their length averages 10 ft 6 in., and their weight $6\frac{1}{2}$ tons. Each has two mortice holes which receive a tenon on the top of the upright. The cap stones have toggle joints with one another—that is, a slight bend at one end which is received into a notch in the end of its neighbour. Where the cap stones vary slightly in depth the top surfaces are left level by dressing away the lower surfaces at the setting. The outer face is not straight, but is dressed to correspond roughly with the curve of the circle. The blue stones of the inner circle are broad flat stones, and much tougher in working.

The uprights of the five great trilithons of sarsen forming the outer horseshoe are of the same dimensions as regards width and depth, but rise in height from 16 ft 6 in. in the two end ones to 17 ft 9 in. in the side pair, and 22 ft in the great central one. The blue stones of the inner horseshoe are better stones than those of the circle. Their height is from 6 to 8 ft, their average diameter 2 ft. They are very carefully dressed to an obelisk shape, and one of them has a uniform groove down the length of one side. They were apparently nineteen in number. All these details point to a very high degree of skill, both in planning and building the structure.

The method of erection of the uprights has been definitely proved by the excavations. A pit was dug to receive the foot of the stone, the chalk was sloped outwards so that the stone could be slid into it, raised to a vertical position, and kept there by ramming chalk and stone fragments round its base. Many of the large stone mauls and hand punches with which the stones were dressed were found in the ramming. The lintels were doubtless rolled up to the top along an earthen ramp which was afterwards removed.

Dealing with the origin of the stones, the sarsens were pointed out by Dr. Williams Freeman to be solidified masses of Bigsnot sands which once overlay the chalk of Salisbury Plain and have been left lying on its surface when the Tertiary beds were washed away. All the varieties of the foreign stone (blue stones)—cyanite, diabase, and rhyolite—have been proved within the last two or three years to have come from the Prescelly Mountains in Pembrokeshire, from a region which abounds in ancient stone circles. Even the altar stone, which is a micaceous sandstone, can be matched from the same county. They were probably brought from Carmarthen Bay to the mouth of the Bristol Avon by water.

The discoveries of Colonel Hawley during the present excavations were next summarized. They consist of a circle of sixty pits in the chalk close inside the bank corresponding to depressions noted by Aubrey in the seventeenth century, and therefore now named the Aubrey holes. The bruising of the chalk at their bases proves them to have contained stones, and it is an interesting fact that simple cremated interments were found in the filling of many of them, evidently placed there since the removal of the stones. Two circles of pits which have contained stones have also been found not far out side the present outer circle, and as the pits correspond radially with the present stones of this circle, it is thought that they must have formed part of the plan of the present structure. The stones may have been removed during the years when Stonehenge was a stone quarry for the neighbourhood. The Aubrey stones show no such correspondence.

The ditch has been excavated for half the circle. A causeway of undisturbed soil, nearly but not quite corresponding with the axis, has been found. Numerous post holes, irregularly disposed, were found about this causeway, suggesting gates or defences at the entrance. Another elongated group of post-holes was found outside the outer circle of the opposite side, which may even have been the post holes of a wooden building.

By the kindness of Colonel Hawley, the lecturer was permitted to exhibit at the hut the most recent plan of all the discoveries and specimens of the mauls and deerhorn picks and other finds.

This instructive open-air lecture was followed by tea, which was served in adjoining military hutments. The return journey started at 6 o'clock, via Warminster, Westbury, Trowbridge, and Bradford-on-Avon (looking in the evening sunshine like an Italian town above the steep river valley). The arrival at Bath at 8.30 ended one of the most enjoyable and interesting Sunday trips within the memory of representatives.

Association Notices

QUESTION OF ADJUSTMENT OF AREAS OF SOUTHERN AND SURREY BRANCHES

THE notice of the proposals to the above made by the Surrey Branch, which appeared in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of July 11th 1925 (p. 14), being in certain particulars incorrect, that notice is hereby withdrawn.

ELECTION OF DIRECT REPRESENTATIVES ON THE SCOTTISH COMMITTEE

THE following have been elected members of the Scottish Committee of the British Medical Association for the ensuing session.

GROUP I—Aberdeen, Orkney, Shetland, Banff, Moray and Nairn, Caithness and Sutherland, Inverness, Islands, Ross and Cromarty. Dr J. MUNRO MORI (Inverness) and Dr J. E. SHANK (Skene).

GROUP II—Dundee, Fife, Perth, Stirling. Dr D. ELLIOT DICKSON (Lochgelly) and Dr G. W. MILLER D.S.O. (Dundee).

GROUP III—Edinburgh, Lothians, South Eastern Counties, Dumfriess and Galloway. Dr JOHN D. COMER (Edinburgh), Dr NORMAN P. LAIPFA (Innerleithen), Dr C. MOWBRAY PEARSON (Edinburgh).

GROUP IV—Glasgow Central, Eastern, North Western and Southern. Dr R. YUILL ANDERSON, Dr D. MCKAIL, and Dr JOHN PATRICK.

GROUP V—Argyllshire, Ayrshire, Dumbartonshire, Lanarkshire, Renfrew and Bute. Dr W. DOUGLAS FRAY (Kilmarnock), Dr J. LAURIL (Greenock), and Dr JAMES B. MILLER (Bishopbriggs).

The Members of Council representing Scottish constituencies are also members of the Scottish Committee, and two additional members may be co-opted.

BRANCH AND DIVISION MEETINGS TO BE HELD

CAPE OF GOOD HOPE (WESTERN) BRANCH.—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday, August 28th, at 8 p.m., when there will be a symposium on the diagnosis of intracranial tumours, arranged by Mr D. J. Wood. Among the speakers will be Dr J. D. M. Claassens, Mr F. T. Petersen, and Dr A. W. S. Siebel.

ESSEX BRANCH.—The annual meeting of the Essex Branch will be held at the Palace Hotel, Southend, on Thursday, July 30th, at 2.30 p.m.

SUFFOLK BRANCH, WEST SUFFOLK DIVISION.—A combined clinical and social meeting of the West Suffolk Division will take place on Thursday, August 6th, when Dr Wood has very kindly offered to entertain the Division once more at Woolpit. Tea in his garden will follow a clinical meeting at the Institute.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH, WORCESTER DIVISION.—A dinner will be held at the Crown Hotel, Worcester 3th, at 8 p.m., to be followed by the annual

The price of the dinner will be 8s (wines, intending to be present are requested to notify the Honorary Secretary.

Meetings of Branches and Divisions

YORKSHIRE BRANCH, SHEFFIELD DIVISION

Reception to Graduates

A VERY pleasant social meeting was held on July 3rd, when the successful students at the recent final examinations in medicine were entertained at luncheon. In the unavoidable absence of the Chairman of the Division, Dr Turner, the Vice-Chairman, Dr C. W. SMITH, presided, and Professor Sholto Douglas, Dean of the Medical Faculty, and eleven graduates were present as guests, in addition to twenty-four members of the Division.

After the loyal toast had been honoured Professor A. J. HALL proposed 'Our New Colleagues'. He remarked that as Sheffield graduates they had been exceptionally fortunate in one respect during their course in medicine: they had had several lectures by an eminent and experienced general practitioner, giving them some idea of the kind of thing they might expect in general practice; their thanks were due to Dr Gordon for the valuable help these lectures had given them. In entering the profession of medicine, Professor Hall urged the guests to bear in mind that at the same time they were entering what might be called the "fellowship of medicine" and a very much greater thing than merely the practice of their profession. Whatever branch they took up that fellowship implied loyalty to all their colleagues as well as loyalty to themselves. 'Medical life is essentially a very isolated life. Unlike the business man the doctor is in a position of superiority to his clients, inasmuch as the medical profession speaks a language that their patients do not and cannot understand. They are in a sense, in the position of absolute despots and autocrats. Suppose I told a patient that he was suffering from inflammatory atrophy of his hippocampus, you smile at the words but he would not; they are a foreign language to him. You are working among people from whom you are isolated by the possession of this special knowledge and the use of this special language. This tends to make us dogmatic and schoolmasterly, but we are saved from becoming either cranks or intolerable bores by the fact that we have to deal with human people.' He warned them very strongly in practice never to listen to what they were told, the doctor said, 'it was never what the doctor *did* say. With many the doctor was a kind of figure-head into whose mouth everybody put what they wanted

to say themselves or what they wanted the doctor to say. Finally Professor Hall wished them every success in their professional career. The greatest success they could have would be the doing of their work honestly and well.

Dr R. K. DOWSON, in responding to the toast, spoke of the suddenness of the change causing some bewilderment. He compared the case of the new graduates to that of new boys entering a big public school but they were proud of the traditions which they were expected to uphold, and hoped that each one of them would do his utmost to prove worthy of that great tradition.

Dr J. WILKIE proposed 'The University Staff.' He referred to the fact that although the Sheffield University only reached its twentieth birthday this year, they could justly be proud of having had in that short period no fewer than six men who had attained the honourable title of F.R.S. The most recent of these was Professor McLellan, whose reputation was world wide.

Professor DOUGLAS, Dean of the Medical Faculty, speaking on behalf of the university staff congratulated the new graduates on having attained to the summit of their desires, which should only prove to be the starting point of new aspirations. With the ending of the academic career the strenuousness of medical life commenced. He trusted their careers would be useful not only in a professional way, but often also by taking advantage of the opportunities of service to the public which their life work would offer. Few men could be so well qualified as the medical man to voice many of the people's needs.

Dr GORDON, proposing the health of the chairman, said it had been the chairman's duty, as the spokesman of the Division to welcome the new graduates into the profession. He wished them to understand that they were not regarded as enemies but were welcomed in the spirit of healthy rivalry. He advised them all to become members of the British Medical Association and urged the importance of an undivided front as there were many questions likely to arise, not only in connexion with national health insurance, but also with regard to public health where their interests would be concerned. Every one should join the British Medical Association and also a defence society.

Dr SMITH, in responding, referred to the fact that he had himself been a student of Sheffield University where he had sat at the feet of Professor Hall nearly thirty years ago.

Speaking of the British Medical Association he said it was such a necessary thing that practitioners of medicine should have a corporate life. "The Association is the only body which gives us any chance of fighting with the hope of success against the problems arising in increasing numbers." Some might say that the Association had not, perhaps done everything that it might have done but it had done, and was doing, a very great deal. It was the only body which could help each one individually. The Association was a reasonable body, not bureaucratic but absolutely democratic where everybody had the chance of giving a vote for or against any proposal that was brought forward.

BORDER COUNTIES BRANCH

A CENTRAL meeting of the Border Counties Branch was held at the Infirmary, Workington, on June 5th, when Dr G. B. MITCHELL (Vice President) was in the chair.

A British Medical Association lecture, entitled "Gastro intestinal disturbances in infants and young children" was given by Dr HUGH T. ASHBY of Manchester. The subjects chiefly dealt with were intussusception, diarrhoea, pyloric stenosis and infantile scurvy. Hearty votes of thanks were accorded Dr Ashby, and to Dr J. H. Dudgeon for his hospitality.

BORDER COUNTIES BRANCH DUMFRIES AND GALLOWAY DIVISION

The summer meeting of the Dumfries and Galloway Division was held in Dalry Galloway on June 25th, under ideal weather conditions. A good company of ladies and gentlemen assembled at 'The Lochmar' where an excellent lunch was provided after which the party adjourned to the bowling green and amid the towering hills of the Kells Rhinns played a game which, if not exactly good bowling, was good fun and thoroughly enjoyed by those engaged in it. An adjournment was then made to the Kenmore Arms, New Galloway, where a considerable addition was made to the party and tea was provided after which a visit was paid to the beautiful golf links. Votes of thanks, proposed by the Chairman, Dr P. M. KERR to Mrs Cowan, wife of Provost Dr Cowan and by Dr JOSEPH HUNTER to the Secretary, brought to an end a perfect day.

DORSET AND WEST HANTS BRANCH BOURNEMOUTH DIVISION

A MEETING of the Bournemouth Division was held on July 1st in St Peter's Small Hall. The CHAIRMAN drew attention to the flag which had been made for the Great Hall of the Association which was on view. The Report of the Council was then considered and the Representative instructed. Dr G. MORSE said he wished to present to the Division badges of office for the Chairman and Honorary Secretary. Dr HARRIS on behalf of the Division thanked Dr Morse for his kind offer and said the Division would be pleased to accept the gift.

EDINBURGH BRANCH SOUTH EASTERN COUNTIES DIVISION

A MEETING of the South Eastern Counties Division was held at Newtown St Boswells on July 1st when Dr MEXZIES, Chairman of the Division presided.

The meeting considered the Report of Council, the Supplementary Report and circulars from the Medical Secretary. In general the meeting approved of the views and recommendations of the Council, and instructed its Representative (Dr Muir) to support them at his discretion. In particular, the meeting asked Dr Muir to use his influence in any way feasible to advance the proposed publication by the British Medical Association of a book describing new and non-official remedies.

Dr ERNEST MUIR, research worker at the School of Tropical Medicine in Calcutta, read a paper on the changed aspect of the leprosy problem. He showed that leprosy as found in India could as a rule be diagnosed from clinical nerve signs long before it was possible to obtain a positive bacteriological examination and when treatment was begun at this early stage and carried on efficiently for a sufficiently long period in favourable circumstances it was possible, in the great majority of cases to free the patient from all active signs of the disease and provided the patient was able to maintain thereafter a fair degree of health there was a good chance of these signs remaining absent. This being so, the reasonable method of dealing with the leprosy problem was to lay stress on the training of medical men to make an early clinical diagnosis and to attract patients in the early stage to undergo efficient treatment, with the hope of remedy instead of as formerly leaving them till the disease was far advanced or frightening them away with the fear of lifelong compulsory segregation. Dr Muir described the nature of leprosy and some of the latest methods of treatment.

The CHAIRMAN invited members to ask questions and the correcting to the identification of the bacillus, the clinical signs of the disease, the effects of segregation in leper colonies, and the prevalence of the disease in Norway were answered by Dr E. MUIR in a most informative manner. Dr DIXON proposed a vote of thanks to Dr Muir for his exceedingly interesting paper, highly appreciated by those fortunate enough to hear it.

KENYA BRANCH

A MEETING of the Kenya Branch was held on March 11th at the Native Civil Hospital, Nairobi, when the PRESIDENT took the chair.

Before proceeding with the business of the meeting the President referred to the death of the late Governor, Sir Robert Coryndon and moved a resolution expressing the Kenya Branch's profound sense of personal bereavement and conveying to Lady Coryndon and her children its sympathy in their tragic loss. The members signified their assent by standing in silence for a few moments. The SECRETARY reported that during 1924 the membership of the Branch had increased from 36 to 52. Ten Branch meetings had been held during the year in Nairobi, the average attendance at meetings being eleven. The Branch was in a sound financial position, the balance in hand at the end of the year being over £40.

The PRESIDENT introduced Dr J. H. SEQUEIRA (London) to the Branch and asked him to open the discussion on syphilis. Dr SEQUEIRA gave a most interesting address on syphilis with particular regard to its various types. A general discussion followed on both syphilis and yaws, in which the majority of the members took part. Cases of skin disease were also shown by Dr BURKITT and Dr ALLEN. At the end of the discussion a hearty vote of thanks was accorded to Dr Sequeira.

The SECRETARY intimated that he had received a letter from the Colonial Secretary enclosing a copy of the proposed Professional Licences Ordinance and inviting the comments of the Branch on the proposed bill. It was resolved that the draft bill should be fully considered by the Branch Council and that after consideration a special meeting of the Branch should be called to discuss the whole subject.

A special meeting of the Branch was held on March 25th at the Native Civil Hospital Nairobi when the PRESIDENT reported that the draft Professional Licences Ordinance submitted by the Government for the comments of the Branch had been fully considered by the Branch Council which was of opinion that the proposed ordinance should be opposed. The President gave a brief outline of the reasons for adopting this attitude and also mentioned that the Law Society had decided to oppose the ordinance. After considerable discussion it was decided unanimously that the Branch was most strongly opposed to the principles involved in the proposed ordinance, and the Secretary was instructed to inform the Colonial Secretary accordingly and to state the reasons for the adoption of this attitude. It was also resolved that the whole of the correspondence in connexion with the matter including a copy of the proposed ordinance should be forwarded to the headquarters of the British Medical Association invoking their aid in opposing the measure and that the Colonial Secretary should also be informed of this resolution.

A further meeting of the Branch was held on April 8th at the Native Civil Hospital Nairobi when the PRESIDENT took the chair.

Arising out of the minutes the SECRETARY reported that a letter had been received from the Colonial Secretary intimating that His Excellency the Acting Governor in Council had decided that the Professional Licensing Bill would not be proceeded with at present.

Dr PATERSON read a paper on medicine and commerce in which he briefly outlined the history and organization of the United Fruit Company a number of whose estates he had seen during his recent visit to South America. A discussion followed, and Dr PATERSON was accorded a hearty vote of thanks for his interesting and suggestive paper.

National Insurance.

THE ROYAL COMMISSION

The thirty seventh meeting of the Royal Commission on National Health Insurance was held at the Home Office on July 7th, Lord Lawrence of Kingsgate, and later Sir Arthur Worley, in the chair.

A statement by the Government actually dealing with the results of the second valuation of approved societies so far as completed was considered by the Commission. Evidence was submitted by the Stepney Borough Council, represented by Councillor J. H. Burnby, as to the payment of contributions in respect of men usually employed on relief works, by the Sons of Temperance Friendly Society, represented by Mr. T. W. Huntley, as to various matters of approved society administration, by the Association of Pool Law Unions, represented by Mr. R. A. Lerch, as to the relations of Pool Law relief to health insurance benefits. Thereafter Mr. W. J. Brathwaite gave evidence on the question of the case value method of remuneration of panel practitioners.

Proof copies of the oral evidence and the relative statements submitted at the meeting of June 18th may be obtained from H.M. Stationery Office, Adelphi House, Kingsway, London, W.C.2 on remittance of cost (3s.) and postage.

The thirty eighth meeting of the Royal Commission was held at the Home Office on July 9th, Lord Lawrence of Kingsgate in the chair.

Evidence was submitted on behalf of the National Association of Trade Union Approved Societies by Mr. F. Kershaw (President), Mr. E. Corbey (Secretary), and Mr. G. W. Canter (ex-President) of the Association, and Mr. G. P. Blizard, covering the whole range of the health insurance scheme, in particular the need for expanding and unifying the arrangements of the various health services.

The Joint Tuberculosis Council, represented by Sir Henry Guvian and Dr. G. Lissant Cox, gave evidence on the need for amendment in the treatment and cash benefits of insured persons suffering from tuberculosis. Mr. Walter Farris was examined on his scheme for fundamental alterations in the financial structure of the scheme.

The thirty ninth meeting of the Royal Commission was held at the Home Office, Whitehall, on July 14th, Professor Alexander Gray in the chair.

Evidence dealing with the constitution of the Central Fund, the methods of audit of approved society accounts, the accumulation of cash benefits in respect of persons in institutions, and the provision of dental benefit was submitted by Mr. Wm. McLean on behalf of the Grand United Order of Oddfellows Friendly Society. The United Patriots National Benefit Society, represented by Mr. J. M. Roberts, gave evidence recommending the provision of curative treatment at the British Spas as a benefit for members of approved societies suffering from rheumatic diseases, this evidence being supported by Dr. Fortescue Fox, Past President of the International Society of Medical Hydrology, and Mr. John Hutton, Secretary of the British Spas Federation. Thereafter Miss M. A. Hilbery gave evidence as to delays and irregularities in payment of cash benefits.

Proof copies of the oral evidence and the relative statements submitted at the meeting of June 23rd may be obtained from H.M. Stationery Office, Adelphi House, Kingsway, London, W.C.2 on remittance of cost (2s. 3d.) and postage.

The fortieth meeting of the Royal Commission on National Health Insurance was held at the Home Office on July 16th, Lord Lawrence of Kingsgate in the chair.

Evidence was given by Mr. H. Lesser, on behalf of the London Insurance Committee, as to the powers and duties of the Committee and methods of improving the medical benefit service. Mrs. Hubback, representing the National Union of Societies for Equal Citizenship, put forward proposals for improving the position of women under the Act. The Standing Joint Committee of Industrial Women's Organizations, represented by Dr. Marion Phillips, submitted recommendations for extending medical benefit to dependants and widening its scope, for increasing the cash benefits, and for pooling the surpluses of approved societies. Mr. W. A. Middleton acting chief auditor of the National Insurance Audit Department, described the detailed arrangements for audit of the accounts of approved societies and insurance committees.

LONDON INSURANCE COMMITTEE

Complaints against Practitioners

At the meeting of the London Insurance Committee on June 25th reports were brought forward on six cases of complaint against practitioners which had been investigated by the Medical Service Subcommittee. In four cases the complaint was found not to be substantiated. In one of the remaining cases the subcommittee found that the practitioner had irregularly accepted fees for the

treatment which he provided for an insured person, but it had accepted his undertaking that he would comply with the requirements in the future. In the other case it was found that the practitioner had failed to attend and treat an insured person notwithstanding the fact that he had suspected two days previously that the patient was suffering from appendicitis (which proved to be the case necessitating immediate operation at a hospital) and it was recommended that he be censured and that the attention of the Ministry of Health be drawn to the case so that it might receive consideration in connexion with the distribution of money available for defraying the cost of medical benefit.

In a case in which the Committee had previously found that a practitioner had committed a breach of the medical certification rules in issuing a certificate without having made a further examination of the insured person and had also made improper use of the intermediate convalescent certificate it was now reported that the Minister of Health had reviewed the case and had decided that as this was the first breach of the terms of service on the part of the practitioner which had been brought to his notice, he would not on this occasion withhold any part of the money payable to the Committee for defraying the cost of medical benefit. The Minister had added however that in the event of any further breach he would take a more serious view of the matter.

LOCAL MEDICAL AND PANEL COMMITTEES

LONDON

Payment for Services of a Second Practitioner.—At the June meeting of the London Panel Committee Dr. H. J. Cardale, presiding, reference was made to two cases which had lately been before the Medical Service Subcommittee in which the insured persons obtained the services of a second practitioner and the subcommittee had found that the expenditure resulting upon this action was reasonably and necessarily incurred. The practitioner concerned in one of these cases discontinued treatment on finding that another doctor had been called in without his knowledge and the subcommittee was of opinion that he had thereby committed a breach of the terms of service. In the other case the finding of the subcommittee was to the effect that the practitioner had failed to provide adequate treatment. The Panel Committee expressed by resolution its opinion that in view of the free choice of doctor, which at present enables an insured person to change his doctor at any time the expenditure incurred by an insured person in cases such as these in obtaining the services of a second practitioner could not be held to be *ex ab initio* or *neccessary*. It was resolved to draw the attention of the Insurance Acts Committee to this point.

Claims for Emergency Treatment.—On a motion to pass for payment certain accounts for emergency treatment the Chairman stated that the Ministry of Health had pointed out that under certain circumstances if the Panel Committee thought there was reasonable cause instead of the fee being deducted from the remuneration of the practitioner concerned, it might be deducted from the general fund.

Range of Service.—A communication was read from the London Insurance Committee asking whether nasal cauterization performed by a practitioner should be considered as falling within the scope of medical benefit. Particulars of the case were submitted, and the Committee sitting as the Local Medical Committee agreed that the operation of nasal cauterization in the circumstances set out did not fall within the scope of medical benefit under the Act.

Public Medical Service for London.—The members who had been sitting as the Panel and Local Medical Committee held a further meeting as the central committee of management of the Public Medical Service for London. It had been previously agreed that the members of the Local Medical Committee should act as an *ad hoc* body to inaugurate a public medical service for the county of London but that after the scheme had been launched the service should be under the control of a separate and democratically elected body with officers and an executive committee. On the motion of Dr. Partridge it was agreed that some six members who under the chairmanship of Dr. Cardale had previously formed a section to study the possibilities of such a scheme should be appointed as the executive committee with power to co-opt up to a total membership of fifteen.

COUNTY OF WARWICK

The report of the Warwickshire Panel and Local Medical Committee for the year 1924-25 has now been issued in printed form.

The Committee met six times during the period and there were various meetings of sections and of subcommittees. Referring to the evidence given before the Royal Commission on National Health Insurance on behalf of the British Medical Association on April 30th and May 7th 1925 the Committee points out that the draft Memorandum of Evidence was prepared by a joint committee which included the personnel of the Insurance Acts Committee of the Association in its membership. This draft statement was submitted to meetings of all practitioners convened in each locality by the Panel Committee acting jointly with the local Division of the British Medical Association. Separate meetings for Warwickshire practitioners were held in Coventry, Nuneaton, Rugby, Leamington, Stratford upon Avon and Birmingham. At these meetings the general principles contained in the draft statement were reviewed and the opinion of the meeting thereon was conveyed to the Medical Secretary of the British Medical Association. The statement of evidence in a revised form was subsequently reviewed by the Panel Committee which instructed its representative member of the Panel Conference (Dr. W. Cook) to attend a special joint meeting with the Representative Body of the British Medical Association convened in London on March 12th,

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, AUGUST 1st 1925

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British Medical Association: Annual Meeting, Bath, 1925.

ANNUAL REPRESENTATIVE MEETING

Monday, July 20th

The Representative Meeting resumed at 10.45 a.m., with Dr BRACKENBURY in the chair. The minutes of Saturday's meeting were confirmed. The CHAIRMAN apologized for a late beginning in view of the great importance of the business before the Council meeting, which had taken place at an earlier hour.

ELECTION OF EIGHT MEMBERS OF COUNCIL

The MEDICAL SECRETARY announced the result of the election of the eight members of Council under By-law 53 (d) and Standing Order 46 as follows (the names are in alphabetical order):

Dr H C Bristowe, Dr H G Dam, Mr MeAdam Eccles, Dr T W H Garstang, Dr Wallace Henry, Dr R Langdon Down, Dr J A Macdonald, and Dr G W Miller.

MEDICO-POLITICAL BUSINESS

Mr I B TURNER (Chairman of the Medico-Political Committee), in moving that the report of the Medico-Political Committee be received, said that many subjects were touched upon, a great deal of work had been done and some important matters would come before the meeting.

Coroners' Law and Death Certification

Mr TURNER went on to move that the Representative Meeting adopt the memorandum on coroners' law and death certification (Appendix III to Annual Report of Council) as the policy of the Association in substitution for the existing policy. He said that a subcommittee of

the Medico-Political Committee sat for a good many sessions working at the question of the memorandum, being most ably assisted by a very distinguished coroner, Sir Walter Schroder. It went into the matter with the knowledge that there was a bill before Parliament presented by Dr Freeman, and drawn up and proposed by another society.

Dr C O HAWTHORNE proposed two verbal alterations: (1) That the words that "a Judge of the High Court shall review the case" (SUPPLEMENT April 11th, p. 166, col. 1) be altered to "who would have the power to reopen the inquiry." In a coroner's court a case was not tried, but an inquiry into the cause of death was held. (2) The second alteration referred to a point in para. 33 of the Appendix. It would be observed that in paras. 31 and 32 the pathologist was spoken of as an expert in homicide; in para. 33 he was spoken of as an expert witness. That would seem to imply that the pathologist was the only expert witness in the case, but his submission was that the family practitioner was also an expert and not a common witness. He therefore suggested that in para. 33 the phrase should be continued so as to remove the implication that the general practitioner was not an expert.

Mr TURNER accepted the first point of Dr Hawthorne and agreed with what he had said on his second point, but suggested the addition of some such words as "an additional expert witness" so as to make the point clear.

The CHAIRMAN said he understood the first suggestion was accepted (Agreed). With regard to the second, Dr Hawthorne would be at liberty to move an amendment when the one on the paper had been dealt with.

Mr BISHOP HARMAN (Marylebone) moved

(1) That in the opinion of the Representative Body it is highly desirable that the information conveyed to the Registrar General on death certificates should be accurate and that accuracy will not be attained unless secrecy is preserved
(2) that the Representative Body is of opinion that death certificates should consist of two parts—one part shall be a certificate of death from natural causes which should be given to the person who registers the death the second part should be for the Registrar General's information only, and shall contain the opinion of the medical attendant as to the cause of death

In view of para 2, para 8 was unsatisfactory His Branch wished the whole of that line taken out, the result being a reversion to the original policy of the Association, which was consistent and scientific and practical

Mr E W G MASTERMAN (Camberwell) opposed both the amendment and the motion to the extent that he was against the hiding of the cause of death either by putting in "natural causes" or by putting in a camouflage of the facts and then sending in information of a scientific character to the Registrar-General. The facts which it was undesirable to put in the certificate were very infrequent and had but little bearing on accuracy of information. When the information failed in accuracy it was usually due to the lack of a post-mortem examination. As the head of a large institution his experience of death certificates was very large, and he could not see how the public was going to be benefited by keeping back information. People wanted to know why their friends died, and the result of suppressing information would be to create a spirit of suspicion that medical men were wanting to keep back facts which they were perfectly ready to give. In the ordinary certificate now given the information was not scientific. Where there was no necropsy the information which could be given on clinical grounds would not in most cases be scientific, he did not think the supplementary certificate would be of great scientific value. He intended later to move a resolution to the effect that it was desirable that, when a necropsy had taken place, or where there were facts which should be kept confidential information should be given direct to the Registrar-General. That information would be strictly scientific and of great value.

The CHAIRMAN understood that the amendment proposed by Marylebone was directed entirely to the form of the certificate suggested in the report. Mr BISHOP HARMAN thought the purpose of the amendment was clear, it was to omit the line which said, "State disease." The CHAIRMAN said it would still be open to the meeting to discuss whether there should be any reservation at all. Dr FOTHERGILL said it would be desirable to have a direct vote on the question of whether or not the disease should be stated in the certificate given to the relations.

The CHAIRMAN said there were two questions to be considered. The big question was whether things should be left as they were, and the disease disclosed to the relatives, or whether any information should be kept back for the Registrar General only. The smaller question was that if such a reservation was desired the form of certificate proposed did not enable it to be made. The Marylebone amendment merely invoked the deletion of that section of the certificate which said, "State disease."

Mr TURNER said "State disease" was put in as a compromise, so that something could be put down of a general nature such as "heart disease" or "brain disease," to satisfy the friends and relations of the dead person. In the certificate to the Registrar, on the other hand as much information as possible would be given where there was no post mortem examination, and accurate details where a post mortem examination was held.

Dr J L LIVINGSTON asked whether everything the amendment aimed at securing could not be done under present law. Dr CANTLER asked how policies for life insurance would be affected. Dr C FRIER asked where the cause of death would be shown on the certificate if the words "State disease" were omitted.

Dr NOR SCOTT (Plymouth) said news travelled quickly in small country districts and if the cause of a child's death were given as "congenital syphilis" all the neighbours would soon learn that the father had "the pox" but

if it were given as "congenital debility" no one would be any the wiser. Doctors should be able to state the cause in general terms on the certificate given to the relatives, and disclose the real cause of death in a confidential document to the Registrar-General.

The CHAIRMAN said that the carrying of the amendment would not preclude the moving of any resolution which would leave things as they were. It would still be possible so to amend the Report of the Council that the form of the certificate would remain as at present. If there were to be a reservation the amendment of the Marylebone Division suggested that that should be left in its simplicity and not complicated by the additional paragraph which said "State disease." That was what they would be voting for if they voted for the amendment.

The Marylebone amendment was lost by a large majority.

Mr E W G MASTERMAN (Camberwell) moved a further amendment.

That in addition to a certificate of death (as referred to in para 1 of Appendix III) the medical practitioner who certifies the death shall if he has further facts to report send to the Registrar General a further report giving any scientific data which he considers necessary or desirable.

The CHAIRMAN asked which certificate was referred to—the form proposed or the form now in use.

Mr MASTERMAN replied that he referred to the present certificate. He differed from the proposal of the Council on two points. He thought the first certificate should be as full as possible, one reason being that poor people would be much embarrassed by having no statement of the causes of death, for the insurance societies would insist on having such a statement, but the most fundamental reason was that the medical profession should not have the burden put upon it of doubly reporting on every case and sending in scientifically valueless documents. They could state their honest belief briefly without pathological details which could not be known without further examination. Mr TURNER had said friends of the deceased person would be quite satisfied to get "congenital debility" or "cirrhosis of the liver" on a certificate, but among the educated classes those were causes which it might be desirable to camouflage. He objected to giving full information to the local registrars, because there was no security that it would be thoroughly confidential.

Dr E R FOTHERGILL in para 2 of the Appendix and the points Mr MASTERMAN makes not met by putting in "Registrar General," and putting "may" instead of "shall" in the first line.

Mr MASTERMAN said he preferred the recasting of the recommendation, but he was willing to accept Dr FOTHERGILL's suggestion.

Dr P MACDONALD (York) seconded the amendment formally.

Sir JENNER VERRALL thought the difficulty arose primarily from a want of consonance between the first and second paragraphs of the Appendix. The first paragraph, headed "Medical Certificate, Death and Stillbirth," spoke of a certificate being on a statutory form for death and stillbirth. At that point it was not said whether the certificate was or was not to include anything beyond the fact of death and give the cause of death. In the second paragraph, besides the certificate of the fact of death, the cause of death had to be given. The Committee did not suggest that the certificate should contain nothing but the fact of death, it left in the form a space for stating whether it was from natural causes or not, and the disease. If the Committee desired the second certificate to be optional, and only used in cases where the practitioner had scientific facts to communicate, the form suggested by the Chairman was very good and covered all the facts. The Committee had to decide whether it wished that the certificates should convey two things—the first, the fact of death, and the second, whether it was from natural causes. Did they wish that the second certificate should be optional, and only to be used when the practitioner had further facts to communicate beyond the simple statement of natural causes, and further, when he had such facts did they wish them to be sent to the Registrar or Registrar General? If so, what was proposed by the Chairman would settle the whole matter, and there was no need for further debate.

Dr J W BONE said the amendment would wreck the whole scheme. The second certificate should be compulsory and issued in every case.

In reply to Dr FOTHERGILL, who asked whether the word "shall" did not appear in the amendment, the CHAIRMAN assented. It was open to the practitioners to say that he had no further facts to report, and therefore there was no certificate.

Dr J STEVENS (Edinburgh) Does this apply to Scotland? (Laughter.)

Mr TURNER It does not. Scots law on this question is different from English and much better.

Dr STEVENS said that reply delighted him, but there was always the danger of an ill-considered thing being passed for England, and afterwards being automatically brought into force in Scotland. The second certificate was secret and confidential, if insurance companies knew that a secret certificate had been sent to the Registrar-General, would they not refuse to pay until they knew the nature of it? That would dispel the secrecy.

The amendment was lost.

Dr FOTHERGILL proposed that in para 2 of the Appendix instead of "Registrar" should be substituted "Registrar-General." This was agreed to.

Mr MASTERMAN asked whether para 2 meant that it was a purely voluntary matter whether a man sent in his report or not.

The CHAIRMAN replied that if he did not consider there were any other facts necessary or desirable for the Registrar-General to know he need not send anything further, but if he considered there were such facts he must send them.

Dr BONE Is that a correct interpretation of policy?

Mr TURNER said the intention of the Committee was that in each case two certificates should be sent. If there was nothing in addition to the fact of death to report to the Registrar-General he would simply send a report, "I have nothing further to report", then he would get his fee.

Dr J L LIVINGSTON emphatically protested against two certificates being given in every case of death ("Hear, hear.") Living in a rural district, he was frequently compelled to give as the cause of death "old age." He objected to having to send to the Registrar-General, whether he supplied the envelope or not, a letter giving scientific information as to the cause of death. He suggested that "may" should be substituted for "shall."

After some discussion as to whether the amendment was in order, as being opposed to previous policy of the Association, the CHAIRMAN ruled that it should be put to the meeting, and called on the Medical Secretary to give a short account of the history of the matter.

The MEDICAL SECRETARY said that his memory, although not very definite as to dates, led him to say that certainly since 1908 the question of coroners' law had been under discussion, and one of the things which had been laid down was that there should be a certificate of the fact of death with perhaps some information as to the cause, with the compulsion on the doctor to give for the information of the Registrar-General full information in another confidential document. Since the war, and if it was to be so as a unit because, before the war, that had been the policy, a resolution to rescind a previous resolution was essential, that would mean that, as regards every motion affecting policy, it would be necessary to hunt up precedents and propose, if necessary, the rescission of resolutions perhaps twenty years old. That would be very inconvenient and obstructive.

Dr LIVINGSTON-DOWN submitted that the notice in the JOURNAL of the meeting rendered a rediscussion of the whole matter in order. The CHAIRMAN said he was not going to rule the amendment out of order.

To Dr BLAIRS, who asked whether a two thirds majority would be required, the CHAIRMAN said "No."

Mr TURNER said he hoped the amendment would be rejected, because it would render the whole thing ungovernable. If there was any question of "may"—well, practitioners "might" not do it. It must be remembered that if

the bill which the Government was bringing before Parliament became law with regard to coroners' law and death certification, anyone giving a death certificate in future would be paid.

This amendment also was lost.

Mr MASTERMAN said that on reading para 3 of the Appendix his Division understood that a medical practitioner sending a case into hospital was under a moral obligation to see that the patient had a certificate. He thought words should be inserted to deal with that point.

Mr TURNER said that was a difficult point. If a man was sent to hospital and died within a day or so, perhaps unconscious, the hospital might give a certificate without really knowing the history of the case, and in that case it would be a good thing for the practitioner also to give a certificate. It was rather difficult to redraft the paragraph.

Dr FOTHERGILL suggested that the onus was on the house-surgeon. Mr MASTERMAN said that in the present paragraph the onus was on the general practitioner.

Dr A MANKFILL (Bradford) said he had recently had a case where a man was dying slowly from malignant disease of the stomach. He took his leave, and ten days later the relatives called at his surgery asking for a certificate that the patient had died from the disease he had diagnosed. It transpired that in the interval the patient had been treated by a non-medical man, a herbalist. If the paragraph had been in operation he would have been obliged to give a certificate but he did not know what the herbalist had given the patient in the interval.

The CHAIRMAN, in reply to various members, said that Mr MASTERMAN's amendment was to para 3 of the Appendix, to add the words—

unless such practitioner has reason to believe that such a certificate has been already given by another medical practitioner.

Dr N RAWSON (Tyneside) saw no need to alter the wording in the Appendix. A hospital was outside the area in which a practitioner practised, he did not usually practise inside a hospital. Dr D'EWARD said some doctors took cases from a very wide area, some definition of what was meant by "the area in which a doctor practises" was therefore desirable. The CHAIRMAN said it had been suggested that the area was that enclosed by the four walls of the hospital, but he did not think the words could be interpreted in that way.

Mr MASTERMAN's amendment was lost.

Dr C F T SCOTT (Willesde) moved that in the case of a body viewed within one mile of the address of the practitioner or medical officer the fee payable by the local sanitary authority should be 7s 6d, with an additional fee of 2s 6d in respect of every mile beyond that distance, instead of the fees of 5s and 2s respectively set out in the Appendix. It was important, he said, that when doctors were asked to accept increased burdens they should be properly paid for doing so.

The CHAIRMAN said it was necessary to consider the scheme as a whole. It was suggested in the amendment that the fees should be paid by the local sanitary authority, but the certificates were to be sent to the Registrar-General so that the local sanitary authority would know nothing about them.

Mr TURNER said the first certificate would go to the local sanitary authority, and the certificate showing the exact causes to the Registrar-General. The first certificate would go to the local registrar of births and deaths and thence to the local medical officer of health and payment could be made on it.

Dr FOTHERGILL asked whether the 5s was to cover both the certificate and the report. Mr TURNER said that was so.

Dr SCOTT suggested the omission of the words "the local sanitary authority." It did no matter where the money came from.

Dr BONE said the proposal under discussion had been carefully considered by many committees for years, and had been the policy of the Association for a long time, yet now at a single sitting alterations were being proposed which might result in its destruction. The scale of fees

proposed in the report had been carefully thought out by medical men and by lay authorities on the subject, and represented the maximum it would be possible to obtain. There was a good chance of obtaining legislation on the lines of the scheme proposed, but not along those suggested by the amendment.

Mr TURNER said it would do no good to the Association to ask for higher fees than could possibly be obtained. The fees proposed were altogether new, would be a fresh charge on the exchequer, and a fresh source of income to the doctor.

The amendment was lost.

The CHAIRMAN, on behalf of West Suffolk (whose representative was absent), moved to amend the proposed certificate of stillbirth by the insertion of the words, "I was informed that" ("and that I was informed that the said child was stillborn"), the words to be erased except in cases where the practitioner was not in attendance at the stillbirth.

The motion was lost, as was also a motion by North-East Essex, similarly moved by the CHAIRMAN in the absence of the representative, to insert the following provisions in the Appendix:

(a) That the usual medical attendant of the deceased should be called to give evidence at an inquest, and

(b) That in the case of an inquest being held the coroner shall give the medical practitioner called at least twenty-four hours' notice.

Dr GORDON BELL (Sunderland) moved to substitute 2 guineas for £1 1s 6d as the fee payable to a medical practitioner by a coroner for every day of attendance to give evidence under his summons.

This motion also was lost.

Mr MASTERMAN, on the general question, said he wished to protest against the fee of 3 guineas which was proposed for every *post-mortem* examination done for a coroner. He regarded such a fee as excessive. In London, at any rate, necropsies conducted at a mortuary did not constitute any great tax on a practitioner, the mortuary attendant did most of the mechanical work. A fee of 4 guineas for attending an inquest where a necropsy was made was too high, and could not be obtained, and he disliked anything which could not be obtained being made the policy of the Association. The effect of the proposal in London would be, probably, to put all necropsies into the hands of pathologists, a practice which was already spreading, if general practitioners wished to continue performing necropsies thus keeping up their knowledge of pathology, they should vote against the fees proposed. He would therefore move the following amendment:

That the fee for making *post-mortem* examinations put in the report at 3 guineas should be 1½ guineas.

The amendment was lost.

Dr R. D. MORTIMER (Bolton) suggested that in para 9 of the Appendix the word "statutory" be added before the word "offence."

This amendment was agreed to.

Dr HAWTHORNE, referring to para 33 of the Appendix, said that the object of the alteration was to secure that a distinction should not be made between a pathologist called in as an expert witness and a family practitioner who was called in. He proposed that the paragraph should read: "When the coroner desires to call for expert witnesses he shall be empowered to do it and to pay such witnesses appropriate fees."

Mr TURNER accepted the proposal, and the amendment was agreed to. The whole of the memorandum as amended was then approved.

Supplementary Death Certificates

Mr TURNER next moved a recommendation of Council that additional death certificates should not be given except at the request of the patient's representatives or after their consent had been obtained. Dr Fothergill had suggested that "copies of" should be inserted in place of "additional." He thought this was the better wording, and he moved it.

Dr MANKFELL said that the certificates asked for were not copies. The duration of the disease was stated in the

certificates given to the registrars, but the insurance companies wanted to know if the death had supervened since insurance or reinsurance. The insurance companies sought for additional information.

Dr J. F. WALKER suggested that the word "duplicate" would be preferable.

Dr BOYF suggested "supplementary" as the more correct word, if the paragraph had to be altered, but he preferred to leave it as it stood.

Mr McADAM FIELDS asked if it really referred to certificates or reports. Everybody could get a copy of the certificate on application to the registrar, but the insurance companies wanted a further report, and he had always objected to such a report being given except with the authority of the relatives of the deceased person.

Dr LANGDON-DOWN, on a point of order, asked if the paragraph had anything to do with the official certification of death. He suggested the deletion of the paragraph. Dr J. F. BILSON replied that the matter was brought up by his Division (Southport) last year, and was intended to refer to copies or supplementary copies of certificates required by insurance companies in cases of people insured for small sums. It was not intended in the case of policies for large sums. It was an attempt to defeat the insurance companies, who sought to render their policies void by some slip or misstatement on the part of relatives of a deceased person.

Dr G. H. LOWE (Cleveland) asked if the passing of the resolution did not mean direct encouragement of the practice of insurance companies of insuring lives without previous medical examination.

Dr J. A. MACDONALD said that these certificates were asked for in order, if possible, to nullify a policy. He always refused to give copies of certificates, whether offered a fee or not.

Mr McADAM FIELDS moved as an amendment:

That the Representative Body is of opinion that an additional report as to the cause of death or a copy of a death certificate should not be given except—

and then to follow on as in the motion.

The CHAIRMAN said it was necessary to keep the two certificates distinct by different nomenclature.

Dr F. L. ANSON (Leigh, Wigan) Why not say "information"?

Dr C. W. CUNNINGTON (Hampstead) seconded Mr Eccles's amendment on the following ground: A certificate of death once given was public property, anybody could get a copy, and he thought it would be inequitable to charge a fee. Secondly, as to copies for information, he was out to protect his patients' interests, and he considered any information he had was confidential. In his own mind he was convinced that doctors should not tell, at least without the consent of the relatives.

Dr BILSON opposed the amendment, remarking that everybody knew what was meant by additional death certificates, and he thought that was enough.

The amendment was lost, and the Committee's recommendation was adopted.

Composition of General Medical Council

Mr TURNER moved the recommendation of Council, made after full consideration of the position with regard to the present constitution and duties and powers of the General Medical Council, that "the Representative Body does not consider that the Association should take steps (as suggested at the last Annual Representative Meeting) with the view of obtaining a larger number of direct representatives." He said it was a general misunderstanding of the medical profession that the General Medical Council was established in the interests of the profession. But this was incorrect, it was established to protect the public. Things which appeared in the lay press from time to time showed that the powers of the Council were jealously regarded by considerable sections of the public, who were usually very ignorant of the real facts. If anything that were done in the way of increasing the representation of the general practitioner led to the casting of the whole constitution of the Council into the melting-pot, there

might be in contention that would result in some of its powers and references being curtailed. That would be most undesirable.

Dr C. I. T. SCOTT (Willesden) moved to rescind the resolution passed last year by the Representative Body that there should be a larger direct representation. He said that the Committee's proposal was in direct contradiction to what the Representative Body did in 1924. The general practitioner was represented by only 6 out of the 38 members of the General Medical Council, and that was not nearly sufficient. The General Nursing Council was composed of 2 Privy Counsellors, 2 representatives of the Board of Education, 5 representatives of the Ministry of Health, and 16 representatives of the nurses on the register. That was a good democratic council. The general practitioner should be better represented, not only for disciplinary measures, but for educational measures.

The amendment was lost, and the recommendation of the Council was carried.

Payment of Health Certificates for Elementary School Children

Mr TURNER moved to rescind the resolution of the Representative Meeting, 1920: "That where in elementary school authority requires a medical certificate of the inability of a child to attend school, the fee for such certificate shall be paid by the education authority," inasmuch as this did not accord with the opinion of the Solicitor of the Association as to the legal position. He said the Solicitor had come to the conclusion that the resolution was not within the law.

North-East Essex had an amendment to reject the recommendation and to substitute "should" for "shall" ("should be paid by the education authority") in the resolution of 1920, but the representative was not present to move it.

Dr WALLACE HENRY submitted that the first part of the amendment, being a direct negative, was out of order.

The CHAIRMAN said the first part was unnecessary, the second part was in order. If passed, it would not become what was technically called a decision of the Association, but a resolution of the meeting. He moved the amendment on behalf of North-East Essex.

Mr BISHOP HARMAN supported the amendment. It should be the policy of the Association to correct the inequalities of the law. Assuming the Solicitor was right, the Association should engage in propaganda to get the law altered.

Dr J. A. MACDONALD asked how the practitioner would stand in relation to the two new positions. An occasion might arise when a practitioner might come to grief over it.

The CHAIRMAN OF COUNCIL suggested that if the meeting was of the opinion that it would be better to have a resolution with the word "should" instead of "shall" it might be better to rescind the original policy motion and thereby put the practitioner out of jeopardy, and then by resolution of the meeting have the altered form put up and make it policy next year.

Dr WALLACE HENRY said that in Leicester the resolution of 1920 had been carried to its logical conclusion. The education authority had declined to pay the fee for examination, and as a result of that no medical practitioners in general practice gave any certificate on any conditions whatever to any school child. That had worked perfectly smoothly, there had been no prosecutions of parents for not sending a child to school on account of physical defect. Consequently his Division wanted to know what had occurred since the resolution had been passed to cause any change in the policy. No Division in the country had asked that the resolution should be rescinded. Why, then, had the Council taken upon itself to propose the rescinding of the resolution? It was because the Solicitor was of opinion that the resolution was illegal. But that opinion had been before the Association when the resolution of 1920 was passed. That opinion was before the Representative Meeting in 1905. Some authorities certainly paid for the certificate, including Hounsey, and if some other authorities had not the power to pay then

the Association, by adhering to its policy, would assist them in obtaining the power they ought to have. Furthermore, it was a great saving of time to the practitioners not to have to give the certificates. He therefore hoped that the meeting would decline to assent to the recommendation of the Council. (Applause.)

Dr L. A. PARRY (Brighton) said that he had the greatest respect for the opinion of the Solicitor, but he believed he was wrong in the present instance, for many authorities paid for the certificates, and if they had no authority the Government auditors would see that that was surcharged.

The CHAIRMAN said that as the Solicitor had been publicly challenged he would invite him later, if the meeting thought that necessary, to justify his opinion.

The CHAIRMAN suggested that the best way out of the difficulty might be to rescind the original resolution and then put as a substantive motion the original resolution with the word "shall" changed to "should," as proposed by the amendment of North-East Essex.

Mr TURNER said he thought that would be the best solution of the problem, and the CHAIRMAN OF COUNCIL also supported the adoption of this course.

Dr BOVEY then proposed that the resolution of the Annual Representative Meeting, 1920, be rescinded, without giving any reasons. This was carried.

On the motion of Mr BISHOP HARMAN the resolution of 1920 with the substitution of the word "should" for the word "shall," was then carried.

Fees for Medical Examination of Emigrants

Mr TURNER moved the adoption of the following in substitution for the fees adopted by the Representative Body in 1923:

That the fees chargeable by the medical referees appointed by the Dominions of the Empire to examine proposed emigrants should be as follows:

- 10s. 6d. for an applicant of 16 years of age or over
- 2s. 6d. for each applicant under 16 years provided their parents or guardian are sailing with them
- Not more than two applicants under 16 years of age in one family to be charged for
- Applicants under 16 years proceeding alone will be charged 10s. 6d.

The motion, he said, was merely a formal one designed to make clear the satisfactory arrangement arrived at with the Australian emigration authorities. There was formerly a limit of 26s. to the amount that could be charged for any one family, which was interpreted by some emigration agents as meaning that boys of 18 or 19 were to be classed as children. By the present arrangement 10s. 6d. was chargeable for every person over 16.

Dr MOTHERSOLF pointed out certain ambiguities in the motion. Certain cases, such as that of children under 16 proceeding without parents or guardians, did not seem to be provided for. He therefore proposed as an amendment certain verbal changes designed to make the position clear.

Mr TURNER did not think the amendment would have any material effect and was unwilling to change the wording without good cause since it had been accepted by the Australian Government with which the Association was working very amicably. Taken in conjunction with the preamble the wording was quite clear as it stood.

The amendment was lost and the recommendation of Council was carried.

Factory Medical Service

Mr TURNER next moved the adoption of the principles set out in the Annual Report of Council (includes a factory medical service (SUPPLEMENT, April 11th p. 155)). The question was he said of great importance in view of the forthcoming introduction of a bill to amend the Factory Act. The question had been very carefully considered and a joint deputation from the Association and the Society of Medical Officers of Health interviewed the Home Secretary with regard to it at the beginning of the present month. Unfortunately he had been unable to take part in that deputation but would welcome a statement from Dr Wallace Henry who was present and was familiar with all that had occurred.

Dr WALLACE HENRY said at the interview with the Home Secretary Dr Bradenbury outlined the policy of

Association with reference to the Factory Acts, at the same time stating that certain members of the Association, and particularly those engaged in factory work, did not entirely agree with that policy. Dr Lyster also spoke on behalf of medical officers of health. The Home Secretary, Sir William Johnson Hicks, received the deputation very cordially, but was unsympathetic towards its object. He made it clear that while there was nothing in the bill he proposed to introduce which would prevent the Association bringing forward its policy again at some future time, there was nothing at all likely to further the aims of the bill of his put before him, beyond a clause taken from the information contained in the reports of school medical officers with the work of the factory surgeon who inspected young people about to enter factories.

Dr W F DEARDEY (Manchester) had a proposal to make which he thought would facilitate business. He had conferred with the representative of the Glasgow Eastern Division, which had an amendment on the subject, and it had been agreed that the amendments by Glasgow Eastern and Manchester should be combined, the former being altered to read "That paragraphs (iv) and (v) of the principles set out in the report be referred back to the Council for further consideration." If that was acceptable he would withdraw the Manchester amendment.

The CHAIRMAN said the suggestion was a valuable one. As far as paragraphs (iv) and (v) were concerned the question of urgency did not arise. If the Chairman of the Committee saw fit to accept the reference back of these paragraphs the meeting could go on with the other parts of this policy.

Dr BEADLES said that factory surgeons would like an opinion on the question involved rather than have paragraphs (iv) and (v) referred back indefinitely.

The CHAIRMAN said these contentious paragraphs could be referred back, well and good, but if some representatives want us to reject them without further consideration they are in order.

Dr DEARDEY: I am willing.

Mr TURNER said he was willing to accept the reference back of the paragraphs, whereupon the meeting agreed to the reference back of these two paragraphs, and the remaining paragraphs of the Report were agreed to.

Unqualified Practitioners

Dr J S MASON (St Helens and Warrington) considered that the policy adopted by the Association in 1906 should be resuscitated in so far that the Medical Acts should be amended in the near future to make it impossible for any unregistered person to practise medicine or surgery. His motion, he said, did not deal with the question of direct representation on the General Medical Council or with that of one portal of entry into the profession but simply with the amendment of surgery by Acts to prevent the practice of medicine and surgery by unregistered persons. This question was admittedly difficult to deal with, but should not be buried simply for that reason. In the interests of public health and public safety the Association should embark once again on its 1906 policy. In 1906 the Association adopted a very active policy against unregistered practice, it might be regarded as a hungry cannibal ready to seize on and eager to devour any unregistered person, such as a stray osteopath, who crossed its path. Intely it had become a vegetarian, almost a fruitarian, living on the "refreshing fruit" of the mild and curious eye of a ruminant. (Laughter) At the time the Association first took the matter up there was fierce competition for small fees and a seat on the public took the view that the profession was merely jealous of its financial interests but to day the position had changed. A great many members of the profession now received more or less assured incomes, and they should show that they were not prepared to tolerate unregistered practice simply because it relieved them of part of their work. In the old days the opposition of the Association to unregistered practice was largely directed against the humble bonesetter or prescribing pharmacist, but to day

the evil was assuming a more subtle and sinister aspect, as was shown by certain cases which had come under his notice recently. In two instances sufferers from forms of tuberculosis had been treated by "spiritual healers." In one case a girl suffering from lupus vulgaris was treated for some months by the invocation of the "spirit" of an Indian who lived 400 years ago, and charged several guineas, and in the other, a woman who had plemisy with effusion was under treatment for seven months by a man who did not even see her, but sent her medicine on the strength of being given a locket which belonged to her. Many people were sent to prison for pretences less false than those made in those instances. Another form of unqualified practice was carried out through a weekly periodical, and two young men who asked him to help them to get the treatment in question told him that there was a medical committee running the treatment for consumption which that periodical professed to give. The time was ripe for the Association to deal with this question. Only registered dentists and midwives could now practise, and the same applied to the treatment of venereal disease, and the whole range of medicine should be kept for those properly trained for the job. The Association should adopt the active policy of 1906.

Dr HARMONIE expressed the opinion that the motion was unsuitable to be put forward in a meeting of medical practitioners. If the citizens of the country required direction to be provided by Government let them ask for it, but do not let medical practitioners set up a rule with the apparent object of getting patients driven into their consulting rooms. The quack had always flourished, but could it be imagined that the House of Commons was going to set up a rule which would interfere with the activities of "Lady Bountiful" in the village or those of the curate in his visitation of poor parishioners? It was an endeavour to restrict the liberty of a number of people regarded as their right and privilege. Every man and to make certain privileges which a number of people regarded as their right and privilege. Every man in this country thought he was competent to drive a gig or edit a newspaper or prescribe for a friend. (Laughter) If this were passed the meeting would be saying a man was to be prevented from conveying his opinion and advice to his neighbour, even if he did not do it for gain. On the other hand, patients were to be prohibited from going to an individual in whom they had faith. All who valued liberty must take the disadvantages as well as the advantages. If the meeting thought individuals should be left a choice—no doubt a foolish one—to take advice from any quarter they liked, they would have nothing to do with a proposal in which their financial and professional interests were concerned. He moved that the meeting proceed to the next business.

Dr C E DOUGLAS seconded, and the proposal to proceed to the next business was carried.

Income Tax and the Association Subscription
Mr F C FINNIS (Newcastle-on-Tyne) moved that members of the profession assessed for income tax under Schedule E should be entitled to a rebate in respect to the subscription to the British Medical Association and kindred societies in the same manner as those assessed under Schedule D. After a brief discussion the motion was lost.

Fees for Examination of Recruits
Dr W T HINE (South Suffolk) moved to instruct the Council to take action with a view to getting the daily maximum remuneration for the medical examination of recruits for the Regular Army and Royal Air Force increased from £1 17s 6d to £2 2s. This resolution also was lost.

Nursing Homes (Registration) Bill
Dr E R FOTHERGILL (Brighton) moved to instruct the Council actively to oppose the Nursing Homes (Registration) Bill, as also any other bill having reference to nursing homes, and based on the same principle. First, a definition of a nursing home was necessary. The definition provided was any premises used for the reception of persons who are suffering from sickness, injury, or infirmity, for the purpose of providing such persons with food where any

parent is used." So that if a medical man's method-in-law, suffering from chronic gout, was staying with him, his house became a nursing home. The bill was so badly drafted that the Minister of Health would have power to refuse to register a home if any person employed in it was unqualified to run it. The framers of the bill—the College of Nursing—agreed that that clause needed in evidence. Nursing homes were not for the industrial classes, but for the middle and upper classes. The inmates were able to pay fees and choose their doctors. They were under no compulsion, they could enter and leave whenever they wished. The ridiculous intrusion of a State department into the practice of the profession should be resisted. He secured Sir Henry Cantley to oppose the bill, doctors wrote to their members of Parliament, and it was withdrawn under promise that a committee should be formed to go into the whole question and decide what, if anything, should be brought up at a later date. Steps had been taken to ensure the Association being represented on the committee if it was not to be entirely composed of members of Parliament. Several other interests were trying to get representation on the proposed committee. He urged that on boards formed locally to deal with nursing homes the medical profession should be represented; that the British Medical Association should be represented on or appear before the committee of inquiry, that any home conducted by a medical man should be outside the scope of the bill, that, wherever the nursing home was, records and details should be confidential between the doctor and his patient, and that the profession should have a seat on any local body formed to control the homes. (Applause.)

Mr TURNER said that the matter was of considerable importance, because when the bill was withdrawn the Minister of Health intimated that a Select Committee of Parliament was going into the whole subject. If the committee was appointed the Association would be asked to give evidence, and the first question would be, Do you approve of the registration of nursing homes? Those appointed to give evidence from the Association should know the opinion of the Representative Meeting. The matter would probably come up before next year's meeting. Although the Council theoretically approved the registration of nursing homes, provided the provisions of the bill satisfied them, it was desirable to have an expression of opinion from the Representative Body whether the Association should support the registration and inspection of nursing homes under proper safeguards and conditions, and limiting those who ought not to be brought into the Act. It was the meeting dead against the proposal and lesions of having nothing whatever to do with it?

The CHAIRMAN said that the difficulty, as Dr Fothergill had pointed out, was exactly what was meant by "similar principles." The Council if the report was approved, did not stand against the registration of nursing homes in general; it had no objection, provided that the things to which Dr Fothergill had drawn attention were safeguarded, and indeed that the Association undertook to support certain nursing organizations in getting the registration of nursing homes. The Council approved the principle of registration, under proper conditions and with proper safeguards—did the meeting approve of that? ("Yes.") The Brighton amendment meant that the Association would not support any bill for the registration of nursing homes, unless it was safeguarded in regard to the three prominent objections pointed out from the medical point of view. If the motion were carried it would not mean that the meeting disapproved of the registration of nursing homes in general, but simply disapproved of certain things in the particular bill which had now been withdrawn.

Dr JOHNSON SMITH said he felt sure the Representative Body would not object to the registration of nursing homes. He took it that Dr Fothergill would not object to the local authority supervising a nursing home in a particular area.

The motion of Brighton was then put and declined carried.

In reply to a question by Mr BISHOP HARMAN the CHAIRMAN said that the interpretation of the motion had been made clear in the meeting. Sir JESSE VERRALL

said that interpretation would not appear in the resolution. He was not satisfied with the position. The CHAIRMAN said he would be prepared to take a supplementary motion.

Mr BISHOP HARMAN asked for a count of the votes on the Brighton motion, which he said, had been put hurriedly. On a count being taken the motion was declined carried by 65 votes to 14. Mr HARMAN then moved that the "similar principles" mentioned in the Brighton resolution, to which principles objection was taken, included the three points mentioned by Dr Fothergill—namely, (1) the non-recognition of the local medical profession by the supervising authority, (2) the disclosure of the case sheets and records of the patients treated to the supervising authority, and (3) that any premises under the control of registered medical practitioners are included within the definition of a nursing home by the supervising authority. The motion was carried.

Remuneration of Assistants in General Practice

Mr TURNER next moved as a recommendation of Council the principles formulated for the guidance of the profession in the matter of remuneration of assistants as set out in the Supplementary Report of Council (SUPPLEMENT, June 27th, p. 276). As would be seen from the Report the Medico-Political Committee had come to the conclusion that the employment of assistants was good both for the practitioner and the public in proper cases, it did not approve of that system where a medical man was sitting in the middle with a lot of assistants "dotted round" almost free from supervision but it thought it was right that he should employ an assistant over whom he could exercise proper supervision, and that he should not make the promise of a partnership the excuse for paying a lower salary.

The motion was carried.

Practitioners Engaged at Municipal Maternity Hospitals

Mr TURNER moved, as a further recommendation of Council to insert in the Report on the utilization of municipal hospitals for civil needs the paragraphs dealing with the remuneration of medical officers of municipal maternity clinics as set out in the SUPPLEMENT of June 27th (p. 277).

Dr J. F. WATKINS suggested with regard to the second paragraph of the recommendation—

That where a general practitioner is called upon to render assistance at a confinement in a municipal maternity hospital the fees payable to such practitioner should be in accordance with the scale of fees approved by the Ministry of Health for the payment by local supervising authorities to medical practitioners called in on the advice of midwives under Section 14 of the Midwives Act 1918—

that the fees for the municipal maternity hospitals should be higher than those paid when a practitioner was called in by the supervising authority under the Midwives Act. The fees under the Midwives Act were on the principle of average—some were very hardly earned, and some were fairly easily earned. In the case of a municipal maternity hospital if a man were called in there it would be an extremely difficult case, not comparable to many of the cases in which men were called in under the Midwives Act. Furthermore, in the case of the municipal maternity hospitals the cases would not, as in the cases under the Midwives Act, be necessitous cases, and therefore the fee should be higher.

Dr J. H. THOMPSON said it was not intended that the patients themselves should pay the fees in the hospitals in the class of case referred to.

Mr E. W. G. MASTERMAN said he only rose because he had charge of a municipal maternity home which was entirely for cases where the housing accommodation was not sufficient. The cases were generally necessitous cases, the patients paying what they could to the medical officer of health—generally 15s a week—and there was a grant from the County Council towards the expenses. He thought, therefore, that the circumstances in which a doctor was called in would be similar to those in cases under the Midwives Act because if there were an efficient resident

Medical Officers and Consulting Fees

Major P. HARRISON (Derby) withdrew his motion to rescind the resolution of the Annual Representative Meeting, 1924, that it was not advisable that whole-time medical officers engaged in public health work should accept fees for private consultations, but the CHAIRMAN said that he had a similar motion from Rochdale.

Dr J. HEVLYN (Rochdale) said that his Division had such great confidence in the skill and judgement of the Council that that was the first time he had brought forward a motion in opposition to it. But in Rochdale there were three medical officers of health, and under the existing arrangement two of the bodies could give powers to their officers to accept fees for private consultations, and the Ministry of Health might object. That was an invidious position for the Division, and it wanted from the Council a definite answer as to whether the medical officers of health could ask for fees or not. It did not mind whether the answer was "Yes" or "No," but it wanted to know the position.

Dr R. BORD (Manchester), supporting the amendment, said that last year his Division brought forward an amendment which was virtually the one before the meeting, though the Manchester resolution added the words, "except when freely offered through the practitioner attending the case."

This amendment was lost.

Food Preservatives

Dr RIDLEY BAILEY went on to mention that a departmental committee was appointed to deal with the subject of food preservatives, which committee had made a report. It had come to the knowledge of the Association that certain vested interests were putting pressure on the Government and Parliament not to adopt certain of the recommendations of that departmental committee. The Public Health Committee of the Association was called together to deal with the matter as one of urgency, and that Committee, having with it a number of experts, gave its opinion, stating that that opinion would come before the Council and the Representative Meeting in due course. The recommendations had been sent to the Government department concerned, they had been before the Council that morning, and they now came before the Representative Meeting as recommendations of Council for the support of the meeting.

The recommendations were as follows:

(1) That the Representative Body is satisfied from the experiments made, from the recorded cases and also from the fact that other countries have discontinued their use that it is essential in the interests of public health that boric acid and borons should not be used as food preservatives.

(2) That while recognizing that there are difficulties in heretofore in this country due to the lack of cold storage facilities and efficient means of transport which do not exist to the same extent in America and other foreign countries the Representative Body is of opinion that as a matter of principle it would have been better if the example of other countries in prohibiting entirely the use of preservatives and metallic and other toxic colouring matters in foods could have been followed in the draft regulations *re* food preservatives etc. issued by the Ministry of Health.

(3) That the members of the Representative Body draw particular attention to the evils which have arisen in their own experience from the importation of liquid eggs preserved with boric acid and the Representative Body considers that it is essential from the public health point of view that liquid eggs preserved with boric acid or other preservative should be prohibited at once.

(4) That subject to the foregoing recommendations the Representative Body places on record its approval of the draft regulations (issued by the Ministry of Health on February 17th, 1925) with regard to preservatives etc. in food.

These recommendations were immediately adopted unanimously and without discussion.

Strancous Duties of Medical Officers

Dr G. G. S. JOHNSTON (Wakefield) moved as in opinion of the Representative Body, "That it is inadvisable and improper that whole time medical officers engaged in public

health work should be required to undertake duties other than those for which they were appointed." He cited two cases in support of the motion. In one case a local authority required its bacteriologist, a whole-time officer, to perform *post-mortem* examinations, for which he received the princely sum of four shillings for expenses. In the other case a whole-time officer was expected by the local education authority to examine mental defectives. If whole-time officers were not permitted to accept fees for private consultations, surely it was only reasonable that they should enjoy the safeguard of his or a similar motion so that they were not exploited by parsimonious local authorities.

Dr RIDLEY BAILEY said there was a good deal to be said in favour of the speech which Dr Johnston had made, but the reference was rather wide.

The CHAIRMAN said he thought Wakefield would agree that the motion said rather more than the Division meant, and suggested that the matter should be referred to Council.

Dr JOHNSTON agreed, and this course was adopted.

Standard of Purity of Calf Vaccine Lymph

Dr JAMES NIAL (Hendon) moved.

That inasmuch as vaccination against small pox by means of calf vaccine lymph is the sole obligatory medical operation known to English statute law—abstention being permitted only after statutory exemption has been obtained—calf vaccine lymph be now recognized in the *British Pharmacopoeia* as a therapeutic substance that standards of purity, potency and source or seed used in its preparation be prescribed that the provisions of the Sale of Foods and Drugs Act be made to apply and that early parliamentary action be urged to enable the Ministry of Health to lay down and enforce regulations governing the conditions of the preparation and sale of calf vaccine lymph.

This was agreed to without discussion. The Report under "Public Health and Poor Law" was then approved.

MEDICAL BENEVOLENCE

Proposed Association Charities Committee

Dr C. O. HAWTHORNE (Chairman of the Medical Benevolent Fund Committee) moved as a recommendation of Council that it be instructed to set up a British Medical Association Charities Committee, to be constituted and conducted according to the provisions set out in the Statute of June 27th (p. 280). He said that the committee set up by a resolution at the Annual Representative Meeting at Bradford last year was given two instructions to survey generally the benevolent organization existing within the profession, and to inquire particularly whether it was advisable or inadvisable to set up a new and fresh benevolent enterprise under the auspices of the British Medical Association. The committee had come to the conclusion that the latter course was not desirable. It had surveyed the field, and recognized that the value of existing organizations was hindered solely by want of funds. It was considered that it would be a useful function of the Association to use its machinery to supply that defect. Apart from smaller and local enterprises, there were two large and important benevolent organizations in connection with the profession—the Royal Medical Foundation associated with Lpsom College, and the Royal Medical Benevolent Fund. Lpsom College was, of course, an educational organization, while the Royal Medical Benevolent Fund was a benevolent enterprise. The former did two things—it provided fifty pensions for aged medical practitioners in reduced circumstances and it supported fifty foundation scholars, each of them being the son of a deceased or disabled medical practitioner, and each being maintained, clothed, and provided with pocket money. The admirable and complete education provided enabled the boys to teach, by their own efforts, positions such as might reasonably be anticipated by the sons of professional men. The Royal Medical Benevolent Fund was also conducted by a committee of medical practitioners, with the help of some laymen. It disbursed last year about £8,500, of which £3,500 was paid in annuities from invested funds and £5,000 distributed

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would bring about all that was wanted in the way all such things were achieved—by human reason and the lapse of time. The public looked on the Association's policy as a profiteering policy, and just as practitioners were forbidden to exploit their patients, so they should refrain from exploiting the public.

Dr FORTHERGILL said what Dr Gordon Bell really supported was the speech made by the representative of Glamorgan, the motion put forward by Glamorgan did not contain the points the mover of it had referred to in his speech.

Dr C J KIRK (Darlington) said Darlington had been loyal to the Association's scale, and their experience differed entirely from that referred to by the mover of the resolution (Dr Jones). Last year the Darlington Education Committee asked for applications for the post of school assistant medical officer at £500. There were fourteen applicants. They were communicated with, and eleven withdrew. His Division followed the proper procedure in sending a deputation to the appointing authority, and so on. The appointment was eventually given to a lady, but for periods of six months at a time only, and as she was refused an unconditional appointment she resigned. His Division took no further action, but the Darlington Committee advertised the vacancy at £600. The Association's scale had received the approval of the Ministry of Health, and had been recognized as a serviceable guide by the Association of Municipal Corporations.

Dr EUSTICE HILL (Public Health Service) hoped the Representative Meeting would not accept the amendment. He was medical officer of health for one of the largest industrial counties and he believed he had about twenty-five whole-time medical officers in the group to which he referred, and it had been the policy of his council, at any rate since the beginning or the middle of the war, to pay the commencing salary the Association recommended, and undoubtedly it had been to the great advantage of the health of the county. The remarks made by the representatives of North Glamorgan and Sunderland meant that while the policy he referred to had been highly successful, there were bodies which would be content to pay the lowest salary for which they could get in office. Because there were difficulties in certain areas there was no need to adopt such amendments. For a long time Sunderland had been in an invidious position, their medical officer of health having been paid little more than half the rate proposed in the scale now before the meeting, and Sunderland liked to base the other salaries in proportion. Many of these posts were blind-alley posts, and a large proportion of the men in the public health service could not hope to get the best posts, and many consequently went into private practice. It was obvious that if £500 were laid down as sufficient salary for a whole-time officer the general public would take that as a standard for insurance practitioners. It was a point the meeting would have to consider. (Applause.)

The CHAIRMAN OF COUNCIL said it was felt when the recommendation was drawn up that for a probationary year the person who had not had the full experience that was thought to be necessary to fill these important posts could be serving the local authority at £500, but after that the full scale must be paid. The Council did not want to encourage local authorities to appoint people with less qualifications and experience because of their particular local attachment, but it was hoped they would go to the open market to get the best person possible. He had not tried to ride off on the technical point that this was a matter not open to discussion, he welcomed the discussion, for it enabled him to say that these £600 a year posts were not for young people fresh from college. Every person who applied for this post at £600 a year had probably spent at least three years after qualification in getting experience in various ways, and probably in getting an additional public health qualification. It was not advisable to have young people fresh from college in these posts, and he hoped the Representative Body would not give the impression that it thought otherwise. It was important that the leading representative men among the municipal authorities welcomed the idea that these medical officers were people likely to com-

mand the confidence of the public and the support of the general practitioner. He wanted to say to the representative of Sunderland that the central office was extremely sorry that the circumstances of the cases referred to had compelled the Council to speak with two voices and, as he had put it, "let Sunderland down." But there were circumstances which could not well be spoken about in public, which had to be considered in particular cases. There were sometimes the personality of an applicant. There were circumstances in which a little delay in taking certain action in Divisions made it unwise to proceed along the general ethical lines. He wanted the meeting to have lost one or two outpost actions, and to have done certain things not and in which would give the impression that it was not prepared to fulfil its policy, yet on the whole front of the battle they had won. (Hear, hear.) The Council had been labouring under the disability that it was waiting for the formal approval of the Representative Body to this final scale before adopting the more rigid procedure which would follow if it were implemented by the meeting's approval that day. He hoped the meeting would reject the amendments and pass the Council's report. (Applause.) With regard to the Poor Law medical officers, he found that Dr D'AVANT was perfectly right. At the last meeting a proposition was carried for the inclusion of the word "Medical superintendents of hospitals, including Poor Law hospitals," but at the Ministry of Health one did not come first to free with the people who could talk about these things, so it was withdrawn from those particular negotiations. But the Council was pursuing it in regard to Poor Law hospitals in another way, though it was not included in the present scheme.

Dr J T D'AVANT I wanted to know when the Poor Law officers will be dealt with. The scale is being applied to advertisements in every case. The amendment was lost, and the scale of salaries was then put to the meeting and approved without a single dissentient.

Salaries for Combined Public Health Posts
Dr RIDLEY BAILEY (Chairman of the Public Health Committee) moved the recommendation of Council with regard to the principles applying to whole-time medical officers (SUPPLEMENT, April 11th, p 159). He explained that the recommendation applied to joint appointments for combined areas, and the object was to ensure that the combined remuneration should not be less than the minimum commencing salary of a whole-time medical officer of health, also that where an assistant medical officer under a county council became a district medical officer for a definite portion of his time, the salary should be proportioned between the two authorities.

In the absence of the representative, the CHAIRMAN formally moved an amendment by North-East Essex, that as the Council's recommendation did not cover the case of combined appointments in Essex it be referred back for further consideration, but this amendment was lost and the recommendation of the Council was adopted.

Dr RIDLEY BAILEY then moved that the remainder of the Annual Report of Council under "Public Health and Poor Law" be approved.

Dr STURTEVANT (Lumbago Wells) said that he had been requested by the Glasgow representative (who could not be present) who proposed the resolution which was carried at the last Representative Meeting to point out that the proposal that the local Poor Law work should in future be carried on by a panel of doctors, instead of by a single officer, was not referred to in the Annual Report. Dr RIDLEY BAILEY replied that the Committee dealt with the matter and sent a recommendation to the Council. The CHAIRMAN explained that the proposal was found to be impracticable in the places in which it was tried, and the Committee recommended to the Council that the resolution should be rescinded. The Council did not feel justified in proposing that course so that the method could be tried in other places if it was wished.

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enough confidence in it to subscribe to it. In 1924 the Fund collected £8,468, and the expenses of doing so were £1,254, which worked out at 14.5 per cent for expenses. He thought the Association, with its new building and its great facilities, could do the work very much more economically than that Dr Hawthorne had mentioned the question of, by support. In his (Dr Walker's) view the Association, with its great and growing prestige, would be able to obtain a large amount of its support. He urged the meeting to set up a fund of its own. It would be a notable landmark in the progress of the Association, they would pay a debt of honour long overdue, and bring ease of mind as well as of body to their poor and distressed brethren who, through no fault of their own, had fallen by the wayside. (Loud applause.)

Mr H S SOUTER, in supporting the original motion, said the view expressed by the last speaker and by Dr Hawthorne that the Association must support members who had fallen into difficulties would be supported by everybody, but there were politic and impolitic ways of doing it. Dr Hawthorne's methods were statesmanlike, but if the amendment were carried the Association would be lauded in difficulties. He knew something of the Royal Medical Benevolent Fund, as he was on its management committee for several years. The Fund was managed under considerable difficulties, and, he thought, not always with great wisdom, but there could be no question as to the wholehearted manner in which the management did its level best to assist the profession, and the amount of work the secretary, Dr Newton Pitt, had put into the Fund was extraordinary, and deserving of their deepest gratitude. He (the speaker) was invited to discuss the matter with the committee of management, although he was at that time a member of that body, and he thought he thoroughly grasped the committee's point of view. It was this, that if the Fund had any official connexion with the British Medical Association the bulk of its subscriptions would be at once cut off. The committee did not dislike the Association or general practitioners, but it thought, on a calculation, it would lose on the transaction. That being so, it was up to the Association to prove the fallacy of the thesis. If the Association could show that it was able to put down the money there would be no difficulty in getting the control it wanted, but if the Association set up a fund of its own it would start with a disadvantage. It could not be called the "Medical Benevolent Fund." The present fund was started by the Association, and why should it be given up? He thought members of the Association had lost control of it largely through their own neglect. The medical profession was subscribing only 7 per cent, and in London it was below 7 per cent, and what right had they to grumble if the management was taken in hand by a group of men who, he thought, had done then best with the funds at their disposal? When the Association had done what it could to find the funds it could regain control. But to form a fund of its own meant duplication of funds, which would be disastrous. It would be a case of lobbying right and left to get benefits. The whole income of the Benevolent Fund was about £8,000. Surely it could be increased to £20,000 (Applause.) But the present arrangement was ridiculous. Let the Association have its own Charities Committee and obtain all the money it could, and then make terms with regard to this bulk sum. By this method they would not duplicate funds, there would be no antagonism, and all that was wanted could be obtained.

Dr E L ELETOR DARTING (Portadown) said it was a disgrace to the profession that only 7 per cent supported the Fund. In Ireland, with a very small number in the profession they raised between £3,000 and £4,000. He thought it would be altogether wrong to disqualify members of the profession because they had ceased to be members of the Association. In his own county the individual contributions had until recently averaged 5s, but by tactful and pleasant handling the usual contribution, even of the young members, had risen to 10s, and older members had willingly doubled that amount. (Applause.)

Dr W I DEANER (Manchester) said that although he had much sympathy with the amendment he must oppose

it. He had set the ball rolling at Portsmouth, and last year he induced the Representative Meeting to ask the Council to go a step further. That step had now been taken, and was in the right order. The first essential was to have a committee that would thrash out the various phases of the matter. It would be a mistake to rush matters. If the fund were started now it would be a considerable time before it became operative. He believed that in a very short time there would be sufficient funds and subscriptions. It was right to begin with a committee in London, but even at the commencement it should be duplicated. A big collecting agency must have a committee in every Branch of the Association. He suggested that every Division should be asked to appoint a charity representative, and those representatives form the Charity Committee of the Branch. That method was followed by the biggest charity organization in the world, and they could not do better than imitate it. (Cries of "Vote.")

Dr C L DOUGLAS said the Royal Medical Benevolent Fund was the creation of the Association, and they could see what had happened by letting it run on its own. Their predecessors twenty years ago made a fundamental mistake—let them not repeat it by creating a second fund and again handing it over. Every member of the Association should subscribe and exert interest in the proposition in the matter. Then the Association could approach the Fund, and say, "You are going to undergo a process of peaceful penetration, we are going to take you over, whether you like it or not. We are going to be the power behind the Royal Medical Benevolent Fund." He had nothing to do with that Fund, he was connected with Epsom College, which was well worthy of support. It was heart-breaking to read from year to year tales of distress and disaster that had fallen upon good fellows who had died before their time, leaving wives and families. Something must be done. It was a disgrace that a great benevolent profession should subscribe to outside charities that ought properly to be looked after by laymen and leave its own kith and kin alone.

Dr G C TROTTER understood that through the medium of the Association these charities had received a considerable sum. A good deal of money had been forthcoming through the Medical Insurance Agency, and he asked that information on that point might be given.

The CHAIRMAN OF COUNCIL said that with the sentiments expressed by Dr Walker everyone must have sympathy. But he (the speaker) had taken some little pains to find out exactly the work that the present organizations were doing, in particular the work of the Royal Medical Benevolent Fund. Those in charge of that organization were doing an exceptional work with the very small means that the profession had given them to handle. Frequently they supplemented the funds out of their own pockets without giving a word about it in public. The Association had the power to implement any appeal of the character proposed, and to guide the activities of the organization. It was only because general practitioners had not attended the meetings of subscribers that there were no general practitioners on the governing body. There was now a prominent representative of the profession—himself—on the executive of the Fund. He was impressed by the extraordinary devotion shown in that body and in particular by the work, never blazoned abroad, of the Ladies' Guild. Such beneficent activities should not go for nothing. They should be furnished with the means of war. He deprecated any assumption of management on the part of the Association, but he would like the Association to go in and help—not to usurp the place of the prominent men in London who were doing detailed work in connexion with these bodies. The Association through local secretaries, who would in most cases be men already doing some work for such bodies, could accomplish a great deal. It would be quite easy if every member instead of talking, would pay. He envisaged the Charities Committee using every Division and Branch to use its organization to gather money, which the Charities Committee could pass either to the Benevolent Fund, or Epsom College, or directly, in emergencies, through the Sir Charles Hastings Fund or otherwise. He begged that no narrow or provincial view

meet more immediate cases of difficulty and distress. It had a special organization attached to it known as the Ladies' Guild, the members of which rendered personal service to the beneficiaries, and by inquiries and investigations kept the governing authorities informed of the merits of individual cases. They were also able to supply certain necessities such as clothing, and to obtain opportunities for general educational and sometimes technical training for boys and girls. Both funds were hampered by want of money. The annuities paid averaged £25 a year, although a few reached £30, and even £40. Having in view the present value of money and cost of living, such sums could hardly be regarded as adequate or as worthy of a profession which had never been reputed lacking in generosity. At the last election of foundation scholars at Lpsom there were 23 applicants for 13 vacancies. If there had been 60 scholarships to distribute instead of 50, 10 more boys would have received the advantages he had outlined, instead of having to suffer a demoralizing and depressing disappointment. The greater part of the sums distributed was obtained by annual subscriptions and donations, so that to maintain the present income level, and, if possible, increase it, called for constant and sustained effort. It was only effected by the self-denying and largely unrecognized efforts of members of the profession who devoted their time and energy with unstinted zeal to promoting the success of the Royal Medical Benevolent Fund and the Royal Medical Foundation. Both organizations (Dr Hawthorne continued) were managed by committees whose work came under review by the subscribers at annual meetings, while on the other hand there was the British Medical Association, a great organization, comprehensive, penetrating, and able to define the exact position of those funds to the great majority of medical practitioners in this country. It would surely be worth while, therefore, to bring about co-operation between the two benevolent organizations and the British Medical Association. His committee suggested that such co-operation should be secured by the establishment of a special committee which would collect funds to be distributed to any benevolent organization which was in need of funds and was doing work of which the Association approved. He submitted that by accepting the motion he proposed to that effect the prestige of the Association would be enhanced, while by linking its name to enterprises which must command the sympathies of all, the Association would be carrying help and sympathy into quarters where they were particularly needed. On the one hand, there were elderly people who had been broken by fate and needed help. With such there must necessarily be an abiding note of sadness, and all that could be done was to mitigate future hardships. On the other hand, there were boys and girls who had suffered, no doubt, great misfortunes, but whose faces were turned to the future rather than the past. With them the note was not of sadness but of hope. It was for the representatives to see that that double appeal, to which all of them must individually respond, was responded to also by the Association as a body.

The discussion on this subject was postponed to the following day, and the meeting adjourned at 6.30 p.m.

DRUG ADDICTION

Mr. TURNER, in submitting the report under "Medico-Political" for approval referred to the report of the Committee on Drug Addiction which was appointed in June, under the chairmanship of Dr. Bone, to advise the Association's witnesses in giving evidence before the Home Office Committee on Drug Addiction. These witnesses were Dr. L. K. Le Fleming, Dr. C. P. Symonds, the Medical Secretary, and himself. He suggested that Dr. Bone should be allowed to put the position before the meeting.

Dr. J. W. BONE, as the representative of the Association on the Home Office Committee on Drug Addiction, placed before the Representative Body the provisional findings of that body, which, as its report is not yet available, cannot be published. The meeting fully discussed the matter and arrived at definite decisions for the guidance of Dr. Bone, and these will also be communicated to the Home Office Committee and reported later in the SUPPLEMENT. The discussion occupied a considerable part of Monday

Tuesday, July 21st

The Annual Representative Meeting assembled at 10.30 a.m., the hour being indicated in order that members might attend the opening of the exhibition of surgical instruments, appliances, drugs, etc., and spend some time among the exhibits.

The Chairman invited on to the platform three distinguished persons, who were technically not representatives, but whom the whole meeting was very glad to welcome—Dr. A. J. Ornstein, C.M.G. (Vice-President, South African Committee), and Dr. Alexander Primrose, C.B., and Dr. A. T. Bavin (respectively chairman of the executive and treasurer of the Canadian Medical Association).

The minutes of the previous day's meeting were confirmed. Dr. R. H. FRASER asked when he could raise the question of the procedure of election of the eight members of Council by the Representative Meeting. The Chairman promised that an opportunity should be given if possible before the meeting ended.

MEDICAL BENEVOLENCE (continued)

Dr. HAWTHORNE, who had made his speech on the subject just before adjournment the previous evening, moved that the Council be instructed to set up a British Medical Association Charities Committee, to consist of the officers of the Association *ex officio*, three members appointed by the Representative Body, and three appointed by the Council, together with the Editor, the Medical Secretary, and the Financial Secretary. The duty of this committee would be to direct the attention of members to the financial and educational positions which arose as a result of misfortune falling on members of the profession and to appeal for contributions to meet those positions. All the sums in response to such appeals should be paid to a trust fund, the trustees being members of the Council for the time being in office, and should be distributed to such medical benevolent organizations and in such amounts as the committee might deem desirable, provision being made for contributions earmarked by the donor for a particular purpose.

Dr. J. F. WILSON (South Essex) moved to amend para. 3 of Dr. Hawthorne's motion, which set out that the sums obtained in response to the appeal should be paid to a charities trust fund, and distributed to medical benevolent organizations. His amendment was:

All sums obtained in response to such appeals shall be paid to a charities trust fund the trustees being the members of Council for the time being in office. Such fund shall be administered by the Charities Trust Fund Committee for the benefit of those members and ex-members of the Association and their dependants who may in the opinion of the committee require assistance.

He appealed for the very careful and earnest consideration by the meeting of his proposal, for it affected, not only those who needed the help of the Association, but also the honour and prestige of the profession. It was a curious anomaly that the medical profession, which was rightly known as the most charitable of all professions, had so far terribly neglected the unfortunate among its own numbers. Large sums were subscribed by medical men to those excellent Masonic charities for the benefit of lay people, yet they could not find enough money for their own people. That was a reproach which could, should, and, he ventured to say, must be removed. (Applause.) So far he was in total agreement with Dr. Hawthorne, but when he came to the methods by which this might be effected he found himself in opposition. His own proposition was that there should be a British Medical Association Fund, with funds collected by the Association, managed by the Association for the benefit of members of the Association. If the resolution were adopted unamended it would mean that the Charities Trust Committee would be a channel whereby sums were collected for existing organizations, of which the most important was the Royal Medical Benevolent Fund, and if that committee merely acted as a channel for collecting funds it would be a failure and would lack the confidence of the profession. Until quite recently the general practitioner was unrepresented on the committee of management of the Royal Medical Benevolent Fund. There was not a single representative of Wales, Scotland, or Ireland, and that was a lamentable defect. Although the Fund had been in existence for forty years, only 7 per cent of the profession had

might be taken. The occasion was one for kind gestures, and cordial action. (Applause.)

Dr. WARRICK HENRY pointed out that at present individual subscribers had individual votes. If the money was sent directly to the central organization how would adequate voting representation be secured? The CHAIRMAN or COSEY said that there were ways and means of attaining that end. The CHAIRMAN reminded that a subscriber could cut-mark his subscription, and in that way retain his original voting power.

Dr. C. O. HAWTHORNE said that on the previous day he had the opportunity of pressing the claims of prominent medical organizations in the profession, and he had now to face a severe attack upon the economy, efficiency, and generosity of the Royal Medical Benevolent Fund, and, in addition, in equally severe attack by inference, upon the British Medical Association, for the mover of the amendment had told the meeting that, while the Royal Medical Benevolent Fund had failed to do this or that, it had yet managed to collect and distribute a sum of £8,500 a year, whereas the British Medical Association had not yet managed to contribute one penny to a debt which, he said, was long overdue. The time and place for criticizing the Royal Medical Benevolent Fund was at the annual meeting of subscribers. What would be the position if a benevolent fund entirely confined to members of the Association were set up? For one thing, its efforts in regard to educational opportunities for sons of deceased members would be restricted in comparison with the work of the Ipsom Foundation. It would be confined to the duty—a duty they all acknowledged—of trying to mitigate the distress of those who had met with misfortune. Dr. Walker had criticized the administration of the Fund, but the speaker's view was that it was administered on an economic basis and could be readily defended.

Dr. WALKER was sorry if any remarks of his were construed as personal criticism against the Benevolent Fund. But could the Association be blamed when it had made overtures to the Fund and had been severely rebuffed? With the power and prestige of the Association a successful fund could be set up, it might take a year or two, but it would become, he was quite sure, worthy of the profession and commensurate with the need.

The CHAIRMAN or COSEY in reply to Dr. Trotter said that grants of varying amounts had been made in the past by way of the Medical Insurance Agency, and a representative of the Agency, in the person of the Financial Secretary and Business Manager, had a seat on the committee of management of the Royal Medical Benevolent Fund.

Dr. DAVID LAWSON asked whether the benefits would be extended to the whole profession. The CHAIRMAN replied that under the amendment members and ex-members would be included.

Dr. Walker's amendment was lost by a considerable majority.

Dr. D'LEWIS asked whether the proposed committee was supposed to be a standing subcommittee of the Association or a committee of the trustees. The CHAIRMAN replied that it would be a committee, not a standing committee. By operation of the by-laws it could be made a standing committee at any time.

Dr. D'LEWIS said he assumed the expenses of the committee would in that case fall upon the Association fund and not upon the Benevolent Fund, and called attention to a standing order which said that the Representative Body should not provide funds for outside purposes until the Finance Committee had dealt with the matter. What had the Finance Committee dealt with it?

The CHAIRMAN or COSEY said that instruction to set up the committee had not yet been given by the Representative Body, and the question of finance had not therefore arisen.

The CHAIRMAN said it was possible to pass the resolution without involving the question of finance at all. If the question of the Association's finance was involved it would, of course, have to be done in the orthodox way.

Dr. FORMER asked whether the money could only be given to certain benevolent organizations and not to an individual. The CHAIRMAN replied that the

Sir Charles Hastings Fund was in an organization which, by the liberality and at the suggestion of its recent donors, could be used without the slightest formality and at any moment to deal with individual cases, and money collected by the Association could be given to that fund.

Dr. J. J. D'LEWIS asked whether in the paper the members received on January 1st the list of benevolent associations usually given would be diminished and the British Medical Association's charity put in. The CHAIRMAN replied that that was what should be done.

The recommendation of Council moved by Dr. Hawthorne was then put and carried.

Dr. Hawthorne announced that he had received in offer a contribution of £5 to the fund on condition that nineteen other men would contribute the same sum.

The CHAIRMAN said that the Representative Body would have to elect the three members on the Medical Charities Committee, the Council electing the other three.

Several nominations were made from the body of the meeting and Dr. W. J. Dearden, Dr. J. A. Macdonald, and Dr. J. L. Walker were elected.

Dr. Hawthorne announced that in addition to the offer of £5 on condition that nineteen others subscribed £5, there had been an offer from a member of the Representative Body of £100 as a contribution to the fund. (Applause.)

Later an appeal was circulated in the meeting, and as a result some £250 was promised, and a further £70 in annual subscriptions.

It was decided, on an amendment proposed by Dr. McCutcheon and seconded by Dr. W. Douglas that the balance remaining after the purchase of the Chairman's Badge—a sum of £8 10s—should be devoted to providing elms on the ribbon of the badge giving the names of the past and present chairmen and the dates of their tenure of the office.

OVERSEA BRANCHES

~ Sir JENNER VERRILL (Chairman of the Dominion Committee) moved approval of the Report under "Overseas Branches." He said he had had considerable experience of committees, but till he was Chairman of the Dominion Committee he had not realized what an important committee it was in the interests of the solidarity of the Association. The Committee had received assurances from the Mesopotamia Branch that the activities of the Association with regard to the difficulties of the profession in that country and with regard to questions of employment and unemployment had been of great value. The Australian Government had appointed Sir George Syme and other members of the Association on a Royal Commission recently set up to inquire into conditions relating to the preservation of health, which showed that when expert members of such bodies were required the Australian Government realized the value of the British Medical Association. (Applause.)

The CHAIRMAN reminded that the Government of New Zealand had appointed an important commission to inquire into questions of mental deficiency and in that case also the Government had looked to the British Medical Association to supply suitable personnel.

Dr. W. N. ROBERTSON (Queensland) briefly addressed the meeting, and was cordially received. He said he would like to refer to the tremendous power the British Medical Association had in Australia. Sir Jenner Verrill had just alluded to the Commission of which Sir George Syme was chairman. Two other members of the Commission were members of the Association and there were two women doctors and one layman. The interesting thing about the appointments was that the Government appointed Sir George Syme straight away, and having appointed another member of the Association, the Government then asked the Branches to nominate a third. The Government went to headquarters for the chairman and then went to the Branches to recommend another member. He was coming to the conclusion that the powers that be in Great Britain were beginning to discover also that the British Medical Association could not be neglected, and he hoped that that would encourage every member of the profession to join it. He would carry back to Australia an impression of the brilliant way in which the work of the Association was done. Of course, here, as in Australia, there were some men who

got up and tilled puzzle—(laughter)—but he was pleased with the sound arguments and the brilliant speeches even when he thought they were on the wrong side. (Applause.)

Major T. J. HARRISON (Mesopotamia) who was involved with applause, said that in Iraq a very difficult period of negotiation in regard to the service of British officials generally and health officers in particular had been passed through, and his Branch desired him to convey to the Association its strong appreciation of the assistance and backing of the Association. In that way the solution of terms for other British officials generally in Iraq had been greatly aided.

The approval of the report was agreed to.

NAVAL AND MILITARY

Sir RICHARD LUCE (Chairman of the Naval and Military Committee) gave a review of the position especially in regard to the negotiations with the War Office with regard to conditions of service in the R.A.M.C. The question was in some respects parallel with that of the senior surgeon commanders of the Navy, which had exercised the Association for four or five years. On that matter a partially satisfactory conclusion had been reached. By retirement before the expected age these senior surgeon commanders lost a very considerable sum. They were offered at first £250 on a slightly sliding scale, which did not make much difference. The Committee tried for £500, but when at length the Admiralty offered £300, and those affected were willing to accept that sum, the Committee recommended them to do so. The shortage in the R.A.M.C. had been exercising the Committee and the Council, and steps had been taken with a view to improving the position. The Secretary of State for War, at an interview a month ago, held out certain offers which if carried out would have done much to improve the conditions of service and to make the service more attractive. Those offers were being opposed by the Treasury, and it was not known whether the War Office, which was in entire sympathy with the increase, would be successful. The matter had been referred to a committee by the Cabinet. Coming to the most important question of all that of a grievance which had come to light in the matter of pensions, the speaker said that by the pre-war warrants it was promised to all officers joining the R.A.M.C. that on retirement after twenty years' service they would receive £365. By an alteration in the warrant which took place in 1919, when pay and pensions generally were being raised, the pension of R.A.M.C. majors was raised to £396, a considerably smaller increase than that of most other branches of the service. By an alteration of the method the £396 was now made up of two elements—service of twenty years and service in rank. Certain R.A.M.C. majors on retirement, if a portion of their service had been spent in West Africa or other unhealthy climates, were enabled to count then time there as double, so that, if four years had been spent in an unhealthy climate, they could retire after sixteen years' service. Hitherto the sixteen years counted as twenty in all circumstances. But some officers who recently retired, instead of receiving £396, had the amount considerably reduced, because they did not get the element of rank pay for more than four years, instead of for eight under the old warrant. Consequently these officers had retired with a sum considerably below the amount promised them when they joined the service. The War Office actually failed to carry out its agreement with them. The Committee had made strong representations to the War Office telling the Secretary of State in the interview mentioned that the Association could not help in recruiting for the R.A.M.C. unless the grievance was righted. On June 10th the Council passed the following resolution:

That it be recommended to the Representative Body that inasmuch as the provision for a 20 per cent reduction in the retired pay of majors after twenty years' service under the R.A.M.C. Warrant can have the effect of reducing the pension of many of these officers below the sum of £1 a day, which was provided by the warrant under which they joined the service the Representative Body is of opinion that a serious breach of faith has been committed by the War Office and that therefore the Association is unable to recommend recently qualified doctors to enter the R.A.M.C. and declines to publish the terms and conditions of service in the P.A.M.C. in the other publications.

Sir Richard Luce added that the recommendation which went forward from the War Office to the Government had been hung up by the Treasury for the time being, so that the position was now that the answer which it had been hoped to have before that meeting had not come to hand. In view of the fact that it had not been settled it was for the Representative Body to decide whether it should say to the War Office that it would not advise the Association to take any steps to help in the recruiting for the R.A.M.C. until the grievance was remedied. He proposed that the resolution already passed by the Council be forwarded to the War Office, explaining that the profession quite realized that the War Office was not hostile, but that it was up to the Government to get the matter settled through its committee.

Dr J. A. Macdonald seconded Sir Richard Luce's proposal. This manner of dealing, both in the case of the army and of the navy, was a perfect disgrace. ("Hear, hear.")

Dr J. CLARKE (Woolwich) supported, and said that only those in close contact with army doctors knew the sad disappointments that they had to meet with.

Dr F. W. GOODBODY said that at present every man who was a captain in 1919 had to accept this warrant. To get over the difficulty of the huge number of senior ranks there were no promotions to major from October, 1918, to January, 1923. Therefore at least forty or fifty men were not given the opportunity to decide which warrant they would elect to retire under—the 1919 warrant or the previous one, which latter was, of course, much more favourable. Also it was quite probable that if the cost of living came down lieutenant-colonels would find their pension fell to pre-war or below pre-war rates. In the case of majors who had retired on less than £365 a year it was quite conceivable that under the present warrant the pension would go down eventually to £277. He asked the meeting to take a decided stand on this question. The War Office had been plying with them for the last three years, hoping that it would get the recently qualified men into the R.A.M.C. And it had been "fobbing off" the profession with all sorts of excuses. The time had come when the Association must say what it said at the end of last century, "We will not advise any man to go into the R.A.M.C. and we will take all steps we can to boycott the service until this injustice has been remedied." It was the desire of the Association to get the best men possible into the service, and the only way to do that was to assist the service against its titular chiefs.

The CHAIRMAN OF COUNCIL suggested that all that was desired would be obtained, and the negotiations by the Council helped, by adding some such words to the resolution (and he hoped the mover would accept them) as the following: "Until the Council is assured that this and other matters under negotiation have been dealt with to its satisfaction."

Major General Sir WILLIAM MACPHERSON suggested the substitution of the word "Government" in the resolution for the words "War Office," and the CHAIRMAN agreed that that would be the better wording since, apparently, the breach of faith could not be laid at the War Office door.

The resolution in that form, with the added words proposed by the CHAIRMAN OF COUNCIL, was carried unanimously.

Sir RICHARD LUCE said that he was not at present in a position to make a statement as to the negotiations with the India Office on the report of the Lee Commission.

The Report under Naval and Military was approved and Sir JOHN ROY ADMIRAL Sir Peter Bassett-Smith K.C.B. C.M.G. R.N. (ret.) was elected to represent the Royal Naval Medical Service on the Council for the period 1925-28.

HOSPITAL POLICY OF THE ASSOCIATION

Mr H. S. SOUTER (Chairman of the Hospitals Committee) moved to rescind para. 10 of the Hospital Policy as adopted by the Representative Body in 1922 as being no longer applicable. (This paragraph which later became para. 9, provides that gratuitous contributions to hospitals by employers or employees should not be treated as the payment of premiums for insurance against the cost

maintenance and medical treatment, nor as entitling to hospital treatment, but as charitable contributions.) He proposed to substitute the following.

Contributions to hospitals by employers of labour or massed or periodical contributions by employers should be considered as contributions for services rendered or to be rendered.

For some years, he said, the Association had been elaborating a hospital policy, and, largely owing to the energy and statesmanship of the present Treasurer, that policy had reached its present stage of perfection. It was at present a coherent and substantial whole, founded on certain broad elementary principles. One of the principles on which it was founded depended on the alteration in the relationship between the hospital and the patient produced by the demand for payment by the hospital. It was felt that that altered the whole situation in the voluntary hospitals. As long as the patient was purely the recipient of charity, his relation to the profession was well established and perfectly understood, but when the hospital not merely accepted a contribution from him, but exacted a definite payment, the profession wanted to know where it stood, and what the payment was taken for. The great difficulty arose where the payment was made through some insurance scheme, through some contributory fund, for he stoutly maintained that a contributory fund was a very definite insurance scheme, and involved actual contractual relationships. He heartily approved of contributory schemes, for through them the hospitals would be put on a sound financial basis. He ought to remind the meeting that at the Annual Representative Meeting last year the motions were agreed to, but not by the requisite two-thirds majority, and he hoped that motion on the present occasion would be carried by a very large majority.

The CHAIRMAN, in view of the fact that no one rose to discuss the motion said he imagined there was no opposition to the resolution.

Dr F RADCLIFFE (Oldham) said there was strong opposition. A great many of the hospitals of the country were at present carrying out the policy of the Association, and to rescind it seemed to him to be sheer nonsense.

The CHAIRMAN intervened to say that the remarks of Dr Radcliffe would be quite appropriate on the next motion, which was to substitute the new paragraph.

Dr RADCLIFFE said he preferred to say what he had to say there and then. If he spoke on the next resolution a two-thirds majority might not be required.

The CHAIRMAN said that on both motions a two-thirds majority would be required.

Dr RADCLIFFE, continuing, said that some of those who spoke on this question were unfamiliar with the conditions in Lancashire and the North. For years Lancashire people had taken part in contributory schemes and had had no voice in the services provided. In the majority of the hospitals in the North of England there was no contractual obligation that those who contributed to contributory schemes should have treatment in return. The only hospital he knew where such an arrangement had been in existence was Leicester, where the scheme originated, and there it had broken down. When the representatives of the workpeople found that the hospital staff would take a percentage they said, "Don't touch our funds." He asked the meeting not to make it difficult for Lancashire to carry on as it wanted to carry on. (Applause.)

Mr BISHOP HARMAN said that in some parts of the country contributions were made by employers who did expect as a right that their employees would receive treatment at the hospitals. Therefore, the old para 10 was out of date and had better be rescinded. That was the proposition before the meeting, and he hoped it would be carried. The fear that if this were done it would wipe out old contributions was quite unjustified. If Dr Radcliffe would refer to the Hospital Policy, para 7, he would see that hospital contributions were still to be received and expended freely without restriction. He hoped the rescinding would be agreed to unanimously.

Dr P MACDONALD (York) expressed the hope that the meeting would not be influenced by the appeal of Mr Bishop Harman, but would back up the appeal of Dr Radcliffe. London conditions were not the conditions of the rest of England, nor he believed of the provinces.

generally. If the rescinding would help to sweep away the principle of voluntarism he would be in agreement, but he thought voluntarism should be allowed to disappear under proper conditions, and not have substituted for it a new control like that of the friendly societies. Although employers and employees expected, possibly, to receive for their contributions a *quid pro quo* it would be a very disastrous thing for the medical profession if it were recognized that the contributions of employers and employees were of this nature. He hoped the meeting would not rescind this policy of the Association. On this occasion he was a constitutionalist! (Laughter and applause.)

Dr R D MOTHERSON said that in Bolton these contributions were not held to be given for treatment as a *quid pro quo*, either by those who subscribed on the one hand or by the committee of the hospital or the voluntary staff on the other. His own opinion was that the most satisfactory solution of hospital financial problems would be found in a comprehensive compulsory insurance system, to provide, not only for hospital maintenance, but payment of hospital staffs, but till that system was adopted the question of taxing voluntary or semi-voluntary contributions would be abhorrent to many in the profession.

Mr I C PINEY (Newcastle) remarked that it seemed there were still some members of the Representative Body who had not yet mastered the essential definition of the voluntary system. That consisted in voluntary management and not in appointment of staff or the methods by which contributions were received. This policy had been framed to meet the need of certain of the larger institutions in industrial centres—to meet the position which was growing up with regard to massed contributions from workmen and employers, and it was to them that the hospitals in future, apart from State hospitals, would have to look for support. In his district 45 per cent of the contributions came from levies obtained from works. These levies did in reality imply payment for services rendered or to be rendered, because for that money practically all these workpeople were treated. At works it was becoming a custom for the employer to keep an ambulance and to carry all accident cases to the hospital to which the works contribution was made.

The CHAIRMAN said that the matter could properly be further discussed on the next motion as well as on the present one. He suggested that the vote for rescission should be taken at once, and he thought a two-thirds majority was required.

The motion to rescind the paragraph was carried by 71 votes to 33, the CHAIRMAN announcing that this was the requisite majority.

Mr SOUTER then moved the substitution of the new paragraph already set out.

Dr J M MYRELL (West Bromwich) moved an amendment whereby the suggested new paragraph would read:

Contributions to hospitals by employers of labour or massed or periodical contributions by employers or contributions by approved societies should be considered as contributions for services rendered or to be rendered only when such contributions are calculated on the number of cases treated.

He explained that in the Birmingham area it was found that the policy set out in the Council's recommendation could not be adopted. West Bromwich Hospital, for instance, was a voluntary institution supported almost entirely by voluntary contributions, including many from employers of labour. He had made personal inquiries as to the attitude of these contributors should they find that doctors took a percentage from voluntary subscriptions, and the reply was that they would at once cease to subscribe. Would hospital boards agree to adopt the scheme? Would public opinion support it? The Association would be ill advised to adopt a policy it could not enforce.

Dr W J LEIGHTON (Preston) did not agree with the mover of the amendment. He believed that working men and other subscribers would support the Association's view if the position were put to them plainly and frankly. Only the previous week the management and staff of the hospital he was associated with had met the workers, who were organizing a contributory scheme, and there was no hostility to a percentage being taken for services rendered.

Dr NOY SCOTT (Plymouth) said that the only objection to putting all their cards on the table before the contributors was that they would demand, not only some services, but all services. In the West of England there was a contributory scheme, and the benefits excluded removal of tonsils and refraction work, but the demand was made that these services should be included. He feared contributors would, under such a system, exploit the services of all the medical men of the town.

Mr SOUTER pointed out that the proposals did not affect genuine voluntary contributions, and it was nonsense to say a distinction could not be drawn between voluntary contributions and contributions given with the intention of getting a return. This was not a demand that staffs of hospitals should be paid, it was that the work of the men at the hospitals should be recognized as of definite monetary value.

Dr P. MACDONALD moved, and it was agreed, that the question be now put, whereupon the West Birmingham amendment was lost by a large majority.

Dr F. RADCLIFFE moved as a further amendment that after the word "should" in the suggested new paragraph the words should be added, "except where there be no implication of contract." He thought this would be a means of meeting two opposing views.

Dr J. C. MATTHEWS, in seconding, said he thought this would meet the difficulties of some of the old standing funds which were now becoming contributory funds.

Mr BISHOP HARRIS said that this olive-branch was studded with prickles. If the words "except where there be no implication of contract" were accepted, there would never be any implication of contract.

The CHAIRMAN OF COUNCIL pointed out that it was impossible to define these implications. If anyone would go into any hospital secretary's office and read the letters which were received from employers and employed he would be convinced that the contributions from these sources were regarded as contributions for the services of medical men. He believed employers and employees who suggested the withdrawal of their contributions if this policy were adopted would think better of it when the question came to a head.

Mr SOUTER said the amendment would cut the ground from under the feet of those who supported the policy proposed. It was all very well to say contributors would withdraw their voluntary contributions, but what about the medical men's services?

This amendment also was lost.

Dr PETER MACDONALD said that he was a loyal member of the Association and he liked to be able to support its policy. But he had a good deal to do with the management of a hospital of whose honorary staff he was a member, and he could not at the present moment carry out in that hospital the policy recommended. It would be useless to try. He suggested that the resolution should be passed, but not by a two-thirds majority. It would thus stand as the principle of the Association, though not as its policy (laughter and applause).

The CHAIRMAN said that Dr Macdonald's position was met by the resolutions passed already. Having passed all the rest as the policy of the Association, the whole of that policy was governed for the moment by a succeeding resolution, which declared that the Association could not expect the policy to be enforced, but that for the next year or two an educational propaganda must be carried on inside and outside the profession.

Mr SOUTER's motion on behalf of the Council—to substitute the following in place of old para 10

Contributions to hospitals by employers of labour or massed or periodical contributions by employers should be considered as contributions for services rendered or to be rendered—

was carried by a very large majority. The CHAIRMAN said that the show of hands was a matter of scores as against units.

Teaching Hospitals and the Hospital Policy

Mr A. P. FLEMING, M.C. (Birmingham Central), moved that

Taking into consideration the importance of medical education and the fact that the large teaching hospitals are specially organized and staffed for such work this meeting is of the

opinion that in the scheme of hospital policy of the British Medical Association these hospitals should be put in a class by themselves.

He said this motion was not framed in a spirit of hostility to the Association. In the preamble to the policy in a broad, general way there were set out three types of hospitals for the treatment of the sick—voluntary hospitals, municipal hospitals, and Poor Law hospitals. Birmingham held that in point of fact there were four distinct types of hospitals, which could be readily differentiated. The first group, that of voluntary hospitals, should be subdivided into a first class, a small class of large voluntary hospitals either associated with universities or recognized as schools for teaching students or for post-graduate study, and a second class of voluntary hospitals, more numerous, but not so large, and where teaching was not included among the duties of the medical staff. The Association, in regard to the establishment of clinical laboratories, had pleaded with the Ministry of Health for the recognition of a different type of institution where research was to be carried on. Birmingham claimed that the position of the voluntary hospitals was closely analogous to that. They claimed that as there was a distinction drawn between two types of laboratories, so there should be a distinction drawn between the two types of voluntary hospitals. Mr Thomson concluded by saying that his remarks could be summarized in the statement that there were certain essential differences between the two classes of voluntary hospitals, which entitled them to separate consideration.

After some discussion Mr Thomson agreed to the reference of his motion to Council for consideration.

The CHAIRMAN said that he wanted Birmingham to realize that its resolution did not imply that teaching hospitals were to be taken out of the hospital policy, but merely that they should be put in a class by themselves.

Dr J. A. MACDONALD protested against the vague terms of the resolution. In what form was the Council to consider the matter? The CHAIRMAN said that apparently Birmingham desired that the question should be considered in its entirety, not in the limited form set out in the specific terms of the resolution. Mr THOMSON indicated agreement, and the motion was passed as a reference for the consideration of the Council.

Payment of Medical Staffs in certain Accident Cases

Mr SOUTER moved, as a further recommendation of Council

That in all cases of accident where medical attendance is given at a voluntary hospital and such medical attendance is covered either directly or indirectly by insurance the hospital authorities should recover from the insurance company the full cost of maintenance and treatment of such patient. That where patients who would ordinarily be considered as private patients are admitted to hospital solely on account of accident or emergency they should be considered as private patients.

Dr F. RADCLIFFE moved that this recommendation be referred back to the Council for further consideration. Hospitals in such cases had no power to recover the cost. Further, if the policy were adopted insurance companies would increase the premium of every motor car policy.

Mr F. C. PIERCE said that the proposal of the Council was supported by the lay committee of his hospital, who had long been in favour of it.

Dr C. G. H. MONSE (Bournemouth) opposing the amendment, said that in the hospital to which he was attached with 150 beds in the last six months there had been sixty accident cases attended, with a total of 1,308 days in hospital, which meant a loss of nearly £300, and no payment could be obtained. There ought to be some means of recovery.

The amendment was lost, and the Council's recommendation was adopted.

Case Sheets of Hospital Patients

Mr SOUTER next moved a further recommendation of Council

That case sheets and records of patients treated in hospitals should remain in the custody of the hospital that they may be regarded as confidential documents and access to them allowed solely to the members of the visiting staff of the hospital.

Dr RAWSON (South Shields, Tyneside) moved to add at the end of the resolution, "or to persons authorized by them, such as members of the resident staff or students."

Mr SOUTTAR was willing to accept the addition, but the CHAIRMAN OF COUNCIL said it would open the door to access by the governing body through a member of the resident staff. There was no difficulty in any hospital about proper access by the resident staff and students.

Dr RAWSON withdrew his amendment, and the motion in its original form was passed.

SCOTLAND AND WALES

Dr C E DOUGLAS (Chairman of the Scottish Committee) moved approval of the Report of Council under "Scotland." He remarked that the membership in Scotland was increasing at a quicker rate than in the rest of the country. The membership in Scotland during the year had gone up by 13 per cent, whereas the total membership had gone up by only 8 per cent. He also referred to the acquisition of the new house of the Association in Edinburgh.

The Report under "Scotland" was approved, as was the Report under "Wales," moved, without a speech, by Dr W E THOMAS, Chairman of the Welsh Committee.

PROCEDURE AT ELECTIONS

Dr FARR suggested that the Council should seriously consider the question of postponing the voting for members of the Council by the Representative Body from the first or second day of this meeting till the last day. In view of certain happenings at the recent elections he would suggest this as a better arrangement. By this means, he thought, the newer members of the Representative Body would become more fully acquainted with the candidates, and he hoped that the irreparable, but, he hoped, temporary, loss which the Council had sustained in the present election might be avoided in future. (Applause.)

Dr BOWEN on behalf of the Council, accepted the proposition that the time of the election should be considered.

THE REPORT OF COUNCIL APPROVED

The CHAIRMAN OF COUNCIL moved the adoption of the Annual and Supplementary Reports of Council as a whole subject to amendments and resolutions carried during the meeting.

The motion was agreed to.

Dr HAWTHORNE said he was informed earlier in the meeting that an opportunity would be given to the Chairman of the Science Committee to reply to certain criticisms on the subject of post-graduate education. It was true that this was one of the functions of the Science Committee and that that Committee appointed a Post-Graduate Subcommittee, but negotiations had taken place and the matter was for the time being removed from the Science Committee and a new committee was set up to deal with the subject. There was no justification for any reflection on the Science Committee which suggested that it had been unworthy of its trust so far as the matter of post-graduate education was concerned.

VOTES OF THANKS

The CHAIRMAN moved that the hearty thanks of the Representative Body be conveyed to the following, who had contributed to the comfort, convenience, and pleasure of the members of the Representative Body and the ladies accompanying them:

The President (Dr I G Thomson), the Acting President (Mr W G Mumford), the Acting Local Honorary General Secretary (Dr R G Gordon), the Mayor of Bath Mr Hutton and the Staff of the Grand Pump Room, the Chairman (Mrs I G Thomson) the Honorary Secretary (Mrs D Ackland) and the members of the Ladies Executive Committee, the Chairman (Mrs A L Macenzie) and the Honorary Secretary (Miss Kathleen Harper) of the Ladies Social Club Subcommittee, the Chairman (Mrs A G Gordon) and the Honorary Secretary (Miss K Ealand) of the Ladies Excursions Subcommittee and Dr J P Williams Freeman for his services during the excursion to Stonehenge on Sunday.

(Applause.) There were also a number of others not mentioned by name whom they desired to thank.

The vote was carried by acclamation.

The CHAIRMAN asked that it should be left to the Chairman and Medical Secretary to distribute the minutes by post to the residences of members of the Representative Body.

This was agreed to.

Dr WALTER HENRY moved a hearty vote of thanks to the Chairman, and this was passed by the members rising and applauding. A vote of thanks was also carried to the clerical staff, on the motion of Dr J A Macdonald.

The business of the Annual Representative Meeting then concluded.

ANNUAL GENERAL MEETING

The ninety-third Annual General Meeting of the members of the British Medical Association was held in the Concert Hall, Grand Pump Room, Bath, on Tuesday afternoon, July 21st.

The President (Mr J Basil Hall, F.R.C.S.) took the chair.

THE PRESIDENT, 1925-26

The President said he had a very simple and pleasant duty to perform, and that was to induct his successor. In one sense he performed it with some regret, because he thoroughly enjoyed his year of office, and he was leaving it with a very much enhanced opinion of the British Medical Association. (Applause.) He very much regretted that his elected successor, Dr Thomson, was unable to be present owing to illness, and everyone would join with him in wishing him a very speedy and successful recovery.

The President then, amid applause, invested the Acting President-Elect Mr W G Mumford, O.B.E., F.R.C.S., with the presidential insignia, and Mr Mumford took the chair.

Mr MUMFORD said he wished to add his regrets to those of Mr Basil Hall at the unfortunate absence of Dr Thomson. He was sure he was expressing the earnest desire of everyone present in wishing him a speedy recovery ("Hen, hen"). For himself, he wished to thank the meeting for according him the honour of acting as Dr Thomson's deputy.

The notice convening the meeting was read, and the minutes of the last meeting, held at Bradford, were taken as read, and the latter were confirmed.

APPOINTMENT OF AUDITORS

Dr F W GOODHORN proposed, and Dr MILNER MOORE seconded, that Messrs Price, Witherhouse and Co be appointed auditors of the British Medical Association until the next Annual General Meeting, at a remuneration of two hundred guineas. This was agreed to unanimously.

PRESIDENT-ELECT

The MEDICAL SECRETARY reported that Mr Robert George Hogarth, C.B.F., F.R.C.S. Eng., senior surgeon, General Hospital, Nottingham, had been elected by the Representative Body as President of the Association for the year 1926-27.

Mr HOGARTH thanked the Representative Body for the very great honour it had done him in electing him to his high position. He felt very unworthy when he looked at the long list of distinguished members of the profession who had held it before him. At the same time, he would not disguise the fact that he felt a great sense of satisfaction when he realized that he owed his position entirely to the wish and recommendation of his professional brethren in the way in which he had worked for the last twenty-five years. He had had a number of letters from old friends, and they all seemed rather surprised to hear about the whole thing, and to think that the Nottingham Division must be very hard up for talent! (Laughter.) Only one had given him any advice—and he hoped to carry it out—that he should carry out his duties with dignity and becoming modesty. (Laughter.) With regard to the visit of the

Representative Body to Nottingham next year, the Buxton Corporation had invited the representatives to go to Buxton by special train, offering to put them up for the night, and have them the baths, and on the following day the Division hoped to take them by car through the Peak District, having them Haddon Hall and Chatsworth. If Bath was the Queen of the West, he might claim that Nottingham was Queen of the Midlands, and he hoped there would be a large attendance. The Nottingham Division would certainly do its best to make the visit instructive, interesting, and enjoyable. He asked the representatives for their support in his endeavour to carry out the important duties of his office in a manner worthy of the occasion. (Applause.)

NOTE OF THANKS TO PAST PRESIDENT

The CHAIRMAN OF COUNCIL (Dr Bolam) moved

That the hearty thanks of this Annual General Meeting of the Association be given to the retiring President, Mr Basil Hall for his services as President, 1924-25.

He said that one of the privileges of those who attended the Association's meetings year by year was to be brought into contact with and to get to know intimately eminent men in various parts of the country who held the office of President, and not the least of those years, in that respect, by any means, had been the last presidential year. Mr Basil Hall was held in great honour in his adopted city of Bradford, and they had learned to know and love him for himself. (Applause.) The past year had been an interesting and memorable one in the history of the Association, and in the great events that had been forward he had played a prominent part with great skill and tact and great success. He went on behalf of the Association to Canada and America, he was its official delegate to the Canadian Medical Association, and he had the unique distinction of being the first official delegate of the British Medical Association to attend the meetings of the American Medical Association. "We have," Dr Bolam concluded, "first-hand evidence that his work and his personality have been of the very greatest value in helping to cement the alliance between the English speaking members of the medical profession." (Applause.)

The resolution was passed by the members rising and applauding.

Mr BASIL HALL said it had been a very great pleasure indeed to him to be President of the British Medical Association. It was something of which he felt very proud and always would feel proud. He had been President during a year when there was perhaps rather more going on than was usual and he was very fortunate in going to Canada and America. For many years he had been anxious to visit both countries, and he hoped that his going as delegate would help to promote fraternal feeling between the American Medical Association, the Canadian Medical Association and the British Medical Association. The Canadians loved to feel that they were British and anything that tended towards that feeling delighted them. He was received everywhere with the greatest hospitality and kindness. He was very grateful for the kind way in which he had been supported and for all the kindness he had received on every hand.

The meeting was then adjourned until the evening.

ANNUAL DINNER

The Annual Dinner of the Association was held in the Assembly Rooms Bath, on July 23rd, with Mr W G MUMFORD, O.B.E., F.R.C.S., Acting President, in the chair. The company, numbering about 350, were distributed at thirty-six tables. Immediately supporting the Acting President were Mrs F G Thomson (wife of the President), Dr R A Bolam (Chairman of Council), and Dr H B Brackenbury (Chairman of Representative Meetings). Among the guests at the principal table were the Marquess of Bath, K.G., the Mayor of Bath (Alderman Cedric Chivers), the Mayoress of Bath (Madame Sarah Grand), the Venerable S A Boyd (Archdeacon of Bath), Lord Dawson of Penn, Mrs Forbes Fraser, Dr W D Haggard (President of the American Medical Association), Professor J Hermann (Stockholm), Sir Basil Meymian, Brigadier-General

H S Bilett (McGill University), Dr A J Orenstein (Johannesburg), Dr A Primrose (Chairman of Council, Canadian Medical Association), Dr W N Robertson (Australian Federal Committee), and Sir StClair Thomson (President of the Royal Society of Medicine). Members of Parliament present were Dr A V Davies, Professor T Simelton, and Dr T Watts.

A larger number of ladies were present than at any previous annual dinner of the Association. The number of overseas representatives also was large. The dinner end was an artistic production, bearing an engraving of Pulteney Bridge. After the King's health had been honoured, the toast of prosperity to the City of Bath was proposed by Lord Dawson of Penn.

"THE CITY OF BATH"

Lord Dawson said it would be surely difficult to find a city in this kingdom which embraces so many qualities. It has a wonderful setting. Nature has made it fine, and man has made it beautiful. Its history goes back for two thousand years. Twin where you will, you find riches of the past. Its springs have brought it reputation, and opportunity has been given to its citizens to endow their city with worthy architecture. The springs, in the course of history, have brought comfort for physical ills and solace for jaded nerves. Not always, it is true, have they been successful, and if the members of my profession ever to search the old records they may find that their ancient colleagues no more than themselves always attained the end they sought. I came across a letter written about 1600 by a patient here to the famous Robert Cecil, which states that here he had found no hope or help, though he had endured "as great heats, distemperatures, and excessive draughts as flesh can abide. Yet I am persevering to the end of my limited time to take away the scandal that other wise the physicians would lay upon me if I should sever from their direction and their command." Bath seems to have mirrored the social customs of England perhaps more than any other city. It has shown aptitude for combining the grave and the gay. But it is not a city which rests upon its past. It is a progressive city. If anybody is in doubt as to that he should go to the Forbes Fraser Hospital on its confines. Bath has been foreseeing and courageous enough to realize that no hospital in the future should ever be built within a city, and accordingly 21 acres of ground have been purchased just outside the city boundaries where a hospital to meet modern needs has been erected. In such a city as this—a city of traditions and yet of progressive outlook—what more can an association of scientific men require? And was there ever hospitality more precious? Was there ever hospitality conceived in a way likely to give greater pleasure? We have held here one of the most successful meetings in the history of the Association. (Applause.) The occasion has left in all our hearts a desire to come back again as soon as possible. To the citizens of Bath for the efforts they have made the Association is full of gratitude, and of the Mayor we can only say that he must be a product of this city or he could not have entertained us as he has done. He is a man of generous interests in it and literature, and he is a leader in all good work. He embodies the traditions of this city, and also its expectations, and for what he has done for us this week I express on behalf of the Association our admiration and our thanks. (Loud applause.)

The Mayor of Bath. This is a very embarrassing moment for me. All that Lord Dawson has said about Bath is perfectly true, his only extravagance is his kindly reference to myself. There is a story of an admirer of Whistler and Velasquez to whom Whistler said, "But why drag in Velasquez?" Someone this week has said that Bath is the two most beautiful cities in Great Britain and that and Edinburgh. But why drag in —? (Laughter.) I am proud of the fact that Bath, although old, is not ageing. Old age is sometimes a time of decay, but sometimes also it is an apothecosis. I am the 695th Mayor of this ancient city, but I assure you that our faces are of the future, and anything that your honourable profession can recommend we shall endeavour to fulfill in order that our city may render still better service for humanity. (Applause.)

"THE BRITISH MEDICAL ASSOCIATION"

THE MARQUSS OF BATH I have the honour to submit the toast of "The British Medical Association" and I am comforted by the reflection that however inadequate my recommendation it is sure of a unanimous and enthusiastic reception at your hands. As laymen we wish the best of health to the doctors. Your President—may I say how much I wish he could have been here this evening—reminded us in his address of the leading part which British physicians played in the formation of this Association ninety-three years ago. Bath has always been to the forefront when any useful purpose was to be served. I yield to no one in my affection for this city. You have seen Bath at its best—hot in above, hot water below (Llangtref). But I venture to offer you in equally cordial welcome on behalf of the county of Somerset. We are proud to welcome this Association with its Branches or affiliated organizations wherever the British flag flies, with its 30,000 members and with its new House recently so signally honoured by Their Majesties. In your sessions at this assembly you have continued to uphold your honourable traditions in the discussion of important discoveries and investigations, some of which only within these last few days have been made known to the public, and which give promise of such untold help for suffering humanity. I give you the toast of 'The British Medical Association,' with the earnest hope of the restoration to health of your President, and I couple with the toast the name of the Chairman of your Council (to whom I offer my congratulations upon the signal honour which his colleagues have conferred upon him in the presentation of the Cold Medal), and also the name of Dr. Robertson, one of your representatives from overseas. (Applause.)

DR R. A. BOLAM said: There are few members of the Association who have been privileged to see such a year of activity as this present year of grace, and not the least memorable of the events we shall always cherish in connection with this year will be our visit to Bath. To this city of charm and culture many of us have come as strangers and the cordial welcome and easy hospitality have left an impression on our minds that it will take long to efface. The wonderful function of last evening only emphasized the care which the Mayor has taken throughout in all things ministering to our comfort and pleasure. We also value extremely the fact that you, my lord, should have taken so keen an interest in the proceedings of this meeting, and should have thrown open your historic home at Longleat to our members as you did yesterday. You have said that we shall all be happy to drink the health of the Association. Yes, in pride in the Association, in zeal for its progress, we stand foursquare to it.

It comes. But in our Divisions and Branches we are very keen critics of each other, and our detailed work is carried on in that stimulating atmosphere. But we are all one in our pleasure at the progress of the Association in these latter days. I had hoped this evening to be able to announce that we had reached a total of 30,000 members, but a telegram received from the office this morning states that the number is 29,871. (Applause.) It has been said, quite truly, that there are a great many men outside the fold of the Association, but there are not many men outside its fold who take any interest in the organization of their profession. I had occasion to say before the Royal Commission on National Health Insurance that of all those medical men in this country who band themselves together with a view to organizing the profession so that it may exhibit unity of action only some 1,500 or 2,000 belong to any medico-political organization except our own. In our work we are often pressed to lay down a standard in one direction or another in the way of guidance to the public. We are asked to express an opinion as to the value of, say, psycho-analysis, or as to the danger of allowing unqualified practice. It is difficult to touch on these subjects in such a way that we in the profession shall not be accused of self-interest. It is ours to seek the interest of the profession and of its individual units only in so far as that interest is a communal interest also. Therefore you must bear with us if we hold our hand and say our voice with regard to many things upon which

doubtless the public are anxious to have a pronouncement. When, in the Representative Body, it was suggested that some stringent action should be demanded against unqualified medical practice, one of our members well said that it was a hard thing to interfere with the undoubted right of any member of a family to try his 'practise hand' on the healing of his relatives. The law of the land so runs that every man or woman may attempt healing, the only limitation is that he or she shall not attempt to recover a reward, and possibly this profession of ours is favoured in that the law so runs. I have been urged often that some steps should be taken by our Council to make the profession of medicine such an entrenchment that no one could possibly do anything in the way of healing, unless he had gone through a well considered curriculum. It may be that such a day will come to pass, the dental profession is well on the road in that respect. But these things come only by the education of the community, and when the community feels that for its safety and comfort the medical profession requires such an entrenchment then doubtless it will tell us so. ("Hear, hear.") You very kindly put men like myself in the position of receiving thanks in all our formal affairs, but I want to say that behind those who are placed in the forefront for the time being we have a devoted permanent staff of men and women, medical and lay, to whom the success of our organization is in very large measure due. (Applause.) Some of them have given up a considerable practice in their love for medical politics, and they have carried on the work for which I fear, we most frequently reap the credit. The work is more difficult than many outside realize. Perhaps that will be understood in the light of what I have just said. We are often accused of not going to the goal directly, but the crooked path—using the word "crooked" in no obnoxious sense at all—may be the real path of progress. It is not possible for us to go directly to the things we wish to achieve, we have to consider all the interests that are involved and many things which those who look on from a distance do not see. In conclusion Dr. Bolam took the opportunity of responding for the permanent staff of the Association and mentioned each of the chief officials in a few gracious words.

DR W. N. ROWATSON, C.B.I. (Vice-Chairman of the Australian Federal Committee), also responded to the toast. He gave some account of the organization of the British Medical Association in Australia, which, he said, was even more thorough than in the Old Country, and indicated a few of the manifold activities of the Australian Branches. The Association out in the antipodes, where one of the great nations of the earth was in the shaping, loved its parent, even as Australia herself loved the motherland. Dr. Robertson mentioned some of the many occasions on which the Australian Federal Government had turned to the British Medical Association for counsel in matters affecting the public health and individual welfare. He paid a warm tribute to his friend Dr. Robert Todd, Honorary Secretary of the Federal Committee, to whom the success of the Association in Australia was due more than to any other man.

"OUR GUESTS"

SIR STCLIN THOMSON, in proposing the health and happiness of the visitors, remarked that he was one of the oldest members of the Association, which he joined forty-two years ago and happened to be a Insman of the new President. When he saw Dr. Thomson that afternoon he asked him to send to all present, especially those from overseas, his very cordial good wishes. He hoped within a very few weeks to be shouldering the duties and responsibilities of his post, and he looked forward to meeting them all in Nottingham next year. Sir Stclin Thomson said there could be no doubt that this meeting had been signally successful, thanks very largely to the hospitality of their Bath friends, who had exhibited what the French called *une hospitalité croissée*. (Applause.) We have visitors with us (he said) like Brigadier General Birtlett, of Montreal—the first Canadian in the war and the last Canadian out of it—my learned friend Dr. Chevalier Jackson of Philadelphia, and Professor Burger of Amsterdam.

Then, for the first time, the American Medical Association which represents 90,000 members of the profession, has sent its President to our Annual Meeting. Dr Haggard comes from Tennessee—a State which has recently demonstrated that whatever you may think about evolution you must not say it. He is over here to raise his opeime index by immunizing himself against the dry when prohibition is revoked in his own country. (Laughter.) Dr Haggard is a great American surgeon—not like another American surgeon of whom it was said (it was an American also who said it, and therefore I quote it) that he “removed all that he could see, and a damned sight more that he could not see” (Laughter.) We hope that all our visitors from overseas will have a thoroughly enjoyable time, that good digestion will wait on appetite, and health on both, and that they will carry away with them all the glad eyes given them by the Bath beauties, will be none the worse for the Bath luns they have eaten, and that it will be long before they have occasion to step into a Bath chair. For them and for all our guests, “welcome ever smiles, and farewell goes out sighing.”

Dr A. J. CHRISTIAN of Johannesburg, in replying to the toast, said that South Africa was a country of very great distances, populated by large numbers of doctors who were reputed to be extremely prosperous in their practices. He was not pretending medicine himself! (Laughter.) South Africa, considering the size of the country and the character of the population, had a strong British Medical Association. In South Africa they were proud of this great organization, and fully appreciated the remark of the late Sir William Osler, when he addressed the American Medical Association, that the greatest benefit of medical organization was, not in listening to scientific papers, but in contact with one's fellow workers, which was what they had enjoyed. In the name of his South African colleagues he thanked them all for their hospitality.

Dr W. D. HAGGARD, President of the American Medical Association, brought greetings from his colleagues in the United States. Only an accident saved the United States from being one of the very great Dominions of the British Empire. Had it not been for that circumstance he might that evening have been responding to the toast without having to drink water! (Laughter.) In common with the other guests at that meeting he had come to learn. The little red rooster and the little brown hen were walking down the village street when they saw an ostrich egg in a shop window, and the rooster said, “My dear, I am not complaining, but I just want to call your attention to what other people are doing.” Well, he had been surprised at the magnificent way in which the other people were doing things in this country. One of the principal functions of the medical societies he had attended hitherto had been the presentation of scientific papers and discussions thereon, but in this wonderful Association they had managed in these days to do more than recapture the glories of Bath in its palmiest times. The gorgeousness of Rome had been outdone by the Annual Meeting of the British Medical Association at Bath. He had flown from Paris to London to attend that meeting, but he did not think he wanted to fly back! He went on to refer to the privilege which the American Medical Association had had of receiving the Past-President, Mr Basil Hall, and he offered a general invitation to the President and members to the next annual meeting of his Association, which would be held in the State of Texas.

PRESENTATION OF GOLF CUPS

At this point in the banquet Mrs Thomson, the wife of the President, presented the Ulster and Childe Cups to the respective winners. These were Dr G. Brand of Glasgow and Dr W. V. Wood of Yatton, Somerset, both of whom were “all square with bogey.”

“THE PRESIDENT”

Dr H. B. BRIDGEMAN proposed in very warm terms the health of the President. In drinking this toast, he said, the first thought would be for Dr Thomson, for whom he wished an early restoration of that health which his labours in connexion with the visit of the Association to Bath had helped to impair. The toast included also the Acting

President, Mr Mumford. It was an honour to my town to have a citizen like Mr Mumford, and he had shown his worth in the peculiarly difficult circumstances of the Annual Meeting. The Association had to thank him for immense responsibilities manfully undertaken, for hard work generally done, and for important functions in connexion with this visit to Bath effectively performed. Fewness of words on this occasion did not mean lack of gratitude.

The toast was drunk with musical honours.

The Acting President, after acknowledging the compliment on his own behalf, expressed the indebtedness of all concerned to many people who had contributed to the success of the meeting. In the first rank were the Marquess of Bath, the Mayor of Bath, and the Mayoress (Madame Sarah Grand). Then there was Dr R. G. Gordon, without whom there could not have been a meeting at all, and whose labours had been simply colossal. Mr John Hutton had also rendered inestimable service. Much work had been done by the various committees. The way in which the Transport Committee had marshalled the visitors to the Mayor's Reception the previous night was beyond all praise, and in this connexion he must mention the name of Mr C. Terry and that of Dr L. Scott White, also Mr Donald Acland, the chairman of the committee, who had laboured hard until he was laid aside by illness. Then the Dinner Committee and its honorary secretary, Mr A. de V. Blathwayt, must be mentioned. And what would the meeting have been without the ladies? Mrs Thomson had acted as chairman of the Ladies' Executive and General Committees, and had been ably seconded by Mrs Donald Acland as honorary secretary, by Mrs Mackenzie, and many other. Finally, he expressed his gratitude to the officers of the Association, and especially to Dr Bolam for his personal help in a difficult position. There were many others who had helped in various ways—including, on the financial side of the arrangements, Dr E. J. Cope and Dr H. C. Nixon—but he knew that the many unnamed helpers would regard this general word of thanks as a sufficient acknowledgment.

When the proceedings of the dinner were over the company were conveyed from the Assembly Rooms to the Grand Pump Room for the reception, dance, and concert given by the Bath Division.

CONFERENCE OF HONORARY SECRETARIES

The Conference of Honorary Secretaries of Divisions and Branches took place at the Guildhall, Bath, on July 22nd. Dr MUN SMITH (Eastbourne) was voted to the chair. Dr MORRIS MACKENZIE (Chairman of the Organization Committee) welcomed those attending, and spoke of the debt which the Association owed to the voluntary workers in the various areas.

Local Propaganda

Dr H. BROWN (Sheffield) opened a discussion on local propaganda. In his view one of the first essentials to successful propaganda was a strong and rather huge executive committee, and one thoroughly representative of all branches of medical work. With such an executive systematic canvassing of non-members could be judiciously shared out. Literature was of value but only if it was followed up by personal work. Invitations to non-members to attend meetings should be limited to those meetings at which it was desired to elicit the opinion of the whole profession. In Sheffield the number of medical students qualifying was comparatively small, but this had the advantage that it was easier to get into personal touch with them. Last year 13 out of 21 joined on qualification.

Dr C. J. B. BUCHAN (Lewisham) said that his Division in three years had increased its membership from 43 to 66. Each year the Division sent out a list of its officers and a letter written by the Chairman asking non-members to join. Literary propaganda was almost a *deus ex machina*. Divisional meetings did good, especially in London where it was always possible to get consultants to give addresses.

Dr WALLACE HENRY (Midland Branch) wondered how many Divisions had carried out the suggestion of the Organization Committee that special propaganda committees should be

up in each area. In widely scattered rural areas it was important to have on the executive representatives of every part of the area as far as possible. Dr J. I. WALTER (South Essex) took up a remark of one of the speakers that some newly qualified men thought they could not afford to join the Association. The fact was, they could not afford not to join. The subscription for the first four years after registration is £1 11s 6d a year, when worked out roughly at 'ten goldfishes a week'. The position of honorary secretary in a Division carried with it an enormous amount of prestige. Originally the honorary secretary was an innocuous sort of person who was chosen because people could get hold of no one else but as time went on the position became one to be sought after rather than avoided. For the solution of the propaganda problem much depended on the personality of the secretary. He suggested that a quarterly letter be written for general publication in the locality, embodying points of interest, especially local interest, much on the lines of the *Monthly Circular* from headquarters.

Dr H. M. STRATFORD (Metropolitan Counties Branch) suggested the value of social functions in Branches and Divisions, the proceeds of which, after paying expenses, could be handed over to the Benevolent Fund of the Association. In his own borough of Kensington he had found the municipal authorities most helpful in lending rooms and giving patronage. Dr O. C. CARTER (Bournemouth) asked for guidance in those cases in which there was in the town, side by side with the Divisional activity a flourishing medical society. Dr C. C. C. SCUDMORE (Croydon) said that in his own Division out of 30 members of the medical society only 6 were not members of the Association. Dr P. MACDONALD, speaking as a member of the Propaganda Subcommittee, said that at York there existed one of the oldest medical societies in the country; there was no question of hostility between that society and the Division and, indeed, the officers and membership were very largely identical. The existence of the society, however, had the necessary result of curtailing the scientific activities of the Division. Dr W. E. A. WOLLEY (City of London) said that in his Division there was a clinical society which was run in association with the Division and the meetings of the two bodies were announced on the same card.

Dr J. G. McCURCHEON (Glasgow and West of Scotland Branch) said that in Glasgow the Divisions had been exceptionally favoured by valuable demonstrations by members of the hospital staff, and at each of the last three meetings held at the hospital the attendance had been well over 300. With regard to the new Committee he hoped that efforts would be made to maintain sufficient support from within the profession without the necessity for any outside appeal. Dr A. LAYDON (Surrey Branch) said that in Divisions in which there was a good medical society the Divisional activities tended to become entirely medico-political. Areas differed widely in the interest which they showed in clinical discussions in the one hand and medico-political discussions on the other. Dr E. W. LEWIS (Southport) remarked that his Division had always devoted itself to medico-political work and the local medical society to clinical work. The two bodies enjoyed the use of the same rooms and many members were unaware as to which of the two bodies was actually meeting at a given time. Dr BRACKENBURY was doubtful as to the merits of the advice given by the speaker that a large and strong executive committee was the first essential of success. With such a committee there was a tendency for members to imagine that everything would be all right without any call for their own active interest. New members on joining should be made to feel that they were actively associated with the organization. Dr NOR SCOTT (Plymouth) thought it not worth while to run after people who made repeated refusals. Efforts should be concentrated on the newcomers into a district. He regretted that the Representative Body by its recent decision had deprived the Divisions of what would have been most useful material for propaganda—individual medical defence.

Panel Committee and Association Work

Mr RUSSELL COOMBE opened a discussion on the tendency of some panel committees to do what was really Association work. He said that during the ninety years of its history the Association had seen its competitors disappear and itself become the body to which the public looked for guidance.

but the position which had been relieved would be undermined if local sectional aggregations began as isolated units to do work which should be done for the whole profession by one united body. In many cases meetings of the local medical and panel committees and Divisional meetings were called simultaneously and were run by the same officers, and, of course so long as the officers of the committees were strong Association men it was all to the good, but it might be that men antagonistic to the Association would come into office in particular localities, and therefore he thought the local position needed constant watching. Dr P. MACDONALD did not share Mr Russell Coombe's view that there was a danger from interference by local medical and panel committees with the activities of the Divisions. It was for the Association to capture the local medical and panel committees and this could be done without much difficulty. He gave an account of events at York, formerly a Medico-Political Union stronghold where now there was the heartiest spirit of co-operation between the local medical and panel committees and the Division.

Dr A. I. JONES (North Cheshire) said that there was a similarly good understanding in his own area. Dr BRACKENBURY said that there were at present several important areas in England in which, because the local medical and panel committee was doing the work which ought to be done by an active Division it was difficult to give life to the local activities of the Association. He begged members to take an interest in the election of panel committees and to use their influence to ensure that the Association was predominant on those bodies. The MEDICAL SECRETARY said that when the local medical committees were first formed a good many people thought they might endanger the future activities of the Association. It was largely the foresight of Dr Fothergill of Brighton which saved the situation permanently. At Dr Fothergill's suggestion the first conference of local medical and panel committees was called in 1913, and from that had sprung an alliance between the panel committees and the Association with the increasing influence of the Association with the Ministry of Health and its recognition as the representative body of the profession on the subjects with which local medical and panel committees had to deal so that even hostile committees could not afford to do without the Association. He believed that time was on the side of the Association in this matter. Dr H. S. BRADLEY (Stratford) referred to the difficulties which arose owing to the fact that the Divisions were often not coterminous with boroughs or counties whereas local medical and panel committees were coterminous with these areas. This led in some cases to lack of co-ordination. Dr FARGHUR MURRAY (Newcastle-on-Tyne) thought that the chairman and secretary of the panel committee should be definitely appointed upon the local Association executive. Dr I. D. ROBERTS (Dudley) pointed out the importance of holding a meeting of the Division when the election of the local medical and panel committees was about to take place. Dr JOHN STEVENS (Edinburgh Branch) said that he was in agreement with Dr Brackenbury—and when Dr Brackenbury and he were in agreement it might be taken that there was no doubt as to the rightness of the particular matter—with regard to the serious danger lest local medical and panel committees should, if not supplant, certainly affect the position and work of the local Divisions and Branches. He gave illustrations of cases which ought to have come before the executive of the local Division and not before the panel committee. The danger arose because, fortunately or unfortunately, a large proportion of the profession had their interests associated with the work of the panel committees and this was apt to lessen if not to take away altogether their interest in other work which was appropriate to the Divisions and Branches. Dr E. A. STARRING (Kent Branch) supported the principle of co-optation of certain members of the panel committee on to the Branch Council or Division Executive.

The CHAIRMAN expressed the thanks of the Conference to Mr Russell Coombe for opening a useful discussion.

Election of Standing Committee

Dr L. A. PARRIS (Sussex Branch) moved to urge strongly upon the Council the desirability of altering the by-laws so that members of standing committees should be elected for three years and one third of the members of such committees should retire annually. He said that this was the procedure

very generally followed on municipal bodies. Under the present arrangement, whereby the whole of the members retired every year, the personnel of some of the committees was considerably changed, with peril to continuity of policy. He also referred incidentally to the way in which resolutions sent up by Divisions were turned down by the Council, and he wanted to see—although he proposed no resolution on the subject—the Council composed entirely of representatives, and to be in fact the executive of the Representative Body. Dr CHURTON (Carlisle) seconded.

Dr W. PATTERSON (Willesden) reminded the mover that it was not the Council which turned down resolutions from the Divisions; it was the Representative Meeting itself representing all the Divisions. Dr JOHN STEVENS said that the resolution would involve wide changes in the constitution, in his view there had always been a sufficient number of old members elected to ensure continuity. Dr PARRIS said that he was well aware that the resolutions were turned down by the Representative Body, but it was the Council which gave the lead. The chairman of a committee had only to pour cold water upon a Divisional motion to turn dozens of votes against it in the Representative Meeting.

Dr PARRIS's resolution was altered to become a request to the Council to consider the desirability of iranging their members of standing committees should be elected for three years, but it was lost by a large majority.

Other Business

The rules and regulations governing the Treasurer's Golf Cup competition were discussed, and it was agreed, on the suggestion of the Deputy Medical Secretary, to appoint a small committee to draw up the rules for the forthcoming year; the committee to consist of Dr McCutcheon (Glasgow), Dr C. J. Kirk (Darlington) and Dr Le Fleming (Bournemouth). Some desire was expressed that each Division and Branch should be allowed to find its own winner and in its own way.

No suggestions were forthcoming for the improvement of the *Annual Handbook*, and the Medical Secretary said that a great deal of the credit for that compilation was due to his colleague, Dr Macpherson. One Secretary asked for guidance on the question of medical charities, and Dr COX replied that the committee concerned would meet shortly, and that various questions must be held in reserve until it had reported.

Reports were received with regard to resolutions of the last Conference. The Organization Committee had been asked to consider how secretaries might be notified of arrears of subscriptions of members prior to the deletion of the names from the list, but the committee was of opinion that the balance of evidence was in favour of taking no action on the lines suggested. It was also asked that some rearrangement of dates might be made whereby the names of recently appointed officers of the Divisions could appear in the Annual List. To this the Organization Committee had replied that there were serious disadvantages in making any change, and that the desire for an up-to-date list of officers was met by the publication in October each year of the *Annual Handbook*.

A vote of thanks to the Chairman was accorded by acclamation.

DINNER OF HONORARY SECRETARIES

Following the Conference the Honorary Secretaries with their ladies dined together at the Red House under the presidency of Dr MUIR SMITH.

In proposing the health of the Chairman Dr A. LONDON mentioned that Dr Muir Smith had held office as a Divisional Secretary for a longer period than any other secretary now living. He was the embodiment of all that a B.M.A. man should be. Dr MUIR SMITH replied that it was true he had been secretary of the Eastbourne Division for twenty years, but it had been an office of unmitigated pleasure. It was a great privilege to come so closely into contact with one's fellow practitioners to learn their difficulties, and to have the opportunity of adjusting their little disputes. Although in the central councils of the Association the importance of secretaries might be small as compared with representatives or members of Council, he looked upon them as the salt of the local profession. He recalled the organization of the profession thirty years ago to resist the injustices inflicted upon it by the friendly societies. The present generation would never understand the tremendous debt of gratitude owed to the late Sir Victor Horsley particularly, and to those associated with him—Dr J. A. Macdonald, Dr Smith Whitaker, and Dr Cox—for the part they played

in those early struggles and for the emergence of a constitution of the British Medical Association on democratic lines. In those days nobody ever dreamed that the Association would become the power in the land that it was to-day. That it was now fully consolidated there could be no doubt whatever.

Dr C. G. C. SCUDWORTH, with appropriate compliments, proposed the health of the ladies, and mentioned particularly the help of the ladies of Bath in making for the success of the social functions of the Annual Meeting. Miss A. L. LAWRENCE, the Intelligence Officer, in a few happy sentences, responded to the toast.

Dr E. A. STANLEY proposed the health of the Medical Secretaries—the man who taught the honorary secretaries how to do their business, stimulated them if they were laggards, restrained their over-zeal, and rectified their errors. Dr COX paid, in response, a generous tribute to his colleagues, especially the clerical staff at headquarters, which, he said, was a well-picked body of men and women, second to none in zeal and devotion, taking a real interest in their work and giving their service in no niggardly measure. He also spoke in similar terms of his fellow secretaries Dr Anderson, Dr Lord and Dr Macpherson the Financial Secretary, Mr Ferris Scott—a more devoted servant the Association had never had—and the Intelligence Officer, Miss Lawrence of the origin of whose post he gave some account. Then there were Dr Drever and Dr Hennessy, respectively the Scottish and Irish Secretaries, to whose work the present position of the Association in those two countries was largely due. Dr ANDERSON and Dr LORD also spoke briefly to the toast and the proceedings were over in early hour to enable those present to attend the civic reception by the Mayor at the Grand Pump Room.

HONORARY DEGREE CONGREGATION AT BRISTOL

In connexion with the Annual Meeting of the British Medical Association at Bath a special congregation of the University of Bristol was held in the Great Hall of the University on the afternoon of Thursday, July 23rd, for the purpose of conferring the honorary degree of LL.D. upon Sir Humphry Rolleston, Bt. & C.B., President of the Royal College of Physicians of London and Regius Professor of Physics at Cambridge, and upon Sir Berkeley Moubray, Bt., K.C.M.G., Professor of Clinical Surgery in the University of Leeds. About 200 medical men and ladies travelled from Bath by motor coach as the guests of the Bristol Division of the Association and a luncheon party to meet the Vice-Chancellor and members of the Faculty of Medicine was held in the old Council Chamber of the University. In reply to a brief speech of welcome by the Vice-Chancellor (Mr T. Loveday), the Acting President of the British Medical Association (Mr W. G. Mumford) acknowledged the assistance cordially given by Bristol to Bath in the organization of the Annual Meeting, and spoke of the happy relations that had long existed between the medical profession in the two cities. In the name of the Association he acknowledged the honour about to be conferred upon two of its most distinguished members by the University of Bristol. Sir Humphry Rolleston, in a very happy speech, mentioned the proverbial hospitality of the inhabitants of the ancient city of Bristol, and touched briefly on some of the historical associations between Bristol and medicine. Sir Berkeley Moubray expressed his pride in being about to receive a degree honour causa in company with his friend, the eminent President of the Royal College of Physicians, and his satisfaction that medicine and surgery once asunder, would stand side by side to receive this honour. After praising the exquisite conception of design and superb craftsmanship of the new University buildings, Sir Berkeley observed that in the revival of learning in the great provincial cities medicine had once again proved herself the mother of the sciences.

Shortly before the congregation the guests assembled in the magnificent Great Hall of the University where the Chairman of the Bristol Division (Dr R. A. Ashmole) introduced Sir George Ostley, the architect who gave a brief account of the memorial tower and other parts of the building, which were then inspected by the visitors. The congregation ceremony, held at 4 o'clock, was presided over by the Vice-Chancellor, beside whom were Sir George Wills Bt. (Chairman of the Council), Professor L. I.

Francis (Pro-Vice-Chancellor) and members of the Council and Senate and academic staff of the University. These, and a large proportion of those present in the body of the hall, wore academic dress. The two honorary graduates were presented to the Vice-Chancellor by Professor J. Fawcett, F.R.S., Dean of the Faculty of Medicine. In his introductory remarks Professor Fawcett observed that the visit of a body like the British Medical Association, representative as it was of medical men throughout the Empire, must always be regarded as an important event in the life of any community. When such a visit was paid to a university town it was customary for the university to take official cognizance of it. Bath was not a university town, but since the inception of the University of Bristol the neighbouring city had taken the greatest interest in its prosperity, and had not hesitated to support it both morally and financially. Moreover, this was a medical visit, and the medical faculty could fairly claim to have had considerable influence in laying the foundation of the movement towards a university for Bristol and the West. On these grounds the University had deemed it fitting that the visit to Bath should be marked by the conferment of honorary degrees on two prominent members of the British Medical Association, who were taking an active part in its deliberations, who were representative of the two great branches of medicine, physic and surgery, and who possessed, moreover, the additional qualification of having some connexion with the University or city of Bristol.

Sir Humphry Rolleston

In presenting Sir Humphry D. Rolleston, Professor Fawcett said:

He who has been selected by the University as a representative of physic is one who to an unusual degree has gained and returned the trust and confidence of his fellow men whether in the strictly professional or academic sense. Sir Humphry Rolleston is a distinguished son of distinguished parent and through his mother is directly and hereditarily connected with that celebrated man of science, who commencing his career at Bristol discovered the physiological properties of nitrous oxide and invented the safety lamp which bears his name. Professionally he holds the office of Physician in Ordinary to the King, his for the third year in succession been elected President of the Royal College of Physicians of London while during the whole of the great war Sir Humphry Rolleston served as consulting physician (with the rank of temporary Surgeon Rear Admiral) to the Royal Navy. Academically he is a graduate of the University of Cambridge in which he has recently been appointed to the important office of Regius Professor of Divinity, honorary graduate of the Universities of Glasgow and Padua, a corresponding member of the Academies of Medicine of Paris and Rome and of the Association of American Physicians. His judgement is so highly appreciated that he has served as external examiner in medicine in most of the universities of the kingdom, and the University of Bristol is numbered among those which he has served during two different periods in the same capacity. Invited for his public services, high honours of a different character have been bestowed on him. In the year 1916 he was made Companion of the Bath. In 1918 he was created a Knight Commander of the Bath and quite recently he has been advanced to a baronetcy of Great Britain.

Sir Berkeley Moynihan

In presenting Sir Berkeley Moynihan, the Dean said:

The University has selected as representative of surgery one who thirty years ago was regarded by his medical confidants in the city of Leeds as of outstanding promise in the domain of surgery. It is common knowledge that that promise has been amply fulfilled and it is not too much to say that wherever modern surgery is taught and practised the name of Moynihan is known. Those who have worked with Sir Berkeley Moynihan know that his manipulative skill as an operating surgeon is as dexterous as his powers of diagnosis are brilliant and those whose fortune it is to be treated by him have felt from the very first that confidence which dispels to a great extent the natural dread attaching to surgical operations. His fellow practitioners have every reason to be grateful to him for his great kindness and sound ration for them in their illnesses and whenever advice on academic matters has been sought of him Sir Berkeley Moynihan has been no less responsive as this University gratefully acknowledges. A graduate of the University of London receiving the Master's degree in Surgery with gold medal in 1893 Sir Berkeley Moynihan is in addition an honorary graduate of the University of his adoption and of the University of Glasgow. He is an Honorary Fellow of the Royal College of Surgeons in Ireland and of the American Medical

Association. Professor of Clinical Surgery in the University of Leeds, Senior Surgeon to Leeds General Infirmary and a corresponding member of the Chirurgical Society of Paris. During the late war Sir Berkeley Moynihan served with distinction in the Army Medical Service as temporary Major-General. He has at various times held important lecturership, as for example the Ainslie and Gale Lectureship in the Royal College of Surgeons of England. He was Bradshaw Lecturer in the year 1920 and Hunterian Professor in 1919-20. In 1922 he was elected Vice-President of the Royal College of Surgeons of England. In recognition of his great services he was, in the year 1912, created a Knight Bachelor. In 1917 he was made Companion of the Bath, in 1918 was created Knight Commander of the Order of St. Michael and St. George and in 1923 he was created a baronet of Great Britain.

Each of the new honorary graduates, after his admission to the degree with due ceremony, was received with loud applause by the company. The Vice-Chancellor having declared the congregation closed the proceedings ended with the singing of the National Anthem. After the ceremony a garden party was held in the delightful grounds of Port Royal, now a part of the University.

IRISH GRADUATES' LUNCHEON

The annual luncheon of the Irish Medical Schools' and Graduates' Association was held on Wednesday, July 22nd, at the Pullman Hotel, Bath. Dr. J. A. McENAMARA presided over a very large company of members and guests. After the King's health had been honoured the toast of continued prosperity to the British Medical Association was submitted by Mr. RUSSELL COOMBS, who referred to the wonderful progress made by the Association in recent years, and in coupling with the toast the name of the Chairman of the Representative Body spoke of the debt of gratitude owed to him. Dr. BRICKENBURY, in responding, had to admit that he had never yet set foot on Irish soil, and could claim no Irish ancestry. He said that the Association to day was even more anxious than ever before to be of a due to Irish graduates and to attract them into its membership. The CHAIRMAN, in proposing the health of the guests, welcomed them with *cord mille faillies*, and in alluding to his friend Dr. W. N. Robertson (Vice-Chairman of the Australian Federal Committee) to respond, said he was only second to being a good Irishman—a good Scotsman. Dr. ROBERTSON expressed the thanks of all the guests to their hosts, and said that the message he would take with him on his 13,000 miles journey home would be that the British Medical Association was as good in Great Britain and Ireland as it was in Australia. Mr. W. D. HENDERSON, speaking as a perennial guest of the Association submitted the toast of "Prosperity to the Irish Medical Schools' and Graduates' Association". Dr. McENAMARA, in a brief reply said that the Association delighted above all things to entertain guests at its gatherings. Before the company parted the health of Dr. W. Douglas, the honorary secretary, was drunk on the proposal of Dr. MILLS.

THE ANNUAL EXHIBITION

The exhibition of surgical appliances, drugs, foods, and other materials and apparatus of professional interest was housed in the wholesale and retail markets of the Bath Corporation, situated between the Guildhall and the Technical School, in both of which buildings the sectional and other meetings took place. The area allotted for exhibition purposes was rather smaller than in recent years, but the utmost use was made of the space available and every one of the eighty-six stands had a good showing. Many of the exhibitors expressed themselves entirely satisfied with the results of the four days' display. The visitors were in general limited to those who could produce a membership card or badge, with the result that the Marquess of Bath and Lord Lieutenant of the County was challenged by the conscientious gatekeeper and only secured admission on the intervention of a police inspector. Lord Bath appeared amused at the incident, and spent a considerable time in the exhibition. Among the exhibitors were many old acquaintances, but there were also some

new-comers, and several things of interest were shown for the first time. The number of bootstalls was noteworthy, and it was also remarked that Buxton, Droitwich, and Harrogate all had stands advertising their waters at this queen spa of the West. In an early issue we shall begin the usual detailed survey of the more outstanding exhibits.

THE TEMPERANCE BREAKFAST

Sir Maurice Craig on Alcohol and Mental Disorder

THE fifth annual breakfast conference of the National Temperance League was held during the Annual Meeting at the Grand Pump Room, Bath, on July 23rd, when Dr Charles A Marsh acted as host.

Sir MAURICE CRAIG addressed the gathering on alcohol in relation to mental disorder. After quoting a statement by Sir Frederick Mott—that alcohol played a relatively unimportant part in the production of certified insanity—he reminded the gathering that certified insanity was a legal term, connoting a disorder which by statute had to be dealt with in a certain way. The lunacy laws were thoroughly unsuited for regulating the detention and care of a person whose mental disorder was due to the direct action of alcohol, for the vast majority of such cases regained mental equilibrium in the legal sense within a few days of the withdrawal of the alcohol, so that it was not to be expected that any large proportion of alcoholics would be found in mental hospitals. Nor was a mental hospital the ideal place for such persons. When clinics for the treatment of early phases of disorder were set up it was to such institutions that the alcoholic should go. It was the minor mental changes resulting from alcohol that were so damaging to a person's efficiency and happiness, and so hurtful to those who had to live with him. Children of alcoholic parents also were especially prone to develop such minor changes which might pass later in life to greater disturbances. The unhappy home surroundings of such children, the frequent emotional stress, the positive ill treatment, were likely to lead to mental instability in later years. Often the child of alcoholic parentage was above the average in intelligence, but this was generally due to hypersensitivity associated with unstable emotional reaction. Those who criticized the advocates of temperance (Sir Maurice Craig went on) declared that alcoholism was merely the expression of some other degenerative factor in the individual. To some extent this was true, but it did not justify a policy of inaction. To read some writers one would conclude that the testing of alcohol was a good test for deciding who were the fittest, but medical science had to do with the prevention of disease, and its aim was the efficiency of the greatest number. Research in mental medicine increasingly went to show that mental changes were frequently the result of poisons produced within the body or absorbed from without. That one individual was more sensitive to a poison than another did not exclude the importance of protection from such poison. Much had been heard of drug addiction, but whilst it was right and proper to see that any danger of this kind was guarded against, drug addiction, save in a limited number of cases, was negligible in this country, while addiction to alcohol was only too prevalent, and there was no such activity for dealing with it.

Sir Maurice Craig next spoke of alcohol as a hypnotic for sleeplessness. Dr Robert Hutchison, in *The Action of Alcohol on Man*, had said that the sedative action of the drug could be turned to good account by the doctor, the best example being the employment of alcohol as a hypnotic in cases of mild insomnia. But the observable symptom to which the taking of alcohol led in very many persons was more restless activity. Thirty years experience had taught him (Sir Maurice Craig) how dangerous was this practice of taking alcohol to encourage or produce sleep. He had seen many disastrous consequences. Even if alcohol at first produced the desired effect, the dosage had to be rapidly and continually increased. He had known a man who up to the time of his insomnia was almost an abstainer come to take as much as a bottle of whisky a night in the endeavour to obtain sleep, until he became alarmed at the consequences. This patient's sleep became thoroughly re-established when alcohol was withdrawn and 7½ grains of medinal alcohol for sleeplessness except in very rare instances as he found it unreliable in its action and in some cases as dangerous

as morphine, in the rapidity with which habit might be induced. The fact that the physiologist found by investigation and test that the action of alcohol on the nervous system was essentially depressing or sedative did not justify the ignoring of any opposite effect that might be commonly observable in clinical experience. Empirical experiences must not be set on one side. For example, chloralhydrate was far less effective as a hypnotic when dissolved in alcohol than when given in its solid form, whereas, according to laboratory investigations it ought to be more effective. That the healthy person could sleep better for or in spite of, his night potion did not mean that the person who was ill would do the same. In some persons sleep was better induced by depressants and in others by excitants but in any case the choice should fall upon the means least likely to establish a habit. Many patients had told him that they dated their intemperate habits from the time they took or were prescribed alcohol for sleeplessness. In conclusion, he urged that greater powers should be given for dealing with chronic alcoholics, whose number was large, and whose baneful influence was well recognized. Education would never touch such persons, and national prohibition would but increase their cunning. They must either be treated as normal persons and their conduct made an indictable offence or as sick persons requiring treatment, which others must be empowered to apply if they failed to seek it for themselves. Some means would have to be found for controlling the activities of these alcoholic persons, and the sooner the better.

Sir WILLIAM WILLCOX, in speaking to a vote of thanks, said that a fairer statement of the case than Sir Maurice Craig's he had never heard. It must always be remembered that the first effect of alcohol was not towards the production of cirrhosis of the liver or Bright's disease—it was the effect on the brain and therefore it was fitting that a neurologist should speak with authority. The only point on which he differed from Sir Maurice Craig was with regard to the giving of medinal for re-establishing sleep. Sir Maurice had said that disastrous consequences followed from the use of alcohol in this connection, and with that he agreed, but when he went on to recommend medinal the speaker was bound to say that the whole of these barbituric acid compounds were harmful and habit producing, and he hoped something more efficient would be found than medinal or any of its congeners. Lady BARNETT and Dr ALFRED COX also spoke to the vote of thanks.

MEDICAL MISSIONARY BREAKFAST

THE third annual Missionary Breakfast, held under the auspices of the Medical Prayer Union, was held on Friday, July 24th, during the Annual Meeting at Bath. The chair was taken by Mrs SCHARLIEB, supported by Mr W McADAM ECCLES, and an address was given by Dr H GORDON THOMPSON, of the Church Missionary Society's Hospital at Yunnan-fu, in South China.

Dr Thompson spoke of the sudden growth of race consciousness among the backward races, and of the unsettlement of the Chinese mind particularly consequent upon the introduction into such a province as Yunnan of modern things like the railway, the telephone, wireless, and the aeroplane. The beliefs of the Chinese were being undermined by these introductions, and there was great need for the West to give the Chinese a gesture of goodwill. What better gesture could be given than the provision of medical help? In the south of China there were actually French government hospitals, with doctors paid by the French Government, the motive of which was to persuade the Chinese people of French goodwill. If the Chinese could be persuaded that the British also were there with a similar intention it would all serve to act as a strong ballast to the Chinese national character, which would steady down in a remarkably short space of time. Dr Thompson spoke of the beginnings of the work now carried on at Yunnan-fu, the first operations were done in a tumbledown cottage, but now there was a well equipped hospital with fifty beds, an out-patient department and an x-ray and electrical installation. He told an amusing story of how, on first arriving at the city, he found that the French doctor on the principle that what people could get for nothing they would value lightly was charging one dollar for attendance. Desiring time to study the language, Dr Thompson thought

to reduce the number of his own patients by charging three dollars. But this had the opposite effect. His reputation was made at once. People said that the French doctor charged one dollar, the English doctor three dollars, and therefore the English doctor must be three times as good! He went on to give several illustrations of the relief afforded by medical work, and of its value as an adjunct to the spiritual enterprise. It would be out of the question, of course, for even the whole of Europe to send sufficient doctors to China, and the latest idea was to establish native medical schools. Something was being done to cope with the need by way of a kind of itinerant practice in market towns, he had himself seen in one day 250 patients. That travel in China was not without excitement he proved by describing a journey he had undertaken to the borders of Tibet when he lost all his supplies to bandits, and was himself a prisoner in their hands for several days. He left with his helpers a picture of the great spaces of China which were without medical help. From Yunnan in one direction the nearest hospital was fourteen days' journey away—that is, a Chinese day's journey, which is about twenty-five miles—and in another direction twenty-eight days' journey. The province of Yunnan was larger than England, Scotland, and Wales put together, and it had not a single isolation hospital, nor a single institution for the many blind. In the whole of China, he believed, there were only two asylums for the insane.

The breakfast was organized by Dr. T. Wilson Smith.

GOLF COMPETITIONS AT THE ANNUAL MEETING

On Thursday, July 23rd, the annual golf competitions for the Ulster and Childe Cups took place at the Stram Castle Golf course at Bath. There was a very satisfactory entry for both competitions, fifty-nine players in all taking part. Dr. G. Brand of Glasgow won the Ulster Cup, and Dr. W. V. Wood, M.C., of Yatton, Somerset, won the Childe Cup. Both players returned a score of "all square with bogey."

On Friday, July 24th, the final stage of the Treasurer's Cup Competition was held on the Lansdowne Golf Club course, sixteen winners of the Branch stage were present and play was of a fairly high order, all entrants, with the exception of one, returning a net score of somewhere between 70 and 80. As will be seen from the following list, the winner of the competition was Dr. W. V. Wood, M.C., of Yatton, Somerset, who returned a net score of 69. The best scratch score was that by Mr. N. Duggan of Worcester (handicap 1), who returned a gross score of 72.

Name and Branch	Gross Score	Handicap	Net Score
Dr. W. V. Wood, M.C. (Bath and Bristol) <i>Winner</i>	93	24	69
Dr. F. Norman (Tassex)	81	14	70
Mr. N. Duggan	72	1	71
Dr. F. B. Rush (Norfolk)	96	24	72
Dr. W. Stobbs, O.B.E. (Oxford and Reading)	79	6	73
Dr. A. Alcock (Gloucestershire)	92	18	74
Dr. I. " "	92	17	75
Dr. I. " "	89	13	76
<i>Inner Groups</i>			
Mr. Garnet Wright (Lancashire and Cheshire)	91	18	76
Dr. J. P. J. Jenkins (South Wales and Monmouthshire)	79	3	76
<i>Professor A. Fullerton, C.B. M.C. (Ulster)</i>	87	10	77
Dr. " " (England)	89	12	77
Dr. C. " "	79	2	77
Dr. V. " "	81	10	73
Dr. I. " "	83	9	79
Dr. I. " "	—	6	—

* No return

Players in all three competitions expressed their appreciation of the kindness and courtesy of the Bath Golf Clubs in placing the facilities of the clubs at the disposal of members of the Association attending the Annual Meeting.

EXHIBITORS' CONCERT

The exhibitors' concert was held this year in the Assembly Rooms on Thursday evening, July 23rd, when there was a large attendance, including many ladies. The chair was taken by Mr. J. G. Percy (Messrs. Down Bros.) and the vice chair by Mr. Lionel Cooper, while the musical arrangements were under the direction of Mr. D. Steele. A very fine programme was provided. The Chairman, in the course of a few remarks, welcomed the presence of Mr. W. G. Mumford, who was acting as deputy to the President, Dr. Thomson (unfortunately prevented from attending the meeting through illness). Dr. Brackenbury, Dr. Cox (the Medical Secretary) and Mr. Lewis Scott (the Financial Secretary). Mr. Percy acknowledged on behalf of the exhibitors the great assistance rendered them by the officials of the Association in connexion with the Annual Exhibition. He asked Mr. Mumford to convey to Dr. Thomson the sympathy of the exhibitors, and to express the hope that he would soon be restored to health. Mr. Mumford in responding paid a tribute to the usefulness of the exhibition, which enabled the profession to become personally acquainted with the latest improvements in medical and surgical appliances and medications. He thanked those present for the vote of sympathy to Dr. Thomson, which he knew would be much appreciated. After proposing the health of the Chairman, Mr. Lionel Cooper expressed the thanks of the exhibitors for the great assistance rendered them by the Corporation authorities through Mr. Hatton.

British Medical Association.

CURRENT NOTES

THE ROYAL OPENING CEREMONY, *Greetings from Tasmania*

At the reception after the Royal Opening of the Association's New House, on July 13th, the following message of greetings from the Tasmanian Branch was conveyed by Dr. W. N. Robertson, Vice-Chairman of the Australian Federal Committee:

*To the President, British Medical Association,
Tavistock Square, London*

We the Council and Members of the Tasmanian Branch of the British Medical Association in Australia, hereby express our fealty to you and your Council, and forward our salutations to the Association on the occasion of the formal opening of the new Home of the British Medical Association at Tavistock Square, London.

We are entrusting the carriage of these greetings to the Delegate of the Federal Committee of the Association, Dr. W. N. Robertson, C.B.E., one of our leading members in Australia, who is not only prominent in his profession but has materially forwarded in our Commonwealth the ideals of the Association, and we are entrusting him to convey not only the formal expression of loyalty to the Council but also personally the hearty greetings from all the members of our Branch.

Signed on behalf of the Tasmanian Branch of the British Medical Association in Australia,

E. BETTINGHAM MOORE
President Elect
TERENCE C. BUTLER,
Vice President
A. W. SHUGG,
Secretary

Representative of Northern Ireland

In our report of the proceedings in connexion with the Royal Opening on July 13th we regret that the name of Dr. W. R. Dawson was omitted from the list of those present. Dr. Dawson, as Chief Medical Officer to the Ministry of Home Affairs in the Government of Northern Ireland, represented the Minister of Home Affairs and his Department at the ceremony.

MOH for Selkirkshire.

It was only as recently as April, 1924, that the Selkirk County Council proposed to appoint a medical officer of health at a salary of £700 per annum with annual increments of £25 to £800. Under the new salaries scale the minimum salary for this appointment was £800 a year. The advertisement was, therefore, refused and became the

subject of an "Important Notice" In spite of this, however, someone was found who was willing to take the appointment. The holder, after a twelve months' trial, has now resigned, and the authority is again seeking to fill the post on the same terms. The fact that two medical officers of health have resigned this appointment in a period of less than two years should suffice to warn intending applicants to have nothing to do with it. The new scheme sero in its final form was unanimously adopted by the Annual Representative Meeting at Bath, and the position of the Association is also strengthened by the fact that the Ministry of Health considers the scheme reasonable and is prepared to support it. Furthermore, a number of authorities in England have adopted the scheme, and there is no reason why those in Scotland should not also do so, particularly if the necessary professional backing is forthcoming.

Association Notices

BRANCH AND DIVISION MEETINGS TO BE HELD

CAPE OF GOOD HOPE (WESTERN) BRANCH—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday, August 28th at 8 p.m. when there will be a symposium on the diagnosis of intracranial tumours arranged by Mr D. J. Wood. Among the speakers will be Dr J. D. M. Claessens, Mr T. F. Petersen, and Dr A. W. S. Siebel.

SUFFOLK BRANCH WEST SUFFOLK DIVISION—A combined clinical and social meeting of the West Suffolk Division will take place on Thursday August 6th when Dr Wood has very kindly offered to entertain the Division once more at Woolpit. Tea in his garden will follow a clinical meeting at the Institute.

Meetings of Branches and Divisions

NORFOLK BRANCH

The annual meeting of the Norfolk Branch was held at the Norfolk and Norwich Hospital on July 8th. Dr A. J. CLEVELAND took the chair for the preliminary business and then inducted the new President Dr CECIL JEFFERY MURIEL.

The following officers were elected:

President Elect Mr William Henry Fisher. *Vice Presidents* Dr F. W. Burton Fanning and Dr C. A. Owens.

A very learned and interesting address was given by His Honour Judge HENRY SMITH LL.D., county court judge on the law and procedure of workmen's compensation. Afterwards at the invitation of Dr and Miss Muriel members and their wives were entertained at tea in the hospital grounds.

NORTH OF ENGLAND BRANCH

The annual meeting of the North of England Branch was held on July 2nd at the Medical Institute, 7 Windsor Terrace, Newcastle upon Tyne when the President Dr D. I. Tonn was in the chair.

The following officers were elected for the ensuing year:

President Dr J. Hudson. *President Elect* Mr W. S. Dickie FRCS. *Vice Presidents* Dr F. Beaton and T. J. Kirk. *Honorary Secretary* Mr Norman Hodgson. *Honorary Scientific Secretary* Dr Henry Evers.

At the conclusion of the business meeting the members present adjourned to the Northumberland Golf Club, Gosforth Park, where they were entertained to luncheon by Dr Hudson after which the annual golf competition for the cup presented by Dr Todd took place. This was won by Dr W. Seymour of Newcastle upon Tyne.

NORTHERN COUNTIES OF SCOTLAND BRANCH

The annual meeting of the Northern Counties of Scotland Branch was held at Largsmouth on June 27th. At the business meeting held in the Stelfield Hotel Dr J. MUNRO MOIR the retiring President installed his successor Dr D. GRAHAM CAMPBELL in the chair. It was resolved to hold the annual meeting for 1926 at Tain. The following officers were elected for the coming year:

President Dr D. Graham Campbell (Flinn). *President Elect* Dr F. K. Mackenzie (Tain). *Vice Presidents* Dr J. M. Moir (Inverness) and Dr Taylor (Elgin). *Joint Honorary Secretaries and Treasurers* Dr J. M. Moir and D. Macfadyen (Inverness).

A discussion took place on the difficulties due to its large area in carrying out the present rules of the Branch, and a committee was appointed to go over the rules and report to the Branch Council what amendments of them were desirable. A discussion also took place as to the best time and place to have the British Medical Association Lecture, and it was decided that it should be held at Inverness in October.

After the business meeting the members and their friends, along with members of the Aberdeen Branch adjourned for lunch when the President Dr CAMPBELL presided over a company of about sixty. After lunch a golf match took place between members of the Branch and members of the Aberdeen Branch resulting in the defeat of the latter. Other members and their friends under the guidance of the President visited several places of historical interest in the vicinity of Lossiemouth. The weather was perfect and altogether a very enjoyable day was spent.

ONE DAY IN THE LIFE OF A COUNTRY DOCTOR

By A NORTH COUNTRY PRACTITIONER

THE other evening just before I went to bed I picked up a book from my shelf to read. It was *The Diary of a late Physician*, by Wriren, long out of print. It is a book of rather lurid tales, rather tall stories, creaky boots, cordials top hats, horse broughams, gramps sepsis, and a vein of religion of the Early Victorian Protestant type. Still in a more modern frame, the pictures would not all be out of date. But apart from the Victorian sob stuff it is interesting as a semi-professional novel. After one or two chapters I put the book down, and said to myself: "Blest if I don't put down a record of to-morrow's work. I did so, the next evening, with the following result."

Aroused from my bed at 7 a.m. to sign off a panel patient who wished to return to work and could not be bothered to come at my proper hours. As I was too bemused with sleep I did so without any comment. Then morning bath but in the midst of it to answer telephone—Oh yes we have telephones now in the country—Just testing the line. Breakfast at 8 with advertising circulars, bacon and eggs, moneylender scripts, samples, marmalade and toast hills to be paid and what riles me a letter of expostulation from a patient about my inordinate fee of four guineas. I certainly only paid two visits but I had to go fifty-two miles to do it.

Surgery from 9 to 10. Nobody to attend there so run through visiting list. This works out at a twenty-seven mile journey for the morning's round to see four patients excluding of course those who call me in on the way or stop me on the road. Get into travelling kit but just on the stroke of 10 in saunters a farm labourer, a case of cattle ringworm plus the stink of farm excrement on his boots. Treat him give directions but he insists on a bottle to cool the blood.

Start up, but have to stop as a patient arrives in emporhated furs. Strip off travelling kit and return. It is a case of nerves with a long rigmarole of what Dr X—said and what Sir Bunkum I he advised. After a process of diagnosis by elimination find it is servant troubles. Advise suggestion treatment and bolt without a fee and half an hour late. Stopped within a mile by farmer who says: "Yer've got to go and see my missus she's badly. Remind *agricola cantantians* that he has owed me money for two years and refuse to go unless he dubs up. He produces some dirty Treasury notes out of a dirtier pocket so go. Case of starvation though farmer and wife are well to do yet very grasping and close. Give advice directions as to food but no bottle consequently shall be turned down in future but will be no loss. Across some fields to a whitlow. Find it is of ten days duration and has been treated with hard cold bread poultices sugar spread on brown paper. This is the thecal form so get out tools sterilizer and ethyl chloride spray. Just ready when patient tries to faint refuses operation and says she will go on with the good old fashioned treatment. After great loss of time in argument leave in disgust even at the risk of being told I had mismanaged the case.

Then to three old cerliscantitis patients of ancient standing. One has been on his cloob for nearly fifteen years. Now, I confess to an interest in matters archeological but not in him. Still, I appear interested it is necessary for such patients can do one a deal of harm in a country practice. Four miles further then walk through three fields with the mud up to my knees to see a farmer's wife lately parturient. Nice plucky little woman. Farmer good sort. Pass me and says my work was worth double my fee. Stopped on the road by a road mender who says he wants to go on my panel. Congratulate him on his choice when he says: "Yes and yer've got to go and see Mrs B—s boy. They say he's dying. That means two miles back but go. Find case of paraphimosis which I reduce with some difficulty without an anesthetic. Cruel but no hospital within sixteen miles and nearest assistance for anesthetic eight miles. Next to an old bedridden chronic of the remini cent type. On tearing myself away daughter consults me. Leucorrhoea of some months standing. An article by Professor (no no he's had enough advertisement) in the (no no you can buy the periodical) on the examination of such cases with the cystoscopes sigmoidoscopes electric light specula swabs for bacteriological examination etc flashes across me. I haven't all these scopes neither an electric light of any kind except a flashlamp so suggest she should come and see me. No. I want a bottle and it's too far to come and I can't get away. So leave it at that.

Home by 2 p.m. for lunch but have to see a gentleman (maid says he is a stranger and she's put him into the drawing room). A nobleman by his dress but selling cheap prints. Show him the door and then to lunch. At 3 visit village patients: cancer of oesophagus traumatic catarrh in a boy, myxodema two

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British Medical Association.

CURRENT NOTES

Port Elizabeth Branch

THE inaugural dinner of the Port Elizabeth Branch of the British Medical Association was held on June 29th, the President, Dr H Ellis Brown, taking the chair, supported by Mr A Linton, the mayor, Mr D Ladie, the chief magistrate, Mr J W Couldridge, the president of the Port Elizabeth and District Chemists' Association, and Dr H St J Randell, president of the Port Elizabeth and District Dental Association. After the usual loyal toasts the president proposed "The Old Port Elizabeth and Uitenhage Medical Society," which was enthusiastically received. The chief magistrate, Mr D Ladie, proposing the toast of "The British Medical Association with its new Branch," gave an account of the objectives of the Association, and commented on the unselfish ideals and the valuable services that characterized the society. He had been surprised to find how much useful work had been performed by the Association in connexion with legislation and other matters of supreme public importance, such as public health, food adulteration, medical laws, and the Factory Acts. He considered that the advice of the Association must be of the greatest value to law makers throughout the empire. Dr Ellis Brown in his reply, explained how the Association encouraged the pursuit of knowledge, and gave general assistance in medical concerns. Great credit, he said, was due to Dr R M Leith for the assistance he had given in the formation of the new Branch. Dr Andrew Steward proposed the health of "Our Guests," interspersing his speech with many humorous anecdotes. He made reference also to the many problems concerning public health with which they were faced at the present time. The mayor, Mr A Linton, in his reply to this toast eulogized the work of the Association in combating disease of all kinds and commented on the rapid strides which medical science was making to do so. He believed that the great advance made by the city of Port Elizabeth during the last twenty years would be considered negligible compared with the progress that seemed probable during the coming twenty years. Dr H St J Randell also replied to the toast, and referred to the presence of representatives of the law and the chemists at this inaugural dinner of the new Branch. He also alluded to the fine record of the Association, and

congratulated the Branch on its choice of Dr Ellis Brown for its first president. The proceedings terminated with a very cordial tribute of thanks to Dr Ellis Brown.

Communications to Medical Secretary during the Month of August

The Medical Secretary, Dr Cox, is at present on holiday and will not return to the office until August 31st. Until that date letters requiring attention should be addressed to the Medical Secretary officially and not to Dr Cox personally.

ANNUAL MEETING, BATH, 1925.

EVENING ENTERTAINMENTS

Receptions and Dances

ON the night of Tuesday, July 21st, after the adjourned Annual General Meeting at the Palace Theatre, a brilliant Reception was given in the historic Assembly Rooms by the President and Mrs F G Thomson. The entrance hall, the octagon, and other parts of the building had been beautifully decorated with flowers. The fine apartment inadequately described as the "ter room," was used for dancing to excellent music by the Clifford Essex orchestra. In the absence of the President, owing to his illness, the guests were welcomed by Mrs Thomson and Mr Malcolm Thomson, their son, who had read the Presidential Address with such grace and effect earlier in the evening. Mrs Thomson carried a bouquet of fine carnations, presented to her by Lady Stothert on behalf of the Ladies Executive Committee. Among the company who attended the reception were the Mayor of Bath (Alderman Chivers), the Mayoress (Madame Sarah Crand), the Viscountess of Bath, Field Marshal Lord Methuen and Lady Methuen, Lady Grant-Duff, Sir Percy Stothert and a very large number of members of the British Medical Association and ladies. Most of the medical guests wore academic robes which looked well in the Georgian setting. A special service of omnibuses ran from the Palace Theatre to the Assembly Rooms by way of Cox Street, Queen Square, and The Circus. This route looked charming in the glow of Chinese lanterns, and the foliage of the Queen Square trees was lit up by beams of soft light from hidden lamps.

Reference was made in a leading article last week to the magnificent Civic Reception given by the Mayor of Bath (Alderman Chivers) at the Grand Pump Room on the evening of Wednesday July 22nd. Through the generous enterprise of the host the price available for the

great gathering, which numbered some 2,500, had been increased by the erection of a large temporary reception hall, with annexes, in the Abbey Churchyard. With the aid of these extensions the accommodation in the Pump Room and Roman Bath suite was amply sufficient, and as every part (except the water in the Roman Bath) was under cover the rain which fell late in the evening did not damp enjoyment. All the guests were received in person by the Mayor and the Mayoress (Madame Smith Grand). At the east end of the great Roman Bath, from 8.30 to 9.30 o'clock, the band of the 2nd Battalion Argyll and Sutherland Highlanders (93rd Highlanders), with pipers and dancers, played music by modern composers, and in the Pump Room a number of performers from the Palace Theatre gave a musical entertainment. At 9.30 the Citizen House Players presented in the Old Pump Room a picturesque series of costume scenes entitled "A Ballad of Bath Ghosts of the Eighteenth Century." The first scene showed the Orange Grove at nightfall in 1704, the burial of Richard Nash, and his acceptance of the position of Master of Ceremonies, rendered violent by the death of Captain Webster, killed in a drunken brawl. The second scene showed a ball in progress in the Grand Pump Room in 1728, with Ben Nash at the height of his power and prestige. The third scene introduced Richard Binsley Sheridan, longing for a glimpse of Lizzy Linley in the Vauxhall Gardens of Bath in 1772, and ended with their elopement. The fourth and last scene was set in the Orchard Street Theatre of Bath on the night, in 1782, when Miss Siddons made her farewell bow before leaving for Drury Lane Theatre. Among the illustrious characters present at the performance were Dr. Samuel Johnson, with Fanny Burney and Miss Thrale. After rendering an act of homage to the dead actor, David Garrick, Miss Siddons delivered a monody entitled "Thrice Heroism for Leaving Bath," and the scene closed upon the great actress and her three children on the stage together. The representation of the Bath Ghosts was repeated twice to large audiences later in the evening. Lion shortly before 10 o'clock until after 1 a.m. there was dancing in the concert room of the Grand Pump Room to music by the Clifford Essex band. At dusk the Roman Baths (in the language of a programme drawn up and printed in admirable taste) were "illumined by a thousand lights," and charming views of the eighteenth century King's Bath could be seen from the Terrace and Pump Room windows. In the Roman Museum many objects of interest found during the excavations were on view, also a case of flint arrow heads and implements found on Lansdown. On the North Terrace there was in exhibition of the wood engravings executed by Horace Gerard for the *Boal of Bath*, and in the West North, and East Corridors were collections of water colour drawings and aquatints of Bath and its neighbourhood. Refreshments were served in the large marquee stretching from Stall Street to the Abbey, and on the Terrace.

The fine set of rooms, permanent and temporary, arranged for the Mayor's reception on Wednesday was again in use on Thursday evening for a delightful Reception given by the Bath Division of the British Medical Association. The guests were received on arrival by Dr. and Mrs. Dupont. A very good concert was provided in the Old Pump Room by Miss E. Hobday, pianist, Miss Jean Robley, violinist, and Miss Molly O'Moore, soprano. From 10.30 o'clock a dance was held in the concert room, where the Clifford Essex orchestra again played excellent music, and for those to whom dancing appeared less than cards, 500 tables were provided in the drawing room and dining room.

The last evening entertainment was a ball held at the Assembly Rooms by invitation of the Ladies Executive Committee. Brief reference to this enjoyable occasion will be found among the paragraphs headed "Ladies' Entertainments." Our information on this point is not first hand, but we have been led to believe that the dancing went on that evening to an even later hour than on Tuesday, Wednesday or Thursday, from which the success of the ball given by the ladies of Bath may be judged to have been complete.

Gala Performances

Other evening entertainments, all attended by as many people as could possibly be got into the space available, were the gala performance at the Palace Theatre on Monday, July 20th, and a representation of Bernard Shaw's play, *The Doctor's Dilemma*, on Thursday, July 23rd, by the Leni Ashwell Players at the Theatre Royal. Medical Freemasons were entertained on the evening of Friday, July 24th, at the Masonic Hall, Old Orchard Street, by their Bath brethren, who gave a demonstration of the working of a Lodge of Ancients in 1760.

The evening entertainment offered at the Spa Hotel on the Saturday of the Representative Meeting was of a varied character. Those who earnestly welcomed the opportunity of seeing a demonstration by the London Team of the English Folk Dance Society before proceeding, according to inclination, to the dance or the smoking concert. Some, indeed, who came to dance, and were diverted to the concert, remained there throughout the evening, held by the unusual excellence of the programme provided by Miss Valérie and Mr. George Christopher, Miss Dorothy Reid, Mr. L. H. Head, and Mr. L. C. Baker of the Bath Operatic Society, together with Mr. Thomas and Dr. Ray Laidridge. The spontaneity and vigour of their rendering, and their happy selection of old favourites and unexpected and original diversions, were warmly appreciated by the guests.

LADIES' ENTERTAINMENTS

From the opening of the Club in Queen Square on the first day of the Representative Meeting the provision made for the comfort and entertainment of ladies attending the meeting was of unvarying excellence, and the Ladies' Committee is to be congratulated on the success of its organization. In spite of the fact that Mrs. Donald Ackland, M.B.E., honorary secretary of the Ladies' Council and Executive Committee, and also of the Dinners and Receptions Subcommittee, was prevented by the grave illness of Mr. Ackland from taking an active share in the final execution of the arrangements she had so ably planned, and that her place had to be filled at the last moment by Miss Kathleen Harper, who was already fully employed as secretary of the Social Club, there was no hitch in the arrangements from beginning to end of the meeting.

The Social Club, with its inquiry bureau, bridge room, drawing rooms and rest and dressing rooms, invited its pleasant extravagance by the attractive furnishing and decoration carried out by firms whose names are household words in the West Country, it proved a most convenient centre whether for rest and refreshment or as a starting point for the various excursions.

Of the special entertainments provided, including visits to the chief features of interest in the neighbourhood as well as in Bath itself, and of the private and public hospitality offered on so lavish a scale, it is impossible to speak in detail, but special mention must be made of the Ladies' Dinner on the first night of the Representative Meeting. The guests were received at the Spa Hotel by Mrs. F. G. Thomson, who welcomed them to Bath, hoping they would enjoy a very happy holiday, and make the fullest use of the Ladies' Club and of the facilities so willingly placed at their disposal by the people of Bath. The service of dinner at small tables, each presided over by a hostess, ensured an informal and enjoyable evening, which was further enlivened by a varied selection of music.

The opportunity of watching a demonstration of Morris and country dancing, given by the London Team of the English Folk Dance Society in the Sydney Gardens on the afternoon of July 18th, was keenly appreciated. The display was given under ideal conditions before a large and enthusiastic audience, which included many children. The trees and lawns of the gardens afforded just the right setting for the rhythmic movements of the dancers to the music of piano and violin. Altogether the display was one of which Cecil Shaple himself might well have been proud.

At the Ladies' Ball—when Mrs. Langdon-Down, at the request of Mrs. Bolam, who had already left Bath, presented Mrs. F. G. Thomson with a bouquet and a bag on behalf of the ladies attending the meeting—an occasion was found

A full programme of sports and games for ladies during the week of the meeting had been arranged with much care and skill by a special Ladies' Sports Subcommittee.

A NOTWORTHY feature of the meeting was the number and variety of the excursions arranged for the afternoons. The list of the places of interest visited during the course of the meeting (and a blue list must suffice) is eloquent testimony to the foresight and care which found means to provide for every taste and interest—a foresight and care equalled only by the general success of the arrangements made, and the pleasure given to all concerned. The hermits of the country itself, the charm of the Wilts and Somerset villages amongst which Cistle Canbe, in its wooded hollow, and Lincok, with its timbered houses and mullioned windows, stand out as typical the historical associations and architectural interest of the great houses, the churches, in so many of which the inspiration of the mother Abbey of Bath may be clearly traced, and the varied industries of the district alike contributed to so happy a result. Beyond all this, the warmth of the hospitality extended on every side to members of the Association will long remain a grateful memory. The weather also was kind to garden parties at Longleat, the Palace at Wells, Ashwicle Hall, and Newton Park, to name some amongst many.

The beauty of Messis Blael more and Langdon's nurseries at Foston can be appreciated, not only by those who actually visited them, but by all who enjoyed the wonderful display of flowers at the Mayor's Reception. The prime source of "Gold Blaes" at Bristol needed no recommendation to a medical audience, and industriously made the Association equally welcome at the Samidile chocolate factory, where music by members of Messis Blael's staff was a feature of the entertainment provided at the Pitman Press, at the Bath Aircraft's cabinet factory at Swerton, and at Messis Stothert and Pitt's great engineering works, where all departments are happily fully employed in spite of the prevailing trade depression.

It was fitting also that the schools of the Bath district should take part in the entertainment offered. The heads of the Benedictine Community at Downside Abbey, with its great modern public school of the Wesleyan Foundation at Kingswood, daughter and successor of the original Kingswood founded by John Wesley, of Prior Park College, where these latest guests must now take their place in memory with those "most substantial shadows," of Pope, Fielding, and Pitt, and of the Lycombe Hall School for Bickford Children, all gave generous hospitality. Nor must the entertainment offered by the Flaxbridge Division at Bradford, by the Savage Club at Bristol, by the Oxford Division at Queen's College, by Dr. Wilcox at Glastonbury, and by Dr. and Mrs. Binstowe at Winton, pass without mention.

Different memories will stand out most clearly for each individual, but some must be given a place of honour by all, and amongst these the great Gothic West Front of Wells Cathedral, the towering heights of the Cheddar Gorge, and the delicate fields of decoration in its caves, the quiet beauty of the terraced gardens of St Catherine's Court the Avon Gorge, seen from the Suspension Bridge on Clifton Downs, and Glastonbury, the yet beloved vale of Avalon, will surely remain, together with the Tithe Barn, the Saxon church at Bradford-on-Avon, and the Mass Chapel on the beautiful old bridge there.

The last Saturday was, as usual, given up to whole-day excursions, and again a generous choice of direction was allowed, parties visiting Bournemouth, by way of Salisbury and Shaftesbury, Oxford, by Milnesbury and Farnford, Tintem the Wye Valley, and the Forest of Dean Mundehead, Farnoor, and the Valley of the Exe, and the New Forest, by way of Salisbury and Lyndhurst.

GARDEN PARTY AT GREAT CHALFIELD MANOR

A party of fifty, composed mainly of those who had been taking part in the Medical Sociology Section, and led by

Dr C F S Flemming, the President of the Section, visited Great Chilfield Manor on Friday afternoon, July 24th, by kind invitation of Mr. and Mrs. Robert Fuller. The Manor is a beautiful house its predecessors date back to Domesday after a period of decadence it has been beautifully and reverentially restored by Major Fuller, who has furnished the house throughout in a most appropriate manner. The party were received by Major and Mrs. Fuller, and were first shown round the sheds which are devoted to the production of milk under the most perfect conditions. This is one of Major Fuller's hobbies, and has rightly placed him in the forefront of the pioneers in providing a pure milk supply. The party, which contained many milk experts, saw the operation of milking, cooling, and bottling, and were much impressed by the excellence of the arrangements. After this the party adjourned to the garden of the house, where they were entertained to tea, and then Major Fuller gave a short but most interesting description of the house and of the families who had owned and occupied it. Finally the house itself was shown to the visitors. A vote of thanks to the hosts was moved by the Medical Secretary and heartily acclaimed by those present.

In this review of the 86 stands at the Annual Exhibition held during the Meeting at Bath no attempt is made to catalogue everything that was to be seen. We have merely selected for brief comment some of the newer or more interesting objects shown by each exhibitor.

The first of the stands devoted to chemical and pharmaceutical preparations which met the visitor's eye on entering the Exhibition was that of Burroughs, Wellcome and Company (Snow Hill Buildings, E.C.). The exhibit embraced several recent additions to the list of tablet products, including iodokim which is iodine on a chocolate base offered for the treatment of goitre in children. A new member of the resorcinol series also appeared under the name of chlorisulphin to be given hypodermically or intramuscularly. A section of the exhibit was devoted to organotherapy and the various stages from the fresh gland to the tablet product of the desiccated gland substance were ingeniously demonstrated. The stages in the manufacture of this firm's brand of insulin were shown in the same way.

Grand products were also the principal exhibits at the stand of the New York chemical house G. W. Criminal Company, whose London distributors are Bood's and Whitnott, Limited (40 Lexington Street, W.). One of these substances was the pluri-indular tablet called hormoneone and another the product typosogen. Emphasis was laid in displaying these and other products upon the care taken in every manufacturing process.

Among the preparations exhibited by Pule Davis and Company (50, Beak Street Regent Street W) was dibromine crystalline substance containing a large percentage of bromine and used in dilute solution for dressings irrigations douches and gargles. There was the usual exhibit of adrenaline and its various combinations, also of neo protosil or silver iodide in colloidal combination offered in various forms and of pituitrin and other products. A selection was also made from the series of vaccines prepared in the department for therapeutic inoculation. St Mary's Hospital for which products this firm is the distributing agent.

Allen and Hanbury's Limited (Bethnal Green) in addition to an exhibit of surgical instruments (to be separately noticed) showed numerous laboratory preparations including a selection of therapeutic serums and vaccines issued by the Lister Institute. Protein therapy products were shown and also a purified colloidal krolm prepared by electrodialysis. The well known foods for infants were once again on view together with the supplementary food biontore, a granular powder containing, among other ingredients bone marrow and yeast extract.

Another comprehensive display of fine chemicals and medicinal preparations appeared at the stand of Boots Pure Drug Company Limited (Nottingham). It included insulin, pituitary extract and gonococcal vaccines, a core of fine chemical preparations and a wide range of compounded tablets of drugs. This stand like those already mentioned illustrated the ingenuity of the modern chemist not only in working out substances but in preparing them for exhibition and in convenient and attractive forms.

Yet another exhibit of fine wooden specialties appeared under the name of A and M Zimmermann, Limited (S. Lloyd's

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Avenue, E.C.). The newest preparation here was a gonococcal vaccine, to which the name arthogen has been given, among the older products were atophin (phenylephrin hydrochloride) and its methylester (novatophin), the latter is tasteless, and is said to have the same therapeutic action and indications as the original product Medinal and various other drugs figured at this exhibit and a gold preparation (Lysolgin) for tuberculosis.

The British Dyestuffs Corporation, Limited (Manchester), placed in the forefront of a most effective exhibit two drug sup 36 and sum 36. Mr J. E. R. McDonagh recently described in these pages (April 4th 1925 p. 654) the development of these drugs from isono benzene bismuth, and in the treatment of gonorrhoea. Both drugs were made at Manchester preparations, and their use in the chemotherapeutic treatment of gonorrhoea.

The business of the chemist is not only to produce drugs but to ensure their efficient administration, and Oppenheimer Son and Company Limited (Queen Victoria Street, E.C.), showed their cocooids, small pills containing standardized quantities of medicaments incorporated into a sweet base, their quantities, in which the medicaments are in a finely powdered form without excipient, and their hypodermic tablets, moulded but not compressed, and therefore readily soluble in the barrel of the syringe. Among the other objects shown here was a vaporizer for the extremely fine division of medicine.

At the exhibit of Hoffmann-La Roche Chemical Works, Limited (Isle of Llandudno, E.C.), attention was principally drawn to chocolate tablets containing a small but definite amount of iodine in organic combination. Tablets like these have been used in a routine prophylactic measure in schools in Switzerland and in various districts and are now it was stated, being used for the same purpose in certain parts of England. Another exhibit here was an ampoule syringe, comprising syringe, needle, and solution in one unit, ready for instant use.

An ultramicroscope at the stand of Buridges and Company, Limited (East Ham), invited the visitor to examine the very vigorous brownian movement of certain colloids (Cooper's medicinal colloids) which this firm was making its principal exhibit. The range included silver, iodine, manganese, and sulphur colloids, the last for both medicinal as well as for internal administration. Among the other preparations shown by this firm was carbon tetrachloride for the treatment of hookworm.

The brownian movement was also demonstrated at the stand of Crookes Laboratories, British Colloids, Limited (Chenies Street, W.C.). Amongst the latest additions to the list of colloids was colloidal aluminium hydroxide claiming to be of value in dyspepsia and also to serve as a colloid ichthol from of value in interesting product was colloid ichthol from wash. Another exhibit of British origin, Ichthol the original a natural ichthol oil preparation, was also the exhibit of sulphonated ichthol oil preparation. Among the other preparations shown by this firm was carbon tetrachloride for the treatment of hookworm.

At seven stands liquid paraffin was a principal exhibit. The Deshells Laboratories, Limited (150 Southampton Row, W.C.), concentrated on their petiolagin, an emulsion of liquid paraffin with agar agar. This preparation appeared in four forms—the first plain, for ordinary cases of constipation in all ages, for phenolphthalein, for chronic cases the third without sugar, for for cases of hyperacidity and the fourth appeared at the stand of the Anglo American Oil Company, Limited (Albert Street, Camden Town), also in a pleasantly flavoured form combined with agar agar to overcome the objection some find to plain paraffin. Another preparation here was mistal, combining menthol, emphor and eucalyptol with a mineral oil, for inflammatory conditions of the nose and throat. Paraffin was also the entire exhibit of the Sempolm Company, Limited (Lenther Lane, E.C.). Sempolm is a paraffin oil emulsion, offered as a vehicle for various therapeutic agents in toxemia and gastro-intestinal disorders. The firm also showed an emulsion containing certain additions to make it suitable for infants needing a mild laxative and correctives.

Peris and Company (Bristol) had general exhibits of pharmaceutical preparations. Here, in addition to antiseptics and ointments were shown some very convenient dressings cabinets for surgical dressings. A wide range of preparations was also to be seen on the stand of C. J. Hewlett and Son, Limited (Charlotte Street, E.C.), they included various tinctures, creams and lotions, a soft paraffin for intestinal lubrication, and some plurigranular extracts. Lionel Cooper (14, Henrietta Street, W.C.) had a range of chemical products, the first place in which was given to a sheet of aluminium, claimed to be of physiological purity, it appeared a white, odourless, and tasteless powder. It was advised for various intestinal troubles and was said to have, on account of its purity, advantages over kaolin and similar products.

Teves Sanitary Compounds Limited (64 Cannon Street, L.C.), had then familiar cylinder products, which now run into a long list and include, in addition to preparations for immediate medical and surgical use, soaps, powders, gauze, and sanitary towels impregnated with 5 per cent cylinder. One came upon the refreshing, bower of I no s Fruit Silt but at this time of dry that effervescent laxative needs no description.

(To be continued)

Association Notices.

FURTHER EXTRAORDINARY GENERAL MEETING

A FURTHER Extraordinary General Meeting of the British Medical Association was summoned to be held at the Herd Office, British Medical Association House, Tavistock Square, London W.C.1 on Tuesday August 4th, 1925, at 2.30 p.m., to consider, and if thought fit to confirm, the special resolution for alteration of Articles which was passed by the requisite majority at the Extraordinary General Meeting held in the Concert Hall, Grand Pump Room, Bath, on Friday, July 17th, 1925. At the August 4th meeting the Chairman of the Representative Body, Dr H. B. Bland, was in the chair but the necessary quorum not being present the meeting stood adjourned to Tuesday, August 11th, 1925, at the same place and hour, pursuant to By-law 34.

By Order of the Council

ALFRED COX,

Medical Secretary

L. FRANK SCOTT

Financial Secretary and
Business Manager

August 4th, 1925

BRANCH AND DIVISION MEETINGS TO BE HELD

CAPE OF GOOD HOPE (WESTERN) BRANCH—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday August 28th at 8 p.m. when there will be a symposium on the diagnosis of intracranial tumours arranged by Mr D. J. Wood. Among the speakers will be Dr J. D. M. Christens, Mr F. F. Petersen and Dr A. W. S. Sichel.

KENT BRANCH—The quarterly meeting of the Kent Branch will be held on Wednesday August 12th at 8 p.m. by kind invitation of Dr R. A. O'Brien, C.B.E. and the medical staff of the Wellcome Physiological Research Laboratories at Langley Court, Beckenham. A demonstration will be given of the work of the laboratories in the preparation control and standardization of antitoxins testing of extracts and toxine injection of horses etc. Tea will be kindly provided.

Meetings of Branches and Divisions.

ASSAM BRANCH

The proceedings of the Assam Branch at the annual meeting held in Jorhat on March 2nd have now been published. The President, Dr E. T. JAMESON, in his address reported on the proposal which had been made a year previously for the manufacture of vaccines for the treatment of pneumonia by the Pasteur Institute in Shillong. The Assam Government and the director of the Institute had not found themselves able to approve the suggestion. It was tentatively as such work had now been transferred to the School of Tropical Medicine and decided to approach the Calcutta School of Tropical Medicine and view the matter and whether it would be willing to risk the comparatively small expenditure in obtaining these vaccines which might prove to be most beneficial that any grievances should be submitted to the Council with a view to negotiation and settlement with the agencies concerned.

A very pleasant meeting of the Branch had been held at Dibrugarh in the course of the year. It was reported that considerable improvement had been brought about in the general circumstances of medical practice in the terai regions. Medical research work was however still handicapped by economic considerations and by the ignorance and superstitions of the coolies. The Pasteur Institute still wanted investigation in assistance but many problems still awaited investigation including those of the greatest gastroenteritis. Travelling laboratories might prove of the greatest assistance in the much needed study of these diseases. Dr G. C. RAMSAY contributed his impressions on some diseases of Assam including the local circumstances which conduced to pneumonia the mild nature of syphilis in Assam.

of serum treatment of bacillary dysentery and the need of further medical research work. The address given by Lieut. Colonel F. J. Palmer on the treatment of epilepsy by metallic salts of which an extract appeared in our columns of May 9th (p. 884), printed in full together with a summary of some typical cases, in account of present knowledge regarding the transmission of malaria in nature was contributed by Lieut. Colonel S. R. Christie M.C. Major H. E. Stuart and Mr. P. I. Barnard of the Malaya Commission. Dr. I. W. O'Connor described the use of the electrical sigmoidoscope in cases of amoebic dysentery in tea-garden practice. Dr. C. STRICKLAND, professor of medical entomology in the Calcutta School of Tropical Medicine delivered an address on the mosquito factor in the malaria of Assam with special reference to preventive work.

BIRMINGHAM BRANCH BROMOCRYNE DIVISION

The annual meeting of the Bromocryne Division was held at the Smallwood Hospital, Redditch, on July 22nd.

The following officers were elected for the ensuing year:

Chairman Dr. C. L. Haxton. Vice-Chairman Dr. E. Prothrope Smith. Secretary Dr. H. Warburton Lewis.

It was decided that arrangements should be made for clinical lectures to be given to the Division during the coming winter on dates to be arranged as far as possible before Christmas in order that the winter's work should not cause small attendance. A vote of thanks to the house committee of the hospital for the use of the board room was passed unanimously. The meeting terminated with tea.

CAMBRIDGE AND HUNTINGDON BRANCH

The eighty-first annual general meeting of the Cambridge and Huntingdon Branch was held on July 10th at Downing College, Cambridge, by kind permission of the Masters and Fellows. In the unavoidable absence of Dr. Stephens (President), Dr. ALBERT WARRICK took the chair. The balance sheet was adopted. The newly elected President Dr. E. LLOYD JONES, succeeded to the chair, and the following officers were elected:

President Elect Dr. H. Hyslop Thom. Vice-presidents Mr. W. H. B. Wainwright and A. C. S. Waters. Honorary Secretary and Treasurer Dr. G. S. Haine.

The President Dr. Lloyd Jones kindly entertained sixty members at luncheon in the College Hall, after which he delivered his presidential address on the diagnosis of pulmonary tuberculosis. On the motion of Professor BRADBURY a vote of thanks to the President for his hospitality and for his instructive address was carried by acclamation.

METROPOLITAN COUNTIES BRANCH GREENWICH AND DEPTFORD DIVISION

The Greenwich and Deptford Division held a garden party on July 8th at Charlton House, S.E. about 100 members and guests being present after the reception by the chairman of the Division the Rev. S. D. Bhabha M.D. the house (which is one of the finest examples of Jacobean architecture in the neighbourhood) and the surrounding gardens which were much admired were carefully explored. Dr. COURTNEY LORR, Assistant Medical Secretary of the British Medical Association, gave an account of the new headquarters of the Association at Tavistock Square and outlined the benefits of belonging to a well organized powerful body such as the British Medical Association. He urged all non-members to join and hoped that every medical practitioner in the Division who either a member or not would visit the new headquarters where they would receive a welcome and assistance in any matter connected with professional life and practice. A vote of thanks to the Mayor and Borough Council of Greenwich for permitting the meeting to be held at Charlton House was moved by Dr. W. H. BAYNE, seconded by Dr. P. QUINN and cordially agreed to. Dr. E. G. ANNE, the medical officer of health was asked to convey the resolution to the borough council.

NORTHERN COUNTIES OF SCOTLAND BRANCH CAITHNESS AND SUTHERLAND DIVISION

The annual meeting of the Caithness and Sutherland Division was held at Helmsdale on July 11th when Dr. J. B. SIMPSON was in the chair.

The following officers were elected:

Chairman Dr. A. Dingwall Kennedy (Wick). Vice-Chairman Dr. J. McLachlan (Dornoch). Honorary Secretary Dr. A. A. Her (Thurso).

The meeting considered the Annual Report of Council for 1922 also the Supplementary Report and instructed the representative on various points in connexion therewith. It was not considered desirable that the Association should take up the question of medical defence as this was very ably managed at present by existing societies. Dr. SIMPSON and the SECRETARY reported as to the meeting of delegates in London in connexion with the evidence submitted by the British Medical Association to the Royal Commission on National Health Insurance. Dr. SIMPSON reported on negotiations of the Highlands and Islands Subcommittee of the British Medical Association and the Scottish Board of Health and intimated that the remuneration had been fixed at the same amount as last year. Satisfaction was expressed with the settlement.

SOUTH MIDLAND BRANCH

The annual meeting of the South Midland Branch was held at Fenny Stratford on June 25th. Prior to the meeting the members were entertained to luncheon by the President Elect Dr. W. Bradbrook.

Dr. I. D. McCRIMBLE M.O.H. Northampton was on the nomination of the Council elected a member of the Council as representing the public health service.

Dr. BRADBROOK having succeeded Dr. BAXTER in the chair delivered his presidential address entitled "Medical men and matters of the past in South Bucks." He spoke first of the unhappy circumstances in which he had become President through the death of Dr. Benson and mentioned several ex-presidents of the Branch who had died in the past year. He gave details of a great number of distinguished men, mostly County physicians of the seventeenth century who had been associated with North Bucks. The address was listened to with great interest and a vote of thanks to Dr. Bradbrook proposed by Mr. NASH seconded by Dr. WICKHAM was carried by acclamation.

Sir JAMES BERRY gave an address. He began by questioning whether the adenoid operation was not done a little too often it was new in his time and he thought that under the present school system the tonsils and adenoids were taken out without sufficient indications. He protested against the routine performance of enucleation of tonsils and said that in his opinion it was often sufficient to slice the tops. Sir James went on to discuss the question whether in acute appendicitis should always be operated on when diagnosed. He pleaded for a better knowledge of the pathology of the condition and for a policy of expectant treatment in cases seen on the third or fourth day. He quoted some very interesting statistics by Love surgical registrar of the London Hospital purporting to show that in 2,000 cases of appendicitis the mortality of those operated on on the third day was double of those cases operated on after a few days delay. He pointed out that the gross mortality of appendicitis had risen from 8.291 in the five years 1901-05 to 12.418 in 1916-20. He discussed whether this could be due to an increasing frequency of occurrence of appendicitis and left the question open. He compared the cases of an English Royal personage and a recent German president contrasting the treatment and result. He quoted Sir Frederick Fiees in favour of delayed operation, and Grey Turner of Newcastle as saying that the recurrent advocacy of delayed operation was always followed by increased mortality and again his own early writings in favour of delayed operation.

A lively discussion followed in which eight members took part. There was considerable difference of opinion as to the advisability of delayed operation two members speaking very forcibly against the delayed operation and one in favour. Mr. GRIFFITH NASH and Dr. BOVE were strongly in favour of immediate operation. Mr. NASH gave statistics showing that the mortality since the cases were seen and operated on early had fallen in his hospital from 40 to 6 per cent and gave his own private statistics of 244 consecutive cases without a death. He deplored Sir James Berry's paper as he had been trying for years to get the general practitioners to send the cases into hospital early. Dr. BOVE spoke to the same effect. He regarded the first day as better than the second second than third third than fourth and so on. Dr. BROUGHTON BAXTER questioned whether it was ever defensible to remove deliberately only part of the tonsil and suggested that it were better to remove ten adenoids unnecessarily than to leave one pad to produce deformity. In his opinion many more cases were left which should be treated than were dealt with unnecessarily. Dr. WILLIAMS spoke in favour of waiting operation on suitable cases of appendicitis. He pointed out that it was the younger generation of doctors who should have heard Sir James Berry's address. Dr. MURRAY (Blackley) spoke of appendicitis being less common in the last seven years than heretofore. Dr. BAXTER said that appendicitis was increasing in frequency and recently had been increasing very fast. Dr. ROSSON spoke of the expectant treatment of appendicitis adopted twenty-five years ago with very good results in his opinion appendicitis was far less common then than now. The President said he had a very fortunate experience of having at first treated cases by expectant methods and recently having had all cases of appendicitis operated on without being able to remember a single case of death.

Sir JAMES BERRY replied advocating his plan and was able to point to Mr. NASH as an excellent example of a patient of his who had done extremely well on expectant treatment though he deplored the fact that Mr. NASH still had his appendix.

During the discussion the President had tea served to the members. Thirty-three members and three guests were present. 18 from Northamptonshire 10 from Bedfordshire and 5 from Buckinghamshire.

SOUTH MIDLAND BRANCH BEDFORDSHIRE DIVISION

The annual meeting of the Bedfordshire Division was held at the Swan Hotel Bedford on July 15th. Previous to the meeting members were entertained to luncheon by the Chairman Dr. G. T. BULL. The annual report for 1922 showing a membership of 89 Bucks and a balance in hand of £717s. 1d. was adopted. The percentage of members to the total of the medical men in the county (excluding retired non-members) was 74.3 as compared with the average for England and Wales of 59.5. The Honorary Secretary reported that he had attended the official opening of the new British Medical Association House on July 13th as representative of the Division.

The following officers were elected for the ensuing year:

Chairman Dr. H. N. Little (Donstable). Vice-Chairman Dr. W. L. Carter (Amphill). Honorary Secretary Dr. F. R. Fauchant (B. Herts).

The Division nominated Dr. F. S. Lloyd O.B.E. (Luton) for the presidency of the South Midland Branch for 1926.

Dr. FAVORHAR BLIZZARD gave an instructive address on some problems in prognosis illustrating his remarks by cases of disseminated sclerosis paralysis agitans and neurasthenia.

SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION
A MEETING of the Swansea Division was held on July 9th. Instructions were given to the representative to the Annual Meeting at Bath. The Annual Report of Council was discussed. It was decided to ask local members of Parliament to support the Summer Time Bill then before Parliament.

SUFFOLK BRANCH

THE annual meeting of the Suffolk Branch was held at the Felix Hotel on July 17th. Dr ASKIN MBE JP the new President entertained about thirty guests to a luncheon. Two excellent papers were read, one by Sir G. LEVTHAL CHAMBER on pathological states of the breast and their practical significance, and one by Dr C. M. HYNES HOWELL on encephalitis lethargica. The papers were well discussed. Tea was served on the lawn of the Felix Hotel at the kind invitation of Dr. and Mrs. Askin.

YORKSHIRE BRANCH HUNTERSFIELD DIVISION

At the annual meeting of the Huntersfield Division held on July 15th the following officers were elected:

Chairman, Dr J. Rafter; Vice-Chairmen, Dr R. S. Clark and Dr I. Rafter; Representative in Legislative Body, Dr J. Rafter; Deputy Representative, Dr Park; Honorary Secretary and Treasurer, Mr A. Latimer Walker.

The annual report of the Division showed that five meetings of the Division and six meetings of the executive committee had been held during the year, together with two general meetings with Local Medical and Panel Committees to consider the evidence submitted by the Association to the Royal Commission on National Health Insurance. The report stated that satisfactory replies had been received from the parliamentary candidates for Huddersfield and the Colne Valley at the last general election regarding the British Medical Association policy. It was reported also that the fees for certification of lunatics and for midwives had been raised by the board of guardians from 10s. to 21s. The social functions held during the year had been successful, and showed a credit balance, as did also the general fund of the Division.

National Insurance.

ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE

EVIDENCE OF THE COUNCIL OF BRITISH OPHTHALMOLOGISTS

FURTHER evidence on the vexed question of ophthalmic benefit was heard by the Royal Commission on National Health Insurance from the Council of British Ophthalmologists. We have already given a summary of the evidence tendered by the Institute of Ophthalmic Opticians (SUPPLEMENT, July 4th, p. 10), which set forth the qualified opticians' point of view. Evidence of similar tenor was given by the Joint Council of Qualified Opticians and by the British Optical Association immediately before the evidence of the Council of British Ophthalmologists.

The witnesses who appeared in support of the evidence of this last body were Mr E. Treacher Collins FRCS President, Mr J. Herbert Fisher, FRCS and Mr S. Mayou, FRCS. It was explained that the council consisted of twelve permanent members who were presidents or past presidents of the Ophthalmological Society, the Section of Ophthalmology of the Royal Society of Medicine or the Oxford Ophthalmological Congress, and that ten members were elected annually from those bodies.

The council expressed the strong opinion that the examination of the eyes should be carried out by qualified medical practitioners. It approved and supported the recommendations in this respect recently formulated by its subcommittee in conjunction with representatives of the British Medical Association. Asked by the Chairman of the Commission (Lord Liversidge of Kingsgate) whether the general practitioner would be acting improperly in advising a patient to go direct to an optician, Mr Collins said that that must be left to a large measure to the general practitioner himself. If he accepted the responsibility of stating that the case was one which required only the care of an optician, he would be taking upon himself a very large responsibility. An optician might in some cases be capable of ascertaining the figures representing an optical defect but the determining of the glasses which should be worn was quite another matter and one which required medical as distinct from optical training. Asked whether he considered that there were sufficient medical practitioners versed in ophthalmic work to meet the requirements should this benefit be extended to the whole insured population, Mr Collins said that his council had associated itself with the British Medical Association and the Ophthalmic Benefit Committee in this matter. The British Medical Association had drawn up a list of some 500 ophthalmologists prepared to see

insured persons at a uniform fee of 1 guinea on behalf of approved societies. The supply would also tend to increase with the demand. The Chairman asked what evidence there was of real danger which had arisen in consequence of the very common practice of going straight to an optician. Mr Collins replied that his council had plenty of evidence which could be divided under three heads: overlooked diseases, patients unnecessarily alarmed about their condition, and unnecessary glasses frequently supplied. The Chairman said that earlier that day the Commission had received evidence from bodies representing the opticians to the effect that opticians were capable of acting as a court of first instance—if he might put it in that way—in 95 per cent of cases. Mr Collins insured that there the ophthalmologists must join issue. Miss Tuckwell, a member of the Commission, suggested that it would get over the financial difficulty if clinics were instituted where ophthalmologists could treat insured persons. Mr Collins thought there would be insuperable difficulties to the adoption of a clinic system. He believed that the British Medical Association was against such clinics. The Association took exception to specialists doing work at the very cheap rate which clinic practice involved. He agreed that there was an established scale of fees for such specialized services in connexion with pensions work, but as to whether the British Medical Association was likely to take exception to a similar scale being applied in this wider connexion, 'you had better ask the British Medical Association that question.' Many other questions were put to the witnesses with regard to the adequacy of ophthalmology in the medical curriculum and there was a good deal of cross-table discussion on the competence of the optician. A characteristic passage was the following:

Professor Gray: Are there any things or drugs which the optician may not use which you may use?

Mr Collins: Drugs he should not use.

Professor Gray: He tells us he does. I think.

Mr Fisher: He may do that at his peril. I suppose.

Professor Gray: What is the peril he does it at?

Mr Fisher: He might make the patient blind in twelve hours if he uses drugs unwisely.

Professor Gray: But so might an ophthalmologist of course if he uses it unwisely. It comes back to wisdom there. There is no special privilege which protects you in the way in which the optician is not protected?

Mr Fisher: No. I should think we are worse protected than they are because we are supposed to possess a higher degree of skill and if an error is made our liability is greater.

The witnesses reaffirmed their opinion that if ophthalmic benefit were brought in under the Act there would be a sufficient number of capable men in the medical profession to carry out the requirements.

EVIDENCE OF THE OPHTHALMIC BENEFIT COMMITTEE

The Ophthalmic Benefit Committee, which was stated to represent more particularly the younger members of the medical profession who had had post graduate special training in eye diseases and were actively engaged already in the type of work which would be carried out under ophthalmic benefit, also gave evidence. The witnesses were Mr H. L. Eason, chairman of the committee, Mr G. H. Pooley, a member, and the late Dr C. I. Harford, honorary secretary.

The evidence of these witnesses was similar to that given by the Council of British Ophthalmologists, its general purport was that prescription by a qualified medical practitioner should be an essential in any approved scheme of ophthalmic benefit. They strongly supported Appendix III (Ophthalmic Benefit) of the statement of evidence of the British Medical Association. They thought there was some misunderstanding, as to the supposed difficulty of obtaining sufficient ophthalmic medical practitioners and they cited some recent developments in connexion with ophthalmology and the public services to show that there was no increasing unavailability of such practitioners.

Some account of the practice of Continental nations was furnished by Dr Harford. In France anything like examination and prescribing glasses by an optician was illegal and punishable. In Belgium opticians were only allowed to supply glasses according to the prescription given by the patient's doctor. In Italy he thought patients went first to the specialist and then to an optician. In America, and he believed also in Germany, the practice was different, some of the British colonies also recognized what they called optometry. Asked by Professor Gray why in America so much more power had been given to opticians than was the case on the Continent, Mr Eason replied: 'I can only say that the United States of America is the home of every quack. Any quack can flourish better in America than in England.' Dr Harford added that it was not only a question of quacks, but there were large numbers of medical schools in the States which were not up to the standard.

Mr. Eason put in documentary evidence—in the form of letters—of a number of cases in which retail him had been done to patients as a result of the common practice of going straight to the optician without the intervention of a medical practitioner. Professor Gray said that it had been put to the Commission that the great bulk of the population had gone to opticians to get treatment, and at the same time many of these people had been under their insurance practitioners, yet there were no complaints against the opticians by the latter. Mr. Eason said that he and his colleagues could not speak for insurance practice, they could only speak for their own end of the machine, but they saw the mistakes and disasters which happened and those were many.

Some questions were next asked on remuneration. The Chairman supposed that the witnesses would desire the insurance practitioner to do the preliminary work within his present contract, the ophthalmic specialist to be remunerated by a fee, and the optician to be paid for the appliances according to a prescribed scale. Mr. Erson said that he would like to avoid answering the first part of that question, because that was a matter for the British Medical Association. All that he would say was that the ophthalmic specialist should be remunerated by a fee, and the optician paid for appliances. Asked whether the provision of clinics might not meet the financial difficulty as between treatment by an ophthalmologist and the ordinary services of an optician, he said that he did not think the specialist would ever take up clinic treatment under the Act. The grave defect in the clinic system was that it was a contract system whereby so many persons had to be seen in 1 session. He thought that this type of contract practice was not satisfactory in the case of a specialist. Dr. Harford also pointed out that in calculating the cost of the clinic system, the cost of administration and equipment must be taken into account, whereas under the system whereby ophthalmologists who are names were on a list agreed to see insured persons at a uniform fee this cost would not arise. Comment was made by members of the Commission on the apparently inadequate number of ophthalmologists—some 580—on the list, covering the whole country, prepared by the British Medical Association. Dr. Harford said that the number on the map showing the distribution of these men were misleading, because many capable ophthalmologists were so sceptical about anything being done that they neglected to send in their names. He believed it would be found if the scheme materialized that most of the areas remaining vacant or sparsely served would be filled up. Mr. Erson added, in reply to further questions on the subject of clinics, that the question of clinic or no clinic was to him and his colleague of secondary importance compared with the main point—namely, that of providing the best possible attention for the insured person when he went to the clinic or anywhere else. If this first point was accepted, the machinery could be devised.

EVIDENCE OF THE CHARTERED SOCIETY OF
MASSAGE AND MEDICAL GYMNASTICS

Evidence was also taken from the Chartered Society of Massage and Medical Gymnastics, for which Sir Cooper Peir, chairman of the council, and Dr James Mennell appeared as witnesses. The proposal of the chartered society was that massage and electrical treatment should be included as an additional benefit to be provided by approved societies, when prescribed, for persons under the National Health Insurance scheme. The witnesses stated that over 5,400 misseuses and misseurs were now registered, and the majority were qualified to administer, under medical directions, the treatment by massage, remedial exercises and medical electricity now so generally ordered for a variety of medical and surgical conditions. The growth of physiotherapeutic departments in hospitals was pointed to as illustrative of the increasing appreciation of these forms of treatment. The witnesses were of opinion that it should not be difficult by the selection of suitable cases, for this proposed benefit to recoup the expense of the treatment in the amount saved by the reduction of sickness. In view of the number of hospital departments and clinics at which this treatment was already available it would be easy to arrange for the treatment of insured persons, at all events in London and the large towns. In an appendix to their evidence the witnesses added some testimonies from eminent orthopaedic surgeons and others to the value of this treatment and the increasing use of it.

Mr. Cooper Perry stated that those he represented believed that 2 per cent of the insured population were likely to require this additional treatment. This estimate was based on the experience of two hospitals and one approved society, though he admitted that with extended facilities a progressive increase in the popularity of the treatment might be expected. It was estimated that the average cost per case would be £5 10s, and this, supposing that 300,000 persons received such

treatment in a year would work out at 2s 2½d per head of insured persons. The people who required massage were a pretty definite class. In very many cases the treatment was sequenced in consequence of injuries, but he thought that the medical would outnumber the surgical cases. He agreed with a suggestion by Sir Humphry Rolleston that massage and gymnastic additional benefit might in many cases be advantageously combined with the additional benefit of nursing.

The Royal Commission on National Health Insurance, having held forty meetings at weekly or shorter intervals since October last for the hearing of oral evidence, has now adjourned until October next, when the final evidence from representatives of the Government departments will be taken after which the Commission will proceed to consider its report.

Proof copies of the oral evidence and the relative statements submitted at the meetings of June 25th and 30th and July 2nd and 7th 1925 may be obtained from H M Stationery Office, Adastral House Kingsway, London, WC2 on remittance of cost (3s for June 25th and 2s 3d for each of the three subsequent days) plus postage

Volume II of the Minutes of Evidence from January 15th 1925 to March 26th (twenty three days inclusive) is now on hand and may be obtained from H.M. Stationery Office, 10, Bedford Square, London, W.C.1, or any bookseller. Price 12s 6d and postage.

LONDON PANEL COMMITTEE

At the meeting of the London Panel Committee on July 21st with Dr H J CARDALE in the chair Dr I C Betch was appointed a member of the committee as representative of the women practitioners on the panel and Dr W H Payne Dr H B W Morgan and Dr H H Mills were appointed to fill three vacancies on the committee. Fifteen members of the committee were appointed to constitute a roster to accompany regional medical officers in the survey of prescribing which is at present proceeding under Article 37 of the Medical Benefit Regulations. The committee held it to be desirable that either the secretary of the committee or a member of the roster should accompany the regional medical officer when interviewing practitioners under this survey.

Clearance of Lists—A letter was read from the clerk of the Insurance Committee with regard to a recent resolution of the Panel Committee urging the general clearance of the lists of all practitioners in London. The letter stated that the subcommittee dealing with this matter was prepared to recommend a general clearance of all medical registers but it understood from the Ministry of Health that owing to revision in connection with the work of the Central Index Committee it was desirable that the work of clearance should be commenced for the period of a year. The subcommittee was therefore of opinion that pending such clearance the present practice with regard to transferred lists should be continued—that is that upon transfer the list should be examined and the successor should receive credit in respect of persons whose title to medical benefit was established. The Panel Committee expressed by resolution its view that the present practice with regard to transferred lists operated inequitably upon practitioners succeeding to practices and should be discontinued. It was also agreed that the Panel Committee should approach the Insurance Committee with a view to a conference on the retention of forms of medical record by practitioners succeeding to practices.

Antedating of Certificates.—The ease was mentioned of a practitioner who was recently ofore the Medical Service Subcommittee, on a charge of failing to attend and treat an insured person. During the hearing of this case it transpired that the practitioner issued a certificate stating that the patient was incapable of work but dated it two days earlier than his actual examination. When questioned with regard to this the practitioner said that he was allowed to antedate a certificate up to three days. The Finance Subcommittee subsequently interviewed the practitioner and pointed out to him that official certificates must not be antedated in any circumstances. Dr. F. Dugon asked whether it was correct that a certificate must not in any circumstances be antedated. He understood that according to the regulations it might be antedated twenty-four hours. The Chairman pointed out that there were on the certificate two lines for dates. If a practitioner saw a patient on Monday and did not give a certificate before Tuesday at the time specified that he had seen the patient on Monday and at the same time dated the certificate for the Tuesday on which he issued it that was not technically antedating. Dr. S. Partridge thought that the sentence to which Dr. Dugon had called attention was misleading. The Chairman could not date a certificate earlier than the sentence to which Dr. Dugon had called attention was understood that antedating meant dating a certificate earlier than one had actually seen the patient and such antedating was not permitted in any circumstances whatever. After some further discussion it was decided that as there appeared to be a good deal of doubt in the minds of members with regard to the exact procedure to be followed in the dating of certificates an explanatory article should be published in the Panel Committee Gazette.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE

Surgeon Commanders J. O'Leary and I. R. Townsend are placed on the retired list with the rank of Surgeon Captain.

Surgeon Commanders A. B. Clark to the *Colossus*, C. Ross to the *Birmingham*, and as Fleet Medical Officer from date of joining A. H. Joy to the *Constance* on re-commissioning, R. Willan to the *Benbow*, R. Kennedy to the *Blenheim*, L. A. Moncrieff to the *Covenry*, and as Squadron Medical Officer from date of joining T. W. Miles CB to the *Hood* as Squadron Medical Officer, F. J. Bolton to the *Fgmont*, additional for RN Hospital Malta and for specialist duties, F. I. Smith to the *Lembrope*, additional for RN Barracks Chatham temporary.

The seniority of Surgeon Commander C. J. Adhead is antedated to February 19th 1918 with effect from July 1st 1925.

Surgeon Lieutenant Commanders V. W. North to the *Agamemnon*, I. S. Cross OBE to the *Constance* on re-commissioning, I. H. Vay to the *Queen Elizabeth*, R. A. W. Ford to the *Caro*, G. H. M. Cimbelle to the *Victory*, Elizabeth for RN Hospital, and as instructor to Sick Berth Staff, J. I. Carroll to HM Dockyard Devonport.

Surgeon Lieutenant H. A. W. Whitty to the *Fingham*.

Surgeon Lieutenant C. Keating has transferred to the permanent list. A. S. Burns has entered as Surgeon Lieutenant for short service and appointed to the *Victory* for RN Hospital, Haslar for course of instruction.

ROYAL NAVAL VOLUNTARY RESERVE

F. A. McLaughlin, R. R. B. Roberts and J. H. Hutchinson entered as Probationary Surgeon Lieutenants and attached respectively to the 1st Division List 1, the 2nd Division List 1, and the Scottish Division.

Probationary Surgeon Sublieutenant H. O'Connor to be Surgeon Sublieutenant with seniority of May 28th 1924.

ROYAL AUSTRALIAN NAVY

Surgeon Commander I. Darby to the *President* for one month's course of instruction at Medical Department Admiralty.

ROYAL ARMY MEDICAL CORPS

Lieut Colonel C. G. Thum on DSO retires on retired pay on account of ill health July 1st 1925 (Substituted for notification in the *London Gazette* June 30th 1925).

Major and Brevet Colonel T. S. Coates OBE to be Lieutenant Colonel, Lieut Colonel C. G. Thum on retired pay on account of ill health. Major G. O. Chambers MC retires receiving a gratuity, and is granted the rank of Lieutenant Colonel.

Major A. C. Vidal DSO, half pay list late RA MC retires on account of ill health.

The following Majors retire on retired pay: F. L. Moss CMG MC (and is granted the rank of Colonel), F. C. Anthony (and is granted the rank of Lieutenant Colonel), M. Evans OBE, C. H. Rice.

The following from the Regular Army Reserve of Officers to be temporary Captains: Lieut Colonel W. Owen, Richard and relinquishes the rank of Lieutenant Colonel, Captain S. Simon and relinquishes the rank of Captain.

Captain I. Vallance MC, retires receiving a gratuity, and is granted the rank of Major.

ROYAL AIR FORCE MEDICAL SERVICE

Squadron Leader J. M. A. Costello MC to RAF British Hospital, Irl.

Flight Lieutenants T. C. St. C. Morton and E. A. H. Gray are promoted to the rank of Squadron Leader.

Flight Lieutenants P. A. Hall to RAF Hospital Cranwell, I. B. Woodrow to No. 41 Squadron Duxford (Honorary Squadron Leader).

W. R. Reith to Inspector of Recruiting.

Flight Lieutenant A. E. Trench relinquishes his temporary commission on ceasing to be employed, and is permitted to retain his rank.

Flying Officer G. Clark is transferred to the Reserve Class D2.

REGULAR ARMY RESERVE OF OFFICERS

SUPPLEMENTARY RESERVE OF OFFICERS, ROYAL ARMY MEDICAL CORPS.

Lieutenant W. S. Dawson to be Captain.

Captain A. G. Henderson late temporary Captain RA MC to be Lieutenant.

TERRITORIAL ARMY

ROYAL ARTILLERY MEDICAL CORPS

Lieutenant Colonels to be Brevet Colonels: C. C. E. Simpson, OBE.

J. H. Ray.

Major (prov.) W. F. Denning is confirmed in his rank.

Major A. Topping late RA MC to be Captain with precedence as from February 22nd 1918 and to relinquish the rank of Major.

Captain C. D. Lacey RA MC to be Divisional Adjutant 52nd (Lowland) Division RA MC TA and School of Instruction, vice Captain R. C. Aitchison RA MC.

Captain G. I. Linlithgow OBE from General Hospital List, to be Captain with precedence as from September 18th 1915.

Captain H. Pinto Leite to be Major (prov.).

Captain F. E. H. Keogh to be Major.

Captain E. M. Douglas Morris TD to be Major (prov.).

Captain E. M. Jenkins is retired and retains his rank.

To be Captains: Captain H. I. W. Adams (late RA MC) with precedence as from February 17th 1918, Captain J. P. J. Jenkins (late RA MC Special Reserve) with precedence as from June 3rd 1919.

Lieutenant C. Atkinson resigns his commission and retains his rank.

To be Lieutenants: Second Lieutenants H. W. M. Williams (late South Wales Borderers), H. E. Suter (late Middlesex Regiment), C. E. Fenton and T. A. Samuel (late 1st London Rifles).

General Hospitals: Lieut Colonel R. C. Dun having attained the age limit is retired and retains his rank with permission to wear the prescribed uniform. Captain A. F. I. Shields (late RA MC Militia) to be Captain with precedence as from April 1st 1915.

Superintendents for Service with OTC: Captain H. H. Woollard to be Major (prov.) University of London Continent (Senior Division).

Artyl S. Gough to be Lieutenant for service with the Medical Unit University of London OTC.

TERRITORIAL ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Lieut Colonel (Brevet Colonel) W. Howler MC, from active list to be Lieutenant Colonel (Brevet Colonel).

Major E. J. Boone TD from active list to be Major.

W. M. Robert on (late Lieutenant RA) to be Lieutenant.

VACANCIES

CAMBRIDGE UNIVERSITY—Two Resident Medical Officers (mal s) Salary at the rate of £155 and £125 per annum respectively.

DORSETSHIRE COUNTY COUNCIL—Assistant School Medical Officer and Tuberculosis Officer Salary £650 per annum, rising in 1926.

JERSEY COUNTY HOSPITAL AND POOR LAW INFIRMARY—Resident Medical Officer Salary £200 per annum.

LIVERPOOL COUNTY BOROUGH—Junior Assistant School Medical Officer Salary £603 per annum.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.1—Casualty Officer Salary £153 per annum.

ST. PETERS HOSPITAL FOR SKIN, ETC. Henrietta Street, W.C.—Honorary Surgeon Salary at the rate of £75 per annum.

WEST END HOSPITAL FOR NERVOUS DISEASES (Cloucester Gate) W.—Senior House Physician (male) for inpatients Salary at the rate of £150 per annum.

CERTIFYING FACTORY SURGEON—The appointment of Certifying Factory Surgeon for the (Clamorgan) is vacant. Applications to the Chief Inspector of Factories, Home Office, Whitehall, S.W.1.

This list of vacancies is compiled from our advertisement columns where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

APPOINTMENTS

BUSBY W. H. I.M.S. SA, Certifying Factory Surgeon for the Chumleigh District, Co. Devon.

DOLGELLY DANIEL MC MD (Vet) Honorary Assistant Gynaecological Surgeon to the Manchester Royal Infirmary.

MANCHESTER ROYAL INFIRMARY—House Physician: F. H. Smith MB ChB, C. T. Marshall MB ChB, N. Young MB ChP and S. I. Nucklow MB ChB, House Surgeons: C. I. Langford MB ChB, N. W. Bolton MB ChB, G. H. Booth MB ChB, R. Wood MB ChB and N. F. Seed MB ChB, House Surgeon to Special Department: H. L. Leman, MB ChB, 1st Assistant in the Dental Department: I. B. Mumford MB ChB, Clinical Assistant (Surgical): Miss M. John on MB, ChB.

British Medical Association

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE
TAVISTOCK SQUARE, W.C.1

Departments

SUBSCRIPTIONS AND ADVERTISEMENT (Financial Secretary and Business Manager) Telegrams: Articulate Westcent London.

MEDICAL SECRETARIAT (Telegrams: Medical Westcent London).

EDITOR, BRITISH MEDICAL JOURNAL (Telegrams: Autology Westcent London).

Telephone numbers of British Medical Association and British Medical Journal: Museum 9851, 9852, 9853, and 9854 (internal exchange four lines).

SCOTTISH MEDICAL JOURNAL—Shepherd Gardens Edinburgh (Telephone 461 Central).

IRISH MEDICAL JOURNAL—Frederick Street Dublin (Telephone 4737 Dublin).

POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION, 1 Wimpole Street, W.1—Prince of Wales Hospital, Tottenham, N.15.

North London Post Graduate College, Intensive Course in General Medicine, Surgery, and the Special Departments, Daily, except Sat. 10.30 a.m. till 5 p.m. Fee £2 2s. All Saints Hospital, Vintry, Strand, S.W.1. Special Course in Urology, consisting of Clinical in the

road and Special Lectures, West End Hospital for Nervous Diseases, 73 Welbeck Street, Lecture Demonstrations illustrated by cases at 5 p.m. Non Venues of Muscular Atrophy, The Reflexes in

Health and Disease, Wed. Cerebral Surgery, Thurs. Sequelae of Encephalitis Lethargica, Fri. Syphilis of the Nervous System.

WEST LONDON HOSPITAL POST GRADUATE COLLEGE, Hammer Smith, W.14. 2 p.m. Medical Outpatients, Tue. 12 noon Chest Cases, Wed. 10 a.m. Medical Diseases of Children, Thurs. 12 noon Surgical Pathology, Fri. 2 p.m. Surgical Outpatients, Sat. 10 a.m. Medical Diseases of Children, Daily 10 a.m. to 6 p.m. Sat. 10 a.m. to 1 p.m. in and out patient Operation Special Departments.

BIRTHS, MARRIAGES AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 9s. which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

DEATHS

SUMMER—On August 2nd at Chips Croft, Alderley Edge, Cheshire, George Edward Smith OBE MB ChB, Retired Medical Officer Ministry of Health.

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, AUGUST 15th, 1925

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British Medical Association.

CURRENT NOTES

Membership of the British Medical Association

The membership of the Association on August 11th was 30,068. This is higher by 1,637 than the previously recorded highest figure (year 1924).

Agricultural Scholarships in Australia

In a Current Note published in the SUPPLEMENT of June 6th (p. 245) it was stated that Miss C. Paterson, the wife of Dr. William Paterson, Honorary Secretary of the Wilkesden Division, had drawn, in the ballot organized by the Fellowship of the British Empire Exhibition, the right to nominate a candidate in the first series of agricultural scholarships for New South Wales, and that she had asked the Association to help in choosing a suitable boy who was a relative of a member of the Association. A vacancy has unexpectedly arisen in respect of this scholarship, and the Medical Secretary, on behalf of Mrs. Paterson, is open to receive applications from members interested, with a view to nomination by her of a boy who is a relative (or orphan) of a member of the Association. The Medical Secretary will accordingly be glad to receive from any member the name of a lad aged from 15 to 17½, of good character and physique, with a view to possible nomination. To be accepted, a candidate will have to pass the tests, including the medical tests, imposed by the Australian Government, and must be approved by the Central Committee of the Fellowship of the British Empire Exhibition. After passing the tests the nominee will be given a free passage to Australia and one year's training at an agricultural college there, and will afterwards be placed in suitable employment on the land, with a view to his acquiring ultimately a farm of his own. The scholarship thus represents a good start in life for a suitable boy. The candidate must be someone whose folk are well known to the member of the Association suggesting him, and for whose good character the member can personally vouch. Any member of the Association desiring to suggest a candidate is asked to communicate with the Medical Secretary as early as possible.

Dr. A. Balguy, of the Kensington Division, a member of the Association who was also successful in the recent draw among the members of the Fellowship of the British Empire Exhibition, has nominated William Anthony Flynn, son of the late Dr. Denis Flynn of Cork.

PROCEEDINGS OF COUNCIL

A MEETING of the Council was held in the Grand Pump Room, Bath, on July 20th, with Dr. R. A. BOLAN in the chair. The other members present were:

Dr. H. B. Brackenbury (Chairman of Representative Body), Mr. J. Basil Hall (President), Mr. N. Bishop Harman (Treasurer), Dr. C. O. Hawthorne (Deputy Chairman of Representative Body), Dr. T. Ridley Bailey, Dr. H. S. Peacock, Dr. J. W. Bone, Dr. H. C. Bristowe, Dr. G. F. Buchan, Dr. H. G. Dunn, Dr. J. S. Darling, Dr. C. E. Douglas, Mr. W. McAdam Eccles, Dr. C. E. S. Fleming, Dr. T. W. H. Gristang, Dr. F. J. Gomez, Dr. F. W. Goodbody, Dr. T. Dunne in Greenlees, Dr. R. Wallace Henry, Dr. T. Lustre Hill, Dr. G. B. Rillman, Dr. R. Langdon Down, Dr. David Lawson, Dr. E. K. Le Fleming, Dr. R. W. Leslie, Sir Richard H. Luce, M.P., Dr. Arnold Lyndon, Dr. J. G. McCutcheon, Dr. J. A. Macdonald, Dr. S. Morton Mackenzie, Major General Sir W. Macpherson, Dr. A. Manknell, Dr. Hugh Miller, Dr. Christine Muriel, Mr. A. W. Nuthall, Lieut. Colonel F. O'Meara, Dr. W. Paterson, Dr. R. C. Peacocke, Dr. F. Riddell, Lieut. Colonel J. W. I. Rait, Dr. C. Sanders, Mr. H. S. Souttar, Dr. John Stevens, Dr. W. F. Thomas, Dr. G. Clark Trotter, Mr. E. B. Turner, Sir Jenner Veirall, Dr. J. F. Walker, and Dr. Denis Walsh.

Decoration of the Great Hall

The Chairman brought before the Council a communication he had received from Sir Edwin Lutjens, R.A., architect of the new House, offering to present a portrait painted by Mr. William Nicholson to occupy the central disc in the Great Hall, and so start the series of distinguished men. Sir Edwin Lutjens asked for the name of the man whom the Council would wish to commemorate, and whether, if living he would sit.

Dr. Morton Mackenzie suggested that the consideration of this matter should be held over until the October meeting of Council. The question of the scheme of decoration for the Great Hall was one which should have fuller discussion than was possible during the pressure of the Annual Meeting. There were other forms of decoration to be considered besides portraits and even if portraits were decided on it would be an extremely difficult matter to choose whom they should represent. Dr. Manknell supported the suggestion that the matter be postponed. Mr. Bishop Harman said that comment had been made on the novelty of the discs, but that there was nothing really novel about them, and the same style of thing might be seen in the William and Mary court at Hampton Court. Others had expressed the opinion that the spaces should be filled with portraits but painted in a conventional style something after the Wedgwood fashion. Sir Edwin Lutjens's idea was that a single conception should run through the whole of the portraits. He (Mr. Bishop Harman) was of opinion that if portraits were chosen they should lean with the great medical figures of antiquity, and come down to modern times, including certainly Sir Charles Hastings.

The Chairman stated that it was due to pressure of time that the spaces had been left blank, the intention of the

architect was to cover them with a film of almost transparent white. He added that the Editor, who had much taste and judgement in these matters, had suggested that the portraits should represent, not all and sundry in medicine, nor merely men who had been prominent in medico-political activity, but British masters in medicine, and he had suggested offhand some twenty or thirty names for such a gallery.

It was resolved to postpone the further consideration of the matter to the October meeting of Council, and the Chairman was asked to explain to Sir Edin Lutyens the reason for the delay in making the decision, and to tender to him in the meantime the Council's very best thanks for his kind offer.

Summer Time

In view of the heavy expenditure incurred by the Early Closing Association in its campaign in favour of a permanent six months summer time period, the Council agreed to make a further contribution on behalf of the Association. Dr Garstang said that he had represented the Association at the meeting of bodies interested, and the fact was brought home to him that an enormous amount of work had been entailed to bring the campaign to the point of success. Sir Richard Luce, in supporting the increased vote, said that medical opinion on this subject had had a considerable influence in deciding the question.

The Association's Scholars and Grantees

Dr Hawthorne (Chairman of the Science Committee) moved certain recommendations for appointments to Association scholarships and the making of new and renewed grants. It was agreed to appoint Dr Helen Mackay as Ernest Hart Memorial Scholar for one year, to reappoint Dr Alice Bloomfield as Ordinary Research Scholar for a second year, and to appoint Dr J. M. Duncan Scott and Dr Percy Charles Rayment as Ordinary Research Scholars for one year. Renewed grants, totalling to £160, were made to five persons, and new grants, totalling to £190, to six persons. Certain researches were specified in the case of each scholar and grantee. Dr Hawthorne also reported that his committee had considered the instruction of the Council to promote research with a view to investigation of the factors which constituted, and the conditions which varied resistance to disease, particularly as regards pregnancy and the puerperium, but in the opinion of his committee the best body to determine the lines of such research was the Committee on Puerperal Morbidity and Mortality, and it hoped that the Council would make funds available for this purpose, by the institution of a special scholarship or otherwise, on lines suggested by the special committee. If the Science Committee could assist it would be glad to do so.

Food Preservatives

Dr Pidley Bailey presented for the Public Health Committee the recommendations on the matter of food preservatives which were subsequently submitted to and adopted by the Representative Body (SUPPLEMENT, August 1st, p. 59). He explained the reason for haste in this matter, which was that certain vested interests were putting pressure on the Government and Parliament not to adopt certain of the recommendations of the departmental committee which had recently reported. Dr Hawthorne said that he had no criticism to offer on the recommendations themselves but the preamble of the Public Health Committee in introducing the recommendations did not appear to him to be wholly acceptable. Dr Dam also, while agreeing with the recommendations, thought that not every statement in the preamble could be endorsed. Dr Eustace Hill admitted that the preamble was not as well considered as it might have been were it prepared in circumstances of less pressure, but he held strongly that the statements on which the actual recommendations were based were accurate in every particular.

On the motion of Sir Jenner Verrall, it was agreed that the recommendations be submitted to the Representative Body, and that instead of submitting the preamble the chairman of the committee should make a general statement as to the reasons which led the committee to bring the recommendations forward.

Drug Addiction

Dr Bone moved the approval of the report of the Committee on Drug Addiction and spoke at length on the provisional findings of the Home Office committee, upon which he served

as representative of the Association. A long discussion took place in Council, and the report of the Committee as approved later in the same day Dr Bone brought the matter forward before the Representative Body, which arrived at certain decisions as a result of Dr Bone's guidance (SUPPLEMENT, August 1st, p. 60). As the report of the Home Office committee is not yet available the discussion in the Council, like that in the Representative Body, cannot, with propriety, be published.

The Position of R. A. M. C. Officers

Sir Richard Luce, chairman of the Naval and Military Committee, gave an account of the progress of negotiations with regard to the pay of officers of the R. A. M. C., similar to the account he gave subsequently to the Representative Meeting (SUPPLEMENT, August 1st, p. 63). He mentioned the proceedings following the deputation to the War Office, and his reference of the matter to a committee of the Cabinet. He said that there was still no guarantee, in spite of the favourable attitude of the War Office itself, that the matter would be adjusted in the way the Association desired. He proposed, with the Council's consent, to bring a resolution before the Representative Body.

The report of the Committee was approved.

A second meeting of the Council was held in the Grand Pump Room on July 22nd, Dr Bolam again presiding. This was the first meeting of the incoming Council, and the Chairman welcomed the new members who were present—namely:

Mr R. G. Hogarth (President-Elect), Dr Percroft Anderson, Dr D. E. Finlay, Dr James Hudson, Dr J. C. Matthew, Dr G. W. Miller, and Dr Lockhart Stephens.

The resolutions of the Representative Meeting were considered from the point of view of the necessity of taking a referendum, and it was decided that this course was not necessary in any case. The dates for the Council and Committee meetings were then considered and a time-table agreed to.

Place of Meeting 1928

The Council had before it invitations from several centres for the Annual Meeting of 1928. In most of the cases the invitation was for 1928 or as soon thereafter as the Council might find convenient. In reply to a question as to when the next meeting could be held in London now that the new House was available the Chairman said that it was thought the centenary year of the Association—1922—would provide the most suitable opportunity and there might be possible a pilgrimage to Worcester, the Association's birthplace.

Dr W. E. Thomas warmly supported an invitation to Cardiff for 1928. He referred to the great improvements which had taken place at Cardiff since the Association last visited that city. The Cardiff of today, he said, did not exist thirty or forty years ago. The municipal halls, the technical school, and the Welsh National Museum were all in one great block. There was also a young medical school. The Welsh were a long suffering little race, who had been sadly neglected so far as the Association's choice of meeting places was concerned. The invitation to Cardiff was given on behalf of the whole of South Wales and Monmouthshire. Dr Douglas asked whether the meetings would be bilingual or whether interpreters would be provided. Dr Thomas replied that there could be no Welsh spoken, but that Dr Douglas would have an opportunity of speaking in Gaelic if he wished. Dr Padcliffe urged the claims of Manchester, and made a point of the fine and appropriate buildings available. Some discussion took place on the possibility of a Canadian meeting and the question was asked whether it was a condition of the Canadian invitation that the meeting should take place in Winnipeg. The Chairman said that on account of the central position of Winnipeg it had been promised that if the Association went to Canada that should be the place of meeting. Sir Jenner Verrall said that Winnipeg was very keen on having a visit, and the Association would be well advised to go to Winnipeg if it saw its way to visit Canada at all. The Canadian people thought nothing about distances, and the profession in Montreal would go to Winnipeg for the meeting without any question. Dr Morton MacLennan hoped that a further postponement of the Canadian invitation would not be misunderstood in Canada but in the meantime he thought it very desirable to accept the invitation to Cardiff.

pecially in view of the young medical school now existing here. The Chairman said that the Canadians recognized the difficulties and would not be offended. Sir J. J. Verill said he had been much struck by the kindly and sensible attitude of the Canadians with regard to this matter. At a meeting which he had to put forward some of the difficulties, and a point out that the difficulties now were far greater than those which existed when the Association went to Montreal and Toronto, the position was fully appreciated by the Canadians.

It was agreed that the choice for 1928 must lie between Cardiff, Manchester and Bournemouth, and on a show of hands it was decided to recommend to the Representative Meeting for the Annual Meeting for 1928 be held at Cardiff. It was agreed that the other Divisions which had sent invitations should be thanked and asked to renew them, if possible, for a later date.

Appointment of Special Committees

The Council agreed not to appoint certain of the committees whose purpose was discharged, though it was stated that it rests across the Committee on the Insurance Acts Royal Commission, for instance, could be reconstituted. The other committees which were not reappointed were the Non-Paid Committee, the Committee on Lunacy Law and Administration, the Committee on Drug Addiction, and the Medical Benevolent Funds Committee (whose work would be taken over by the new Medical Charities Committee). It was also agreed that there was no longer any necessity to reappoint representatives at a conference with representatives of the Society of Medical Officers of Health. The committees reappointed were the Committee on the Lee Commission, the Ophthalmic Benefit Committee, the Puerperal Morbidity and Mortality Committee, and the Post-Graduate Committee. The Council appointed as its representatives on the Medical Charities Committee Dr. C. L. Douglas, Dr. C. O. Hawthorne, and Mr. H. S. Soutter. (The Representative Body had already selected as its representatives Dr. W. L. Dearden, Dr. J. A. Macdonald, and Dr. J. F. Walker.)

It was agreed to defer until the October meeting of Council the nomination of two representatives to the Society of Medical Officers of Health for election to the council of that body. Dr. Ridley Bailey said that he desired to express his appreciation of the great courtesy of that society to the representatives of the Association during the year. The suggestion had been made with which he was in entire agreement that the representatives chosen should be general practitioners, and not medical officers of health even part-time ones.

The Council concluded its business in time for the members to attend the various meetings of Sections.

Meetings of Branches and Divisions

Sussex Branch Brighton Division

The Brighton Division held a supper at the Royal Café on July 2nd, when Mr. G. Morgan, the chairman of the Division, presided over a company of forty. Mr. W. E. Hempton, Solicitor to the British Medical Association, after the supper, gave an address on "Some pitfalls of medical practice."

Pitfalls of Medical Practice

Mr. Hempton said that his connexion with the Medical Defence Union began in 1892, and his coming visit to Bath would be the twenty-fifth Annual Meeting he had attended as adviser to the British Medical Association. As the result of this experience of over thirty-three years he had come to the conclusion that the practice of medicine and surgery was not beset by any special legal pitfalls, except for allegations of malpractice against medical men and defamatory statements concerning them in which two respects medical practitioners were certainly exposed to danger. He had defended some 1,200 actions based on allegations of malpractice, and in only a small percentage of cases were damages awarded. There being no fixed science in medicine or surgery, the law operated in aid of the medical practitioner when his skill and judgement had been prudently exercised. A large majority of these actions were inspired by speculative solicitors whose advice had been sought by the litigants. Some twenty years ago in a colliery district an epidemic of actions against medical practitioners was conclusively brought to an end by one of the cases being fought to a conclusion regardless of expense, a verdict being

obtained in favour of the medical practitioner. These actions usually started when the professional account was rendered, the hope being that the claim would in consequence not be pressed. If the medical practitioner then showed weakness he placed himself in a very dangerous position. So far as concerned defamatory statements of medical men, no neighbourhood was entirely free from local gossip and scandal, which was rife in very many. Mr. Hempton had had to investigate and deal with many hundreds of these cases. His uniform advice was that the source of the mischief should be traced and the offenders caused to suffer so severely as to prevent any recurrence of the evil. He had always been opposed to the suggestion of obtaining a form of indemnity before a surgical operation was undertaken, since he believed that, if an action were brought later, such an indemnity might prove to be in the element of prejudice rather than of assistance. From a legal point of view the relationship between doctor and patient was one of contract, the patient who called in a doctor undertook to pay his proper fees, and the doctor was under obligation to bring reasonable care and skill to bear. No doctor undertook to perform a cure or to use the highest possible degree of care and skill. Every doctor must, however, keep himself reasonably abreast of advances in medical and surgical knowledge. Controversy had often arisen during the trial of an action as to whether the doctor did or did not recommend some particular form of treatment which the patient or the relative refused, and no conclusive evidence had been obtainable. Such a contingency must often occur in medical practice, and Mr. Hempton advised that the simple precaution of recording the recommendation in a letter to the patient, and retaining a copy, might prevent serious trouble thereafter. There was a sharp dividing line between the civil and the criminal responsibility of the doctor. Mr. Hempton then referred to the cases of Dr. Hadwen and Dr. Bateman pointing out that he had confidently predicted acquittal in the first case. In the Barnett case it had become apparent that the law had proved to be well founded, Section 350 of the Lunacy Act of 1890 affording protection to the medical practitioner. In that section the word "skill" did not appear and the law only required for the protection of the medical man that he should have acted in good faith and with reasonable care. This provision had now been interpreted by the judgement of the House of Lords in its widest and broadest sense. Mr. Hempton then referred to the case of Dr. Leeming (*British Medical Journal*, June 27th 1925, p. 1200) and advised that the lecture by Mr. Joy, K.C. on the medical witness (*ibid.*, June 27th, 1925, p. 1159) should be carefully read since it contained much useful information with regard to such matters as professional secrecy. Here the privilege to be established was that of the patient concerned, and the proper attitude of the medical witness was to make his protest and submit to the ruling of the Court. Mr. Hempton approved the suggestion to form a medico-legal institute in London to investigate medico-legal cases and teach medical jurisprudence, such an institute to be under the control of the Home Office, and educational supervision to be supplied by the Board of Education, the University of London, and the Royal Colleges of Physicians and Surgeons. In conclusion he reiterated his contention that apart from the exceptions discussed there were no special legal difficulties associated with medical practice, and that an individual practitioner, by exercising due care and making use when necessary, of the advice of colleagues, rendered himself immune from either civil damages or criminal proceedings, provided a fair trial was accorded to him.

At the conclusion of the address a discussion followed, in which Drs. PARRY, GOTHERGILL, MACKINROSH, and others took part. A vote of thanks was accorded to Mr. Hempton with enthusiasm, and a most successful evening terminated with a vote of thanks to the chairman.

Association Notices

BRANCH AND DIVISION MEETINGS TO BE HELD

CAPE OF GOOD HOPE (WESTERN) BRANCH.—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday, August 28th at 8 p.m. when there will be a symposium on the diagnosis of intracranial tumours arranged by Mr. D. J. Wood. Among the speakers will be Dr. J. D. M. Claessens, Mr. F. F. Petersen, and Dr. A. W. S. Siebel.

OXFORD AND READING BRANCH, OXFORD DIVISION.—In place of the complete post-graduate course which has been temporarily postponed a series of ward and out-patient demonstration under the auspices of the Oxford Division will be given by members of the honorary staff of the Radcliffe Infirmary on the afternoons of the week commencing October 5th. The demonstrations will be open to both members and non-members of the British Medical Association. To those notifying Dr. William Stobie (honorary secretary) 340 Banbury Road, Oxford, of their intention of being present on any afternoon a detailed programme will be sent toward the end of September. There are no fees.

Dr H C Br-towe Wrrington
Dr C O Hawthorne F.R.C.P London
Dr F W Johnson Barr
Dr R Langdon Down, Teddington
Dr A Lyndon O B E Hudhead
Dr Peter Macdonald York
E W G Masterman Esq F.R.C.S, London
Dr Christine Murrell London
Dr James Neal London
Dr L A Parry Hove
Dr John Stevens Edinburgh
Dr J F Walker, Southend on Sea.

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Dr H. S. Beadles, Romsford
Dr J. W. Bone, Luton
Dr H. C. Bristowe, Wroughton
Dr F. R. Tothergill, Hove
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Dr Christine Murrell, London
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Sir Jenner Verrall, LL.D., Leatherhead
Chairman, Public Health Committee

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Dr C B Hillman, M B F Wakefield
Dr E Lewis Lloyd Townyn
Dr C F T Scott Willesden
Professor F E Wynne Sheffield
Dr G F Buchanan Willesden
Dr R A Lyster, Winchester

*Two members of Council elected
by the Public Health Service
members*

With two members to be nominated by the Society of Medical Officers of Health

INSURANCE ACTS COMMITTEE

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Panel Conference)
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Dr J W Bone, Luton
Dr R W Craig, Palthhead Ford
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Dr P Macdonald York

With twenty three direct representatives of Local Medical and Panel Committees one representative of the Hospitals Committee one representative of the Medical Women's Federation one representative of the Society of Medical Officers of Health and one representative of the Poor Law Medical Officers' Association.

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F C Pylus Esq, F.R.C.S., Newcastle upon Tyne
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NAVY AND MILITARY COMMITTEE

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CMG, R.N. (ret) London
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London
Lieut Colonel J W T Rast, IMS (ret) Radlett, Herts

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ARRANGEMENTS COMMITTEE

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DOMINIONS COMMITTEE
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 Dr W Paterson Willesden
 Lient Colonel J W Rait, I M S (ret),
 Dr G Clark Trotter London
 Sir Jenner Verrall, LL D, Leatherhead
 Two vacancies

Scottish Members of Council

Dr G A Allan, Glasgow
Dr C E Douglas, Cupar
Dr David Lawson, Banchoy
Dr J G McCutcheon, Glasgow
Dr Hugh Miller, Hamilton

D

Dr J D " "
Dr D E
Dr N P
Dr W Douglas Frew, M C, Kilmarnock
Dr J Laurie Greenock
Dr D McKail Glasgow
Dr G W Miller D S O, Dundee
Dr J B Miller Bishopbriggs
Dr J Muoro Moir Inverness
Dr John Patrick, Glasgow
Dr C M Pearson, Edinburgh
Dr J E Skinner Skene

With two members to be co-opted by the Committee

IRISH COMMITTEE

Irish Members of Council

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Dr J Giusani Cork
Dr R W Leshe LL D Belfast
Dr John Mills Ballinacroe
Dr R C Peacocke OBE Blackrock
Dr Denis Walshe Graiguevarna

Secretaries of Irish Bland

Dr Pierce Grace Maryborough
Dr Philip G Lee Cork
Dr H P Malcolm MC Belfast
Dr John Mills (see also above)
Dr J P Shanley, Dublin

One member to be appointed by each Irish Branch

WELSH COMMITTEE

Dr T Ridley Bailey Bilston
Dr J J Healy, Llanelli
Dr E Lewis Lloyd Town
Dr A A Prichard Cardiff
Dr W E Thomas, Ystrad Rhondda

With one Member to be elected by each Division wholly situate in Wales including Monmouthshire With the Chairman and Secretaries of the Welsh Standing Contract Practice Subcommittee

OFFICE COMMITTEE

The Office Committee is constituted as follows:

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Chairman of Council
Dr H B Brackenbury Hornsey *Chairman of Representative*
Body
N Bishop Harman Esq FRCS London *Treasurer*
Sir Dawson Williams CBE MD, LL.D D Sc, D Litt,
Editor
Dr Alfred Cox OBE Hon MA *Medical Secretary*
L Ferris Scott Esq, FCA, *Financial Secretary and Business*
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W McAdam Eccles Esq M S, F R C S London
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Dr T W H Garstang London
Dr R Wallace Henry, Leicester
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Sir Richard Luce K C M G C B M P London
Dr J A Macdonald LL D Tanton
Dr Christine Murrell London (*Medical Women's Federation*)
E B Turner, Esq F R C S London
Sir Jenner Verrall LL D Leatherhead
Dr T Watts, M P Manchester

With power to co opt (a) Not more than four other members of the Association and (b) a medical representative from the Local Election Committee formed in any area in which an approved medical candidate is standing for election

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AND MORTALITY

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 Dr J W Bone Luton
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 Dr Mabel Ramsay Plymouth
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 Sir Jenner Terrall LL D Leatherhead
 Dr Everard Williams London (*Honorary Secretary*)
 Chairman, Medico-Political Committee

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CIVIL SERVICES IN INDIA

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T. P. on
Lieut. on
Dr D.
Major General Sir Gerald Giffard, K.C.I.E., C.S.I., K.H.S.,
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Lieut. Colonel J. W. I. Rart I.M.S. (ret.), Radlett, Herts
Sir Jenner Verrall LL.D. Leatherhead
Sir Norman Waller I.R.C.P., LL.D. Edinburgh
The Chairman of and one member to be appointed by the
Organization Committee With power to co-opt three
members

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With one member to be nominated by Insurance Acts
Committee one member to be nominated by Section of
Ophthalmology of the Association one member to be nomi-
nated by the Council of British Ophthalmologists

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C. C. Chovee Esq. C.B.E., C.M.G., F.R.C.S. London
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C. H. Fagge Esq. M.S., F.R.C.S. London
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Sir George Makins C.M.G., C.B., F.R.C.S. London
Profes. or C. J. Martin C.M.G., F.R.S., London
Dr Pegginald Miller F.R.C.P. London
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THE ANNUAL EXHIBITION, BATH, 1925

[SECOND NOTICE]

Food Preparations

It is not easy to draw the line between the chemical and pharmaceutical preparations, noticed in the last issue, and the food preparations which formed the principal exhibit at a dozen or more stands. Some firms, including a number who are best known for certain food products, exhibited on this occasion preparations which might have been included in the former notice.

Virol, Limited, in addition to the product which goes by the firm's name had virolin, which is an emulsion of liquid paraffin. The Glaxo firm, by the side of their dried milk products, exhibited an extract of cod liver oil suspended in glycerin which has been placed upon the market under the name of osteolin as a prophylactic against rickets and other wasting disorders. Oxo, Limited, showed not only the familiar fluid beef preparations, together with hospital Oxo and beef essences for invalids, but also a number of endocrine

extracts, under the name of "oxoid," in tablet and fluid form. Benger's Food, Limited, showed a range of other products, including peptonized beef jelly, extract of red marrow, and essence of rennet. Armour and Company, Ltd., also showed a series of digestive ferments together with a number of endocrine preparations which are guaranteed to have been manufactured from absolutely fresh and unimpured glands. Finally, in this group, Carnation, Limited, showed not only sanotogen, a tonic food, but also a number of de-fatted vaccines and antisepsics.

There were a number of other exhibits to which no extended reference is needed save because the products are already well known. This applies to Cadbury's Bournville cocoa and chocolate, to Horlick's malted milk, and to Allenburys' food for infants. A number of milk and other foods were exhibited, including, Hoolet's malted milk, the Devonshire dried milk of Ambrosia, Limited (London), the Benger food and malted milk of Monongahie and Company (Glasgow), the "human milk" full cream and milk of Finfood, Limited (Wrenbury), who also showed a pure, sweet whey in powder form, and, finally, Mead's infant diet materials (the London agents for which are Bloor's and Warburton, Ltd.) consisting principally of a malt sugar for use in cases in which sugar is necessary as in addition to the diet, and certain reconstructed milk powders to suit different types of infants. The Food Education Society, formerly the National Food Reform Association, had a stand on which various publications were exhibited intended for the education of the public in cookery and food hygiene.

If drinks may be included under the head of foods three stands have to be noticed. Ingram and Rattle Ltd., again had in exhibit of the French mineral water Vichy Celestins, and of the mineral water of Carlsbad and other Continental springs. The Stowers lime juice and similar preparations, which have been known for nearly a hundred years, were shown, for those who liked a stronger beverage, though not too strong, Cymer's cider, which has a reputation extending back for nearly thirty years, was available.

Surgical Instruments and Material and Hospital Equipment

An operation table with an oil pressure pump for raising and lowering, and a screw for lateral tilting was in the forefront of the exhibit of Down Brothers, Ltd. (St. Thomas's Street, E.C.). Other objects of interest in the extensive range of instruments at this stand, many of them made in stainless steel, were Child's skin suturing forceps, Pairs' crushing clamps for stomach and intestines, a new pattern of guillotine for tonsil excision, the latest model of an intratracheal apparatus, and Cheever Jackson's instruments for bronchoscopy and oesophagoscopy, modified by Mr. W. G. Howarth. The Howell Mosley suction and etherization apparatus was again shown, with an electric motor.

Another comprehensive collection of surgical instruments appeared at the stand of Allen and Hanbury, Ltd. (48 Wigmore Street, W.), whose pharmaceutical exhibit has already been noticed. Among the instruments for examination was a universal diagnostic illuminator, a combination which it not literally bearing out its title served the purpose of at least half a dozen instruments, also an improved ophthalmoscope giving an even illumination of the fundus without any shadow or reflection of the lamp filament. Among other exhibits at this crowded stand were horizontal and upright models of a high pressure sterilizer, and the St. Bartholomew's hospital table, in which some improvements have recently been made in the better adjustment of shoulder supports and in other particulars.

Instruments for bladder and kidney surgery were found in considerable variety at the stand of the Genito Urinary Manufacturing Company, Ltd. (64 Great Portland Street, W.C.), but the exhibit was not limited to the class of instruments suggested by the firm's name; it included instruments for the examination of the throat and the oesophagus, as well as for other purposes. Here, too, we saw the only diathermy apparatus that we happened to notice in the exhibition.

Another large assemblage of instruments was at the stand of Arnold and Sons (50-52, Wigmore Street, W.), the most prominent being the operation table on an oil pump basis, which has previously been described in dealing with the manufactures of this firm. Other interesting devices were a syringe for regional anaesthesia and a new self-retaining abdominal retractor. There was also a good selection of gynaecological and obstetrical instruments and of surgical material.

John Weiss and Son, Ltd. (287, Oxford Street, W.) exhibited a very large number of instruments, principally of the smaller kind—needles, scissors, various forms of forceps, clamps, gouges, chisels, tenotomes, suturing instruments, and so forth. The newest manufactures exhibited were some models of cystoscopes and some glass syringes of an original pattern, with metal protection caps. Many of the instruments were in stainless steel.

* The first notice was published on August 8th. SUPPLEMENT D 79

Instruments for orthopaedic surgery and aluminium splints for various purposes were shown by Mayer and Phelps (59 61, New Cavendish Street W.) This firm also exhibited skin grafting instruments, lumbar puncture needles, syringes—on of these a combined urological syringe—oesophageal intubation tubes and many other designs. Here also were to be seen radium applicators and diathermy electrodes. In the forefront was the "Empire" operation table to which reference was made last year.

The hospital beds of Hoskins and Sewell, Ltd (Birmingham), have been frequently described when shown at previous exhibitions. The new feature this year was an obstetric bed designed by Dr Remington Hobbs for use at St Mary Abbott's Hospital, Kensington. The bedstead is made in two separate halves, each half having four legs and castors. When needed, the foot end half can be unfastened and pulled away, and stirrups put in the other half. Several other beds or bed attachments were shown at this stand, including what must surely be the simplest device for lifting up a bed foot and locking it in the tilted position.

Several exhibitors confined themselves to surgical dressings and other requisites. Lissett and Johnson Ltd, showed the adhesive plasters, absorbent cottons, surgical ligatures, and other articles more familiarly known under the name of Seabury goods. Mention may be made of their rubber self-adhesive plaster spread on strong cotton cloth, and their medicated plasters of Indian rubber.

The Thermogene Company Ltd (Harrow Heath) again showed their impregnated cotton wool, and antiphlogistine, the poultice, was the exhibit on which the Denver Manufacturing Company (Bow) concentrated.

Apparatus for Light and Heat Treatment

Quartz lamps for ultra violet radiation treatment were demonstrated by the British Hanover Quartz Lamp Company, Ltd (Slough). It was stated that over 60 000 of this firm's alpine sun lamps are in use. The lamps displayed were of three principal models: the Kromayer lamp (which is the best known) for the intensive treatment of small areas, the standard model of the alpine sun lamp, adapted chiefly for general irradiation, and the Jesionek lamp, which is so constructed as to send out its rays in a horizontal direction, and is designed for use in batteries of such lamps so as to get the effect of diffused sunlight. The firm also showed a lamp for the prolonged local application of luminous heat rays.

A new lamp of considerable interest was shown by the Holborn Surgical Instrument Company, Ltd (26, Davies Inn, E.C.1), it was called the Jupiter sun lamp, it consisted of a carbon arc, fitted with carbons of a special composition and producing a light with a strong ultra violet as well as an infra red element. At the recent International Congress of Radiology this lamp formed the subject of one of the papers in the Physics section, and the claim was made for it that its light had a spectral value approaching more nearly to that of the natural solar rays than any other lamp made. This firm also showed a wide range of surgical instruments, lamps for diagnostic purposes and hospital furniture.

The manner of using radiant heat was again demonstrated by the Dowsing Radiant Heat Company, Ltd (Baker Street W.). The apparatus this firm had on view comprised a radiant heat bed complete with lamps and connexions for tiering the whole body, a large tunnel apparatus for treating the trunk or a limb, and a small apparatus, for use with the hand, for directing the light on any local area.

Instruments of Measurement and Laboratory Equipment

Clinical thermometers of various types and patterns were shown by G. H. Zeal, Ltd (75 77, John Street, E.C.) The difficulty sometimes experienced in shaking down a clinical thermometer was overcome in some of these types by a simple device for resetting quickly. Another design was for a thermometer which could be carried in an antiseptic solution without disfiguring the engraving. It was stated that the bulbs for all these thermometers were blown from glass which does not contract with age, and that the permanent accuracy of the instrument is thus ensured.

The Trecos sphygmomanometer, which has been previously described in these columns, again appeared at the stand of Short and Mason, Ltd (Walthamstow) in both the surgery and the portable types, and attention was drawn to the complete control and accurate calibration of this instrument. This firm also showed a large variety of clinical thermometers as well as instruments for recording temperature of a sick room and variations of atmospheric pressure.

Some interesting instruments for colour analysis and other purposes of measurement, which have been noted on other occasions, were shown by Tintometer, Limited (Salisbury). Among the newer instruments was an improved form of Oliver's haemoglobinometer, and a red cell suspensionometer.

The British Drug Houses, Ltd (Graham Street, N.) exhibited their indicator for colorimetric determinations of the hydrogen ion in concentration. They showed a capillitor in the form of a series of capillary tubes described as a pocket size laboratory for the rapid determination of pH values. A number of standard stains for microscopic purposes, tested histologically and guaranteed to be true to type, were also exhibited.

The progress which has been made in the fashioning of the microscope could be studied at the stand of Charles Heaton and Company, Ltd (Willow Walk, S.E.), where microscopes of many kinds to suit all purposes, from the extreme demands of the pathological laboratory to the ordinary necessities of the student were exhibited. Other laboratory apparatus, in the shape of incubators, sterilizers, centrifuges, and the like, which this firm has exhibited in past years, were again on view, generally with some new refinement.

An excellent display of laboratory equipment was also to be seen at the stand of Band and Titchlock, Ltd (Cross Street E.C.) including centrifuges, sterilizers, apparatus for the Wassermann reaction, for the manufacture of calf lymph, for gas analysis and indeed for most of the requirements of modern laboratories.

Kodak Limited (Kingsway) had a display of dupli-tized x-ray film negatives, x-ray prints and enlargements on their special bromide paper, and x-ray transparencies. This exhibition represented a very high standard of radiography on its technical side. All the accessories of the dark room were shown here, including some ingenious devices.

A cabinet heated by electricity for the drying of x-ray or ordinary negatives was one of the two principal exhibits of O. Sichel, Ltd (52 Bunhill Row, E.C.) This was a large and elaborate affair, with special devices for hanging the plates or films and for sending a current of air in such a way as to act on the whole of the sensitive surfaces and bring about rapid drying. Their other exhibit was the kinograph something, like an ordinary photographic enlarger (for which purpose, indeed, it can be used) acting as camera and illuminant for the photography of any part of a living subject or pathological specimen, with the minimum of trouble in placing and focusing.

Ophthalmological Apparatus

The beautifully coloured lantern slides of the fundus were the outstanding exhibit of Theodore Hamblin, Ltd (15, Wigmore Street, W.) The instrument to which particular attention was drawn at this stand was the Lister hand projection lamp, which can be readily balanced in the hand, and projects a disc of even and intense illumination up to 120 c.p. This was only one of various patterns of lamps and other apparatus for eye testing. The newest device was an astigmatic test in which the important factor of the amount of illumination falling on the chart had been considered and the correct area of the immediate background used for a standard illumination.

Another excellent selection of ophthalmoscopes and outfits for sight testing was to be seen at the stand of Rymer and Keeler Ltd (Kemp Town, Brighton). Here the newest device was an operating lamp mounted on a ceiling support and so arranged as to project three beams which combined and thereby minimized the shadows. There was also a single beam lamp mounted on a stand with a wide range of adjustment for height and giving a very intense illumination. Among other ophthalmic instruments was a slit lamp apparatus and a rapid test for stereoscopic vision.

Hague and Son (Bath) had an exhibit of ophthalmic instruments, together with some microscopes, and another Bath firm Melson Wingate Ltd, had an exhibit of lenses in various stages of completion.

(To be concluded)

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

SURGEON CAPTAIN W. W. KAIR CMG to the *Egmont* additional and to the *Egmont* additional for hospital ship *Harne* on joining.
SURGEON COMMANDER R. B. SCHERER has been placed on the retired list with the rank of Surgeon Captain.
MR J. S. FILIOT has been entered as Surgeon Lieutenant Commander.
MR R. W. J. DOODS, C. R. MOORE and T. F. CREIN have entered a Surgeon Lieutenant and have been appointed to R.N. Hospital H.M.S. for four years.

ROYAL NAVAL VOLUNTEER RESERVE

SURGEON COMMANDER D. D. MACINTYRE to R.N. Hospital H.M.S. for fourteen days training.
SURGEON LIEUTENANT S. D. BORTHWICK to R.N. Hospital H.M.S. for fourteen days training.
SURGEON SUB-LIEUTENANT R. RAU all to R.N. Hospital H.M.S. for fourteen days training.
DR R. F. BARHAM and R. WEAR promoted to Surgeon Lieutenant.

ROYAL ARMY MEDICAL CORPS

Major W. C. NIMMO from half pay list retire on retired pay.
Captain J. A. W. EBDEN retire receiving a gratuity.

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, AUGUST 22ND, 1925

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British Medical Association

CURRENT NOTES

The Association's Scholarships and Grants

On page 94 of this issue will be found particulars as to the work done by the Association's scholars for 1924-25. The Science Committee is much indebted to the following gentlemen for having kindly acted on its behalf as visitors in connection with the work of the Association's scholars and grantees: Dr J G Adam (Liverpool), Dr H H Dalo (London), Professor W T Dixon (Cambridge), Sir David Drummond (Newcastle-on-Tyne), Professor J B Lethley (Sheffield), and Professor J Lorrain Smith (Edinburgh).

Awards for 1925-26

On the recommendation of the Science Committee the Council of the Association has appointed the following as scholars, and has made the undermentioned grants, for the year 1925-26.

SCHOLARSHIPS

1 Ernest Hart Memorial Scholarship (value £200)
Dr Helen M M Mackay for research into secondary (alimentary) anaemia in infancy and the use of ultra violet light in its prevention and treatment

2 Ordinary Research Scholarships (three—each of the value of £100)

Mrs Alice Bloomfield FRCS (second year) for continuation of research into the bearing of embryological detail on certain pathological conditions arising in the female genito-urinary tract.
Dr P C Rayment for research into the significance of the changes of the inorganic radicals of the blood in cases of chronic haematuria, gout and allied diseases.

Dr J M Duncan Scott, for further investigation of medullary reflexes. The investigation of the effect upon medullary reflexes of cauterization of limited areas of the medulla and also of application of drugs thereto, also the effect of deep stimulation of the medulla.

GRANTS

Grants were renewed to

Mr Hamilton Bailey FRCS and Mr George P B Huddy FRCS (jointly) (£50)
Dr Dorothy C Hare (£35)
Dr Mary F L Heene (£50)
Mr F C Pybus, MS FRCS (£25)

New grants were made to

Dr G P Crowden (£20)
Professor Winifred C Cullis (£50)
Mr W S Duke Elder FRCS (£20)
Dr G R James (£30)
Dr T McWalter Millar (£20)
Dr Robert Platt (£20)

Ophthalmic Benefit

It has recently come to notice that a certain approved society is endeavouring to enter into an arrangement with ophthalmic surgeons in different parts of the country for attendance on all the members of the society in the area of each of the practitioners concerned who may require ophthalmic treatment. This, it is maintained, is not only contrary to the spirit of the Regulation which has recently been framed to deal with this matter, but is also contrary to one of the main principles of the Insurance Acts—that

is, free choice of doctor. It is sincerely hoped that practitioners will not enter into any such arrangement as that mentioned above, but will hold themselves free to treat any insured member of an approved society who may desire to consult them under the scheme of ophthalmic benefit now in operation.

Treasurer's Cup Golf Competition

The Central Golf Committee appointed by the Secretaries' Conference at Bath for the purpose of the Treasurer's Cup golf competition is as follows: Dr C J Kail (Drillington), Dr E K Le Fleming (Wimborne, Dorset) and Dr J G McCutcheon (Glasgow). The committee has decided that no change shall be made in the rules for the ensuing year, except that the limit handicap allowed will be 18. Any member with a handicap of over 18, of course, competes, but he will not receive more than 18. The earlier date for the handing in of entries—namely, October 1st—will enable secretaries this year to make the necessary arrangements in order that some of the preliminary ties may be played off before the very short days set in. The first stage must be completed by February 1st. All members of the Association who wish to enter for the competition are urged to send their names to the Honorary Secretaries of their respective Divisions not later than October 1st. It is hoped that the competition will include every Division in the United Kingdom. The rules and regulations governing the competition for this year are as follows.

RULES AND REGULATIONS

To be Played for in Three Stages Entrance Fee, 2s 6d
Open to all Members of the British Medical Association
in the United Kingdom

First Stage—Entries to be handed in to the Secretary of the local Division by October 1st. Arrangements for the eliminating rounds to be in the hands of a special Golf Subcommittee or rounds to be in the hands of the Executive of the Division. Competition to be failing thus the Executive of the Division. Competition to be a knock-out competition under handicap rules members club a handicap to be accepted (limit handicap 18). The handicap under which a competitor enters cannot be altered at any time during the three stages of the competition. Draw to be arranged by the Golf Subcommittee. Matches to be played upon ground mutually agreed upon by the players. Failing agreement the matter to be referred to the Golf Subcommittee for decision. Eliminating rounds to be arranged so that the first stage will be completed by February 1st.

Second Stage—Division winners in the area of the Branch to engage in knock-out competition. This stage to be completed by June 1st. Committee in charge—the Branch Council or a special Golf Subcommittee of the Branch Council. Arrangements as in first stage. For the purposes of this competition the Metropolitan, Counties Branch Inner and Outer Group will count as separate Branches. In some Divisions or Branches it may be convenient to play out or more of the rounds on one day—making a field day for golfing members.

Third Stage—The winners of the Branch stage will play off under medal play condition (handicap on the Firth) (July 25) during the Annual Meeting of the Association at Nottingham. Winner to be the one who returns the lowest score under handicap. Arrangements for this stage to be made by Central Committee appointed by Secretaries' Conference.

All disputes to be settled by the Committee responsible for completion of each stage. Date must be strictly adhered to. No extension of time can be given.

THE ANNUAL EXHIBITION

Acoustical Apparatus

The Government has appointed a blind man on the Committee on Bioridensing, it would have been a further touch of imagination to have appointed a deaf man. Mr R H Dent (95, Wigmore Street W), in showing his newest aids to hearing, emphasized the usefulness of the portable telephone—which is what his instrument really is—in enabling persons suffering from middle ear deafness to enjoy music and speech transmitted by wireless. We experimented and pleased at the ardent response, and were surprised and pleased at the results. The sounds were magnified without being distorted. Moreover, the instrument collected sounds from all round the listener, and not from one point only. This instrument is attached to the ear in such a way that its presence is scarcely noticeable either to the wearer or anyone else.

Acousticon aids for the deaf were shown at the stand of General Acoustics, Limited (77, Wigmore Street, W). The Acousticon has now a good many years behind it, and has been progressively improved and made more sensitive and more adjustable to different degrees of deafness. The important and of recent developments has been to make the low sounds louder while giving to the loud sounds only the minimum increase. Emphasis was laid upon the range of acousticons now available and the methods of testing patients to ensure accuracy, also upon the neatness, lightness, and elegance of the instrument. A multiple acousticon was shown, enabling a number of deaf people to hear in a public meeting, this instrument, it was stated, has been fitted in over 300 churches in England and Scotland.

Trusses and Orthopaedic Appliances
H. E. Curtis and Son, Ltd (7, Mandeville Place W), exhibited their abdominal support, and a modification for the tropies which was distinguished for its lightness. Among other devices at this stand was a colostomy support (or a truss where no general support was required. This firm, in addition to its exhibition of appliances of its own manufacture, made a feature this year of the karyleno preparations for intestinal strasis and colic liquid paraffin, of which it is the distributor. An exhibit of Domet belts was furnished by the company of that name (456, Strand, WC), some of these designs were intended for pregnancy or for restoring shapeliness after confinement, others for pendulous abdomen or unbalanced hernia. These were less in evidence than in former exhibi

Artificial limbs were less in evidence than in former exhibitions, but Pedestros, Limited (10, Conduit Street, W.), had a display of light all metal legs, including five models of the Desoutter type. A feature of this limb is a swivel and pivoting device whereby the strain of the limb is eliminated during the quick turning of the body as in sport or active bodily work. Mr B Smith (Bath) illustrated the artificial limbs and surgical appliances of various kinds which have been fitted during and since the war at the Bath War and Ministry of Pensions Hospital.

Medical Publications

Half a dozen bookstalls added to the pleasure of a stroll around the exhibition. The Oxford University Press (Warwick Square) showed a number of standard works, the largest of which was the fifth edition of Tweedy's *Practical Obstetrics*, running into well over 600 pages. A third edition of H C Cameron's *The Nervous Child*, and a second of Groves's *Surgical Operations*, were shown at this stand, together with many other volumes. H K Lewis and Company, Ltd (136 and 140, Gower Street, W C), had their own very full display of standard works, embracing such subjects as orthopaedic surgery, radiography, school medicine nursing, medical climatology, medical jurisprudence, public health, surgical pathology, and tropical diseases, many of which have been reviewed in these columns. The firm showed also a number of office requisites, ledgers, case books, and so forth. Constable and Company, Ltd (10 12, Orange Street, W C), placed in the forefront their modern medical monographs, edited by Professor Hugh Macleay, three volumes of which—one on syphilis and gonorrhoea, another on pulmonary tuberculosis, and a third on the toxæmias of pregnancy—were available. W B Saunders Company (9, Henrietta Street, W C) showed examples of recent American medical literature, including the *Collected Papers of the Mayo Clinic, 1924*, and the work on pediatrics, edited by Professor Abt of Chicago, running into eight octavo volumes, with a total of 8,000 pages and 1,500 illustrations. Among the large selection of volumes at the stand of J and A Churchill (7, Great Marlborough Street, W) special attention was drawn to *Recent Advances in Medicine* by Beaumont and Dodds, *Midwifery* by Eden and Holland, and *The Diabetic Life its Control by Diet and Insulin*, by R D Lawrence. Here was to be seen also, of course, the

unfailing and indispensable *Medical Directory* Among the newly published works shown by John Wright and Sons Ltd (Bristol), was *Leprosy*, by Sir Leonard Rogers and Dr Ernest Minn, *Some Encouragements in Cancer Surgery*, by G Grey Turner, and *Rheumatic Heart Disease*, by Carv I Ceombs The ninth edition of *Pies Surgical Handcraft* and the seventh of *Hey Groves's Synopsis of Surgery* were also to be seen This firm showed a number of card index registers and medical account books Another book stand was that of Stanley Phillips (Brondesbury Road, N W), who showed a number of recent books issued by publishing firms in London, Edinburgh, and Philadelphia Our contemporary the *Lancet* also occupied a stand

Miscellaneous

Three spas ventured to assert their claims within hearing of the Bath waters. Harrogate proclaimed the diversity of its springs and the progress of its spa department, Droitwich, its famous brine and the recommendation of its bathing establishment, Buxton, its radio active thermal water, its lately reconstructed baths, and the wonders of the Peak district.

Two stands were devoted entirely to dentifrices. At the stand of Pep odent, "the pioneer tooth dentifrice, attention was drawn to the value of the polishing agent. The Kolynos dental cream called the microscope to its aid to illustrate its cleansing properties.

The hygienic clothing had a stand in which the merits of its various articles were proclaimed, not only in

Jaeger hygienic clothing had a stand in which the merits of this underwear and outerwear were proclaimed, not only in respect to health, but to style and comfort.

this underwear and outerwear were produced
 respect to health, but to style and comfort.
 An apparatus declared to be new in this country was the
 Appen inhaling apparatus, shown by the Inhaling Drug and
 Apparatus Company (30 Grosvenor Place, S.W.). It is de-
 signed to transform any liquid into a thin vapour which can be
 breathed, thereby distributing drugs through the respiratory
 organs. An English translation of a German pamphlet on
 inhalation therapy was handed to inquirers.
 The Medical Sicknes, Annuity, and Life Assurance Society,
 Ltd (309, High Holborn, W.C.), advertised the various forms
 of assurance it undertakes, including partnership and educa-
 tional assurances some of which have novel features.
 The Medical Insurance Agency (British Medical Association
 House, Tavistock Square, W.C.) brought before medical men
 the advantages of insurance through its office, such as its
 expert advice which is the result of long experience, the allow-
 ance of rebate on practically all classes of policies passing
 through its hands, and the considerable benefit to medical
 charities which has resulted from its business.
 This concludes a brief and cursory summary of an exhibition
 which was full of interest, even though outstanding novelties
 were few.

Ichthol

In the notice of the exhibition at the Annual Meeting in our issue of August 8th (p 80), a passing reference was made to the exhibit of W Dederich, Ltd (Dean Stanley Street, Westminster), who showed the sulphonated ichthol preparation.

Ichthol Messrs Dederich desire to state that ichthol is a trade name registered and protected in this country, and refers to the preparation, of which here they are the sole distributors, manufactured from the oil distillate of a mineral deposit near Seefeld in the Tyrol.

BRANCH AND DIVISION MEETINGS TO BE HELD

CAPE OF GOOD HOPE (WESTERN) BRANCH—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday August 28th at 8 p.m. when there will be a symposium on the diagnosis of intracranial tumours arranged by Mr D J Wood Among the speakers will be Dr J D M Claassens, Mr F P Petersen and Dr A W S Siehel

SOUTH AFRICAN MEDICAL ASSOCIATION—The Chairman of the South African Medical Association is Mr J. Lodee

NORTH OF ENGLAND BRANCH CLEVELAND DIVISION —The Chairman
and Mrs. Body will be at home to members at Cleveland Lodge
Grove Hill Middlesbrough on Friday, August 28th, from 3.30 to
6.30 p.m. (garden party and tennis)

OXFORD AND READING BRANCH OXFORD DIVISION—In place of the complete post graduate course which has been temporarily suspended a series of ward and out patient demonstrations under the auspices of the Oxford Division will be given by members of the honorary staff of the Radcliffe Infirmary on the afternoons of the week commencing October 5th. The demonstrations will be open to both members and non members of the British Medical Association. To those notifying Dr William Stobie (honorary secretary), 340 Banbury Road Oxford of their intention of being present on any afternoon a detailed programme will be sent towards the end of September. There are no fees.

Meetings of Branches and Divisions

BORDER COUNTIES BRANCH

The fifty fourth annual general meeting of the Border Counties Branch was held at the Cumberland Infirmary, Carlisle, on July 10th when Dr M. Bryson, the retiring President, was in the chair. The Branch Council report and financial statement were adopted and the election of the following officers confirmed:

President Mr Norman McLaren 1st Vice President Dr P. Murray Kerr 2nd Vice President Dr M. Bryson and Dr C. B. Murray Honorary Secretary and Treasurer, Dr G. T. Wilson Assistant Honorary Secretary Dr R. Connell

A very hearty vote of thanks was accorded to Dr Bryson for the able way he had filled the office of President and Dr Bryson, in vacating the chair, called on Mr Norman McLaren for his presidential address entitled 'The Cumberland Infirmary—Past, Present and Future.' This was illustrated by numerous paintings, engravings, plans and documents of great interest. It was much appreciated by the meeting which passed with acclamation a vote of thanks to the new President. At Mr McLaren's invitation tea was then taken in the nurses' dining hall.

ESSEX BRANCH

The annual meeting of the Essex Branch was held at the Palace Hotel, Southend-on-Sea, on July 30th.

After the routine business of the meeting had been completed Dr Percival Wells (Chelmsford) gave an address on fatal syncope. He mentioned two recent cases of sudden death in patients who had shown no signs or symptoms of dangerous illness. In one case he ascribed the cause of death to interference with the heart by a dilatation of the stomach. In one case a post mortem revealed a healing gastric ulcer. Other speakers mentioned that indigestible food such as white, cockles or crab was likely to be a contributing factor.

Dr G. Norman Meacher read a paper on the justifiability of the present expenditure on tuberculosis in which he dealt with the value and the limitations of sanatorium treatment, the need of more systematic search for early cases of the disease and the benefits that have been already derived from the campaign against tuberculosis. Drs F. Miles R. H. Vercoe J. Waller, Grant Pugh, and Rowland took part in the subsequent discussion.

A keen debate on birth control was opened by Dr R. H. Vercoe, medical officer of health for Chelmsford. Several different points of view were taken by the speakers and no definite conclusions were reached. The members were entertained to tea by the President Dr Hinks and after an interesting and pleasant afternoon the meeting broke up at 5.30 p.m.

KENYA BRANCH

A special meeting of the Kenya Branch was held at the Native Civil Hospital, Nairobi, on May 13th when the President stated that a minute of the meeting of the deputation with the Colonial Secretary had been circulated to all members of the Branch. He added that the matter was being dealt with by the Dominions Committee of the Association. Dr Kauntze explained the position of Government medical officers in the Union of South Africa. After discussion it was resolved, on the motion of Dr Burkitt, seconded by Dr Kauntze:

That the whole of the correspondence in connexion with the matter should be sent to the headquarters of the Association for their information and needs any action.

The rules as to the question of election of members were amended. The President stated that he was of opinion that the Branch should reconsider the Professional Licences Bill. Although the Colonial Secretary had given an assurance that the Government did not propose to proceed with the bill for the present he understood that the bill had been referred back to a Government Committee and that it might be reintroduced at any time. It was resolved to send the whole of the correspondence in connexion with the matter to headquarters, accompanied by a covering letter from the secretary explaining the present position.

Dr Kauntze read a paper on the plague problem in South Africa and a general discussion followed in which the majority of members took part. A hearty vote of thanks was accorded to Dr Kauntze for his most interesting paper.

A further meeting of the Branch was held on June 10th at the Native Civil Hospital, Nairobi.

The Secretary reported that a considerable amount of information regarding medical defence had now been collected and suggested that a small subcommittee should be appointed to consider the whole question and report. After discussion it was resolved on the motion of Dr Paterson, seconded by Dr Gilks, that the matter should be considered by the Branch Council.

Dr Jex Blake was unanimously elected Representative and Dr P. A. Clearkin Deputy Representative, of the Branch for the Annual Representative Meeting at Bath.

Dr Wilson opened a discussion on African diets and gave a brief account of the work that had been done on this subject in the medical department up to date including information collected during the war. His remarks were illustrated by a number of charts and diagrams. A general discussion followed in which the majority of the members took part. The President in thanking Dr Wilson for opening the discussion emphasized the importance of the subject but pointed out the impossibility of making much advance without an increase of staff and particularly of trained research workers and biological chemists.

SHPORSHIRE AND MID WALES BRANCH

The President of the Shropshire and Mid Wales Branch, Mr C. G. Russ Wood and Mrs Russ Wood, entertained members and their wives at St Mary's Hall, Shrewsbury, on the afternoon of August 6th when music was rendered at intervals by an orchestra. Many members and their friends were present and much enjoyed this opportunity of meeting socially.

SUFFOLK BRANCH WEST SUFFOLK DIVISION

A meeting of the West Suffolk Division was held at the Institute, Woolpit, on August 6th at the invitation of Dr O. R. M. Wood.

In the absence of the Chairman and Vice Chairman, Dr J. S. HINWELL at the request of the meeting presided. Dr HERBERT FRENCH opened a clinical discussion on the following subjects: (1) Concerning blood letting in chronic cases and a simple needle and bottle method of doing it. (2) The causation of acute nephritis and its bearing upon treatment. (3) The treatment of recurrent severe sick headache, especially in women. (4) The gist of insulin treatment in diabetes. Dr French's opening remarks in each case were very practical and interesting, and led to a brisk discussion under each heading in which many members and visitors took part. The discussion lasted for some two hours and Dr French was then obliged to close without finishing the programme. On the motion of Dr HINWELL seconded by Dr WILKIN, a very hearty vote of thanks was accorded with acclamation to Dr French. It was generally felt that an afternoon of this kind was far more interesting and instructive than a set paper on one subject and those present hoped that Dr French would attend on another occasion to complete the programme. After the clinical meeting members adjourned to Dr Wood's garden, where tea was provided. There was a good attendance of ladies, wives and daughters of members and those present agreed that the reputation of Woolpit for hospitality had been well maintained.

National Insurance

ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE

EVIDENCE OF THE SOCIETY OF MEDICAL OFFICERS OF HEALTH

EVIDENCE on behalf of the Society of Medical Officers of Health was tendered by Dr R. A. Taster, President, and Dr J. J. Buchan. It was stated that the society numbered about 2,000 members.

The witnesses maintained that the insurance system was so isolated from kindred branches of public work that it suffered great limitations. In their view there was need for a closer relationship between the scheme and other activities of a like kind. For the purpose of distributing payments in money (sickness and disablement benefits) the grouping of insured persons in approved societies formed a not unsatisfactory instrument but greater advantages would follow a grouping, in approved societies established on the same territorial lines as public health administration. The witnesses preferred was for one local approved society to each area, if more than one approved society operated in an area a council of approved societies should be set up for negotiation and consultation with the local authority.

They considered that Insurance Committees were faulty in constitution that they did not command sufficient local respect, and that their health functions were very indefinite. Their duties would be more effectively carried out by the local health authority, and a committee of the local authority should be appointed, with provision for the representation of the other interests involved. This criticism of Insurance Committees was questioned by members of the Commission, who said that they had evidence from other quarters pointing to the general success of these bodies. Dr Buchan said that the Committees had done very well according to their abilities and opportunities, but they were far from attaining such improvement in health matters as was prophesied. The Insurance Committee was the poorest sort of authority in an area. In the minds of the people it was made up of club agents and persons of that description and could carry out no effective propaganda.

It was a further part of the society's proposal to set up Local Medical Committees representative of all registered medical practitioners to undertake the duties of the existing Panel and Local Medical Committees and to be available for consultation with the local authority on medical matters.

With regard to the administration of benefits the witnesses had some novel proposals to make. They suggested that sickness and disablement benefits should not be administered at a uniform rate but within prescribed limits in accordance with the needs of the insured and that they should in certain circumstances be paid in part even when the insured person was partly employed—for example in the case of a man recovering from illness and able to do part time work. Maternity benefit should no longer be administered by approved societies but by the local authority, when in turn should be made a timely

responsible for providing medical attention. "The attendance upon maternity cases should not be an obligation upon a panel practitioner." Medical benefit should be administered by local authorities through their committees, and should be extended so as to provide insured persons with all necessary treatment and nursing in illness. The programme of extension would take years to complete, but a commencement should be made by including the following:

(a) Facilities to the medical profession for laboratory diagnosis (b) specialist advice and treatment (c) dental treatment, (d) treatment in general hospitals and other like institutions (e) further accommodation for the treatment of tuberculosis (especially surgical) (f) treatment in convalescent homes (g) home nursing when required (h) all other necessary medical advice and treatment (including the provision of such nursing, dressings, and equipment as may be necessary).

The witnesses held that medical benefit should be administered in such a way that the good work done by medical practitioners in the preservation of health should be rewarded. They explained that by this they meant that medical practitioners should in future be given a direct interest in the maintenance of the patient's health. Varying payments should be made to practitioners for work in this capacity, the funds for such payments being constituted from any saving resulting from decreased sickness or disablement payments. Sir Alfred Watson, referring to a proposal for the health supervision of persons not already ill, hoped that the intention was not to put the whole population under a periodical medical survey. The witnesses explained that they meant supervision only, this would not be compulsory, but as time went on insured persons would go to the doctor more frequently to talk over their illnesses and their health. Sir Alfred Watson remarked that with payment on a capitation basis there was nothing to prevent insurance practitioners now from devoting themselves to preventive health service if they chose.

With regard to the finance of their proposals, on which they had to face a lengthy fire of questions from Sir Alfred Watson from the actuarial point of view, the witnesses were of opinion that the present Government grant (two ninths) should be allocated to local health authorities as a nucleus to start a proper medical service, and that this should be supplemented from local rates and from other sources which do not appear to be specified. They saw no injustice in making a Government subsidized and rate aided benefit available only to persons below a certain income limit, it would amount merely to a form of indirect income tax. The insured persons' contributions and part of the contributions of employers should be left to the approved societies for the financing of cash benefits, but this should not be supplemented by Government contribution. They did not agree that if Government money was withdrawn the societies would be justified in claiming the withholding of Government control from their finance.

The total effect of these proposals would be to lift the medical service out of the Insurance Act, but that part of the service—certification mainly—which had to do with sickness and disablement benefit should be financed out of the moneys at the disposal of the approved societies. The cost of medical benefit, apart from certification, was almost met at present by the Government grant, and, no doubt, with a unified local service, there would be economies in administration, but the extensions contemplated would, of course, make necessary a call upon local rates. The witnesses believed that the advantages of medical benefit should be made available to dependants as far as possible, and to those to whom the Poor Law system at present applied. They did not presuppose a change in the system of remuneration of the profession. "We recognize definitely," said Dr Lyster, "that whole time salaried service is not practical politics in the mean time. The fact is that as nearly as good as one can get is probably the panel service. Otherwise, if one tries to impose any particular whole time service—although it has many attractions and one could do things possibly much more perfectly—the whole thing would topple down."

In reply to the Chairman (Sir Arthur Worley), Dr Lyster said that he looked forward to a great development of clinics under the scheme. Team work was only possible at clinics, and the ground it could cover was very large.

EVIDENCE OF THE TRADE UNIONS

Important evidence was submitted to the Commission on behalf of the National Association of Trade Union Approved Societies and it was stated that the witnesses were able to speak also for the General Council of the Trades Union Congress and the Executive Committee of the National Labour Party. The witnesses were Mr F Kershaw, J.P., Mr E Corbey, Mr G W Carter, and Mr G P Blizard.

The witnesses stated that, although they saw several defects in the approved society system, on a balance of considerations they desired that system to be retained. They did not think it practicable to recommend the abolition of approved societies

at the present time, mainly for the reason that the advocates of the change would find it difficult to present their case to the insured population, and so counter the agitation which would be aroused by the agents of the collecting societies and also by those who retained a pathetic belief in the necessity of maintaining the traditions of mutual thrift organizations. But the witnesses believed that a completely efficient co-ordination of all health services was impossible under the approved society system. As immediate recommendations they submitted that control by members of approved societies should be made more real, also that national valuation should take the place of approved society valuation, or, failing national valuation, that a national equalization fund should be created. They considered that the present system of segregating the insured population into valuation units seriously militated against the full development of the objects of the Act.

With regard to the categories of persons in insurance, they were of opinion that employment within the meaning of the Act should commence at the statutory school leaving age instead of 16 years, that the income limit for persons in insurance should be raised to £350 a year, and that the provision for exempting persons with a private income of £26 a year should be repealed.

Coming to the large question of medical benefit, the witnesses agreed that the medical profession as a whole had rendered competent and conscientious service to insured persons. Such criticisms as might be made were directed, not against insurance practitioners as such, but rather against the defects and limitations of the system. The limitations of the present range of service were a grave defect. The collective maximum skill of medical practitioners should be at the disposal of insured persons rather than the minimum skill of one individual practitioner. It was an anomaly that specialist treatment should be provided only when a person was a hospital inpatient. On the character of the medical services in general the following passages took place between the Chairman of the Commission (Lord Lawrence of Kingsgate) and the leading witness (Mr Kershaw):

You are of opinion that the medical profession as a whole has rendered competent and conscientious service to insured persons?—We do not say that the malpractices of a few do not warrant a condemnation of the whole. We desire however to emphasize that we mean competent and conscientious service within the limits of the present range of service.

And speaking for over a million insured persons in our great industrial centres you do not think there is anything in the allegations sometimes made in the press and elsewhere that the panel service is inferior to that given in private practice by the general practitioner?—We cannot admit that there is nothing in the allegations. We believe that whether or not a limitation is imposed by individual medical men in practice the limitations imposed by the regulations and terms of service quite naturally will give the impression that private patients get a more complete service than panel patients.

Do you suggest that each individual insurance practitioner should be required to render to any insured person on his list the full extent of medical service which he is competent to render?—Yes.

Would such a requirement be reasonable under a uniform capitation rate of payment, and, if not, on what basis do you suggest that payment should be made?—We suggest that the method of overcoming the difficulty of fixing an equitable payment in all cases is one for the medical profession to solve. An equitable flat rate for an unrestricted range of service should be fixed. We cannot agree that the present capitation fee is equitable in all cases, but as laymen we cannot judge of the professional standards of medical men.

With regard to the size of practitioners' lists, the maximum number of insured persons allowed to a practitioner should bear some relevance to the extent of his private practice. The term "medical benefit" should include everything that medical and surgical science could command for the prevention and cure of sickness. It should include consultant and specialist advice and treatment, dental treatment, and hospital and convalescent home treatment and nursing. Medical benefit should be extended to wives and dependants, and should include treatment and attendance before, during, and after confinement. The witnesses also made some recommendations for increased sickness and disablement benefit. Asked in what order of priority the witnesses would place these extensions supposing that on account of the cost involved it was not possible to have them all at once, Mr Kershaw gave the following order:

- 1 Extension of scope of medical benefit
- 2 Extension of medical benefit to dependants
- 3 Full provision for maternity
- 4 Medical attendance at confinement
- 5 Payment of full benefit during illness
- 6 Increase in rate of sickness benefit

He added that the association took the view that the future medical service should make available to the whole population, irrespective of age or wealth, all that medical surgical science could provide, and that the cost should be borne by rates and taxes in a manner similar to that of education and other public

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It was admitted, however, that the nation was probably not ready for this development, nor was it clear that the medical profession would undertake whole-time State service. Payment of the doctor by salary on a whole-time basis as the servant of the local authority was not an essential part of their scheme. Asked if the suggestion behind this was that a whole-time salaried man did not give as good service as the man who was paid by results, Mr. Kerishaw replied:

The objections to a State service are usually illogical and based upon an inadequate study of the subject. We submit that the history and traditions of the medical profession show that it stands out as one in which devotion to duty to science and to public welfare takes first place. We cannot agree that the make-up of medical men would be transformed if they became public servants instead of the servants of the public. We would refer the opponents to the services of the existing public medical officers. It would be proper to observe also that this change would be part only of a very much greater change in which are incorporated opportunities for medical study and research which are denied the average practitioner to-day.

On the question of hospitals the witnesses repeated the policy of the Labour party on this subject, and a number of other administrative points were put forward including a suggestion by the witnesses that Insurance Committees should be reconstituted on a broader representative basis, to bring in every interest directly associated with public health and medical services and should be renamed health committees or medical services committees.

THE PROBLEM OF THE TUBERCULOUS INSURED PERSON

Sir Henry Gauvain and Dr. G. Lissart Cox submitted evidence on behalf of the Joint Tuberculosis Council, a body which they stated, represented the collective views of tuberculous medical officers, medical superintendents of sanatoriums and other members of the profession engaged in the special treatment of tuberculosis.

The suggestion which the council urged upon the Commission was that the period of sickness benefit should be expiable or extension in the case of tuberculous persons. The present limit of twenty-six weeks had led to the interruption of treatment and a premature return to work. The council was also of opinion that sickness and disablement benefit should continue to be paid, of course at a diminished rate, during part-time employment in the case of tuberculous persons. Such a scheme would assist the gradual return of such persons to full economic employment when their health permitted.

Asked what extension of sickness benefit the council had in mind, Dr. Lissart Cox said that ideally it would be for as long as the patient required it, but a definite step for and would be to extend the full benefit from twenty-six to fifty-two weeks, and, if possible, to allow half benefit for another fifty-two weeks. In reply to a question as to what the council thought of the Papworth scheme as a basis for wider colonization Dr. Cox said that the Papworth experiment was a very real success, but it only settled a fraction of the men—he believed about 25 per cent—who in the first place went to the institution. Moreover, it depended for its success upon the genius of Dr. Varrier Jones, a man of excellent business ability and it was under private management, with no difficulties with regard to public finance. He doubted whether it could be copied throughout the country.

Dr. Lissart Cox admitted that the payment of part benefit in the case of various illnesses would be administratively very difficult, but he thought that tuberculosis exceptionally called for some such scheme on the ground that it was a long chronic disease that in a large number of cases the patient got better and then graduated to work of a light kind was actually part of the medical treatment of such patients. Mrs. Harrison Bell said that her knowledge of employers did not lead her to expect that they would be likely to attempt a reorganization of their part of their industry to provide for these people. Sir Henry Gauvain replied that that might be true of many employers, but it did not necessarily apply to all.

Further evidence with regard to the Papworth scheme was submitted by Dr. P. C. Varrier Jones, medical adviser to the Cambridgeshire Tuberculosis After-care Association and Mr. Bunnell, a member of the committee of management. The special point of this evidence also was to urge the need for modified sickness benefit in the case of tuberculous insured persons on their discharge from sanatoriums to take up part-time employment. The witnesses considered that one of the best safeguards against abuse would be the tuberculous village settlement like the one at Papworth, where medically graded persons were employed and a resident medical officer exercised supervision. Even in cases not covered by the village settlement the tuberculous officer who had quite a different relation to these patients from the ordinary medical attendant would prevent possible abuses. With more eradication of employment tuberculous patients might return in time to a fully self-

supporting position, meanwhile some form of subsidy to bring their economic earnings up to the level of a living wage was very desirable, and if they were in the sheltered employment of a settlement such subsidy might be regarded as a premium for insurance against the infection of the community by the return of the infected person to ordinary employment.

Dr. Varrier Jones, at the request of the Commission described in detail the organization and financial arrangements of the Papworth settlement. The industries were launched under philanthropic auspices; they were not a commercial proposition, because these people suffering from disease could not work at full efficiency, and the consequent lowering of output made commercial profits impossible. The concern remained solvent because no interest had to be paid on capital and there were no directors' fees, but obviously the conditions could not obtain in industry generally. Hence the need for the continuance of a modified sickness benefit on discharge from sanatoriums. The witnesses also explained the need for certain modifications in the rules which govern the payment of sickness benefit to insured persons, without dependants, while under treatment in residential institutions.

Mr. C. H. Walmisley, chairman of the Public Health Committee of the London County Council, gave evidence in elaboration of a resolution passed by the council that grants should be made from insurance funds in aid of approved work centres at which post-sanatorium cases could be employed under the supervision of the tuberculous officer. That the statutory maximum period of sickness benefit should be extended in the case of tuberculous persons and that allowances should be made from the funds to tuberculous insured patients capable of part-time but incapable of whole-time work. The Public Health Committee was also of opinion that approved societies surplusage might be devoted in part to benefits in kind, including financial aid, for tuberculous insured persons on a similar basis to the provision made for ex-service men by the British Red Cross and United Services Fund.

Correspondence

Wages and Tuberculosis

SIR,—At the Annual Representative Meeting of 1921 I submitted that the high tide of wages was probably turning and that 1923 or 1924 would see a rise in the phthisis mortality. Sir George Newman's report shows that for 1924 this was true, and in attributing it to unemployment he says in a circuitous way what I said plainly as a warning. Four correct forecasts since 1911 surely in logic throw the burden of proof on opponents when I say, as with growing confidence I do say, that the Insurance Act was the last and deciding factor in the change from an almost stationary into a rising rate, just as freeing the board schools may have been the final blow to put the brake in 1896 on a rapidly falling rate. I know no country where a rapid fall in mortality is not preceded by a rising wage, or where a falling wage rate has not resulted, according to depth of fall in a slackened decrease or an increase in mortality, the Act has depressed wages. The rise in 1924 is serious, mainly because it marks the turning point the rate will probably rise slowly up to 1929-30, when Mr. Churchill's budget will meet its response in a formidable total of deaths. The Association seems to have buried its boots. The preface to the evidence before the Commission states that the Act is not even probably the best way to secure national health. But after this sop to uneasy conscience the evidence is concerned wholly with extension of the principle found wanting. You Sir have acknowledged in a leader that it is just to say that in 1896 we had reason to expect that phthisis would by now have become a negligible item in the national mortality. It was then plainly being prevented it has ceased to be prevented, except for the break due to the high wages during and shortly after the war. That from 1896 to 1924 very many thousands of lives have been sacrificed to the fetish of State collectivism is not a theory, but an exercise in arithmetic. Yet it is but a type disease—an index of malnutrition on the national scale. How long is the Association to acquiesce in this sacrifice to a policy, and helplessly to watch the State render nugatory a great part of the advance in treatment? I have been a member and a member jealous for the Act for a long time. I have felt ashamed when in 1923, as in 1912 at meetings to discuss the Act I was forbidden to allude to its national bearing to hear the Annual Representative Meeting spend hours in debating how at the supreme crisis in our history to add to the already staggering national burden while it turned down contemptuously the single scheme proposed to lighten it. I confess to an anxiety to see even yet, the Association take a lead in a matter profoundly affecting the future of England. The economic aspect is important. The Commission was prepared to discuss it with the Association.

B G M BASKETT

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National Insurance.

ROYAL COMMISSION ON NATIONAL HEALTH
INSURANCEEVIDENCE OF THE LONDON INSURANCE
COMMITTEE

MR. HENRY LESSER, vice chairman of the London Insurance Committee, gave evidence on behalf of that body. His committee recommended that the medical service under the Act should be extended, and a complete general practitioner service be made available to insured persons. The treatment to which an insured person was entitled should not be limited by a formal definition of medical service but should include all such treatment as an insurance practitioner was able to provide, the insured person should be required to pay a fee only if it was necessary for him to consult a specialist as such. Professor Gray said that this plan would be open to the objection that a practitioner with special skill in some particular direction would be unduly called upon by one kind of patient, this might discourage practitioners with some specialist knowledge from going on the panel.

The London Insurance Committee also urged that it should be empowered, after consultation with the Panel Committee to reject the application of a practitioner for admission to the medical list, subject to appeal by the practitioner to the Minister of Health. It should not be obligatory on the committee to state to the practitioner the ground of its refusal but such ground would have to be disclosed under privileged conditions to the Minister in the event of an appeal. Professor Gray pointed out that this would put the Minister in an extremely delicate position, he would be a target for the press if he could be represented as having turned down a doctor against whom nothing could be said. Mr. Lesser said that cases of this kind occasionally arose in which doctors who had been found to be undesirable persons (apart from medical skill) in their own locality migrated to London to avoid unpleasant consequences and in London were more or less concealed. If such a doctor asked to go on the medical list the Insurance Committee at present was practically bound to admit him. Again there were doctors who were in senile decay or suffered from physical infirmities which prevented the efficient carrying on of their practices, and it was desirable here also that the Insurance Committee should have the power to reject. Sir Arthur Worley suggested that the onus might be thrown more on the medical side—that the Insurance Committee should admit subject to recommendation of the Panel Committee. In the opinion of the committee the maximum number of insured persons to whom a doctor was permitted to include in his list should be reduced universally to a figure below 2,500. No difficulty would arise in London from such limitation. Mr. Lesser also thought that the Minister should define the distance away from his surgery at which a practitioner should be permitted to live. There were several cases in London in which a practitioner lived say at Bromley or Kew, and practised at Stepney or Bermondsey. The number of practitioners in London who did not reside at their surgeries was 531, and in many cases there was no telephonic communication.

During the period 1913-24 the number of complaints against practitioners substantiated by the Medical Service Subcommittee was 550 and the number not substantiated 464. In 18 cases the committee made a representation that the continuance

of a practitioner on the medical list would be prejudicial to the efficiency of the service in 7 of these cases the name was removed and in the others a fine was imposed. The committee was in favour of the time limit for complaints being extended from six weeks to three months for insured persons were often unaware that they must give notice within a certain period from the date of the incident. Power should also be given to the subcommittee to require witnesses to give evidence on oath. In the case of an appeal by the practitioner costs should be awarded to follow the result of the appeal. Mr. Lesser touched on two recent cases in which the London Insurance Committee had been concerned in disciplinary action against doctors. He said: "We should like to make it clear that the issue here is not the ordinary common law issue of negligence but it is whether or not the doctor has conformed to his terms of service, and it is on that ground that the fine is imposed." In reply to a question, Mr. Lesser said that his committee had no evidence to show that the general practitioner service in London generally was inferior; it was fair and an improving one. The limelight is put on to the cases by the London press whenever they get a chance. The panel service is a favourite stunt for London newspapers, and while there may be every justification for their comments in a particular case it is very unfortunate if the impression gets abroad that it is anything like general.

The committee favoured the principle of statutory dental benefit but thought it desirable that further experience should be obtained as to the probable ultimate cost by a continuance of the present administration of dental benefit as an additional benefit through the approved societies. Another recommendation was that the hospital medical service should be coordinated with the general practitioner treatment of insured persons, so that a medical record of a particular patient in which there was now often a hiatus corresponding to his period in hospital, might be made complete.

VENEREAL DISEASES AND NATIONAL INSURANCE

Evidence on behalf of the British Social Hygiene Council (until recently the National Council for Combating Venereal Diseases) was submitted by Mr. E. B. Turner, F.R.C.S., chairman of the executive committee. Dr. Otto May, honorary medical secretary and other officers. The council asked for the amendment of Section 26 of the Act so as to make it possible for approved societies or Insurance Committees to make subscriptions or donations to societies or other organizations approved by the Ministry of Health which are engaged in medical research or the combating or amelioration of disease. It was urged that the economic consequences of venereal diseases were often concealed from approved societies owing to the fact that these diseases in their early stages were rarely incapacitating but that a very large proportion of disabling illness was due to this cause.

Dr. Otto May submitted in tabular form the experience of a large group of approved societies of which he is consulting medical officer. In these societies with an approximate membership of just over 3,000,000 the cost arising from incapacity due to venereal diseases during the six months July to December 1924 was given as £3,015. These cases included however referred only to group in which venereal disease was almost certainly the origin of the disability. This did not include the very large number of cases of heart disease, other headngs—such as rheumatism, arthritis, heart disease and so forth—in which it was impossible to estimate what

With regard to the men managing these institutions, Dr Hamilton stated (according to the official report of his evidence) There are very few genuine working men amongst them. They are mostly little tradespeople. They are regular tyrants—the same class of men as you get amongst the deacons in the Nonconformists. Special complaint was made of the Friendly Societies Medical Alliance which, it was stated had always ignored any representation help or advice from the medical officers on any matters presented to the Minister.

Its dominant policy is a sinister one to the medical profession, the enslavement of medical men under whole time contracts with penal clauses against any attempt to start in practice in the neighbourhood. Certain recommendations were put forward if the institutions are to be continued, the medical officers should be liable to answer personally to any complaint to the duly constituted tribunal for insurance practitioners, no agreement should be valid which in any way infringed the right of insured persons to free choice of doctor in the event of a medical officer leaving the institution and the capitation payments to institutions should be of the same kind and made at the same time as the payments to insurance practitioners generally. One member of the Commission pointed out that the severe criticisms levelled against the institutions by the witnesses seemed to be an argument for their abolition. Dr Holmes replied that he had made use of the expression.

They are to be continued because he had regard to the somewhat overwhelming importance generally given to what the British Medical Association recommended. There was no doubt that a considerable number of these institutions were not worth retaining but there were others—a few—which were excellent. A special exception was made in the case of the Coventry Provident Institution which Dr Holmes said was entirely different from other so-called medical societies or medical aid institutions, there the doctors always had a voice in the management. Another consideration in favour of retention was that if dependants were brought into national insurance the institutions would be specially favourably placed on account of their generous waiting room and other accommodation whereas ordinary medical men who had large insurance practices would find themselves in a difficulty. It was complained that some of the institutions were very expensively administered with a paid committee running into forty or more members. What the union wanted was that the medical officers might be taken from the control of the secretaries and committees of the institutions and put in a position similar to that of other insurance practitioners.

The contention by the witnesses that in an institution the expense of equipment and so forth was greater than in private practice was taken up by Professor Cray who asked whether there was not something to be said on the other side. With three or four doctors working together in one building was there no economy with regard to apparatus, waiting rooms and so forth as compared with a similar number of doctors working in separate houses. Dr Holmes replied that the experience of those for whom he spoke was quite the opposite whereupon Professor Cray asked why the medical profession should be the only kind of trade in which apparently on this evidence the expenses became heavier with a large scale of production. Dr Holmes who is connected with the Coventry Dispensary said that he had—what was rare among medical officers—in ordinary insurance practice and he found that the payment in the case of the institution insured patients worked out at something like 1s 7d a head less than in the case of his outside insurance patients. The Chairman asked whether the lessened working expenses in connexion with institution patients had been taken into account but no direct answer was given.

The Friendly Societies Medical Alliance—a lay body—urged in its evidence that the embargo on new institutions should be removed that the payments to them should be on the full capitation and drug tariff rates that the insured members should enjoy the same freedom of transfer as the ordinary insured person that representation on Insurance Committees should be granted and that these institutions should receive their proper share of the capitation fees for unallocated persons. Asked what was the relation between the Medical Alliance and the British Medical Association the witnesses for the alliance said that it was not unfriendly. The medical officers at many institutions were members of the Association, and were consulted by the Association's local representatives. There was only one Warning Notice relating to an institution. When the same question was put to the witnesses for the Medical Officers Union Dr Roberts replied that the attitude of the British Medical Association was very hostile to the institutions and to the officers in them though not all the institutions were blacklisted.

The case of the Luton Medical Institute was mentioned by both sets of witnesses. The Medical Alliance said that at Luton there was now a membership of 6,000 insured persons, that three whole time medical officers were in the service of the

institution that there were three surgeries open morning, afternoon, and evening and that two motor cars and chauffeurs were provided for the service of the medical staff. The witnesses for the Medical Officers Union on the other hand criticized the Luton institution, suggesting that it had made savings to the point of off of its mortgage at the expense of the doctors whom it employed. The Chairman said That is rather put up to us as a good institution, to which Dr Hamilton replied If you trace its origin you will see that it was not such a good one. It was rather fatal to offend the secretaries.

DENTAL BENEFIT

THE BRITISH SOCIETY OF DENTAL SURGEONS

Sir Frank Colver and Dr E. W. Fish gave evidence on behalf of the British Society of Dental Surgeons, a body which was founded to represent only qualified dentists at a time when the British Dental Association proposed to admit to its membership those known as dentists 1921. (The question of the admission of these dentists to the association has now been postponed for two years.)

The British Society of Dental Surgeons urged that dental benefit should be made statutory. Money should be allocated in the first place for the education of the public in prevention. Sir Frank Colver said that a widespread system of education from childhood to adult age would get rid of 85 per cent of dental disease. Dental benefit proper should consist of extraction of tender or hopelessly infected teeth under suitable anaesthetics and the scaling of the remainder. A service restricted in this way would be directed solely towards the eradication of infection from the mouth and would not be concerned with aesthetic details. The witnesses believed that a capitation fee of 3s per insured person would cover the cost of this treatment with an additional 6d for administration and propaganda, but of course such a fee would have to be open to revision at an early date. The capitation fee appeared to them to be the most satisfactory form of payment. (Witnesses on behalf of the British Dental Association had previously stated that in their view a capitation fee must be ruled out owing to the absence of data on which it could be assessed.) Other matters urged by the society were the principle of free choice of dentist, and the need for the addition to the medical capitation fee of a sum to make it possible for patients to obtain the services of their insurance practitioners for the administration of anaesthetics. The first extension of the scheme when funds permitted, should be to include in this partial scheme the children of insured persons. Later extensions might be the provision of fillings for children and adults, and finally the supply of dentures necessary for the patient's health. Some members of the Commission appeared to challenge the scheme on the ground of its restricted character, and asked whether the provision of dentures could rightly be regarded as only an aesthetic detail without any important effect on health. Asked if reasonable dentures, in addition to other services, could not be provided for a capitation fee of 5s, Dr Fish replied that this was not possible. Sir John Anderson pointed out that in the estimates which the witness had placed before the Commission no allowance had been made for filling, and he asked whether it was conceivable that a national scheme could be recommended to the insured public which while making provision for extractions and scaling made none for fillings. Dr Fish replied that he thought a scheme capable of being reasonably financed could be drawn up for extractions and scaling and that this would interest the whole public and incidentally educate them and with the consequent improvement of health the number of fillings would be small and capable of being dealt with. But to attempt to cope with the question of fillings at present would be impossible unless you had the coffers of Croesus.

THE IVORY CROSS

Evidence was tendered by Mr W. J. Mellersh and other officers on behalf of the Ivory Cross society founded in 1914 for the supply of dental treatment to soldiers, sailors and recruits. Since its organization it had dealt with 106,000 dental cases. The methods which had been found most satisfactory in ensuring the supply of thoroughly efficient dental treatment consisted in the first place of the appointment of a committee of surgeon dentists who selected from a roll a surgeon to deal with each case presented for treatment (in practice the nearest available practitioner). To this practitioner a dental chart for diagnosis was sent and was returned by him after he had seen the patient showing the treatment he recommended. A dental committee consisting of at least six dental surgeons of experience then examined and criticized this chart and if they thought well, issued a certificate authorizing treatment at the fees allowed. In the view of the witnesses dental benefit could be made available for the whole insured population without utilizing the so-called dentists 1921, provided that all surgeon dentists were willing to take up insurance work.

Association Notices

BRANCH AND DIVISION MEETINGS TO BE HELD—The
and West Hants Branch West Dorset Division will be a secret one,
and West Dorset Division will be held at Milton
on Wednesday, 28th inst. at 7.30 p.m. and a visit will
be made to the (celebrated

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These list of patients is compiled from our advertisement columns where full particulars will be found. To insert notice in this column advertisements must be received not later than the first post on the day morning.

APPOINTMENTS
MBCI II

column and advise
 post on the day morning

APPOINTMENTS

Carey, Norman B. M.D. Liverpool M.R.C.I. Honorary Physician Pwll
 Southern Hospital, Liverpool — 11 1 Ander on M.B. Ch.B. F.R.C.S. for th
 City and County of Liverpool — 11 1 Ander on M.B. Ch.B. F.R.C.S. for th
 Hospital for the Blind, Bedford R.S. Canham T. 1 Muir F.R.C.S.
 for the South District West Riding of Yorkshire T. 1 Muir F.R.C.S.
 and St. John's Hospital for the Blind, District North Riding of
 Yorkshire

Association

British Medical Association
OFFICES BRITISH MEDICAL ASSOCIATION HOUSE
111 STOCK SQUARE W.C.1

OFFICES BIRMINGHAM
2111 STOCK SQUARE

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LONDON LITERARY MEDICAL JOURNAL (Lecturers, Medical Officers, etc.) 16, Abchurch Lane, London, E.C. 4

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POST GRADUATE COURSES AND LECTURES

West London Hospital Postgraduate Course Hammer-smith W—Mon
11 am Surgical Ward Th— 12 noon Chest Cases Wed 11 am
Medical Ward Thurs 2 p.m. Surgical Ward Fri 2 p.m. Thral
Noe and Ear Department Sat 10 am Medical Practice of Children
Daily 10 am to 6 pm In and Out patient
Operation Special Department Sat 10 am to 11 am
Crickow Institute of Medical Studies—At Royal Hospital for
Children Di 2 of Children daily except Sat 9.15 to 11 am
Chancery Lane Infirmary Daily Out patients 1 p.m. Lecture Demon
Chancery Lane 4 p.m.

MARRIAGES AND DEATHS

Deaths Marriages

BIRTHS, MARRIAGES AND DEATHS
 respecting announcement of Births, Marriages, and Deaths should be forwarded with the day's paper to the Editor of the Daily Mail, 4 p.m.

BIRTHS, MARRIAGES AND DEATHS
The charge for inserting an announcement of Births, Marriages and Deaths is 6s which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue

BIRTHS
 ... of Cromwell Crescent and S1 a daughter
 ... Rives to Dr ...

BIRTHS

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DEAD REACTS

Mrs. Thompson On August 19th at St. Watford Ws Henry George
 Venn On August 19th at St. Watford Ws Henry George
 W.D. Thornborough House Watford Ws Henry George
 MAIRIACRS
 Cassing-Turner On August 19th at St. Saviour Ws Henry George
 Richmond Gunning I.R.C.I. M.R.C.S. I.D.S.Fng of Wm of St. 1
 W.I. elder son of Mr and Mrs. Conning of Rowland Castle Hamp hire
 to Ruth, Helan (wenth only daughter of Mr and Mrs Turton of
 Tintagel Cornwall
 Cowell-Sutton On August 22nd at Bideford North Devon Dr Stuart
 1 Cowell M.A. M.B. M.R.C.I. of 2 Wostenholm Road Sheffield
 May Lendole-Smith M.B. elder daughter of Mr and Mrs Cecil Smith
 of Ink Inn Ws toward 9th at the Church of St James the Crester
 Davis-Simpson On July 9th at M.B. B.S. younger son of the Rev
 Leicester Dwyer in Danu M.B. B.S. Montgomery hire to Lucy Herbert
 and Mrs D.C. Davies Machelneth daughter of Mr and Mrs Carbert
 Simpson Leicester M.B. Ch.B. elder daughter of Mr and Mrs Carbert
 DEATHS
 Simpson Leicester at 11 The Circus Bath Donald Acklan
 Simpson Leicester at 11 The Circus Bath Griffiths Aptom
 Simpson Leicester at 11 The Circus Bath Griffiths Aptom

DEATHS

Wm Simpson in the
 Leicester David in the
 and the D & Davies Macmillan
 Simpson M B Ch B elder daughter of
 Simpson Leicester

DEATHS
 at 11 The Circus Bath Donald Ackland
 aged 50 years Griffiths Apthomas
 Colwyn Day his band of 12

VICKLAND—On August 17th at 11 The Circus Bath Donald Ackland
 M R C S L R C I D S B N aged 50 years Griffiths Apthomas
 Ayrshire—On August 4th at Stanhope Colwyn Day his band of 12
 M B C M D late of Oldham the belved James Stewart
 Apthomas—On August 24th suddenly James Stewart
 of 50 Northumberland Street Edinburgh
 Fowler M D I R C P F of 1st Sturt Fowler M D George Iowa
 (aged 51) son of the late lame Sturt Fowler M D wife of
 Demerara

JOHNSON—On July 24th at 5 St Martin's Place W C 2 six day after
 the birth of her daughter Isabella Johnston M R C S L R C I D S B N
 the Rev Hugh John ton at F roadie Torquay William Odell M D

OMAH—On August 21st at F roadie Torquay William Odell M D
 T R C S aged 74

Parish of St Ianaras in the County of London

VACANCIES

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BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, SEPTEMBER 12TH 1925

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British Medical Association

CURRENT NOTES

Badges for Branch and Division Officers

It will be remembered that the Council has approved the idea of the provision of badges for officers of Branches and Divisions of the Association, not only as a means of distinguishing these officers at meetings which are attended by members who do not know them, but in the belief that such badges will add to the dignity of the office. It is hoped that officers' badges will be provided either by a voluntary subscription from members of the Association units, or as a gift from previous or present holders of offices. The badges are now available at prices which vary in accordance with the material of which they are made. Particulars may be obtained from the Financial Secretary, British Medical Association House, Tavistock Square, London, W.C.1.

Care of Certificate Books

The Ministry of Health has issued to Insurance Committees a circular stating that a case has recently come to light in which sickness benefit was fraudulently obtained over a long period by an insured person by means of forged medical certificates, the blank forms having apparently been stolen from the doctor's consulting room. The Ministry's Insurance Committees to draw the attention of practitioners to the importance of certificate books being kept under conditions which will prevent the blank forms falling into the hands of unauthorized persons. The warning applies, of course, not only to insurance practitioners and to insurance certificates, but to all practitioners and their certificates, and it would be well if all doctors who keep any kind of printed form of certificate would see that such forms are not kept in a place where they can easily be appropriated and used by unauthorized persons.

Treasurer's Cup Golf Competition

The attention of Division secretaries and members of the Association generally is drawn to the rules and regulations appearing in the *SUPPLEMENT* of August 22nd, 1925, regarding the Treasurer's Cup golf competition, from which it will be seen that the first stage of the competition begins on October 1st, by which date all intending entrants must notify their intention to the secretary of the local Division.

THE THERAPEUTIC SUBSTANCES ACT

THE Therapeutic Substances Act, which received the Royal Assent on August 7th, is intended to provide for the effective control of the quality and the authenticity of such therapeutic substances as cannot be adequately tested by direct chemical means. In such substances three groups may be distinguished. The first includes the preparations described in the U.S.A. Regulations of 1919 as "biologic products"—namely, vaccines, serums, toxins, antitoxins, and antigens, the second the group of synthetic substances comprising salvarsin and its analogues, and the third consists of insulin and preparations of the pituitary gland intended for use by injection. Provision is, however, made for the addition to the schedule of further substances.

The position in respect of these preparations has hitherto been increasingly unsatisfactory. The standards of the *British Pharmacopoeia*, based solely upon physical and chemical tests, are inapplicable to the substances included in the first two groups, and there is a general feeling that a number of products actually included in the *British Pharmacopoeia*, such as digitalis, strophanthus, cranialis indica, and ergot, require the additional safeguard of a physiological standard. In the case of the first group in particular the only guarantee of potency and authenticity available hitherto has been the name of the supplying firm and while the reputation of many British manufacturers is deservedly high, it must not be forgotten that the law demands from the individual manufacturer no proof of competency, and that the free import of these products from abroad is an additional risk.

The difficulty of the position was recognized by the General Medical Council as early as 1909, when the question of the edition of the *British Pharmacopoeia* published in 1914 was under consideration. At that time the President of the General Medical Council was authorized by the Pharmaceutical Committee to approach the Government with a suggestion for a public institution for the standardization of potent drugs and serums. No action was taken on these representations at the time, but when Dr. Addison became Minister of Health he appointed a departmental committee under the chairmanship of Sir Macdonald Chilmead to consider and advise upon the legislative and administrative measures to be taken for the effective control of the quality and authenticity of such therapeutic substances offered for sale to the public as cannot be tested adequately by direct chemical means. The committee examined a number of witnesses, including representatives not only of scientific bodies, but of the chief

firms engaged in the manufacture and sale of these preparations, and reviewed the systems of control adopted in America and on the Continent. Its inquiries showed that in the majority of European countries and in the United States official standards had been adopted and strict control was already in force, while British manufacturers were compelled in cases requiring biological assay to adopt foreign standards. A further result of the absence of control in this country was that products rejected as unsatisfactory by the competent authority in the country of origin could be sold freely in the United Kingdom, in competition with the home products.

The witnesses examined showed a remarkable degree of unanimity as to the nature of the problem and the method of its solution. Three things were clearly necessary for definition of standards, the provision of machinery for ensuring rigid adherence to those standards, and protection against the import of inferior foreign products. The committee reported in December, 1920, outlining a scheme for ensuring the desired result and bills drawn on the lines of its recommendations were introduced in the House of Lords in 1923 and 1924. Notwithstanding the uncontroversial nature of the measure and the general support it received from all the interests affected it failed to reach the House of Commons. Meanwhile the appropriate department of the League of Nations had gone into the general question, and the League had recommended its constituents to take steps which, in the absence of the imposition of adequate standards in this country, would exclude British products of this class from the European market. This fact doubtless contributed to the better success of the bill introduced by Lord Onslow last March.

The Act, which applies to England, Scotland, and Northern Ireland, seeks to provide for the definition of standards and the control of manufacture and import. The manufacture of the scheduled substances is to be conducted only by persons and on premises specially licensed for the purpose, and under such conditions as may be laid down by the licensing authority. The licensee may be laid down by the Act may at any time be suspended or issued under the Act may at any time be suspended or revoked subject to appeal to the courts. The licensing authority under the Act is for England, the Minister of Health, for Scotland, the Secretary of State for Scotland, and for Northern Ireland, the Minister for Home Affairs. The task of securing the desired uniformity is entrusted to a Joint Committee, consisting of the three authorities, named, or deputies appointed by them for the purpose, and acting after consultation with an expert advisory committee, consisting of one member appointed by the Minister of Health (chairman) and one member each appointed by the Scottish Board of Health, the Minister for Home Affairs of Northern Ireland, the Council of the Pharmaceutical Society of Great Britain, the Council of the Institute of Chemistry of Great Britain and Ireland, and the British Medical Association.

The Joint Committee is empowered to make regulations prescribing the standard of strength, quality, and purity of any substance to which the Act applies, the tests to be used for determining whether that standard has been attained, the units of standardization to be employed, the form of the licences, and the conditions of their issue. These conditions include provision for the inspection of premises, plant, and processes of manufacture, and the taking of samples. The Committee may also, by regulation, add to the schedule of which cannot be adequately tested by purely chemical means, an important proviso in view of the very narrow limits of the existing schedule. All imports must be consigned to a person licensed for the purpose by the appropriate authority, and must in addition satisfy the authority that they comply with the standards in force for the home product. The effective application of this restriction is provided for under the terms of the Customs Consolidation Acts.

The Joint Committee is further empowered to require that if any of these substances is advertised for sale as a proprietary medicine or contained in any such medicine a name descriptive of its true nature and origin shall

appear on the label, that the date of manufacture shall be stated on all containers, that no such substance shall be sold after the expiration of a given period from the date of its manufacture and that containers of a certain character, labelled in accordance with the regulations, shall be used.

At three points care has been taken to restrict the application of the Act. In the first place, the medical practitioner has been ensured full freedom to prepare any of these substances for the use of an individual patient. In the second, a provision is made for the issue of special licences to import to persons engaged in research, such licences permitting the import of experimental standards, and lastly, the Joint Committee is empowered to make regulations necessary to exclude from the application of the Act substances intended exclusively for veterinary use. Offences under the Act and Regulations will be punishable on summary conviction by fine not exceeding £100, or in the case of a second or third offence by imprisonment with or without hard labour, together with the forfeiture of any goods in connection with which the offence was committed, and, of course, revocation or suspension of licences where these have been granted.

It is intended that the work incidental to the determination of the required standards shall be carried out in the laboratory of the Medical Research Council and under its direction. The ordinary routine tests will be left to the individual manufacturers, but such control tests and such inspection of premises and processes of manufacture as may be thought necessary will be conducted by the Council's staff. Accordingly the expenses of administration will be borne on the vote for the Medical Research Council, and the policy adopted is thus made subject to periodical parliamentary review. All regulations under the Act will be laid before both Houses, and subject to modification or annulment under the ordinary procedure on presentation of an address by either House. The Act will be brought into operation by Order in Council not earlier than one and not later than two years from its original date.

SOUTH AFRICAN MEDICAL CONGRESS

The twentieth South African Medical Congress was held at Pietermaritzburg from July 6th to 11th, by the invitation of the Natal Inland Branch of the British Medical Association. The President of the Congress was Dr. D. Campbell Watt, president of the Natal Medical Council and a Vice-president of the British Medical Association. He was the general secretary of the Congress last year at Grahamstown. There were five sections, and presidents were not expected to give opening addresses, in their place a series of special introductions to the discussions was arranged. This has been the practice of the British Medical Association at its Annual Meetings for a good many years, and was followed at the South African Medical Congress at Johannesburg in 1912. The discussions were timed so as to avoid clashing with other sectional meetings, thus making it possible for every member of the Congress to be present.

PRESIDENTIAL ADDRESS

Dr. Campbell Watt referred to the previous South African Medical Congress in Pietermaritzburg twenty years before, and then discussed the subject of professional unity, illustrating his points by the example of co-ordination and unity elsewhere in nature. He said that the human body was rapidly becoming a miniature Westminster Abbey for the commemoration of the names of illustrious physicians and surgeons, such as Scrip's triangle, McBurney's point, Romberg's sign, and the Argill Robertson pupil were becoming so numerous that the body almost bristled with memorials. Although South Africa had long been notorious for its quack remedies, the legal position of medicine from the earliest settlement had always been that medical practice without a preliminary education and licensing should be prevented. He recalled the fact that in and prior to the fifteenth century unlicensed practitioners had been liable to excommunication by the Church, and that in 1511 a civil law was passed

prohibiting the practice of all quacks, though it was shortly afterwards repealed in consequence of popular clamour. The quack was much beloved by the general public, and even now there were to be found not a few otherwise intelligent people moving heaven and earth to obtain recognition for practitioners of strange methods from the United States and other countries. It was difficult to educate many members of the public, who were too prone to be influenced by the unorthodox, mystery, and copious advertising of new cures, despite the willingness of the medical profession to investigate any new theory or any new method of treatment, and to adopt it if found beneficial. The State had extensively and necessarily committed itself to the recognition of the medical profession, as regards both the treatment and the prevention of disease. It, therefore, could not logically extend its recognition to any class of institution of which the doctrines and methods were fundamentally opposed to orthodox principles and practice. The medical profession was a great democracy, and ruled itself within certain wide limits laid down by the State, each practitioner being free to hold any theory he approved and to practise any method he considered advisable. The principle of unity in the profession was evinced by the establishment of many voluntary associations for the promotion of the science and art of medicine, and for schemes of benevolence and defence. The greatest and most powerful of such societies within the Empire was the British Medical Association, under whose auspices the Congress was being held. The Association was not comparable with a trade union, since a society could only be legally registered as a trade union if its main objects were the material interests of its members as workmen. In contradistinction to this the main objectives of medical institutions were the promotion of the welfare of humanity through the advancement of medical science and the maintenance of the honour of the profession, while the actual work performed by medical societies was almost entirely scientific in nature. In fact, the constitution of the Association expressly prohibited the support of any objective which would make the Association a trade union. Dr Campbell Watt pointed out that the principle of unity as applied to various occupations was exemplified by the formation of the "guilds" in the Middle Ages. These institutions had begun in England in the seventh century, and on the continent of Europe in the eighth century, though previously there had been trade corporations in the later Roman period, preceded by somewhat similar Greek and Roman institutions. With the rise of national as against civic authority in the sixteenth and seventeenth centuries these guilds began to decline in authority and importance, but notable survivals of the guilds of physicians, surgeons, and barber surgeons were to be seen in their lineal descendants the Royal College of Physicians of London, the Royal College of Surgeons of England, and the corresponding institutions of Scotland and Ireland. The medical guilds did not seem to have arisen until early in the fourteenth century, probably because for centuries prior to that time the practice of the art of healing lay chiefly in the hands of the clergy, although from time immemorial physicians and surgeons had existed apart from the priesthood. During the reign of the Dutch East India Company at the Cape the chief surgeon had had to certify the fitness of any person applying for leave to practise, and examinations were held from time to time. A Supreme Medical Committee was formed in 1807, and re-established in 1825, five years later a Colonial Medical Committee was appointed to examine applicants for a licence to practise. It imposed a penalty of £30 on any person practising without a licence. This ordinance was superseded in 1891 by the existing Medical and Pharmacy Act, under which was formed the Colonial Medical Council. In Natal a similar committee had been formed in 1850, and the Natal Medical Council was constituted in 1896. In the Transvaal it was not until 1881, under the British occupation, that medical practice was properly regulated by law, five years later the Republic appointed a Medical Committee of the South African Republic, and in 1904 the present Transvaal Medical Council was established. In the same year a Medical and Pharmacy Council of the Orange Free State was appointed. A Capetown Medical Society existed from

1828 to 1847, and besides the reading of scientific papers it drew up ethical rules, established a widows' and orphans' fund, and framed a tariff of fees, for a time it acted as a Medical Council and court of arbitration. In 1883 the South African Medical Association was formed, which in 1888 became the Western Province Branch of the British Medical Association. Since that time the Association had increased in members and prestige, until now it included nearly one-half of the practitioners of South Africa. The President appealed to the other smaller voluntary societies existing in various parts of the country to unite with the Association. He emphasized the principle that unity was strength, and concluded by pointing out the present need for strength and vigorous activity in all parts of the medical profession, medical congresses were a valuable means to such ends, and promoted fraternity, while affording full opportunities for the free discussion of scientific and professional problems.

INaugural Address

Sir John Dove-Wilson, Judge President of the Natal Division of the Supreme Court, delivered the opening address of the Congress which was entitled "Bench, Bri, and Medicine." He described the way in which the judicial courts and the medical profession were jointly concerned in the fulfilment of a high and onerous duty to society. It depended he said to a large extent on the guidance received from medical men whether the administration of the law resulted in justice. After illustrating the way in which medical practitioners were expected to co-operate the speaker explained what the law required of the medical witness in the great variety of cases in which his assistance was necessary. He then referred to the question of actions brought against medical practitioners and defined the underlying principles. After dealing with the difficult point of professional secrecy, he acknowledged the great debt owed by the law to medicine for its local co-operation.

SECTIONS

The five sections of the Congress were Medicine and Mental Hygiene, Surgery, Public Health, Special Subjects, and Obstetrics and Gynaecology. A discussion was held in the Medical Section on focal infection, and in the Surgical Section on the treatment of carcinoma of the breast. The Public Health discussion related to the public health aspects of the milk supply, and in the Special Subjects Section the work of the laboratory in relation to the practice of medicine was considered. The causation and prevention of foetal death was the primary subject in the Section of Obstetrics and Gynaecology.

BUSINESS MEETINGS

Business meetings were held on two days. An invitation from the local branches of the British Medical Association and the South African Medical Association to hold the next Congress at Pretoria was accepted after some discussion as to whether it was in accordance with the rules to accept an invitation from other than a Branch of the British Medical Association. Other matters considered were childhood welfare organization, the notification of arrested leprosy, the great need for district work in the obstetrical training of medical students and pupil midwives, and some problems relating to medical ethics.

ENTERTAINMENTS

A large number of receptions and excursions had been arranged, and visits were paid to the Howick Falls, the South African Paper Factory, the Natal Museum, and other places of interest. Various recreations, including golf and tennis tournaments, boating on the river, bowling, and croquet, were also provided. A popular lecture, which was a new feature of these Congress meetings, was delivered by Dr Shadeli Higgins, medical officer of health for the City of Capetown, who took as his subject "Public health in relation to social welfare." An interesting trades exhibition attracted much attention.

The *South African Medical Record*, in its issue of July 25th, gives an account of this Congress. In addition to publishing in full the pre-sidential and inaugural addresses, the issue includes the introductory speeches of the discussions in the Sections of Medicine and Obstetrics.

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, SEPTEMBER 19TH, 1925

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British Medical Association

CURRENT NOTES

The New House of the Association

MEMBERS in or visiting London are cordially invited to inspect the new House of the British Medical Association in Tavistock Square. On application to the porter at the gate arrangements will be made to show them round, together with any friends they may bring with them. Large accommodation is available while members are using the building.

The British Medical Association Charities Fund

An old member of the Association, who had arranged in his will some years ago to leave something to medical charities, has been led by the discussion which took place at the Annual Representative Meeting at Bath¹ to alter his dispositions so that the sum of £1,000 will be left at the disposal of the British Medical Association Charities Committee. The member called at the office to make inquiries, and, after coming to the decision that in this way his money would be best used in the interests of the profession and of the Association, he gave permission for his intention to be announced, in the hope that it might encourage others to do likewise.

Treasurer's Cup Golf Competition

The attention of Division secretaries and members of the Association generally is drawn to the rules and regulations appearing in the SUPPLEMENT of August 22nd 1925 (p. 93) regarding the Treasurer's Cup golf competition, from which it will be seen that the first stage of the competition begins on October 1st, by which date all intending entrants must notify their intention to the secretary of the local Division.

Assistant Medical Officer and School Medical Officer
Wigan

In the list of appointments appearing under the heading "Important Notice" in our advertising columns will be found the post of assistant medical officer and school medical officer to the county borough of Wigan. The advertisement for this appointment was tendered to the Journal and refused, because the corporation is only offering £500 per annum while requiring a high degree of

experience and competence. The appointed officer will have, *inter alia*, to do maternity and child welfare work, the medical inspection and treatment of school children, and certification and supervision of mental defectives. Candidates must have had special experience in diseases of women and children, obstetrics, and child welfare work, and the possession of a Diploma in Public Health and experience in refractions are stated to be desirable. It is earnestly to be hoped that practitioners possessing the necessary qualifications will, by refraining from applying for this post, assist the British Medical Association in its mission of improving the conditions of public health officers in this country. It must not be forgotten that the proportion of senior posts to junior in the public health service is such that only about one in five of those who enter the service can ever expect to reach a senior post, the salaries of which average between £800 and £1,000. Most of the junior officers are entering what is virtually a blind alley service, and therefore it is essential that the commencing salary should be a reasonable one.

Conference of Representatives of Local Medical and
Panel Committees

In connexion with the first Panel Conference to be held in the British Medical Association House, Tavistock Square, on Thursday, October 22nd next, the attention of honorary secretaries is drawn to the following dates:

September 21st Last date for receipt of motions for inclusion in Provisional Agenda of Conference.

September 30th Issue of Provisional Agenda of Conference which will include motions sent in by Committees and by the Insurance Acts Committee and be accompanied by the Insurance Acts Committee's annual report.

October 12th Last day for receipt of motions for inclusion in the Final Agenda.

October 15th Issue of Final Agenda.

Election of Direct Representatives upon Insurance
Acts Committee

It is desired to draw attention to the fact that nominations for the twenty-three direct representatives upon the Insurance Acts Committee for 1925-26 must be by Local Medical and Panel Committees as such, and must reach the Medical Secretary, British Medical Association House, Tavistock Square, W.C.1, on form M 2/1925-26 (copies of which will be furnished upon application) not later than the first post on October 12th, 1925. Nominations by Scottish County Panel Committees for four county panel representatives on the Scottish Sub-committee or the Insurance Acts Committee must be made on nomination paper M 3, and by Scottish Burgh Panel

¹ SUPPLEMENT August 1st 1925 (pp. 59-62)

Committees for four burgh representatives on the Scottish Sub-committee must be on nomination paper M 4, and must reach the Medical Secretary by the first post on October 12th.

An Oversea Opening

The Medical Secretary has been told of an opening in Newfoundland for a young, keen, and active doctor who would enjoy a life which the Medical Secretary's correspondent describes as a "rugged" one. Any medical man who feels attracted by the prospect is invited to write to the Medical Secretary for further particulars.

Meetings of Branches and Divisions

DORSET AND WEST HANTS BRANCH WEST DORSET DIVISION

The last meeting of this Division took place on September 9th. It was a social meeting to which members brought their friends of both sexes. The party which numbered between 60 and 70 met at Milton Abbey at 2.30 p.m. and inspected it by kind permission of Sir Eric Hambro and under the guidance of the Rev. H. Pentin, who had been Vicar of Milton for thirteen years. Afterwards the party proceeded through the grounds and climbed to St. Catherine's Chapel, which was also inspected. Later Abellingham Hall was visited and tea was provided there by the generosity of the owner Mr. G. Cochrane. After tea, members and their friends strolled round the beautiful house and gardens. A pleasant afternoon terminated at about 6.15 p.m.

YORKSHIRE BRANCH YORK DIVISION

A MEETING of the Division was held on August 26th in the York Medical Society's Room with Dr. J. G. Craig in the chair.

The HONORARY SECRETARY stated that the medical officer of health Dr. P. R. McNaught had drafted for publication a leaflet on cancer and had submitted it to the Executive Committee. A number of suggestions were made and accepted by the medical officer of health and the leaflet is amended and with the approval of the Committee. It was not intended to broadcast the leaflet but that it should be handed to people asking for advice. Dr. McNaught thanked the Division for its assistance.

Dr. H. E. KILG RAY, who acted as spokesman of a deputation to the Health Committee of York Corporation on the subject of hospital accommodation, reported that several individual cases had been gone into in detail and he thought some impression had been made. The Medical Officer of Health said that plans for extension of the fever hospital were being produced and that considerable improvement in accommodation would result particularly in the shape of a cubicle block for miscellaneous infectious disease.

The HONORARY SECRETARY reported on the presentation of a flag representing the Division for the decoration of the Great Hall in the Association's new house in London. He was instructed to use another circular asking the members who had not subscribed to the Flag Fund to do so.

Dr. PETER MACDONALD referred to the meeting of the Yorkshire Branch on September 26th and to the exhibition of human embryos (transparent) which he had seen at the Annual Meeting at Bath. He said the specimens were excellent. The Department of Embryology, University College, was appealing for further specimens of embryos, abortions, tubal pregnancies, etc. and he hoped members would forward any specimens which came into their hands. Dr. MacDonald then fully reported on the Annual Representative Meeting at Bath dealing more particularly with items of interest to the Division. In concluding Dr. MacDonald announced that he had been reappointed a member of the Insurance Acts Committee and of the Central Ethical Committee. In answer to Dr. MILLS Dr. MACDONALD stated that members who subscribed through the British Medical Association Charities Committee would be able to earmark amounts for various charities (national or local). In answer to Dr. LATH he expressed the opinion that it would be well for the Division to pass a resolution on the question of the payment of medical staffs of hospitals in respect of certain accident cases in the form recommended by the Council of the Association and after discussion the following resolution was passed *unanimously*.

That the Medical Board of the York County Hospital should be asked to consider the following resolution adopted by the Representative Body of the British Medical Association:

That in all cases of accident where medical attendance is given at a voluntary hospital and such medical attendance is covered either directly or indirectly by insurance the hospital authorities should recover from the insurance company the full cost of maintenance and treatment of such patient. That where patients who would ordinarily be considered as private patients are admitted to hospital solely on account of accident or emergency they should be considered as private patients.

A hearty vote of thanks to Dr. MacDonald for his excellent services as Representative of the Division was carried with acclamation.

The HONORARY SECRETARY read an extract from a circular by the Medical Secretary on the inadvisability of practitioners sending patients to opticians and he was instructed to issue a circular on similar lines to all members of the profession in the area of the Division warning them against this practice.

Dr. LOUISE FRASER (consultant medical officer to the York Maternity Hospital) opened a discussion on puerperal pyrexia and

mortality and expressed the opinion which was emphasized by statistics that there was great urgency to take some steps to reduce this mortality particularly in the direction of improved antenatal care on the part of medical practitioners. Dr. MACDONALD proposed that the matter be referred to the Executive Committee to see what steps could be taken and to take what ever steps seemed advisable. In seconding Dr. McNaught gave statistics of the maternal deaths in York during the last five years which showed that the general rate of maternal mortality in York was 4, as compared with 4.68 per 1000 for England and Wales. The resolution was carried.

Association Notices

BRANCH AND DIVISION MEETINGS TO BE HELD

BIRMINGHAM BRANCH WEST BROMWICH DIVISION—The fourth regular meeting for 1925 of the West Bromwich Division will be held in Parish's Restaurant, Lombard Street, West Bromwich, on Tuesday, October 6th, at 8 p.m. The meeting will take the form of a supper, and Mr. B. T. POSE, F.R.C.S., of Birmingham, will read a paper on surgery in general practice.

BORDER COUNTIES BRANCH DUMFRIES AND GALLOWAY DIVISION—The next meeting of the Division will be held in the Royal Infirmary, Dumfries, on Thursday, September 24th, at 3.30 p.m. when Dr. John Marshall, M.C., of Glasgow and Dumfries will deliver a lecture on the iris and pupil illustrated with stereoscopic slides and cases. Dr. Livingston and others will exhibit specimens.

CAPE OF GOOD HOPE (WESTERN) BRANCH—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday, October 30th, at 8 p.m. when there will be a symposium of neuro-symphyls arranged by Dr. J. H. HOOPER. Among the speakers will be Dr. J. S. du Toit, Dr. A. Reith Fraser, Mr. J. Lückhoff, Dr. W. P. Mulligan and Dr. E. W. D. Swift.

LANCASHIRE AND CHESTER BRANCH STOCKPORT MACCLESFIELD AND EAST CHESTER DIVISION—A meeting of the Division will be held on Thursday, September 24th, in the Mayor's Parlour, Congleton (by kind permission of the Mayor) at 4 p.m. A report from Dr. L. J. Pielon will be received in the Annual Representative Meeting at Bath.

METROPOLITAN COUNTIES BRANCH WEST HERTS DIVISION—A meeting of the Division will be held at the Lister Institute, Ulster, on Thursday, September 24th, at 3 p.m. After the meeting there will be a short address on the work of the Institute by Dr. Petrie, followed by a demonstration of the methods employed for the production and testing of sera and antitoxins. Tea will be provided at the Institute.

MIDLAND BRANCH DERBY DIVISION—A meeting of the Derby Division will be held at the Devonshire Hospital, Buxton, on Wednesday, September 23rd, at 5 p.m. Papers—(1) Dr. J. Barnes, Burt physician to the hospital, various types of chronic arthritis and their treatment illustrated by cases. (2) Dr. Eric Riddle, bacteriologist to the hospital, indications and scope of vaccine treatment in arthritic disease. Cases of special interest will be shown by members of the hospital staff. After tea there will be a discussion.

NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION—A scientific meeting will be held at the Royal Infirmary, Sunderland, on Wednesday, October 7th. All medical practitioners in the area of the Sunderland Division, whether members or not of the British Medical Association, are invited to be present. The annual address will be given by Dr. Crichton Miller on Thursday, November 12th, and the annual dinner will be held the same evening.

NORTH WALES BRANCH—A special joint meeting of the North Wales Branch with the members of the North Wales Division of the National Veterinary Medical Association will be held at the Queen Hotel, Chester, on Tuesday, September 22nd, at 1.45 p.m. The subject for discussion is clean and pure milk and the administration of the Milk and Dairies Consolidation Acts and the Tubercle Ordinance 1925. Speakers will deal with the following subjects: the Veterinary Mr. J. S. Lloyd F.R.C.V.S. (Sheffield), the Medical Officer of Health Dr. E. L. Parry Edwards (Carmarvon), the General Medical Practitioner Dr. J. C. Davies (Wrexham), the Agricultural Mr. G. Jones B.Sc. (Llangefni), the Public Analyst Mr. H. F. Lowe M.Sc. F.I.C. (Chester), the Bacteriologist Dr. W. H. Grace (Chester). A general discussion will follow. It is hoped that there will be a good attendance of members.

OXFORD AND READING BRANCH OXFORD DIVISION—In place of the complete post graduate course which has been temporarily suspended a series of ward and out-patient demonstrations under the auspices of the Oxford Division will be given by members of the honorary staff of the Radcliffe Infirmary on the afternoons of the week commencing October 5th. The demonstrations will be open to both members and non-members of the British Medical Association. To those notifying Dr. William Stobbs (honorary secretary), 310 Banbury Road, Oxford, of their intention of being present on any afternoon a detailed programme will be sent towards the end of September. There are no fees.

SOUTHERN BRANCH—A meeting of the Branch will be held at the South Western Hotel, Southampton, on Thursday, September 24th, at 2.5 p.m. Agenda: Correspondence, financial statement, letter from Honorary Secretary, Isle of Wight Division, and letter from Sir S. Guise Moore, K.C.B., C.M.G., accepting the office of President. Fleet paper by Dr. L. P. Firman Edwards (Ryde) on the significance of blood counts, to be followed by a discussion.

THE MEDICAL REGISTER UNTRACEABLE PRACTITIONERS, 1925

We are requested by the Registrar of the General Medical Council to publish the following list of medical practitioners who have not replied to his inquiries as to the accuracy of their addresses. Anyone who finds his or her name included in this list should communicate immediately with the Registrar of the General Medical Council, 44, Hallam Street, Portland Place, London, W 1, otherwise the name will be omitted from the next issue of the Medical Register

Adam Josiah Oake 1836 (E)	Cunne Ernest Whitmore Newton 1892 (I)	Pope George William 1917 (I)
Aitken Charles 1883 (S)	Hamilton Robert 1901 (S)	Powell Arthur Worsley 1895 (S)
Aldridge George Frederick 1901 (I)	Hanratty Francis Vincent 1911 (I)	Lower John Lawrence 1905 (S)
Alexander William Nicholas 1905 (S)	Harcastle Alfred Herbert 1833 (E)	Power Maurice Aloysius M C 1907 (I)
Arnold Wilberforce John James 1834 (I)	Harcourt Averil 1906 (S)	Power Michael 1908 (I)
Arundel Robert James 18 5 (I)	Harrave Herbert John 1883 (E)	Pratt William Sutton 1834 (E)
Attaoullah M S Hava Khairul N A 1922 (E)	Harpur James 1900 (I)	Pritchard Arey William 1901 (S)
Barton Francis Alexander 1887 (E)	Harris Walter Terence Joseph 1922 (Col)	Profet Alexander Charles 1899 (S)
Barwise Sidney 1884 (F)	Harris James 1904 (S)	Ramsey William Miller 1895 (S)
Beaumont Charles George 1877 (S)	Havnes John Frederick 1916 (E)	Ranisey George Arthur Stuart 1921 (Col)
Bellot Claude Herbert Lucien 1910 (E)	Hendricks Hiram Porter 1918 (Col)	Reid Alfred 1900 (E)
Berch Charles Ormond 1886 (F)	Hersford Charles Francis Alexander 1900 (E)	Reynold Benn Roland 1919 (E)
Blaiz M R Valina Heloise 1893 (E)	Hingston Henry Sandford 1910 (E)	Riches Reginald George 1909 (E)
Bloomfield Theodore 1859 (E)	Hobson Henry Overton 1893 (E)	Robertson John Wright 1915 (S)
Bond John Alexander 1907 (I)	Hole Richard Brazer 1903 (S)	Rostant Pierre Ange 1916 (S)
Brennan Charles Henry M C 915 (I)	Huffton Edith 1915 (E)	Runting Ernest Arthur 1912 (E)
Briffaux Philippe 1915 (For)	Hunt Edmund Langley M C 1894 (I)	Schofield George Taylor 1875 (E)
Brown John Alexander 1903 (S)	Ievers Charles Langley 1910 (S)	Seed William Hope 1893 (E)
Brownlee Arthur Oswald Innes 1917 (S)	Infante Ferdinand 1923 (For)	Sells Charles John 1889 (F)
Buth Charles 1890 (E)	Ito Hoken 1923 (For)	Shaw Thomas Curre 1868 (F)
Cable Walter George Hughes 1900 (E)	Jack on Oswald Ebert 1903 (I)	Shaw Thomas Wharton 1889 (I)
Caley Henry Albert 1890 (F)	Jameson Robert 1906 (I)	Sheil William Francis 1918 (I)
Campbell Archibald W A 1897 (Col)	Jerdassan Samuel 1903 (Col)	Shepherd Richard Le Fleming 1886 (S)
Campbell Duncan 1918 (E)	Johnston James Alfred 1880 (I)	Shirgoaker Jagannath Vishnu 1910 (Col)
Campbell Sir William KCMG CB DSO 1872 (S)	Johnston James Percy 1910 (I)	Silvester William George 1897 (S)
Cardozo Elizabeth Mary 1917 (E)	Jones Ralph 1913 (E)	Simpson William Henry 1918 (Col)
Carew William King 1914 (I)	Joynt Henry Noble Holton 1883 (I)	Singh Bawa Iwan CIE 1889 (E)
Carter Charles Noel 1916 (F)	Kaka Dinshah Lanyu 1924 (Col)	Singh Jung Bahadur 1919 (S)
Carrwright Robert Pepler 1907 (S)	Kelli William Patrick 1906 (I)	Sinha Narendra Prannu 1884 (E)
Casal Adolphus Leo 1887 (E)	Keser Jean Samuel 1881 (E)	Slack William Angus Lu 1919 (S)
Chapple Aubrey Durrant 1885 (E)	Kidd Walter Aubrey 1876 (E)	Slaughter Henry Lawrence 1921 (E)
Chittors Satyraj 1922 (Col)	Kusumbar Gagan Chintaman 1915 (E)	Smartt Edw and Nangle 1889 (I)
Cline Eric Clarence 1915 (E)	Large Stanley Dymott DSO M C 1912 (S)	Smith Edward Arthur 1906 (S)
Clippendale Samuel Dodd 18 5 (F)	Leclercq George Joseph Alexis 1907 (E)	Smith Edward John 1883 (E)
Clifford Harold Edward 1893 (E)	Lincoln Joseph Maurice 1894 (I)	Smith Ernest Sullivan 1893 (E)
Clifford John Moore 1900 (E)	Longhurst Edith Herbert 1899 (E)	Smith Harry Emile 1900 (S)
Clonally William James 1900 (I)	Long George 1891 (S)	Sothwick Michael Harold 1922 (Col)
Clonidine Patrick Bernard 1832 (I)	MacDonald William MacLachlan 18 6 (E)	Spence John Buchanan 1882 (S)
Craig Alexander Kirkpatrick M C 1903 (I)	Macdonnell Henry CB 1861 (I)	Steven Moutant Augustus de Brouque n Carol 1887 (E)
Cutts Duncan 1905 (S)	Mac Edmund Garvin 1908 (E)	Steven Walter 1901 (I)
Cowan Alfred 1893 (Col)	McKenna Charles William 1910 (I)	Stewart John Swinton 1914 (S)
Cronther George Dobson 1882 (E)	MacKenzie Kenneth William DSO 1905 (E)	Stott William Harle OBE 1897 (S)
Crozier George Rowland Henderon 1903 (E)	McQueen Robert Martin 1903 (E)	Stuart Forde Jack on OBE 1906 (S)
Cullinan Nicholas 1837 (S)	MacSwiney Victor Howard Lucien 1901 (I)	Sully Albert Max 1887 (E)
Curtis George Burnett 1884 (S)	Maitland Jones Elizabeth 1922 (E)	Sutherland Frederick Charles 1834 (E)
Cuttle Ronald 1923 (Col)	Mann Alexander 1909 (E)	Tatum Edwin Charles 1885 (E)
Dante Augustus Paul 1912 (E)	Margenot William Wendt 1889 (S)	Taylor Gerald Mark 1906 (E)
David on Herbert John 1916 (S)	Martindale Eslin Marcar 1912 (S)	Tha Richard Roland Hooton OBE 1915 (E)
Deamer George Edwin 1888 (E)	Martin Louis Charles 1909 (E)	Thom on Walter Poudiot 1920 (Col)
De Boer Hilda Spalding M C 1914 (E)	Mason Thomas Hunter M C 1906 (I)	Todd Peter Everard 1882 (F)
Denny Charles John 18 5 (E)	Mathew Charles 1885 (E)	Tomkin Arthur Wells Lu 1889 (I)
De Silva Herbert John 1903 (E)	Mehta Manekji Sorabji 18 9 (E)	Totaka Bunko 1922 (For)
De Silva Arthur Marcellus 1905 (E)	Mehlin Stavak Byramji 1906 (Col)	Tucker William Eldon 1895 (E)
De Wattyville Armand 1876 (E)	Merrin Michael Ferreira 1915 (S)	Twining Edward Wing 1913 (E)
Dick on John Rhodes 18 0 (S)	Micheel John Charles 1885 (E)	Turkic John Joseph 1904 (S)
Doddle Francis Xavier 1916 (I)	Minn William Stuart 1902 (S)	Typhard George Theodore 1921 (Col)
Doudney Edwin 18 0 (E)	Morris Ludlow Murett 1918 (E)	Ymon Robt R Culbert on 1901 (I)
Duke Herbert Lindhurst OBE 1910 (E)	Morgan Edward Rice 1871 (E)	Waller Gerald Douglas Hamilton 1901 (E)
Duke Valentine de Saumarez 1868 (E)	Morris on Michael Woodwood 1911 (E)	Ward Francis 1834 (E)
Eagleton Arthur Joseph 1913 (E)	Muir David Clark 1922 (E)	Water John Frank William 1897 (E)
Eder Thomas Hugh 1915 (E)	Mullen Jarlath J 1874 (I)	Water ton George Fik 1897 (S)
Elcombe Gilbert Henry Wemy 18 6 (E)	Mullick Sarat Kumar OBE 1897 (E)	Watkin Alan Percival 1890 (E)
Ellington Nicolas 1833 (E)	Nearby John Frederick 1908 (I)	Webb William Leslie 1912 (E)
Fiches William Robert 1883 (E)	Newell Robert Frederic Norman 1923 (E)	Wet Lery Coulthurst 1905 (E)
Fitzgerald Gerald Harta 1918 (E)	Nicola John Daly 1904 (S)	Wet Stephen Harold M C 1904 (E)
Follett Harold Harry Bailly 1908 (E)	Norris Samuel Knight 1897 (S)	Wetcott William Wynn 1870 (E)
Ford Donna d McNeill 1901 (S)	O'Brien John Aloysius 1876 (E)	Wilchillo Harold 1885 (E)
Gairna Nariman Jam hedji 1915 (Col)	O'Grady Donald de Courcy DSO 1905 (E)	William Carl Mathia 1915 (F)
Gardner Robert 1880 (S)	Ohlmu Walter Theodore 1916 (E)	William Benjamin 1833 (S)
Garnett Evelyn Alice 1910 (E)	Olshole Akidra Ladage 1910 (E)	William Ronald Edward 1911 (E)
Chaduri Dwyendra Nettle 1921 (Col)	O'Neill Sydney 1922 (Col)	Wilson Arthur William 1901 (S)
Chalmour Robert Thomas 1892 (E)	O'Reilly Bertram Charles Noble 1905 (E)	Wilson Mary Theobald 1920 (Col)
Cooley George Ernest 1900 (E)	Patrick Joseph Lennox Donation 1917 (E)	Wolfford George Arthur Herbert 1834 (E)
Crodon Henry Laing 1889 (S)	Provost Walter 1924 (S)	Wollard Herbert Henry 1920 (Col)
Crozier Cyprian Manuel 1917 (Col)	Prosser Walter Angus Lu 1897 (E)	Wundham Thomas Lanecot 18 9 (E)
Crunski Morris 1905 (E)	Tatham Alfred John 1885 (E)	Yang John Franklin 1908 (E)

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

SURGEON COMMANDERS V R FISHER to the Columbine for RN Hospital Queensterry T A Smyth to the Lizard for RN Barracks Devonport W G Edwards to the Egarham and as Squadron Medical Officer R F McMalton to the Valaya
Surgeon Lieutenant Commanders F E Fitzmaurice to the Indefatigable and W G Thwaites to the Forth both as pupils in Ophthalmology F G Hunt to the Chariton J S Elliott to the Viceroy
Surgeon Lieutenants W G F Murray to the Scaral J G Maguire to the Egarham
Surgeon Lieutenant P J Maguire transferred to the Permanent List Messrs H Cow and D C Hulse entered as Surgeon Lieutenants and appointed to RN Hospital Harlyn for course

ROYAL NAVAL VOLUNTEER SERVICE

Surgeon Lieutenant D Bertram to the Ajax for twenty eight days training
Probationary Surgeon Sublieutenant I B Hutchinson to the Bruce for twenty eight days training in 8th Flotilla
Mr L B Hartley entered as Surgeon Lieutenant and attached to the London Division
Mr D R W Burbury has entered as Probationary Surgeon and attached to the London Division

ROYAL ARMY MEDICAL CORPS

Lieutenant General Sir Charles H Burchaell KCB CMG retired pay L R A M C is appointed Colonel Commandant vice Major General Sir Hayward R Whitehead KCB
Major General Sir William G Macpherson KCMG CB retired pay L R A M C is appointed Colonel Commandant vice Sir David Bruce KCB

ROYAL AIR FORCE MEDICAL SERVICE

Squadron Leader T Montgomery to R A F Depot Uxbridge
Flight Lieutenants (Honorary Squadron Leader) E Brown to No 100 Squadron Spillgate J Pradergast to Central Flying School Lyven
Flying Officers T A O'Brien to No 203 Squadron, Egypt V Harris to No 4 Flying Training School Egypt

INDIAN MEDICAL SERVICE

Lieut Colonel C Hind on CIE DSO IMS to assist The War with effect from July 1 1925
Lieut Colonel J McPherson IMS an Agency to assist in the Pindary Surgeon Service with effect from July 1 1925 but to all practical purposes the services of the undermentioned officers are at the disposal of the Government of Burma as would be well if all of them had their names Major S T C Tedford form of certificate
Lieut Colonel E T Harris DSO (March 1925) in a place where they are not authorized persons

the British Medical Association at their Office Tavistock Square in the Parish of St. Pancras in the County of London.

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, SEPTEMBER 26TH 1925

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British Medical Association.

CURRENT NOTES

The Council Dinner

THE fourth Council Dinner will be held in the Great Hall of the Association's House on Wednesday, October 21st, at 7 for 7.30 p.m. The price of the tickets will be 12s 6d, exclusive of wine, and early application is strongly recommended. There are many difficulties to be surmounted in this the first attempt to hold such a function in the new House and whether the experiment can be repeated or not will depend very largely on the support which the Council gets on this occasion. Members may bring friends, and ladies will be welcomed. Application, accompanied by a cheque, should be made to the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1.

Flags for the Great Hall

As previously announced, it is hoped to hang in the Great Hall of the New Headquarters Building a flag from each place in which an Annual Meeting of the Association has been held and those who have seen the Great Hall will realize how much these flags add to the impression made on every visitor to the Hall. There is, moreover, reason to believe that the flags will have a distinctly good influence on the constitution of the hall and it is therefore hoped that the vacant niches for flag-staffs will soon be filled. We have previously announced the effect of flags from the following: Aberdeen, Bournemouth, Bradford, Edinburgh, Glasgow, Leicester, London (City of), Montreal, Nottingham, Toronto, Worcester, and Birmingham. Carlisle, Newcastle-on-Tyne, Sheffield, and Swansea. Of these the first twelve have already been received and are hung. Those from Birmingham, Carlisle, Newcastle, Sheffield, and Swansea are it is believed on the way. Flags from Cardiff, Liverpool, and Manchester, not previously mentioned in our

columns, have been delivered and are now hanging in the hall, and Brighton has just announced its intention of presenting a flag. The Council would be glad to hear from other areas which are not yet represented in the Great Hall.

Badges for Branch and Division Officers

It will be remembered that the Representative Body has approved the idea of the provision of badges for officers of Branches and Divisions of the Association, not only as a means of distinguishing these officers at meetings which are attended by members who do not know them, but in the belief that such badges will add to the dignity of the office. It is hoped that officers' badges will be provided either by a voluntary subscription from members of the Association units, or as a gift from previous or present holders of office. The badges are now available at prices which vary in accordance with the material of which they are made. Particulars may be obtained from the Financial Secretary, British Medical Association House, Tavistock Square, London, W.C.1. The accompanying illustration shows the type of badge designed for an honorary secretary of a Branch or Division.



Care of Certificate Books

The Ministry of Health has issued to Insurance Committees a circular stating that a case has recently come to light in which sickness benefit was fraudulently obtained over a long period by an insured person by means of forged medical certificates, the blank forms having apparently been stolen from the doctor's consulting room. The Ministry asks Insurance Committees to draw the attention of practitioners to the importance of certificate books being kept under conditions which will prevent the blank forms falling into the hands of unauthorized persons. The warning applies of course not only to medical practitioners and to insurance certificates but to all practitioners and their certificates and it would be well if all doctors who keep any kind of printed form of certificate would see that such forms are not kept in a place where they can easily be appropriated and used by unauthorized persons.

The New House of the Association

Members will be glad to hear that the Members' Lounge or Common Room is ready for use. The room is a large one and the accommodation very comfortable, light refreshments are available both at lunch and tea time at very reasonable prices. Those who are unfamiliar with the location of the Association's new House in Tavistock Square will no doubt welcome the following information as to means of access which has been compiled by the Financial Secretary and Business Manager:

Omnibus Routes

From—	Buses	Time
Victoria to Tavistock Square	No 44	25 mins
Charing Cross to Tavistock Sq	Nos 77 177	15
Waterloo to Tavistock Sq	Nos 68 163 169	15
London Bridge to St. James Church	No 118	20
St. Pancras to Tavistock Sq	Nos 77 177	5
King's Cross to Tavistock Sq	Nos 77 177	8
Paddington (Praed St) to St. James Church	No 18	20
Liverpool St to Tavistock Sq	No 9 or 11 to Strand (Gaiety Theatre) then 77 177 68 163 or 169	25

* The e include the A B C and D services running under these numbers

Tube Routes

From—	Tube	Time
Victoria to Euston	District Rly to Charing Cross change to Hampstead Rly	20 min
Charing Cross to Euston	Hampstead Rly	15
Waterloo to Euston	Bakerloo change Charing Cross to Hampstead Rly	20
Waterloo to Finsbury Sq	Bakerloo to Piccadilly change to Finsbury line	15
London Bridge to Finsbury	City and South London	15
Paddington to Finsbury	Metropolitan	15
Liverpool St to Euston	District to Charing Cross change to Hampstead Rly	25
Liverpool St to Finsbury or King's Cross	Inner Circle	20

Walking Distances

From	Time
Finsbury Station to Tavistock Square	5 mins
St. James Station to Tavistock Square	7
King's Cross Station to Tavistock Square	10

The Carmarthenshire Education Committee and its Assistant School Medical Officer

It is satisfactory to note that the Carmarthenshire Education Committee has resolved to offer £600 a year for an experienced assistant school medical officer, or £500 a year, during a probationary period for one with less experience. The decision came after an attempt to secure an officer at a commencing salary of £400. Eight applications were received for the post, but the chairman of the sub-committee concerned believed that, in consequence of the representations of the British Medical Association, several of the candidates would withdraw. According to a local newspaper the usual complaints about the "arbitrary action" of the British Medical Association were made, one gentleman talked about dying in the last ditch rather than give way to the threat of the Association. But the wiser members of the committee held that it would pay the county to have a full choice of medical officers specially qualified for this work, and, in particular, to have one who would be able to work in complete harmony with the local profession. The Carmarthenshire Education Committee is to be congratulated on this far-sighted action, which may cost the ratepayers a trifle more at the beginning, but is much more likely to secure the kind of medical officer that is wanted than the offer of a salary which at once excludes all loyal members of the British Medical Association.

Association Notices**BRANCH AND DIVISION MEETINGS TO BE HELD**

BIRMINGHAM BRANCH—The annual meeting of the Birmingham Branch will be held at the Medical Institute Birmingham on October 15th at 3.30 p.m.

BIRMINGHAM BRANCH WEST BROMWICH DIVISION—The fourth regular meeting for 1925 of the West Bromwich Division will be held in Linn's Restaurant Lombard Street West Bromwich on Friday, October 10th at 8 p.m. The meeting will take the form of a supper and Mr. B. T. Pocklington F.R.C.S. of Birmingham will read a paper on "Urgency in general practice."

CAPE OF GOOD HOPE (WESTERN) BRANCH—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday, October 10th at 8 p.m. when there will be a symposium on neuro-syphilis arranged by Dr. F. H. Keen. Among the speakers will be Dr. J. S. Tait, Dr. A. Reith Fraser, Mr. J. Luckhoff, Dr. W. P. Mulligan and Dr. E. W. D. Swift.

METROPOLITAN CITIES BRANCH WILLESDE DIVISION—A Christmas meeting of the Willesden Division will be held at Park Road Hospital, Acton Lane on Friday, October 10th at 3.15 p.m. and will be conducted by Dr. W. E. Turner, the resident medical officer. Entries for the Treasurer's Cup golf competition should be sent to Dr. Pughan, Town Hall, Dene Road N.W.6, before October 11 at 2 p.m.

NORTH OF ENGLAND BRANCH CLEVELAND DIVISION—Mr. J. Paull Hall M.Chir. F.R.C.S. of Bradford, Ex-President of the Association will address the Cleveland Division in Middlesbrough on Thursday, October 22nd. The subject of the address will be "Announcement of later Members of neighbouring Divisions are cordially invited."

NORTH OF ENGLAND BRANCH SUMMERLAND DIVISION—The annual address will be given by Dr. Crichton Miller on Thursday, November 12th and the annual dinner will be held the same evening.

NORTHERN COUNCIL OF SCOTLAND BRANCH PART II ELGIN AND NAIRN DIVISION—The autumn meeting of the Banff, Elgin and Nairn Division will be held in the Grand Hotel Elgin on Friday, October 2nd at 6.30 p.m. As matters of great importance to the Division will come up for discussion a full attendance of members is requested (particularly of those from the Banff area). The annual dinner will thereafter be held at 7.30 p.m. So that members may bring guests especially if these be practitioners in the area who are not members of the Association.

OXFORD AND PLAINING BRANCH OXFORD DIVISION—Outpatient demonstrations and ward visits (by kind co-operation of the honorary staff) will take place at the Padellet Infirmary each afternoon (except Sundays) from Monday, October 5th to Wednesday, October 10th. Members and non-members of the Association are invited. There are no fees. Tea will be provided each afternoon.

SURREY BRANCH CROYDON DIVISION—A general meeting of the Croydon Division will be held at the Croydon General Hospital on Tuesday, September 23rd at 8.30 p.m. Matters for consideration include badges for officers' report of Representatives at Annual Representative Meeting 1925, report of Secretary on Conference of Secretaries at Bath.

SURREY BRANCH GUILDFORD DIVISION—The first meeting of the winter session of the Guildford Division will be held at the Royal Surrey County Hospital, Guildford on Thursday, October 8th at 1.30 p.m. Tea will be served at 4.15 p.m. Dr. W. Langdon Brown will give an address on the future of ophthalmology. The annual dinner will be held after the meeting at the Angel Hotel, Guildford at 6.30 p.m. (morning dress). Tickets 5/- 6/- exclusive of wine.

National Insurance**OPHTHALMIC BENEFIT FOR INSURED PERSONS**

From time to time references have been made in the JOURNAL to the arrangements which the British Medical Association is making with the Ministry of Health for the provision of ophthalmic benefit for insured persons. It will now be useful to summarize the present position.

In consequence of the efforts of the Association, in co-operation with the Council of British Ophthalmologists and the Ophthalmic Benefit Committee, and with the help of the Ministry of Health, an arrangement came into force on July 1st, 1925, under which members of those approved societies which provide ophthalmic benefit must, in the first instance, consult their insurance practitioners who, in accordance with a new Regulation, is under obligation to give a recommendation in writing, if so desired by an insured patient, as to the need for ophthalmic treatment which is not within the scope of the practitioner's duties. The obligation applies to any insured person who, in the opinion of the medical practitioner, requires ophthalmic treatment, whether or not he is incapable of work. There is no official form for the purpose, and the practitioner is not entitled to demand a fee for giving such a recommendation. This recommendation is then sent by the insured person to his approved society, and the approved society, if it has adopted the new scheme, will take appropriate action. The member will be instructed by the society how to proceed.

A list of registered medical practitioners having special experience of ophthalmic work, who are willing to advise on such cases and prescribe spectacles at a fee of £1 is has been drawn up by the British Medical Association, and this list is available for the use of societies, and copies will be supplied to them by the Ministry on request. It is expected that insured persons will be instructed to make

an appointment for examination by one of the nearest available practitioners on the list.

The memorandum (Memo 288) of the Ministry of Health dealing with this question, which has been issued to the societies, says:

For any ophthalmic treatment including examination and prescription for glasses in respect of which the benefit is granted the society will under the scheme pay the whole cost. The Committee may also pay the members travelling expenses and it is recommended that this should be done at any rate where the amount is more than a few pence.

The circular then goes on to describe the dealings of the approved society with opticians as regards the provision of glasses.

A good deal of correspondence has been reaching the Medical Secretary which shows that many practitioners whose names are on the special list do not realize that the societies which have at present adopted the new scheme represent a comparatively small number of insured persons, though there are a considerable number of these societies. The schedule relating to this benefit is at present applicable only to those societies and branches which have been valued as at December 31st, 1922. These societies are, speaking generally, the smaller societies, and upwards of 600 of them have adopted ophthalmic benefit, in addition to a large number of branches of the affiliated Orders, the membership in each case being in general a small and localized one. The larger societies are valued as at December 31st, 1923, and then new schemes of additional benefits will only come into operation in July, 1926. As the new schedule relating to ophthalmic benefit is not incorporated in the existing schemes of these large societies, which cover by far the greater number of insured persons, uniformity in the schemes will not be obtained before the middle of next year.

The special list has been sent, not only to approved societies on application, but to the Insurance Committees. The first list contains some 550 names, and additional names will be sent by the Association to the Ministry of Health on the first of every month. The Ministry is promised to circulate these additional names to the societies concerned at frequent intervals, probably every two months.

In answer to a question as to how the specialist might expect to obtain payment for his services, the Ministry states:

This is a matter the details of which are left in the hands of the committee of management of each individual society or branch administering the benefit. Ordinarily the insured member would be furnished with an ophthalmic benefit letter by which the society authorizes the member to go in a suitable case to one of the medical practitioners on the list. The production of the society's letter of authorization will indicate the procedure it has adopted and should be sufficient authority for the medical practitioner and it does not appear that the retention by the practitioner of any document should be necessary. Normally it is believed the society will itself pay the fee of £1 1s to the practitioner after the member's treatment has been completed subject to the member having given the necessary formal authority to the society to make the payment.

Practitioners who are asked to recommend patients to obtain ophthalmic treatment will in general be required to do this by means of a note to the approved society, but sometimes a form will be presented to them in which the practitioner may be asked to sign a recommendation that the patient should be sent to an optician. All that need be done in this case is to make an alteration in the form indicating that the patient should go to a registered medical practitioner on the list. It should also be observed that it is not in order for insurance practitioners formally to recommend particular names on the list. The list has been established by the Association with the view of giving free choice of consultant to the insured person, and it is expected that the patient will be allowed by his society to select the specialist to whom he intends to go. There is of course, no reason why the insurance practitioner should not in conversation recommend his patient to choose the specialist whom the practitioner would himself select.

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

SURGEON COMMANDERS A. J. SHELDON and J. P. SHORTEN D.S.C. to the Resident for R.N. Medical Store Depot Deptford for twenty-eight days. N. S. MEIKLEJOHN D.S.O. to the *Taurar* and is Medical Officer in charge. Wei Hai Wei M.C. to the *Pembroke* for R.N. Hospital Chatham and as special in ophthalmology.

Surgeon Lieutenant Commander F. H. VEE to the *Queen Elizabeth* addition.

Dr. E. T. S. RUDD has entered a Surgeon Lieutenant on the list for service and has been appointed to the *Victory* for Haslar Hospital for course.

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Sublieutenant I. P. SPERO to the *Prince & Margaret* for twenty-eight days training and promoted to Surgeon Lieutenant seniority July 30th.

Probationary Surgeon Lieutenant H. M. PETTY to the *Tiger* for fourteen days training.

Probationary Sublieutenant A. T. C. THOMAS to be Surgeon Sublieutenant.

Dr. T. H. DAVEY has entered as Probationary Surgeon Lieutenant and attached to the *Litler Division*.

ROYAL ARMY MEDICAL CORPS

Captain H. T. FINDLAY is granted the temporary rank of Major whilst employed as a Deputy Assistant Director of Pathology. Captain W. E. FINDLAY M.C. is granted the temporary rank of Major whilst employed as Deputy Assistant Director of Pathology and Hygiene. Captain R. C. MATON half pay whilst late R.A.M.C. retires on account of ill health.

REGULAR ARMY RESERVE OF OFFICERS

SUPPLEMENTARY RESERVE OF OFFICERS. ROYAL ARMY MEDICAL CORPS. Captain A. L. TAYLOR from R.A.M.C. T.A. Reserve to be Captain. Captain NORMAN H. SMITH late temporary Captain R.A.M.C. to be Captain. Major H. AUBREY M.C. late R.A.M.C. Special Reserve to be Lieutenant.

ROYAL AIR FORCE MEDICAL SERVICE

Flight Lieutenants W. G. WESTON to R.A.F. Depot (Honorary Squadron Leader) E. BROWN to No. 55 Squadron Biggin Hill G. H. H. MAXWELL to No. 4 Flying Training School Egypt.

Flight Lieutenant F. E. JOHN on is promoted to the rank of Squadron Leader.

Flight Lieutenant J. S. WILSON transferred to the Reserve Class D2.

Flying Officer I. P. McCULLAGH is promoted to the rank of Flight Lieutenant.

Flying Officers F. W. WILSON to Aerophony and Armament Experimental Establishment. Martineham Heath. A. F. COOK to Research Laboratory and Medical Officers' School of Instruction on appointment to a short service commission for short course. H. G. MAGUIRE to School of Technical Training (Men) Manston.

Flying Officer H. W. D. MACLENNAN is transferred to the Reserve Class D1.

The following are granted short service commissions as Flying Officers for three years on the Active List: J. McV. Wilder F. B. C. I. B. Crawford.

INDIAN MEDICAL SERVICE

Lieut. Colonel (now Colonel) R. W. KNOW D.S.O. to be temporary Colonel from November 23rd 1918 to November 11th 1919 whilst employed as Assistant Director of Medical Services in Egypt.

Lieut. Colonel A. FENTON Officiating Inspector General of Civil Hospitals Burma is confirmed in that appointment.

Major to be Lieutenant Colonel: H. W. PIERPOINT W. D. H. STEVENSON C. P. S. WALL W. J. FRANK C. A. GODDARD M.C. R. H. LEE F. I. WARMICK D.S.O. W. A. Mearns R. G. C. CROFT.

Major F. STEVENSON was posted as Agency Surgeon Cilit with effect from November 1st 1924.

The services of Major R. B. SEYMOUR SEWELL Surgeon Naturalist Marine Survey of India are placed at the disposal of the Department of Education Health and Land for appointment as Director Zoological Survey of India.

The services of Major R. E. FLOWERDEW are placed permanently at the disposal of the Government of Burma with effect from May 28th 1922 for employment in the Jail Department.

Captains to be Majors: G. H. MAHONY C. CORRELL W. R. STEWART (Brevet Major) V. MAHADEVAN A. C. L. O'S. BILDERBECK.

The services of Captain S. L. MITRA are placed temporarily at the disposal of the Government of Bihar and Orissa.

The services of Captain E. R. DABOO M.C. are placed temporarily at the disposal of the Government of Assam.

The services of Captain P. VERDON are placed permanently at the disposal of the Government of Madras.

The services of Captain A. H. HARTY are placed temporarily at the disposal of the Government of Bombay for employment as Superintendent, Central Mental Hospital Yeranda.

The services of Captains J. B. VAIDYA M. M. KHAN and A. J. D. SONZA M.C. are placed temporarily at the disposal of the Government of Madras.

Army Department Notification No. 2828 dated September 12th, 1919 in so far as it relates to the grant of acting rank of Lieutenant Colonel to Captain J. P. MUIR O.B.E. is hereby cancelled.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Major P. D. WARTLTON (Captain Reserve of Officers) resigns his commission in the T.A.

Captain A. LEGG D.S.O. to be Major.

Lieutenant JAMES SMITH resigns his commission.

Sanitary Company—Lieutenant J. A. BINGHAM to be Captain.

COLONIAL MEDICAL SERVICES

Dr. C. H. B. THOMPSON appointed Medical Officer of Health Kuala Lumpur and Dr. H. D. J. S. and Medical Officer of Health to Central Prison and Hospital, F. M. S. Dr. C. W. VAUGHAN and Dr. W. PURCELL appointed Medical Officers, Medical Department, F. M. S. Dr. W. H. DREW appointed Medical Officer, Tanganyika. Dr. M. MORRISON has been confirmed in his appointment as Medical Officer, Nigeria.

VACANCIES

- BATH ROYAL UNITED HOSPITAL—House Physician (male unmarried) Salary £125 per annum
- BIRMINGHAM GENERAL HOSPITAL—Assistant Surgeon Honorarium £50 per annum
- CHELSEA HOSPITAL FOR WOMEN Arthur Street S W 3—Surgeon
- CHOPLEY HOSPITAL Lane—House Surgeon (male) Salary £150 per annum
- EASTERN DISPENSARY Leman Street E 1—Physician Honorarium at the rate of £65 per annum
- ESSEX COUNTY HOSPITAL Colchester—Radiologist and Medical Officer in charge of Electrotherapeutic Department
- FULHAM HOSPITAL 370 High Street Hammersmith F—Junior Assistant Medical Officer Salary £300 per annum rising to £425
- GLoucester HOSPITAL—(1) Resident Medical Officer (2) House Physician Salary at the rate of £150 and £100 per annum respectively
- HOSPITAL FOR Sick CHILDREN Great Ormond Street W C 1—(1) House Surgeon (2) House Physician and Assistant Casualty Officer Salary £50 for six months
- KING'S COLLEGE HOSPITAL—(1) Clinical Assistants (2) Medical and Surgical Outpatient Officers (3) Sanbrook Medical Surgical and Outpatient Registrars
- LADY HARRINGTON MEDICAL COLLEGE AND HOSPITAL Delhi—Radiologist Emoluments R 750 p.m.
- LONDON COUNTY COUNCIL—Eight Assistant Medical Officer (male) in the Mental Hospitals Salary £300 per annum rising to £400 and temporary additions making the total commencing remuneration about £425 a year
- LIVERPOOL UNIVERSITY—Professor of Surgery Salary R 1200—50—1400 p.m.
- MANCHESTER ANCOATS HOSPITAL—Assistant Surgical Registrar Salary £40 per annum
- MANCHESTER ROYAL INFIRMARY—(1) Resident Medical Officer (2) Assistant Medical Officer Ladies Salary £200 and £100 per annum respectively
- MIDDLESBROUGH NORTH RIDING INFIRMARY—Junior House Surgeon (male) Salary at the rate of £150 per annum
- MILDURA UNION HOSPITAL Austin Street Bethnal Green E—Assistant Casualty Officer (female) Salary at the rate of £100 per annum
- NORFOLK COUNTY COUNCIL—Assistant Tuberculosis Officer Salary £600 per annum
- PADDINGTON GREEN CHILDREN'S HOSPITAL W 2—(1) House Physician (2) House Surgeon Salary £150 per annum
- ROYAL NATIONAL OPHTHALMIC HOSPITAL Great Portland Street W—Three Registrars Honorarium 100 guineas
- ST BARTHOLOMEW'S HOSPITAL AND COLLEGE EC—Resident Assistant Physician Accoucher and Demonstrator of Practical Midwifery
- ST PAULS BOROUGH—Assistant Medical Officer (male) in the Public Health Department Salary £600 per annum rising to £650
- SHEFFIELD ROYAL HOSPITAL—(1) Radiologist (2) Medical Registrar Salary £300 and £250 per annum respectively
- SHREWSBURY DISPENSARY—Medical Officer
- SOUTH SHIELDS COUNTY BOROUGH—Venereal Diseases Medical Officer Salary £750 per annum
- SOUTH SHIELDS INFIRMARY—Junior House Surgeon (male) Salary £150
- THORNTON HOSPITAL Golden Square W 1—(1) Two House Surgeons salaries at the rate of £100 per annum (2) Two Honorary Surgical Registrars
- TORQUAY TOWN HOSPITAL—Resident Medical Officer (unmarried) Salary £200 per annum
- WATFORD UNION WHIFFS CROSS HOSPITAL—Surgeon Specialist in Light Treatment Remuneration £300 per annum
- WOLK CITY METAL HOSPITAL Fulford—Male Assistant Medical Officer Salary £440 per annum
- CERTIFICATE FACTORY SURGEONS—The following vacancy appointments are announced Looe (Cornwall) Shrewsbury (Salop) Applications to the Chief Inspector of Factories Home Office S W 1

This list of vacancies is compiled from our advertisement columns where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning

APPOINTMENTS.

- CIPRI D V L RCP and S Ed L R F P S Class D O Oron, D P H Lond, Honorary Surgeon to the Royal Eye Hospital Ea Bourne
- HUTCHER John B, FRCS Surgeon to the Royal Northern Hospital Holloway
- WOOLFENDELL H F FRCS Honorary Surgeon to the Liverpool Royal Infirmary
- QUEEN CHARLOTTE'S MATERNITY HOSPITAL Marylebone Road N W 1—Senior Resident Medical Officer A L Lankester M R C S I R C P Assistant Resident Medical Officer George J V Nellen B S Lond M R C S I R C P

DIARY OF SOCIETIES AND LECTURES

- ROYAL SOCIETY OF MEDICINE
Section of Obstetrics and Gynaecology Thurs 6 p.m. Specimens by Mr Fe Keith Whitehouse Mr A C Palmer Acute Lurulent Salpingitis at the Third Month of Pregnancy Dr P P Thomson and Dr Lamb Ruben of New York Diagnostic Value and Therapeutic Application of Iodoform Insufflation of the Fallopian Tubes in Sterility

POST GRADUATE COURSES AND LECTURES

- FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION—Westminster Hospital S W 1 Post Graduate Course in General Medicine Surgery and Special Department 10.30 a.m. to 3.30 p.m. daily Demonstration Lectures etc Hospital for Consumption and Diseases of Chest Brompton S W 3 Post Graduate Course in Diseases of the Chest Operation Lecture Lecture Demonstration Demonstrations

Loyal Free Hospital Cray & Inn Road W C 1 Wed, 5.0 p.m. Lecture Demonstration on Treatment by Electotherapy

LONDON POST GRADUATE MEDICAL ASSOCIATION—At Westminster Infirmary Thurs and Fri Diseases of the Throat and Nose Tues and Thurs Radiology Tues Wed Thurs and Fri Venereal Diseases At Royal Hospital for Sick Children Daily (except Sat) 9.15 till 11.15 Diseases of Children At Glasgow Eye Infirmary Daily Intensive Course of (1) Royal Maternity and Women's Hospital Daily (2) Royal Samaritan Hospital for Women Daily (3) At Ear Nose and Throat Hospital Thurs and Fri 1.15 p.m. Diseases of the Ear Nose and Throat

JOINT TUBERCULOSIS COMMITTEE—Special Course on Tuberculosis Mon, Heatherwood Hospital Ascot Lane Queen Mary's Hospital Carshalton Wed (Mornin) Skin Department London Hospital (Afternoon) Royal College of Surgeons Thurs (Mornin) Skin Department at Royal Hospital (Afternoon) All Saints Hospital for Venereal Diseases Fri and Sat Wingfield Orthopaedic Hospital, Oxford

MANCHESTER ROYAL INFIRMARY—Tues 4.15 p.m. A Survey of the Treatment of Diphtheria Tues Fri 4.15 p.m. High Blood Pressure as a Cause of Disablement in Worker

British Medical Association.

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE
TAVISTOCK SQUARE W C 1

Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager) Telegrams Articulate Westcent London

MEDICAL SECRETARY (Telegrams Mediocera Westcent London)

EDITOR British Medical Journal (Telegrams Antiology Westcent London)

Telephone numbers of British Medical Association and British Medical Journal Museum 9861 9862, 9863 and 9834 (Internal exchange four lines)

SCOTTISH MEDICAL SECRETARY 6 Drumsheugh Gardens Edinburgh (Telegrams Associate Edinburgh Tel 4361 Central)

IRISH MEDICAL SECRETARY 16 South Frederick Street Dublin. (Telegrams Bacillus Dublin Tel 4737 Dublin)

Diary of the Association

SEPTEMBER

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|---------|--------|-------------------------|-----------|
| 25 Fri | London | Public Health Committee | 2.30 p.m. |
| 29 Tues | London | | |
| | London | | |
| 30 Wed | London | | |

OCTOBER

- | | | | |
|---------|--------------------------------|---|-----------|
| 1 Thurs | London | Journal Committee | 2.30 p.m. |
| 2 Fri | London | Deinstitutions Committee | 2.30 p.m. |
| | Banff Elgin and Nairn Division | Grand Hotel Elgin | |
| | | Meeting 6.30 p.m. Dinner 7.30 p.m. | |
| 5 Mon | Oxford | Division Demonstration and Ward Visit Radcliffe Infirmary during afternoon and continued each afternoon | |
| 6 Tues | | | |

Shard Street
1 R.C.S. of
in General

- | | | | |
|----------|---------------------|--|-----------|
| 7 Wed | London | Finance Committee | 2.30 p.m. |
| | Sunderland Division | Scientific Meeting at Royal Infirmary | |
| 8 Thurs | London | Arrangements Committee | 2.30 p.m. |
| | London | Prevalence of Morbidity and Mortality Committee | |
| | Guildford Division | Royal Surrey County Hospital Guildford | |
| | | Address by Dr W Langdon Brown on the future of Endocrinology 4.30 p.m. Annual Dinner Angel Hotel 6.30 p.m. | |
| 14 Wed | Oxford | Division Concluding Demonstration and Ward Visit at Radcliffe Infirmary | |
| 15 Thurs | Birmingham | Branch Annual Meeting Medical Institute | |
| | Birmingham | | |
| 16 Fri | Wiltshire Division | Chemical Meeting Park Royal Hospital, Acton Lane 3.15 p.m. | |
| 21 Wed | London | Council 10 a.m. | |
| 22 Thurs | London | Conference of representatives of Local Medical and Panel Committees 10 a.m. at B.M.A. House Tavistock Square | |
| | Cleveland Division | Middlebrough Address by Mr J Basil Hall | |

NOVEMBER

- | | | | |
|----------|---------------------|--------------------------------------|--|
| 12 Thurs | Sunderland Division | Annual Address by Dr Crichton Miller | |
| | | Annual Dinner the same evening | |

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages and Deaths is 9s, which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue

BIRTHS

- COLLYER—On September 14th at 151 Dorchester Road Weymouth to Mr and Mrs Thomas Collyer a daughter
- GAFLAND COLLINS—On September 11th at Garden Reach Buckhurst Hill Essex the wife of Dr I Gafland Collins of a daughter

MARRIAGES

- September 17th at St James Spanish Place
M B D P H Assistant M O H Cradock to
B A Assistant M O London County Council

DEATHS

- RUSSELL—On September 20th at Havat Devonshire James W Russell M A M D I R C P of Chad Road Edgbaston Birmingham in his 63rd year

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, OCTOBER 3RD, 1925

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British Medical Association.

CURRENT NOTES

The Association's New House A French Impression

THE September issue of *Le Medecin Syndicaliste*, the official organ of the Union des Syndicats Medicaux de France, contains an article by the president of the union, Dr Fernand Decourt, giving an appreciative account of his visit to London last July, as the representative of the union, for the Royal opening of the British Medical Association's new House. On receipt of the friendly invitation from London, Dr Decourt says, it was decided to accept it so as to take the opportunity of drawing closer the relations between the two great national groups. "Thus it was that I had the honour of representing the practitioners of France at this family festival, along with the presidents and secretaries of other medical bodies representing in like manner the practitioners of their respective countries." Before passing on to outline his hope for the future—the setting up of an international union of medical practitioners—Dr Decourt expresses his thanks to the British Medical Association and particularly to the Medical Secretary (of whose warm courtesy he already had personal knowledge) for the friendliness of the welcome he received here. Something more than ordinary polite applause during his presentation to the King and Queen, as the representative of France made him feel clearly the sincere and vibrant sympathy of the British medical profession for France and French practitioners and on behalf of his 16,000 fellow members of the Union des Syndicats Medicaux de France he thanks them. British comrades. Dr Decourt records his astonishment at the size and splendour of the new House and, above all, at the magnificent Great Hall (its columns capitals and nave calling up memories of some Romanesque church), where under the heraldic flags of its Branches more than 600 representatives of the Association can sit in comfort. Thus, on his return home, has made him regret the more that the practitioners of France have not backed up better the praiseworthy efforts of his friend Dr Thoiry Secretary of the Association Generale, who has so ardently put forward the idea of establishing in Paris a common centre

where could be housed under one roof the manifold activities, now scattered, of the French medical profession. In France, he says, they act in open order, in England in solid formation and he holds up as an example to his fellow members the British Medical Association, which with its service in so many different directions, combines the functions of a number of scientific and professional bodies, metropolitan and provincial, and has grouped the British profession into a compact yet flexible mass, able to act as a whole "while we in France jealously keep ourselves scattered, fragmentary."

The Sir Charles Hastings Clinical Prize for General Practitioners

The Council of the British Medical Association has decided to establish experimentally an annual prize—"The Sir Charles Hastings Clinical Prize"—of fifty guineas for an essay or lecture for the purpose of stimulating systematic observation, research, and record in general practice. The Council believes that systematic observation by general practitioners, along selected lines of clinical study, may result in the production of practical contributions of great value by those who are in a favourable position for following disease through its various stages.

The first prize will be awarded in 1926, and the conditions governing its award as adopted by the Council on April 16th, 1924, are as follows:

Regulations

1 This prize is established by the Council of the British Medical Association for the promotion of systematic observation, research, and record in general practice, it includes a money award of the value of fifty guineas.

2 Any member of the Association who is engaged in general practice is eligible to compete for the prize.

3 The work submitted must include personal observations and experience of the candidate collected in general practice, and a high order of excellence will be expected. If no essay entered is of sufficient merit no award will be made.

4 Essays, or whatever form the candidate desires his (or her) work to take, must be sent to the Medical Secretary, British Medical Association, B.M.A. House, Tavistock Square, W.C.1, not later than December 31st, 1925, and

[1109]

BRANCH AND DIVISION MEETINGS TO BE HELD

BIRMINGHAM BRANCH—The annual meeting of the Birmingham Branch will be held at the Medical Institute, Birmingham, on October 15th, at 3 30 p m.

BIRMINGHAM BRANCH West Bromwich Division—The fourth regular meeting for 1925 of the West Bromwich Division will be held in Pugh's Restaurant, Lombard Street West Bromwich on Tuesday, October 6th at 8 p.m. The meeting will take the form of a supper and Mr B T Rose, F.R.C.S., of Birmingham will read a paper on surgery in general practice.

METROPOLITAN COUNCILS BRANCH CITY DIVISION—The first meeting of the new session of the City Division will be held at the Metropolitan Hospital on Tuesday, October 6th at 9:30 p.m. Dr. C O Hawthorne will read a paper on cardiac arrhythmias and polygraphic tracings illustrated by lantern slides. All practitioners in the Division are cordially invited. All practical meetings will also be held on Friday, October 8th and every second Monday from October to July 1926. Coffee and dinner will be served at the Metropolitan Hospital. The American Medical Association staff of the hospital, under the leadership of the medical and surgical departments, will be demonstrated in conjunction with the invited to show cases of interest. The meeting on October 8th will commence at 4:15 p.m. (tentative). Members hour and a quarter. Dr. F H G Shore will be the speaker.

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METROPOLITAN COUNTIES BRANCH LANCHELY Division will be the speaker
meeting of the LANCHELY Division will be held at the Thomas's Hospital
consideration of proposal on Tuesday October 6th at 8.30 p.m. Agenda
held monthly during the winter Professor Hugh McLaren St
Thomas's Hospital will read a paper on diabetes and its treatment
in general practice

meeting of the WILKESDEN DIVISION will be held at Park Royal Hospital Acton Lane on Friday, October 16th at 3.15 p.m. and will be conducted by Dr W E Turner the resident medical officer.

NORTH OF ENGLAND BRANCH CLEVELAND DIVISION.—Mr J Basil
Hall M Chur FRCS of Bradford & President of the Assoc
tion will address the Cleveland Division in Middlesbrough on
Thursday October 22nd The subject of the address will be
announced later Members of neighbouring Divisions are cordially
invited
NORTH OF ENGLAND BRANCH
general meeting

NORTH OF ENGLAND BRANCH DARTINGTON DIVISION—The annual general meeting of the Dartington Division will be held in the Board Room, Greenbank Hotel, on Thursday, 10 October 1974, at 8.30 p.m. Agenda: Election of officers; selection of lecturers for the session; Representatives' report of business done at Annual Representative Meeting.

Stockton Division—A meeting of the Stockton Division will be held in the Stockton and Thirby Hospital to day (Friday, October 2nd) at 8.30 p.m. Agenda: Winter arrangements (dinner, scientific meeting etc.) Use of putruba by midwives Medical Benevolent fund golf competition co operation between St.1 and general practitioners

NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION.—The annual address will be given by Dr Crichton Miller on Thursday, November 12th and the annual dinner will be held the same evening.

NORTHERN COUNTIES OF SCOTLAND BRANCH BANFF, ELDON, AND NAINN DIVISION—The autumn meeting of the Banff, Eldon, and Nainn Division will be held in the Grand Hotel, Eldon, on Thursday (Tuesday, October 2nd) at 6.30 p.m. As matters of great import to the Division will come up for discussion a full attendance of members is requested particularly of those from the Banff area. The annual dinner will therefore be held at 7.30 p.m. To this members may bring guests especially if these be practitioners in the area who are not members of the Association.

OXFORD AND READING—The annual dinner will be held on Thursday

and the not members of the Association especially if these be practitioners in
 OXFORD AND READING BRANCH OXFORD DIVISION.—Out patient
 demonstrations and ward visits (by kind co-operation of the
 honorary staff) will take place at the Radcliffe Infirmary, each
 afternoon (except Sunday), from Monday, October 5th, to

- 5 If any question arises in reference to the eligibility of the candidate or the admissibility of his essay, the decision of the Council on any such point shall be final
- 6 Each essay must be distinguished by a motto, and must be accompanied by an envelope marked with the same motto and enclosing the candidate's name and address
- 7 The candidate who gains the prize shall be invited to deliver the Annual General Meeting

7 The candidate who gains the ward shall, if the Council so desires, publish his paper in the BRITISH MEDICAL JOURNAL or deliver a lecture on the subject thereof at a meeting of the Association

8 Inquiries relating to the

8 Inquiries relative to the prize should be addressed to
the Medical Secretary, B.M.A. House, Tavistock Square,
London, W.C.1

MOH for Selkirkshire

In a Current Note headed "MOH for Selkirkshire" published in the SUPPLEMENT of August 1st, attention was directed to the fact that the Selkirk County Council was, for the second time in twelve months, seeking to fill the post of medical officer of health at the old salary—£100 less than the minimum approved by the British Medical Association. The hope was expressed that no applicants would be forthcoming, but, according to a report in the *Southern Reporter* of September 17th, there were no fewer than ten candidates for the post, and one of them has been appointed. It is discouraging to observe that members of the medical profession can still be found willing to accept a parsimonious local authorities in keeping down the remuneration for important public posts. The list of authorities which, with more regard for the real interests of the public health, have fallen in with the scale approved by the Association and the Ministry of Health is steadily winging, but Scotland may take what encouragement it can in the fact that its health authorities appear to be less anxious to get a full and free choice of suitable candidates than their colleagues on the other side of the border.

Under the heading 'Clean Advertising' Dies" our contemporary, the *Journal of the American Medical Association* recently printed a short editorial article, which we venture to quote in full for the encouragement of those newspaper proprietors and advertising agents in this country who, under the influence of the British Medical Association's campaign, are becoming ashamed of the worst forms of patent medicine advertising in British periodicals. The paragraph runs as follows:

In the recent death of Victor T. Lawson publisher of the *Chicago Daily News* the cause of public health has suffered a great loss as has that of clean journalism. As one of the greatest newspaper properties in the United States if not indeed in the world the *Daily News* carries and has for years carried an enormous amount of advertising. About ten years ago much of the present medicine advertising in the *Daily News* was open to serious criticism. A letter written to Mr. Lawson was open headquarters office of the American Medical Association calling his attention to the character of some of the patent medicine copy resulted in a drastic change in the methods governing the acceptance of advertisements of this type. Mr. Lawson immediately went to the expense of having analyses made of scores of patent medicines whose advertisements were offered to the *Daily News*. The chemists' reports were then turned over to the personal physician who passed on the therapeutic claims made for the products in the light of the composition as shown by his analyses. If the physician's report was unfavourable as in many many instances it was the advertisement was turned down. Mr. Lawson's physician was in constant touch with the Bureau of Investigation (Propaganda Department) of the American Medical Association getting from it all the available information regarding widely advertised nostrums. While some of the medical advertisements in the *Chicago Daily News* are still open to criticism the paper can furnish of pregnant as one of the cleanest in medical copy in the world. More recently—in fact just before his death—Mr. Lawson's diagnosis of the Papersonian interest and the service of his patient was in and exposure made by the Bureau of Investigation and the American Medical Association. The firm selling the medicine should inspire confidence and the future should lead those who have been misled by the Chicago Daily News in the future.

Wednesday, October 14th Members and non members of the Association are invited There are no fees Tea will be provided each afternoon

SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION—The annual dinner of the Swansea Division will be held on Thursday, October 8th at 7.15 p.m. at the Hotel Metropole Wind Street Swansea Price of tickets 12s 6d each (exclusive of wines) Ladies may be invited To facilitate arrangements it is hoped that all those who desire seats to be reserved will apply immediately No places can be reserved after Monday October 5th The dinner will be served at separate tables Parties of members and their guests will be arranged for on application being made Applications for seats accompanied by cheque must be sent to Dr H R Tighe 36, Lion Street Swansea Medals and decorations (miniatures) to be worn Cars may be left at the Auto Garage Company Fisher Street

SURREY BRANCH GUILDFORD DIVISION—The first meeting of the winter session of the Guildford Division will be held at the Royal Surrey County Hospital Guildford on Thursday, October 8th at 4.30 p.m. Tea will be served at 4.15 p.m. Dr W Langdon Brown will give an address on the future of endocrinology The annual dinner will be held, after the meeting at the Angel Hotel, Guildford at 6.30 p.m. (morning dress) Tickets 6s 6d, exclusive of wine

SURREY BRANCH REICATE DIVISION—The following programme has been arranged for the session 1925-26 Wednesday October 7th 7 p.m. Annual dinner White Hart Hotel Peigate Address by Dr Herbert French A variety of small points that appear to be of practical importance Tuesday November 10th—Mr R P Howlands The acute abdomen Tuesday, December 8th—Dr H C Cameron Some complaints of children Tuesday January 12th, 1926—Sir Henry Grayson Conservative treatment in non-pulmonary tuberculosis Tuesday, February 9th—Dr Robert Hutcheson The chronic abdomen Tuesday, March 9th—Mr Frank Cook Pelvic inflammation in women Tuesday April 13th Clinical meeting Tuesday May 11th Divisional meeting Wednesday June 2nd 3.45 p.m. Annual meeting All meetings will be held at the East Surrey Hospital at 8.45 p.m. unless otherwise stated

YORKSHIRE BRANCH BARNSELY DIVISION—A meeting of the Barnsley Division will be held at the Central Cafe, Market Hill Barnsley on Friday October 30th Supper will be served at 8.30 p.m. prompt Mr Graham Simpson (Sheffield) will give an address on a survey of renal surgery (with lantern demonstration) Those intending to be present should notify the honorary secretary Dr J B Fisher King Street Heyland not later than Monday, October 19th

YORKSHIRE BRANCH LEWISBURG DIVISION—The following lectures and meetings have been arranged for the session 1925-26 October 6th—Dr H C Cameron (London) British Medical Association Lecture on dietetic modifications and the control of certain disorders of infancy and childhood November 3rd—Sir Berkeley Mountrian Bt (Leeds) Lecture (subject to be announced later) December 1st—Dr Burrows (Leeds) Referential pain from a diagnostic standpoint January 12th 1926—Dr W Fletcher Shaw (Manchester) Chronic pelvic pain February 2nd—Mr A M Connell (Sheffield) Demonstration of treatment of injuries of the lower limb March 2nd—Dr W Vining (Leeds) Acidosis April 6th Open night May 4th Annual dinner The meetings will be held in the Man and Saddle Restaurant Dewsbury Supper will be provided at 8.15 Members from neighbouring Divisions will be welcomed

YORKSHIRE BRANCH HARROGATE DIVISION—A meeting of the Harrogate Division will take place at the Royal Bath Hospital on Wednesday October 14th at 4.30 p.m. Dr Alfred Cox Medical Secretary of the Association will open a discussion on Is the B.M.A. any use to the non-panel doctor? Tea will be provided at the hospital at 4.15 p.m. by the Chairman A dinner will be held at the Mayette Hotel (price 8.6d) at 7.30 p.m. After dinner it is expected that Dr Cox will reply to the toast of the Association As this is a special occasion the executive hopes that members will make every endeavour to be present and to persuade as many non-members as possible to attend

Meetings of Branches and Divisions

YORKSHIRE BRANCH

The autumn meeting of the Yorkshire Branch was held at the Royal Hotel Whitby on September 26th and was largely attended The Branch Council elected forty-three new members to the Association An Ethical Committee for the Branch was also elected It was resolved that in future reports of Branch meetings should be reported by the honorary secretary of the Divisions in which the meeting was held

Demonstrations were given by Dr Leo Rowden Professor of Visceral Surgery at St. Mary's and Dr H H Raw Tapers were read by members on the following subject (1) The surgical treatment of trigeminal neuralgia as exhibited in seventeen consecutive cases by Mr Basil Hughes F.R.C.S. (2) Twist and spirals in medicine and surgery by Mr W S Dickie F.R.C.S. (3) Section in its clinical aspects by Dr M Foster F.R.C.P. (4) Cerebral tumours by Dr R N Wilson (5) A case of acanthosis nigricans by Dr H H Raw (6) Warning signs of impending perforations of peptic ulcers by Mr R St Ledger Brockman F.R.C.S.

By the kindness of Dr and Mrs Rawter was provided for members and their wives and the thanks of the Branch for a very successful meeting are due to Dr Raw

Correspondence

In urance Certificates

Sir,—The bulk of the trouble connected with insurance certificates arises from the fact that the approved societies to cut down their office work, wish to have continuation certificates dated to run in periods of seven days If the annual continuation certificate could be reworded to recognize this fact it would reduce the friction over certificates automatically

The dates for examination and signing should be on the second date should be renewal certificate due or some such wording, and should be subject to the same limitation as in the footnote of the present form—I am, etc.,

Crickhowell Sept 25th

J S TOWNLEY

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

SURGEON COMMANDER A F FLEMING D.S.O. has been placed on the retired list with the rank of Surgeon Captain

Surgeon E St G S Goodwin to the *President* for course

Surgeon Lieutenant A C Bee has been promoted to the rank of Surgeon Lieutenant Commander

Surgeon Lieutenant R W Vines short service engagement has been extended to August 21st 1926

The following have entered as Surgeon Lieutenants and appointed to the *Victory* for R.N. Hospital Staff for course R C Foster (short service) G W Garde

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Lieutenant R Weir to the *Champion* for training and to the *Victory* for R.N. Hospital Staff to complete twenty-eight days training

ROYAL ARMY MEDICAL CORPS

Major W C Nimmo from half pay list returns on retired pay on account of ill health July 31st 1925 (Substituted for notification in the *London Gazette* August 6th 1925)

Major R C Wilmut to be Lieutenant Colonel vice Lieutenant Colonel F W W Day on

Captain C I K Finlay to be temporary Captain and relinquishes the rank of Captain

REGULAR ARMY RESERVE OF OFFICERS

SUPPLEMENTARY RESERVE OF OFFICERS **ROYAL ARMY MEDICAL CORPS**
Second Lieutenant J V Doulay from the Buffs Regular Army Reserve of Officer to be Lieutenant

ROYAL AIR FORCE MEDICAL SERVICE

Wing Commander H W Scott to R.A.F. British Hospital Iraq
Flight Lieutenant H McW Daniel to Headquarters Iraq I K Landells to R.A.F. British Hospital Iraq D McLaughlin and M J O'Reilly to Headquarters Egypt

Flying Officers H W Cooner to Basrah Combined Hospital Iraq
Flying Officer H C Carter to F L White and B Lifford to Headquarters Iraq

The following Flying Officers are granted permanent commissions in the rank of Captain: S G Cilmore R H Stanbridge

INDIAN MEDICAL SERVICE

The services of **Lieutenant Colonel R McCarron C.I.E.** as Agency Surgeon on return from leave are placed temporarily at the disposal of the Government of India in the Department of Education Health and Land

Lieutenant Colonel J M Woolley has retired from the Service

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Captain J Waller M.C. to be Major

COLONIAL MEDICAL SERVICES

Dr P B Macleod J.H. Paquet and C Wilson appointed M.O. Nigeria
Dr J H Owen Flood appointed M.O. Medical Department Co. I
Colonel Dr J H Thom on appointment Senior M.O. Tanganyika
Dr J B Sman Senior M.O. Tanganyika transferred to Kenya
Dr J F B Edmund confirmed in his appointment as M.O. Tanganyika

VACANCIES

BEGRIVE HOSPITAL FOR CHILDREN Clapham Road S.W.9.—(1) Assistant Surgeon (2) Hon. Surgeon (3) Assistant Hon. Surgeon Honorary for (1) 50 guineas per annum and for (2) and (3) salary at the rate of £100 per annum

FRIMOND EX PERI—Junior Assistant Medical Officer at the Infirmary Lower Road Rotherhithe Salary at the rate of £400 per annum for first six months rising to £450

BOLTON HOSPITAL ROYAL VICTORIA AND ALFRED HOSPITAL—Hon. Surgeon Salary £150 per annum

BRISTOL Royal Victoria Hospital—(1) Hon. Surgeon (male) Salary £150 per annum (2) Honorary Surgical Clinical Assistant

CLIFTON ANDERSON HOSPITAL—Clinical Officer and Resident Assistant (male) Salary £100 per annum

CARDIFF ROYAL INFIRMARY—Ophthalmic Hon. Surgeon Salary £50 per annum

CENTRAL LONDON THROAT AND EAR HOSPITAL Crayke Inn Road W.C.1—Assistant Outpatient Registrar

GLAUGOW FIVE FIFTHS—Resident Assistant Hon. Surgeon Salary at the rate of £75 per annum

GLAUGOW ROYAL HOSPITAL—Junior Hon. Surgeon Salary at the rate of £150 per annum

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST Brompton SW 3—
Two House-Physicians
HOSPITAL OF ST JOHN AND ST ELIZABETH 40 Grove End Road, N.W. 8—
(1) House Physician (2) House Surgeon Salary £100 and £75 per
annum respectively
LADY HARDINGE MEDICAL COLLEGE A.D. HOSPITAL Delhi—Radiologist
Emoluments Rs 750 p.m.
LEWIS ROYAL INFIRMARY—Second Resident Anaesthetist Salary £200
per annum
LEEDS UNIVERSITY—Professor of Surgery Salary Rs 1,200—
50-1400 p.m.
MANCHESTER BABIES HOSPITAL—Two Honorary Physicians
MANCHESTER ROYAL INFIRMARY—(1) Resident Medical Officer (2) Assistant
Medical Officer Ladies Salary £200 and £100 per annum respectively
MINISTERS OF HOME AFFAIRS FOR NORTHERN IRELAND—Medical Inspector
Salary £500 per annum rising to £800 together with cost of living
bonus of Civil Service rates
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC Queen Square W.C.1
—Resident Medical Officer Salary £200 per annum
PADDINGTON GREEN CHILDREN'S HOSPITAL W.2—(1) House Physician (2)
House Surgeon Salary £150 per annum
PATENT OF ST LEONARD Shoreditch—Fourth Assistant Resident Medical
Officer at St Leonard's Hospital 204 Roston Street, N.1 Salary £30
per annum
PORTSMOUTH ROYAL PORTSMOUTH HOSPITAL—Four Resident Medical
Officers Salary at the rate of £100 per annum
RENFREW COUNTY—Assistant Tuberculosis Officer Salary £600 per annum
ROYAL CHEST HOSPITAL City Road E.C.—(1) House Physician (2) Resident
Medical Officer Salary at the rate of £100 and £150 per annum respec-
tively
ROYAL FREE HOSPITAL Gray's Inn Road W.C.1—Senior Resident Medical
Officer Salary £200 per annum
ROYAL NATIONAL ORTHOPAEDIC HOSPITAL Great Portland Street W.—Three
Registrar Honorarium 100 guineas
SPRINGFIELD GOVERNMENT—Assistant Medical Officer and Resident Surgeon
Salary Rs 6500
STO PORT INFIRMARY—Senior House Surgeon Salary £250 per annum

CERTIFYING FACTORY SURGEON—The following vacant appointment for
Certifying Factory Surgeon is announced: William Tynce (Northumber-
land) Applications to the Chief Inspector of Factories, Home Office
S.W.1.

*This list of vacancies is compiled from our advertisement columns,
where full particulars will be found. To ensure notice in this
column advertisements must be received not later than the first
post on Tuesday morning.*

APPOINTMENTS

CHAMBERLAIN Ernest N. M.B. Ch.B. Liverpool Honorary Assistant Physician
Royal Southern Hospital Liverpool
FITTON Geoffrey H. M.D. Ch.B. House-Surgeon to the Dewsbury and
District General Infirmary
OLIPHANT Brian J. M.R.C.S. L.R.C.P. Resident Medical Officer General
Hospital Jersey
PLATT Harry M.D. M.S. F.R.C.S. Consultant, Orthopaedic Surgeon to the
Devonshire Hospital Buxton
RUFFIN F.G. M.B. M.S. F.R.C.S. Edin. Visiting Surgeon to the Union
under Lano Union Hospital
THORP Arthur C. M.D. Aberdeen D.P.H. Medical Superintendent Willemsen
Municipal Hospital
SCHOOLER Thomas M.B. Ch.B. Edin. Resident Surgeon to the
Birmingham General Dispensary Mosley Road
SURROD Royal Hospital—Resident Medical Officer H. Joffe M.R.C.S.
L.R.C.P. House Surgeon (Orthopaedic Department) C. Eckleton M.B.
Ch.B.

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE
Section of Orthopaedics Tues 5 p.m. Cases 5.0 p.m. Presidential
Address by Mr A. S. Blundell Bonart The Physiology of Muscular
Action. A discussion will follow
Section of Neurology Middlesex Hospital Porters Street W.1 Thurs
8.30 p.m. Presidential Address by Dr Campbell Thomson The Work
of Sir Charles Bell in Relation to Modern Neurology Drawings and
specimens will be exhibited
Clinical Section Fri 5 p.m. Cases
Section of Ophthalmology Fri 8 p.m. Cases 8.30 p.m. Discussion
Penetrating Injuries of the Eye to be opened by Mr Gray Clin-
ically followed by Messrs G. H. Pooley, Harry Lee and Goulton

POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION—
Control London Throat, Nose and Ear Hospital Gray's Inn Road W.C.1
Special Course in Laryngology, Rhinology and Otolaryngology
Surgery. Class daily 9.30 to 11.0 a.m. Clinical Course most days
9 a.m. to 5 p.m. In and Out-patient Operations Clinics and Lectures
London School of Hygiene and Tropical Medicine Endelburgh Garden
N.W. First two of a series of eight Clinical Demonstrations on the
More Important Diseases of Tropical Countries Tues and Thurs 2 p.m.
Royal Free Hospital Gray's Inn Road W.C.1 Lecture Demonstration
on Treatment by Electrotherapy on Wed at 5.30 p.m.
GLASGOW POST GRADUATE MEDICAL ASSOCIATION—At Western Infirmary
Tues and Fri 4 p.m. Thurs 9 a.m. Throat and Nose Tues and
Thurs 9.30 a.m. Radiology Tues and Thurs 5.30 p.m. Wed and
Fri 11 a.m. Venereal Diseases At Royal Hospital for Sick Children
11th (excl. Fri) 9.15 to 11 a.m. Diseases of Children At Glasgow
Royal Maternity and Women's Hospital Daily 3.30 to 5 p.m. (Sat
10 to 11.30 a.m.) Clinical Obstetrics At Royal Samaritan Hospital for
Women Mon Wed Fri 9.15 till 11 a.m. Clinical Gynaecology At
Ear and Throat Hospital Tues and Thurs 7.15 p.m. Demonstra-
tion on Diseases of the Ear, Nose and Throat
MANCHESTER ROYAL INFIRMARY—Tues 4.15 p.m. Prognosis and Treatment
of Bronchitis Fri 4.15 p.m. Preventing Diseases as a Cause of
Disability in Workers
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC Queen Square W.C.1
—Mon Tues Thurs and Fri 2 p.m. Out-patient Clinic Mon
12 noon Anatomy and Physiology of the Nervous System 3.30 p.m.
Tues and Thurs 3.0 p.m. Epilepsy Thurs 12 noon Neurology
Dementia 3.30 p.m. Prigerson's Muscular Atrophy Fri 3.30 p.m.
Inflammatory Tumours Tues and Fri 10 a.m. Methods of Examination of
the Nervous System Operations Tues and Fri 9 a.m.

British Medical Association

OFFICE, BRITISH MEDICAL ASSOCIATION HOUSE,
TIVISTOCK SQUARE W.C.1

Departments

SUBSCRIPTION AND ADVERTISEMENTS (Financial Secretary and Business
Manager) Telegrams Articulate Westcent London)
MEDICAL SECRETARY (Telegrams Mediocera Westcent London)
EDITOR British Medical Journal (Telegrams Anthology Westcent,
London)

Telephone numbers of British Medical Association and British Medical
Journal: Museum 9231, 9232, 9233, and 9234 (interual exchange,
four line)

SCOTTISH MEDICAL SECRETARY 6 Drumshough Gardens Edinburgh (Tele-
grams Associate Edinburgh Tel. 4.61 Central)
IRISH MEDICAL SECRETARY 16, South Frederick Street, Dublin (Tele-
grams Bacillus Dublin Tel. 4737 Dublin)

Diary of the Association

OCTOBER
2 Fri London Dominions Committee 2.30 p.m.
Luff Elkin and Cairn Division Grand Hotel Elgin
Meeting 6.0 p.m. Dinner 7.30 p.m.
Bristol Division Bristol University (Room 43) 5 p.m.
Stockton Division Thornaby Hospital 8.0 p.m.
5 Mon Oxford Division Demonstration and Ward Visits Radcliffe
Infirmary during afternoon and continued each afternoon
until Wednesday October 13th
6 Tues London Central 2.30 p.m.
London Carol 2.30 p.m.
City Division 2.30 p.m.
Hawthorne on Cui 2.30 p.m.
Tracing
Dewsbury Division Man and Saddle Restaurant Donbury
B.M.A. Lecture by Dr H. L. Cameron on Dietetic Modifica-
tions and the Control of Certain Disorders of Infancy and
Childhood Supper 8.15 p.m.
Finchley Division Finchley Memorial Hospital Paper by
Professor Hugh Maclean on Diabetes and its Treatment in
General Practice 8.30 p.m.
West Bromwich Division Parish Restaurant Lombard Street
West Bromwich 8 p.m. Supper Mr B. T. Rose F.R.C.S. of
Birmingham will read a paper on Surgery in General
Practice
7 Wed London Finance Committee 2.30 p.m.
Regate Division Annual Dinner White Hart Hotel Reigate
Address by Dr Herbert French on a Variety of Small Points
that appear to be of Practical Importance 7 p.m.
Sunderland Division Scientific Meeting at Royal Infirmary
Sunderland
8 Thurs London Arrangements Committee 2.30 p.m.
London Interperal Morbidity and Mortality Committee
2.30 p.m.
Guildford Division Royal Surrey County Hospital Guildford
Address by Dr W. Lingdon Brown on the Future of Endo-
crinology 4.30 p.m. Annual Dinner Angel Hotel 6.30 p.m.
Swansea Division Annual Dinner Hotel Metropole Wind
Street Swansea 7.15 p.m.
9 Fri City Division Clinical Meeting Metropolitan Hospital Dr
T. H. G. Shore will be the speaker 4.15 p.m.
13 Tues Coventry Division Annual Dinner Masonic Hall 7.30 p.m.
14 Wed Harrogate Division Royal Bath Hospital Division of
Is the B.M.A. any Use to the Non-Medical Doctor? to be
opened by the Medical Secretary 4.30 p.m. Dinner Magpie
Hotel 7.30 p.m.
Oxford Division Concluding Demonstration and Ward Visit
at Radcliffe Infirmary
15 Thurs Birmingham Branch Annual Meeting Medical Institute
Birmingham 3.0 p.m.
Darlington Division Annual Meeting Board Room Green
bank Hospital 8.30 p.m.
16 Fri Willemsden Division Clinical Meeting Park Royal Hospital
Acton Lane 3.15 p.m.
21 Wed London Council 10 a.m.
22 Thurs London Conference of representatives of Local Medical and
Dental Committees 10 a.m. at B.M.A. House Tavistock Square
Cleveland Division Middlebrough Address by Mr J. B. Hall
Hall
30 Fri Barnley Division Central Cafe Market Hill Barnley
Address by Mr Graham Simpson on a Survey of Rural
Surgery Supper 8.30 p.m.

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and
Deaths is 5s. which sum should be forwarded with the notice
not later than the first post on Tuesday morning, in order to
ensure insertion in the current issue.

BIRTH

ANDERSON—At 5 Albion Terrace Warden on September 24th 1925
the wife of William Anderson F.R.C.S. of a son

DEATHS

DAVIES—On September 23rd, at East Cliff Cottage Bournemouth Dr
William Morrison Davies aged 83
NORRI—On May 21st at the Ramsay Hospital Naini Tal United
Provinces India Constance Mary, the dearly loved wife of C. T. Norri,
M.R.C.S. L.R.C.P. and daughter of the Rev and Mr J. J. Cook of
Tunja North Africa
OVELL—On September 25th at 8 St Stephen's Gardens East Twicken-
ham suddenly Adam Robert Hamilton Oakley M.R.C.S. L.R.C.P.
chief surviving son of the late Sir Henry Oakley aged 69. Funeral
held on Wednesday September 30th at Pichmond Parish Church
SEALON—On September 23rd at his residence Elm House Whalley Range
Manchester Leonard Edmund Scanlon M.R.C.S. Eng. L.R.C.P. Lond.
N.B.E. aged 55

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY OCTOBER 10TH 1925

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British Medical Association

CURRENT NOTES.

The Autumn Dinner on October 21st

MEMBERS are again reminded of the necessity for applying early for tickets for the Autumn Dinner, which is to be held in the Great Hall of the Association's new House in London on Wednesday, October 21st, at 7 for 7.30 p.m. The Council confidently expects that members will support it on this occasion by an exceptionally large attendance and will bring their friends. Decorations will be worn. The price of tickets is 12s. 6d. each exclusive of wine, and application, accompanied by a cheque should be made to the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1.

The Association's Annual Handbook

The Annual Handbook of the British Medical Association for 1925-26 is now ready. Though primarily intended as a book of reference for honorary secretaries and other workers of the Association, the Handbook is also of interest and assistance to all members. The new edition has been completely revised. It contains the decisions of the Representative Body of the Association on questions of policy, particularly of the new London and Scottish Houses of the Association, information as to the British Medical Journal, the circulation of which is now over 35,500 copies weekly, and lists of the officers and officials of the Association and of its Council and Central Committees. Copies of the Handbook can be had by members, gratis and post free, on application to the Medical Secretary, British Medical Association House, Tavistock Square, London, W.C.1. To non-members the book is on sale at 2s. 6d. (post free 2s. 9d.).

Temporary Transfer of Membership

Members intending to be resident for a length of time whether for post-graduate or other purposes, in areas other than those which contain their home address, are reminded that it is within their option to transfer temporarily to the membership list of the Division and Branch in which they will temporarily reside. By doing so, they become full members, for the time being, of the Division and Branch into the area of which they move, including the opportunity of sharing in all the activities of these bodies, social, clinical and scientific as well as medico-political, in addition to receipt of the British Medical Journal at the new address. Applications for such transfer should be addressed either to the Honorary Secretary of the member's home Division or Branch or to the Financial Secretary and Business Manager.

REPORT OF INSURANCE ACTS COMMITTEE, 1924-25

I—ADMINISTRATIVE MACHINERY

DIRECT REPRESENTATIVES ON INSURANCE ACTS COMMITTEE

1 As a result of the voting by Members of Local Medical and Panel Committees the following were elected as direct representatives upon the Committee for the Session 1924-25:—
Dr J. G. McCutcheon (Glasgow and Dr D. Horie D.S.O. (Glasgow, Aberdeenshire (Group A) Dr R. H. Dix, Sunderland (Group B) Dr G. B. Hillman M.B.E. Wakefield and Dr G. H. Sedgwick Rotherham (Group C) Dr R. G. McGowan Manchester Dr H. F. Oldham M.B.E. Morecambe and Dr F. Radcliffe Oldham (Group D) Dr J. C. Davies Wrexham and Dr W. E. Thomas Lestrade Rhondda, Glam. (Group E) Dr C. J. Palmer, Mansfield Woodhouse (Group F) Dr T. Ridley Bailey, Bilton Staffs (Group G) Mr E. Lewis Lilley Leicester (Group H) Dr John Steed Hereford (Group I) Dr D. G. Greenfield Rushden Northants (Group J) Dr J. P. Williams Freetman Andover (Group K) Dr T. Wood Locket Westbury, Wilts (Group L) Dr P. V. Fry East Molesey and Dr G. C. Garratt Chichester (Group M) Dr C. H. Panting Leyton and Dr H. Rose Wendover Bucks (Group N) Dr H. J. Cardale and Dr E. A. Gregg London (Group O).

ATTENDANCES AT COMMITTEE AND SUB COMMITTEE MEETINGS

2 A list of attendances at Insurance Acts Committee meetings and Sub Committees during the Session from the 1924 Annual Conference to September 24th, 1925, is circulated with the report.

CHAIRMAN

3 Dr H. Guy Dain of Birmingham was appointed Chairman of the Committee for the session.

REPRESENTATIVES OF OUTSIDE BODIES

4 The following nominees of outside bodies were appointed members of the Committee for the past session.—Dr Mah. I. Ramsay Plymouth (Medical Women's Federation) Dr W. I. Howarth C.B.E. London (Society of Medical Officers of Health) Dr A. E. Cope London (Poor Law Medical Officers Association) Mr H. S. Sontar C.B.E. was re-appointed by the Hospital Committee of the Association as a representative of the Staff of a Voluntary Hospital.

MEMBERS APPOINTED BY THE ANNUAL REPRESENTATIVE MEETING 1925

5 The five members of the Committee elected by the Annual Representative Meeting 1925 of the British Medical Association, are as follows:—

England and Wales.—Dr H. S. Badley, Pomfret Dr J. A. Bone, Luton Dr H. Guy Dain, Birmingham Dr P. Macdonald, York.

Scotland.—Dr R. W. Craig, Edinburgh.

ELECTION OF DIRECT REPRESENTATIVES ON THE INSURANCE ACTS COMMITTEE

6 As a result of the Committee's consideration of the following Minute 46 of the 1924 Annual Conference —

46 Resolved That the Insurance Acts Committee be requested to enquire into the disparity which at present exists between certain areas in numbers of their electors at Insurance Acts Committee elections and to suggest a remedy,

representations are being made to one Committee whose number of voters was strikingly disproportionate in comparison with the other Committees in the Group in the hope that it will bring its number into line with the rest of the Group and so obviate that general rearrangement of the whole scheme of the election of direct representatives which would otherwise be necessary

SUB COMMITTEES

7 The Committee re-appointed its Insurance Acts Sub-Committee (Scotland) and Rural Practitioners Sub-Committee with the same references as before. It also appointed an Emergency Sub-Committee, consisting of three members, to which was referred matters arising out of Medical Service Sub-Committee crises upon which the advice of the Committee was sought and any other matter of detail upon which the Head Office might desire to obtain advice between meetings of the Committee

8 With reference to the Rural Practitioners Sub-Committee, it was considered that this might be made more representative of the rural areas if its membership included a rural representative from each Group (excluding London and Scotland) not otherwise represented, and the constitution of the Sub-Committee has accordingly been altered to allow of this. The effect will be that those Groups which elect a rural representative to the parent Committee will be represented on the Sub-Committee by that representative. Groups not so represented will be asked to nominate a rural practitioner for appointment on the Sub-Committee. This will be done through the Group Standing Joint Committees, and nominations will be required within three weeks of the result of the election of direct representatives upon the full Insurance Acts Committee. Where a Group Standing Joint Committee does not exist the appointment will be made by the Rural Practitioners Sub-Committee

MINISTRY OF HEALTH DISTRIBUTION COMMITTEE

9 Dr C L Bateson, the Secretary of the London Panel Committee, has been nominated by the Insurance Acts Committee to fill the vacancy upon the Distribution Committee caused by the death of Dr R J Farnham, and has been duly elected. The Committee's representatives upon this Committee are now as follows —

Dr H G Dain (Birmingham) Dr E Lewis Lloyd (Merioneth), Dr C L Bateson (London), and the Deputy Medical Secretary, together with Dr W Baigent (Northampton) Dr H C Jones (Barnstaple) and Dr J P Williams Freeman (Andover) when questions concerning mileage are under consideration

II—ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE

10 The events which led up to the appointment of the Royal Commission and the preliminary steps taken to prepare the Association's evidence before that Commission were fully outlined in the Committee's report to the 1924 Annual Conference and it is proposed here to deal only with the events which followed the appointment by the Council of a Special Committee to deal with this matter

11 The Special Committee, it will be remembered, consisted of 31 members 12 of whom were appointed by the Insurance Acts Committee. Much of the groundwork of the Committee was delegated to Sub-Committees consisting not only of members of the Special Committee but of other practitioners who were specially qualified to deal with the subjects referred to the Sub-Committees. The reports of these Sub-Committees were fully discussed by the Special Committee and at intervals meetings were held jointly with the Insurance Acts Committee which had also been discussing from a slightly different point of view the question of the future development of National Health Insurance

12 A first draft of the Association's Memorandum of Evidence was then prepared and submitted to the Council of the Association. After revision by the Council this report was printed in the Supplement to the *B M J* of January 3rd 1925 and copies were circulated through local Secretaries to all non members. The object of this was to enable meetings to be called in every area in Great Britain to which the whole of the local profession could be invited so that when the Evidence was placed before the Royal Commission it could be said to be representative of the opinion of the whole of the profession. Secretaries of Divisions and Local Medical

and Panel Committees were asked to co-operate in the calling of local meetings, and members of the Special Committee and the Insurance Acts Committee as well as the Medical and Deputy Medical Secretaries attended a large number of the meetings to explain the draft Memorandum in detail. In order to facilitate consideration of the draft Memorandum, a set of questions dealing with the main principles set out therein was issued and local meetings were asked to vote upon these questions and to forward their views upon any other part of the Memorandum where those views were in conflict with the Memorandum. These local meetings were, generally speaking, very successful and from the replies received to the questions the draft Memorandum appeared to have received very careful consideration throughout the country

13 The collective views of the profession, as represented by these replies, were then considered by a further joint meeting of the Special Committee and the Insurance Acts Committee and due regard was paid to all suggestions for the variation of the Memorandum. The amended Memorandum was then submitted to a special meeting of the Council and afterwards published in the *B M J* Supplement of February 28th, 1925. As before, copies were circulated to non members of the Association and local Secretaries were asked to call further meetings of the local profession if deemed necessary, with a view to instructing their representatives who were to attend a conference between the members of the Representative Body of the Association and the members of the Conference of representatives of Local Medical and Panel Committees. This conference, the largest ever held under the auspices of the Association was held on March 12th 1925 and was representative of every branch of the profession. The revised draft Memorandum of Evidence was carefully considered and, except for some small amendments and suggestions was approved and recommended to the Council for submission as the considered opinion of the medical profession upon the various subjects dealt with therein

14 The Council, at its meeting on March 25th 1925, proceeded to its final consideration of the draft Memorandum and amended it in the light of the suggestions made at the joint conference referred to above. The Memorandum in its final form was submitted to the Royal Commission on April 3rd 1925

15 The Association's witnesses in chief (Dr R A Bolam, LL.D., Chairman of Council Dr H B Brakenbury, Chairman of the Representative Body Dr H Guy Dunn, Chairman of the Insurance Acts Committee and Dr Alfred Cox, OBE, Medical Secretary) appeared before the Royal Commission in support of the Association's Memorandum of Evidence on April 30th and May 7th, 1925. They were accompanied by Dr H J Cardale who gave evidence as regards the special conditions in London, Dr J P Williams Freeman, Andover, on rural conditions Mr N Bishop Farnham, London, on the question of Ophthalmic Benefit and Dr J R Drever the Scottish Medical Secretary who advised on Scottish matters. In the course of the first day's evidence the Royal Commission expressed a desire to hear evidence upon the Manchester and Salford system of 'payment per attendance' and the Manchester Panel Committee was asked to appoint a representative with the result that Dr Stanley Hodgson of Salford attended on the second day and gave evidence

16 A full report of the oral evidence of the Association's witnesses appeared in the Supplements to the *BRITISH MEDICAL JOURNAL* of May 23rd and 30th, 1925

EVIDENCE OF BRITISH SOCIAL HYGIENE COUNCIL

17 The Committee was asked for its observations upon a letter received by one of the Association's Branches from the above body (lately the National Council for Combating Venereal Diseases) concerning certain extracts from the Social Hygiene Council's draft Memorandum of Evidence to the Royal Commission. The letter from the Social Hygiene Council referred to the fact that syphilis was considered to be outside the scope of an insurance practitioners' agreement and that the treatment of gonorrhoea was at present by the ruling of the Ministry of Health within the competence of the general practitioner but that the lengthy special treatment and the large number of specialised instruments and apparatus required rendered success in a majority of cases an impossibility

18 The matter was brought by the Committee before the Council of the Association, which passed the following resolution and brought it to the notice of the British Social Hygiene Council —

That the Association maintains the principle that the treatment of any disease as such should not be removed from the province of general practitioners as a class, and that syphilis and gonorrhoea do not call for special modification of the principle

III—MISCELLANEOUS

OPHTHALMIC BENEFIT

19 Panel Committees are doubtless aware that as a result of the second valuation of Approved Societies, a considerable sum of money will now be available for expenditure by Societies upon additional benefits. Several Approved Societies have for some time recognised the need for examination of the eyes and the provision of glasses where necessary and have been administering what was known as 'optical benefit' which often consisted of referring the insured person to an optician. This is of course contrary to the policy of the Association, as it is considered that the eyes can only be properly examined by medical practitioners who are specially qualified to undertake this work.

20 The reasons given by Approved Societies for the employment of opticians were (1) that they could not afford to pay the fees for the advice of ophthalmologists and (2) that the number of these was too small and their distribution throughout the country too uneven to allow of their employment even if the provision of the fee were practicable.

21 The situation thus created led to the appointment by the Council of the Association of a Special Committee to consider matters specially affecting ophthalmic surgeons and their relation to the public and this Committee has co-operated with the Insurance Acts Committee in the action which has been taken to place this matter upon a more satisfactory basis.

22 Steps were at once taken to show that the reasons given by the Approved Societies were fallacious, by forming a list of ophthalmologists who would be willing to treat insured members of Approved Societies at a uniform fee of £1 1s to cover each complete case of refraction. The result is that over 600 practitioners who are regarded as specialists in this class of work have agreed to give their services on the terms just mentioned. In order that there could be no doubt as to the standing and experience of those on the list each applicant was required to satisfy one or more of the following criteria:

(a) that he has held hospital or other appointments affording special opportunities for acquiring special skill and experience of the kind required for the performance of the service rendered, and has had actual recent practice in performing the service rendered or services of a similar character or

(b) That he has had special academic or post graduate study of a subject which comprises the service rendered and has had actual recent practice as aforesaid or

(c) that he is generally recognised by other practitioners in the area as having special proficiency and experience in a subject which comprises the service rendered.

23 The Ministry of Health was then approached in co-operation with the Council of British Ophthalmologists and the Ophthalmic Benefit Committee (a body which more particularly represents junior ophthalmologists and refraction assistants) urging the necessity from the public standpoint for the employment of ophthalmologists instead of opticians being made an essential part of the Ministry's approval of additional schemes. Various discussions took place upon the matter and the Ministry eventually submitted the following draft provisions for the observations of the Association—

(1) In all cases the insured person must first consult his panel doctor.

(2) The panel doctor—

(a) if he is satisfied that the case is one only of a simple error of refraction either prescribes glasses or informs the Society of the necessity for glasses.

(b) if he is doubtful or if he considers that further medical opinion is necessary he refers to a specialist on the approved medical list other than himself.

(3) The above action of the panel doctor is admitted to be within competence of the present contract.

(4) The approved medical list will be drawn up in Insurance Committee areas and maintained by the British Medical Association consisting of persons satisfying the three criteria quoted above.

(5) It will be sent to the Ministry and circulated to Societies and Insurance Committees for distribution to practitioners in their areas—alterations to be similarly circulated.

24 The Ministry was informed that while appreciating the interest the Ministry was taking in the matter and its attempts to bring about an understanding between the profession and the Approved Societies in regard to a matter of very great importance the Association could not accept paragraphs (2) and (3) above mainly because of what might flow from the acceptance of 2 (a). Under that paragraph the practitioner would have to satisfy himself that the case was one of simple error of refraction that is to say an error which would justify him (not being an expert) in prescribing glasses or suggesting to the Society that the provision of glasses (presumably by an optician) would meet the case.

Also, the practitioner, not being possessed of expert knowledge would be taking a great responsibility inasmuch as he might be wrong in his diagnosis of a simple error of refraction, and the case might turn out to be something much more serious.

25 The Ministry was further informed that the Association could not accept the position that a registered medical practitioner should in any way lay himself open to the charge of recommending an insured person to be treated by an unqualified person and that the recommending that an insured person should be sent to an optician for the examination of his eyes would be equivalent in the opinion of the Association to the covering of unqualified practice.

26 Serious objections were raised to parts 2 (a) and (b) and the following paragraph was suggested to replace them—

If the insurance practitioner from his general examination of the patient concludes that the symptoms found arise from defect of the eyes or call for examination and report upon the eyes, he should so inform the Approved Society and recommend that the Approved Society should refer the patient to an ophthalmologist upon the approved list.

This if adopted would place the onus of using the optician instead of the ophthalmologist on the Approved Society, would enable the Society to use any practitioner on the special list and would allow the insured person to have some choice of specialist not excluding his own insurance practitioner if he happened to be on the list.

27 Further discussions took place between representatives of the Association and the Ministry and the latter subsequently intimated (1) that the suggestions of the Association had been placed before the Consultative Council of Approved Societies, when the Societies were strongly urged to recognise the danger to individual insured persons which might arise if ophthalmic treatment or optical appliances were supplied without the advice of a properly qualified medical man (2) that there was a strong body of opinion among Societies in favour of the employment of specialists and no special difficulties were encountered with regard to the proposals on the understanding that the certificate or recommendation which the insurance practitioner would give was to be treated as part of his obligation under the terms of service. This obligation the Insurance Acts Committee has accepted on behalf of insurance practitioners.

28 Regulations have since been issued providing that if the condition of the patient is such as to require ophthalmic treatment which is outside the practitioner's contract he shall if the patient so desires furnish him with a recommendation in writing that such treatment should be obtained. The procedure will then be for the insured person to obtain from his Society the necessary authority to visit one of the ophthalmic surgeons on the approved list. This list was sent to the Ministry who printed and circulated it to Approved Societies as well as to Panel and Insurance Committees. As fresh names are added to the list they are sent to the Ministry and supplementary lists will from time to time be circulated.

29 Most of the Societies eligible to join the scheme have done so but this class was limited to those whose second valuation had taken place at December 1922, with the result that the scheme at present only applies to a group of the smaller Societies with a total membership of some 1,600,000. The remaining Societies including most of the large ones will not be eligible to join the scheme until July, 1926.

30 The importance of this development to insurance practitioners to ophthalmic and other specialists to the medical profession and to the public can hardly be overestimated. Insurance practitioners are mainly interested because for a large number of their patients an efficient ophthalmic examination and correction of refraction or other troubles has been or will shortly be secured. The specialist is interested if he is an ophthalmologist because the scheme opens out a field of remunerated work, most of which in the past has been done by opticians or at hospitals or not done at all. Other specialists are interested because it provides an example of procedure in dealing with other special fields of practice if and when they come to be included in medical benefit or given as additional benefits. The medical profession as a whole must welcome the scheme.

by many of the Approved Societies at the Ministry of the value of qualified and s opposed to the fitting of glasses by opticians who however well qualified as opticians have no general clinical experience and have never been trained to treat the eye as part of the body and not merely as an optical instrument. The precedent is of immense value to the public in giving official recognition to the doctrine that insured persons are entitled to treatment by fully qualified persons.

you over a number of years it was found that the average worked out not unfavourably to the doctors, and he has undertaken that if in any one year there is a surplus at the end of that year he will consult the Insurance Acts Committee before disposing of such surplus. From the explanation given the Committee is satisfied that the Pool as at present constituted covers all the persons for whom insurance practitioners throughout the country are at risk.

APPOINTMENT OF CHAIRMAN OF MEDICAL SERVICE SUB COMMITTEE

46 The Committee influenced by unfortunate incidents in the London and some other areas, has for some time past urged upon the Ministry the desirability of improving the machinery for appointment of the Chairman of the Medical Service Sub Committee and the Minister issued a Regulation amending Article 27 (2) (iii) of the principal Regulations so as to provide that the Chairman shall be appointed by the unanimous vote of the members of the Sub Committee present at a meeting to be specially summoned for the purpose, and that failing unanimity the Chairman shall be appointed by the Minister. The Regulation appeared to meet satisfactorily the difficulties experienced in certain Insurance Committee areas in regard to this matter.

47 While the draft Regulations containing the above mentioned amendment were lying on the table of the House of Commons for the necessary period which must elapse before they become law a motion for their annulment was tabled by a number of Members of Parliament. The Office immediately wrote to every medical Member of Parliament (1) describing the position and pointing out that the draft Regulation was made by the Minister of Health with the full knowledge and approval of the Insurance Acts Committee in order to cope with difficulties which had occurred in one or two areas under the old Regulation and (2) asking them to use their influence to prevent the motion for annulment being carried. The motion was eventually withdrawn upon an undertaking by the Minister of Health that the draft Regulation in question would be amended. The effect of the amendment will, it is understood, be that the Chairman of the Medical Service Sub Committee should in the first instance, be appointed by a majority of the votes of the Sub Committee. If he cannot be appointed because the two sides of the Committee are voting in opposite ways the Committee being divided in equal numbers so that no majority can be obtained or if the Committee fails to function by reason of the fact that the Chairman appointed is unacceptable to some of the members of the Committee, the matter will be referred to the Insurance Committee. The latter would then appoint a Chairman who would not necessarily be a member of the Committee. He would, however, in the latter event be co-opted a member of the Committee. In the event of the Sub Committee declining to accept him as Chairman, and again declining to function it is proposed that the Insurance Committee should make representations to the Minister who after consultation with the Insurance and Panel Committee would himself appoint a Chairman. This procedure would seem to secure what is wanted namely, the appointment of a Chairman who could fairly be regarded as impartial.

48 Up to the date of the meeting of the Committee on September 24th no statement had been received from the Ministry of Health of the above action or of any proposed amendment of the Regulation but on that date the Committee was informed that the Ministry had had under consideration an amendment of the Regulation and had in fact consulted a member of the Committee thereon in another capacity. The Committee has called the attention of the Ministry of Health to the fact that, while as a central negotiating body on behalf of insurance practitioners the Committee was consulted as to the wording of the original draft Regulation it had not been consulted as to the subsequent amendment thereto and enquiring the reasons therefor.

REMUNERATION OF ASSISTANTS IN GENERAL PRACTICE

49 At the request of the Medical Students and Newly Qualified Practitioners Sub Committee of the Association's Organisation Committee the Insurance Acts Committee has had under consideration the question of the remuneration of assistants in general practice and of what action it may the Association should take in the matter. The Committee was asked for its opinion on the subject from the point of view of the insurance practitioner and made the following recommendations which have been approved by the Representative Body of the Association—

- (a) That on general principles the employment in suitable cases of assistants by practitioners is in the interests both of the general public and of the profession.
- (b) That it is not desirable for a principal to employ an assistant where he is unable to exercise adequate personal supervision over the latter, and, in some types of branch practice in such circumstances a partnership is to be preferred.

(c) That the offer or promise of a future partnership should not be made a reason for paying a lower salary to an assistant.

(d) That the minimum for a newly qualified inexperienced assistant is £240 per annum with the addition of board and lodging and in the case of such a practitioner employed on an outdoor basis the board and lodging value should be estimated from £120 to £160 per annum according to the circumstances of the individual case, that the only exceptions or possible exceptions to the foregoing should be in the case where, owing to arrangements made for study leave or to physical disability or other reason the assistant is not able to give full time to the work.

(e) That a whole-time assistant should be entitled to not less than two weeks holiday a year on full pay.

(f) That no steps should be taken for the present to make the foregoing expressions of opinion the policy of the Association but they should be used for the assistance of the office in advising on points connected with the terms and conditions of the work of assistants. Where an advertisement is offered for insertion in the Journal in connection with an assistantship not in accordance with the foregoing opinions the attention of the advertiser should be drawn to them in the hope that the advertisement will be amended but the advertisement should not if otherwise eligible be refused.

50 It is believed that the general acceptance of these principles will be of advantage to insurance practitioners as improving the status of assistants when these have to be employed. Their general acceptance will certainly be regarded with satisfaction by the younger members of the profession, and will make them more willing to undertake a post graduate experience of this kind which is such an excellent training for them.

UNIFORM CERTIFICATE FOR MATERNITY BENEFIT

51 Minute 38 of the last Annual Conference instructed the Insurance Acts Committee to take steps to have established a uniform certificate for all Approved Societies for the purpose of certifying for Maternity Benefit with the result that the following form has been submitted to the Ministry of Health as a suitable model form—

Medical Certificate in respect of Maternity Benefit

I certify that I attended the above named woman in her confinement at the address stated above when she was delivered of a * ^{male} _{female} child on the ^{day} of 19 and that the child was born ^{dead} _{alive}

* ^{dead} _{after a period of pregnancy lasting not less than 28 weeks}

Date _____ Signature _____

Qualifications _____

(If certified midwife add Registered Number) _____

Address _____

* Strike out words not required

ALTERATION OF CERTIFICATE IN AN APPROVED SOCIETY OFFICIAL

52 The attention of the Ministry was drawn to the action of a local Secretary of an Approved Society in altering the date of a certificate given by an insurance practitioner, and a request was made that the Ministry would take a serious view of the case in view of the consequences which follow breaches of the certification rules by an insurance practitioner. The Ministry replied that it had been in communication with the General Secretary of the Approved Society in question from whom it was understood that the local Secretary acted under a misapprehension that he fully appreciated the seriousness of the offence and had given an undertaking that it would not occur again. The Committee is not satisfied with this reply and has given instructions that the Ministry's attention be drawn to the contrast between this complacent leniency and the severity of the Ministry towards even minor breaches of the Certification Rules by an insurance practitioner.

SPECIAL INTERMEDIATE CERTIFICATES

53 In view of a statement by the Ministry of Health that the interpretation of a week in Certification Rule 5 was not applicable to the phrase 'specified intervals' in Rule 12, representations have been made by the Committee accepting this interpretation of the wording of Rule 12, but urging that the Rule be so amended as to provide that a practitioner who gives a special intermediate certificate for a specified interval shall be allowed to give his next special intermediate certificate on any day of the first week of succeeding 'specified intervals'.

MEDICAL RECORDS

54 The subject matter of the following Minute 52 of the 1924 Annual Conference has been fully discussed with representatives of the Ministry of Health but as with many other delicate

points the Ministry holds out no hope of any change in the present requirements until after the Royal Commission has reported —

52 Resolved That this Conference, while fully appreciating the value of careful Clinical Notes and essential dates on Medical Records, considers that it is unnecessary to record all attendances, etc. in chronic cases (except where practitioners have agreed to keep full records of work done for statistical purposes), inasmuch as in many cases the continuation Record Cards overload the Record Envelopes and seriously diminish the utility of the Clinical Notes

The Committee intends to keep this matter alive and therefore recommends the Conference to reiterate the foregoing opinion

FEES FOR ANAESTHETICS

53 The 1924 Annual Conference instructed the Committee to prepare a full statement upon the question of fees for anaesthetics and to circulate such statement to Panel Committees. The Committee accordingly prepared a full statement of the circumstances under which it considered that an anaesthetist's fee could or could not be charged to the Local Practitioners' Fund or the patient. This statement was issued to Local Medical Panel Committees on 4th June, 1925 (M. 23), and is appended to this Report

DISPENSING CAPITATION FEE

56 Minute 45 of the 1st Annual Conference, asking the Committee to enquire as to the adequacy of the capitation fee of 2s for dispensing, has been under consideration. It was noted that the Accountant-General of the Ministry of Health, in his evidence before the Royal Commission, stated that the cost of drugs per insured person for 1924 exceeded 2s 3½d, and had exceeded 2s from 1922 onwards. Further action in connection with the Conference minute has, however, been deferred, because it is believed that up to date statistics as to cost of drugs and attendances upon insured persons will be submitted by the Ministry to the Royal Commission in October, and such figures may well provide convincing arguments as to the inadequacy of the 2s dispensing fee

POST GRADUATE FACILITIES FOR INSURANCE PRACTITIONERS

57 Minute 53 of the 1924 Annual Conference, instructing the Committee to approach the Council of the Association with a view to the provision of post graduate facilities in those areas which require them, was referred by the Council to the Science Committee of the Association. A Special Committee has since been appointed by the Council of the Association with a view to exploring the possibility of including, among the Association's activities, post graduate study for all branches of the profession. Such a scheme would, naturally, include insurance practitioners. The Minister of Health has also appointed a committee to draw post graduate medical education centred members of which Committee are the R. A. Bolam and the Chairman of the Insurance Acts Committee (Dr H. Guy Dain). The Committee will await its opportunity for useful action

DISPENSING BY PRACTITIONERS

58 The Committee decided after consideration that it was impossible to take any useful action in connection with the following Minute 42 of the 1924 Annual Conference —

Resolved That in considering the evidence to be presented before the Royal Commission the Insurance Acts Committee be requested to take into consideration the question of dispensing by medical practitioners in collectory or other special areas

A UNIVERSAL HEALTH INSURANCE FORMULARY

59 The Committee was asked to consider the desirability of the introduction of a universal formulary which could be issued by the Ministry of Health for use by all insurance practitioners throughout the country. Owing to the difficulties, however, of compiling a formulary which would not be too extensive and which would, at the same time, satisfy the needs of all areas, the Committee did not think that the suggestion was a practicable one. It was known at the time that two large areas were revising their formularies, and they were asked to see whether it would not be possible to combine the two and thus form the basis of a national formulary. Both Committees reported, however, that the divergency between the two formularies was so great that it was not possible in any way to combine them. The Committee has therefore not proceeded any further in the matter

QUANTITY AND QUALITY OF DRUGS

60 The Ministry of Health recently prepared after discussion with the Retail Pharmacists Union a scheme for the testing of drugs and appliances supplied by insurance chemists and submitted the draft scheme for the observations of the Insurance Acts Committee. The only part of the scheme which affects insurance practitioners is that which requires an insurance practitioner to supply a prescription which is to be used for the purpose of a test, and as the Committee was satisfied that the prescriptions used by practitioners who would be asked to supply them would be a matter upon which the Panel Committee would be consulted, together with the local Pharmaceutical Committee, the Insurance Acts Committee informed the Ministry that it raised no objection to the scheme

tioner to supply a prescription which is to be used for the purpose of a test, and as the Committee was satisfied that the prescriptions used by practitioners who would be asked to supply them would be a matter upon which the Panel Committee would be consulted, together with the local Pharmaceutical Committee, the Insurance Acts Committee informed the Ministry that it raised no objection to the scheme

ADDITIONS TO THE LIST OF PRESCRIBED APPLIANCES—SPECIALLY EXPENSIVE DRUGS

61 As a result of representations by the Committee the following appliances have now been added to those contained in the Second Schedule to the Medical Benefit Regulations —

Ring pessaries, eye droppers, eye baths, triangular bandages, hypodermic syringes and needles for self-administration of insulin

62 With the exception of triangular bandages it has been agreed with the Ministry of Health that the whole of the foregoing shall be added to the list of specially expensive drugs in Part II of the Distribution Scheme, thus excluding them from the drugs and appliances in respect of which a dispensing surcharge practitioner accepts liability

FEHLING'S SOLUTION FOR TREATMENT BY INSULIN

63 The Committee took up with the Ministry of Health the question of Fehling's Solution, for use in the treatment by Insulin, being a proper charge upon the Drug Fund, but was unable to persuade the Ministry that it should be so chargeable. The Ministry holds that Fehling's Solution in these cases is a means of diagnosis and not of treatment. The Committee has now informed the Ministry that it is the duty of the doctor to prescribe, in certain cases, Fehling's Solution to be used by the patient as an essential part of the treatment by Insulin, in which case the cost is in the opinion of the Committee properly chargeable against the Drug Fund, and that, in the event of the Ministry maintaining its present attitude in this matter the Committee would have no option but to advise insurance practitioners that if they prescribed Fehling's Solution for use by the patient, the patient would have to pay for it himself, as the Ministry had decided that it was not a proper charge upon the Drug Fund

CERTIFICATION—INCAPACITY FOR WORK

64 The following Minute 37 of the 1924 Annual Conference was dealt with in paragraph 53 of the Association's Memorandum of Evidence before the Royal Commission —

37 Resolved That the Insurance Acts Committee be instructed to take whatever steps it may deem desirable and necessary to obtain an authoritative ruling as to the meaning of 'incapable of work' as defined in the Medical Certification Rules in order that there may be greater uniformity in practice in dealing with the question of incapacity for work

The ambiguous character of the phrase was dealt with and the Commission asked to find another phrase. The question is one of great difficulty, but the Committee awaits the report of the Commission in the hope that something useful may be suggested

1924 CENTRAL POOL FINAL FIGURES

65 The Central Practitioners' Fund (England) for 1924 was finally determined at £5700,300. The final amount in 1923 was £5836,000. Taking into account the difference in the amount of the capitation fee for both years, the 1924 figure represents an increase of 338,912 insured persons

SEAMEN'S NATIONAL INSURANCE SOCIETY

66 The Committee has given consideration to Minute 50 of the last Annual Conference, in which it was asked to support in every possible way the Executive Council of the National Association of Insurance Committees in its endeavour to secure that the members of the Seamen's National Insurance Society shall henceforth receive their medical benefit by and through Insurance Committees and has had before it information as to the method of administering medical benefit by the Society

Conversations with the Seamen's National Insurance Society and the Medical Political Committee of the Association in reference to the fees paid by the Society to medical practitioners for treatment of members of the Society seemed to indicate that sailors as a class can only be dealt with under the normal panel system with great difficulty. The majority of sailors apparently object to placing their name on the list of any particular doctor until they are sick and when they become sick they have a great tendency to go to certain doctors who are well known to seamen. If this be true and that a few doctors in any port have to attend practically the whole of the sick seamen it would appear to be unfair that the whole of the money available for their medical benefit should go into the local medical pool and be divided amongst the

whole of the doctors in that area. The Seamen's Society being well acquainted with the habits of seamen came to the conclusion that it would be much better that medical practitioners should be paid for work done on a scale of fees which is at present the subject of negotiations.

The Committee, therefore, has come to the conclusion that the peculiar nature of the occupation of the members of that Society is a good reason why they should receive their medical benefit as they do and not through Insurance Committees. The Committee therefore recommends

Recommendation That having considered the question of the method of administration of medical benefit for members of the Seamen's National Insurance Society, the Conference is of opinion that the present method whereby members of the Society obtain their medical benefit through the Society is more in the interests of the insured persons concerned and the medical profession than would be the administration of their medical benefit through Insurance Committees.

RECIPROCITY BETWEEN INSURANCE PRACTITIONERS AND MINISTRY OF PENSIONS MEDICAL OFFICERS

Since 1922 efforts have been made to arrange for some closer co-operation between Ministry of Pensions Medical Officers and insurance practitioners in connection with the treatment by the former of insured pensioners. Notwithstanding repeated pressure by the Committee it has never been found possible to get the Ministry of Pensions to arrange for a Conference until June last. At this Conference, however, it did not appear that the Ministry of Pensions officials appreciated the position of insurance practitioners in this matter, and did not seem at all anxious for any reciprocity. As there has been a great decline in the Pensions Medical Service since the matter was first raised, the Committee is of opinion that no further action need be taken.

APPENDIX

FEES FOR ANAESTHETICS

- | | |
|---|---|
| 1 Where the operation is 'inside the contract' and is performed by the insured person's insurance practitioner with a second practitioner administering the anaesthetic (provided the giving of the anaesthetic is not itself a specialist service) | Fee payable from Practitioners Fund |
| 2 Where the operation is 'inside the contract' and is performed by a second doctor, and the insured person's insurance doctor administers the anaesthetic (provided the giving of the anaesthetic is not itself a specialist service) | Do |
| 3 Where the operation is "outside the contract" and is performed by the insured person's insurance doctor who possesses special skill and experience of a degree or kind which general practitioners as a class cannot reasonably be expected to possess, and a second practitioner administers the anaesthetic (provided the giving of the anaesthetic is not itself a specialist service) | Do |
| 4 Where the operation is outside the contract and is performed by a second doctor and the insured person's insurance doctor administers the anaesthetic (provided the giving of it is not itself a specialist service) | No fee chargeable to Practitioners Fund or to patient (If assistance in addition is necessary fee for assistance is payable by patient) |
| 5 Where the operation is 'outside the contract' and is performed by a second doctor and the insured person's insurance doctor gives assistance (three practitioners being involved) | Fee for anaesthetic (whether itself a specialist service or not) chargeable to the patient. |
| 6 Where the giving of the anaesthetic is itself a specialist service in connection with an operation 'inside or outside' the contract | Fee chargeable to patient |
| 7 Where the operation is in respect of a confinement | Do |
| 8 Where the operation is a dental operation | Do |

APPLICATION TO HOSPITALS

It is open to the Panel Committee of any area to arrange, so far as its locality is concerned that the foregoing principles apply in connection with the administration of anaesthetics for operations performed in a hospital where any general practitioner may treat his own patients or choose his own anaesthetist. Any hospital with a selected medical staff would, of course, be debarr'd from this arrangement.

THE PANEL CONFERENCE, 1925

The Annual Conference of Representatives of Local Medical and Panel Committees will be held on Thursday, October 22nd, at 10 a.m., in the Great Hall of the British Medical Association House, Tavistock Square, London, W.C.1.

The following Motions for consideration at the Conference have been received since the printing of the Provisional Agenda (Document M 9, already circulated)

Cases referred to Regional Medical Officers

Motion by HASTINGS That when a patient has been referred to the Regional Medical Officer by the Society and the Regional Medical Officer is of opinion that he or she is capable of work the Regional Medical Officer should before sending in his report, see or communicate with the practitioner connected with the case if the latter was unable to be present at the examination.

Election of Direct Representatives on the Insurance Acts Committee

Motion by HERTFORDSHIRE That this Conference agrees to the division of Group 'N' (now returning two members to the Insurance Acts Committee) into two Groups each Group returning one member: it such division is agreed to by all the Panel Committees composing Group 'N' and that any division so agreed upon shall become operative for the election of 1926.

Investigation of Complaints by Insurance Practitioners against Approved Societies

Motion by WARWICKSHIRE That in the opinion of the Conference article 28 (2) of the Medical Benefit Consolidated Regulations 1924 should be so amended as to make it clear that the Medical Service Subcommittee shall, at the request of the Panel Committee investigate any complaint made by a practitioner against an approved society or its agent arising in the discharge by the practitioner of his duties under the terms of service.

Association Notices

BRANCH AND DIVISION MEETINGS TO BE HELD

BIRMINGHAM BRANCH—The annual meeting of the Birmingham Branch will be held at the Medical Institute, Birmingham on October 15th, at 3.30 p.m.

BIRMINGHAM BRANCH COVENTRY DIVISION—The annual dinner of the Coventry Division will be held at the Masonic Hall on Tuesday, October 13th at 7.30 for 7.45 p.m. Price of tickets including wine 18s without wine 14s. Members are requested to notify the Secretary regarding tickets not later than October 6th. Every effort is being made by the committee to ensure that the dinner shall be a success. Bridge tables, etc., will be provided.

CAPE OF GOOD HOPE (WESTERN) BRANCH—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday, October 30th, at 8 p.m., when there will be a symposium on neurophysiology arranged by Dr F. H. Hooy. Among the speakers will be Dr J. S. du Toit, Dr A. Reith Fraser, Mr J. Luckhoff, Dr W. P. Mulligan, and Dr E. W. D. Swift.

EDINBURGH BRANCH SOUTH EASTERN COUNTIES DIVISION—An ordinary meeting of the South Eastern Counties Division will be held in the Railway Hotel, Newtown St. Boswells, on Wednesday, October 14th, at 3 p.m. Address by Colonel William Glen Leitch on the help afforded by clinical pathological examination.

METROPOLITAN COUNTIES BRANCH CITY DIVISION—The following meetings have been arranged for the session—Tuesday, November 3rd at 4.30 p.m., at St. Bartholomew's Hospital British Medical Association Lecture by Mr John Fraser, M.C., Professor of Clinical Surgery, Edinburgh University. Sympathetic disturbances of the abdominal viscera in relation to surgery. Tuesday, December 1st, 9.30 p.m. at Metropolitan Hospital Mr Comyns Berkeley. Treatment of eclampsia. Thursday, December 3rd, 7.15 for 7.30 p.m., Annual Dinner Holborn Restaurant. Tuesday, January 5th 1926, 9.30 p.m. at Public Library, Holloway Road, N. Lieut. Colonel Mort. Interesting surgical cases in relation to general practice (with photographs). Tuesday, February 2nd 9.30 p.m. at Public Library, Holloway Road, N. Professor J. McIntosh. Dental decay. Tuesday, March 2nd, at Metropolitan Hospital Mr H. S. Scott. Some modern advances in chest surgery. Thursday, March 25th. Dinner and fancy dress dance. Crown Hall Holborn Restaurant. 7.30 p.m. to 2 a.m. Tuesday, April 6th 9.30 p.m. at Metropolitan Hospital, General Meeting. Tuesday, May 4th at 9.30 p.m., at Metropolitan Hospital President's address. Tuesday, June 1st, 9.30 p.m. at the Metropolitan Hospital, Annual General Meeting. Tuesday, July 6th, 9.30 p.m., Dr T. H. G. Shore. Pathological specimens with clinical notes. In conjunction with the Aesculapian Society clinical afternoons will be held at the Metropolitan Hospital on the second Friday in the month, commencing October 9th and concluding on July 9th 1926. Tea is provided at 4 p.m. and the demonstration commences at 4.15. members are invited to show cases of interest.

METROPOLITAN COUNTIES BRANCH ST. PANCRAS DIVISION—The first meeting of the winter session of the St. Pancras Division will be held in the British Medical Association House, Tavistock Square, W.C. on Tuesday, October 13th at 4.30 p.m. Dr John S. Fairbairn, obstetric physician, St. Thomas's Hospital, will deliver

in address on puerperal sepsis in general practice, its causes and prevention. A very interesting discussion is expected, and members are invited to make a special effort to attend.

METROPOLITAN COUNTIES BRANCH SOUTH WEST ESSEX DIVISION.—The following are the arrangements for meetings during the session 1925-26.—October 20th at Walthamstow Hospital, paper by Mr J Howard Russell M.S. F.R.C.S. Cancer of the breast. November 3rd at Livingstone College Knott's Green Leyton, paper and lantern demonstration by Dr H G Adamson Lezoma. December 1st, at Wesleyan Schoolrooms High Road Leyton paper by Dr M Culpin. The handling of nervous patients. March 16th, 1926 at Whipp's Cross Hospital Leytonstone. Clinical demonstration by Dr J C Muir medical superintendent. April 6th, at Walthamstow Hospital paper by Dr J Sorley. The significance of early signs and symptoms in pulmonary tuberculosis with special reference to children. May 4th, at Claybury Mental Asylum, demonstration by Dr C P Braham medical superintendent. June 1st at Wesleyan Schoolrooms High Road Leyton Annual General Meeting. The meetings will be held at 3.30 p.m. unless otherwise notified. Visitors are cordially invited to attend the scientific meetings.

METROPOLITAN COUNTIES BRANCH WILKESDEN DIVISION.—A clinical meeting of the Wilkesden Division will be held at 11th Royal Hospital Acton Lane on Friday October 16th at 3.15 p.m. and will be conducted by Dr W E Turner the resident medical officer.

NORTH OF ENGLAND BRANCH CLEVELAND DIVISION.—Mr J Basil Hall M.Chir. F.R.C.S. of Bradford Ex-President of the Association will address the Cleveland Division in Middlesbrough on Thursday October 22nd. The subject of the address will be announced later. Members of neighbouring Divisions are cordially invited.

NORTH OF ENGLAND BRANCH DARLINGTON DIVISION.—The annual general meeting of the Darlington Division will be held in the Lord Room Greenbank Hospital on Thursday, October 15th, at 8.30 p.m. Agenda: Election of officers, selection of lecturers for the session, Representative's report of business done at Annual Representative Meeting.

NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION.—The annual address will be given by Dr H Crichton Miller on Thursday November 12th. The annual dinner will be held the same evening at 7.30 at the Palace Hotel Sunderland.

OXFORD AND READING BRANCH OXFORD DIVISION.—Out patient demonstration and ward visits (by kind co-operation of the honorary staff) will take place at the Radcliffe Infirmary each afternoon (except Sunday) up to Wednesday, October 14th. Members and non-members of the Association are invited. There are no fees. Tea will be provided each afternoon.

SHROPSHIRE AND MID WALES BRANCH.—The fifteenth annual general meeting of the Shropshire and Mid Wales Branch will be held at the Royal Shrop Infirmary on Tuesday October 27th at 3.30 p.m. The President Elect Dr Whitley, will deliver an address. The annual dinner will take place the same evening at the Raven Hotel Shrewsbury at 7 o'clock. As the occasion will mark the jubilee of the Branch a very large attendance is looked for and every member is urged to make a special effort to attend.

SOUTHERN BRANCH WINCHESTER DIVISION.—A meeting of the Winchester Division will be held on Wednesday October 14th at the Red Lion Hotel Basingstoke at 3.15 p.m. At 3.30 Dr G C Anderson Deputy Medical Secretary of the British Medical Association will give an address on the Association's policy affecting hospitals. Non-members particularly those holding hospital appointments, are cordially invited to be present.

SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION.—The following programme of meetings has been arranged by the Swansea Division for the session 1925-26. The meetings will take place at the General Hospital, Swansea, at 8.15 p.m. October 22nd—Dr Daniel E Evans. The diseased heart in pregnancy. November 5th—Surgical clinic. November 19th—Dr White of Messrs Puke, Davis and Co. Some recent aspects of gland therapy. December 3rd—Medical clinic. December 17th—Ophthalmic meeting. Members desirous of reading papers or of showing cases and specimens are requested to communicate with the honorary secretaries of the Division not later than seven days before date of meeting.

SURREY BRANCH CROYDON DIVISION.—The next general meeting of the Croydon Division will be held at the Croydon General Hospital on Tuesday October 27th at 8.15 p.m., when Dr H Britly Shaw will give an address on early treatment by artificial pneumothorax of pulmonary suppuration.

SURREY BRANCH REIGATE DIVISION.—T has been arranged for the session 1925-26.—Mr R P Rowlands. The acute abdomen. 8th—Dr H C Cameron. Some complaints. January 12th 1926—Sir Henry Gairdner. In non-pulmonary tuberculosis. Tuesday. Hutchison. The chronic abdomen. Dr Frank Cook. Pelvic inflammation in women. Tuesday April 13th. Clinical meeting. Tuesday, May 11th. Divisional meeting. Wednesday June 2nd 3.45 p.m. Annual meeting. All meetings will be held at the East Surrey Hospital at 8.45 p.m. unless otherwise stated.

YORKSHIRE BRANCH BARNLEY DIVISION.—A meeting of the Barnley Division will be held at the Central Cafe Market Hill Barnley on Friday October 30th. Supper will be served at 8.30 p.m. prompt. Mr Graham Simpson (Sheffield) will give an address on a survey of renal surgery (with lantern demonstration).

Those intending to be present should notify the honorary secretary Dr J B Fisher, King Street, Hovind, not later than Monday, October 19th.

YORKSHIRE BRANCH DUNSFORD DIVISION.—The following lectures and meetings have been arranged for the session 1925-26. November 3rd—Sir Berkeley Moynihan, Bt (Leeds) 1st lecture (subject to be announced later). December 1st—Dr Burrows (Leeds) Refracted from a diagnostic standpoint. January 12th 1926—Dr W Letcher Shaw (Manchester) Chronic pelvic pain. February 2nd—Mr A M Council (Sheffield) Demonstration of treatment of injuries of the lower limb. March 2nd—Dr W Vining (Leeds) Acidosis. April 6th. Open night. May 4th. Annual dinner. The meetings will be held in the Main and Saddle Restaurant Dunsford. Supper will be provided at £15. Members from neighbouring Divisions will be welcomed.

YORKSHIRE BRANCH HARRGATE DIVISION.—A meeting of the Harrgate Division will take place at the Royal Bath Hospital on Wednesday October 14th at 4.30 p.m. Dr Alfred Cox Medical Secretary of the Association, will open a discussion on Is the HVA any use to the non-panel doctor? Tea will be provided at the hospital at 4.15 p.m. by the Chairman. A dinner will be held at the Majestic Hotel (price 8s 6d) at 7.30 p.m. After dinner it is expected that Dr Cox will reply to the toast of the Association. As this is a special occasion the executive hopes that members will make every endeavour to be present, and to persuade as many non-members as possible to attend.

YORKSHIRE BRANCH WAKEFIELD, PONTEFRACT AND CASTLEFORD DIVISION.—The following programme of lectures arranged by the Wakefield, Pontefract and 1925-26. October 15th—Mr J A Coupland. A notable rate of operations for intestinal. 12th—Dr J S Bollen (Wakefield Mental Hospital) Diagnosis and certification of mental diseases. Sunday, December 13th—Colonel L W Harrison (special medical officer for venereal diseases to Ministry of Health) British Medical Association Lecture. The management of syphilis (illustrated by a cinematograph film). January 14th, 1926—Discussion. The role of the general practitioner in preventive medicine. To be opened by the Chairman (Dr William Sisson). February 11th—Dr William Mitchell (Bradford) The therapeutic value of electric and allied methods of treatment. March 11th—Mr E W Bain F.R.C.S. (Leeds) Middle ear suppuration. April 15th—Dr A E Pearson (medical superintendent of the City Hospital, Leeds) The diagnosis of infectious diseases with special reference to the tests in diphtheria and scarlet fever. The above meetings (except that on December 13th) will be held in the Bull Restaurant, Westgate, Wakefield. Supper will be served at 7.45 p.m. (charge 2s 6d) and the lectures will commence at 8.30 p.m. prompt. Colonel Harrison's lecture on Sunday December 13th, will be given in the Pavilion Westgate Wakefield at 3.30 p.m. The meetings are open to all medical practitioners of the district whether members of the British Medical Association or not and the lectures are to be followed by open discussion.

Meetings of Branches and Divisions

BORNER COUNTIES BRANCH DUMFRIES AND GALLOWAY DIVISION

A MEETING of the Dumfries and Galloway Division was held in the Royal Infirmary Dumfries on September 24th. It was agreed that the next meeting should be held in Castle Douglas Hospital in November when, *inter alia*, Dr Welsh (Castle Douglas) will demonstrate the newly installed x-ray apparatus.

Dr JOHN MARSHALL M.C. of Glasgow and Dumfries delivered a lecture on the iris and pupil, which was illustrated with diagrams and stereoscopic slides. The subject was dealt with in a practical and lucid manner. Drs LIVINGSTON and REICHERT discussed the paper and thanked Dr Marshall for the trouble he had taken to put the subject so clearly before the Division. After tea Dr LIVINGSTON exhibited two patients who had suffered motor accidents. One had both liver and kidney severely injured and the other kidney torn and ruptured. He also exhibited specimens of ectopic gestation successfully operated on and other pathological specimens. Dr LAWRIE showed a heart the apex of which was completely detached, showing both ventricles, as the result of an accident in which the patient had been run over. He also exhibited a fractured spine removed from a man who had had a motor accident.

LANCASHIRE AND CHESHIRE BRANCH ST HELENS DIVISION

A MEETING of the St Helens Division was held at the Fleet Hotel on September 18th when Dr HANWELL was in the chair. The question of the membership and activities of the Division was discussed and certain decisions arrived at. A proposal to hold a dinner was referred to the Dinner Committee for report to the November meeting. The Divisional competition for the Treasurer golf cup will take place at Formby on October 21st at 10 a.m. A letter from the secretary of the St Helens Hospital concerning an eye, ear and throat clinic for the Lancashire Education Committee was discussed and it was decided to form a committee similar to that in force for the St Helens Education Committee.

SURREY BRANCH CROYDON DIVISION

A GENERAL meeting of the Croydon Division was held at the Croydon General Hospital on September 29th when Dr J H THOMPSON was in the chair. The request for the transference of three members from the Reigate Division to the Croydon Division was directed to be brought before the Surrey Branch. It was resolved that bridge should be obtained for the chairman and honorary secretaries. The mode of payment to be arranged by the Executive Committee.

The Representatives, Mr E M COWELL and Dr G G O SCUDAMORE, reported on the proceedings of the Annual Representative Meeting at Bath and Dr Scudamore gave an account of the Secretaries Conference, they were heartily thanked for their reports. The HONORARY SECRETARY reported that there were ten candidates for election by the next Branch Council.

MEANS OF ACCESS TO THE ASSOCIATION'S NEW HOUSE

Those who are unfamiliar with the location of the Association's new House in Tavistock Square will no doubt welcome the following information as to means of access, which has been compiled by the Financial Secretary and Business Manager.

Omnibus Routes

From—	Buses	Time
Victoria to Tavistock Square	No 44	25 mins
Charing Cross to Tavistock Sq	Nos 77 177	15
Waterloo to Tavistock Sq	Nos 69 163 169*	15
London Bridge to St Pancras Church	No 18 118	5
St Pancras to Tavistock Sq	Nos 77 177	20
King's Cross to Tavistock Sq	No 77 177	8
Paddington to St Pancras Church	No 27 or 127 to Baker Street then 18 118 or 10*	20
Liverpool St to Tavistock Sq	No 9 or 11 to Strand (Gaiety Theatre) then 77 177 68 168 or 169*	25

* These include the A B C and D services running under these numbers

Tube Routes

From—	Tube	Time
Victoria to Euston	District Rly to Charing Cross change to Hampstead Rly	20 mins
Charing Cross to Euston	Hampstead Rly	15
Waterloo to Euston	Bakerloo change Charing Cross to Hampstead Rly	20
Waterloo to Russell Sq	Bakerloo to Piccadilly change to Piccadilly line	15
1	City and South London	15
1	Metropolitan	15
1	District to Charing Cross change to Hampstead Rly	25
Liverpool St to Euston Sq or King's Cross	Inner Circle	20

Walking Distances

From Euston Station to Tavistock Square	5 mins
St Pancras Station to Tavistock Square	7
King's Cross Station to Tavistock Square	10

Members will be glad to hear that the Members' Lounge or Common Room is now in use. The room is a large one and the accommodation very comfortable, light refreshments are available both at lunch and tea time at very reasonable prices.

THE SIR CHARLES HASTINGS CLINICAL PRIZE FOR GENERAL PRACTITIONERS

THE Council of the British Medical Association has decided to establish experimentally an annual prize—"The Sir Charles Hastings Clinical Prize"—of fifty guineas for an essay or lecture for the purpose of stimulating systematic observation research, and record in general practice. The Council believes that systematic observation by general practitioners, along selected lines of clinical study, may result in the production of practical contributions of great value by those who are in a favourable position for following disease through its various stages.

The first prize will be awarded in 1926, and the conditions governing its award, as adopted by the Council on April 16th, 1924, are as follows.

Regulations

1 This prize is established by the Council of the British Medical Association for the promotion of systematic observation, research, and record in general practice, it includes a money award of the value of fifty guineas.

2 Any member of the Association who is engaged in general practice is eligible to compete for the prize.

3 The work submitted must include personal observations and experience of the candidate collected in general practice, and a high order of excellence will be expected. If no essay entered is of sufficient merit no award will be made.

4 Essays, or whatever form the candidate desires his (or her) will in title, must be sent to the Medical Secretary, British Medical Association, B.M.A. House, Tavistock Square, W.C.1, not later than December 31st, 1925, and

the prize will be awarded at the Annual General Meeting of the Association. The first award will be made in 1926.

5 If any question arises in reference to the eligibility of the candidate or the admissibility of his essay, the decision of the Council on any such point shall be final.

6 Each essay must be distinguished by a motto, and must be accompanied by an envelope marked with the same motto and enclosing the candidate's name and address.

7 The candidate who gains the award shall, if the Council so desires, publish his paper in the *BRITISH MEDICAL JOURNAL* or deliver a lecture on the subject thereof at a meeting of the Association.

8 Inquiries relative to the prize should be addressed to the Medical Secretary, B.M.A. House, Tavistock Square, London, W.C.1.

IRISH FREE STATE

COMMISSION ON THE RELIEF OF THE DESTITUTE SICK AND POOR

At a recent meeting of the Poor Law Commission of the Irish Free State, Mr W. L. Micks, a former Commissioner in the Local Government Board, outlined a scheme of reform as follows.

1 The funds for expenditure on local government purposes should no longer be raised by local rates varying in poundage in each existing local area, but by a uniform tax either equally over the Free State at large, or with a different rate of tax for certain large urban and for rural and minor urban areas. For special important local undertakings loans with appropriate areas of charge might be sanctioned by the Local Government Department.

2 All existing local honorary bodies should be dissolved.

3 In future local administration should be in the hands of members of a permanent civil service of the Free State. These civil servants with their subordinate officials also civil servants should be subject to the control of the Ministry of Local Government.

4 The executive civil servants in each county or county borough (the only proposed units for local government) should be advised by small councils elected by the voters of local taxes in each county or county borough.

In support of these suggestions Mr Micks made the following statement.

Money for the expenditure of local administrative bodies should be levied by a State tax to be apportioned according to the Poor Law valuation, and to be payable by such persons or bodies as are now liable to pay poor rate and other local rates. It was a question whether, having regard to the more costly requirements of towns, the tax should be uniform over rural areas and such populous cities and towns as may be scheduled as urban. Disbursements for local requirements would be made by the Ministry of Finance from time to time upon the requisition of the local administrators in each county or county borough, subject to the approval of the requisition by the Local Government Department. Estimates of receipts and expenditure for the following year should be furnished by the local administrators to the Local Government Department for approval or variation on or before a date to be fixed by the Ministry of Local Government. These estimates, when approved, should be transmitted to the Ministry of Finance in order that the rate of tax should be fixed. Mr Micks thought that the amount now expended upon local services was capable of very great reduction in the total (and, therefore in the amount to be paid by every occupier) owing to the contemplated diminution in the number of local officials consequent upon the amalgamation of a large number of districts. Efficiency also would be promoted and unnecessary expenditure curtailed by the employment of paid responsible trained officials not influenced by a desire to secure local support or favour. In poor areas with a low valuation the local payments would be much reduced, while satisfactory administration in such areas would be possible for the first time. Owing to high poundage rates on low valuations it was impossible in very poor districts to maintain satisfactory institutions or to administer efficiently services under the Poor Relief, Public Health and Medical Charities Acts. He considered that a very great reduction could be made in the number of local administrative bodies, including urban councils and similar municipal bodies. A reduction in the number of local bodies would entail a very large reduction to be made in the number of the more highly paid local officials. If local officials were dispensed with as suggested there might be a very large immediate saving even allowing for due compensation to the holders of abolished offices. Subordinate civil servants would cost far less than the present local officials many of whom in their responsible situations without any official superiors were paid high salaries. There would be only one local administration in each county or county borough though for some important and populous places it might no doubt be found desirable to have subsidiary local areas subordinate to the administrators of counties or county boroughs. It was a question how far it would be equitable to have a uniform or identical tax over the whole Free State affecting equally urban and rural areas. He contemplated the abolition of all local bodies whether acting under charters or otherwise and the transfer to county or county borough official administrators of all the property rights and duties of existing local bodies. The ancient municipal charters as used by the Crown or by bishops or peers were granted for purposes that

were now obsolete. Apart from a natural veneration for antiquity, there did not appear to be any reason why cities, towns, and urban corporate bodies should not be included in a system of local government suitable to Ireland. Their existing system of local government like most other Irish institutions was founded and maintained on English lines. He suggested the dissolution of all local elected bodies of which the members discharge their functions voluntarily and without salary. The duties of such bodies should be carried out by civil servants, aided by advisory councils for each county or county borough. Civil servants were appointed by open competitive examination from which, however, in the transitional period it was presumed that transferred existing officers of the present local bodies would be exempt, while their pensions would count in calculating their pensions.

Mr. Hicks suggested that there should be a Free State Medical Service, the medical officers of which should discharge all medical duties paid for out of public funds. Following the recommendation made in the report of the Vice-regal Poor Law Reform Commission in 1906 the medical service would be entered by competitive examination and promotions therein would be made by the Local Government Ministry acting with a professional medical council. Special regulations would also be desirable as regards the qualifications, appointment and tenure of engineers, architects, and sanitary officers to be employed in local administration. It was contemplated that the proposed advisory councils should not be given any administrative functions or powers. Such councils would however discharge useful and important consultative and critical duties with reference to the proposals and acts of the local administrative officials in their respective areas. The membership of councils should be small in number (say about a dozen), and the members should remain in office for a few (say three or five) years. They would be elected by the voters of local rates in their respective areas. It was probable that the members of the advisory councils of counties and county boroughs would be selected ultimately if not at first on account of their character, intelligence, and knowledge as regards the requirements of efficient and prudent local administration.

National Insurance

EXTENSION OF HEALTH INSURANCE SERVICES IN SCOTLAND

At the thirteenth annual conference of the Scottish Association of Insurance Committees held at Rothesay on September 26th, under the chairmanship of Sir Henry S. Keith an address on national health insurance problems in relation to medical service was delivered by Sir James Leishman of the Scottish Board of Health. The Board of Health, he said, was troubled about the drug position in Scotland because it was under the impression that the people of Scotland in the past two years had taken too much medicine without any corresponding benefit. It was desirable, in so far as there was waste and expense, to hear from time to time of countless money for everybody in the national health insurance scheme—for the chemist, for the doctor, and for the official. Such an idea was the enemy of economy, and there was not plenty of money, for what was available for any particular purpose was comparatively limited, although he was quite satisfied that the scheme as a whole was solvent with something over. New proposals for alterations or extensions would have to come within the limits of the present scheme. No additions or new provisions, no matter how small, could be faced. A very important extension of the insurance principle was about to start in connexion with the widows' and orphans' scheme, which had a proper place in the feelings of everyone, but incidentally had absorbed a good deal of the money that might have been available for any other kind of social service. Sir James Leishman referred to the experiments which had been made in connexion with the Islands and Highlands Medical Service, whereby some expert surgeons had been maintained in remote portions of the country, most encouraging accounts of the value of the work done by surgeons in such out-of-the-way places as Stornoway and the Shetlands had been received. This encouraged an extension of the scheme when means and opportunities were suitable. Times were difficult and there was no particular sign of improvement in trade and industry. After the Napoleonic wars the amount of public burdens was about 52 millions a year for a population of about half the present population. On this basis the public burdens to-day should be about 100 millions but they were ten or twelve times that amount. Nearly a million a day was being spent on the public social services and next year it was expected more would be spent. He thought it might be assumed that social insur-

ance would develop in the future, probably on a contributory basis. It must have as a primary and important portion of it work a medical system. He held that the present general practitioner service was very good. The number of practitioners in Scotland who were not as satisfactory as they ought to be was very small, while the really good general practitioners were in a vast majority. Particularly in the country districts he had found hard working, careful, competent advisers giving of their best in the way of advice, treatment, and attention, with a degree of unflinching skill that had impressed him very much. His own opinion was that the insured person was getting better service than the private patient, and he said this after having got information in the most complete and thorough way. He believed as the result of twelve years' experience, that the medical service was not only essential but should be extended and developed to cover all that advanced up-to-date medical services could cover. He thought, therefore, that the ordinary general practitioner and his patient should have a chance of consultations and the benefit of specialist aid in diagnosis, of additional treatment, and of nursing and convalescent services. It was highly probable that the Hospitals Department Committee would report that there was an insufficiency of hospital accommodation. There was no proper standard as to the number of beds that should be available in any particular locality. The relation of the local authority and its advisers to hospitals would have to be considered, and he thought for example, that more provision must be made for non-pulmonary tuberculosis. With regard to the relation of approved societies to extended medical service, including hospital treatment, there were great difficulties. It might be necessary to draw upon a central fund or some other fund to enable certain societies to pay the usual benefits, and it might be necessary to pool reserves. The voluntary hospitals had done very great service in the past, but he doubted if they were the last word in management, organization, or development.

NATIONAL ASSOCIATION OF INSURANCE COMMITTEES

The programme has been issued for the annual meeting of the National Association of Insurance Committees to be held at the Lytton Hall of the Mansion House, London, on Thursday and Friday, October 22nd and 23rd. The proceedings will open on October 22nd at 3 p.m. and after the transaction of formal business Mr. T. D. Achard, chairman of the Dental Board of the United Kingdom, will speak briefly on the importance of dental health to the insured population and the opportunities for propaganda work open to Insurance Committees in conjunction with the Dental Board. At the resumption on Friday morning Mr. W. A. Platt will deliver a presidential address.

LONDON PANEL COMMITTEE

At a meeting of the London Panel Committee on September 22nd with Dr. H. J. Cardale in the chair, Dr. Cardale and Dr. E. A. Giegg were appointed representatives of the committee on the Insurance Acts Committee during 1925-26 and the same two gentlemen together with Dr. C. L. Battenon, H. W. Palmer, and H. Roberts were appointed representatives of the committee at the forthcoming Conference of Local Medical and Panel Committees.

Chairmanship of Medical Service Subcommittee

In accordance with the resolution passed at the last meeting of the Panel Committee the chairman of the committee had reported to the General Purposes Subcommittee the action which had been taken during the recess in the matter of the new regulation providing for certain changes in the method of appointment of chairmen of Medical Service Subcommittees. This arose out of the recent deadlock in London. Objection was taken to the new regulation by the Insurance Committee at its meeting in July and since then the chairman of the Panel Committee had interviewed medical members of Parliament and others in order to secure that any amended regulation should be satisfactory to the profession. The General Purposes Subcommittee regarded the pledge recently given in the House of Commons by the Minister of Health (British Medical Journal August 8th p. 273) as satisfactory and the amended regulation which had been framed embodied the principle for which the committee had contended.

The committee approved the action taken by the chairman during the recess and on the motion of Dr. A. Davis seconded by

Dr Gregg, a vote of thanks was recorded to Dr Cardale for the manner in which he had conducted the whole of the negotiation. The Chairman, in expressing his appreciation of the vote of thanks, said that he thought the new regulation when it came into force would be quite satisfactory to the Panel Committee and would certainly prevent the recurrence of any such deadlock as had been lately experienced in London. (The amended regulation provides that in the event of the subcommittee being unable to agree upon its chairman, or if the chairman appointed is unacceptable to some members of the subcommittee the matter is referred to the Insurance Committee itself which appoints the chairman, who may be specially co-opted for the purpose. In the event of non-receipt by the subcommittee of the chairman so appointed, representations may be made to the Minister who may make an appointment after consultation with both the Insurance and the Panel Committees.)

Pharmacists Hours

It was reported that in response to a suggestion recently made by the Committee that a late roster system should be adopted by the pharmacists in each district in the London area in order to obviate any difficulty in the dispensing of urgent prescriptions after the usual closing hour, the Pharmaceutical Committee had forwarded a list of chemists in each metropolitan borough who were usually available after 8 p.m. for the dispensing of urgent prescriptions. The Pharmaceutical Committee stated that it was satisfied that the facilities were adequate in every area and that there should be no difficulty in obtaining urgent medicine up to a reasonable time say 9.30 or 10 p.m., provided the scripts were marked Urgent.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE

SURGEON COMMANDER G. G. VICKERY OBE to the Admiralty. Surgeon Lieutenant Commanders G. S. Harvey, W. H. Murray, and G. H. Hayes have been promoted to the rank of Surgeon Commander.

ROYAL NAVAL VOLUNTEER RESERVE

Probationary Surgeon Sublieutenant D. R. Burbury to the Victory for R.N. Hospital Haslar for fourteen days training.

ROYAL ARMY MEDICAL CORPS

Major T. W. Stallibrass retires on retired pay. Captain F. H. Tomlinson retires receiving a gratuity. C. F. McLean to be temporary Lieutenant.

ROYAL AIR FORCE MEDICAL SERVICE

Squadron Leader F. C. Cowtan to R.A.F. Depot. Flight Lieutenant J. C. Osburne is granted a permanent commission in the rank stated. Flying Officers G. J. Hanly to R.A.F. Depot, R. J. K. Chatter to Research Laboratory and Medical Officers School of Instruction, Harrogate. Albert F. Cook is granted a short service commission as a Flying Officer for three years on the active list with effect from and seniority of September 16th 1925.

INDIAN MEDICAL SERVICE

Lieut. Colonel R. McFarrison C.I.E. is appointed temporarily to the Medical Research Department. Lieut. Colonel Alexander Tanton to be Colonel vice Colonel Peter Dee. Majors to be Lieutenant Colonels B. E. M. Newland, L. A. H. Lack, S. Sodhi, M. C. W. C. Gray. The services of the following officers are placed temporarily at the disposal of the Government of Bengal: Captains B. H. Singh, M. C. P. Banerjee and H. E. Murray.

MILITIA

ROYAL ARMY MEDICAL CORPS

Captain S. W. Howland to be Major.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Lieut. Colonel C. H. S. Redmond to be Brevet Colonel. Captain R. C. Aitchison (Retiree of Officers) to be Major (prov.) with precedence as from June 27th 1924. Captain H. F. W. Adam late R.A.M.C. to be Captain with precedence as from February 17th 1918. (Substituted for notification in the London Gazette July 31st 1925). General Hospitals—Lieut. Colonel A. H. Gosc to be Brevet Colonel.

TERRITORIAL ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Captain R. J. D. to be from Active List to be Captain.

VACANCIES

BURTON URBAN DISTRICT COUNCIL—House Surgeon to the Accident and Surgical Hospital. Salary £200 per annum. BRIGHTON HOSPITAL, Lambeth Road, S.E.—Two Resident House Physicians (male unmarried). Honorarium at the rate of £25 per quarter. BRIGHTON CITY—Assistant Medical Officer at one of the City Mental Hospitals. Salary £550 per annum rising to £600. BRIGHTON EMPIRE LEPROSY RELIEF ASSOCIATION, Delhi—Leprosy Research Worker. Salary £1,000 to £1,200 per mensem. CAMBRIDGE ADDENBROOKS HOSPITAL—Casualty Officer and Resident Anaesthetist (male). Salary £130 per annum.

CENTRAL LONDON THROAT NOSE AND EAR HOSPITAL, Gray's Inn Road, W.C.1—A Assistant Outpatient Registrar. CHELSEA PARISH—Third Assistant Medical Officer (male) for St. Luke's Hospital. Salary £325 per annum. EDINBURGH ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN—Physician in Hospital for Consumption and Diseases of the Chest, Brompton, S.W.3—Two House Physicians. HOSPITAL OF ST. JOHN AND ST. ELIZABETH, 40 Grove End Road, N.W.8—(1) House Physician, (2) House Surgeon. Salary £100 and £75 per annum respectively. HULL EDUCATION COMMITTEE—Assistant School Medical Officer (male). Salary £600 per annum. IPSWICH COUNTY BOROUGH—Assistant Medical Officer to the Mental Hospital. Salary £300 per annum rising to £350. MANCHESTER ROYAL INFIRMARY—House Surgeon (male) to Aural, Cannical, Ophthalmic and Ophthalmic Departments. Salary at the rate of £50 per annum. METROPOLITAN EAR NOSE AND THROAT HOSPITAL, 2 Fitzroy Square, W.1—House Surgeon (non resident). Salary £150 per annum. METROPOLITAN HOSPITAL, King's Land Road, E.8—(2) Senior House Surgeon, (3) Junior House Surgeon, (5) Two Casualty Officer of £100 per annum each. MILLER GENERAL HOSPITAL, Greenwich Road, S.E.10—(1) Assistant in the Outpatient Department, (2) House Surgeon. Salary £125 per annum. NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.1—Resident Medical Officer. Salary £200 per annum. NEWARK HOSPITAL AND DISPENSARY—Resident House Surgeon (male). £150 per annum rising to £200. LLYMOUTH COUNTY BOROUGH—A Assistant Medical Officer of Health. Salary £750 per annum rising to £900. QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.2—Assistant Surgeon Honorarium to cover travelling expense. ROYAL CHEST HOSPITAL, City Road, E.C.1—Physician with charge of Outpatients. ROYAL NORTHAMPTON HOSPITAL, Holloway Road, N.—Physician with charge of Outpatients. ST. BARTHOLOMEW'S HOSPITAL, E.C.—Assistant Ophthalmic Surgeon. SEAMEY'S HOSPITAL SOCIETY—Surgeon with charge of Outpatients at the Dreadnought Hospital, Greenwich. SEICHELES GOVERNMENT—Assistant Medical Officer and Resident Surgeon. Salary Rs. 6500. SOUTHEND ON SEA COUNTY BOROUGH—Assistant Medical Officer (Woman). Salary £600 per annum rising to £700 with an additional £50 per annum in respect of duties at Venereal Diseases Treatment Centre. WOLVERHAMPTON AND STAFFORDSHIRE HOSPITAL—House Surgeon. Salary at the rate of £150 per annum. CERTIFYING FACTORY—Vacant appointments now announced locally. (Salop) Applications to S.W.1. MEDICAL REFEREE UNDER THE WOMEN'S CONVENTION ACT—Medical Referee for the District of the North and Port Talbot County Court (Circuit No. 31). Applications to the Private Secretary Home Office by October 28th.

This list of vacancies is compiled from our advertisement columns where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

APPOINTMENTS

CHAMBERLAIN, E. Noble, M.D. MRCP Lond. Honorary Assistant Physician Royal Southern Hospital, Liverpool (corrected notice). HARRISON, L. F. A. MRCS LRCP Resident Medical Officer to the General Lying in Hospital, York Road, Lambeth. BIRKS, H. B. MB ChB Edin. DPH Camb. Assistant School Medical Inspector Staffordshire Education Committee. SUKLUFF, M. L. MRCS LRCP DPH Assistant School Medical Inspector Staffordshire Education Committee. WHITE, Angus Hedley, MB BS Durh. FRCS Honorary Assistant Surgeon Royal Victoria Infirmary, Newcastle upon Tyne. WILSON, Edward A. M.D. Edin. Junior Assistant Medical Officer, Chelms County Mental Hospital, Parkside, Macclesfield. NATIONAL HOSPITAL FOR DISEASES OF THE HEAR, Consulting Surgeon, Wilfred Trotter, M.B. for Diseases of the Ear, Nose and Throat. FRCS. CERTIFYING FACTORY SURGEON—J. Graham, M.D. Edin. for the Linst. Grinstead District (Co. Su. ex). J. T. S. Hoey, M.B. BCh. Oxon. for the Petersfield District (Co. Southampton). J. H. Morris Jones, LRCP and S. Edin. LRFPs Glas. for the Colwyn Bay District (Co. Denbigh). H. Webb, MRCS LRCP for the Beaulieu District (Co. Su. ex). MEDICAL REFEREE UNDER THE WOMEN'S CONVENTION ACT—J. A. R. Glennie, M.B. ChM. for the Districts of the Bedford, Hertford and Luton County Courts (Circuit No. 58). Lieut. Colonel F. S. Toogood, OBE, M.D. for the Districts of the Bodmin and Ilfracombe County Courts (Circuit No. 59).

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE

War Section—Mon. 5 p.m. Presidential Address by Lieut. General Sir William Leishman (D.G.A.M.S.) Research in the Medical Service. Section of Therapeutics and Pharmacology—Tue. 5 p.m. Discussion. Some Difficulties in the Use of Insulin to be opened by Dr. Corcoran. Graham (President) followed by Prof. or Dr. Maclean, Dr. R. D. Lawrence, Dr. E. P. Poulton. Dr. G. A. Harrison. Section of Dermatology—Thurs. 4 p.m. C. C. Section of Electro-Therapeutics—Fri. 8.30 p.m. Presidential Address by Dr. Alexander MacGregor. Then and Now.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln Inn Field, W.C.—Fri. 5 p.m. Museum Demonstration by Sir Arthur Keith. The Pathological Anatomy of Acromegaly.

Printed and published by the British Medical Association at their Office, Tavistock Square, in the Parish of St. Pancras, in the County of London.

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, OCTOBER 17TH, 1925

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British Medical Association

CURRENT NOTES

The Autumn Dinner on October 21st

MEMBERS are again reminded of the Autumn or Council Dinner, which will be held in the Great Hall of the Association's new House on Wednesday, October 21st, at 7 for 7.30 p.m. It would be very helpful to those who are arranging for the dinner if tickets were applied for at once instead of waiting until the last day or two. A member may bring any number of guests, up to the limit of the room, and ladies are welcomed. Orders and decorations will be worn. It has been arranged that the dinner shall end about 10.30 p.m., and from then until midnight there will be dining in the Hastings Hall. Applications for tickets, price 12s. 6d. each, exclusive of wine, should be made to the Financial Secretary, British Medical Association House, Tavistock Square, W.C.1.

Committee on Causation of Maternal Morbidity and Mortality

This committee of the British Medical Association held its first meeting of the session on October 8th. The chief item of business was the consideration of the first draft of the interim report on the position and on the steps which should be taken to reduce the death rate due to puerperal sepsis. It is proposed eventually to submit this report to Divisions and Branches of the Association for their consideration, together with a questionnaire designed to elicit information which will be helpful in completing the final report. It is hoped that the interim report will be available early in January next. Meanwhile Divisions and Branches, which are contemplating holding British Medical Association Lectures, might well choose the subject of puerperal sepsis and arrange for lecturers who would be willing to address them on this matter.

G.M.A. and B.M.A.

In the Canadian Medical Association Journal for September an account is given of the opening of the new House of the British Medical Association in London, illustrated by a photograph and a ground plan. The Editor, Dr. A. D. Blackader, includes also an abstract of Mr. Munro Little's lecture on the history of the site. In another part of the same issue Dr. A. H. Gordon gives a flattering account of the Annual Meeting in Bath. He records his opinion that the leaders of British medicine there represented showed an almost uncanny ability to expose the essentials of the subjects under discussion in such a way that they might be understood by the less learned. Although the number of social events, tea parties, golf competitions, and excursions seems to have caused him a little embarrassment, the visit left Dr. Gordon with the impression that Bath is unique, not only in its architecture, but also in its civic character and the warmth of its hospitality. Under the heading of "Editorial Comments"

the papers of Dr. Gao and Mr. Bernard in the Section of Pathology are discussed at some length by Dr. D. Fraser Harris. An abridged version is also given of the opening paper by Sir Humphry Rolleston in the discussion on rheumatoid arthritis in the Section of Medicine, which was published in full in the *British Medical Journal*, October 3rd (p. 589).

The Association's Annual Handbook

The *Annual Handbook of the British Medical Association* for 1925-26 is now ready. Though primarily intended as a book of reference for honorary secretaries and other workers of the Association, the *Handbook* is also of interest and assistance to all members. The new edition has been completely revised. It contains the decisions of the Representative Body of the Association on questions of policy, particulars of the new London and Scottish Houses of the Association, information as to the *British Medical Journal*, the circulation of which is now over 33,500 copies weekly, and lists of the officers and officials of the Association and of its Council and Central Committee. Particulars are also given of the library and lending library, as to some new publications of the Association, the scholarships, grants and prizes given by the Association, and a summary of some of its recent work. Copies of the *Handbook* can be had by members, *gratis* and post free, on application to the Medical Secretary, British Medical Association House, Tavistock Square, London, W.C.1. To non-members the book is on sale at 2s. 6d. (post free 2s. 9d.).

Absence from Home of Insured Persons

It often happens that an insurance practitioner has occasion to recommend a change of air for one of his insured patients. If the insured person takes the advice of the doctor in this matter it is his duty, according to the statutory rules of his society, to notify his intention to the secretary of that society, and failure to do so will probably mean that sickness benefit will not be forthcoming when next the insured person applies for it. A friendly hint by the doctor to the insured patient, to the effect that the patient's intention to be absent from home for a period should be intimated to the society concerned before he leaves home and that the society's approval should be obtained, would be in the interest of the patient, and might save considerable trouble for the society concerned. The patient's position is safeguarded if the doctor states under "remarks" on the ordinary intermediate certificate that such change of air is necessary.

Dispensing Capitation Fee

In a circular letter issued on October 6th to all Insurance Committees the Ministry of Health gave effect to an arrangement agreed to by the Insurance Acts Committee of the British Medical Association at its last meeting—namely, the addition to the list of drugs and appliances appended to the Distribution Scheme of the following: Ring pessaries, eye droppers, eye baths, hypodermic syringes and needles.

for self-administration of insulin. The result of this addition is that the articles in question are not included among those which a dispensing practitioner is expected to supply out of his 2s ex-patiation dispensing fee.

Association Notices.

ELECTION OF MEMBERS OF COUNCIL, 1926-27, BY BRANCHES OUTSIDE UNITED KINGDOM

NOTICE is hereby given that **Nominations** of Candidates for election as Members of Council by those grouped Branches outside the United Kingdom in which there are vacancies (see below) for a period of either three, two, or one year, as prescribed by By-law 56 (2), **must be forwarded** in writing so as to reach the Medical Secretary on or **before February 13th, 1926**.

Nominations must be signed by not less than three Members of any Branch in the Group, and must be in the following form or in one to the like effect:

NOMINATION FORM

By not less than Three Members of the Grouped Branches

We, the undersigned, hereby nominate

of [Full name and address to be given] for election by the [State the names of the Branches in the Group] Branches as a Member of the Council of the Association for the period of _____ years [State whether for 3, 2, or 1 year].

Signatures and addresses of Nominators
Branches

Date 192

The elections, where contests occur, will be by voting papers, containing the names of all duly nominated Candidates, issued from the Head Office, British Medical Association House, Tavistock Square, London, W.C.1, to each member of each Branch in the Group.

A notice will be published by the Council in the JOURNAL as soon as possible after January 13th, 1926, as to any Group for which only one candidate has been nominated and is thereby elected. Not later than the second week in June, 1926, a notice will be published by the Council in the JOURNAL, giving the result of the elections for those Groups where there have been contests.

GROUPING (ABOVE REFERRED TO) OF BRANCHES NOT IN THE UNITED KINGDOM FOR ELECTION OF MEMBERS OF THE COUNCIL OF THE ASSOCIATION 1926-27 IN CASES WHERE THERE ARE VACANCIES

	Members of Council
Hong Kong and China, Malaya	1
New South Wales, Queensland	1
New Zealand and Fiji	1

October 17th, 1925

ALFRED COX,
Medical Secretary

BRANCH AND DIVISION MEETINGS TO BE HELD

BIRMINGHAM BRANCH DUDLEY DIVISION—The annual meeting and dinner of the Dudley Division will take place on Thursday, October 29th, at the Saracen's Head Hotel, Dudley, at 8 p.m. The price of the dinner will be 9s, payable at the time and exclusive of wines. Dr. G. C. Anderson will be the guest of the evening. Members of neighbouring Divisions will be welcome.

BIRMINGHAM BRANCH NUNEATON AND TAMWORTH DIVISION—The following programme has been arranged for the session 1925-26: Thursday, October 22nd at Tamworth General Hospital—Inaugural address by Chairman. Report of Representative in Representative Body. Wednesday, November 18th at Nuneaton General Hospital—Dr. M. S. F.R.C.S. Notes from the 20th 1926 at Nuneaton General Hospital—Mr. Bernard G. Goodwin F.R.C.S. Some modern methods in the diagnosis and treatment of surgical diseases of the urinary system. Friday, 24th at Atherton—Arranged by Mr. D. S. Price and date of the March meeting will be announced later. It is hoped that a demonstration by Dr. P. J. Housburgh M.O.H. Nuneaton, to be given in May.

BORDER COUNTIES BRANCH—A general meeting of the Border Counties Branch will be held at Tullic House, Carlisle, on Friday, October 23rd at 4 p.m. The silk banner to commemorate the Association's visit to Carlisle in 1896 will be handed to the Mayor of Carlisle (Alderman P. Burns J.P.) for exhibition in Tullic House before being sent to London. Tea. Ladies are specially invited. The Branch Council will meet at 3.30.

CAPE OF GOOD HOPE (WESTERN) BRANCH—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday, October 30th at 8 p.m. when there will be a symposium on neurosyphilis arranged by Dr. F. H. Hooy. Among the speakers will be Dr. J. S.

du Toit, Dr. A. Reith Fraser, Mr. J. Luckhoff, Dr. W. P. Mulligan, and Dr. E. W. D. Swift.

KEYS BRANCH ISLE OF THANET DIVISION—The next meeting of the Isle of Thanet Division will be held on October 20th at 4.30 p.m. at the Cottage Hospital, Laversham, Dr. H. M. Raven in the chair. Address on obstructive disease of the colon by Prof. or C. A. Pinnett, F.R.C.S., surgeon to St. Mary's Hospital, London. Members are cordially invited to tea at the hospital at 4 p.m.

LEICESTER AND CHESHIRE FRANCH SOUTHPORT DIVISION—A meeting of the Southport Division will be held to-day (Friday, October 16th) at 52, Highton Street at 8.15 p.m. The matters for consideration include: Report of Annual Meeting at Bath by the Representative; Huddersfield's 'Practitioners' Mutual Help Scheme'; Chairman's bridge, golf competition, and social function.

METROPOLITAN COUNTIES BRANCH CITY DIVISION—A meeting of the City Division will be held at St. Bartholomew's Hospital, E.C., on Tuesday, November 3rd, at 4.30 p.m. Mr. John Fraser, Professor of Clinical Surgery, Edinburgh University, will deliver a British Medical Association Lecture on sympathetic disturbances of the abdominal viscera in relation to surgery.

METROPOLITAN COUNTIES BRANCH KENYOTON DIVISION—A clinical meeting of the Kenyot Division will be held at St. Mary's Hospital, Paddington, by kind permission of the Committee of Management, on Wednesday, October 28th at 8.30 p.m. Cases will be shown by members of the hospital staff, and a discussion will follow.

METROPOLITAN COUNTIES BRANCH LEWISHAM DIVISION—The first meeting of the session of the Lewisham Division will be held at the Parish Room, St. Lawrence, Venerable Bromley Road, Catford, S.E.6, on Tuesday, October 20th at 8.45 p.m. Dr. M. Godwin Chase will occupy the chair. Agenda—Lecture: Some recent aspects of gland therapy by Dr. J. Stanley White (illustrated by lantern slides); consider proposed dinner, points in regard to panel practice.

METROPOLITAN COUNTIES BRANCH SOUTH WEST ESSEX DIVISION—A meeting of the South West Essex Division will be held at the Wallhamston Hospital on Tuesday, October 20th at 3.30 p.m. when Mr. Russell J. Howard M.S., F.R.C.S., will read a paper on cancer of the breast.

METROPOLITAN COUNTIES BRANCH WILLESDEN DIVISION—A clinical meeting of the Willesden Division will be held at Park Royal Hospital, Acton Lane to-day (Friday, October 16th) at 3.15 p.m. and will be conducted by Dr. W. E. Turner, the resident medical officer.

MIDLAND BRANCH CHESTERFIELD DIVISION—The following is the programme of meetings arranged by the Chesterfield Division for the winter session 1925-26—Friday, November 13th—Discussion: Small pox, to be opened by Dr. Garraway. Friday, December 11th—Address on passive immunity by Dr. J. S. C. Douglas, Professor of Pathology, University of Sheffield. Friday, January 8th 1926—Address on pelvic pain in women by Mr. A. M. Webber F.R.C.S., honorary surgeon, Nottingham General Hospital. Friday, February 12th—Paper: The functions of the thyroid secretion, by Dr. Good. Wednesday, March 17th—Annual dinner. Friday, April 9th—British Medical Association Lecture by Professor F. Langmead. Friday, May 14th—Clinical and pathological evening—demonstration of cases. With the exception of the annual dinner, all the meetings will be held at the Maternity Hospital, Chesterfield, at 8.15 p.m., tea and coffee will be served at 8.

NORTH OF LANCASHIRE BRANCH CLEVELAND DIVISION—Mr. J. Basil Hall, M.Chir., F.R.C.S., of Bradford, Past President of the Association, will address the Cleveland Division in Middlebrough on Thursday, October 22nd. The subject of the address will be announced later. Members of neighbouring Divisions are cordially invited.

NORTH OF ENGLAND BRANCH NORTH NORTHUMBRIA DIVISION—Sir David Drummond will give a talk to the members of the Division on our mistakes in diagnosis and how and why we make them, on Thursday afternoon, October 29th, in the Berwick Infirmary. This early preliminary notice is given in order that members may keep that date free. Further details of the meeting will be issued nearer the time.

NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION—The annual address will be given by Dr. H. Orlinton Miller on Thursday, November 12th. The annual dinner will be held the same evening at 7.30 at the Palatine Hotel, Sunderland.

SHERIFFS AND MID WALES BRANCH—The fiftieth annual general meeting of the Shropshire and Mid Wales Branch will be held at the Royal Salop Infirmary on Tuesday, October 27th, at 3.30 p.m. The President, Dr. Dr. Wheatley, will deliver an address. The annual dinner will take place the same evening at the Raven Hotel, Shrewsbury, at 7 o'clock. As the occasion will mark the jubilee of the Branch, a very large attendance is looked for, and every member is urged to make a special effort to attend.

SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION—A meeting of the Swansea Division will be held at the General Hospital, Swansea, on Thursday, October 22nd, when Dr. Daniel F. Evans will discuss the diseased heart in pregnancy.

SOUTHERN BRANCH PORTSMOUTH AND ISLE OF WIGHT DIVISIONS—A joint meeting of the Portsmouth and Isle of Wight Divisions will be held at the Queen's Hotel, Southsea, on Wednesday, November 11th, at 3 p.m. Dr. G. C. Anderson, Deputy Medical Secretary, will give an address on the British Medical Association's Hospital Policy.

SURREY BRANCH CROYDON DIVISION—The next general meeting of the Croydon Division will be held at the Croydon General Hospital on Tuesday, October 27th at 8.15 p.m. when Dr. H. Batty Shaw will give an address on early treatment by artificial pneumothorax of pulmonary suppuration.

QUEEN - 110 FIRST FOR CHILDREN, Hackney Road E2-4A Infant Surgeon
Honorarium to cover travelling expenses.

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, OCTOBER 24TH, 1925

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British Medical Association

CURRENT NOTES

Bethnal Green and its Medical Officer of Health

It is necessary to draw attention to certain features of an advertisement for a medical officer of health recently submitted by the Bethnal Green Borough Council. This metropolitan borough has a population of 117,238, and under the scale approved by the Ministry of Health a salary of £1,100 should be offered for the post. From the terms of its advertisement the borough council appears to be under the impression that it can get this work properly done for £800 a year, rising by annual increments of £50 to a maximum salary of £900, and, as if to emphasize the council's opinion of the value of such services, it adds that "the salary is inclusive of all services of any kind whatever and no bonus will be paid." To make the insult more complete, the advertisement states that the successful candidate must be, or on appointment become, a member of a trade union. It need scarcely be said that this advertisement does not appear in the *British Medical Journal*, the *Lancet* or the *Medical Officer*, and we find it difficult to believe that any practitioner with such experience as might encourage him to aspire to the responsible position of medical officer of an important metropolitan borough would apply for the appointment, or that even if such applications were made, the Ministry of Health would be willing to approve the payment of a salary so manifestly inadequate on conditions so incongruous. The attempt to force medical men to join a trade union ought to be even more efficacious in deterring the right kind of man from applying. Anything more likely to estrange good men than an attempt to break down their professional traditions cannot well be imagined. So far as we know, medical men have no intention of joining trade unions or of adopting many of the methods of trade unions, and Bethnal Green and other corporations which are inclined to regard membership of a trade union as the seal of efficiency should be made aware that the test of efficiency is registration by the General Medical Council, and that doctors consider membership of their own professional organizations, which are not trade unions, quite adequate, not only for their protection but for the satisfaction of any desire a local authority may have that its officers should belong to an organization capable of conducting collective bargaining should the need arise.

All India Medical Licentiates Association Conference

The President of the All-India Medical Licentiates' Association has sent a cordial invitation to any members of the British Medical Association who are likely to be in the East this winter to attend the conference which that association is holding at Rangoon in the month of December. The president (Dr K. M. Hiranandani), in extending this invitation, recalls happy recollections of the Annual Meeting at Bradford in 1924, which he attended. Any member who

is likely to be able to accept this invitation should write to the President of the All-India Association c/o The Editor of the *Indian Medical Journal*, Meerut, India, and also advise the Medical Secretary of his intention.

Meetings of Branches and Divisions

GLASGOW AND WEST OF SCOTLAND BRANCH

Reception to New Graduates

The customary reception to new graduates given by the Glasgow and West of Scotland Branch was held on October 14th in the University Union, when Dr GEORGE A. ALLAN, President of the Branch presided.

The new graduates were received by the President and other members of the Branch Council and entertained to afternoon tea followed by a musical programme of half an hour.

Dr HUGH MILLER, Chairman of the Scottish Committee, in a convincing address on "Pitfalls in general practice" gave most excellent advice to the new graduates which if followed will certainly considerably help them in their future career. The President also spoke to them on the subject of the British Medical Association and what it can do for them and what it is able to do for members of the profession. Of the seventy-five new graduates who attended the function sixty-four signed the application form for membership before leaving. Those unable to be present at the reception were approached on the morning of the graduation ceremony and a further thirty-five signatures were obtained representing in all 87 per cent of those who graduated at this time.

Association Notices

BRANCH AND DIVISION MEETINGS TO BE HELD

BIRMINGHAM BRANCH DUDLEY DIVISION—The annual meeting and dinner of the Dudley Division will take place on Thursday, October 22nd at 8 p.m. at the Saracen's Head Hotel, Dudley. Dr G. C. ANDERSON, Deputy Medical Secretary, will be present and will give an address. Members of neighbouring Divisions and non-members of the Division will be welcomed. The price of the dinner is 9s. (exclusive of wine) payable at the dinner. Members are requested to notify the honorary secretary (Dr L. D. Roberts, The White House, Wordsley, near Stourbridge) on or before Saturday, October 24th whether they will be able to attend and if they wish to bring a guest.

CAPE OF GOOD HOPE (WESTERN) BRANCH—A meeting of the Cape of Good Hope (Western) Branch will be held on Friday, October 30th, at 8 p.m. when there will be a symposium on neuro-psychics arranged by Dr I. H. KOOP. Among the speakers will be Dr J. S. du Toit, Dr A. Reith Fraser, Mr J. Lückhoff, Dr W. I. Mulligan, and Dr E. W. D. Swift.

GLASGOW AND WEST OF SCOTLAND BRANCH GLASGOW NORTH WESTERN DIVISION—A meeting of the Glasgow North Western Division to which all practitioners within the area of the Division are invited will be held in the Bacteriological Department of the Glasgow Corporation, 20 Cochrane Street, on Wednesday, October 28th at 8 p.m. A demonstration on the methods employed in the bacteriological diagnosis of infectious diseases will be given by the chairman of the Division, Dr F. M. BUCHANAN. Tea will be served from 8 till 8.20 p.m.

LANCASHIRE AND CHESHIRE BRANCH HINE DIVISION—A supper dinner will be held in Hyde Town Hall on Friday, November 13th, at 8.30 p.m. Tickets, price 15s. each, may be had from the honorary secretaries. Members should apply early for their tickets as the number is limited.

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BRITISH MEDICAL JOURNAL]

of the neighbouring Divisions (Horsham Brighton etc) with their wives and other guests are cordially invited. The price of dinner tickets is 7s, exclusive of wines. Members are asked to apply to the honorary secretary Dr Duncan Mackintosh for dinner tickets enclosing remittance, before October 28th.

YORKSHIRE BRANCH BARNSELEY DIVISION—A meeting of the Barnsley Division will be held at the Central Cafe, Market Hill, Barnsley, on Friday, October 30th. Supper will be served at 8.30 p.m. prompt. Mr Graham Simpson (Sheffield) will give an address on a survey of renal surgery with lantern demonstration.

YORKSHIRE BRANCH SHEFFIELD DIVISION—A general meeting of the Sheffield Division will be held at the Chureli House, St James Street, Sheffield, on Friday, October 30th, at 8.30 p.m. The representatives will present their report. It is hoped that all members will make a special effort to attend.

INSURANCE ACTS COMMITTEE

INSURANCE ACTS COMMITTEE
 Election of Direct Representatives
 The following being the only candidates nominated by Local
 Medical and Panel Committees for their respective Groups
 will become members of the Insurance Acts Committee for the
 session 1925/26

Group	Member	Area
Group 1	Dr. J. C. Davies	(Wales and Cheshire and County of Wrexham and
Group 2	Dr. C. Glyn	(St. ...)

[illegible]

Contests take place in the following Groups in connexion with which voting papers were posted from the Medical Department on October 22nd to every member of the Local Medical and Panel Committees concerned where the personnel has been notified to the Medical Secretary

Group 4 (Scotland where 2 are required) and the following are the candidates nominated

- Dr C E Douglas Cupar Fife
- Dr J G McCutcheon Glasgow
- Dr John Orr Edinburgh
- Dr D Rorie Dundee
- Dr D Lyon D.S.O.

Group A (Scotland where 2 are required) and the following are the candidates nominated

- Dr C E Douglas Cupar Tife
- Dr J G McCutcheon Glasgow
- Dr John Orr Edinburgh
- Dr D Roie DSO Cults Aberdeenshire
- Dr D Lyon Stevenson Larkhall Lanarkshire
- Dr James Wilson Irvine Ayrshire

Group B (Northumberland and Durham and County Boroughs where 1 is required) and the following are the candidates nominated

- Dr R H Drx Sunderland
- Dr G F Shepherd South Shields
- Dr D I Todd Sunderland

Group C (Yorkshire and County Boroughs where 1 is required) and the following are the candidates nominated

- Dr J G Clegg Wakefield
- Dr J G Clegg Wakefield
- Dr J G Clegg Wakefield

Group B (Northumberland Durham and County Boroughs
therein where 1 is required) and the following are the candidates
nominated

Dr R H Dix Sunderland
Dr G F Shepherd South Shields
Dr D I Todd Sunderland

Group C (Forfeiture of seat)

Mr J O Guinness Larkhall Lanarkshire
Mr James Wilson Irvine Ayrshire

Dr D F Shepherd Sunderland and County Borough
 Dr D I Todd Sunderland
 Group C (Yorkshire—North East and West Ridings and
 County Boroughs therein where 2 are required) and the following
 are the candidates nominated
 Dr G J B Candler Hop West Aton
 Dr G B Hillman M B F Wakefield
 Dr G H Sedgwick Thryberg

Dr G B Hillman M B F West Ridings and
Group D (Lancashire Thrybergh nr Rotherham
Boroughs therein where 3 are required) and the following
candidates nominated Cumberland Westmorland and County
Sir Thomas Iloroff Bolton
Dr R G McEwan Manchester
Dr H F Oldham M B F More
Dr Frank Radcliffe M B F More
Dr T Miller W. Oldham
Group -

[illegible]

METROPOLITAN COUNTIES BRANCH KENSINGTON DIVISION — A clinical
 meeting of the Kensington Division will be held at St Mary's
 Hospital Paddington by kind permission of the Committee of
 Management on Wednesday, October 28th at 8.30 p.m. Cases
 will be shown by members of the hospital staff and a discussion
 will follow.
 METROPOLITAN COUNTIES BRANCH NORTH MIDDLESEX DIVISION —
 A general meeting of the North Middlesex Division will be held at
 Wednesday, October 28th at 8.30 p.m. Cases
 will be shown by members of the hospital staff and a discussion
 will follow.

METROPOLITAN COUNTIES BRANCH NORTH MIDDLESEX DIVISION — A clinical
 general meeting of the North Middlesex Division will be held on
 Wednesday October 29th at 3.30 p.m. in the Southgate Council
 Offices, Palmers Green. The Chairman will deliver his address on
 Endocrinology — some facts and fancies. The annual Divisional
 dinner will be held on Thursday, October 29th in the Criterion
 Restaurant at 8.30 p.m. (for £4.5). Tickets 10/- each.
 METROPOLITAN COUNTIES BRANCH ST PANCRAS DIVISION —
 meeting of the St Pancras Division will be held on
 Wednesday, November 10th, at 8.30 p.m. in the Criterion
 Restaurant, 100, Strand, London, W.C.2. Tickets 10/- each.

Metropolitan Counties Branch St Pancras Division — The next
 meeting of the St Pancras Division will be held at the British
 Medical Association House Tavistock Square WC1 at 9 p.m. on
 Tuesday November 10th when Dr Robert A Young CBE
 will give a lecture on the early recognition of pulmonary tuberculosis
 and give a lecture on the South West Essex Division will be held at
 the College of Knolls Green Leyton on Tuesday November 10th at 8.30 p.m. when Dr H G Clayton will be the speaker.

METROPOLITAN DIVISION — The next
 meeting of the Metropolitan Division will be held at the British
 Museum, Natural History, on Tuesday, November 3rd, at 9 pm on
 the early recognition of pulmonary tuberculosis
 by Dr Robert A Young CBE
 METROPOLITAN DIVISION — The next
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 the early recognition of pulmonary tuberculosis
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 Museum, Natural History, on Tuesday, November 3rd, at 9 pm on
 the early recognition of pulmonary tuberculosis
 by Dr Robert A Young CBE

METROPOLITAN BRANCH. H G Adamson will read a paper on excommunication demonstration. Division will be held at Livingstone Hall on Tuesday 19th at 8.30 p.m. The paper will be on the subject of the death of Dr. Stearns.

COUNTY BRANCH. WILLESDEAN DIVISION. — The meeting of the Newcastle upon Tyne Division will be held at 8.30 p.m. on Tuesday, October 27th at 8.30 p.m. The paper will be on the subject of the death of Dr. Stearns.

NORTH NORTHUMBERLAND BRANCH. — The meeting of the Newcastle upon Tyne Division will be held at 8.30 p.m. on Tuesday, October 27th at 8.30 p.m. The paper will be on the subject of the death of Dr. Stearns.

NORTH NORTHUMBERLAND BRANCH. — The meeting of the Newcastle upon Tyne Division will be held at 8.30 p.m. on Tuesday, October 27th at 8.30 p.m. The paper will be on the subject of the death of Dr. Stearns.

The following is the programme of the November 19th at the Isolation
 Division — The Newcastle upon Tyne Division —
 The Annual Representative Meeting of the report of representatives at
 and Dr J Campbell will relate some of their experiences. As the
 Meeting is a very great success both scientifically and
 socially it is hoped that members will make a point of being
 present to hear the report
 NORTH OF ENGLAND BRANCH NORTH NORTHUMBERLAND DIVISION —
 David Drummond will give a talk to the members of the
 Division on our mistakes in diagnosis and how and why we make
 them on Thursday afternoon October 29th, in the R
 Cinema. This early pichmintry notice is given in the R
 mbics may keep that date free
 be issued nearer the time
 YORK AND READING
 Oxford Div
 Division

present to hear the report

NORTH OF ENGLAND BRANCH **NORTH NORTHUMBERLAND DIVISION** —
Mr David Dunnington will give a talk to the members of the
Division on our mistakes in diagnosis and how and why we make
them on Thursday afternoon October 29th, in the Berwick
Luncheon Club. This early preliminary notice is given in order that
members may keep that date free. Further details of the meeting
will be issued nearer the time.

OXFORD AND READING BRANCH **OXFORD DIVISION** —
The Oxford Division will be held at the
Wednesday October 28th at 2.30
Peters Rice Institute.

Sussex Branch **Sussex Division** —
The Sussex Division will be held at the
Sussex Institute on Wednesday October 28th at 2.30.

the members of the Oxford Division —
October 23th, in the Berwick
Further details of the meeting
Oxford and Reading Branch
Oxford Division — A meeting of
the Radcliffe Infirmary on
Wednesday October 23th at 2.30 p.m. Clinical cases Professor
Peters Recent researches in insects (lantern illustrations)
Shropshire and Mid Wales Branch — The fifthth
meeting of the Shropshire and Mid Wales Club at the
the Royal Shrop Infirmary and Mid Wales Club
The President Mr Dr. Williams on Tuesday
annual dinner will be held on Tuesday
Shrewsbury.

BRANCH Oxford Division.—A meeting of the Branch will be held at the Radcliffe Infirmary on Tuesday, October 28th at 2.30 p.m. (Chm at cases Professor Peters' recent researches in tickets (lantern illustrations)).

SHROPSHIRE AND MID WALES BRANCH.—The fifth annual general meeting of the Shropshire and Mid Wales Branch will be held at the Royal Shrop Infirmary on Tuesday, October 27th at 3.30 p.m. The President will take place the same evening at the Raven Hotel annual dinner will take place the same evening at the Raven Hotel Shrewsbury at 7 o'clock. As the occasion will mark the jubilee of the Branch a very large attendance is looked for, and every member is urged to make a special effort to attend.

SOUTHERN BRANCH Southampton and Wiltshire.—A combined meeting of the Southampton and Wiltshire Branch will be held on Wednesday, October 29th at 7.30 p.m. at the South Western Hotel, Southampton. The meeting will be held at the hospital premises.

The fifth annual general meeting of the South Western Branch will take place on Tuesday, October 27th at 3.30 p.m. The branch will deliver an address. The occasion will mark the jubilee of the branch, and every member is urged to make a special effort to attend.

SOUTHERN BRANCH SOUTHAMPTON AND WIMBORNE DIVISIONS—A combined meeting of the Southampton and Winchester Divisions will be held on Wednesday, October 28th at 3.30 p.m. at the South Western Hotel Southampton for the purpose of discussing the hospital policy of the Association.

SOUTH WESTERN BRANCH—The autumn inter-district meeting of the South Western Branch will be held at Plymouth on Wednesday, November 6th at 3.30 p.m. Mr. McCrankin will deliver the address.

South Western Hotel Southampton and Winchester Divisions.—A
meeting will be held at the South Western Hotel Southampton on Wednesday October 28th at 3.30 p.m. at the
purpose of discussing the hospital policy of the Association

South Western Branch.—The autumn intermediate meeting of
the South Western Branch will be held at the Plymouth on Wednesday November 4th at 4 p.m. when Dr
W. McC Wanklyn will deliver an address entitled "The route
of pneumonia" provided it is with special reference to small pox Tea will be
provided at 3.40 p.m.

Surrey Branch Croydon Division.—A general meeting
of the Surrey Division will be held at the Croydon on Tuesday
October 27th at 8.30 p.m. The speaker will be Dr H. Batty Shaw F.R.C.P. The route
of pneumonia pneumothorax of the lung

Sussex Branch Brighton Division.—A general meeting
of the Sussex Division will be held at the Brighton on Tuesday
October 27th at 8.30 p.m. The speaker will be Dr H. Batty Shaw F.R.C.P. The route
of pneumonia pneumothorax of the lung

Wednesday, November 4th at 4 p.m. when Dr
 Wanklyn will deliver an address entitled "The acute
 anthrax with special reference to small pox. Tea will be
 provided at 3.40 p.m."

STREYD BRANCH Croydon Division.—A general meeting of the
 Croydon Division will be held at the Croydon General Hospital
 on Tuesday, October 27th at 8.30 p.m. An address will be given
 by Dr H Batty Shaw F.R.C.P. An address will be given
 on artificial pneumothorax of pulmonary suppuration treatment by
 F.R.C.P.

SUSSEX BRANCH Brighton and Worthing Division.—The
 autumn meeting of the Brighton and Worthing Division will be
 held at Warner's Hotel, Brighton, on Wednesday, November 4th
 at 7 p.m. On this occasion the Division will give a
 dinner a la carte to the public authorities on human nature of
 members will be given.

A general meeting of the Croydon General Hospital
 will be held at 8.30 pm on Wednesday November 11th
 at 7 pm. An address will be given
 on the early treatment by
 Dr. Habberton Lulham
 of the Division of
 Chest and other guests and members
 will be entertained.

Group 'U' (Surrey, Sussex—East and West, Kent and County Boroughs therein where 2 are required), the following being the candidates nominated

Dr J J Day Canterbury
Dr E R Fothergill Hove
Dr P V Fry, East Molesey Surrey

INSURANCE ACTS SUBCOMMITTEE (SCOTLAND), 1925-26

The following being the only candidates nominated by Burgh Local Medical and Panel Committees will become members of the Insurance Acts Subcommittee (Scotland)

Dr W Lawson Glasgow
Dr G W Miller DSO, Dundee
Dr John Orr Edinburgh
Dr James Todd, Glasgow

The following seven practitioners having been nominated by Scottish County Local Medical and Panel Committees for the four seats upon the Subcommittee allotted to direct representatives of County Committees, voting papers were posted from the Medical Department on October 22nd to every member of those County Panel Committees the personnel of which has been reported to the Medical Secretary

Dr R Bruce DSO, Culter, Aberdeenshire
Dr D E Dickson, MC, Lochgelly, Fife
Dr C E Douglas Cupar, Fife
Dr N P Farrar, Innerleithen, Peeblesshire
Dr J W Little Newmans, Lanarkshire
Dr W R Martine Weston, Haddington
Dr James Wilson Irvine, Ayrshire

AN INSURANCE INQUIRY

An inquiry was held at Exeter on October 7th to investigate a representation which had been made to the Minister of Health by the Exeter Insurance Committee, 'that the continuance of Dr Bernard Kelly upon the medical list is prejudicial to the efficiency of the medical service of insured persons

Mr E H Tindal Atkinson (presiding), Dr E Collingwood Andrews (London) and Dr A Forbes (Sheffield) composed the Committee of Inquiry. The Exeter Insurance Committee was represented by Mr Theo Mathews (instructed by Mr J L Pengelly), and Dr Kelly was represented by Mr Rayner Goddard, KC, and Mr W Blake Odgers (instructed by Messrs Le Brasseur and Oakley, solicitors to the London and Counties Medical Protection Society)

At the outset of the inquiry Mr Rayner Goddard took the objection that the representations made by the Exeter Insurance Committee were not confined to the facts as found by the Medical Service Subcommittee which, according to the Regulations, were binding upon local Insurance Committees

Mr Mathews, opening the case for the Committee, said the representations made followed upon a complaint by Mrs Ellen Stevens that Dr Kelly had failed to provide adequate medical diagnosis and treatment to her husband, Sidney Septimus Stevens, in consequence of which he died on April 1st last. Stevens died of strangulated hernia and intestinal obstruction and Dr Kelly's diagnosis was gastroenteritis for which he treated Stevens until April 1st. Dr Kelly was called in on March 27th, and on the fifth day Mrs Stevens was so distressed at her husband's condition that she insisted on a second opinion. Another doctor came, and ordered Stevens' removal to the hospital, where he was operated upon. It was necessary to prove that the doctor had not made a mistake that might fairly have been made and it was contended that from what he knew of Stevens—who had been his patient for many years—he ought to have guessed that the man's condition might have been due to hernia, from which he had previously suffered. The doctor was given a specific account of an incident to Stevens which ought to have shown him, quite apart from the man's history, that he was suffering from hernia. In addition, what the doctor was told daily by Mrs Stevens should have convinced him of the complaint. There appeared to have been symptoms which any medical man would have regarded as characteristic of the man's condition. There was also a small lump in the groin. When Dr Kelly saw Stevens on March 29th he was in pain and was vomiting, and the doctor said to Mrs Stevens 'It is a pity he was not operated upon years ago. It would have saved all this bother.' It was suggested that Dr Kelly had been grossly negligent.

Mr James Long, dispenser to Dr Kelly for eleven years in his evidence said that on the Friday afternoon when Stevens' brother-in-law called at the surgery and told him the symptoms and mentioned that Stevens had previously suffered from hernia he (witness) himself wrote on a slate for Dr Kelly a note 'Stevens, strangulated hernia'. The same evening Dr Kelly asked him who had diagnosed the case, and the witness replied that he himself had.

Dr Howell, house surgeon at the Royal Devon and Exeter

Hospital during March and April, said he attended the operation on Stevens for intestinal obstruction caused by hernia. Stevens died the day following the operation, and he (witness) gave a certificate to the effect that death was caused by strangulated inguinal hernia and intestinal obstruction. It was not a true strangulation, but it was what he had always understood as strangulation. It was not such a typical strangulation as he had seen.

Mr Rayner Goddard, opening the case for Dr Kelly, said the operation upon Stevens revealed that it was a remarkable and obscure case, and Mr Lock would say that he had come across only one similar case in the whole of his experience, and that was subsequent to the present case. Dr Kelly's attention was never directed to anything unusual until the Tuesday morning when the nature of a vomit by Stevens told him there was intestinal obstruction. He examined Stevens on more than one occasion without finding any trace of hernia, the symptoms were those of gastroenteritis. While a mistake had been made, Dr Kelly could have done no more in the case.

Dr Bernard Kelly, in his evidence, said he qualified in Ireland in 1912 and commenced practice in Exeter in the following year. There were 2,400 insured persons on his list. This was the first occasion on which any complaint had been made concerning him, either on the panel or in private practice. When Mrs Stevens came to him on the morning of March 27th she said nothing about her husband having had a strain. In the afternoon, on reaching his house, he saw on his slate, 'Stevens, "strangulated hernia," and he went to see Stevens immediately. Stevens was in bed, and witness took his temperature and pulse and examined him carefully. Stevens reminded him that ten years previously he sent him to the hospital for rupture. The temperature and pulse were normal, and witness satisfied himself that no acute condition was present. He formed the opinion that the complaint was gastroenteritis. He was rather terse with Mrs Stevens. He was in a hurry because of another urgent case. He objected to having a diagnosis thrust upon him by people not competent to make a diagnosis and he thought, quite wrongly, that it was Mrs Stevens who had sent the message and not the dispenser. He asked Mrs Stevens what the vomit was like, and she replied, 'Curded milk.' Later he found that the diagnosis had been made by his dispenser, and when Mrs Stevens called in the early morning he apologized to her and said he would call again that evening. He did so, and found there was no change in the patient's condition. He saw the patient again on Saturday, Sunday, and Monday, and examined him every time for hernia but could detect nothing. Each time he was told that the vomit was the same. On the Tuesday he saw the vomit, and at once concluded that intestinal obstruction was present. He asked Mr Lock to see a case of intestinal obstruction, saying at the same time that he did not know the cause. Witness was present at the operation, and he had never seen a similar one.

Cross-examined, the witness said that if the operation had been performed earlier the patient would probably have had a better chance of recovery. Hernia was ever present in his mind and had he found any symptoms of strangulated hernia he would have sent the case to hospital. He asked Stevens all the questions a medical man would ask and did all that a medical man should do for a patient. There was nothing in his treatment of Stevens that he regretted. He watched Stevens carefully.

Mr Norman Loel, consulting surgeon, in his evidence, said he was called in by Dr Kelly and examined Stevens. Apart from the fact that his face looked pinched there was no physical sign of any serious illness. The operation revealed no sign of strangulation in the technical sense of the word. From the point of view of the general practitioner it was a very obscure case. He knew of only one other in the whole of his experience.

The Chairman announced that the Court would report in due course.

VACANCIES

ABERDEEN, ROYAL INFIRMARY—Assistant Surgeon to the Ear, Nose and Throat Department.
BOLTON COUNTY BOROUGH—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £600 per annum.
CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEART AND LUNGS (Victoria Park, E.2)—House Physician. Salary at the rate of £100 per annum.
COACHESTRA, SEVERALLS MENTAL HOSPITAL—Second Assistant Medical Officer (male). Salary £60 per annum rising to £705. Diploma of Psychological Medicine carries £50 per annum extra to the scale.
DARLINGTON GENERAL HOSPITAL—Honorary Surgeon to the Ear, Nose, and Throat Department.
DURHAM COUNTY ROYAL MENTAL HOSPITAL—Clinical Pathologist. Salary £400 per annum increasing to £700.
DURHAM COUNTY COUNCIL—(1) School Dentist (whole time). Salary £500 per annum rising to £600. (2) School Dentist (part time) for Bishop Auckland School Clinic. Remuneration £11s 6d per school session.
EASTROPPE, PRINCE'S ALICE MEMORIAL HOSPITAL—Male Resident House Surgeon (unmarried). Salary at the rate of £175 per annum for six months rising to £200 if appointment extended.

[illegible]

Diary of the Association

OCTOBER.

27 Tues. Crodon Division Crodon General Hospital, Dr H Batty Shaw on the Earls Treatment 11 Artificial Pneumothorax of Pulmonary Suppuration 8.30 p.m.
 Newcastle upon Tyne Division 7 Wind or Terrace 8.20 p.m.
 Shropshire and Mid Wales Branch Annual Meeting Royal Salop Infirmary 3.30 p.m. Annual Dinner Pavenherst Shrewsbury 7 p.m.

28 Wed. London 1. Spagnum Sulcarum Committee 2.30 p.m.
 (1) 2. 3. 4. North Western Division Bacteriological Department of the G.C. 8.30 p.m.
 Kensington 8.30 p.m.
 North Middle 8.30 p.m.
 Oxford Div. Professor Peters on Recent Rec. m
 Southampton Southampton 3.30 p.m.

29 Thurs. Dudley Division Annual Meeting and Dinner Dudley Address by Deputy Medical Secretary 8 p.m.
 North Middlesex Division Annual Dinner Criterion 8 p.m.
 Herwick Infirmary St David's Hospital

30 Fri. 8.0 p.m.
 Barnet Division Central Cafe Market Hill, Barnet Address by Mr Graham Simpson on a Survey of Bacterial Surgery 8.30 p.m.
 Sheffield Division Church House St James Street, Sheffield 8.30 p.m.

The charge for inserting announcement of Births, Marriages, and Deaths is 9s which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

BIRTH

Gos - 11 Saltash " High Road Loughton on October 8th to Dr and
Mrs W Ethard Gos a son.

MAPPLACES

ANDERSON—WHARFON.—On October 9th at St Nicholas Church Great Yarmouth by the Right Rev the Lord Bishop of Coventry and the Rev Canon Aubrey Tucker, A S H. Anderson DSO MC MB, Ch B DPH younger son of the late Alexander Anderson and Mrs. Anderson of Aberdeen to Joyce elder daughter of Mr and Mrs. W S Wharfon of Great Yarmouth.

DANES-LOVE—On Wednesday, October 14th at Southwark Cathedral by the Rev Canon J B Haldane assisted by the Rev J S Dean and the Rev W W Hubbard Dr Francis Creswell Lawson son of the late Rev Francis Francis of Shadinghall, Suffolk and Mr Barnes of Hymount, Lincs. Beccles to Miss Wignall daughter of the late Mr Thomas Lobbs and Mrs Lobbs of Poole, Co Wilt.

LYLE-HUGHES—On October 14th at St Paul, Cornhill by Rev A Burt John Scott Lyle M A B Ch son of Dr and Mrs Lyle, Newdown street and Miss Alice Lyle daughter of Mr and Mrs Lyle and the late Mr George Hu hes Forden Wiltshire.

DEATHS

KELLETT—On October 15th A F Kellett MB BS B.A. St John's College Cambridge A-graduate of Birmingham University for thirty three years practising at Lewisham, S.E. aged 59

ORRIN—At Ferndale Hatfield Essex on October 18th Beth the wife of Herbert Charles Orrin OBE FRC S Surgeon-Minister of Pensions Hospital Newcastle-on-Tyne

BENTALL, C. Philip M.C. M.B. Ch.D. Liverpool, Honorary Assistant
 Surgeon, St. Mary's Hospital, Manchester and Honorary Assistant
 Gynaecological Surgeon, Northern Hospital, Manchester
 COOK, Frank B.Sc. M.B., B.S., F.R.C.S., Surgeon to Out patients
 Chelsea Hospital for Women
 LEITCH, Bernard B.A., M.B. Ch.B. Dublin, Ophthalmic House-Surgeon
 Cardiff Royal Infirmary
 SCOTT, Bertram M.B. Ch.D. Manchester and Leeds D.F.H. Cambridge
 Medical Officer of Health for Letchworth Urban District, vice Dr E. A. Fiddian,
 resigned.

ROYAL SOCIETY OF MEDICINE

Section of Odontology **Mon 8 p.m.** Presidential Address by Mr J Lewin
Paine. The Origin and Growth of the Odontological Society. Mr A T
Pitts and Mr J Howard Nummerv. A Melanotic Epithelial Odontoma
in a Child

Section of Medicine **Tues 5.30 p.m.** Clinical Meeting at Middle ex
Hospital, 11 Tea at 5

Social Fencing **Tues. 8.30 p.m.** Fellows and their friends will be
received by the President Sir St Clair Thomson. 9.20 p.m., the President
will give a short Address on Shakespeare as a Guide in the Art and
Practice of Medicine. There will be an interesting Exhibition
arranged by Mr C J S Thompson of the Wellcome Historical Museum
to illustrate the subject of medicine in the Elizabethan period and the
references to medicine in the plays of Shakespeare

Section of Comparative Medicine **Wed 5 p.m.** Presidential Address by
Mr Frederick Holdridge. Dr W H Andrew. Some Recent Advances in
our Knowledge of Plant Poisoning. A Discussion will follow to be
opened by Professor J Clark

Section of Psychiatry **Wed 8.20 p.m.** Joint Meeting with the British
Section. Discussion. The Early Treatment of Mental Disease. To be
opened by Sir Maurice Craig and

Bladder

ROYAL COLLEGE OF SURGEONS OF ENGLAND, LINCOLN'S INN FIELDS, W.C.1.—
Museum Demonstrations 5 p.m. Mon. by Mr. Shattock, C.B.S.
Fri. Sir Arthur Keith, Evolution of the Human Mechanism of Hearing.
MEDICAL SOCIETY OF LONDON, 11 CHANCERY STREET, W.1.—Mon. 8.30 p.m.
Clinical Evening Exhibition of cases and diagrams.

POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION.
 1. Wimpole Street W.1.—Fellowship of Medicine Lecture Medical
 Society 21 Chandos Street W.1 Mon 5.30 p.m. The Treatment of
 Pulmonary Tuberculosis in London School of Hygiene and Tropical
 Medicine End-lich Cardens The and Thurs Clinical Demonstra-
 tions Royal Victoria Hospital Holloway Road N Intensive Course
 in Medicine Surgeons and the West
 Hospital Lecture for Square Daily
 Department Bi-weekly Lectures
 Thurs Principles of Treatment
 Demonstration St. Peter's Hospital Henrietta Street W. and Special
 Course in Gynaecology Clinical work every afternoon and lecture

SUPPLEMENT TO THE BRITISH MEDICAL JOURNAL.

LONDON SATURDAY OCTOBER 31st 1925

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British Medical Association.

FOURTH AUTUMN DINNER

THE Great Hall of the British Medical Association House received what one of the speakers described as a "house-warming" on the evening of Wednesday, October 21st, when a company of about three hundred members and guests assembled there for the Annual Council or Autumn Dinner. Although the hall is primarily designed for an auditorium, with the dais at one end, it served admirably the purpose of a banquetting chamber, at all events from the scenic point of view, if the acoustics were not all that could be wished in the case of speakers who addressed the gathering from their different places at the tables, the difficulty was overcome to some extent by getting them to stand on their chairs. The tables were decorated with yellow chrysanthemums, and the dais, from which a programme of music was rendered, was a bank of palms and baskets of flowers. The presence of many ladies added to the pleasure of the occasion.

The chair was taken by Dr R. A. BOLAN, Chairman of Council with the retiring President, Mr J. Basil Hall, who was the principal guest of the evening, on his right. Besides the speakers whose names appear below, and the officers and members of Council, the following were among those present:

Lieut. General Sir W. B. LUSHMAN (Director Army Medical Service), Air Vice-Marshal D. MUNRO (Director Royal Air Force Medical Service), Mrs. IVANS (President Medical Women's Federation), Sir St Clair THOMSON (President Royal Society of Medicine), Sir Frederick METT (President Medical Psychological Association), Dr G. F. BUCHAN (President Society of Medical Officers of Health), Dr Vincent DICKINSON (Master Society of Apothecaries), Mr P. F. ROWSELL and Sir W. Glyn-Jones (President and Secretary Pharmaceutical Society), Mr J. H. Bidecock (President British Dental Association), Dr C. Hubert BOND (Medical Council Board of Control), Dr J. R. KAYE (President, Association

of County Medical Officers of Health), Dr Watkins Pitchford and Dr Orenstein (South Africa), Mr John HATTON (Director of Bath's Bath), Sir Philip Magnus, and the following members of Parliament: Mr A. V. DAVIES, Dr F. E. FREEMANTLE, Dr Haden GUEST, Sir Henry JACKSON, Dr E. G. GRHAM LITTLE, Sir Richard LUCE, Dr T. WATTS and Sir H. KINGSLEY WOOD.

Apologies for absence were received from Sir Cecil Newman and Sir Arthur Robinson.

The Retiring President

After the toast of "His Majesty" had been fittingly honoured in the hall of the building he had so recently opened,

Sir Richard Luce proposed the health of the retiring President. He said that the British Medical Association was happy in the system whereby it obtained distinguished recruits. From the area in which its Annual Meeting was to be held it selected one of its councils very often the most distinguished medical man of the locality, and in this way often brought into the work of the Association, to their own good as well as for the good of others, consultants and specialists who might previously have taken no part in Association affairs. Mr Basil Hall had had an adventurous run of office. It had been marred by the opening of the new headquarters and also by his visit in a representative capacity to Canada and the United States. Much was heard in these days about imitations of Empire, but in recent years several officers of the Association had gone on ambassadorial tours to the profession in the Dominion greatly to the advantage of the profession both overseas and at home.

Mr BASIL HALL, in response to the toast, which was very heartily received, said that when, a little more than two

years ago, he came up to London for a meeting of the Arrangements Committee he felt himself rather a fraud, because that was the first occasion on which he, the President-to-be, had been intimately concerned in the work of the Association. The only thing he really knew at that time about the Association was that it had in office called Dr Cox, whom he had subsequently found to be a safe anchor in time of need. But it he had been reassured in the past he hoped he had atoned (Applause) He felt deep gratitude towards the Association and its Council. He had had two years of real enjoyment. He had been very fortunate in his year of office because it had been so pleasantly eventful. His tour in Canada and the United States made him acquainted with the overwhelming hospitality of the "other side." It had been a valuable experience to attend the Council meetings. Some of them might perhaps have been briefer, but there had been no disorderly scenes of the kind with which Sir Richard Luce must be familiar in the House of Commons. The Council meetings were always worth attending by anyone who was interested in human nature. The Chairman of Council filled him with astonishment on account of his inexhaustible good nature and untried patience. For a long time he never could understand how he had developed that patience, and then it occurred to him that he was a dermatologist! If in Dr Belam the Council had *suaviter in modo*, in Dr Brackenbury it had *fortiter in re*. Dr Brackenbury appealed to the speaker, who was a Yorkshireman, for his fighting qualities. During the war a sergeant had said to him, "If you want someone to make a dash and take a position, give me a Highland regiment, but if you want someone to hold a trench and stick it to the last, give me a few West Riding men." Dr Brackenbury's stubborn fighting spirit had evoked his immense admiration. After a humorous illustration contrasting the successful methods of the two chairmen in debate, the President concluded with an expression of thanks for the extraordinary kindness he had received on every side during his term of office. (Applause)

The Common Health

SIR THOMAS HORDER, in proposing the "Common Health," said that he liked the term better than "Public Health," because it suggested a closer approach to the individual and involved less of the State. He wished it could be one word, like "Commonwealth," which was in no respect more important. Speaking from a detached point of view, as one who did not belong to the body of general practitioners and as one also who was not connected with governmental or municipal bodies, he could testify all the more freely to the steadily increasing robustness of the "patient" who was under this combined charge, and give honour where honour was due for some splendid achievements. The infant mortality rate had steadily decreased, so that the figure in 1924 was a little less than half that of 1900—a great testimony to the infant welfare work and to other activities supervised by the Ministry of Health. The death rate from tuberculosis had come down within the same period almost in the same degree. The rehousing of the people seemed now in a fair way to solution. The rate at which it was proceeding in Great Britain would stand comparison with that of any other country in the world. The question of general hospital provision was harked up with the question of Poor Law reform, and concerning this the Ministry had pledged the Government to action. Two very important Royal Commissions were now sitting—one of them on the lunacy laws, the other on national health insurance. Possibly, with regard to the latter, the Pensions Act had disposed of any hope of further contributions towards insurance from the State, the employer, or the insured person, but the accumulated wealth of the approved societies, due very largely to the good work of the doctors, might still serve as incentive to the Commission to hammer out a plan of improvement and extension in health services. There were still those, outside and inside the profession, who considered that the National Insurance Act was "sown in dishonour"; they might live to see it "raised in honour." Many a politician had bumbled better than he knew. It might well emerge that 14,000 insurance practitioners practising for twelve years a system by which they were better paid when their patients were well than when

they were ill, constituted an experience and training in preventive medicine such as nothing else could afford. Sir Thomas Horder went on to refer to post-graduate education, and said that at last there seemed to be hope that this belated service to the common health might be rendered in that efficient manner which it so fully deserved. There was much in the art of medicine which could not be taught to the undergraduate, burdened as he was by an over-full curriculum on the scientific side, and there was much in the science of medicine which changed so rapidly with the growth in sister sciences as to make the education most desirable and important. Another more thorny problem was the education of the public in health. There was now a tendency, which he regarded as healthy, to relax the iron rules of etiquette so jealously demanded by those bodies which guarded the medical traditions. In the past the hungry sheep had looked up and had not been fed—for that could scarcely be called food which was supplied by "Our medical correspondent," by whom doctors turned journalists, or even by the editor's own practitioner when he yielded to the pressure put upon him to contribute 2,000 words upon a disease of which he had had no personal experience! Turning to matters less debatable, Sir Thomas Horder instanced the need for the maintenance of a pure milk supply, for some diastolic alteration in the design and mode of operation of the municipal dustcart, and for effective tackling of the smoke nuisance. The London fog seemed nobody's business and yet it was, literally as well as figuratively, a blot upon civilization. Obviously it was not the doctor's job, for he was too busy trying to keep the carbon-laden lungs of his patient artificially aerated. Dr Cox, always cheerful and confident, had told him that he had hopes of some Government action should three Cabinet Ministers die on one day and the death certificate state in each case that the death was the effect of fog! (Laughter.) The greater hope was not in Governments, but in teaching the public and stimulating it to make its own reasonable demands and make them imperative. The common health was best relieved along the lines of education, organization, and co-operation. No one individual or party in this complex machine could relieve anything worth having, but working together they could relieve all things. (Applause)

Captain O. E. WARBURG (Chairman, London County Council), whose name was associated with the toast, said that he had always regarded the health services of London as a great partnership between the Ministry of Health, the municipal bodies, the voluntary bodies engaged in health services, and the medical profession. Those responsible in the London County Council for health matters, in administering the various services had endeavoured to maintain close co-operation with the medical profession, to take advantage of the latest results of medical education and research, to encourage and not to stifle initiative, and to weld together into one common whole all those great health services which were administered partly by municipal and partly by voluntary effort. The early interests of municipal bodies in health matters were concerned almost solely with environmental conditions. Fifteen years ago no treatment was being undertaken by public authorities except through hospitals for infectious diseases and through the Poor Law medical service. Since that date the London County Council had instituted a service for the medical treatment of school children, a scheme of treatment of venereal diseases, and various other measures. Since 1906 the death rate of the citizens of London had been reduced by one-fourth, the death rate from tuberculosis by one-third, and the infant mortality rate by one-half, and he looked forward to further triumphs.

Mr S. P. VIVIAN (Registrar General), who also responded to the toast, said that although he was supposed to think of nothing but statistics he did not propose to wear the company with them on that occasion. Figures of speech were more suitable to a banquet than speeches of figures. But he wished to define the relation between the service for which he was responsible and the great purpose of the common health. He had some difficulty in other spheres in maintaining the view that the vital and medical statistics which he produced were important and necessary, but in the present gathering he need not argue a point like that

I had been his good fortune to be associated, throughout a large part of his official career, with the medical profession. He was pitched into the controversies of 1912, now "unhappy, far-off things." To him, an outsider it was given to enter the inner sanctuaries of 429 Strand, as liaison officer between the National Service Ministry and the Central Medical War Committee. No doubt the stress of war made even the Association forget that "civil communications corrupt good manners." In his experience he had never found the medical profession respond other than favourably and with the fullest measure of co-operation to any proposition that promised real progress in scientific knowledge and its application to the needs of the people. He liked to describe the service for which he was responsible as part of the scientific equipment of the medical profession. The results obtained by that service were designed to assist the medical profession in all its branches to prosecute its labours more successfully. The material for that service in the shape of great groups of mortality and other statistics, was drawn directly from information provided by the medical profession itself. All that the Registrar General's office did was inspired by an almost functional honesty in the desire to furnish nothing which was not trustworthy, nothing capable of misleading, and he thought the profession and the public could rely upon that office not to be moved by any controversial aspect of the material with which it dealt. (Applause)

The Guests

Mr F B TURNER proposed the health of the guests, and referred to some of the distinguished visitors. With regard to the two guests present from South Africa, Dr Watkins-Pitchford and Dr Orenstein, he remarked that they were being given by the Association a guest and valuable trust. To them was being handed over the Medical Secretary, and he hoped they would label him carefully and treat him with care, and return him fit and unimpaired. He also spoke of the pleasure it gave to the Council to see so many members of Parliament and so many presidents of bodies allied to the Association at the table. He coupled with the toast the names of Sir Kingsley Wood, Parliamentary Secretary to the Ministry of Health, and Sir Holburt Waring, President of the Medical Society of London.

Sir H KINGSLEY WOOD, M.P., said, on behalf of Mr Neville Chamberlain and himself, how much they had valued the assistance and co-operation of the British Medical Association during the past year. The relationship between the Government and the medical profession was never so close and cordial as it was to-day, and he put that happy result down largely to the work of the Association. It had undoubtedly played a useful part in voicing the views of the profession to the department of State which had most to do with medical affairs. He could give the assurance that no new scheme or additional obligations which involved the members of the medical profession would for a moment be contemplated without in the first place the freest and frankest consultation with the Association. Reference had been made by Sir Thomas Horder to the great progress in health affairs, which he attributed to the partnership between the Ministry of Health, the medical profession, the local authorities and the great body of voluntary associations up and down the country. Too many people were to-day looking to the State for things which they ought to be doing themselves. It was the policy of the Ministry as far as possible to foster voluntary organizations. The voluntary service rendered in this country was matter for pride to every citizen.

Sir HOLBURT WARING congratulated the Association upon its new house. He had heard many discussions as to the advisability of the Association taking up its residence in Tavistock Square, especially in view of the possibility that the University of London might become a very near neighbour. The Bloomsbury site for the University was still under discussion, but he thought the Association might look forward to a certain number of highly respectable institutions presently settling in its locality. The London School of Hygiene and Tropical Medicine plans for which were going forward was one of these—an institution which, when completed, would be second to none in the world.

The Medical Secretary

The CHAIRMAN at this point announced that the Council at its meeting that day had decided to accede to the request of the South African Committee that the Medical Secretary should be allowed to go to South Africa on an organizing tour. Although his absence would mean great privation at headquarters—for he would be away five or six months—the Council felt that it was right to make this response to the request of their South African colleagues. He called upon the company to express its good wishes to Dr Cox, the most devoted colleague, one of the best servants the Association ever had, and the most patriotic man who could be sent on an imperial mission. (Loud applause.)

Dr ALFRED COX who was warmly received said that he was going to South Africa on a mission for the Association which he would dearly like to bring off with flying colours. His purpose was, if possible, to effect the solidarity of the profession in that Dominion. His regret was at leaving the interesting concerns of headquarters for so long a time, but he went with the desire to do credit to the Association of which he had been an officer for eighteen years and which he loved more every year he worked for it. (Applause.)

The Chairman

The toast of "The Chairman" instead of being a casual compliment at the end of the gathering was the climax. Dr C E DOUGLAS proposed the toast in a capital speech, in the course of which he said that no association had ever had so hard-working and so devoted a chairman as Dr Bolam. The Chairman was a man who rose to every occasion. He had revealed himself, when the Association wanted new premises, as the champion house hunter of the kingdom. (Laughter and applause.) He had also shown with what dignity he could handle a royal occasion and sustain his position as the first officer of the Association in the presence of the King. (Applause.) And that night he appeared as host at his own table. But these more or less ornamental duties were things he took in his stride. The members of Council knew him best for his masterly conduct of business. What was his secret of successful chairmanship? After watching him for six years the speaker had discovered it. He knew the alpha and omega of chairmanship. The alpha of chairmanship was in any meeting to be able to restrain a member from monopolizing the conversation, and the omega was like unto it—to refrain from monopolizing the conversation himself. Dr Bolam was a typical Englishman of the North. Tennessee had a couplet which had sometimes puzzled the speaker:

bright and fierce and fickle is the South
And dark and true and tender is the North

Dark with the depth of intelligence, true as every Englishman was true to his word and tender with the cynic's humour and rugged loving-kindness of the men of those counties from Trent—those were the characteristics of the Chairman. (Applause.) There was "a south in the wind" that he was terminating his office as Chairman. That must not be. (Applause.) He would like to see him remain to take his place on that day in seven years' time when the centenary of the Association would be celebrated. And for a long—for a much longer chairmanship was there not ample precedent in the thirty-three years of office of Sir Charles Hastings.

Dr BOLAM who was affectionately greeted on rising said that this was one of the proudest moments in his term of office now rapidly nearing its conclusion. (Cries of "No.") Had he the energy and wit of Dr Douglas he might perhaps be persuaded to carry on the work with which he had been entrusted. At the same time he hoped that while mother would sit in the chair during the centenary year, he himself would be there on that occasion. No man could have received during these last five years more kindly help and encouragement than it had been his lot to receive, in particular from the permanent staff who did everything for him, and allowed him to take the credit for it.

British Medical Association

CURRENT NOTES

The Chairman of Council's Badge of Office

THE very beautiful Badge of Office for the Chairman of Council, shown in the accompanying illustration, has been designed and executed by Mr Allan G Wyon. It takes the form of a gold and enamel star measuring about 3½ inches across. The central device is a replica of the staff and serpent of Aesculapius in the form in which they appear above the Memorial Gates of the Association's new home. The inscription "Chairman of the Council" surrounds this central device appearing in letters of gold on a circle of blue enamel. Between this main "star" and the locket loop by which the badge is suspended from the blue ribbon collarette is a smaller star bearing, again in blue enamel, the initials "B.M.A." Mr Wyon was the designer also of the Badge of Office presented in July last at Bath to the Chairman of the Representative Body, and he prepares the gold medals of the Association.

The Badge of Office was presented to Dr Bolam at the Council meeting on Wednesday, October 21st after the following letter had been read to the Council:

It has appeared to some of us for some time to be desirable that the Chief Executive Officer of the Association should be marked by a Badge of Office in order that the ordinary member may easily identify the individual who should receive most of the praise or blame for the acts of the Association.

At the Bath Meeting one of our members was privileged to see the very beautiful jewel prepared by Mr Allan G Wyon for the Chairman of the Representative Body, and after consultation we decided to ask Mr Wyon if he would undertake the design and preparation of a Badge of Office for the Chairman of Council of the Association. We have left the arrangements in the hands of the Financial Secretary and Mr Wyon and have little doubt that you will be satisfied with the result.

We hope you will wear this jewel for a long time, and that when in the course of years you hand it on to your successor it will prove to him a constant reminder of the high position to which you have raised your office.

We have asked Mr Wyon to bring the Badge of Office with him shortly after the opening of the Council Meeting this morning to present it to you on our behalf.

We make it a condition that our anonymity is respected."

The report of the Proceedings of Council on October 21st will appear in next week's SUPPLEMENT.

Organizing Tour of the Medical Secretary in South Africa

The Council at its meeting on October 21st acceded to a pressing request from the South African Committee that the Medical Secretary should be allowed to visit South Africa on an organizing tour of all the Branches there. It was pointed out that the present was the best time for such a tour, and accordingly Dr Cox sails on October 30th, and does not expect to be back until early in April. The intention is that he shall confer with the South African Committee, which will lay out an itinerary for him, and that he shall see as many members of the profession in that country as possible and report both to the South African Committee and to the Council on his return. The main object of the tour is to organize the Branches and to bring them into closer contact with the Association.

reference to the resolution passed by the Council, which instructed him to convey to the South African Committee the Council's best wishes for the success of that Committee's efforts to promote the solidarity of the profession in South Africa. Members are requested to note that all communications addressed to the Medical Secretary personally will be dealt with during his absence by the Deputy Medical Secretary.

Association Prizes for Essays by Medical Students

The Council of the British Medical Association propose to award in March, 1926, prizes of £10 each for the best essays by final-year medical students on the disabilities that may be directly due to simple fracture (excluding separation of the epiphysis)—(a) of the femur, (b) of the tibia, (c) of the fibula, (d) of the tibia and fibula (simultaneously injured), and the means to be adopted in the treatment of such cases in order to prevent or minimize these disabilities—namely, one prize in each of the following groups of medical schools:

Group 1—University of Aberdeen, University of St Andrews (University College Dundee).

Group 2—Queen's University of Belfast, University of Dublin (Trinity College), National University of Ireland (University College Cork, University College, Dublin, University College, Galway), Royal College of Surgeons in Ireland (Schools of Surgery).

Group 3—University of Birmingham, University of Bristol, University of Wales.

Group 4—University of Durham, University of Leeds, University of Sheffield.

Group 5—University of Edinburgh, School of Medicine of the Royal Colleges.

Group 6—University of Glasgow, Anderson College of Medicine, Queen Margaret College School of Medicine for Women, St Mungo's College.

Group 7—University of Liverpool, Victoria University of Manchester.

Group 8—London, Charing Cross Hospital Medical School, King's College Hospital Medical School.

Group 9—London, Guy's Hospital Medical School, London Hospital Medical College.

Group 10—London, London (Royal Free Hospital) School of Medicine for Women, University College Hospital Medical School.

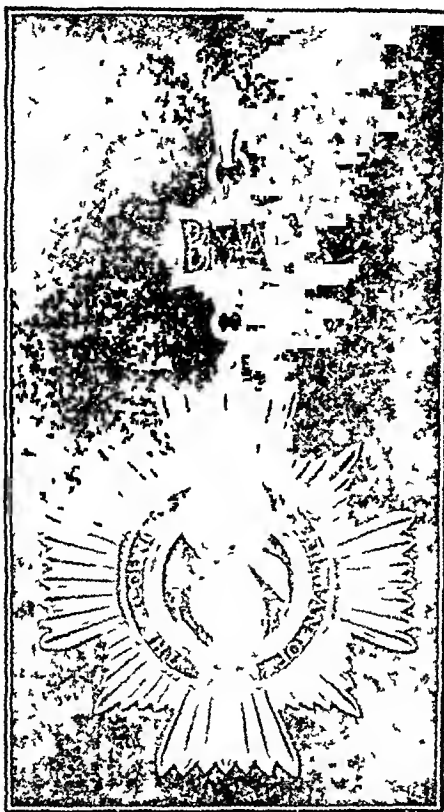
Group 11—London, Middlesex Hospital Medical School, St Mary's Hospital Medical School.

Group 12—London, St Bartholomew's Hospital Medical College, St George's Hospital Medical School.

Group 13—London, St Thomas's Hospital Medical School, Westminster Hospital Medical School.

Group 14—Medical Schools in the British Empire outside the United Kingdom.

The prizes will be awarded to the authors of the essays deemed by the examiners to be the best sent in from the respective groups, but if no essay received from a group is considered deserving of a prize, no prize will be awarded in respect of that group. The essay, which must not exceed 5,000 words, should be clinical in nature, and must include concise notes of three cases personally observed by the student. Essays should be plainly written or typed on foolscap paper (one side only), and must reach the Medical Secretary, British Medical Association House, Tavistock Square, London, W.C.1, not later than January 16th, 1926. Each essay must be signed by a pseudonym, and be accompanied by a sealed envelope marked on the outside with the pseudonym, and containing inside a signed and dated statement that the essay has been the bona fide work of the competitor, and that he or she has not yet passed the final professional examination together with full name, address, and medical school. The essays received will be adjudicated on by examiners appointed by the Council from among members of the Association not resident in the area of the particular group. The decision of the Council will be final.



Notices in regard to the essays have been sent to the deans of the medical schools with a request for exhibition on the notice boards, as well as to those hospitals concerned with the education of medical students, and to the honorary secretaries of the Divisions and Branches of the Association in whose areas the respective schools are situated. A new feature of the competition on this occasion is the tentative formation of a group for the medical schools in the British Empire outside the United Kingdom.

The Association's Annual Handbook.

The *Annual Handbook of the British Medical Association* for 1925-26 is now ready. Though primarily intended as a book of reference for honorary secretaries and other workers of the Association, the *Handbook* is also of interest and assistance to all members. The new edition has been completely revised. It contains the decisions of the Representative Body of the Association on questions of policy, particulars of the new London and Scottish Houses of the Association, information as to the *BRITISH MEDICAL JOURNAL*, the circulation of which is now over 33,500 copies weekly, and lists of the officers and officials of the Association and of its Council and Central Committees. Particulars are also given of the library and lending library, as to some new publications of the Association, the scholarships, grants, and prizes given by the Association, and a summary of some of its recent work. Copies of the *Handbook* can be had by members, *gratis* and post free, on application to the Medical Secretary, British Medical Association House, Tavistock Square, London, W.C.1. To non-members the book is on sale at 2s. 6d. (post free 2s. 9½d.).

Association Notices

PROPOSED CHANGE OF NAME OF BANFF, ELGIN, AND NAIRN DIVISION

NOTICE is hereby given to all concerned of a proposal made by a General Meeting of the Banff, Elgin, and Nairn Division held on October 2nd 1925, that the name of the Division be altered to "Banff, Morry and Nairn Division". The matter will be determined in due course by the Council. Any member affected by the proposed change, and objecting thereto, is requested to write, giving reasons therefor, to the Medical Secretary, British Medical Association House, Tavistock Square, W.C.1, not later than December 1st, 1925.

BATH AND DIVISION MEETINGS TO BE HELD

BATH AND BRISTOL BRANCH.—The following dates and places of meetings of the Bath and Bristol Branch have been fixed for the 1925-26 season: November 25th (Bath); January 27th 1926 Clinical meeting (Bristol); February 24th (Bath); March 31st (Bristol); April 28th (Bath); May 26th (Bristol). Extra meetings have been arranged at Wells in April and at Weston super Mare in May. The annual meeting will be held at Bristol on June 30th 1926.

BIRMINGHAM BRANCH, COVENTRY DIVISION.—The following programme of meetings of the Coventry Division has been arranged: the meetings will take place at the Coventry and Warwickshire Hospital at 8.30 p.m. Tuesday, November 3rd.—Paper by Dr. Mackey, Common sense. Representatives' report. Dr. E. H. Snell. Tuesday, December 1st.—Paper by Dr. Hart, Use of anaesthetics. Tuesday, February 2nd 1926.—Paper by Colonel Harrison, Modern methods in the diagnosis and treatment of gonorrhoea. Tuesday, March 2nd.—Paper by Mr. Musgrave Woodman. Tuesday, April 13th.—Paper by the Chairman (Dr. Fraser Annand). Some diseases and diets. Tuesday, May 11th.—Annual meeting. Members are invited to show specimens or cases at any meeting.

BIRMINGHAM BRANCH, NEWCASTON AND TARNWORTH DIVISION.—A meeting of the Newcastle and Tarnworth Division will be held at the Newcastle General Hospital on Wednesday, November 18th, when Mr. H. Beckwith Whitehouse M.S. F.R.C.S. will give an address entitled "Notes from an ante-natal clinic".

DUNDEE BRANCH.—A meeting of the Dundee Branch will be held at University College, Dundee on Friday, November 6th at 8.30 p.m. General Business. Report on Local Hospitals Committee. At a meeting of the Branch to be held at the same place on Friday, November 27th at 8.30 p.m. a British Medical Association Lecture will be delivered by Dr. F. A. E. Crew, lecturer in genetics, University of Edinburgh.

LANCASHIRE AND CHESHIRE BRANCH, HAILE DIVISION.—A supper dance will be held in Hyde Town Hall on Friday, November 13th at 8.30 p.m. Tickets price 15s. each may be had from the honorary secretaries. Members should apply early for their tickets as the number is limited.

METROPOLITAN COUNTIES BRANCH, CITY DIVISION.—A meeting of the City Division will be held in the Medical Lecture Theatre at St. Bartholomew's Hospital, Smithfield, E.C. on Tuesday, November 3rd at 4.30 p.m. Mr. John Fraser, Professor of Clinical Surgery, Edinburgh University, will deliver a British Medical

Association Lecture on sympathetic disturbances of the abdominal viscera in relation to surgery. Tea will be served in the Library at 4. It is hoped that as many members as possible will attend. Senior students at the hospital are invited to tea and the lecture. In conjunction with the Aesculapian Society there will be a clinical afternoon at the Metropolitan Hospital, Kingsland Road, on Friday, November 13th at 4.15 p.m. when Mr. R. A. Ramsey, F.R.C.S. surgeon to the hospital will show cases with notes. Members are invited to show cases at any meeting. Tea at 4.

METROPOLITAN COUNTIES BRANCH, HEYDON DIVISION.—A clinical evening will be held at Heydon (Friday, October 30th) at 8.30 p.m. at the Hendon College Hospital (near Hendon Central Station). Programme.—(1) Discussion on the diagnosis and treatment of gastric and duodenal ulcer. (a) The surgical point of view (illustrated by lantern slides) by Mr. Norman C. Lake, F.R.C.S. surgeon to Charing Cross Hospital. (b) The medical point of view by Dr. C. N. Wilson, F.R.C.P. physician to St. Mary's Hospital. General discussion will follow. (2) Treatment of puerperal infection by drainage of the uterus by Dr. Remington Hobbs, medical superintendent of St. Mary Abbott's Hospital, Kensington. (3) Demonstration of specimens by Mr. Leonard Phillips M.S. F.R.C.S. surgeon to patients, Queen Charlotte's Hospital. (a) Spontaneous separation of the cervix in labour. (b) A pyretic fibroid. Light refreshments will be provided. All practitioners are cordially invited. It would greatly facilitate the arrangements for the evening if practitioners intending to be present would notify the honorary secretary.

METROPOLITAN COUNTIES BRANCH, ST. PASCAS DIVISION.—The next meeting of the St. Pascas Division will be held at the British Medical Association House, Tavistock Square, W.C.1 at 9 p.m. on Tuesday, November 10th when Dr. Robert A. Young, C.B.F. F.R.C.P. physician to the Brompton Chest Hospital, will deliver a lecture on the early recognition of pulmonary tuberculosis.

METROPOLITAN COUNTIES BRANCH, SOUTH WEST ESSEX DIVISION.—A meeting of the South West Essex Division will be held at Livingstone College, Knott's Green, Leyton, on Tuesday, November 3rd at 5.30 p.m. when Dr. H. G. Adamson will read a paper on eczema and give a lantern demonstration.

METROPOLITAN COUNTIES BRANCH, WILLESDEN DIVISION.—The clinical meeting arranged for November 19th at the Isolation Hospital has been postponed owing to the death of Dr. Stewart. The second annual dinner of the Division will be held at the Criterion Restaurant, Piccadilly, on Sunday, November 15th, when Lieut. Colonel Kirkpatrick, I.M.S. (ret.) will preside. Reception at 7 p.m., dinner 7.30. Principal guests: Dr. H. B. Brackenbury and Mr. G. J. Triness, chairman, Willesden General Hospital. Any member of the Association will be welcomed and may bring a friend. Tickets 10s. each (exclusive of wine) may be had from Dr. W. Lock, 45 Church Road, N.W. 10.

MIDLAND BRANCH, CHESTERFIELD DIVISION.—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield, on Friday, November 13th at 8.15 p.m. when a discussion on small pox will be opened by Dr. Galloway. Tea and coffee will be served at 8.

NORTH OF ENGLAND BRANCH, STOCKTON DIVISION.—A meeting of the Stockton Division will be held in the Stockton and Thornaby Hospital on Friday, November 6th at 8.30 p.m. when an address will be given by Dr. W. E. Hume, F.R.C.P. on some observations on Bright's disease. A large attendance is hoped for.

NORTH OF ENGLAND BRANCH, SUNDERLAND DIVISION.—The annual address will be given by Dr. H. Crichton Miller on Thursday, November 12th. The annual dinner will be held the same evening at 7.30 at the Palace Hotel, Sunderland.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—The autumn meeting of the Northern Counties of Scotland Branch will be held in the Columbia Hotel, Inverness, to-day (Friday, October 30th). A British Medical Association Lecture on infant feeding will be delivered by Dr. Leonard Findlay at 6 p.m. The members will dine together at 8 o'clock after which the presentation of the testimonial to Dr. Munro Vair will take place.

SOUTH WALES AND MONMOUTHSHIRE BRANCH, SWANSEA DIVISION.—A meeting of the Swansea Division will be held at the General Hospital, Swansea, on Thursday, November 5th at 8.15 p.m. Surgical clinic.

SOUTHERN BRANCH, PORTSMOUTH DIVISION.—In order to provide facilities for the discussion of subjects of professional interest and to promote social intercourse and good fellowship among the medical men of Portsmouth and district it has been decided to hold a meeting of the Portsmouth Division on the first Thursday evening of each month during the winter. The first meeting of the session will accordingly be held at the Queen's Hotel on Thursday, November 5th at 9.30 p.m. The meeting will be preceded by a supper (at 3 p.m. head) at 9 p.m. precisely. It is hoped that all members will make a special effort to be present and so secure the success of the inaugural meeting of the session. Members proposing to be present at the supper are requested to notify the honorary secretary by October 31st in order that arrangements can be made. Agenda.—Statement of accounts, recommendations of Executive Committee. (a) flag for Great Hall, British Medical Association House. (b) election of representative letter from Dr. Lockhart Stephens, honorary secretary, Southern Branch, kindly offering to present the Division with badges for the chairman and honorary secretary. Discussion. The early diagnosis of acute infectious diseases to be opened by Dr. James McGregor.

SOUTHERN BRANCH, PORTSMOUTH AND ISLE OF WIGHT DIVISIONS.—A joint meeting of the Portsmouth and Isle of Wight Divisions will be held at the Queen's Hotel, Southsea, on Wednesday, November 11th at 5 p.m. Dr. G. C. Anderson, Deputy Medical Secretary, will give an address on the British Medical Association's Hospital Policy. As the subject is of great importance to medical practitioners the Branch Council hopes that all members will endeavour to attend. Non-members will be heartily welcomed.

The autumn intermediate meeting of the Exeter Division will be held at the Athenaeum, November 4th at 4 p.m., when Dr. Oliver will deliver an address entitled 'The acute and chronic reference to small pox'. Tea will be provided at 4.40.

SOUTH WESTERN BRANCH EXETER DIVISION—The annual meeting of the Exeter Division will be held in the Library of the Royal Devon and Exeter Hospital on Friday, November 6th, at 3.30 p.m. Agenda: Report of Executive Committee, elect officers for session 1925-26. Tea at 4 o'clock. At 4.30 Dr. J. A. Roper will give the first of a series of lectures which is being arranged for the winter of 1925-26 on the modern treatment of diabetes.

SURREY BRANCH CROYDON DIVISION—The next meeting of the Croydon Division will be held at the Queen's Hotel, Upper Norwood on Thursday, November 19th at 4 p.m.

SURREY BRANCH GUILDFORD DIVISION—An ordinary meeting of the Guildford Division will be held at the Royal Surrey County Hospital, Guildford, on Thursday, November 5th, at 4 p.m. Tea will be served at 3.45. The surgical staff of the hospital will show cases in the wards.

SURREY BRANCH KINGSTON ON THAMES DIVISION—The first general meeting of the season will be held at Surbiton Hospital on Tuesday, November 3rd, at 8.45 p.m. An address will be delivered by Dr. Norman Haire on birth control and contraceptive methods. The other arrangements for the season are:—November 18th—Annual dinner at Nuthall's Restaurant, 7.30 p.m. December 1st—Dr. William Brown, Psychology and medicine, January 5th 1926—Dr. J. G. Turner, F.R.C.S., Dental sepsis, February 2nd—Dr. Robert Hutchison, Haematomesia, March 2nd—Dr. Kenneth Walker, F.R.C.S. (subject to be announced later).

SURREY BRANCH REIGATE DIVISION—A meeting of the Reigate Division will be held at the East Surrey Hospital, Reigate, on Tuesday, November 10th, at 8.45 p.m., when Mr. R. P. Rowlands will read a paper on the acute abdomen.

SUSSEX BRANCH CHICHESTER AND WORTHING DIVISION—The autumn meeting of the Chichester and Worthing Division will be held at Warner's Hotel, Worthing, on Wednesday, November 11th, at 7 p.m. On this occasion the Division will entertain guests representative of the public authorities in the area, and after the dinner a lantern lecture will be given by Dr. Habberton Lulham on human nature through a doctor's eyes. It is hoped that members will bring their wives and other guests, and members of the neighbouring Divisions (Horsham, Brighton, etc.) with their wives and other guests, are cordially invited. The price of dinner tickets is 7s., exclusive of wines.

YORKSHIRE BRANCH BARNLEY DIVISION—A meeting of the Barnsley Division will be held at the Central Café, Market Hill, Barnsley, to-day (Friday, October 30th). Supper will be served at 8.30 p.m. prompt. Mr. Graham Simpson (Sheffield) will give an address on a survey of renal surgery (with lantern demonstration).

YORKSHIRE BRANCH BRADFORD DIVISION—The following dates of meetings of the Bradford Division have been arranged:—November 4th—Opening meeting, inaugural address by the chairman, Dr. W. T. Rawson. December 8th—Combined clinical meeting with Bradford Medical-Chirurgical Society, January 26th 1926—Supper dance at Midland Hotel, February 17th or 24th—Lecture by Dr. R. A. Bolam, March—Annual dinner of the Division, April—British Medical Association Lecture, May or June—Motor picnic.

YORKSHIRE BRANCH DEWSBURY DIVISION—A meeting of the Dewsbury Division will be held at the Man and Saddle Restaurant, Dewsbury, on Tuesday, November 3rd, when a lecture will be delivered by Sir Berkeley Moynihan, Bt (Leeds). Supper will be provided at 8.15 p.m. Members from neighbouring Divisions will be welcomed.

YORKSHIRE BRANCH SHEFFIELD DIVISION—A general meeting of the Sheffield Division will be held at the Church House, St. James Street, Sheffield, to-day (Friday, October 30th), at 8.30 p.m. The representatives will present their report. It is hoped that all members will make a special effort to attend.

YORKSHIRE BRANCH WAKEFIELD, PONTEFRAC, AND CASTLEFORD DIVISION—At the meeting of the Wakefield, Pontefract, and Castleford Division to be held in the Bull Restaurant, Westgate, Wakefield, on Thursday, November 12th, at 8.30 p.m., Dr. J. S. Bolton (Wakefield Mental Hospital) will discuss the diagnosis and certification of mental diseases. Supper will be served at 7.45 p.m. (price 2s. 6d.). The meeting is open to all practitioners in the district.

Meetings of Branches and Divisions

METROPOLITAN COUNTIES BRANCH ST PANCRAS DIVISION

Discussion on Puerperal Sepsis

The St. Pancras Division held its first meeting of the winter session at the Association House, Tavistock Square, on October 13th. After Dr. KATHLEEN LANDER, vice-chairman, had expressed regret at the unavoidable absence of the chairman, Dr. Roche, a most interesting address on 'Puerperal sepsis in general practice, its causes and prevention' was delivered by Dr. JOHN S. FAIRBAIRN, obstetric physician to St. Thomas's Hospital.

Dr. FAIRBAIRN commenced by enumerating and discussing many causes of puerperal sepsis which were not under the direct control of the obstetrician and which accounted for so large a proportion of the total number of cases. In particular he deprecated wild statements as to the practitioner's responsibility pointing out that cases could be easily collected to fit in with a preconceived

idea. As an instance of this he mentioned a recent Government report which had given offence to many members of the medical profession. He, however, strongly recommended his audience to read the report of the Scottish Board of Health in which the difficulties of the busy practitioner received full acknowledgement. He himself appreciated the work of the general practitioner, carried out as it so often was under great difficulties, but he considered that the fully qualified medical man was too expensive a weapon to be used in normal confinements. He drew a comparison, very unfavourable to the medical man, between the medical mortality rates and those of the trained midwife. He strongly deprecated the unnecessary use of the forceps, although severely blaming the practitioner, harassed as he often was by the piteous appeals of the patient and her relatives. He thought that women nowadays were not prepared to put up with prolonged pain, knowing as they did that the 'whiff of an anaesthetic' topped their sufferings. In particular he stressed the importance of ante-natal care and simple supervision of the midwives' work. Finally, Dr. FAIRBAIRN appealed to his audience to look to the future and to form new ideals, instead of sticking to their viewpoints of the past. He begged for a very full discussion of his somewhat provocative address.

Dr. LANDER thanked Dr. FAIRBAIRN most cordially for his attendance and address. She was especially grateful to him for his comparison of the midwives' work with that of the doctor, a thing she had not previously dared to do in public. She herself strongly held the opinion that the midwife knew far more about how a confinement should be conducted than did the general practitioner, and was better fitted to conduct labour. She also thought that coitus hinc in pregnancy accounted for a considerable proportion of the cases of sepsis.

Dr. P. P. DALTON commented on the marked moderation displayed by Dr. FAIRBAIRN but joined issue with him and Dr. LANDER over the question of midwives. If Dr. FAIRBAIRN wanted better midwifery, why suggest that the midwives attend all the normal cases, thus robbing the doctor of his only means of gaining the experience of the normal on which he could build up and improve his treatment of the abnormal? Midwives had better mortality figures than the general practitioner (or the specialist) had because they were only allowed to attend on their sole responsibility those patients who were able to deliver themselves. Their mortality for these should be nil. As to doctors being an expensive instrument to use for normal confinements they were being forced to increase their fees because they only got the difficult cases nowadays. He noticed that it was mainly the women specialists who demanded that all the work should be given to the midwives. If he had a case in which the midwife thought she knew more than her doctor did he would dismiss her on the spot as a dangerous person.

Dr. O. I. THEOBALDS read notes of some striking cases of sepsis treated many years ago with marked success. The method used was to administer very large doses of phenazonum to wash out the uterus and to foment the abdomen. All the cases treated by this method recovered.

Dr. E. A. GREGG implored the younger members of the profession, who were not yet set in their ways, to include a midwife in their team of workers. He pointed out that full-time employment could easily be found for them. The plan was that the doctor should supervise the pregnancy and the midwife conduct the actual labour, calling in her chief if his help was required. His suggestions were received with marked approval.

Dr. A. J. CLARKE asked Dr. FAIRBAIRN's opinion as to the use of pituitrin instead of low forceps delivery. Dr. FAIRBAIRN, in reply, expressed his gratification at the keen interest shown by his large audience. He was particularly pleased at hearing Dr. GREGG's constructive suggestions. He approved of the use of pituitrin, but only if the forceps were by, ready for immediate use. If pituitrin did not complete labour in fifteen minutes the forceps should be used.

The meeting closed with a very cordial vote of thanks to Dr. FAIRBAIRN. Sixty-two members and guests were present.

BIRMINGHAM BRANCH NUNEATON AND TAMWORTH DIVISION

The new session of the Nuneaton and Tamworth Division was very successfully inaugurated on October 22nd at a meeting held at Tamworth General Hospital. Dr. LOWSON, the chairman, in his address dealt with the subject of medico-politics with special reference to the National Health Insurance Act. His address was much appreciated and gave rise to a discussion in which several members took part. Dr. McCOLL, the Divisional representative, gave a most comprehensive report upon the Representative Meeting at Bath.

The arrangements for the Treasurer's Cup golf competition as regards local entries were referred to a subcommittee, consisting of the two secretaries, and it was also decided to purchase badges for the officers of the Division. The secretaries were instructed to invite subscriptions (not exceeding half a crown) from the members towards the cost of the badges. All the members present subscribed.

The administration of treatment at the health resorts was a medical concern demanding special study. The health resort was a place for physical treatment by means of climate and for external methods—by baths and otherwise—a conforming to the climate so as to produce a harmonious effect. The simultaneous

treatment by means of physical remedies and medicaments advocated at some of the Continental health resorts, was not advisable because it was merely harmonious. Enlightened medical opinion was turning towards the health resort. Lord Dawson had "devoted health centres" and Sir George Newman proposed "treatment centres" especially for chronic rheumatic disorders. Both these authorities naturally and rightly insisted that investigation should be combined with treatment. This was particularly necessary in the case of the health resort and physical clinic for physical remedies had hitherto been left too much in the hands of non-medical persons.

Another new movement of opinion was towards the sea. Important congresses on thalassotherapy had been held at Venice and Arcachon and everywhere along the European coast there were not only a largely increased number of bathers but of marine hospitals and sanatoriums. Marine health resorts ought to be carefully differentiated especially in the British Islands for our seaside places are quite as different in their action as those upon the three seas of France. At every treatment centre, marine sanatorium or physical clinic at the seaside, certain methods of treatment might well be introduced to combat those particular forms of ill health for which the place has been earmarked. There was need for such specialized health resorts especially in the winter season adapted for example to the catarrhal affections of children, myocardial weakness, arterial hypertension, the soft forms of rheumatism and the nervous breakdowns of middle life. In all these matters the experience and co-operation of local practitioners were essential.

On the motion of the CHAIRMAN a hearty vote of thanks was recorded to Dr Porteus Fox for his very able address. In view of the importance to the borough of the subject discussed the Mayor and other councillors were present at the meeting by invitation. The meeting subsequently at the Mayor's request appointed Dr Bruce (M.O.H. Hastings), Dr W. E. Peck, and Dr Drybrough Smith to act with the local medico-surgical society in the formation of a medical subcommittee of five to co-operate with the council.

ULSTER BRANCH, PORTADOWN AND WEST DOWN DIVISION

A MEETING of the Portadown and West Down Division was held at Armagh on October 16th when the chair was occupied by the newly elected Chairman Dr R. FLOOD (Newry).

Dr ROBERT MARSHALL F.R.C.P. introduced a discussion on the prevention of heart disease in children. This was much appreciated by members and led to a free and interesting discussion in which many of those present took part. Drs DENNY and DARLING reported a case of uterine fibroid obstructing labour and the subsequent operation. Dr DARLING showed a most interesting case exhibiting the Parkinsonian syndrome; this was a girl who had encephalitis lethargica in 1924. He also showed some pathological specimens.

WILTSHIRE BRANCH, TROWBRIDGE DIVISION

A CLINICAL meeting of the Trowbridge Division was held on October 21st at Melksham Hospital. Cases were shown as follows: Dr C. F. RUMBOLD, multiple lymphomata; Dr A. D. HAMILTON and H. C. FAYLOR, amyotrophic lateral sclerosis; Dr C. EDE, popliteal cyst; Dr F. F. BOND, (1) bilateral cervical rib, (2) arthropathy; Dr D. LEIGH SPENCER, imperforate vagina in a child of 14 months. Each case was separately discussed by the members present after which tea was served.

Dr HAMILTON kindly consented to assist the honorary secretary in arranging for a dinner at Devizes on December 2nd; the price of tickets to be 10s. 6d., exclusive of wine.

YORKSHIRE BRANCH, HARROGATE DIVISION

A MEETING of the Harrogate Division was held at the Bath Hotel on October 14th when the chairman of the Division Dr L. G. E. CALTHROP presided. Non-members were invited, and they, together with members, were entertained at tea by the chairman prior to the meeting.

Dr ALFREDO COX, the Medical Secretary, in an address on the advantages of the British Medical Association to non-panel practitioners pointed out some of the activities of the Association that should appeal to all members of the profession: the grants for research of a type that could be carried out by a practitioner in his own laboratory, and the Journal as a vehicle for circulating the advances made by any research. He emphasized the growth of public medicine and dwelt on the futility of individual doctors attempting to bargain with large societies—work which could only be done on a national basis by those with long experience. As an example he instanced the recent negotiations between some approved societies and the British Spa Federation for the treatment of panel patients at certain spas. He said he had been looking into the matter recently at the request of members of that Division and had found that the scheme was in a very nebulous condition, and was unlikely to come into operation for some years except perhaps in a small way as an experiment. The medical organization required would be such as would entail considerable expense and very careful management as it would need the efficient co-operation of medical practitioners all over the kingdom. Yet it had been assumed by a few balneologists and Spa Federation experts that the medical side could easily be arranged by the medical societies of the spas concerned. Lastly Dr Cox made an appeal to non-members on the ground of *noblesse oblige*. The British Medical Association asked those who were not in material need of it to come in and help them. It wanted their views and it needed their outlook.

Dr Edgcombe thought that factors operating against the British Medical Association were the presence of a strong local medical

society and the fact that the Annual Meeting was held in July at a time when most of the members of the Division could not get away. He suggested that the Annual Meeting might be held in Harrogate at some future date.

Dr BAIN, sen., criticized the *BRITISH MEDICAL JOURNAL*. Dr PAVEN SMITH compared the British Medical Association to the Automobile Association. It was the knowledge of the good work it was doing for its members as a whole rather than a strict assessment of the amount of benefit likely to accrue to oneself that should make men join.

Dr COX, in his reply, said he believed the idea of an Annual Meeting in Harrogate would be welcomed by many, but it would have to be towards the end of July.

In the evening a dinner was held at the Hotel Majestic when Dr NIMMO WATSON proposed the toast of the British Medical Association to which Dr COX replied following which the chairman and others entertained the party with music.

YORKSHIRE BRANCH, WAKEFIELD, PONTEFRACT, AND CASTLEFORD DIVISION

THE opening meeting of the winter session of the Wakefield, Pontefract and Castleford Division was held at Wakefield on October 15th when Dr WILLIAM STEVEN, Chairman of the Division, presided. Mr J. A. COUPLAND F.R.C.S. (Leeds) gave an address on the mortality rate of operations for intestinal obstruction. Having pointed out that the mortality rate although greatly reduced, was still seriously high, he went on to discuss the reasons for the high mortality, and emphasized the great need for early diagnosis and prompt surgical treatment. He subsequently dealt with the principal points in diagnosis and criticized some diagnostic signs on which medical practitioners had been taught to rely—for instance abdominal rigidity and distension.

The address was one of singular interest to medical practitioners and after a discussion, in which several members joined, a very hearty vote of thanks was extended to Mr Coupland.

THE SIR CHARLES HASTINGS CLINICAL PRIZE FOR GENERAL PRACTITIONERS

THE Council of the British Medical Association has decided to establish experimentally an annual prize—"The Sir Charles Hastings Clinical Prize"—of fifty guineas for an essay or lecture for the purpose of stimulating systematic observation, research, and record in general practice. The Council believes that systematic observation by general practitioners, along selected lines of clinical study may result in the production of practical contributions of great value by those who are in a favourable position for following disease through its various stages.

The first prize will be awarded in 1926, and the conditions governing its award, as adopted by the Council on April 16th, 1924, are as follows:

Regulations

1 This prize is established by the Council of the British Medical Association for the promotion of systematic observation, research, and record in general practice; it includes a money reward of the value of fifty guineas.

2 Any member of the Association who is engaged in general practice is eligible to compete for the prize.

3 The work submitted must include personal observations and experience of the candidate collected in general practice, and a high order of excellence will be expected. If no essay entered is of sufficient merit no award will be made.

4 Essays, or whatever form the candidate desires his (or her) work to take, must be sent to the Medical Secretary, British Medical Association, B.M.A. House, Tavistock Square, W.C.1, not later than December 31st, 1925, and the prize will be awarded at the Annual General Meeting of the Association. The first award will be made in 1926.

5 If any question arises in reference to the eligibility of the candidate or the admissibility of his essay, the decision of the Council on any such point shall be final.

6 Each essay must be distinguished by a motto, and must be accompanied by an envelope marked with the same motto and enclosing the candidate's name and address.

7 The candidate who wins the award shall, if the Council so desires, publish his paper in the *BRITISH MEDICAL JOURNAL* or deliver a lecture on the subject thereof at a meeting of the Association.

8 Inquiries relative to the prize should be addressed to the Medical Secretary, B.M.A. House, Tavistock Square, London, W.C.1.

ANNUAL PANEL CONFERENCE

EMPHATIC VOICE OF CONFIDENCE IN INSURANCE ACTS COMMITTEE

THE Annual Conference of Local Medical and Panel Committees was held in the Great Hall of the British Medical Association House, Tavistock Square, on Thursday, October 22nd. It was very largely attended, and although the agenda appeared to be much lighter than usual, containing only about forty motions, many of them of a formal character, the proceedings nevertheless continued from 10 in the morning until 7 at night.

Dr E KALE LE FLEMING (Wimborne) presided, and was supported by Dr H G DAIN (Chairman, Insurance Acts Committee), Dr A Cox (Medical Secretary), Dr G C Anderson (Secretary to the Committee), Dr J R Dwyer (Scottish Secretary), and Mr W B Hempson (Solicitor).

The CHAIRMAN expressed the gratification of all the representatives on meeting for the first time in the dignified hall which was part of the home of the British Medical Association, and he thought they would all wish to congratulate the Association upon a house so well adapted to its purposes. (Applause.) He was proud of the fact that he should be the first to preside at a Conference in the Great Hall.

Among the preliminary business was a motion from Kent urging that the annual report of the Insurance Acts Committee ought to be available to representatives at an earlier date, before the provisional agenda of the Conference was drawn up. Dr DAIN explained that the report was held over until after the September meeting of the Insurance Acts Committee in order that it might be absolutely up to date. Had it been published earlier in the year a supplementary report to correct or amplify certain matters would have been necessary. He agreed, however, that next year the report, if possible, should be made available to committees a longer time ahead.

Dr HERBERT HALL (Hertfordshire) brought forward a motion to divide group N' (the group which includes his own county together with Middlesex, Buckinghamshire, Essex, East and West Ham and Southend) into two groups, each returning one member to the Insurance Acts Committee instead of the entire group returning two members as at present. Some objection to the proposed division was raised by representatives of other constituencies included in the group. It was pointed out that the division would bear unfairly on the Essex side, moreover, that to divide one constituency in this way would break up the symmetry of the whole scheme of grouping. The motion, however, was agreed to on the understanding that the division should only take place by the consent of all the committees composing the group—a consent evidently not yet forthcoming.

ANNUAL REPORT OF INSURANCE ACTS COMMITTEE

Dr DAIN, in bringing forward the annual report of the Insurance Acts Committee as to action taken since the last annual Conference (SUPPLEMENT, October 10th, p. 121), said that he could not recall a conference agenda which was so free from controversial matters. There were two reasons for this. One was that a special conference had been held in the earlier part of the year to consider the Memorandum of Evidence to be presented to the Royal Commission, and at that conference a good deal of the ordinary contentious business was disposed of. The second reason was that all improvements of the insurance system were at present held up pending the report of that Royal Commission. Any suggestions that might be made to the Ministry of Health were met by the statement that the Ministry was not prepared to consider alterations until the Commission had reported. One of the questions raised last year had been settled in a very admirable way. This was the over-representation of Sunderland in the group electing direct representatives to the Insurance Acts Committee, owing to the special constitution of the Local Medical Committee in that area. Sunderland had very generously altered its local arrangements in this respect so as to bring its representation into line with the other members of the group. There were only one or two matters in the report which called for general observations. One was the arrangement

which had been entered into with the Ministry of Health with regard to ophthalmic benefit. The methods suggested for the addition of this specialist service were experimental, and would probably be improved in the light of experience, but that experience would be of great value when other specialist services—this was the first of them—came to be added to the present service. This particular service had pitfalls which most of the other specialist services would not possess. The large majority of approved societies which up to now had given any ophthalmic benefit had done it largely through the opticians as a rule the benefit consisted in referring their members to opticians to be tested for and given glasses. The Committee, of course had taken the only possible line, that it must insist that in every case in which the practitioner considered that the eyesight required attention the diagnosis must be made by a properly qualified ophthalmic surgeon ('Hear, hear'). This had raised a situation of some difficulty such as, of course, would not arise in dentistry. A new standard had to be set up, and the approved societies had to be warned from a method which they had already adopted for optical benefit, and urged to adopt another method much more satisfactory, but also more expensive. A very small proportion of insured persons were at present entitled to this particular benefit, but by July, 1926 when the additional benefits accrued for very many large societies the question would take a much wider range, and it was hoped that those societies would then adopt the agreement made with regard to this additional benefit. The difficulty of getting together a list of ophthalmic specialists had been surmounted by a special committee of the British Medical Association, consisting of ophthalmic surgeons, with others, with Dr Wallace Henry as chairman. Very great care was exercised to ensure that all applicants for admission to the list of those ready to perform this service were properly qualified according to the standard set up. The other important matter on which he might say a few words was that of disciplinary action by the Ministry of Health. It was not necessary to repeat to the Conference the history of the cases which had caused considerable anxiety to the Committee as to the way in which the functions of the Ministry in this respect were carried out. The Minister himself in June last received a deputation from the Insurance Acts Committee on the subject. On that occasion the matter was laid before the Minister under four headings, and certain principles were put forward corresponding to those already set out in the Association's evidence to the Royal Commission. After some discussion as to the meaning of the principles, the Minister agreed that the principles were on the whole fair and sound, but he pointed out that the disagreement might arise on the bearings of a particular case with regard to those principles. Since that interview no case had arisen, to the Committee's knowledge, in which there was a difference of opinion as to the application of any of these principles. If and when such a difference arose the Committee would be prepared to deal with the matter. The proof of the pudding was in the eating, and he did not feel that anything further could be said on this point until experience showed whether the attitude of the profession had had a modifying effect upon the decisions by the Minister on receiving reports from Medical Service Subcommittees and Committees of Inquiry.

Dr Gordon Ward asked for further information with regard to the Committee's attitude to the Minister in relation to one of the four principles brought before him.

Dr DAIN, in reply, said that the Committee did not agree that in any circumstances it was competent for officers of the Ministry to set up a standard of professional treatment. The insured person was entitled to the best service which a qualified man could give but it was not competent for the Ministry to insist on a standard of treatment different in any way from the treatment which practitioners

gave to all their patients. The Committee would have behind it the full support of the Conference in maintaining the position that individual practitioners must be free to do what they believed to be best in the interests of the patient without the risk of some lay person—an official of the Ministry, who, moreover, had never seen the patient, and knew nothing at first hand about the case—saying he should do something different. (Applause)

CONFIDENCE IN THE EXECUTIVE

Dr D. R. FOTHERGILL (Brighton), as a matter of urgency brought forward the following motion:

That this Conference of Local Medical and Panel Committees reiterates its confidence in the Insurance Acts Committee of the British Medical Association as the one and only medical body authorized to defend the honour and interests of insurance practitioners and to voice their wishes and urges all its constituent committees loyally to support that committee only, dissociating themselves from action taken within the medical profession by others which can result only in disunion and in rendering collective bargaining ineffectual.

Dr Fothergill said that, coming up in the train that morning, he had thought that those attending the Conference would have little to do beyond looking out return trains, and then he saw in the newspaper a report of a meeting held on the previous day (in one journal the report was headed "Panel Doctors' Revolt") which "put his dander up," and he felt it was time the Conference passed some such resolution as he had brought forward. He wanted to put matters to the Conference quite bluntly. The position was back again at 1914. At the Aberdeen meeting in that year a strong attempt was made by certain medical practitioners to form an outside body to voice the wishes of the men serving under the Insurance Act. That was fought and "downed." He himself believed that the "downing" of that movement was the biggest step ever made towards unity in the profession ("Hear, hear"). Had that outside body been formed, the result would have been, instead of one authoritative and effective body, two bodies lacking authority or effectiveness, and the profession, instead of meeting there that day with practically nothing to do, would have had to fight for its very bread and cheese. (Applause.) Had the British Medical Association delivered the goods? or had it not? ("Yes.") The issue could be judged only by the facts. First he would point to the mobility of the executive body, the Insurance Acts Committee. Mobility was a condition of effectiveness on the part of any representative organization. When the Committee was first constituted only three or four seats were allocated to direct representatives of Local Medical and Panel Committees, but the constitution had been so moulded that now the direct representatives numbered about two dozen, and only four members were elected by the British Medical Association. The Committee had constantly called conferences, it had poured out voluminous documents—probably resented by many who read nothing except the newspaper—and it had given every constituent committee of the Conference the fullest opportunity of voicing its wishes. That was illustrated in the action taken on the Memorandum of Evidence submitted to the Royal Commission. In fact, so generous was the Association that its own Representative Body was asked to collaborate with the Conference in formulating recommendations, the two bodies sitting as one. When, in the matter of the expiration fee, the time came for united action by the profession, a most extraordinary thing happened. He himself had once stated that when one tried to grip the medical profession and weld it for one common purpose it would be like a handful of sand which trickled through the fingers. He was wrong, through the effective organization of the British Medical Association the whole of the insurance practitioners—99 per cent of them—sent in their resignations. Was not that a thing which for all time should make insurance practitioners and their committees stand by the one and only body which had "delivered the goods"? (Applause.) Many in the Conference perhaps did not know that it only required the chairman and a few other representatives of the Insurance Acts Committee to approach the Minister and say that a certain thing must not be done, and, speaking generally, it was

not done. The Government simply accepted the opinion of the Insurance Acts Committee as the opinion of the profession, and moulded its own action accordingly. (Applause.) The Committee had arrived at this happy result because it had been able to convince the Government that professional interests were also the interests of the public. Well, what would be the result if Panel Committees started equotting with other bodies? What would be the effect on the rank and file of insurance practitioners? They would say, "I am told that I must not have confidence any longer in the Insurance Acts Committee, and I don't quite know what this new 'stunt' is, I will leave it at that." Then, when trouble came, where would they be? Instead of ninety-nine out of a hundred in support of one united policy there would be, perhaps, forty or fifty. If the press could show that there was disunion among insurance practitioners, well, at any rate it made a headline, and a good many people took their opinions from the press. The impression was given that the Insurance Acts Committee was no good, that the profession was in revolt, and that some other body was coming along to look after it. What would be the effect on the Government when it learned that there was no longer any body competent to voice the opinions of insurance practitioners? The result would be to confuse the officials and to make them less inclined to heed representations made on behalf of the profession. The future was not in any case likely to be a calm sea. The Act was going to be extended. There might have to be a fight over many new proposals. It was necessary for the profession to be in a strong position and to speak with one voice, disunion would be fatal. He begged the Conference to stand together and adopt the resolution (Loud and general applause.)

Dr PETER McDONALD (York) said that it was a fairly open secret in the Conference that he was not always in entire agreement with Dr Fothergill, but on this occasion he was wholeheartedly with him, and seconded his resolution. He did so, however, with a certain amount of pain, because the resolution did cast reflection to some extent upon those with whom he had at one time been prominently identified. He ceased to be identified with the body in question, and his committee did the same, they came to the conclusion that that body was not promoting unity, but disunity ("Hear, hear"). He did not attend the proceedings of the previous day, his committee did not desire him to attend, it desired him not to attend. It seemed to him that the effect of those proceedings of which they read in the newspapers that morning was again to promote disunity, it looked as if that was the desire of the meeting in question. He was not quite certain that it might not have been better for the Conference to have treated the proceedings with silent contempt—a contempt they might well deserve. But there were two reasons why something should be said. The first was on account of the effect on the minds of the medical profession. The proceedings in question might lead people to suppose that the Insurance Acts Committee had been ineffective in the matter of disciplinary procedure on the part of the Ministry. But he need only point to one instance (the Lancashire case) in which the Committee secured its end by persistent pressure—almost badgering, indeed, although quite tactful badgering—and the result on the whole was satisfactory. That was just one instance of the work of the Committee. A second reason why the thing could not be passed over in silence was because of the effect upon the Minister of Health and the Ministry. The Committee had had interviews on this matter of discipline with the Ministry, and in one instance with the Minister himself, and had received from the Minister declarations which on the whole again were satisfactory. Now a body came forward and said, "No, things are not right." But the fact was that it could not be said whether things were right or wrong until it was known what the Minister was going to do. If the Minister implemented what he had said, then things were all right, if he did not, then it would be time to take action. But to give the Ministry the impression that the profession at this moment was not satisfied was unwise and not altogether "playing the game" ("Hear, hear"). It gave him great pleasure to second the resolution. (Applause.)

Dr GORDON WARD (Kent) said that in that Conference he represented the Kent Committee and no other body. But in view of the perfectly honest attacks which had been made on a particular body in the speeches just delivered he asked permission to speak for a moment as representing it. The body in question was in existence and was increasing in numbers. The question arose as to how it was to be treated. It claimed no more support than it actually got, and it was not fair to suggest that it stated, or had at any time stated, that it represented as wide an electorate as the Insurance Acts Committee. That body, on the previous day called a conference, which spent several hours discussing each step in the disciplinary proceedings. At the end of that conference it came to the conclusion that there should be an appeal to the courts. It had been suggested that this was idle opposition to the Insurance Acts Committee. Such was not the fact. The Insurance Acts Committee had an interview with the Minister of Health, the report of which (SUPPLEMENT, June 27th, p. 290) was before the Conference. The deputation took four principles and brought forward an illustrative case with regard to each of them. Two of those cases were cases of members of the other body, which had been entrusted with their interests. That body, previous to the Insurance Acts Committee interview, had intimated to the Minister that it wished to be heard on behalf of its members, but it was told that the Minister could only hear the Insurance Acts Committee. In the course of the interview with the Minister the question was raised of whether or not injustice was done in one of these instances, and the deputation said, "We are not pressing that claim." The speaker urged that in view of the information available there was no question but that definite injustice was done in this particular instance. These were the circumstances under which a conference largely of an educational character, was summoned. It was not possible for the present Panel Conference to give to one single subject the hours of consideration which were given by the conference on the previous day, but a good deal was learned from the discussion. Such a body could be treated if they pleased, with "contempt"—the word used by Dr Macdonald—but that it would hardly promote unity in the profession. Although he (the speaker) belonged to that other body, he stood there and declared that unity in the profession was the only thing that mattered. The members of that body had a right to express their own particular views. There was, as Dr Fothergill had said, a fight in the future. That body could very easily be forced into a position of almost compulsory antagonism to the Panel Conference and the Insurance Acts Committee. If that were done it would be done at the peril of the profession. At present it would be wise to let things alone, and to allow the process of evolution to proceed.

Dr L. A. GARGR (London) said that it was some years past since he definitely addressed himself to the task of contributing towards that professional unity which Dr Fothergill by the attitude and spirit of his speech, had succeeded in imperilling. He wanted to remind the conference that the last time he (Dr Gregg) stood on its platform was an occasion in which he went the whole length it was possible for one to go who, while wishing to remain loyal to the other body, ardently desired unity and a working agreement. He would, however, refuse to say another word in answer to the objectionable spirit of Dr Fothergill's speech. The seconder of the resolution had used the term "silent contempt." He wished he had not done so. He would remind the Conference that the other body which had been so much spoken about that morning took its share in the last great fight, it did its utmost, and he had never heard a word of appreciation of the services it rendered on that occasion. The suggestion was made that the Insurance Acts Committee and the profession were satisfied with the utterances of the Minister on disciplinary procedure. He contested that absolutely. The profession was not satisfied with those utterances, and a considerable pro-

portion of the members of the Insurance Acts Committee themselves were not satisfied. He wished to move that the Conference proceed to the next business. Having ventilated this matter, he hoped that any little ill feeling would pass away.

The motion to proceed to the next business was not accepted by the Chairman.

Dr BRACKENBURY (Middlesex), who was received with applause, said that he was not sorry that the motion had been brought forward, but he was more than a little sorry at the course of the discussion. The Conference was not now dealing with the satisfaction or otherwise of the Insurance Acts Committee with the utterances of the Minister on disciplinary cases but Dr Gregg, who was an important member of the Insurance Acts Committee, had never voiced in that committee the dissatisfaction of the large number of practitioners, which dissatisfaction, he now stated, existed. (Applause.) The Conference, again, was not concerned with the relations of the Medical Practitioners' Union to the Insurance Acts Committee. The resolution was concerned with the relation of the Panel Committees to the one and the other—a very different thing. If there were members of the profession who desired to belong to a trade union particularly of that type they were at perfect liberty to do so. He did not think they were wise, but that was for them to say. And if there were to be more bodies than one to organize the members of the profession, then the bodies ought to try to behave towards one another in a friendly and professional manner. It was necessary to judge, not by words, but by deeds, and they could make up their minds about the Medical Practitioners' Union, not by the words of its supporters on that platform, but by its actions. It would be fatal if there were a divided loyalty on the part of Panel Committees, which had again and again chosen the Insurance Acts Committee as their representative and executive body. If certain Panel Committees, as such, went to another conference and took their action through another executive body, then the influence of the present Conference and of its executive with the public, with the profession, and, above all, with Government departments, was well nigh gone. ("Hear, hear.") If the Medical Practitioners' Union chose to call a conference of its members in order to give them the education which they needed so badly—(laughter and applause)—neither he nor anyone else would stand in their way. But what was their decision on the previous day? Dr Gordon Ward had not told the present Conference, but the Conference probably knew, that the decision at the previous day's proceedings was to send a separate representation on behalf of insurance practitioners to the Ministry. If it had been an educational conference and had decided to make representations to the present Panel Conference or its executive, and had urged a further deputation to the Ministry, nothing would have been said. But if a position arose in which some Panel Committees sent representatives to the present Conference, some to another conference, and some to both, each conference instructing separate executive committees to go to the Ministry it would be disastrous. That was what was deprecated in the resolution, which he hoped would be carried almost unanimously by the Conference.

Dr Fothergill's resolution reiterating the confidence of representatives of Panel Committees in the Insurance Acts Committee was then put to the meeting, and was immediately seen to be carried by an overwhelming majority. The dissentients numbered eleven. The number of those who voted in favour of the resolution was not counted, but it must have been about 150.

DISCIPLINARY MATTERS

Dr G. G. GENG (Croydon), in moving "That all complaints against insurance practitioners should be dealt with in the first instance by Insurance Committees," described certain cases in which insurance practitioners had been penalized for not sending in reports to tuberculosis officers, and the complaint had not been made through the Insurance Committee in the ordinary way, although it was with Insurance Committees that insurance practitioners were under agreement.

Dr DAIN said that insurance practitioners had been always under obligation to furnish reports to tuberculosis officers

¹ No such words appear in the official report. The relevant passage appears to be the following:

The Minister. And what about injustice? Dr Brackenbury. That is not an opinion that we as a committee have expressed. We have brought to the notice of the Ministry a feeling widely current in the profession.

with regard to insured patients. When the treatment of tuberculosis was taken out of the hands of Insurance Committees it was arranged that such reports should be sent direct to regional medical officers, but eventually, in view of the cumbersome nature of that procedure, an agreement was arrived at that the regional medical officer should be cut out and reports go direct to the tuberculosis officer as before. As a matter of machinery the tuberculosis medical officer reported to the regional medical officer when a practitioner failed to send the reports for which he was asked, and the regional medical officer reported to the Ministry, on which report action might be taken, although the Insurance Committee had not been consulted in the matter. The officers of the Ministry, with whom this question had been raised, had urged that this was not a question in which facts were likely to be in dispute, or in which evidence was necessary—the practitioner had simply failed to present the report—and if it was desired to refer all such cases to the Medical Service Subcommittee, with the requirement that the doctor should appear before that body, it would cause a good deal of trouble to various people not least to the practitioner himself. The machinery had now been at work for two years, and the speaker did not think that any substantial advantage would be gained by doing what the resolution asked. The present arrangement did not seem likely to result in any particular injustice.

Dr. GEORGE urged that the Minister should not be allowed to fine practitioners without giving them the full trial to which they were entitled. (A Member: They were practitioners who did not do their job.)

The motion was lost by a large majority.

Dr. J. L. PICTON (Cheshire) moved

That there should be a right of appeal not only on grounds of procedure but on the merits of the case from the decisions of the Minister to the High Court or when removal from the panel is in question to the proposed medical tribunal if that be created.

He said that a similar resolution was brought forward at the last Conference and not carried. It was lost by a small majority, and some of those who voted against it did so under a misapprehension. What the last Conference had in mind was that, if such a resolution were carried, there might be a large increase in the amount of litigation before the courts to which practitioners would be compelled to submit, because the same right of appeal must be given to the complaining patient or other party as to the practitioner. But such rights, so far as insured persons were concerned, had always existed. Insured persons were not under the regulations and did not suffer from the disabilities attaching to insurance practice. They had always been free to go to the courts. It had also been said that this motion was unconstitutional because it interfered with the disciplinary control which a Minister responsible to Parliament for money expended on a particular service must have over those who worked that service. But the constitutional position depended upon the terms of the Act, and any modification of legislation could create a fresh constitutional position. Moreover, there was one case in which the Minister had actually withheld his decision pending the decision of the courts. Practitioners had no fear in invoking the common law. Why, indeed, should they want to be outside its sphere of action? Matters had quietened down since the interview with the Minister, but this disability remained, and it seemed to him that the safety-valve indicated in the resolution should be available.

Dr. D. F. TOWN (Durham) moved as an amendment that a practitioner should have the right of appeal against the decision of the Minister of Health to an independent authority if the same met with the approval of his Panel Committee. His own committee recognized that there should be a right of appeal, but at the same time there was another side to the matter, and the right might be very much abused if it were left in the promiscuous manner suggested in the resolution. The remedy would be for an insurance practitioner to have the right of appeal to a higher authority if he had the support and approval of his Panel Committee. This matter called for careful dealing. All that the profession wanted was equity.

Dr. DUNN hoped that the Durham amendment would be carried down. No Panel Committee would lightly face the

responsibility of having to decide whether a man who wanted to appeal should be allowed to or not. Dr. TOWN declared that no Panel Committee in the country would fail to do its duty faithfully and loyally on behalf of practitioners. He thought that the position of the profession would be strengthened by proceeding on these lines.

The Durham amendment was lost by a large majority.

Dr. G. C. GANNATT (West Sussex), in supporting Dr. PICTON's motion, said that the policy put forward in the Memorandum of Evidence seemed, from the point of view of the profession, to have broken down. It had been demonstrated to be incomplete, and to furnish no adequate protection for the practitioner. To urge that better things were hoped for in the future because there had been a deputation to the Minister was useless. Ministers came and Ministers went, and so long as that power remained in their hands it was a standing menace to the profession. Something had been made of the constitutional aspect of this question, but the fact was that these powers of the Minister did not depend upon constitutional precedent. The power to remove from the panel depended entirely on Section 15 (2) of the original Act of 1911. That Act was so far reaching that it merely skeleton management was all that could be achieved in the first instance, and details had to be filled in later, with the result that in order to get the Act to function it was necessary to create a special body of Commissioners and equip them with powers quite extraordinary. These Commissioners were to be the sole interpreters of their own legislation. He contended that it was inconceivable that Parliament ever contemplated the assumption by any men of such powers as these, and their inheritance by a new authority could only be attributed to a gross and lamentable oversight. The power to fine rested on a basis which was also questionable. Had the Chancellor of the time conferred with the profession as he conferred with trade unions and societies, and had the original Act contained provisions as satisfactory to the profession as to these other bodies, no Income-tax grant would ever have been required, and no power to fine would have existed. It was inconceivable that anybody would argue before Parliament that of two bodies of men working under the same authority, for the same people, and under the same Act, one should be subject to rigorous disciplinary control, and the other go scot-free. These powers of the Minister were based fundamentally on oversight and injustice, not on constitutional precedent. So far from being constitutional, they were more against the whole spirit of the constitution than any other piece of legislation since Stuart times. (Applause.)

Dr. J. CANNING (Salford) noted the reference in the Insurance Acts Committee's report to the Committee's consciousness "of a good deal of uneasiness in the minds of insurance practitioners generally," and this was to some extent satisfactory, but he would have welcomed a more definite expression of the Committee's own opinions. In spite of the fate of last year's resolution, his committee remained firmly convinced that the right of appeal to the High Court was absolutely essential to their liberty, not only as members of the profession, but as ordinary British citizens. Why should practitioners allow their liberties to be filched away? The position was bad enough as it stood, but what would happen when dependants came in, supposing a practitioner were unfortunate enough to come under the ban of the Ministry? Where was such a doctor to get a living, if ill? His economic fate should at least be made to depend upon the merits of his case as pleaded before the High Court, not upon the caprice of a Minister.

Dr. BRACKENBURY said that in view of the force and persuasiveness of the last two or three speeches it was only fair that he should place certain considerations before the Conference. His hope was that the Conference would decide to pass to the next business without taking a vote on this motion. The profession might yet be in a situation in which it would be driven, against its will, to adopt a resolution of this kind, and therefore he would be sorry to see it turned down to-day. On the other hand, it was necessary to recall what the profession had submitted to the Royal Commission. What it had submitted was something better than the simple proposition involved in the

present motion. It had suggested to the Royal Commission that all those personal disputes, as they might be called, regarding neglect or character of attendance should be taken away from the purview of the insurance system altogether, that these were matters which ought to be dealt with entirely along the lines of private practice, in which the patient, if dissatisfied, could go to some other doctor, or in which the doctor could ask the patient to go to somebody else. It was proposed that all these things, which constituted the bulk of the present complaints, should be removed altogether from this quasi legal procedure. Apart from giving a false or misleading certificate—which, of course, was a heinous professional offence by whomsoever committed, and with which the General Medical Council would deal—there should remain only two possibilities of complaint. The first was with regard to taking money deliberately from a patient when the practitioner had undertaken by his terms of service not to take money from him. That was not a purely professional matter, it was a question of fact into which other than purely medical and professional considerations entered. In these cases it had been suggested that the procedure should remain much as at present, plus certain reforms which would make it more acceptable to the profession. The other class of cases was that in which the habitual conduct was such as ought to lead to a man being removed from the panel. There it was suggested that the Minister must not act before he had received authority to act from a central authoritative professional tribunal. Thus the whole matter came down really to this, that a man might be fined for taking money from a patient when he had definitely undertaken not to take money. Was it worth while going to Parliament to ask for legislation in order that there might be an appeal to the High Court in such cases as those? He urged the Conference to wait until the report of the Royal Commission on these proposals was forthcoming.

Dr Gordon Ward said that apparently the Royal Commission had been asked by those who spoke for the British Medical Association and the Panel Conference to grant that virtually all complaints should be removed from insurance procedure. Such a request was plainly farcical. Discipline there must always be in any such service. The public view of insurance practitioners was that they were out for money and nothing else, but here they were only asking Parliament for the ordinary right of the citizen to appeal to the High Court. There was abundant evidence that that right ought occasionally to be exercised. He did not believe there was any likelihood of any extensive recommendation by the Commission on these subjects.

Dr Day emphasized what Dr Brackenbury had laid before the Conference. As the profession had so recently expressed an opinion to the Royal Commission, certainly the report of the Commission should be awaited before that opinion was modified. The representatives of the profession had put up certain suggestions, upon which Dr Ward wanted to go back in many respects. It was bad policy to alter, even in matters of detail, expressions of opinion which had been deliberately put forward, until it was known what effect might be given to them by those to whom they were submitted. The Ministry was aware of the nature of the evidence which had been tendered on this matter.

Dr Peto fully appreciated the force of what Dr Day had said, but he thought a vote ought to be taken on his resolution. The representatives of the profession had gone before the Royal Commission with a very hesitating voice on this matter. Since that evidence was given cases had occurred which had called forth the most vigorous comment, not only in the professional but in lay journals. If the matter was held up until the Commission reported it would be too late.

By 85 votes to 55 a resolution to proceed to the next business was carried.

OPHTHALMIC BENEFIT

Dr T. MILLER WILSON (Liverpool) had a motion urging that an official form should be provided for recommendations for ophthalmic benefit, and that the Insurance Acts Committee should be requested to draw up a suitable form of certificate. He said that at present some societies

supplied certificates and others did not. He agreed to an amendment by Southport that the motion should apply to recommendations for dental as well as for ophthalmic benefit.

Dr Day pointed out that this was asking the Ministry to furnish another official form, and he thought the profession had been trying to get rid of official forms. He suggested that the motion be in the form of a request to the Insurance Acts Committee to draw up a suitable form of certificate for recommendation for ophthalmic or dental benefit.

Dr MILLER WILSON accepted this suggestion, and in that form the resolution was agreed to.

Dr W. STEVEN (West Riding) moved

That this Conference is of opinion that when an insurance practitioner recommends an approved society to send one of its members to an ophthalmic surgeon whose name appears on the official list the insurance practitioner should have the right of nominating the ophthalmic surgeon due regard being paid to difficulties of distance and transport.

He said that the right ought to be secured to the practitioner of suggesting to the patient to whom to go for ophthalmic treatment. He agreed to an amendment substituting for "nominating" the word "suggesting."

Dr MANKELL (Barnford) suggested that the words "and to the desires of the patient" should be added at the end of the resolution.

Dr Day said that these various suggested amendments seemed to show that the resolution was without value. In any case, was not the choice of the specialist the patient's right? It was the practitioner's business to suggest to the patient to what specialist he should go.

The motion, with the two amendments, was agreed to.

Dr E. W. S. ROWLAND (Reading) moved

That this Conference is of opinion that the panel list of ophthalmic specialists is inadequate and that there should be two classes of specialists: (1) ophthalmic surgeons; (2) practitioners who are able to produce satisfactory evidence of special ability and training in refraction work.

He said that only two ophthalmic surgeons were on the list in Berkshire, and these were the only men to whom such patients could be sent. His committee was of opinion that there were at the present time two classes of people dealing with eye work—on the one hand, the pure specialist, who was in operating surgeon, and on the other a large number of men who by special training were perfectly qualified to prescribe glasses for patients. These two classes should be on separate lists.

Dr J. W. BONE asked whether the case of Reading was not already covered by the existing arrangements.

The Medical Secretary said that it was. The list now consisted of nearly 600 names, some of them people who were doing nothing but ophthalmic work, others general practitioners possessing certain qualifications laid down by the Conference. When a man made an application to go on this list he was required to satisfy certain criteria. In any case of difficulty as to a claim the Committee, which consisted of general practitioners and ophthalmic specialists, adjudicated.

Dr P. MACDONALD hoped the resolution would be turned down. The first steps were now being taken to establish a consultant service in the insurance system, and the best must be given. On no account must the second best be countenanced. If the consultants were divided into two classes, one best and the other second best, it would be bad policy. The question of the present inadequacy of numbers would settle itself in time.

The motion was lost.

CHAIRMANSHIP OF THE CONFERENCE

Dr ANDERSON announced at this stage, amid applause, that only one nomination for the chairmanship of the Conference had been received—namely, Dr E. K. Le Fleming—who was accordingly elected for another year. Dr LE FLEMING thanked the members for the compliment they had paid him.

NATIONAL INSURANCE DEFENCE TRUST

Dr DAY, as chairman and treasurer of the National Insurance Defence Trust, submitted the report as to

contributions by various areas. When the Trust was instituted by the Conference it was decided that the proper subscription for each committee was at the rate of 1d per insured person per annum, but it was realised that this could only be obtained in those areas in which a voluntary levy was established. It had been hoped that with the strong backing of the Conference, the trust funds would have increased until by now the yearly income would have been somewhere near 1d per insured person. So far this had not been borne out by experience. The sum of 1d per insured person should produce, roughly £29 000 a year. The following were the annual contributions during the last six years:

1920	£5 222	1923	£17 260
1921	£6 672	1924	£12 672
1922	£12 961	1925	£13,020 (to date)

In the report a column was added to show what percentage of the estimated subscription had been paid by the different committees. The results showed extraordinary variations, ranging from the few committees which had so far subscribed nothing at all to one committee (Huddington, East Lothian) which had subscribed 117 per cent of the total payments expected from it during the last six years on this basis.

Dr A FORBES (Sheffield) moved

That the time has now come for the Conference to fix a definite limit to the Trust Fund, that the limit be £100 000 and that the Insurance Acts Committee be empowered to determine a method equitable as between Panel Committees of providing the balance necessary to make up this sum.

He added, however, that he was quite ready to accept a friendly amendment calling for a higher limit than £100 000 but he thought the time had come when the Conference should indicate to the trustees how much money they were going to have to administer.

Dr L R FOTHERGILL hoped that the Conference would look, not so much to the present, as to the future. The Insurance Act would certainly be developed; it would affect the interests of every practitioner, and he doubted whether the present time was opportune for fixing any limit at all.

Dr H F OLDHAM said that it would be very undesirable at the present moment, when no one knew what the Royal Commission was going to recommend, that any sum should be fixed. The effect of constant propaganda had been to bring in a steady income and if that propaganda were continued a little longer he believed that a sum of money would be available sufficient to meet every requirement.

Dr T D LUND (Lancark) opposed the motion. The Conference had that day reaffirmed its confidence in the Insurance Acts Committee as the fighting arm of the profession, this was the fighting fund, and he was against any present limitation.

Dr DUN said that there was an advantage in having a definite sum in mind as the goal of effort in that it would resist the further adjustment of contributions as between committees. Certain committees from the beginning had strongly supported the fund, and their contributions were not far short of short at all of the expected level, but some of them were getting uneasy because they were contributing so large a proportion in comparison with others. There was some risk of jealousy between committees, some having contributed so much and others so little, and if the Trust was faced with the necessity of spending large capital sums out of the fund this disproportion in the contributions might tend to weaken unanimity on matters of policy. The sum he had suggested was £250 000, which represented nine or ten years' contributions at the rate of 1d per insured person per annum. No committee had as yet nearly reached the end of its quota if such a sum were taken but the fact that there was an eventual limit would tend to ease the burden on committees which had already contributed well, and would enable a more intelligent outlook on the whole position to be taken.

Dr GORDON WARD moved that this be referred to the Insurance Acts Committee in order that it might bring forward a definite recommendation on the matter at the next annual Conference.

Dr FORBES expressed his willingness to accept this amendment.

The amendment was carried.

Dr F D LUND brought forward, as matters for the consideration of the Insurance Acts Committee, that costs incurred by the Committee in central negotiations should be allocated among and collected from Panel Committees in ratio to the respective number of insured persons in each separate area, and also, in view of the apathy of many Panel Committees to the fund, that the Committee should review the position and issue recommendations.

These questions also were referred to the Committee.

Dr GORDON WARD moved to request the trustees to consider the form in which the accounts of the Trust are presented with a view to making them more easily understood. The accounts, he said, were not presented in the form of a balance sheet, and he wanted the statement of expenditures to be more particularized, especially as to the use which had been made of certain small loans.

Dr A I LARKINE (Hastings) asked whether Dr WARD would not endeavour to increase the contribution of his committee (Kent) above the level of 7 per cent of the total possible payments for the last six years. (Laughter.)

Dr DUN said that he was quite willing to accept the resolution. A balance sheet ought certainly to be provided. He went on to explain the circumstances in which loans were made to the Lancashire Panel Committee and to the Essex Public Medical Service.

This concluded the discussion on the Trust.

TRANSFER OF PRACTICES

Dr DUN moved, on behalf of the Insurance Acts Committee, a resolution declaring that a return should be made as early as possible to the 1912 Regulations governing the transfer of practices—that is that the notice issued to insured persons on the list of a deceased or retiring practitioner informing them of their right to a fresh choice should intimate that they would be deemed to have consented to their names being transferred to the successor's list unless within fourteen days of receiving such notice they notified their objection to such transference. He said that a return to the old system was desirable in several respects, and now that there was entire free choice of doctor the reasons which were operative when the Regulations were altered had lost their force. There was no reason, administratively or from the point of view of policy, why the old arrangement should not be reverted to. The Ministry met this, as it met every proposal at the present time by saying that the report of the Royal Commission must be waited, but the Insurance Acts Committee thought it desirable to have a vote of the Conference. The procedure proposed in the resolution had the support of Insurance Committee clerks, who had found the new procedure complicated and expensive.

The motion was adopted.

Dr G C GERRATT moved as an rider to add to the motion that no practice thus transferred could be retransferred in less than twelve months without reasons satisfactory to the Insurance Committee of the area. He said that this was a very important part of the new proposal, and it should be made clear that the profession set itself against any repetition of the old abuses.

Dr BRICKENBURY was sorry that Dr GERRATT did not appear to recognize that identical action was not necessarily desirable in different circumstances. If this particular provision—which would certainly be put forward, among others, as part of the general method—were selected for the emphasis of a special resolution it would suggest that the profession attached more importance to it than to other modifications of the general method. When the general method had been accepted by the Ministry this and any other modification desired might be pressed forward.

It was agreed to refer the proposed rider to the Insurance Acts Committee.

Dr GERRATT also pointed out that under the old Regulations it was the duty of the doctor who bought the practice to send out the notices at his own expense, and the only duty of the Insurance Committee was to see that they were in an approved form. Under the new Regulation it was the duty of the Insurance Committee to send out these notices at its expense. A reversion to the old arrangement might mean additional expense to the incoming practitioner.

Dr DAIN thought that even if practitioners had to meet this expense they would still prefer to go back to the 1912 system, but he was quite prepared to endeavour to secure a revision with regard to the old procedure of sending out notices, and return the present system in respect to allocation of expenditure.

RECORDS AND CERTIFICATES

Dr DAIN, again on behalf of the Insurance Acts Committee, asked the Conference to reiterate the opinion that while fully appreciating the value of careful clinical notes and essential dates on medical records, it was unnecessary to record all attendances, inasmuch as in many cases the continuation record cards overloaded the record envelopes and seriously diminished the utility of the clinical notes. He accepted an amendment by Githens to substitute for the last phrase the words 'and valuable clinical notes become obscured by a multiplicity of unnecessary repeat attendance marks.' Dr FORBES, in moving this amendment, said that unnecessary attendance marks at present "punctuated, elongated, and obliterated" the clinical history.

The motion as thus amended was agreed to.

Dr W J T BAKER (Lindsey) moved that Rule 11 of the Certification Rules ought to be amended so as to obviate the requirement that an insured person should be continuously treated and certified incapable of work for a period of twenty-eight days before the issue of an intermediate convalescent certificate. He also wanted the time of issue of such a certificate to be left to the doctor's discretion, and the maximum period covered by the certificate to be one month. His committee found it very unkind to a patient could not get away from his home to recuperate until after twenty-eight days. No doubt the difficulty was still greater in industrial areas.

Dr H D PORTLAND (Bedfordshire) wanted the maximum period to be two weeks instead of one month. A maximum of one month would have a tendency to become a minimum, and the patient would soon want and expect to be sent away for a month anyhow. It was advisable also that a patient should be seen by a doctor and again certified as fit or unfit after two weeks.

Dr DAIN said that the proposers both of the motion and the amendment had assumed that ability to issue an intermediate form carried with it the necessity that the patient must stay at home for twenty-eight days. What was forbidden was the use of the official form until the patient had been ill for twenty-eight days, but the society might agree, if it pleased, that the patient should go away for a convalescent holiday at the end of a week or the end of a day.

Dr BRENNAN (Stockport) related an instance in point, in which he had received a letter from Sir Thomas Neill stating that he (the doctor) ought not to have sent the patient away until after twenty-eight days. His reply was to the effect that that was an idiotic rule, when it was obviously in the interest of the patient's recovery that he should go away. He received a further letter from Sir Thomas Neill stating that this particular regulation was not the work of the approved societies, and implying that had the societies made these rules they would have contained all possible wisdom.

The amendment to limit the period to two weeks was lost, and the motion as proposed by Dr Baker was agreed to.

DISPENSING

Dr H R BROWN (Essex) moved that the Insurance Acts Committee be instructed to take steps to obtain an increase in the remuneration paid to small practitioners who undertook to do their own dispensing. He said that the difference between the average cost of drugs dispensed by a pharmacist in the area of the Essex Insurance Committee and the amount of the capitation payment to small practitioners for the purpose of dispensing drugs was 2 7d per insured person per quarter for the year 1924. Obviously, if the doctors were paid 6d a quarter and the pharmacists 8 7d, either the former were underpaid or the latter overpaid. He was able to bring forward evidence that dispensing was really being done at a loss. From some figures which he had carefully worked out in his own practice he

found that the cost to him for dispensing (including two-thirds of the dispenser's salary and the net cost of drugs, but not including rent for the dispensary) for his insured patients amounted to £84 in the year, and he was paid on the capitation basis £72.

Dr W I GORDON (Northumberland) supported the motion, and also furnished statistics obtained through the North of England Pricing Bureau. These showed distinct losses to the dispensing practitioner, and he pointed out that the position was an unfair one to the doctor, who was tempted to buy cheaper drugs or to stint a patient in dressings and so forth, to the patient's detriment.

Dr J P WILLIAMS-FIREMAN said that the Rural Practitioners' Subcommittee was as keen on this matter as anyone. It was waiting for conclusive figures covering the whole country, these it hoped to obtain from the official pricing bureau.

The motion was carried.

Dr D O TAYLOR (Devonshire) moved to instruct the Insurance Acts Committee to consider the question of the dispensing fee in relation to the supplying of special serums and expensive drugs and appliances. Dr BRACKENBURY said he was unaware that a special dispensing fee was paid to insurance practitioners in the case of serums, he did not think it applied in all insurance areas. Dr DAIN said that, of course, the dispensing practitioner received the same dispensing fee as the chemist. If the claim was made on behalf of practitioners that the fee be raised, this would include a raising of the fee to the chemist. He suggested, and it was agreed, that this matter be referred to the Insurance Acts Committee.

Dr TAYLOR further moved to instruct the Committee to take immediate steps to secure the provision of a standard methylated spirit suitable for general dispensing of prescriptions. In view of the great number of formulae uniformity in dispensing was at present impossible.

Dr J W BONE said that the particular question of methylated spirit had been dealt with by the Medico-Political Committee of the Association, and he thought that all that was possible up to the present had been done. Government departments had provided, or were about to provide, for grades of methylated spirit which would serve all medical purposes.

The motion was withdrawn.

MEDICAL BENEFIT FOR SEAMEN

Dr DAIN, for the Insurance Acts Committee, asked the Conference to express its opinion that the present method whereby members of the Seamen's National Insurance Society obtained their medical benefit through the society was more in the interests of the insured persons concerned and the medical profession than would be the administration of their medical benefit through Insurance Committees. The reasons for this were discussed in the report of the Insurance Acts Committee. In reply to a question, he said that the scale of fees paid by the society was still under discussion, they were all agreed that the present fee was unsatisfactory.

Dr A P LILDRED (Essex) had an amendment deprecating this society's practice of urging its members to accept as their medical attendants practitioners whom it recommended. This prevented insured persons from exercising their right of free choice of doctor. He described certain cases which had arisen in his constituency.

The MEDICAL SECRETARY said that this was a very old question which had been dealt with in part by the Insurance Acts Committee and in part by the Medico-Political Committee. At present the latter committee was in negotiation with the society with a view to getting back to the scale of fees in operation before a drop of 20 per cent took place. With regard to the preference of the society for certain doctors, he did not think either the Insurance Acts Committee or the Ministry itself could do much to alter matters, for the society was given the right to deal with its members to a certain extent outside the Act. The society had to do with a certain difficult class of insured men and preferred doctors who for years had had experience in treating seamen at the various ports, the seamen too liked when in a strange town and requiring treatment, to be told who were the 'seamen's doctors.'

Dr J W BOWI said that the Contract Practice Subcommittee of the Medico-Political Committee, which had been in negotiation with the Seamen's National Insurance Society, set up a scale which the society declared itself utterly unable to pay. The society offered a fee for a visit of 3s 6d and for a consultation at the surgery of 2s 6d, in each case to include medicine for two days. The negotiations at present were suspended, and there was no definite arrangement with these people. He had just seen some figures for Scotland. In Scotland where it was not the custom to dispense, the society was actually paying 1s 6d a visit.

The Medical Secretary added that in Southampton the profession by its united action, had compelled the society to give the fees without the 20 per cent reduction which accompanied in other areas.

The amendment was dropped, and Dr Dain's motion carried.

APPROVAL OF THE COMMITTEE'S REPORT

This concluded the matters on the agenda which bore upon the report of the Insurance Acts Committee, and the report was then formally approved. Dr DAIN accepted an amendment by Dr GORRISON WARD, upon the motion to approve the report, in the following terms: "But without prejudice to the right of any Panel Committee to make such payments in connexion with the administration of anaesthetics as the Regulations allow." Dr DAIN also stated that after examining the constitution of the central pool he could assure the representatives that everything was done in the actuarial calculations to safeguard the interests of insurance practitioners.

Dr J S MARSON (Warrington) brought forward what he described as a delicate and perhaps rather dangerous point in insurance practice when he asked the Committee to approach the Ministry with a view to drawing up definite rules for guidance respecting the treatment of insured persons by insurance practitioners as private patients. The position of an insurance practitioner when an insured person not on his list applied to him for treatment as a private patient was more than a little difficult, especially in view of the 1924 Regulations relating to free choice of doctor.

Dr DAIN gave an explanation of the circumstances in which an insurance practitioner may charge a fee to an insured person for general practitioner services. There was first the case in which the evidence of title to benefit was not forthcoming, when a fee could be charged, or an account rendered and a receipt given on Form G.P. 4. Then there was the case where the patient did not claim to be insured, but subsequently proved to be. This was dealt with under Clause 7 (3) of the terms of service: the fees were repaid to the patient, and the doctor got the appropriate credits. The next case was the really difficult one: the patient who went to a panel doctor in his own area and asked to be treated as a private patient. Here it should be explained to the patient that he had the right to change his doctor at any time and that the practitioner would take him on his list if he wished, that the practitioner could do in every way as well for him as a panel patient as he could if he were a private patient. If the patient still refused this offer and insisted on being treated as a private patient the practitioner should make him furnish a statement in writing to that effect. This safeguarded the practitioner's position if at any subsequent date the patient was told that he should not have paid and that if he sent the account to the Insurance Committee he would get his money back. On such advice he might claim the money back without any idea that he was letting down his doctor. Dr DAIN added that it was, of course not possible by Regulations to take away the insured person's right to go to any doctor of his choice, or to compel him to avail himself of the service if he did not wish to. On the other hand, not the least sympathy was due to the practitioner who would take fees from insured persons on the ground that he could treat them better as private patients. Then there was the patient who was on a practitioner's list and had subsequently moved outside the area in which the practitioner had contracted with the Insurance Committee to attend insured persons. In this case the

patient was entitled to the practitioner's services without fee when he came to see him, but if he desired to be visited outside the practitioner's area the latter was entitled to charge him a fee. The last case to be mentioned (and it would hardly seem necessary to refer to it if it were not that the question had been raised with the office) was the patient who was not on a practitioner's list and who lived outside that doctor's area of insurance practice. Obviously in this case the insured person had no claim on the practitioner's services as a panel doctor, but there was nothing to prevent the practitioner from attending him at the patient's or the doctor's house as a private patient, and charging him fees. After a few other questions had been asked and answered the motion was withdrawn.

THE COLLECTION OF STATISTICS

A long resolution was down in the name of Kent calling for a carefully organized campaign to obtain statistics from practitioners on such matters as fees, mileage costs of transport, and average income. Before calling upon the mover, the Chairman asked the Medical Secretary to state what was already being done upon these lines.

The Medical Secretary said that information was being collected under three headings. The first of these related to attendances on insured persons. Cards were being sent to 120 insurance practitioners who had volunteered to keep daily records of visits and attendances. The day-to-day record undoubtedly produced the best results so far as the ultimate average was concerned. With regard to mileage records, an appeal was made which was responded to by 85 rural practitioners who kept a record of the miles travelled in respect to both insured and private patients. In addition, during the latter half of last year about 150 model account books were forwarded to insurance practitioners who had promised to place their accounts at the Committee's disposal. These books entailed a great amount of detailed work, and he feared that in some cases they were not being kept but a number had been returned.

Dr GORRISON WARD then moved a series of resolutions urging the necessity that such statistics should be available as soon as possible, especially in view of the probable revision of the capitation fee at the end of 1926 and of the certainty that powerful interests will seek to lower it. The resolution continued:

That such statistics can only be obtained by a carefully organized campaign which may well involve the circulation of questionnaires or of model account books, the employment of actuaries, and the making of many thousands of visits to individual practitioners.

He mentioned some of the subjects on which statistics were necessary. One of these was mileage, another the difference between urban and rural dispensing. The Committee might map out eight or ten typical areas and send out a questionnaire. A few of those to whom it was addressed would return it voluntarily others would do so after repeated solicitation. Information regarding professional incomes were badly wanted, and it ought to be obtainable over a considerable area. Something definite ought to be known about maternity and other charges above the ordinary charge for attendance and medicine and so on. This was a statistic which could be got from selected areas, and Panel Committees could carry out a great deal of this work. One of the factors in assessing remuneration was the number of special services rendered. The figures for comparable professions also—and especially the figures for the fighting services and the civil service—had played a great part in the determination of the capitation fee in the past. Someone should draw up these figures in comparative form. Then there was the question of the number of anaesthetics given. Another was the scale of fees paid by such bodies as the National Deposit Friendly Society. The fees in club practices also ought to be taken into consideration. All this would require an organized campaign, and it would be necessary in very many instances to go down to the doctor and fetch the figures from him.

Dr W M RENTON, also of Kent supported the proposition, and in view of a later resolution from the same area suggesting that the funds of the National Defence Trust should be available for the purposes of this campaign,

said that he had no doubt that Dr Ward, his colleague, would support a more generous contribution to the fund than the present rather meagre one from his county.

The resolution as so far moved was agreed to, and Dr Ward then proceeded to move resolutions to the effect that the funds of the National Defence Trust should be employed for this campaign, and that "the executive committee of this Conference" be instructed to set up the necessary organization, appointing a special committee upon which experts might be co-opted, with a view to producing a really authoritative survey of the present economic position of the profession. He said that those areas which had not contributed to the fund, largely because of a subconscious idea that the "goods were not being delivered," would contribute if some such use as this were made of the money. He would certainly in that event advise his own area to make up its leeway. The sum of £5,000 would be the minimum cost of a campaign such as he had outlined. The special committee should include paid experts, such as an accountant and statistician. The position would not be imperilled if the money of the Trust Fund was used for this purpose. A sixpence gained on the capitation fee, which might well be the result of such a survey, would make an even larger expenditure well worth while.

Dr DAVY was glad to see from the terms of the Kent motion that the Insurance Acts Committee was recognized as "the executive committee of the Conference," at all events when there was money, especially trust money, to spend. He deprecated so definite a binding motion upon the Committee as to the methods by which it should secure its statistics. He was not prepared to accept an instruction as to detail on a matter on which there could be no proper discussion in that Conference.

Dr BRACKENBURY moved that in place of the last section of the resolution—the one instructing the Committee to set up the necessary organization—the Conference should adopt a clause referring all the previous clauses to the Insurance Acts Committee. The Conference would then be saying that it was concerned at the existing inability of the profession to produce statistics, that it was essential that such statistics should be made available as soon as possible, that such statistics could only be got by a carefully organized campaign, that funds in the National Defence Trust should be employed for this purpose, and that the whole of these matters be referred to the Committee.

Dr J W BONE seconded Dr Brackenbury's amendment. In its present form the scheme was entirely out of the question. No committee that had ever existed in the Association could take on a problem of that magnitude. It was the scheme of a megadominion. A body of supermen would be wanted for the purpose. The sum of £5,000 would not begin to finance such a scheme as had been foreshadowed by Dr Gordon Ward.

Dr WILLIAMS-FREEMAN supported Dr Ward in his desire for better statistics. He believed that a permanent committee to be set up by the British Medical Association to investigate statistics would be of the utmost value. In view of the possibility that dependants would be included, for instance, what statistics were in hand as to the relative attendances on men, women, and children? Again, an immense amount of statistical matter was issued from the Ministry itself from time to time, but it was not collated.

Dr BRACKENBURY agreed that better statistics were wanted, but the Conference would be unwise to commit itself to the details of Dr Ward's proposed method.

The MEDICAL SECRETARY said that even Dr Bone had underestimated some of the difficulties and also the expense. This work would require at least half a dozen clerks in the office, who would have to be trained. Some of the people who were wanted on this special committee would have to be paid. But the real solution of the difficulty was in the hands of insurance practitioners themselves, who could furnish statistics if they would. All the information necessary could be furnished by the members of that meeting with very little expense, but some of the people who had been most urgent with regard to the matter that afternoon had never furnished the office with a figure at all.

Dr BRACKENBURY said that with regard to the statement in the resolution that there was a probability of the revision of the capitation fee at the end of 1926, it should not be taken as certain that the question or revision would be raised at that time, unless the profession raised the question itself.

Dr GORDON WARD said that it was evident that the Committee did not intend to undertake this work in any extended form. Of course it would need six clerks, but the thing was worth doing. He was sorry to notice the sentiment of the permanent administration with regard to the matter.

Dr Brackenbury's amendment was carried, both as an amendment and as a substantive motion, by a very large majority.

OTHER MOTIONS

Dr W COOK (Warrickshire), in a resolution, wished it to be made clear that a Medical Service Subcommittee might, at the request of the Panel Committee, investigate any complaint made by a practitioner against an approved society or its agent. He related a local instance of approved society misdoing in regard to which the Ministry had taken a "milk and soda" attitude. Dr DAVY said that they would all share Dr Cook's indignation, but the resolution would affect nothing. It was not the business of Medical Service Subcommittees to investigate the delinquencies of agents of approved societies. He agreed to take to the committee a request from the Conference that some way should be explored for dealing with approved society agents.

Dr A E LARKING (Hastings) moved a resolution urging that when a patient had been referred to the regional medical officer by a society and the officer considered he was capable of work, the officer should, before sending in his report, communicate with the practitioner connected with the case if the latter was unable to be present at the examination. Dr BRACKENBURY said that in every case the practitioner was given the opportunity to attend the examination. He pointed out certain drawbacks to the procedure indicated in the resolution, and the resolution was put and lost.

Dr F J GOMEZ (Somerset) wished the Insurance Acts Committee to inquire into the unsatisfactory conditions existing with regard to domestic servants, so many of whom did not choose a practitioner until they required treatment. Dr DAVY said that this might be a rural problem, but it did not apply to the towns or suburbs. A motion on this subject was lost.

Dr J CANTLEY (Salford) had a resolution regretting that the Committee had failed to obtain the provision of a statutory fund whereby local Medical Committees could discharge the expenses involved in carrying out the duties imposed upon them. He also cited a local instance in which there had been or was likely to be financial loss to the practitioners of the area concerned for some necessary action which they had taken. Dr DAVY said that they were all agreed that such provision was desirable, but as a matter of practice the circumstances in which a local Medical Committee would be called upon to ask for the removal of a practitioner from the panel, and would have to bear certain expenses involved, would be very unlikely to occur. There were very special circumstances in the Salford case, and he did not think that the Committee could be said to have failed to obtain something required generally. The motion was lost.

Dr BATTISON (London) moved to express the strong opinion of the Conference that the notification of insured persons that they were no longer entitled to medical benefit should be made a statutory duty upon approved societies. He said that friction was caused when such persons applied for treatment and were informed that they were no longer entitled to benefit, and his Committee desired that the annoyance, both to the practitioner and to the insured patient, should cease. Dr DAVY said that the Insurance Acts Committee, after considering this matter, was of opinion that in view of the expense and trouble entailed in giving effect to the proposal no commensurate benefit would accrue to insurance practitioners.

generally and therefore it did not feel justified in supporting the proposal. The motion was carried.

Dr D G GREENFIELD (Northamptonshire) asked the Insurance Acts Committee to arrange for organized support for the Medical Charities Fund from every Panel Committee. The Medical Charities Committee, which was a channel through which the stream of medical benevolence might flow, should inform the profession fully as to the amount of money required properly to support medical charities and the Insurance Acts Committee should consider what proportion of that amount insurance practitioners might be expected to give. The motion was agreed to unanimously.

Dr A J LEWIS (Southport), in asking the Conference to express the view that the extraction of teeth was definitely outside the contract of insurance practitioners, cited the dental paper of the Lancashire Federation of Rural Friendly Societies, in which, among instructions to the applicant, was the following: 'For simple extractions where no anæsthetic is necessary you should consult your panel doctor who is required under his terms of service to provide such treatment free as part of your medical benefit. The Minister had been asked to have this withdrawn as inaccurate, but if he refused it would strengthen the hands of the profession to have such a resolution as he proposed. Dr DAVY said that there were circumstances in which this service must be performed—exactly the same circumstances as those in which the practitioner would perform it for a private patient—but cases must now rarely arise. Dr CRUTE said that in Scotland this matter had been taken up with the Board of Health and a satisfactory result arrived at. The Board appointed a court of referees to decide the specific cases and the court, after consideration, decided that dental treatment was for the purposes of the Act something further and additional to medical treatment and was not included in that expression and also that dental treatment was a treatment for which additional payment had to be made. Dr J HOLMES (Bury) said that now that dental work was so well organized it should be the recognized position that this service was no part of medical treatment. The motion was carried.

This concluded the business before the Conference which rose after passing votes of thanks to the Chairman (Dr Le Fleming) and to Dr DAVY.

PANEL CONFERENCE DINNER

On the evening of the Panel Conference the members of the Insurance Acts Committee were entertained at dinner by the members of the Conference. Dr H J CARDLE (Chairman of the London Panel Committee) presided and the arrangements which included an excellent entertainment were in the capable hands of Dr C L BATESON. Among the other guests were four medical members of Parliament—Dr Haden Guest, Sir Henry Jackson, Dr E Graham Little and Sir Richard Luce.

Dr J O SUMMERHALES, DSO, in a breezy speech proposed the health of the members and officers of the Committee. The flavour of his utterance fresh from the Oxfordshire country side is difficult to capture in a printed record. He distributed praises and criticisms impartially but ended by saying that the Committee had led insurance practitioners wisely and well and he considered that the medical men working the Insurance Acts had now as good a committee to look after their interests as they could ever expect to have. Dr H C DAVY, Chairman of the Committee alluding to the alleged revolt of panel practitioners as announced in certain newspapers and to the decisive vote of confidence by the Panel Conference that day told of a countryman who meeting another and desiring to inform him that his wife was in a certain condition said that she was 'stagnant'. You've got the wrong word, man, said the other. What you mean is she is 'pregnant'. It might have been imagined from the morning papers that the Insurance Acts Committee was 'stagnant' but subsequent events had proved that it was 'pregnant'. He went on to refer to the Medical Secretary's 1011 commission to South Africa and to wish him in the name of insurance practitioners a successful tour.

Dr Cox said that he was not accustomed to hear so many complimentary things said about the Insurance Acts Committee. He had heard a very different sort of comment expressed in the past and he knew of nothing which was so good for medical organization as trouble and plenty of it. He hoped therefore,

that when the report of the Royal Commission came out it would give the Insurance Acts Committee some long notice of it. With regard to his forthcoming mission, he commended his colleague Dr Anderson to a furtherance. Dr ANDERSON added a few words in which he indulged in some humour at the expense of his chief, who a holiday in South Africa he described in luxurious terms.

Dr R A BOLAM propounded the health of the medical members of Parliament. Members of the medical profession, he said did not take the part in public life which they ought to take for the good of the commonwealth and of the profession as well. A special debt of gratitude was due to those few who had the courage to brave the obloquy and turmoil of the political arena for the man who went in a municipal life or the larger life of Parliament incurred a good deal of odium entirely undeserved. The atmosphere moreover was one in which a man with a professional upbringing must find strange. When I read of Sir Richard Luce braving his uproarious constituents at Derby a week ago he could not help feeling that the services such a man rendered to the community were underrated.

Dr HADEN GUEST, MP said there were fourteen members of the profession in Parliament and so far as they could tactfully and pleasantly represented the medical point of view and brought the influence of the profession to bear upon other members. This was largely done in committee in private meeting, and even in social gathering. There was a medical committee on which there was an question of parity and the custom was being followed of getting men from outside to come and address them so that the medical members in their turn might be better able to inform the House on medical and scientific affairs. The training of the doctor was particularly valuable as a training for public life. Medical men a great deal knew more about the real conditions of the masses of the people than did the average citizen. They did not of course approach Parliament as members of a trade union, but as members of a profession—a very different thing. It was always difficult for a doctor to detach himself sufficiently from his profession to enter politics, but he hoped an increasing number would do so. What was needed at the present time was not a recitation of party difference but a more scientific view with regard to public affairs. Medical men did at least possess the scientific spirit but the more he saw both in this and other countries of politicians who were not doctors the more he was impressed by the sore need for the application of scientific knowledge and thinking to the solution of political difficulties. It was always interesting to stand back and bring a balanced scientific criticism to bear upon public affairs but it was much more difficult though also much more useful to enter public life and maintain that balance. The man who had been a successful fundraiser or grocer was not necessarily qualified to be a director in national concerns but the successful doctor had only to add some qualification for such a task. The taking of executive action in the State should not be left entirely to the commercial classes but more and more men of scientific attainments should be included to bring the scientific vision to bear upon national affairs.

Sir RICHARD LUCE and Dr GRAHAM LITTLE in their own appeals from the audience also made a few remarks.

THE ROYAL COMMISSION

THE forty-second meeting of the Royal Commission on National Health Insurance was held at the Home Office Whitehall on October 22nd and 23rd with Lord Lawrence of Kinnear in the chair on the 22nd and Sir Arthur Worsley on the 23rd.

Evidence was given by Mr J G F PRICE Principal Assistant Secretary Ministry of Labour on the question of utilizing the Employment Exchanges to create genuine employment for the purpose of dealing more generally with the problem of the arrears of penalties under the Health Insurance Scheme. Thereafter Sir Walter Kinnear Controller of Finance in a Department of the Ministry of Health Mr L C Brock Principal Assistant Secretary and Dr J S W Whitaker Senior Medical Officer of the Ministry were examined on a wide range of questions affecting health insurance on its administrative and medical sides.

LONDON PANEL COMMITTEE

WE have received from the secretary Dr C L BATESON a copy of the following resolution passed by the Panel Committee for the County of London at its meeting on October 22nd.

That the Panel Committee do inform the Panel Commission on the National Health Insurance Act that a medical member of the London Insurance Committee has never at any time consented to the proposal contained in the evidence submitted to them by Mr Le Fleming as Chairman of that Committee.

Correspondence.

The Cheshire Motion at the Panel Conference

Sir,—The Conference on October 22nd was very kind to me in allowing latitude beyond the merge time permitted to the recorder of a motion, nevertheless I feared to trespass on its indulgence, though I had much more to say. For this reason, and because I had no opportunity to reply to the criticism of Dr Brackenbury, I crave leave to supplement my remarks.

It is obvious that we may have a Minister of inferior quality to Mr Neville Chamberlain, and definitely prejudiced against us, also that, by taking on dependants of the insured, we may deliver ourselves completely into his hands. Such a man may more effectually ruin doctors by reflections upon their professional conduct than by fines. Dr Brackenbury claims that the difference between his policy and ours is trivial, I disagree with him. The one is incomplete in an essential particular, with him. The one is incomplete in an essential particular, with him. The one is comprehensive, logical, and lays no emphasis on any other pecuniary issue. As I stated, in 1912, so long as we fought for great principles, we won conspicuously, when we descended to a single monetary demand, we failed disastrously.

Again, when, lately, we were out for worthy causes—for our right to negotiate freely with the Minister, for protection from approved society interference, and for power to submit to arbitration any grave dispute—we won a notable victory, completely restored our reputation, and set an example to all of how such fights should be conducted by an educated profession. To quote the admirable words of Dr Brackenbury himself: 'What I say to you this morning is that the economic argument, while we do not minimize it the least, must now take a subordinate place.' And again: 'The public will realize that we care much less about sixpence here, or sixpence there, than we do about ensuring a good national service, and maintaining a free and honourable profession.'

Now, it is difficult to approach the Minister, but far more difficult to approach Parliament, which can alone assist us. Our one opportunity will, I take it, arise when the report of the Royal Commission is discussed. It is therefore absolutely necessary that the case then presented be logical, worthy, and convincing.

What, then, is the logical, worthy, and convincing policy at the present time? Surely to claim the natural right of every free Briton to defend, not merely his pocket, but his honour and reputation before an impartial court, to protest to the very uttermost against our present intolerable position of inferiority to the meanest society official in the matter of complaints, and not just to plead that the Minister cudgel us not too harshly on what would appear to be our only sensitive spot. Presumably, from some fear of offending the societies, the second argument was never even mentioned, either in the Memorandum or in the interview with the Minister. I would therefore narrate my own experience.

On May 11th, 1923, when the special mixed Committee was sitting, I moved a resolution before our Insurance Committee, to be sent to that mixed Committee, drawing its attention to the grave injustice of the present position of doctors, as compared with society officials, and calling upon it to take steps to put both upon an equal footing. Such was the patent justice of my appeal that at that meeting of 23, of whom no fewer than 16 represented approved societies, my motion was carried by a majority of 3, and of the minority not one opened his mouth. My speech was published verbatim, with report of the motion and voting, in the *National Insurance Gazette* of June 23rd, 1923, and in the columns of that organ of approved societies, which circulates to Insurance Committees, none entered a protest against either my motion or my arguments.

Now, are we going before Parliament on these great issues—winning issues as I maintain, and worthy of our traditions—or on a merely mercenary matter? In the former case, why delay for the report of the Royal Commission before declaring our intention? It seems to me that such declaration would produce a very desirable impression upon that body, and that it is a great pity that the panel Conference adopted a contrary view. In particular, I would protest strongly against a vote to proceed to the next business, as if our motion were merely frivolous or vexatious. Such conduct seems to me little conducive either to the proper ventilation of important business, or to good feeling among different Panel Committees. As I had no opportunity before, I must here challenge the suggestion by Dr Brackenbury that only charges of accepting fees would, under the policy of the Memorandum, come for final decision by the Minister. Section 38 includes for such decision also such general conduct as is held to be detrimental to the interests of the service. Will Dr Brackenbury seriously contend that negligence or incompetence leading to the death of the patient is outside this category?

Yet this has been precisely the charge brought in every notorious case of injustice, it is the charge made in a notable case published in the *SUPPLEMENT* for October 24th (p. 139). In three such cases already this charge, after being upheld by the Minister, has failed before another tribunal, and would therefore probably have failed before the High Court. In no case was the fine excessive for the offence alleged. Plainly such cases cannot be dealt with by merely changing the doctor, equally certainly no suggestions that we make, such as those in Section 41, will ever exclude them from decision of the Minister. Public opinion would be against such a barrier. They are the very cases which, under the policy of the Memorandum, would be finally decided by him with risk of grave injustice to us, but, under our policy, would, if necessary, go before the High Court, with good prospect of success.

I claim to have upset the former plea of constitutional precedent, I would add a word as to that of promoting undesirable litigation. Appeal to the High Court is a most formidable procedure, liable, even if successful, to costs amounting to hundreds of pounds. It seems to me to be to the last degree improbable that such a weapon would be taken up lightly, whether by doctors, insured persons, Insurance Committees, or approved societies. I am convinced that the total number of such appeals annually by all parties put together would be quite insignificant, and would differ but slightly under the two policies before us. I see no reason whatever why the Minister should object to a proceeding so universal, and one which relieves him to some extent from a disagreeable and one which relieves him to some extent from a disagreeable responsibility. Should he be so unwise as to do so, he must either claim infallibility above that of the High Court, or maintain that it is good for the service that an injustice committed be beyond repair. I credit him with too much sense to advance either thesis—I am, etc.,

G. C. GARRATT

Chichester, Oct. 24th

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

SURGEON CAPTAIN H. S. BURTON, C.V.G. has been placed on the retired list with the rank of Surgeon Rear Admiral.
Surgeon Commander W. E. Orr by O.B.E. has been placed on the retired list with the rank of Surgeon Captain.
Surgeon Commander H. Drernan D.S.O. to the *Emerald*.
Surgeon Lieutenants H. L. Bernstein to the *Birmingham*. W. T. Dood, to the *Royal Oak*.

ROYAL NAVAL VOLUNTEER RESERVE

Probationary Surgeon Sublieutenant H. Willoughby to the *Champion* for even days training.

ROYAL ARMY MEDICAL CORPS

Major E. M. J. O'Farrell to be temporary Captain and temporarily relinquishes the rank of Major.

ROYAL AIR FORCE MEDICAL SERVICE

Flying Officer W. J. Hutchison is transferred to the Reserve Class D 2.
Flying Officer R. J. A. Chattey to R.A.F. Depot.
R. J. A. Chattey is granted a short service commission as a Flying Officer for three years on the active list with effect from and with seniority of September 28th 1925.

REGULAR ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS.
Major E. N. Graham late Malay States Volunteer Reserve to be Major.
SUPPLEMENTARY RESERVE OF OFFICERS. ROYAL ARMY MEDICAL CORPS.
Lieutenant W. Boyd late R.F.A. Special Reserve to be Lieutenant.

VACANCIES

ABERDEEN ROYAL INFIRMARY—Assistant Surgeon to the Ear, Nose, and Throat Department.
BIRMINGHAM UNIV.—Resident Assistant Medical Officer (male) at Selly Oak Hospital. Salary £300 per annum rising to £400.
CHELSEA HOSPITAL FOR WOMEN—Anaesthetist. Honorarium £21 per annum.
COVENTRY AND WARWICKSHIRE HOSPITAL—(1) Resident Junior House Surgeon. (2) Resident House Physician. Male. Salary £125 per annum each.
DURHAM COUNTY COUNCIL—School Dental (part time) for Bishop Auckland School Clinic. Remuneration £11s 6d per school session.
HOSPITAL FOR SICK CHILDREN, Great Ormond Street W.C.1—Medical Registrar and Pathologist. Salary £200 per annum.
LIVERPOOL SMITHY HOSPITAL—(1) Male House Surgeon. (2) Female Gynaecological House Surgeon. Salary £100 per annum.
MANCHESTER ROYAL INFIRMARY—Resident Medical Officer at the Barn Connalescent Hospital. Remuneration at the rate of £250 per annum.
METROPOLITAN ASYLUMS BOARD—Junior Assistant Medical Officer in the Infectious Hospitals Service. Salary £504 per annum.
MIDDLESEX COUNTY COUNCIL—Assistant Medical Officer (female). Salary £600 per annum rising to £750.
NEWCASTLE-UPON-TYNE CITY MENTAL HOSPITAL—Junior Assistant Medical Officer (male). Salary £350 per annum rising to £400 on obtaining Diploma in Psychiatry.
NORTHAMPTON GENERAL HOSPITAL—Honorary Assistant Surgeon.
QUEEN MARY'S HOSPITAL FOR THE EAST END, Stratford E.15—Honorary Assistant Physician.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, NOVEMBER 7TH 1925

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British Medical Association.

PROCEEDINGS OF COUNCIL

Wednesday, October 21st, 1925

A MEETING of the Council of the Association was held on October 21st. The meeting was the first to take place in the Council Chamber at the new House in Tavistock Square, also the first to be called to order by the handsome gavel recently presented by the Tasmanian Branch. Dr R A BOLAM was in the chair, and the following members were present:

Dr H B Birchenbury (Chairman of Representative Body), Mr A Bishop Harman (Treasurer), Mr J Basil Hall (Past President), Mr R G Hogarth (President-Elect), Dr C O Hawthorne (Deputy Chairman of Representative Body), Dr G A Allan, Dr J Barcroft Anderson, Dr T Ridley Bailey, Surgeon Rear Admiral Sir Percy Bassett-Smith, Dr H S Beadles, Dr J W Bone, Dr H C Bristowe, Dr G F Buchan, Dr H G Dun, Dr J S Darling, Dr C E Douglas, Mr T P Dunhill, Mr W McAdam, Dr D Ewart, Dr D E Fimar, Dr C E S Flemming, Dr T W H Garstang, Dr F J Gomez, Dr I W Goodbody, Dr J Gusani, Lieut Colonel C B Heald, Dr R Wallace Henry, Dr G B Hillman, Dr J Hudson, Dr I W Johnson, Dr R Langdon Down, Dr David Lawson, Dr R W Leslie, Dr E K Le Fleming, Sir Richard Luce, MP, Dr A Lyndon, Dr P A Lyster, Dr J G McCutcheon, Dr J A MacDonald, Dr S Morton Mackenzie, Major General Sir William McEpherson, Dr A Manknell, Dr J C Matthews, Dr G W Miller, Dr Hugh Miller, Dr Christine Murrell, Mr A W Nuthall, Lieut Colonel F O Kneely, Dr William Paterson, Dr R C Perceock, Dr T Padeliffe, Lieut Colonel J W F Rait, Dr Lockhart Stephens, Dr John Stevens, Dr W I Thomas, Dr G Clark Trotter, Mr E B Turner, Dr J F Walker.

Apologies for absence were read from the President (Dr Thomson), Dr John Mills, Dr D Walshe, and Sir Jenner Verrall.

Preliminary and Personal

The death of Dr G K Smiley, who was a member of Council in 1919-20 was reported and Sir Richard Luce paid a tribute to the memory of an old friend and colleague through whose influence he himself was persuaded to take up work in the British Medical Association. He recalled the

heroic way in which Dr Smiley had borne the afflictions which fell upon him.

It was agreed that Dr Oswald Marriott should be asked to fill the vacancy on the Council in respect of the Hong Kong and China and Malaya group of Branches.

The Chairman was authorized to send to all who had contributed to the success of the Bath meeting the cordial thanks of the Association. He said that the Bath meeting would be one of the most memorable in the series of Annual Meetings for the vast amount of local effort which the occasion evoked. He could not recall an Annual Meeting in which the local colleagues had in such a marked degree spent themselves in ensuring success. (Applause.)

The Council unanimously decided to recommend to the Representative Body that the retiring President Mr J Basil Hall should be elected a Vice President of the Association as a recognition of his services as President. The Chairman said that Mr Basil Hall had had a busier year than had fallen to the lot of most recent Presidents but he had fulfilled his duties in a most excellent manner and had rendered sterling service to the Association.

It was resolved to place on record and to transmit to His Grace the thanks of the Council to the Archbishop of Canterbury for his services in dedicating and opening the Gates of Honour on July 13th.

The Treasurer in submitting a financial statement which was largely concerned with the expenditure incident to the removal to the new premises and the ceremonial opening, said that the burden of the arrangements had fallen heavily upon the department of the Financial Secretary and Business Manager, and to Mr Lewis Scott himself as chief of the staff, and to his lieutenant Mr Griffiths, in particular some recognition was due for most ungrudging labours. (Applause.)

Badge of Office for the Chairman

The Medical Secretary read a letter addressed to the Chairman from certain members of the Association who desired to remain anonymous, saying that it had appeared to them for

some time to be desirable that the chief executive officer of the Association should be identifiable by a badge of office. At the Bath meeting one of the writers of the letter saw the beautiful jewel prepared by Mr Allan G Wyon for the Chairman of the Representative Body, and after consultation the members asked Mr Wyon to undertake the design and preparation of a badge of office for the Chairman of Council. The arrangements were left in the hands of the Financial Secretary and Mr Wyon, and the writers hoped that the Chairman would wear the jewel for a long time to come, and that when he handed it to his successor it would be to the one who would then wear it a constant reminder of the high example set by Dr Bolam during his tenure of office.

Mr Wyon, on behalf of the members, then invested the Chairman with the badge, a beautiful piece of gold work, of which a photograph was reproduced in last week's SUPPLEMENT at page 144.

The Chairman said that this was quite an irregular and undisciplined proceeding, but he would be very glad to wear the badge during the short time which remained of his term of office. It was only one more proof of the extraordinary kindness which had pursued him ever since he was elected to the chairmanship, and he hoped that succeeding Chairmen of Council would have as happy a time in wearing it as he had had during the last five years. The badge was, of course, a decoration for the Chairman in perpetuity, but that his own term of office should have been signalized by its bestowal filled him with gratitude. (Applause.)

The Committee Work of the Association

A resolution from the Brighton Division was considered, asking the Council to arrange, when considered advisable for the publication in the SUPPLEMENT of the fullest possible reports of meetings of the standing and other committees, on the ground that members of the Association had at present little or no opportunity of judging for themselves of the very great amount of detailed work done by those committees. Dr J A Macdonald pointed out that the substance of the proceedings of the committees was embodied in the reports of the meetings of Council and in the Annual and Supplementary Reports, while matters in the committee stage often formed the subject of a Current Note. There was great pressure on the space of the JOURNAL, and additional reports of this kind could only be published at the sacrifice of other and perhaps more important matter. Dr Langdon Down pointed out that the chief value of committee work lay in the fact that it was done without publicity, and therefore on that general ground he would deplore the proposal. The matters under discussion in the Central Ethical Committee were certainly not of a kind which could be freely published. Dr Bore moved that, in the opinion of the Council, the present method of reporting the work done by the various committees is satisfactory, and this was agreed to.

Advertisements of Conditional Appointments

Dr J A Macdonald, Chairman of the Journal Committee, brought forward the question of advertisements by public authorities for medical officers in which the statement appears that the successful candidate shall become a member of a trade union, or society, or association, certain public bodies having recently made requirements of this nature. After full debate the Council passed resolutions for the guidance of the Journal Committee.

On a later matter, on the report of the Medico-Political Committee, it was resolved to bring before the Representative Body the strong objection to the practice adopted by some public bodies of asking medical practitioners to tender for appointments with a recommendation that advertisements for such appointments be not published in the JOURNAL.

Question of a Membership Card

Dr Morton Mackenzie brought forward a proposal from the Organization Committee that members of the Association should be furnished with a membership card. This would tend to prevent unfair advantage being taken by non-members of the facilities at headquarters, and it would afford to members

attending meetings in Divisions other than their own or going overseas some document which they could produce as *prima facie* evidence of their membership. Dr Wallace Henry and Dr Beadles supported the proposition, but the Treasurer pointed out that the preparation and dispatch of such cards would require the employment of another clerk, and in view of the heavy financial commitments of the Association at the present time the Finance Committee could not agree to the expenditure involved. Other members pointed out that it would be more effective to get those who called at headquarters to sign an attendance book.

The proposal for a membership card was not adopted.

Dr Mackenzie reported that the membership of the Association was still increasing. It was 2,000 above the corresponding figure for last year, and was now well over 30,000.

Medical Secretary's Tour in South Africa

Dr Mackenzie then introduced the question of the organization of the profession in South Africa. A memorandum by the Medical Secretary was circulated giving an account of the conversations which had recently taken place. Dr Mackenzie said that the Association at headquarters was anxious to do all it could to help the profession in South Africa. Their view was that the secret of the solution of the South African medical question lay in the better organization of the South African Medical Committee and in the appointment of a Medical Secretary for South Africa. The South African Committee had suggested that Dr Cox should go out to South Africa on an organizing tour. Dr Orenstein, vice-president of the South African Committee, who was visiting this country, said from the first that Dr Cox ought to go out to South Africa. The Chairman of Council and the speaker, together with Dr Cox, while at Bath had an interview with Dr Orenstein, Dr Napier, who was a protagonist of the movement for the South African Medical Association, and Dr Meyer, who was a delegate to the Annual Meeting. Dr Napier asked whether the British Medical Association would grant immediate affiliation to the South African Medical Association irrespective of any question of amalgamation of the British Medical Association in South Africa with that body. He was informed that the answer must be in the negative. At that meeting Dr Orenstein again strongly pressed his desire that the Medical Secretary should go to South Africa, and the other two South African gentlemen agreed that such a visit would do good. A little later a cable was received from the President of the South African Committee (Dr Campbell Watt) saying that the Committee unanimously invited Dr Cox to pay the visit, and that it did not require this year the £1,000 which had been promised towards the salary of the South African Medical Secretary, it had not, in fact, been possible to find the right man. The Organization Committee thought that a good case could be made out for sending the Medical Secretary. It would mean that he would be in South Africa for four months or a little more, and would undertake a proper organizing tour right through the country. The Committee believed that the visit would not only result in a better organization of the South African Branches, but would probably bring to a fruitful and satisfactory issue the prolonged negotiations with regard to the organization of the profession, would enhance the position of the South African Committee, and strengthen the ties uniting the members of the Association in South Africa with those in the home country. He moved that the Council accede to the South African Committee's invitation that the Medical Secretary should visit South Africa on an organizing tour.

Dr Paterson, on behalf of the Domestics Committee, cordially supported the recommendation. The Treasurer said that the Finance Committee took no exception to this proposition. It would cost about £800 to send Dr Cox to South Africa, but part of Dr Cox's ordinary duties was to visit the Divisions at home, and this was only an extension of his tour. Dr Langdon Down remarked that if in absence of Dr Cox for six months from the work of the office could be arranged without detriment, there must be somebody at the office to whom they were very much indebted. Dr Macdonald, as one who had visited South Africa, supported the proposal wholeheartedly. Dr Mackenzie said that Dr Cox's absence

would involve a strain upon the head office, but the work could be managed by curtailing certain activities and making some adjustments. He hoped that South Africa would accept this as a gesture of entire friendliness.

The resolution was carried unanimously and Dr Biscoff Anderson, on behalf of South Africa, offered the Council the sincerest thanks for what it had done. A resolution was also carried instructing the Medical Secretary to convey to the South African Committee the Council's best wishes for the success of the Committee's efforts to promote the solidarity of the profession in South Africa.

The Chairman said that it was well appreciated that this meant a sacrifice on all sides, but he had the greatest hope for the success of the mission, and tendered the best wishes of the Council to Dr Cox.

The Medical Secretary thanked the Council, and said that he knew his colleagues in the office would rise to the occasion, but he asked for the forbearance of the Council if some things were not done quite so thoroughly as usual and some things even omitted. He would certainly convey the Council's good wishes to the South African Committee for the success of the mission in which they as well as himself would be involved during the next five or six months.

Other Oversea Matters

Dr Mackenzie said that the arrangement which had been made with the Canadian Medical Association seemed to be bearing excellent fruit. He moved that following on the adoption of the Articles of Association as regards affiliation, the Council give notice to dissolve the following Branches of the Association in Canada: Halifax (Nova Scotia), Montreal, St John (New Brunswick), Saskatchewan, and Toronto. This was agreed to.

A report from Mr H W Carson, F.R.C.S., who went as an official delegate to the meeting of the Canadian Medical Association in June, was laid before the members. Mr Carson reported that the Canadian Congress was attended by some 500 members, and many valuable papers were read and interesting discussions followed. He found everywhere a very friendly feeling towards the British Medical Association on the part of the members of the affiliated body in Canada, and he thought that this was in great part due to the impression left by Sir Jenner Ferrell and Dr Cox and by Mr Basil Hall during their recent visits.

A letter of thanks was directed to be sent to Mr Carson for acting in this capacity.

A formal invitation was received from the executive committee of the Australasian Medical Congress, to be held at Dunedin, New Zealand, in February, 1927, asking the Council to send an official representative of the Association. Dr Ewart representing New Zealand on the Council, supported the invitation. He said that a hearty welcome awaited any such visitor, and added that the profession in New Zealand was well informed and up to date, and an interesting scientific programme would be carried through. The President of the Congress, Mr I E Brunett, CMG, F.R.C.S., was a former teacher of his, and he knew that with him in the chair a successful Congress was assured.

It was resolved that a letter of thanks for the invitation be sent, and that the appointment of a representative be deferred until the next meeting of Council.

Practice of Psycho-analysis by Medical Men

Following upon the resolution of the Annual Representative Meeting referring to the Council a motion that it should consider certain practices alleged to be prevalent among some medical men practising psycho-analysis. Dr Langdon Down brought forward a report of the Central Ethical Committee on the subject. It had he said received the very careful consideration of the Committee, which had had the advantage of the presence of Dr L A Parry who introduced the subject at the Representative Meeting. Dr Parry had stated to the Committee that neither he nor the Sussex Branch wished the Council to undertake the investigation of complaints against individuals and, with regard to the other way in which the

Council might approach the matter—that of a general pronouncement—it was not desired that any general condemnation of psycho-analysis should be issued, it was only certain aspects of the matter which were challengeable. On being asked to define what it was that was objected to, Dr Parry replied that it was the practice of habitually and unnecessarily emphasizing the sexual aspects of psycho-analysis. The Committee felt that the word 'unnecessarily' constituted a great difficulty. It was always one of the debatable questions of medicine what was and what was not necessary. Dr Parry had furnished particulars of three or four cases, but in one of them only was the information first hand. An endless discussion on the whole question of psychology and human instincts might be opened up. It should be remembered that persons aggrieved had their proper legal remedy. On the statements submitted certain of the practices appeared to be criminal with regard to others it was a debatable question whether what was alleged to have happened constituted an offence and in one case the complaints made by the patient were in such a form that it was hardly credible that what was alleged to have occurred could really have taken place. It would be unnecessary for the Council to say that it regarded actions which were of a criminal nature as being objectionable. Like other professional organizations the Association would desire to encourage among its members an undeviating regard for the discretion and delicacy which ought always to mark professional conduct. Any departure from this position would undoubtedly merit and receive severe condemnation by the general verdict of the profession. But to proclaim this doctrine by a public announcement might well be held to imply that some general or urgent necessity for such an announcement had arisen, and would thus appear to support a conclusion which his Committee was not prepared to accept. He moved that the Council take no further action with respect to the resolution.

This was agreed to without discussion.

Puerperal Morbidity and Mortality

Dr J W Bone (the vice chairman) brought forward a report from the Committee on Causation of Puerperal Morbidity and Mortality. The report was of an entirely preliminary character. The Committee, of which Sir Eben MacLennan had been appointed chairman, hoped to present an interim report at the next meeting of Council. Dr Bone stated that the Committee was in touch with the Medical Research Council with a view to ascertaining what assistance that Council would be prepared to give in the conduct of certain researches cognate to its subject.

The Council appointed Mr E B Turner a member of the Committee, and gave the Committee power to co-opt an additional member, probably on the nomination of the Medical Research Council.

Factory Medical Service

Dr Bone, chairman of the Medico-Political Committee, reporting with regard to the resolutions of the Representative Meeting on the factory medical service, said that his Committee recommended that a joint meeting with the Public Health Committee be called to consider the question, that the Association of Certifying Factory Surgeons be asked to appoint representatives to attend, and that the question at issue be extended to embrace the advisability of the factory medical service being made an exception to the policy of the Association that all health services should be under the administration of the Ministry of Health. Sir Richard Luce said that in the present form of the Factories Bill there was no proposal to alter the medical arrangements at all, and it was important if any steps were to be taken before this bill went through that it should be definitely known what the Association wished. The recommendation was agreed to.

Consultations at Reduced Rates

Dr Bone also reported that the Association of Assistant Masters in Secondary Schools had applied for information and advice with regard to making arrangements for obtaining the services of consultants for members of that body at reduced rates. The Committee did not consider that such schemes were necessary, as persons deserving of special consideration

as regards fees could always get it on the recommendation of their family doctor. He moved that general arrangements with consultants for their acceptance of reduced fees for services rendered to organized groups of persons were unnecessary and undesirable.

Dr Wallace Henry pointed out that the resolution as it stood was opposed to the policy adopted by the Council in the matter of ophthalmic benefit for insured persons, and, after a short discussion it was decided that the resolution should be re-drafted by the Committee and brought forward at the next meeting.

Tests for Drunkenness

Arising out of the recent correspondence in the JOURNAL, Dr Bone proposed that the Association should set up a special Committee, composed of neurologists, psychotherapists, and persons with special knowledge of the subject, to consider and report on the present tests for drunkenness. A Home Office committee was now sitting, and, he was informed, would be glad to co-operate in any investigations. Dr Mckenzie supported the recommendation. In view of the difficult cases with which the medical man was constantly confronted he thought that every effort ought to be made to get a definite ruling on the point.

The appointment of the committee was agreed to, and it was also agreed that police surgeons should be asked to nominate representatives to serve.

Ophthalmic Benefit

On the report of the Insurance Acts Committee, moved by Dr Dain, Dr Brackenbury drew attention to a paragraph relating to ophthalmic benefit, which stated that some 572 practitioners had now expressed their willingness to serve under the scheme. He said that it was desirable that the Council and the whole Association should know one or two things about this ophthalmic benefit, its limitations, and the way in which certain of the approved societies were acting. Many members of the Council must have been under the impression that the arrangement entered into with regard to ophthalmic surgeons for insured persons would be operative over the whole field of national health insurance, but certain of the largest approved societies were not in the arrangement at all, they had not had time to be in it yet. The great majority of insured persons, therefore, did not come under this arrangement. The collective arrangement which had been made applied only to a relatively small minority. The point which deserved attention was what happened to a member of a society outside this arrangement. The societies had made arrangements with the opticians, and if the optician gave the member a certificate that in his opinion it was desirable that an ophthalmic surgeon should be consulted the society would honour that certificate from the optician, but if an insurance practitioner gave a similar certificate that in his opinion it was desirable that the patient should see an ophthalmic surgeon, the approved society—the Prudential—took no notice whatever of the certificate. That was a state of affairs which ought not to be tolerated. The Ministry of Health, however much it might disapprove, had no power to bring the societies into a better way except by persuasion. The fact remained that the certificate of a registered medical practitioner that the opinion of an ophthalmic surgeon was desirable was ignored and repudiated by the Prudential approved society, whereas a similar certificate given by an optician was honoured.

Dr Dain and other members agreed that the position was unsatisfactory. Dr Dain also spoke of certain anomalies in the list of specialists, which would be got over by consulting local committees. Up to now it had been purely an office matter. Dr Wallace Henry said that on the Ophthalmic Committee there were representatives from all parts of the country. The first list was crude but it had now been possible to make it more complete and inclusive.

Minimum Salaries in Scotland

Dr Hugh Miller, Chairman of the Scottish Committee, reported that at a conference with representatives of local authorities arranged by the Board of Health the following

modifications of the Association's scale of minimum salaries for public health medical officers in its application to Scotland were suggested: (1) a lower salary than £800 for medical officers in areas with a population of less than 25,000, (2) differentiation in the scale for officers of the school medical service, (3) a graded scale for officers employed in departments. The Committee had agreed to continue consideration of the first of these modifications, pending further information, did not agree to the second and, with regard to the third, recommended that it be authorized to continue negotiations for the adoption of an agreed scale of minimum salaries, providing for a graded salary for officers employed in departments, commencing at less than £600 and increasing by regular increments to a figure higher than £600. He said that the number of special areas in Scotland to which a concession might reasonably be given was not more than half a dozen. It was thought that a joint committee might be set up to deal with these special cases as they came forward. With regard to the graded scale, the whole standard of professional remuneration was not so high as it might be, but he thought the arrangement proposed might assist matters.

Dr Buchan said he quite realized that special areas required special consideration, but that ought not to be a matter of general resolution and if a graded salary were permitted it ought to be from £500 up to £700 to be equivalent to anything near the £600 minimum. Dr Brackenbury said he would rather stick to the £600 and be beaten in the majority of cases than waive it in the manner proposed. The poverty of Scotland did not appear to be a reason for departing from the minimum, but a reason which would appeal was that the local government units in Scotland were smaller, and it was not to be expected that these small units should pay the salaries which the relatively larger units of England and Wales paid. Dr Allan also pointed out as another factor to be considered that the proportion of medical graduates was very much greater in Scotland than in England, and there was a considerable surplus of unemployed practitioners.

It was agreed to ask the Committee to give further consideration to the whole matter.

Arrangements for Next Annual Meeting

The Chairman, on behalf of the Arrangements Committee, submitted the arrangements for Sections and a timetable for next Annual Meeting, to be held at Nottingham in July. With regard to the Section of Anaesthetics a suggestion had been received from the Society of Anaesthetists in the United States and Canada that it might be possible to combine its own annual meeting with the meeting of the Section at Nottingham, and thus give the meeting an international character.

The Council endorsed the Committee's view that this would be a welcome arrangement, and agreed that officers for the Section should be appointed with this in mind.

The Chairman reported that a valuable memorandum on the arrangements for Annual Meetings, based on the experience at Bath, had been received from Mr W. G. Mumford, Local Honorary Secretary and Acting President of the Bath Meeting.

The New Headquarters

On the report of the Office Committee, various internal arrangements in the new House were discussed, including garage facilities for members and others, the use of rooms for meetings of other bodies, and the contributions to be made by Branches and Divisions of the Association towards the expenses of meetings held in the House.

The Council agreed that in order to provide increased library accommodation the Hastings Hall should be fitted with bookshelves. This would also have the advantage of improving the acoustic properties of the hall, which at present are inferior to those of the Council Chamber, owing to the paneling and seats in the latter.

Dr Hawthorne said that the Library Subcommittee welcomed any proposal for the provision of increased library accommodation, but urged upon the Council the need for better accommodation for certain valuable folios and other works.

Other Committee Reports

Sir Richard Luce reported that the Naval and Military Committee was in communication with the War Office as to the pensions of majors of the R.A.M.C. & twenty years service, and was also moving in the matter of the pay of captains in the Territorial Army. Dr Ridley Bailey, for the Public Health Committee, reported on the action taken in connection with a number of public health appointments. Mr McAdam Eccles, for the Hospitals Committee, brought forward as recommendations to the Representative Body two paragraphs for adoption as the hospital policy of the Association which were approved by the last Representative Meeting but in connection with which the requisite two months' notice had not been given. He also stated that correspondence was proceeding with the Hospital Saving Association with regard to a suggestion, already endorsed by the Council, that every patient who was a member of that body and sought treatment should carry with him a recommendation from his medical practitioner. Dr Paterson, chairman of the Dominions Committee, said that the Committee had no recommendations to bring forward, but certain matters were in their early stages. Protests had been received from the Kenya and Zanzibar Branches against the new regulations for the East African Medical Service and the Colonial Office was being acquainted by the Committee with the prevailing dissatisfaction, and was being asked for further information. He hoped that the Committee would be prepared to make certain recommendations at the next meeting. There was great trouble also in the Malayan Medical Service, where the salaries were inadequate, and the administration in a state of chaos. The Committee was given to understand that the Windward Islands Medical Service had been somewhat improved of late, and inquiries were being pursued in the Branch there to find out whether there was sufficient justification for the withdrawal of the Important Notice.

The Council nominated Dr Ridley Bailey and Dr A. Manknell as representatives of the Association upon the council of the Society of Medical Officers of Health and concluded its business at 6.15 p.m., in time for the Autumn Dinner, of which a report appeared in last week's SUPPLEMENT.

Association Notices**AFFILIATION OF CANADIAN MEDICAL ASSOCIATION WITH BRITISH MEDICAL ASSOCIATION***Dissolution of Canadian Branches*

NOTICE is hereby given by the Council of the British Medical Association to all concerned of the following resolution passed by the Council on October 21st 1925:

That following on the adoption by the Annual Representative Meeting, 1925, and Extraordinary General Meetings of the Association, of Articles of Association as regards affiliation, and the terms of the affiliation of the Canadian Medical Association with the British Medical Association the Council, in pursuance of the power conferred upon it by Article 15 do forthwith give notice to dissolve the following Branches of the British Medical Association in Canada: Halifax, Nova Scotia, Montreal, St John, New Brunswick, Saskatchewan, Toronto.

Written notice of the intended dissolution of the Branches of the British Medical Association in Canada is also being given to those Branches which will be deemed by the Council to be dissolved as from June 1st 1926.

By order of the Council

ALFRED COY,
Medical Secretary

October 28th, 1925

BRANCH AND DIVISION MEETINGS TO BE HELD

BIRMINGHAM BRANCH. NUNEATON AND TAMWORTH DIVISION.—A meeting of the Nuneaton and Tamworth Division will be held at the Nuneaton General Hospital on Wednesday November 18th when Mr H. Beckwith Whitehouse, M.S. F.R.C.S., will give an address entitled "Notes from an antenatal clinic."

GLASGOW AND WEST OF SCOTLAND BRANCH.—A clinical meeting for members of the Glasgow and West of Scotland Branch will take place in the Royal Hospital for Sick Children, Yorkhill, Glasgow,

on November 18th at 3 p.m., when surgical and medical cases will be demonstrated by members of the hospital staff. The annual dinner of the Branch will be held on the same evening at 6.30 for 7 p.m., in Feigson and Forrester's Restaurant, 36 Buchanan Street, Glasgow.

GLOUCESTERSHIRE BRANCH.—The opening meeting of the new session of the Gloucestershire Branch will be held on Thursday, November 12th at the Royal Infirmary, Gloucester, at 6.15 p.m. Presidential address: Chronic pelvic pain in women. There will be supper at the Spread Eagle Hotel after the meeting (price 5s each exclusive of wine). Members intending to be present at the supper are asked to notify the honorary secretary.

LANCASHIRE AND CHESHIRE BRANCH.—A scientific meeting of the Lancashire and Cheshire Branch will be held at the Bolton Infirmary, Chorley, New Road, Bolton on Thursday, November 12th at 3.30 p.m. Agenda.—Dr F. P. Mallett (Bolton) Introductory remarks. Dr T. H. Oliver (Manchester) Insulin in private practice. Dr C. W. Paget Moffitt (Bolton) Antenatal treatment from the public health point of view. Dr R. D. Mothersole (Bolton) Septic ulcers. Exhibition of cases and specimens. Tea will be given by the Bolton Division, and in order that the necessary arrangements may be made members proposing to be present are asked to notify Dr R. Cranna, 584 Blackburn Road, Bolton as early as possible.

LANCASHIRE AND CHESHIRE BRANCH. HAIDE DIVISION.—A supper dance will be held in Hyde Town Hall on Friday, November 13th at 8.30 p.m. Tickets, price 15s each, may be had from the honorary secretaries. Members should apply early for their tickets as the number is limited.

LANCASHIRE AND CHESHIRE BRANCH. MID CHESHIRE DIVISION.—A meeting of the Mid Cheshire Division will be held in the Board Room of the Altrincham General Hospital on Thursday, November 12th at 8.30 p.m. prompt. After the business meeting a British Medical Association Lecture will be given by Professor Edward Mellorby of Sheffield University on diet and disease. The lecture will be illustrated by lantern slides. Members of other Divisions and non-members in the area will be heartily welcome.

LANCASHIRE AND CHESHIRE BRANCH. ROCHEDALE DIVISION.—The third meeting of the session of the Rochdale Division will be held in the Chippiness Hall, Dyke Street at 8.30 p.m. on Wednesday, November 11th. Dr G. J. Langley (Manchester) will deliver the third of a series of lectures on recent advances in cardiology.

METROPOLITAN COUNTIES BRANCH. CITY DIVISION.—In conjunction with the Aesculapian Society there will be a clinical afternoon at the Metropolitan Hospital, Kingsland Road on Friday, November 13th at 4.15 p.m. when Mr P. A. Ramsey, F.R.C.S. surgeon to the hospital will show cases with notes. Tea at 4. Members are invited to show cases at any meeting.

METROPOLITAN COUNTIES BRANCH. ST PANCRAS DIVISION.—The next meeting of the St Pancras Division will be held at the British Medical Association House, Tavistock Square, W.C.1 at 9 p.m. on Tuesday, November 10th when Dr Robert A. Young, C.B.E., F.R.C.P. physician to the Brompton Chest Hospital will deliver a lecture on the early recognition of pulmonary tuberculosis.

METROPOLITAN COUNTIES BRANCH. WILLEMS DIVISION.—The clinical meeting arranged for November 19th at the Folation Hospital has been postponed owing to the death of Dr Stewart. The second annual dinner of the Division will be held at the Criterion Restaurant, Piccadilly on Sunday, November 15th when Lieut. Colonel Kirkpatrick, I.M.S. (ret.) will preside. Reception at 7 p.m. dinner 7.30. Principal guests, Dr H. B. Brackenbury and Mr G. J. Furness, chairman, Wilsden General Hospital. Any member of the Association will be welcomed and may bring a friend. Tickets, 10s. each (exclusive of wine) may be had from Dr W. Lock, 45 Church Road, N.W.10.

MIDLAND BRANCH. CHESTERFIELD DIVISION.—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield on Friday, November 13th at 8.15 p.m. when a discussion on small pox will be opened by Dr Garrow. Tea and coffee will be served at 8.

NORTH OF ENGLAND BRANCH. SUNDERLAND DIVISION.—The annual address will be given by Dr H. Crichton Miller on Thursday, November 12th. The annual dinner will be held the same evening at 7.30 at the Palatine Hotel, Sunderland.

SOUTH WALES AND MONMOUTHSHIRE BRANCH. SWANSEA DIVISION.—A meeting of the Swansea Division will be held at the General Hospital, Swansea on Thursday, November 19th at 8.15 p.m. when Dr White will speak on some general aspects of "Mind therapy."

SOUTHERN BRANCH. PORTSMOUTH AND ISLE OF WIGHT DIVISIONS.—A joint meeting of the Portsmouth and Isle of Wight Divisions will be held at the Queens Hotel, Southampton on Wednesday, November 11th at 3 p.m. Dr G. C. Anderson, Deputy Medical Secretary, will give an address on the British Medical Association's Hospital Policy. As the subject is of great importance to medical practitioners the Branch Council hopes that all members will endeavour to attend. Non-members will be heartily welcomed.

STAFFORDSHIRE BRANCH. SOUTH STAFFORDSHIRE DIVISION.—Sir Robert Jones has kindly consented to show cases to the members of the South Staffordshire Division on Sunday, November 8th at 2.30 p.m. at the Shropshire Orthopaedic Hospital, Gobowen, near Oswestry. It is proposed that members of the party should lunch (3/-) at the Winery Arms at 1.15 p.m., and proceed two and a half miles to the hospital at Gobowen.

SURREY BRANCH. CROYDON DIVISION.—The next meeting of the Croydon Division will be held at the Queen's Hotel, Upper Norwood on Thursday, November 19th at 4 p.m. An address will be given by Dr J. Bright Banister entitled "Some obstetric emergencies."

SURREY BRANCH KINGSTON ON THAMES DIVISION—The following are the arrangements for the season—November 18th—Annual dinner at Nuthalls Restaurant 7.30 p.m. December 1st—Dr William Brown Psychology and medicine January 5th 1926—Mr J. G. Turner, I.R.C.S. Dental sepsis February 2nd—Dr Robert Hutchison Haematemesis March 2nd—Mr Kenneth Walker, I.R.C.S. (subject to be announced later)

SURREY BRANCH REIGATE DIVISION—A meeting of the Reigate Division will be held at the East Surrey Hospital, Reigate on Tuesday, November 10th, at 8.45 p.m., when Mr R. P. Rowlands will read a paper on the acute abdomen.

SUSSEX BRANCH CHICHESTER AND WORTHING DIVISION—The autumn meeting of the Chichester and Worthing Division will be held at Wines Hotel, Worthing on Wednesday, November 11th at 7 p.m. On this occasion the Division will entertain guests representative of the public authorities in the area, and after the dinner a lantern lecture will be given by Dr Habberton Lullum on human nature through a doctor's eyes. It is hoped that members will bring their wives and other guests and members of the neighbouring Divisions (Horsham Brighton etc.), with then wives and other guests are cordially invited. The price of dinner tickets is 7s, exclusive of wine.

WILTSHIRE BRANCH TROWBRIDGE DIVISION—The Trowbridge Division will hold a dinner at the Bear Hotel Devizes on Wednesday, December 2nd, at 7.15 for 7.30 p.m., after which Mr Cecil Terry will read a paper on some minor points in surgery. The price of the dinner exclusive of wine, is 10s. 6d., and members intending to be present are requested to notify Dr D. Leigh Spence (The Limes Melksham) by the first post on Saturday, November 28th. As this is the first dinner held by the Division for many years it is hoped that all members will make a special effort to attend. Non members in the Devizes area are cordially invited.

YORKSHIRE BRANCH DEWSBURY DIVISION—A meeting of the Dewsbury Division will be held at the Man and Saddle Restaurant Dewsbury on Tuesday, December 1st. Dr Burrows (Leeds) will read a paper on referred pain from a diagnostic standpoint. Supper will be provided at 8.15 p.m. Members from neighbouring Divisions will be welcomed.

YORKSHIRE BRANCH ROTHERHAM DIVISION—The annual dinner of the profession will this year be held under the auspices of the Rotherham Division at the Crown Hotel, Rotherham on Friday, November 20th at 7.15 for 7.30 p.m. Price of tickets 15s. exclusive of wine. Members are requested to notify the secretary regarding tickets not later than November 13th.

YORKSHIRE BRANCH SHEFFIELD DIVISION—A meeting of the Sheffield Division will be held in the General Lecture Room The University, Sheffield, on Friday, December 11th at 8.30 p.m. when a British Medical Association lecture will be given by Dr Crumpler on the new outlook on cancer. Non members will be welcomed.

YORKSHIRE BRANCH WAKEFIELD DIVISION—At the meeting of the Wakefield Pontefract and Castleford Division to be held in the Bull Restaurant Wakefield on Thursday, November 12th, at 8.30 p.m. Dr J. S. Bolton (Wakefield Mental Hospital) will discuss the diagnosis and certification of mental diseases. Supper will be served at 7.45 p.m. (price 2s. 6d.). The meeting is open to all practitioners in the district.

Meetings of Branches and Divisions

BERKSHIRE AND CHESHIRE BRANCH WARRINGTON DIVISION
A MEETING of the Warrington Division was held in the Infirmary on October 30th. Dr J. CRIGGON BRAMWELL (Manchester) read a concise and lucid paper on the treatment of cardiac failure with congestion. At the termination of his address the lecturer was accorded a most hearty vote of thanks for the enjoyable evening given to the Division.

NORTH OF ENGLAND BRANCH CLEVELAND DIVISION
A MEETING of the Cleveland Division to which members of the neighbouring Divisions had been invited was held in the Board Room of the North Ormesby Hospital, Middlesbrough on October 22nd. A most interesting address was given by Mr J. BASIL HALL, M.Ch. F.R.C.S. of Bradford Past President of the Association on his experiences and impressions of his recent tour in Canada and the United States. Mr Hall spoke in his usual humorous vein and at the close answered a number of questions. The address was greatly enjoyed by those who had the good fortune to be present.

SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION
A MEETING of the Swansea Division was held on October 22nd when the Vice Chairman of the Division Dr H. R. FREDERICK presided in an able manner. Dr DANIEL L. EVANS delivered a lecture on the diseased heart in pregnancy which was followed by a splendid discussion in which the majority of those present including Dr I. ATTERSON, lady medical officer of the Public Health Department, took part.

SURREY BRANCH CROYDON DIVISION
A GENERAL meeting of the Croydon Division was held at the Croydon General Hospital on October 27th when Dr J. H. THOMPSON was in the chair. The honorary secretary was instructed to write to Dr Walter Gupper (Wallington) a former chairman of the Division expressing the regret of the members that he was leaving the neighbourhood and wishing him God speed. The Vice Chairman Dr J. G. SWAYNE invested the Chairman Dr J. H. Thompson with the chairman's badge and the Honorary Secretaries Dr C. G. C. Scudamore and Dr P. W. Hamond, received the secretaries' badges from the Chairman.

Dr H. BATTY SHAW F.R.C.P. gave an address on the early treatment by artificial pneumothorax of pulmonary suppuration which was listened to with very great attention and a number of members took part in the discussion which followed. At the close Dr Batty Shaw was heartily thanked for his address.

National Insurance

THE ROYAL COMMISSION

THE forty third meeting of the Royal Commission on National Health Insurance was held at the Home Office, Whitehall, on October 29th, with Sir Arthur Wiles, and later Lord Lawrence of Kingsgate, in the chair.

Evidence was given by Mr A. B. MacLachlan and Mr H. W. S. Francis, Assistant Secretaries, Ministry of Health, as to the public provision of health services outside the insurance scheme and the relations of these to the medical benefit arrangements. Thereafter further evidence on the general provisions of the insurance scheme was given by Sir Walter Kinnear, Mr L. G. Brook, and Dr Smith Whitaker of the Ministry of Health, and by Sir James Lushman and Mr G. Wight of the Scottish Board of Health.

Volume III of the Minutes of Evidence (twenty fourth to thirty fourth days) and Part III of the Statements of Evidence (Appendices XL to LXXXI) are now on sale in final form and may be purchased from H.M. Stationery Office, Admiralty House, Kingsway, W.C.2, or through any bookseller at the following prices: Vol. III of Minutes 10s. net per page extra. Part III of Statements, 10s. 6d. net postage extra.

CONFERENCE OF REPRESENTATIVES OF LOCAL MEDICAL AND PANEL COMMITTEES

IN the report of the proceedings of the Conference of Representatives of Local Medical and Panel Committees a mistake appeared on page 155 in connexion with the discussion on the provision of medical benefit for seamen. It states at the bottom of page 155 and the top of page 156 that Dr Eldred of Essex proposed an amendment to the Insurance Acts Committee's motion which amendment was subsequently dropped. What actually happened was that the motion proposed by Dr Drum on behalf of the Insurance Acts Committee was carried, and that, subsequently, a separate motion was proposed by Dr Eldred, which was also carried.

LOCAL MEDICAL AND PANEL COMMITTEES BERKSHIRE

PRINTED copies of the annual report of the Berkshire Local Medical and Panel Committee for the year 1924-25 have recently been issued to the practitioners on the panel for that county. The report is signed by the chairman, Dr P. Napier Jones of Crowthorne. It contains a series of paragraphs headed "Panel doctors and public service—an opportunity, from which we quote the following passages:

The Panel Committee of Berkshire has been in existence for fourteen years and has reached a stage when its statutory duties have become familiar, and thanks to the standard of work done by you take up less time than formerly. We therefore feel that we ought to turn our attention to matters outside these duties and endeavour to use our established position to enhance the reputation and standing of the panel doctor.

The Panel Committee is the recognized channel through which the Minister of Health approaches doctors on questions affecting public health. Precisely the same avenue is open to the country urban and rural councils, boards of guardians, philanthropic bodies and the public generally. We desire to prove that instead of exploiting doctors as rival individuals they are able to obtain the force of the united medical opinion and assistance through this Committee provided their objects and methods are sound.

"There is a subject which is very much in the minds of leading social workers at the present time—namely the care of mentally deficient and feeble minded persons whether certifiable under the Act or not. As our business is confined to deciding whether a particular person is certifiable and whether a particular child is able to benefit by attendance at a primary school this subject does not affect us greatly. For that very reason it lends itself rather well as a means of showing how general practitioners can give a useful lead in social and scientific reform without any question of material gain."

The Committee has accordingly arranged a meeting for Tuesday, November 10th at 3 p.m., at 75, London Road, Reading when Dr Henry Devine, O.B.E., F.R.C.P., medical superintendent of the Portsmouth Corporation Mental Hospital, will deliver an address on the care of mental defectives. All medical practitioners on the Berkshire panel are invited to attend and invitations are being sent to influential people interested in the subject. Dr Devine was President of the Section of Neurology and Psychiatry at the Annual Meeting of the British Medical Association held at Portsmouth in 1923.

LONDON PANEL COMMITTEE

At the meeting of the London Panel Committee on October 20th with Dr H J CARDLE in the chair Drs Cardle and Harry Roberts were appointed representatives of the Committee on the Medical Service Subcommittee for the ensuing year and Drs J H Triquet, A T Swan and R G Chase were appointed deputies to serve in the absence of the representatives. At a subsequent meeting of the Local Medical Committee Dr T M Ness was reappointed to represent that body on the subcommittee.

Evidence before Royal Commission—The Committee resolved to inform the Royal Commission that the medical members of the London Insurance Committee had never at any time consented to the proposals contained in the evidence submitted to the Commission by Mr Lesser the vice chairman of the Insurance Committee (see SUPPLEMENT, August 29th, p 101, and October 31st p 158). Mr Lesser was reported to have informed the Royal Commission that the medical members of the Insurance Committee had agreed to the evidence which he submitted.

Transfer of Practices. Clearance of Lists—A communication was received from the Insurance Committee stating that it was desirable that the lists of all practitioners withdrawing from the medical list should be cleared and that their successors should be credited under Clause 1 (2) of the Distribution Scheme only in respect of those persons whose title to benefit was established. This was contrary to the view which the Panel Committee had always held that the successor to a practice should receive credits equivalent to the total number on the list of his predecessor. It was agreed to request the Ministry to receive a deputation on the question of the clearance of lists of practitioners succeeding to practices, and matters relevant thereto.

Duplicate Copies of Prescriptions—A letter was read from the London Pharmaceutical Committee calling attention to the fact that in certain cases insured persons had obtained medicine from chemists by means of duplicate copies of prescriptions. Such copies had been given to the insured persons for the purpose of presentation at the next consultation. A resolution was proposed expressing agreement with the opinion of the London Pharmaceutical Committee that the difficulty would have been obviated had the former duplicate or triplicate prescription books been still in use. So much diversity of opinion was expressed, however, with regard to the utility of duplicate or triplicate prescriptions that the whole matter was referred back to a subcommittee for further consideration.

Ethical Questions—Four cases were reported in which the recently appointed Ethical Subcommittee had been of service in warning practitioners with regard to relatively minor irregularities and approval was given to the action by the subcommittee in each instance.

Distribution Scheme and Emergency Treatment—The Committee resolved to ask the Ministry of Health to receive a deputation to discuss the subject of granting discretionary powers to the Committee in considering claims for payment for emergency treatment submitted by practitioners after the period allowed under the provisions of the Distribution Scheme. This period which was until recently forty eight hours has been extended to seven days but on again approaching the Insurance Committee for discretionary powers the Panel Committee was told that in cases of doubt where a practitioner had applied to the Insurance Committee for advice before sending in a claim, and such claim was not submitted within seven days the application to the Committee might be regarded as the date of the receipt of claim. The Panel Committee was not able to accept this interpretation of the Distribution Scheme.

Onychogryphosis—Among the claims for payment for the services of a second practitioner in administering an anaesthetic considered by the Committee was one in which the nature of the case was given as onychogryphosis. In reply to a member, the Secretary said that he understood this to be a case of in growing toe nail.

Correspondence.

The Cheshire Motion at the Panel Conference

SIR,—May I correct two small but important errors in the report of my speech (SUPPLEMENT October 31st, p 152)?

I did not contend that it was inconceivable that Parliament contemplated the assumption by any men of the extraordinary powers assigned to the Commissioners, but the assumption of such powers by any single man.

Again, I did not claim that It was inconceivable that any body would argue before Parliament, etc., but that, had there been no additional Exchequer grant it was inconceivable that anybody then would have argued etc. In fact, no power to fine was granted by the Act itself, and all possible excuse for the survival of the present iniquity has been long removed. The arbitration award of 1920 and departmental inquiry of 1921 fixed the salaries of doctors and society officers respectively, after adequate experience of their work and with no reference whatever to the Exchequer grant which has in fact, ceased to exist. As a matter of the most elementary justice the two parties should now be treated alike, and I do not foresee the societies submitting to the penalizing of their officers without right of appeal on the merits of the case, as well as on the amount of the penalty.—I am, etc.,

Chichester, Oct. 31st.

G C GARRATT

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

SURGEON COMMANDER C R RICKARD is placed on the retired list with the rank of Surgeon Captain.

Surgeon Commanders J P Shorten D.S.C. to the Princess Margaret H R B Hull and A I Sheldon to the President additional for three months post graduate course.

Surgeon Lieutenant Commanders W F Beattie to the Dragon C E Grierson to the Excellent A S Moore to the Egmont for R.N. Hospital Malta on relief.

Surgeon Lieutenants R W Muir to the Dido T G B Crawford to the Daffodil on commissioning.

ROYAL NAVAL VOLUNTEER RESERVE

Probationary Surgeon Sublieutenant E I Pudda to be Surgeon Sublieutenant with seniority of September 17th 1924.

Messrs P B H Watt and R Erskine Gray have entered as probationary Surgeon Lieutenants and attached to the London Division.

ROYAL ARMY MEDICAL CORPS

Captain J G Gill D.S.O. O.B.E. M.C., relinquishes the temporary rank of Major on ceasing to be employed as Deputy Assistant Director of Hygiene and Pathology Northern Ireland District.

A K J Finch to be temporary Lieutenant.

ROYAL AIR FORCE MEDICAL SERVICE

Flying Officer L C Palmer Jones to No 24 Squadron Kenley.

INDIAN MEDICAL SERVICE

Lieut Colonel W W Jendwae C.M.G. Civil Surgeon Simla West granted leave for eight months from September 1st 1925.

Lieut Colonel H Halliday appointed temporarily to officiate as Civil Surgeon Simla West up to December 31st 1925.

Lieut Colonel Corrie Hud on C.I.E. D.S.O. to be Colonel vice Colonel Frederic Linton Blenkinsop.

The services of Captain P Verdon and Major F J Anderson M.C. are placed permanently at the disposal of the Government of Madras. The services of Captain A M Ghosh are placed temporarily at the disposal of the Government of Bihar and Orissa.

The following officers have retired: Lieut Colonels L Hirsch C.I.E. (on account of ill health) J C G Kunhardt H A F Knappton.

REGULAR ARMY RESERVE OF OFFICERS

SUPPLEMENTARY RESERVE OF OFFICERS ROYAL ARMY MEDICAL CORPS

Captain A R Balmann late R.A.M.C. Special Reserve to be Lieutenant.

Captain R J S McDowall late R.A.M.C., T.A. to be Captain.

VACANCIES

BATH ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer of £170 per annum.
Assistant Medical Officer for service in
for Infectious Diseases salary £400

Assistant Physician

House Surgeon for district Salary at

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—Junior House Surgeon (non resident) Salary at the rate of £200 per annum.

BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN.—House Surgeon Salary at the rate of £75 per annum.

BRIGHTON ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House Surgeon (male) Salary at the rate of £100 per annum.

CARETOWN SOMERSET HOSPITAL.—Resident Medical Superintendent Salary £800 per annum.

CHELTENHAM GENERAL AND EYE HOSPITALS.—House Physician (male unmarried) at the General Hospital Salary £200 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE ROYAL HOSPITAL.—(1) Resident Surgical Officer (2) Fifth House Surgeon Salary £350 and £100 per annum respectively.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEAR AND LUNG Victoria Park E 2.—House Physician (male) Salary at the rate of £100 per annum.

EAST HAM EDUCATION COMMITTEE.—Aural Surgeon Remuneration £3 3s per session.

ELIZABETH GURRETT ANDERSON HOSPITAL Euston Road N.W.—(1) House Physician (2) Obstetric Assistant (3) Two House Surgeons (4) Clinical Assistants in the Out patient Department Salary for (1) (2) and (3) at the rate of £50 per annum.

HEXINGTON FULHAM AND CHELSEA GENERAL HOSPITAL S.W.—Resident Medical Officer (male) Salary £75 per annum.

LANCASTER BOROUGH.—Assistant Medical Officer of Health and Assistant School Medical Officer Salary £500 per annum rising to £600.

LEICESTER URBAN DISTRICT COUNCIL.—Deputy Medical Officer of Health and Deputy School Medical Officer Salary £600 to £700 per annum increasing by annual increments of £25.

LONDON HOSPITAL E 1.—(1) Assistant Physician to the Skin Department (2) Honorary Dental Surgeon.

LONDON JUVENILE HOSPITAL Stepney Green E 1.—Junior Resident Medical Officer Salary at the rate of £100 per annum.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer at the Barnes Convalescent Hospital Cheshire Remuneration at the rate of £250 per annum.

MANCHESTER NORTH ORMLEY HOSPITAL.—House Surgeon (male) Salary £125 per annum.

NOADWICH CITY COUNCIL.—Medical Officer of Health Salary £100 per annum.

OXFORD RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—(1) House Physician (2) House Surgeon (3) Casualty House Surgeon (4) Obstetric House Physician Males Salary at the rate of £120 per annum each.

PRESTON COUNTY BOROUGH.—Assistant Medical Officer (woman) for Maternity and Child Welfare Salary £500 per annum.

PRINCE OF WALES GENERAL HOSPITAL Tottenham N 15.—Honorary Anaesthetist Honorarium £25 per annum.

RHOADDA URBAN DISTRICT COUNCIL.—Assistant Medical Officer Salary £600 per annum.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Military Lecturer for 1927.

ROYAL FREE HOSPITAL Great Portland Street W.C. 1.—(1) Obstetric House Surgeon (2) Gynaecological House Surgeon.

ROYAL NORTHAMPTON HOSPITAL Holloway N.—(1) House Surgeon (2) Two Casualty Officers. Salary for (1) £70 per annum and for (2) £60 per annum.

ST. HELENS COUNTY BOROUGH—Assistant Medical Officer of Health (male)
Salary £600 per annum
SOUTHAMPTON EDUCATION COMMITTEE—Assistant School Medical Officer Salary
£600
SOUTHAMPTON—District Medical Officer Salary at the rate of £250
per annum
STAFFORDSHIRE GENERAL INFIRMARY, STAFFORD—House Physician (male)
Salary at the rate of £150 per annum
ST. JOHN'S GOVERNMENT MEDICAL DEPARTMENT—Three Medical Officers (un-
married) Salary £1,720 a year rising to £1,800
UNIVERSITY OF LONDON—Associate Examiners for M.B. Examination
in Medicine Obstetric Medicine Pathology Surgery

CERTIFYING FACTORY SURGEON—The appointment of Certifying Factory
Surgeon for Renfrew (co. Renfrew) is vacant. Applications to the
Chief Inspector of Factories Home Office S.W.1

This list of vacancies is compiled from our advertisement columns,
where full particulars will be found. To ensure notice in this
column advertisements must be received not later than the first
post on Tuesday morning.

APPOINTMENTS

BYRNE Austin W. M.B. BCh. DPH. (Captain R.A.M.C. (ret.)) Expert
Adviser in Public Health and Tropical Medicine to the Government of
Egypt at Cairo (corrected notice)
COBB T. H. M.B. B.S. FRCS. Surgeon to the Children's Hospital,
Sheffield
CERTIFYING FACTORY SURGEONS—R. McConnell F.R.C.P. and S. Edin-
burgh F.R.C.P. for the Wylam District co. Northumberland A.D.
Symons M.D., DPH., for the Shrewsbury District co. Salop

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE
War Section Mon. 5 p.m. Wing Commander E. C. Clements R.A.F.
Visual Problems and their Relation to Flying and Industrial Fatigue
from the Service Standpoint
Section of Therapeutics and Pharmacology Tues. 5 p.m. Discussion
The Influence of the Ovary on Parturition Mr. F. M. A. Marshall,
Dr. Langdon Brown and Mr. Wilfred Shaw. Members of the Section
of Obstetrics and Gynaecology are particularly invited to attend
Section of Psychiatry Tues. 8.30 p.m. Residential Address by Dr. R. H.
Cole. The Progress of Psychiatry
Section of Surgery—Subsection of Proctology Wed. 5.30 p.m. Presiden-
tial Address by Mr. G. Grey Turner. The Relationship of Proctology to
Greater Medicine. A discussion will follow. There will be a Demonstration
of Pathological Specimens
Section of Tropical Diseases and Parasitology Thurs. 5.30 p.m. Presi-
dential Address by Sir W. T. P. T. Medical Conditions in Tropical
Countries. Dr. A. Castellani. Typhoid and Paratyphoid like Fevers
caused by Organisms which differ from *B. typhosus* and *B. paratyphosus*
A. B. and C. Specimens. Members of the Section of Medicine are
invited to attend
Section of Neurology Thurs. 8.30 p.m. Dr. Wilfred Harris and Dr.
W. D. Newcomb. On a Case of Glioma of the Pons with Special Refer-
ence to its Bearings on the Physiology of the Fifth Cranial Nerve
Clinical Section Fri. 5 p.m. Cases and Specimens
Sections of Ophthalmology and Surgery Fri. 8 p.m. Cases 8.30 p.m.,
Joint Discussion. Plastic Operations on the Face in the Region of the
Eye. The following will take part: Messrs. H. S. Souttar, G. H. Pooley,
Kilner, Percival Cole, Ormond Shaw, Edmunds and M. W. B. Oliver

BIOCHEMICAL SOCIETY, King's College W.C.2.—Mon. 5 p.m. Communica-
tions.—J. A. Hewitt and H. C. and Constitution
of Glycine Aldehyde C. C. Formation in
Plain Muscle Elizabeth S. Starch in the
Guard Cells of the Stomata J. W. Jordan J. W.
McLeod and B. Wheatley between the
Amino acids which favour a Cerial Growth
J. R. Marzack and G. P. Thacker Influence of Ionic Strength on the
Equilibrium of Calcium Ion in Bicarbonate Solutions
HISTORICAL SOCIETY OF LONDON, Paddington Town Hall, Paddington Green
W.2.—Thurs. 8.30 p.m. Dr. J. D. Rolleston. The Differential Diagnosis
of Scarlet Fever and Diphtheria and the Modern Methods of Treatment
and Prophylaxis to be followed by a discussion
HISTORICAL SOCIETY, Cutlers Hall, Warwick Lane E.C.—Mon. 8.45 p.m.
Discussion. The Relation of Spiritual Healing to Modern Medicine
MEDICAL SOCIETY OF LONDON, 11 Chandos Street W.1.—Mon. 8.30 p.m.
Discussion. Obscure Pueria in Childhood to be introduced by Dr.
Robert Hutchison, followed by Dr. Wilfred Pearson Professor F. S.
Langmead and others
ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East S.W.1.—Tues-
day and Thurs. 5 p.m. Fitzpatrick Lectures by Dr. Arthur Shadwell
Medicine in Ancient Egypt, Assyria and Palestine
ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields W.C.—
Wed. 5 p.m. Bradshaw Lecture by Mr. James Sherrin Gasfio
pyelostomy
UNIVERSITY OF LONDON, University College Hospital Medical School.—
Thurs. 4.15 p.m. Dr. Charles Singer. The History of Influenza
WELSH MEDICAL CHURCH SOCIETY, Miller Hospital, Greenwich Road
S.E.10.—Fri. 8.45 p.m. Address by Dr. W. Gilliat. Colic in

POST GRADUATE COURSES AND LECTURES

ELLOWSHIP OF MEDICINE
1. Wimpole Street W.1
Society of Tuberculosis
Diagnosis of Tuberculosis
both S.E. Tues. 11 a.m.
Mental Diseases Sat. 11
Women Arthur Street S.
Lectures and Demonstrations daily. Pathology and Operation London
Lock Hospital, Dean Street. Comprehensive Course in Instruction in
Outpatient Department and Lectures. City of London Hospital for
Diseases of the Heart and Lungs, Victoria Park E. Post Graduate
Course in Diseases of the Heart and Lungs. Lectures Clinical and
Laboratory Demonstration. St. John's Hospital, Leicester Square
W.C. Daily Demonstrations in the Outpatient Department. Dis-
eases of the Heart and Lungs. Tues. 5 p.m. Diseases due to Animal Parasites
Thurs. 5 p.m. Urticaria
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square W.C.1
Mon. Thurs. and Fri. 2 p.m. Outpatient Clinics. Tues. and
Fri. 10 a.m. Methods of Examination of the Nervous System. Mon.
and 12 noon Reflex Action as a Whole. 3.0 p.m. Tremor and Inco-
ordination. Tues. 3.0 p.m. Peripheral Neuritis. Thurs. 12 noon

Subacute Inflammation 3.30 p.m. Hemiplegia Fri. 3.30 p.m. Electro-
therapy in Lesions of Peripheral Nerve Operations Tues. and Fri.
9 a.m.
NORTH LONDON POLYTECHNIC COLLEGE, Prince of Wales General
Hospital, Tottenham N.15.—Thurs. 3 p.m., Demonstration. Blood
Pressure Investigations 4.30 p.m. Lecture. A Plea for the Mutilating
Operations in Carcinoma. Daily. Inpatient and Outpatient Clinics in
General and Special Departments. Operations etc.
OPEN CHAIRS OF MEDICINE, Marlborough Road W.1.—Thurs.
5 p.m. Middlesex Midwifery
ROYAL INSTITUTE OF LEPIDIC HEALTH, 37 Russell Square W.C.1.—Wed.
4 p.m. Prevention of Cancer and Allied Neoplasia

British Medical Association

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQUARE W.C.1

Departments

SUBSCRIPTIONS AND ADVERTISEMENTS: Administrative Secretary and Business
Manager. Telegrams Articulate Western London
MEDICAL SECRETARY (Telegrams Medicaria Western London)
EDITOR: British Medical Journal (Telegrams Articulate Western
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four lines)

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grams Articulate Western London) 461 Central
IRISH MEDICAL SECRETARY: 47 St. Patrick Street Dublin (Tele-
grams Articulate Western London) 4731 Dublin

Diary of the Association

6 Fri London Dominions Executive Subcommittee 2.30 p.m.
Dundee Branch University College Dundee 8.30 p.m.
Exeter Division Annual Meeting Royal Devon and Exeter
Hospital Dr. R. A. Roper on the Modern Treatment of
Diabetes 4.30 p.m.
Stockton Division Stockton and Thornaby Hospital Dr. W. E.
Hume on Some Observations on Bright's Disease 8.30 p.m.
8 Sun South Staffordshire Division Shropshire Orthopaedic Hospital
Gobowen 2.30 p.m.
10 Tues London Special Committee on Puerperal Morbidity and
Mortality 2.30 p.m.
Reigate Division East Surrey Hospital Address by Mr. R. P.
Rowlands on the Acute Abdomen 8.45 p.m.
St. Pancras Division British Medical Association House,
Tavistock Square W.C.1. Dr. R. A. Young on the Early
Recognition of Pulmonary Tuberculosis 9 p.m.
11 Wed Chichester and Worthing Division Worthing Dr. H. Latham
on Human Nature through a Doctor's Eyes 7 p.m.
Folkestone and Isle of Wight Divisions Southsea Deputy
Medical Secretary on the British Medical Association's
Hospital Policy 3 p.m.
Rochdale Division Chappin Hall, Drake Street Dr. Langley
on Recent Advances in Cardiology 8.30 p.m.
12 Thurs London Medical Students and Newly Qualified Subcommittee
2 p.m.
London Rural Practitioners Subcommittee 2 p.m.
London Regulations and Standing Orders Subcommittee
3 p.m.
London Ophthalmic Committee 5 p.m.
Gloucestershire Branch Royal Infirmary Gloucester 6.15 p.m.
Leicestershire and Cheshire Branch Scientific Meeting Bolton
Infirmary Bolton 3.30 p.m.
Mid Cheshire Division Altrincham General Hospital B.M.A.
Lecture by Professor E. Mellanby on Diet and Disease 8.30 p.m.
Sunderland Division Annual Address by Dr. H. Crichon
Miller Annual Dinner Palladium Hotel Sunderland 7.30 p.m.
Walsfield Pontefract and Catfild Division Bull Restaurant
Walsfield Walsfield Lecture by Dr. J. S. Bolton on
Diagnosis and Certification of Mental Diseases Supper 7.45
Lecture 8.30 p.m.
13 Fri London Science Committee 2.30 p.m.
City Division Clinical Meeting Metropolitan Hospital 4.15 p.m.
Chichester Division Chichester Discussion on Small pox
to be opened by Dr. Carrow 8.15 p.m.
Hild Division Supper Dance Hyde Town Hall 8.30 p.m.
15 Sun Walsden Division Annual Dinner Criterion Restaurant
7 p.m.

GLASGOW POST GRADUATE MEDICAL ASSOCIATION—At Royal Hospital for Sick
Children Wed. 4.15 p.m. Surgical Cases At Glasgow Exc. Infirmary
Tues. and Fri. 2 p.m. External Diseases of the Eye

JUNES
4 p.m. Research St. Andrews—Tue
MICHIE
Treatment of Common
MICHIE
Shoulder tip Pain Fri
4.15 p.m. The Sympathetic Nervous System

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and
Deaths is 9s. which must be forwarded with the notice
not later than the first post on Tuesday morning in order to
ensure insertion in the current issue.

BIRTH

PARKIN ON—On October 20th at 1 Devonshire Place W.1 the wife of
John Parkin on M.D. of a daughter.

MARRIAGE

BROWN—On September 2nd at Edgbaston Parish Church by
the Rev. Canon Stuart Bishop Samuel Joel Brown M.C. M.B. Ch.B.
M.R.C.S. youngest son of the late Thomas Brown and Mrs. Brown of
Abington Salop to Barbara Joan Edwards M.B. B.S. M.R.C.S.
second daughter of Mr. and Mrs. W. J. Edwards of lateley Road
Edgbaston

DEATHS

MAUDE—On October 27th after a motor accident Alexander Maude aged
27 years 1 Lythe House Worsfold, Cheshire
SMITH—On October 31st Sidney Joseph Smith M.D. M.R.C.S. F.R.C.P.
of Fairlop Mount 113 Fairlop Road Leytonstone aged 56 years

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, NOVEMBER 14th, 1925

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British Medical Association.

CURRENT NOTES

Association Propaganda

MANY interesting points as to the progress of the British Medical Association were under consideration by the Propaganda Subcommittee at its meeting on October 28th, during its review of the propaganda work of the Association, local and central. The membership of the Association is now over 30,400. No fewer than 3,203 new members joined in the year from October 1st, 1924, to September 30th, 1925. Of this number, about 2,000 were newly qualified members of the profession, a remarkably high record, brought about mainly as a result of the meetings of welcome to the newly qualified given by those Divisions and Branches whose areas contain medical schools. The Subcommittee was especially gratified with the following figures shown by the Glasgow and West of Scotland Branch and the Newcastle-on-Tyne Division:

Qualification	No registered	No joined B M A
Glasgow M B	279	267
Durham M B	45	44

A wide field still remains for propaganda, especially among the newly qualified. The Council hopes that all the Divisions and Branches concerned will follow the example set by the Newcastle-on-Tyne Division and the Glasgow and West of Scotland Branch. Many interesting programmes of meetings arranged by Divisions in all parts of the country were reported to the Subcommittee, and it was thus not surprising to find that, in the analysis of methods of introduction of new members, the item "Recruited by Home Divisions and Branches" headed the list with a total of 655 new members. There is, however, still a small number—a steadily diminishing one—of Divisions which are unorganized or inactive, and these are being communicated with.

Garage Accommodation at Headquarters

Garage facilities are now available for members in the garage at the rear of the North Wing of the Association's new House in Tavistock Square. Members may garage their cars during the day free of charge, and during the night at a charge of 2s a night. There are also two lock-up garages available, the charges for which are 5s a night, 25s a week, or £40 a year; these may be let for a period of not longer than one year on a three months' notice, or for shorter periods. All applications for garage accommodation should be made to the Financial Secretary and Business Manager. The garage will be accessible only during office hours, except by arrangement with the caretaker. It must be clearly understood that the Association can take no responsibility for cars garaged on the premises.

New South Wales Medical Roll of Honour

The New South Wales Branch of the British Medical Association has published in pamphlet form a list of the members of the medical profession of New South Wales who served overseas during the war, together with a list of the orders and decorations awarded, and the roll of honour. A view of the memorial tablet in the hall of the British Medical Association Building, Sydney, is included. We reproduced a photograph of this tablet in the JOURNAL of October 27th, 1925 (p. 778).

Border Counties Branch Banner

At a well attended meeting of the Border Counties Branch of the British Medical Association held at Tullie House, Carlisle, on October 23rd, the presentation banner which the Branch is providing to be hung in the Great Hall of the Association's new headquarters building in London, to commemorate the Annual Meeting of the Association held in Carlisle (1896), was handed over to the care of the Mayor of Carlisle, for exhibition in Tullie House for a short period before its dispatch to London. Mr. Norman MacLaren, president of the Branch, who took the chair, said that the Border Counties Branch was one of the first to fall in with the suggestion that banners bearing the arms of the cities and towns wherein the Annual Meeting of the Association had taken place should be hung in the Great Hall. He then recalled his memories of the Association's meeting in Carlisle in 1896. Dr. Helm, honorary secretary of the local committee of the Carlisle meeting, and Dr. Graham, secretary of the Local Inter-Parliamentary Committee in 1896, also gave some reminiscences of that occasion. The Mayor gracefully accepted custody of the flag for exhibition at Tullie House for a fortnight.

Northamptonshire County Council Medical Officer of Health

In the autumn of 1924 the Northamptonshire County Council tendered to the BRITISH MEDICAL JOURNAL an advertisement for a medical officer of health and school medical officer for the administrative county of Northampton. The salary was to be at the rate of £1,050 per annum. According to the new salaries scale the commencing salary should have been somewhere within a range of £1,100 to £1,200. The advertisement was refused, and at the instance of the Ministry of Health a conference was held between representatives of the county council and the British Medical Association, together with representatives of the Society of Medical Officers of Health, with a view to arriving at a satisfactory salary. No definite conclusion was come to, and the appointment remained in abeyance. In May last a further conference was held, and an agreement was reached that the commencing salary should be £1,100, and that the advertisement should include the information that it is the practice of the county council to review salaries periodically and to award suitable increments of salary for proved ability and satisfactory service.

This arrangement has been approved by the Northamptonshire County Council, and an advertisement in conformity with it appears in this week's JOURNAL. It will be seen that in this case the principle of collective bargaining has been successful, agreement has been reached, and there is, consequently, no reason why members of the profession should not apply for the post.

CERTIFICATION IN MENTAL CASES

ADDRESS TO THE OXFORD DIVISION BY
DR T S GOOD

At a recent meeting of the Oxford Division of the British Medical Association a paper on the subject of certification was read by Dr T S Good, OBE, medical superintendent of the City and County Mental Hospital, Littlemore, Oxford. Dr Good, after pointing out that certification was a legal device to protect the liberty of the individual and the public interest and safety, spoke first of the Mental Deficiency Act, which, he said, represented a closer accord of law with medicine than did the Lunacy Acts.

Grades of Mental Defectives

Under the Mental Deficiency Act persons of feeble intellect were defined as those whose mental defectiveness can be shown to have existed from birth or from an early age, and they were divided into four classes: (1) idiots, incapable of guarding themselves from common physical dangers, (2) imbeciles, having a mental defect not amounting to idiocy, but so pronounced as to render them incapable of managing themselves or their affairs, (3) feeble-minded persons who, while not imbecile, required care, supervision, and control, (4) moral imbeciles, persons who from an early age displayed some permanent mental defect coupled with strong vicious or criminal propensities on which punishment had little or no deterrent effect.

The first point to which the attention of the medical man should be directed in these cases was whether the mental defect was present from birth or from an early age. Persons whose mental defect arose from or followed brain lesions, the result of toxins or senile changes, should not be classed as mentally deficient. These were degenerative anomalies, they had been normal but had regressed. In the mentally deficient there was a minus degree of certain mental faculties or qualities from the earliest age. Frequently cases of mental enfeeblement, with marked moral deterioration, which had appeared first after some acute illness, were brought to the medical man for his opinion. In all probability these cases represented the after-effects of encephalitis. The impairment of the intelligence in the case of these young persons was usually slight, except in memory and concentration, it was on the moral side that the weakness was manifest. The parents often could not understand that there was any grave mental deterioration, because the child though naughty and undisciplined, was sharp and precocious. The truth was that these were cases of arrested mental development at such an age that the further development of abstract ideas (involving adjustment to the social and ethical needs of civilized society) was impossible, probably owing to changes in the higher cells of the cortex.

The Problem of the Moral Imbecile

Such cases, as the law stood at present, were not often certifiable under either the Lunacy or the Mental Deficiency Acts, but Dr Good believed that they formed a large group in the fourth class of persons—namely, moral imbeciles—just mentioned. It was this fourth class which presented the principal difficulty to medical men. The idiot, the imbecile, and the feeble-minded person were usually discovered by the point-scale or the Binet-Simon test, but the morally intractable were a problem that had yet to be solved, and meanwhile they were a danger to the community because of their social and ethical delinquencies.

Dr Good thought that moral imbeciles might be divided into three groups: (1) those in whom, on examination with the point-scale test, the concrete thought processes appeared intact, but abstract ideation was very defective, (2) those who showed the moral deterioration he had just described as following from acute illness (and here he emphasized the need, as in all mental cases, for careful examination of the physical condition), (3) those whose moral imbecility might be mainly due to grave errors in early education, the term "education" including the behaviour of parents and others in respect to them, for moral irregularities in children were often traceable to

emotional repressions in early childhood caused by the actions and speech of older persons.

As an example of the first of these groups, he described the case of a woman, aged 37, who, by the point-scale or Binet and Simon test was 11 years of age. But it was only when her comprehension, her sense of absurdity, and her power of definition of abstract terms was tested that it was found that apparently she had no capacity for abstract thought. Her record was one of continual social lapse. Until the war she went through life as an apparently normal person simply because her environment was such that there was, nothing to make her immoral. During the war, when her husband was at the front, she had two illegitimate children and became addicted to alcohol. On a casual examination she did not appear feeble-minded, only when she was examined carefully was the paucity of abstract thought detected.

The Law as regards the Lunatic

The law as regards the mentally defective, Dr Good continued, was more in accord with medicine than the law as regards the lunatic. The legal definitions of the feeble-minded person were capable of scientific support. The various degrees of feeble-mindedness involving nerve cell paucity could be detected by psychological tests for measuring or examining the intellect. Only in the case of moral deficiency was there any difficulty, and even here the Mental Deficiency Act was an improvement on the Lunacy Acts. The medical man was at all events given a definition of mental defect, he had the means of verifying and diagnosing a mental defective by the point-scale or Binet-Simon examination, he was protected by being able to call in a medical opinion approved by the law, and he had the right to appeal to the local authority to act in a case where he considered it necessary. Moreover, the same law was applied to rich and poor—that is, to private and pauper patients—alike.

Under the Lunacy Act of 1890, on the contrary, no definition was afforded. There was no mathematical method of examination in the case of the lunatic one had to pay regard principally to emotional abnormalities. Feeble-mindedness was a failure of conscious mental processes, whereas the psychoses were mainly a failure of conscious control of unconscious or automatic mental processes. Again there was no provision in the Act for a recognized medical authority backed and upheld by the law, and even the magistrate who signed the order was not bound to see the case. The medical man could not appeal to the local authority, he could only notify the police or advise the friends. Finally, the procedure of certification was not the same in the case of the rich as in the case of the poor.

The Mental Deficiency Act, therefore, with its definitions and safeguards, was a more advanced act scientifically than the Lunacy Act of twenty-three years earlier. It was important to keep in mind that the two forms of mental disorder—feeble-mindedness and lunacy or psychoses—were separate entities. Feeble-mindedness was a congenital condition, a psychosis an acquired condition. The feeble-minded might develop a psychosis, but legally the lunatic could not be feeble-minded.

Certification in Lunacy

The Lunacy Acts threw upon the medical man the responsibility of deciding in the eyes of the law something which the law itself did not define. To judge from recent legal proceedings, not only did the law fail to define the condition, but it might punish members of the medical profession when they attempted to protect the patient and the public by treating the patient in the only way in which the law allowed a medical man to treat a lunatic—namely, by certifying him and placing him in a mental hospital or licensed house.

After describing the legal procedure and hearings of certification, Dr Good addressed himself to the matters to be carefully considered before signing a certificate. In the first place, the certificate must be made on facts observed by the medical man himself—facts that he would be prepared to swear to, and to undergo cross-examination upon, in a court of law. A certificate was not valid so long as it contained only particulars communicated by others. It was a good rule for the medical man to arrive at the facts from his own observation of the patient before he heard what others had to say. The supposed 'facts' communicated by others sometimes proved to be only figments of the imagination. The relatives often exaggerated a mere emotional outbreak due to some domestic trouble of which they themselves were the cause. In some cases also their anxiety to get the patient out of the way led them to put down as facts what they had only feared or had even invented.

In one case the statement by a relative was that the person under observation had tried to stab him and so forth. The person concerned refused to give any information to the medical man and that fact was set down by the medical man on the certificate accompanied by the relative's statement. The certificate was returned by the Board of Control asking for a fact which clearly indicated insanity. The medical certifier had evidently

been influenced unconsciously by the statement of the relative, who turned out to be a feeble minded person himself also a sufferer from shell shock. The person under observation was quite sane and her refusal to give information was simply due to resentment.

Objective Signs

The facts which could be safely used to certify a patient were such as indicated him to be a danger to himself or to others by his conduct, and they might be divided into objective and subjective signs. The objective signs included great alterations in the conduct of the patient as observed by the medical man. Sometimes a medical man was called to a case in which the patient had alarmed his friends by suddenly becoming restless and talking absolute rubbish. In such cases the medical man should suspect aphasic lesions or encephalitis and a physical examination, with an assurance to the patient that he was ill, and that his inability to talk successfully was due to his illness would often quieten him and allay the fears of his friends. A physical examination of the supposed lunatic was imperative. A sudden onset or rapid exacerbation of symptoms within a few days was almost invariably due to toxic causes and was of the nature of a delirium. When combined with emotional disturbance there was great motor restlessness, loss of power of orientation to time and place, a history of influenza typhoid pneumonia or other acute illness, or the puerperium, certification should be delayed for as long as possible, as these cases often recovered under treatment.

Suicide was the danger to the patient which probably in cases of depression had most influence in leading to the signing of the certificate. Personally the speaker believed that the statement that a patient was suicidal was made too often. Suicide was seldom prevented by certification. The suicidal individual committed the act without warning. The threatened or attempted suicide seldom materialized in the successful act. He believed that in the case of many so called suicidal patients the idea of suicide only occurred to them when they believed themselves to be becoming insane, and if the law refused to accept suicidal threats or attempts as signs of insanity suicide would be greatly lessened. Homicidal attacks without apparent reason should undoubtedly be dealt with by certification.

Subjective Symptom

Incoherence—meaning by that term, not rambling conversation, but a true loss of sentence formation—was a symptom of grave import. It was found in cases of toxic poisoning, in uterine sclerosis, in the end period of general paralysis of the insane, and in some cases of dementia praecox. Its presence generally indicated certification and the medical man should endeavour to discover the physical cause. In dementia praecox incoherence was generally accompanied by absurdities in movement and expression.

Rambling speech was often a sign of intense emotional strain but a little patience on the part of the practitioner might dispel the symptom. There were cases, especially senility and toxemia where rambling speech was indicative of grave cerebral degeneration, and here it was a point which could be used in signing a certificate. Refusal to speak might be due to motor inability or to deep mental depression or loss of memory. If used as a fact in signing a certificate, the medical man should be quite sure that it was not due to the patient's annoyance or resentment. Patients with a facial expression of acute misery who refused to speak were generally grave melancholics, and in the certificate the refusal to speak should be coupled with a description of the facial expression.

Delusions and Hallucinations

A delusion was an abstract idea which could not be reasoned away. A hallucination was a false belief connected with one of the special senses. Probably all false mental processes connected with sensation had a physical origin—that is, the organ connected with the sense perception was not functioning properly or its physical nervous mechanism was deranged. Peripheral neuritis might cause the common hallucination of 'feeling electrical currents', the hallucination of poisoning might derive from an alteration in the sense of taste. Frequently associated with carious teeth, and that of internal growths from some failure in the normal rhythm of peristalsis. Delusions or false ideas which could not be shaken were not only subjective facts to be used in a certificate but represented a condition which could seldom be dispelled except by treatment in a mental hospital. They must not be confounded with obsessions, or false ideas which the patient knew to be such, but could not force out of his mind. Obsessions were not indicative of a psychosis and should not be used alone as a statement in a certificate. The delusion of the paranoid, in which the patient generally supposed himself to be persecuted, was one of the gravest of mental disorders—dangerous to the public and difficult to treat. The delusion was of slow

formation, and while the patient imagined various secret plottings against himself he remained otherwise sensible. If this false idea was attached in the mind of the patient to any particular person, that person stood in great danger. Fortunately, these cases were comparatively rare, but it recognized they should be certified.

Dr Good concluded by saying that the study of mental disorders was a branch of medicine which had been and was ill taught. Every medical man derided these cases and with good reason if he had never as a student been made familiar with their commonest symptoms. The first case he had to deal with was a nightmare to the young practitioner, he was afraid of doing something against the patient's interest and against the law. Until medical men insisted on the law recognition, that the treatment of mental symptoms was the treatment of illness, and often curable they would be hampered by the bogey of certification. At the same time if they were to treat and understand the problem of mental illness they must educate first themselves and then the public, and only by such a course would they free themselves from the fear of legal penalty and public blame.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD

BIRMINGHAM BRANCH, NUNEATON AND TAMWORTH DIVISION—A meeting of the Nuneaton and Tamworth Division will be held at the Nuneaton General Hospital on Wednesday, November 18th at 5.30 p.m. when Mr H. Beckwith Whitehouse, M.S. (I.R.C.) will give an address entitled 'Notes from ante natal clinic.'

GLASGOW AND WEST OF SCOTLAND BRANCH—A clinical meeting for members of the Glasgow and West of Scotland Branch will take place in the Royal Hospital for Sick Children, 101 Hill, Glasgow, on November 18th, at 3 p.m. when surgical and medical cases will be demonstrated by members of the hospital staff. The annual dinner of the Branch will be held on the same evening at 6.30 for 7 p.m. in Ferguson and Forrester's Restaurant, 36 Buchanan Street, Glasgow.

LANCASHIRE AND CHESHIRE BRANCH, HYDE DIVISION—The following programme of meetings of the Hyde Division has been arranged for the session 1952-56: Friday, November 13th, 8.30 p.m.—Supper dansant in Hyde Town Hall. Thursday, November 26th, 8.30 p.m.—Scientific address in Hyde Town Hall by Dr C. J. Bond, C.M.G. Vitamins from the medical and public health point of view (illustrated by lantern slides). January 1956—Social function (to be arranged). Thursday, January (exact date to be arranged) at 8.30 p.m.—Medico-legal address by His Honour Judge E. O. Burgess in Dukinfield Town Hall. Friday, February 26th, 8.30 p.m.—Scientific address by Mr John Morley, M.Ch. (I.R.C.S.) in Stralybridge Town Hall. Thursday, March 18th, 8.30 p.m.—Medico-political address by Dr L. J. Pictou, O.B.E. in Hyde Town Hall. Thursday, May 20th, 11 a.m.—Picnic to Bakewell, Chatsworth, and Buxton, meet at Mottram Moor. Thursday, June (exact date to be arranged) at 4 p.m.—Annual meeting in Hyde Town Hall. A hearty invitation is extended for all meetings to the members of neighbouring Divisions.

METROPOLITAN COUNTIES BRANCH, CITY DIVISION—In conjunction with the Aesculapian Society there will be a clinical afternoon at the Metropolitan Hospital, Kingsland Road, to day (Friday, November 13th) at 4.15 p.m. when Mr R. A. Ramsey, F.R.C.S., surgeon to the hospital, will show cases with notes. Tea at 4. Members are invited to show cases at any meeting. A meeting of the Division will be held at the Metropolitan Hospital, Kingsland Road, E., on Tuesday, December 1st at 9.30 p.m. when Mr Comyns Berkeley will speak on the treatment of cataracts. The annual dinner of the Division will take place at the Holborn Restaurant on Thursday, December 3rd at 7.15 for 7.30 p.m.

METROPOLITAN COUNTIES BRANCH, LEWISHAM DIVISION—A meeting of the Lewisham Division will be held on Tuesday, November 17th at 8.45 p.m. at the Parish Room, St. Laurence Vicarage, Bromley Road, Catford, when Dr R. Godwin Chase will occupy the chair. Agenda: Questions arising from the Insurance Acts; address on the relationship between the voluntary hospitals and the general medical practitioner by Dr Herbert I. Eason, C.B., C.M.G., medical superintendent of Guy's Hospital.

METROPOLITAN COUNTIES BRANCH, SOUTH WEST ESSEX DIVISION—A meeting of the South West Essex Division will be held at the Wesleyan Schoolrooms, High Road, Leyton, on Tuesday, December 1st at 3.30 p.m., when Dr M. A. Culpin will read a paper on the handling of nervous patients.

METROPOLITAN COUNTIES BRANCH, WESTMINSTER AND HOLBORN DIVISION—A social evening will be held by the Westminster and Holborn Division on Thursday, November 26th at the British Medical Association House, Pavilions Square, W.C.1. Members and their friends will be received at 8.30 p.m. by the chairman, Dr Redmond Roche. Ladies will be welcomed. At 9 p.m. Prof. G. Elliot Smith, F.R.S., will read a short paper on 'The left handed lady of Lloyd's.' It is hoped that all members will take this opportunity of visiting the new headquarters, the success of the evening depends on a large attendance. Members and their friends from invited music light refreshments, dancing for a number and guest may be had free on morris secretary (Dr P. I. Stuart Webb, Mayfair, W.1) further tickets may be had for 2. 6d each and remittance must accompany application.

Meetings of Branches and Divisions.

METROPOLITAN COUNTIES BRANCH WILLESDEN DIVISION—The clinical meeting arranged for November 19th at the Isolation Hospital has been postponed owing to the death of Dr Stewart. The second annual dinner of the Division will be held at the Criterion Restaurant, Piccadilly, on Sunday, November 15th, when Lieut Colonel Kirkpatrick, I.M.S. (ret.), will preside. Reception at 7 p.m. dinner 7.30. Principal guests: Dr H.B. Brackenbury and Mr G.J. Furness, chairman Willesden General Hospital. Any member of the Association will be welcomed and may bring a friend. Tickets 10s. each (exclusive of wine), may be had from Dr W. Lock, 45 Church Road, N.W. 10.

MIDLAND BRANCH CHESTERFIELD DIVISION—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield, to-day (Friday, November 13th) at 8.15 p.m., when a discussion on small pox will be opened by Dr Garrow. Tea and coffee will be served at 8. A meeting will also be held at the Maternity Hospital on Friday, December 11th at 8.15 p.m., when Dr J.S.C. Douglas, Professor of Pathology, University of Sheffield, will give an address on passive immunity. Tea and coffee at 8.

NORTH OF ENGLAND BRANCH NORTH NORTHUMBERLAND DIVISION—The annual dinner of the North Northumberland Division will be held in the Plough Hotel, Alnwick, on Friday, November 20th at 6.30 for 7 p.m., tickets 10s. 6d. each (exclusive of wine). Members intending to be present are asked to notify the honorary secretary not later than November 16th, and to enclose a remittance for their own and their guests' tickets. Evening dress.

SOUTH WALES AND MONMOUTHSHIRE BRANCH CARDIFF DIVISION—The following Divisional programme for the winter 1925-26, has been arranged—December 2nd—Dinner and dance in Cox's Rooms, Cardiff. The guests will include the Lord Mayor (Alderman W.B. Francis), Sir William Diamond, Dr H.B. Brackenbury, and others. Dr Brackenbury (chairman of the Representative Body of the Association) will give an address at 3.30 p.m. on the same day, in the Engineers' Institute, Park Place, Cardiff, on theory and practice in British Medical Association policy. Further particulars will be circulated. December 16th—Lecture by Dr J. Stanley White (London) on recent advances in endocrine therapy, in the Engineers' Institute, Cardiff illustrated by lantern slides. January 20th 1926—Clinical meeting in the Medical Unit Lecture Room, Cardiff Royal Infirmary, short papers and clinical cases. February 17th—Continued meeting with the Cardiff Law Society at 8 p.m. in the Park Hotel. This subject—one of medico-legal interest to all practitioners—will be announced later.

SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION—A meeting of the Swansea Division will be held at the General Hospital, Swansea, on Thursday, November 19th, at 8.15 p.m., when Dr White will speak on some general aspects of gland therapy.

SUFFOLK BRANCH SOUTH SUFFOLK DIVISION—A meeting of the South Suffolk Division will be held to-day (Friday, November 13th), at 3.30 p.m. at the Crown and Anchor Hotel, Ipswich. Dr Hugh Thimsheld, I.R.C.P. (Physician St. Bartholomew's Hospital), will give a lecture on the treatment of rickets considered in light of recent work.

SURREY BRANCH CROYDON DIVISION—The next meeting of the Croydon Division will be held at the Queen's Hotel, Upper Norwood, on Thursday, November 19th, at 4 p.m. An address will be given by Dr J. Bright Banister, entitled "Some obstetric emergencies."

SURREY BRANCH KINGSTON ON THAMES DIVISION—The annual dinner of the Kingston on Thames Division will be held at Nuthall's Restaurant, Kingston, on Wednesday, November 18th at 7.30 for 8 p.m. Charge 7s. 6d. (exclusive of wine), to be paid at the restaurant. The guests will be Mr F.G. Penny, M.P. and Mr G.D. Densham, Mayor of Kingston. Medical guests of members will be welcome. There will be a short musical programme.

WILTSHIRE BRANCH TROWBRIDGE DIVISION—The Trowbridge Division will hold a dinner at the Bear Hotel, Devizes, on Wednesday, December 2nd, at 7.15 for 7.30 p.m., after which Mr Cecil Terry will read a paper on some minor points in surgery. The price of the dinner, exclusive of wine, is 10s. 6d., and members intending to be present are requested to notify Dr D. Leigh Spence (The Limes, Melksham) by the first post on Saturday, November 28th. As this is the first dinner held by the Division for many years it is hoped that all members will make a special effort to attend. Non-members in the Devizes area are cordially invited.

YORKSHIRE BRANCH DENSBUARY DIVISION—A meeting of the Densbury Division will be held at the Man and Saddle Restaurant, Densbury, on Tuesday, December 1st. Dr Burrows (Leeds) will read a paper on referred pain from a diagnostic standpoint. Supper will be provided at 8.15 p.m. Members from neighbouring Divisions will be welcomed.

YORKSHIRE BRANCH HALIFAX DIVISION—A general meeting of the Halifax Division will be held in the Board Room of the Royal Infirmary, on Wednesday, November 18th at 8.30 p.m. Professor M.J. Stewart will give a lantern talk on gastric ulcer and cancer.

YORKSHIRE BRANCH Huddersfield DIVISION—The medical dance will be held on Wednesday, December 16th, in the Royal Infirmary, from 9 p.m. to 1 a.m. Reception commencing at 9.15 will be wish to dance. A bridge drive admission by programme. As the arranged Tickets 8s. 6d. each (sufficient number of tickets are sold, dance will only be held if a sufficient number of members will inform the committee if members wish to assist the number of tickets required.

YORKSHIRE BRANCH ROTHERHAM DIVISION—The annual dinner of the Rotherham Division will be held under the auspices of the Rotherham Division at the Crown Hotel, Rotherham, on Friday

November 20th, at 7.15 for 7.30 p.m. Price of tickets 15s. exclusive of wine. Members are requested to notify the honorary secretary regarding tickets not later than November 13th.

YORKSHIRE BRANCH SHEFFIELD DIVISION—A meeting of the Sheffield Division will be held in the General Lecture Room, The University, Sheffield, on Friday, December 11th, at 8.30 p.m. when a British Medical Association Lecture will be given by Dr Cramer on the new outlook on cancer. Non-members will be welcomed.

Meetings of Branches and Divisions.

METROPOLITAN COUNTIES BRANCH CITY DIVISION
A MEETING of the City Division was held at St. Bartholomew's Hospital on November 3rd, when Professor JOHN FRASER of Edinburgh gave a very interesting lecture on sympathetic disturbance of the abdominal viscera in relation to surgery. Several members of the hospital staff and more than a hundred medical students attended, and this occasion, which was notable as being one of the first Divisional meetings in London to be attended by a large number of students proved to be a very great success. Dr CLARK TROTTER, medical officer of health for Islington and chairman of the Division, contributed an excellent introductory speech and the dean of the Medical College, Dr T.W. STORE, extended a cordial welcome to Professor Fraser. In the course of the meeting the great advantages associated with membership of the British Medical Association were emphasized, the claims of the benevolent funds were urged, and the importance of every practitioner obtaining medical protection was insisted upon. A vote of thanks to the lecturer was proposed by Prof. or G.E. GASK.

NORTHERN COUNTIES OF SCOTLAND BRANCH
A MEETING of the Northern Counties of Scotland Branch was held in the Columbia Hotel, Inverness, on October 30th, when Dr CAMPBELL, President, was in the chair. Dr LEONARD FRIDLEY of Glasgow delivered a British Medical Association Lecture on infant feeding. The lecture was listened to with much appreciation by about fifty members, and at the close the lecture was accorded a very hearty vote of thanks. After the lecture the members, along with the following as guests (Dr William Mackay, Dr Dreyer and the B.M.A. Lecture), Smith Mr Kyle Mackintosh, Dr Dreyer and the B.M.A. Lecture), dined together. Dr J. Munro Moir was also a guest of the Branch on this occasion.

Presentation to Dr Munro Moir
The 101st of The King, Patron of the British Medical Association, having been duly honoured, the CHAIRMAN, in making a presentation to Dr Munro Moir said he had a pleasant duty to perform in being the spokesman of so many of the practitioners of the North who desired that night to express their gratitude to Dr Moir for all the work he had done for them for so many years. The ready response to the appeal in connection with the testimonial showed how widespread that gratitude was. It was to Dr Moir that the Association owed its strong position in the North of Scotland. In presenting Dr Moir with his portrait illuminated address, and a cheque he hoped Dr Moir would realize how much they appreciated his sacrifice of so many hours in a busy life to the professional welfare of the chairman then called upon the company to pledge the health and happiness of Dr Munro Moir which was duly honoured. Dr Moir in reply thanked the members for their kindness, and expressed the pleasure afforded to him by the work he had been able to do for the Branch. Dr WILLIAM MACKAY, the Rev. DONALD MACLEOD, Dr DREYER, and Dr FRIDLEY also spoke regarding Dr Moir's sterling qualities and the great work he had done on behalf of the profession in the North. The portrait illuminated address was much admired by the assembly. The illuminated address incorporating the badge of the British Medical Association and a view of Inverness, was worded as follows:

We the undersigned, on behalf of the Members of the Northern Counties of Scotland Branch of the British Medical Association in presenting you with this Address Portrait and Cheque desire to acknowledge your devoted service to the medical profession in the North during the last thirty three years.

For over twenty five years you have acted as Honorary Secretary of this Branch and we beg to assure you that your faithful and untiring work on our behalf has been deeply appreciated. It is largely owing to your tact, sagacity and enthusiasm that the British Medical Association occupies the influential position that it does in the Northern Counties of Scotland.

A Member of the British Medical Association for over forty even years you have been a Member of Council, a Representative of this Branch on the Representative Body, a Member of the Scottish Committee, a Member of the Organization Journal and Medico-Political Committee, Vice President of the Section of Medical Sociology, Chairman of the Inverness Division and on two occasions President of this Branch. In all the above capacities you displayed the great qualities of vigorous common sense and a high sense of duty which rendered your service so valuable.

Next June (1926) you will complete fifty years practice of your profession and we beg to offer you our warmest congratulations on the near approach of the completion of this long period of professional

life during which you have honourably upheld the dignity and interests of our profession

We wish you all happiness and contentment in looking backward on a busy and useful professional life beloved by your patients and esteemed by your colleagues

(Signed) D C CAMPBELL President
E H MACKENZIE President Elect
J B SIMPSON Representative for
Caithness and Sutherland
D MACFADYEN, Secretary

Inverness, October 30th 1925

ABERDEEN BRANCH

A GENERAL meeting of the Aberdeen Branch was held in the Palace Hotel, Aberdeen on October 30th. In the absence of the President and President Elect, Dr RORIE (Cults) was elected to the chair.

The Branch Council's report was read and approved and a financial statement was submitted showing a credit balance of £28 13s 8d. Dr HOWIE and Mr COLE were appointed to audit the accounts. Forty four new members were admitted during the year. The following officers were elected for 1925-26:

President Dr D WAT on Geddie (Aberdeen) President Elect Dr J F SKINNER (Shene) Honorary Treasurer Dr JOHN LEVACK (Aberdeen) Honorary Secretaries Dr T FRASER (Aberdeen) Mr F K SMITH (Aberdeen)

A lively discussion took place with regard to the present condition of both the Branch and Division. The hope was expressed that a wider and deeper interest in the affairs of the Association might be taken at other times than those during which the financial interests of members were at stake and various proposals were put forward for the Branch Council's consideration. Dr CHARLES LORDES brought forward the question of post graduate teaching during the summer vacation as proposed by the Association and the SECRETARY stated that this matter was under consideration by the Branch Council, and also by another body.

A vote of thanks to the chairman closed an animated gathering and thereafter the members present dined together in the hotel and spent an interesting and enjoyable social evening.

BIRMINGHAM BRANCH BROMSGROVE DIVISION

The first clinical meeting of the winter session of the Bromsgrove Division was held at the Smallwood Hospital, Redditch, on November 5th when Dr R DOUGLAS WILKINSON (Birmingham) read a paper on the use of insulin in private practice. The paper was thoroughly enjoyed by all. Non members of the Association were invited to the meeting.

BIRMINGHAM BRANCH DUDLEY DIVISION

The annual meeting and dinner of the Dudley Division took place at the Saracen's Head Hotel, Dudley, on October 29th.

All the retiring officers were re-elected.

Chairman Dr F M TIBBETTS Vice Chairman Dr G J DUDLEY OBE Honorary Secretary Dr L D ROBERTS

Dr G K GIFFORD in a very humorous speech, proposed the toast of prosperity to the British Medical Association.

Dr G C ANDERSON (Deputy Medical Secretary), responding, apologized for the absence of Dr COX, Medical Secretary who was due to start the following morning on a six months tour of South Africa. He announced that the membership of the British Medical Association had reached the record figure of 30,400. They were all proud, he was sure of the magnificent new Association buildings in Tavistock Square which had been recently opened by His Majesty the King. The Association was recognized by Government departments as representing the medical profession and they now consulted the Association before imposing any new regulation on the profession. The Council of the Association was actively engaged in considering the very important question of post graduate education in the kingdom with London as a centre. Locum tenens bureaux were in course of organization for the benefit of its members in fact bureaux were already in being in some areas. The Association was mainly responsible for the present satisfactory state of national health insurance. Every insurance practitioner in the country owed a debt of gratitude to Dr H B BLACKBURN, whose untiring exertions brought the recent negotiations to such a successful issue. The Royal Commission would probably issue its report towards the end of the year but he (Dr Anderson) did not think that any very drastic changes would be imposed, at any rate as far as medical benefit was concerned.

Mr A W NUTTALL, F.R.C.S. (President of the Birmingham Branch), spoke of the enormous amount of voluntary work which was being done often at the expense of their own practices by the members of the Council. In addition to the Council meetings there were committee meetings almost every day, entailing journeys to London from most distant towns. He also reviewed the work done by the permanent officers, the Medical Secretary, his deputy whom they welcomed among them that evening, and the Assistant Medical Secretaries.

Dr MICHAEL BREZICH, and all too briefly proposed the health of the visitors. This toast was responded to by Dr RIDLEY BAILEY who in eloquent phrases pointed out that the power of the Association was derived from its high moral force and pleaded that whatever advances were made the importance of maintaining this character should be paramount.

CAMBRIDGE AND HUNTINGDON BRANCH ISLE OF ELY DIVISION

The first annual dinner of the Isle of Ely Division together with the Isle of Ely Panel and Local Medical Committees was held at the Griffin Hotel, March, on October 27th. Dr C E STEPPENS, chairman of the local Division of the British Medical Association presided and a very enjoyable evening was spent. After the toast of The King had been duly honoured Sir WILLIAM CLARKE

chairman of the county council proposed that of "The British Medical Association" which was acknowledged by Dr ALFRED COX OBE, the Medical Secretary. Dr P A HENNLEY proposed that of "The Isle of Ely Insurance Committee" to which the Rev S S WALTON replied. The toast of "Our Guests" proposed by Dr ARTHUR PAIV, was acknowledged by Major H H LITTLE for Sir H LUCAS TOOTH, Bt, M.P. The final toast of the evening "The Chairman," was proposed by the Rev R B HILL to which Dr STEPHENS replied. During the evening songs were rendered by Drs A G S WATERS and G H LUCAS and Dr PLYTON WALKER gave a humorous medical recitation.

MIDLAND BRANCH LEICESTER AND RUTLAND DIVISION

A MEETING of the Leicester and Rutland Division attended by 84 members, was held at the Medical Club, Leicester, on November 4th when a lantern demonstration was given by Mr H D GILLIES C.B.E. F.R.C.S., on developments of plastic surgery. The results shown on the screen were received with frequent applause and the lecturer was warmly thanked for one of the most interesting addresses delivered to the Division for a long time past.

NORTH OF ENGLAND BRANCH NORTH NORTHUMBERLAND DIVISION

A MEETING of the North Northumberland Division was held on October 29th in Berwick Infirmary presided over by Dr Iulton of Wooler. After the business had been transacted an exceedingly interesting address was given by Sir DAVID DRUMMOND D.C.L. M.D., Past President of the Association, on our mistakes in diagnosis and how and why we make them. At the conclusion of the address a hearty vote of thanks was on the motion of Dr SCOTT PURVES, accorded to Sir David Drummond. Tea was kindly provided by the matron of the Infirmary at the close of the proceedings.

SHROPSHIRE AND MID WALES BRANCH

The fiftieth annual general meeting of the Shropshire and Mid Wales Branch was held at the Royal Salop Infirmary on October 27th. Dr J WHEATLEY, medical officer of health for the county of Salop having been installed in the presidential chair read a most arresting paper on the future of public health work and of the general practitioner. He stressed the importance of public education in hygiene and the improvement of housing, sanitation and the supply of fresh air in the prevention and removal of disease, pointing out that the methods used in the extermination of any particular disease were of more importance than the mere fact of extermination. It would be said have been a national calamity for instance if the prophylactic inoculation for typhoid had preceded the discovery that improved sanitation was the primo need. In the matter of tuberculosis too general hygienic measures would tend to stamp out not only this disease but many others whereas tuberculin and other cures merely aimed at the disease itself and left the community no better off in other respects. The prevention and treatment of disease, both from the public health and general practitioner viewpoints must be based on physiology and the physiologist would have to be far more exploited in the future than he had been in the past.

The annual dinner was subsequently held at the Raven Hotel, Shrewsbury when members and guests to the number of eighty sat down. It proved one of the most successful and enjoyable in the history of the Branch. The principal guests were the Archdeacon of Salop (the Hon H E S Lambart) the Headmaster of Shrewsbury School (Canon H A P Sawyer) and Admiral Sir Cecil Thursby, K.C.M.G.

SOUTH MIDLAND BRANCH

The autumn meeting of the South Midland Branch was held at the Northampton General Hospital on October 29th. Dr I S Lloyd nominated by the Branch Council as President Elect was elected unanimously.

Mr GIFFORD NASH F.R.C.S. read a paper on modern treatment of appendicitis with special reference to when to operate. He made it clear that this paper arose out of that read by Sir James Berry at the Annual Meeting. He gave a great mass of statistics showing that immediate operation had a lower mortality than a policy of wait and see. He then gave some striking private statistics of his own, showing that appendicitis was far more common in the last ten years than in the twenty years previously. His own private statistics now showed 304 consecutive cases of appendicitis without a death.

Eight members took part in the subsequent discussion all were unanimous in concurring that a policy of immediate operation was the correct one except in a few very special cases. Several members pointed out that a policy of wait and see threw a greatly increased responsibility on the surgeon. Mr Gifford Nash replied. During a twenty minutes interval tea was provided by the Honorary Secretary.

Mr HOLMES subsequently read a paper introducing a discussion on carcinoma of the colon bringing forward several points on which he wished for the opinion of the meeting. Among these were "Is it ever worth while to do a local incision in carcinoma of the rectum?" "Is colotomy worth while when the patient is not really obstructed?" "To make it worth while an operation must not only prolong life but increase comfort." He gave a summary of the symptoms of carcinoma of the colon and pointed out that there was some danger in the use of the sigmoidoscope. He discussed the treatment, and gave details of 26 cases of his own.

Dr ROBSON described the methods of examination by x rays. The method he advocated was screen examination of an opaque enema. He emphasized the need for preparation by emptying the large bowel and requested members to send their patients up prepared if they wished for an immediate examination.

Drs. GREENFIELD and ROUGHTON then spoke giving several additional suggestions for after treatment. Five other members also spoke, and Mr. NORMAN replied.

SOUTHERN BRANCH, PORTSMOUTH DIVISION

The opening meeting of the Portsmouth Division winter session was held at the Queen's Hotel, Southsea, on November 5th. A feature of the meeting was the presentation of British Medical Association badges to the chairman and honorary secretary of the Division by Dr. LOCHART STEWART, honorary secretary of the Southern Branch. It was decided to present a flag from Portsmouth to hang in the Great Hall at headquarters. After the business there followed an interesting discussion opened by Dr. JAMES McCURION on the early diagnosis of neuro-infectious diseases. This was one of the most successful Divisional meetings held at Portsmouth. It was attended by about seventy members, of whom fifty sat down at the supper which preceded it.

YORKSHIRE BRANCH, SHEFFIELD DIVISION

A MEETING of the Sheffield Division called to receive the representative report of the Annual Meeting at Bath, was held on October 30th, the chairman of the Division, Dr. A. C. TURNER, presided.

Dr. A. LOEBES said that the Council had recommended that it would be a good thing if the chairman and secretaries of Divisions had badges of office and as senior amongst the ex-chairmen of the Sheffield Division it gave him great pleasure to present badges to the chairman and secretary. He then invested the chairman and secretary with badges of the pattern described in the Supplement of September 26th. Proceeding to give his report as representative at the 1925 Annual Representative Meeting Dr. LOEBES said it was not necessary to enter into much detail as nothing very controversial had been dealt with. Of medico-political matters coroners' law and death certification was perhaps the most important, and on this there had been a good deal of difference of opinion at the meeting, but ultimately the recommendations of the Council were carried. Some points connected with the Dangerous Drugs Acts and drug addiction were brought up at the meeting, and the results of an interesting questionnaire on this subject were reported. It was felt that it would be well if it became a generally accepted practice with medical men having the care of cases of drug addiction to share the responsibility by calling in a colleague in consultation. The question of a special tribunal to consider cases of men accused of offences under the Dangerous Drugs Acts had also been discussed. On the subject of public health appointments it was evident at the meeting that in some parts of the country there was a good deal of feeling that £500 was rather more than they could afford to pay a newly qualified person. A recommendation was carried that it should be in order to appoint junior officers to commence at the lower salary of £500 per annum who had not had the three years' experience contemplated in fixing the higher scale. On the question of hospital policy—a hardy annual—the important clause relating to "services rendered or to be rendered" was this year carried by a large majority, so that on this point the policy of the Association was now definitely settled. This did not mean that there was any intention of enforcing this policy in places where the hospital staff themselves did not desire it, but that when the local hospital staff should endeavour to enforce it they could rely on any support the Association could give them. In conclusion, Dr. LOEBES said he had been specially impressed at this meeting by the discussion in regard to the setting up of a medical benefit fund within the British Medical Association. It was pointed out that the present state of affairs was the reverse of creditable, a very small percentage of the profession subscribed to the two existing medical benefit funds. A committee had been appointed to take steps for improving the position.

Mr. C. W. SMITH (Dr. LOEBES's co-representative) said that individual medical defence was the subject which excited most interest at the meeting. The Sheffield representatives had been instructed to vote against the Association undertaking individual defence. Numerous arguments were brought forward on both sides. After a long discussion a Cardiff amendment which opposed the Association undertaking individual defence was carried by 97 votes against 72 the voting being much the same as last year. One point of special interest to Sheffield in regard to the recruiting of new members was that four towns were mentioned, with the names of their secretaries, where specially good work had been done—namely Newcastle, Glasgow, Liverpool, and Sheffield. Perhaps the most important point with regard to National Health Insurance was that the ophthalmic benefit scheme had been established, which commenced in July last. 600 ophthalmic surgeons had intimated their willingness to co-operate in the scheme. It was proposed at the meeting that a separate medical journal should be published dealing with ophthalmic diseases; this was carried and the new periodical would appear in due course. In conclusion Mr. SMITH spoke very warmly of the hospitality shown by the members of the Association at Bath, everything possible had been done to give the representatives a good time. The trip to Stonehenge was one of the best in which he had ever joined.

Mr. CARRER said it was by no means the first time that the Division had had to thank Dr. LOEBES for serving as its representative. Attendance at the Representative Meeting involved more strenuous work than was commonly supposed. He had very much pleasure in proposing a hearty vote of thanks to Drs. LOEBES and SMITH. This was seconded by Dr. LOEBES and carried most cordially. Dr. LOEBES in reply endorsed Dr. SMITH's words of appreciation of the hospitality shown them at Bath. Lastly on the proposal of the CHAIRMAN a vote of thanks to Dr. LOEBES for his generous invitation to the badges of office to the Division was very heartily carried.

National Insurance

THE ROYAL COMMISSION

THE forty-fourth meeting of the Royal Commission on National Health Insurance was held at the Home Office, Whitehall, on November 5th and 6th, Lord LAWRENCE of Kingsgate, and later Sir ARTHUR WOLLEY, in the chair. Evidence was given by Sir WILLIAM Glyn Jones as to the powers and duties of Insurance Committees and the limited field of work open to them under the conditions of the insurance scheme as it has now developed. Thereafter the Commission sat in private to review the evidence which has been received since it began its work and to consider the questions arising therefrom.

INSURANCE ACTS COMMITTEE AND SCOTTISH SUBCOMMITTEE

LECTION OF DIRECT REPRESENTATIVES

THE following have been elected as direct representatives of Local Medical and Panel Committees on the Insurance Acts Committee and its Scottish Subcommittee for the session 1925-26.

Insurance Acts Committee

Group "A"—Dr. C. L. Douglas (Cupar, Fife) and Dr. J. G. McCutcheon (Glasgow).

Group "B"—Dr. R. H. Dix (Sunderland).

Group "C"—Dr. G. B. Hillman, M.B. (Wakefield), and Dr. G. H. Sedgwick (Thrybergh, nr. Rotherham).

Group "D"—Dr. R. G. McCowan (Manchester), Dr. H. I. Oldham, M.B. (Morecambe), and Dr. T. Miller Wilson (Liverpool).

Group "E"—Dr. I. G. Davies (Wrexham) and Dr. W. L. Thomas (Cardiff Rhondda).

Group "F"—Dr. C. I. Palmer (Mansfield Woodhouse Notts).

Group "G"—Dr. T. Ruddy Bailey (Bilston, Staffs).

Group "H"—Mr. L. Lewis Lacey, I.R.C.S. (Leicester).

Group "I"—Dr. John Steed (Hereford).

Group "J"—Dr. D. G. Greenfield (Rushden, Northants).

Group "K"—Dr. J. P. Williams Freeman (Amidover, Hants).

Group "L"—Dr. H. C. Jones (Barnstable).

Group "M"—Dr. J. J. Day (Canterbury) and Dr. E. R. Iothergill (Hove).

Group "N"—Dr. C. H. Panting (Leyton) and Dr. H. Rose (Wendover, Bucks).

Group "O"—Dr. H. J. Cardale (London) and Dr. E. A. Gregg (London).

Insurance Acts Subcommittee (Scotland)

By County Local Committees—Dr. R. Bruce DSO (Gulls, Aberdeen-shire), Dr. D. E. Dickson (Guelphilly, Liffelshire), Dr. J. W. Little (Newmans, Lanarkshire), and Dr. W. R. Martine (Weston, Haddington).

By Single Panel Committees—Dr. W. Lawson (Glasgow), Dr. G. W. Miller, DSO (Dundee), Dr. John Orr (Edinburgh), and Dr. James Todd (Glasgow).

Correspondence

The Cheshire Motion at the Panel Conference

SIR,—When I wrote my letter (SUPPLEMENT, October 31st, p. 159) I had not before me the report of Dr. Brudenbury's speech, much of which, owing to the fact that I was near the back of the hall when he commenced, I appear to have missed. I should like to comment upon that portion.

Dr. Brudenbury is in error in stating that the Memorandum produces something "better than the simple proposition involved in the Cheshire motion." On the contrary, the Cheshire motion was and is an addition to that Memorandum, it accepts the whole of the suggestions contained therein but adds also something which experience has shown to be absolutely necessary. It is clear that the Memorandum was prepared under the influence of the Lancashire fine case, and that the practice since exhibited by the Minister of supporting accusations of negligence calculated to ruin doctors completely, yet imposing fines so moderate as to defy appeal on the score of excessive penalty, was not foreseen except by Cheshire.

The sole difference between the Cheshire policy and that of the Memorandum is that the former allows defence against such action and the latter does not. The one allows the doctor to defend his honour and reputation as well as his pocket, the other his pocket alone. I contend that the Cheshire policy will appeal to Parliament and the public, while the other will not only fail so to do, but be ruinous to our reputation—I am, etc.,

Manchester, Nov. 8th

G. C. GUNNITT

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

SURGEON LIEUTENANT I. P. SPERO (R.N.A.R.) has entered as Surgeon Lieutenant R.N., and appointed to R.N. Hospital, Haslar for course

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Lieutenant B. W. C. Archer to the Victoria for R.N. Hospital, Haslar for twenty-eight days training
J. L. Cox appointed as Probationary Surgeon Lieutenant and attached to the London Division

ROYAL ARMY MEDICAL CORPS

Lieut Colonel B. A. Craig retires on retired pay
Captain J. E. Meacham retires receiving a gratuity
Raymond J. C. Hyde to be temporary Lieutenant
Lieutenant J. C. L. Vachell to be temporary Deputy Surgeon at the Royal Hospital, Chelsea

ROYAL AIR FORCE MEDICAL SERVICE

Flight Lieutenant C. A. Lindup to No. 60 Squadron India
Flying Officers C. M. Anderson and B. L. Edwards to Research Laboratory and Medical Officers' School of Instruction, Hampstead, on appointment to short service commissions for short course

INDIAN MEDICAL SERVICE

Major W. J. Simp on an officiating agency surgeon is granted leave from September 11th
Major R. P. D. McGregor an officiating agency surgeon on return from leave is posted as agency surgeon, Hospital
Major G. Covell is appointed temporarily to the Medical Research Department and posted as a supernumerary officer at the Central Research Institute, Kanpur
The services of Major A. C. Tresidder are placed temporarily at the disposal of the Government of Bombay
Lieut Colonel F. O. N. Well C.I.E. has retired
Major R. W. C. Hingston M.C. is appointed surgeon, naturalist, Marine Survey of India

MILITIA

ROYAL ARMY MEDICAL CORPS

Major H. H. Brown relinquishes his commission and retains the rank of Major

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Major W. C. Gunn from Sanitary Companies to be Major, with precedence as from October 6th 1921
Major A. W. Uloth M.C. late R.A.M.C. to be Captain with precedence as from February 16th 1918 and relinquishes the rank of Major
Major W. H. Broad T.D. having attained the age limit is retired and retains his rank with permission to wear the prescribed uniform
Captain R. C. Aitchison (Reserve of Officers) to be Major with precedence as from June 27th 1924 August 5th 1925 (substituted for the announcement regarding this officer in the London Gazette of September 28th 1925)
Captain D. Mackie M.C. to be Major
Captain F. B. Julian M.C. resigns his commission and retains his rank
Captain E. Hauxwell to be Major with precedence as from April 27th 1924
Captain F. C. Chumler M.C. R.A.M.C. to be Divisional Adjutant 5th L. (Highland) Divisional T.A. Vice Captain T. L. Fraser O.B.E. R.A.M.C. who vacates that appointment
Lieutenant C. J. A. Woodside resigns his commission and is granted the rank of Captain
Lieutenant W. R. S. Watkins to be Captain
Lieutenant P. C. Thompson resigns his commission
Lieutenant R. E. Holme (late 4th D.W.R.) to be Lieutenant
Lieut. A. S. Mitcheson (late R.A.T.A.) to be Lieutenant with precedence as from May 15th 1925
Superintendency for Service with the Officers' Training Corps—Major C. A. Williamson and H. Emerson M.C. resign their commissions and retain their rank
Sanitary Companies—Captain A. Davidson to command the 5th (Scottish) Sanitary Company

TERRITORIAL ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Lieut Colonel (Brevet Colonel) C. E. Simpson O.B.E. T.D. from Active List to be Lieutenant Colonel (Brevet Colonel)

COLONIAL MEDICAL SERVICES

Drs J. S. Armstrong and H. T. O'D. Burke-Caffrey appointed Medical Officer Tanganyika
Dr J. W. Graham transferred from Dar es Salaam to Kilimanjaro
Tanganyika
Drs J. C. R. Buchan and G. S. P. Noble appointed Medical Officers Urua District (Sleeping Sickness duty)
Tanganyika
Drs R. Mackay, A. Mackenzie, B. O. Wilkin and L. A. Willmott appointed Medical Officers for Lindi, Mwanza, Pangani and Tabora Tanganyika respectively
Dr S. M. Vassallo appointed Surgeon Specialist Medical Department Zanzibar (transferred from Uganda)
Drs C. T. MacCarthy and E. C. H. Payne confirmed in their appointments as Government Medical Officer for Muzarini River (Diamond Fields) Medical District and Assistant Government Medical Officer respectively
Dr J. William transferred Urua District to Tabora
Kilimanjaro Railway Construction Tanganyika
Dr B. Moiser Assistant Director of Medical Service Nigeria has been involved out of the service
Dr J. M. W. Lollard Senior Medical Officer West African Medical Staff appointed an Assistant Director of the Medical Service in Nigeria
Dr B. Moir retired
Dr R. A. L. Van Someren has left the service of Uganda Protectorate
Dr E. S. John on M.C. Medical Officer appointed Lady Medical Officer Nigeria
Dr H. E. Brazier appointed temporary Medical Officer Gold Coast
Dr E. Brazier appointed Assistant Government Medical Officer British Cameroons
Drs D. M. McSwan, C. S. Wilson and R. T. B. Green appointed Medical Officers

Medical Department Federated Malay States
Dr A. B. W. Smart appointed Medical Officer Medical Department Nigeria
Lieut Colonel T. R. M. Leonard, D.S.O. promoted Assistant Director of Medical Service Nigeria

The title of Principal Medical Officer Nyasaland is changed to Director of Medical and Sanitary Service
The title of Sanitation Officer is changed to Senior Sanitation Officer

VACANCIES

ALTRINCHAM GENERAL HOSPITAL—House Surgeon Salary £125 per annum
BINGOOR VILLAGE MENTAL HOSPITAL near Edinburgh—Second Assistant Medical Officer (male) Salary £50 per annum
BELGRADE HOSPITAL FOR CHILDREN Clapham Road S.W. 9—Honorary Radiologist
BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL—Junior House Surgeon (non resident) Salary at the rate of £200 per annum
BOURNEMOUTH ROYAL VICTORIA AND WEST HAVES HOSPITAL—(1) Honorary Surgeon to Orthopaedic Department (2) Honorary Assistant Medical Officer to the Maternity Department (3) Honorary Anaesthetist (4) Honorary Dermatologist (5) Honorary Assistant Dermatologist (6) Honorary Dental Surgeons
BRIGHTON NEW SUSSEX HOSPITAL FOR WOMEN AND CHILDREN—Honorary Clinical Assistant (female) to Out patients
BRIGHTON ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN—House Surgeon (male) Salary at the rate of £100 per annum
CITY OF LONDON METROPOLITAN HOSPITAL City Road E.C.1—Resident Medical Officer (male) Salary at the rate of £100 per annum
DOLGELIS LLE OF MAN NOBLE'S HOSPITAL—Resident House Surgeon Salary £175 per annum
EAST LONDON HOSPITAL FOR CHILDREN Shadwell E.1—Assistant Physician Honorary £50 per annum
ELIZABETH GARRETT ANDERSON HOSPITAL Euston Road N.W.—(1) House Physician (2) Obstetric Assistant (3) Two House Surgeons (4) Clinical Assistants in the Out patient Department Salary for (1) (2) and (3) at the rate of £50 per annum
EVELING HOSPITAL FOR CHILDREN Southwark S.E.1—House Surgeon (male) Salary at the rate of £120 per annum
HOSPITAL FOR SICK CHILDREN Great Ormond Street W.C.1—(1) House Surgeon (2) House Physician (Males unmarried) Salary £50 for six months
IRAQ HEALTH DEPARTMENT—Two Medical Officer Salary R.1.250 per mensem with annual increments of Rs 75
KEST COUNTY MENTAL HOSPITAL Maidstone—Assistant Medical Officer (male) Salary £300 per annum
KEST COUNTY OPHTHALMIC HOSPITAL Maidstone—House Surgeon (unmarried male) Salary £300 per annum
KING EDWARD VII WELSH NATIONAL ASSOCIATION—Assistant Resident Medical Officer at the Kenington Hospital St. Bride, Lambeth, London Salary £200 per annum
LANCASHIRE COUNTY COUNCIL—County Analyst Salary £800 per annum, rising to £1,000
LANCASTER BOROUGH—Assistant Medical Officer of Health and Assistant School Medical Officer Salary £500 per annum rising to £600
LIVERPOOL AND DISTRICT HEART HOSPITAL—(1) Honorary Physician (2) Honorary Assistant Physician
LONDON HOSPITAL E.1—Honorary Dental Surgeon
LONDON LOCK HOSPITAL 91 Dean Street W.1—Clinical Assistant in the Out patients Department
LONDON SCHOOL OF MEDICINE FOR WOMEN AND ROYAL FREE HOSPITAL—Obstetrical and Gynaecological Unit (1) Senior Assistant (part time) (2) Second Assistant (3) Third Assistant Salary £150 £50 and £40 per annum respectively
LONGTON HOSPITAL—House Surgeon Salary £150 per annum
MARGATE ROYAL ST. BATHING HOSPITAL—Male House Surgeon Salary at the rate of £200 per annum
METROPOLITAN HOSPITAL Kingsland Road E.8—Pathologist
NORWICH CITY COUNCIL—Medical Officer of Health Salary £1,100 per annum
PLYMOUTH ROYAL EYE INFIRMARY—Honorary Surgeon
PRESTON COUNTY BOROUGH—Assistant Medical Officer (woman) for Maternity and Child Welfare Salary £600 per annum
PRINCE OF WALES GENERAL HOSPITAL Tottenham N.15—(1) Honorary Anaesthetist Honorary £20 per annum (2) Clinical Assistants in various Departments
QUEEN CHARLOTTE'S MATERNITY HOSPITAL Marylebone Road W.1—Assistant Resident Medical Officer Salary at the rate of £80 per annum rising to £100 on appointment as Senior Resident Medical Officer
QUEEN'S HOSPITAL FOR CHILDREN Hackney Road E.2—House Physician Salary £100 per annum
RHONDA URBAN DISTRICT COUNCIL—Assistant Medical Officer Salary £600 per annum
ROCHFORD UNION—Visiting Physician at the Guardians Hospital Salary £50 per annum
ROYAL COLLEGE OF SURGEONS OF ENGLAND—Two Members of the Court of Examiners
ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN Waterloo Road S.1.1—(1) House Surgeon (2) House Physician (3) Non resident Casualty Officer Salary for (1) and (2) at the rate of £100 per annum and for (3) £150 per annum
ST. HILLES COUNTY BOROUGH—Assistant Medical Officer of Health (male) Salary £600 per annum
SINGAPORE COLLEGE OF MEDICINE—(1) Professor of Biology (2) Professor of Biochemistry Salary \$850-\$1,000 per mensem rising by annual increments of \$30 per mensem (=£110-£42-£140 per annum) with temporary allowance of 10 per cent of salary to unmarried and 20 per cent to married officer
WELSH NATIONAL SCHOOL OF MEDICINE Cardiff—Lecturer in Pathology and Bacteriology Salary £750 per annum
WEST HERTS HOSPITAL Hemel Hempstead—Resident Medical Officer Salary £200 per annum
WEST LONDON HOSPITAL Hammersmith Road W.5—(1) House Physician (2) House Surgeon (3) Rural House Surgeon and Casualty Officer (Male) Salary at the rate of £100 per annum each

WILFRED, GENERAL HOSPITAL, Harleiden Road N.W. 10—Honorary Physician with charge of out patients

CERTIFYING FACTORY SURGEONS—The following vacant appointments for Certifying Factory Surgeons are announced: Teddington (Middle ex) Rhyl (Hants) Croston (Lancs) Applications to the Chief Inspector of Factories Home Office S.W. 1

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning

APPOINTMENTS

ANDERSON, W. W. M.B. Edin., Certifying Factory Surgeon for the Whit church District co. Salop

COYNE, Ralph M.B. B.S. Lond. F.R.C.S. Assistant Surgeon to the Queen's Hospital for Children Hackney Road E2

LINDBERG, E. W. M.B. Ch.R. Glas., Certifying Factory Surgeon for the Brockheim District co. Forfar

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE
David Lloyd Roberts Lecture Mon., 5.30 p.m. by Sir Arthur Keith
Mins Structural Defects

General Meeting of Fellows Tues. 5.30 p.m.
Section of Pathology Tues. 8.30 p.m. Mrs. M. M. Barratt. Susceptibility of Rats and Mice to Diphtheria Infections. Miss D. B. Stiehl.

Further Experiments on the Action of Colloidal Substances, Dr. C. Dukes. Early Stage in Cancer of the Rectum

Section of History of Medicine. In view of the date and time of the Thomas Vesley Lecture the November meeting of this Section is cancelled

Section of Dermatology Thurs. 4 p.m., Cases
Annual Dinner of the Society Hotel Victoria Thurs. 7.30 for 8 p.m.

Section of Electrotherapeutics Fri. 8.30 p.m. Cinematographic demonstration—Dr. L. D. Bailey. Recovery of Function after Nerve Anstomosis. Demonstration of the De Forrest talking films with reference to their scope and possibilities in medical education introductory remarks by Dr. C. B. Heald

ROYAL COLLEGE OF SURGEONS OF ENGLAND Lincoln's Inn Fields W.C.—Wed. 5 p.m. Thomas Vesley Lecture by Professor William Wright. The Medical Conception of the Anatomy and Physiology of the Central Nervous System

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE—Laboratory Meeting at the London School of Hygiene and Tropical Medicine, Endleigh Garden, Fytton Road Thurs. at 8.15 p.m.

Alcock Dis. Andrew Balfour M.A. B.A. B.Sc.
Dr. Aldo Castellani, T. T. Duncan F. Jones

Dis. H. B. Newham M.B. B.S. Scott. Lieut. Colonel H. Marrian Perry, Drs. A. A. Dice Sharp J. Gordon Thom and C. M. Wenyon

CLINICAL SOCIETY St. George's Hospital S.W.—Tues. 8.30 p.m.
Discussion Insulin Treatment. Speakers: Drs. E. P. Loullou G. Graham P. J. Cammidge and F. G. Crookshank

WINTER St. Mary's Hospital Whitworth Street—Tues., 4.15 p.m.
Lloyd Roberts Lecture by Dr. T. W. Eden. What we can do for the Lethargic Child

UNIVERSITY OF LONDON—At University College Hospital W.C.—Thurs., 4 p.m. Dr. Charles Singer. History of Diphtheria

POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION
1 Wimpole Street W.1—Fellowship of Medicine Lecture Medical Society H. Chandos Street W. Mon. 5.30 p.m., Night Treatment of Surgical Tuberculosis Chelsea Hospital for Women Arthur Street S.W. Postgraduate course in gynaecology. Lectures and demonstrations daily. Operations and pathology. London Lock Hospital Dean Street W. Comprehensive course of instruction in the out patient department and lectures. City of London Hospital for Diseases of the Heart and Lungs Victoria Park, E. Special course in diseases of the heart and lungs. Lectures, clinical demonstrations and laboratory demonstrations in the out patient department. Biweekly lectures Tues. and Thurs. at 5 p.m.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL Gray's Inn Road W.C.—Fri. 3 p.m. An Intracranial Case

LONDON SCHOOL OF DERMATOLOGY St. John's Hospital 49, Leechter Square W.C.2—Tues. 5 p.m. Diseases due to Fungi. Thurs., 5 p.m., Pathological demonstration

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC Queen Square W.C.1—Mon. Tues., Thurs. and Fri. 2 p.m. Out patient clinics. Tues. and Fri. 10 a.m. Methods of Examination of the Nervous System. Mon. 12 noon. 3.30 p.m. Papilloedema. Tues. noon. Syphilis of the Nervous System. Thurs. the Fifth Nerve. Fri. 3.30 p.m. Tues. and Fri. 9 a.m.

NORTH EAST LONDON POST GRADUATE COLLEGE Prince of Wales General Hospital Tottenham W.15—Thurs. 3 p.m. Demonstration. Hearing Test. 4.30 p.m. Lecture. The Physical Examination of Pelvic Conditions. Daily. In patient and out patient clinic in general and special departments in operations etc.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL Marylebone Road N.W.1—Thurs. 5 p.m. Clinical Aspects of Abortion

ROYAL INSTITUTE OF PUBLIC HEALTH 37, Piccadilly Square W.C.1—Wed. 4 p.m. The Role of Clothing in the Prevention and Arrest of Disease

MANCHESTER ROYAL INFIRMARY—Fri. 4.15 p.m. The Sympathetic Nervous System

CLINICAL POST GRADUATE MEDICAL ASSOCIATION—At Western Infirmary Wed. 4.15 p.m. Surgical Cases. At Glasgow Eye Infirmary Tues. and Fri. 2 p.m. External Diseases of the Eye

JAMES MCKENZIE INSTITUTE FOR CLINICAL RESEARCH St. Andrew's—Tues. 4 p.m. The Use of Insulin

MANCHESTER ANCOATS HOSPITAL—Thurs. 4.15 p.m., Treatment of Common Fracture with practical demonstrations

British Medical Association

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE
TAVISTOCK SQUARE W.C.1

Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Busloe's Manager) Telegrams Articulate Westcott London

MEDICAL SECRETARY (Telegrams Medicine Westcott London)

EDITOR British Medical Journal (Telegrams Altiology Westcott, London)

Telephone numbers of British Medical Association and British Medical Journal: Museum 5861, 5862, 5863 and 5864 (internal exchange, four lines)

SCOTTISH MEDICAL SECRETARY 6 Drumshugh Gardens, Edinburgh. (Telegrams Associate Edinburgh) Tel. 4361 Central

IRISH MEDICAL SECRETARY 16 South Frederick Street Dublin (Telegrams Enallius Dublin) Tel. 4737 Dublin

Diary of the Association

- 13 Fri London Selen City Division Chesterfield Div Hyde Division South Norfolk Division Dr Hugh Thurstield on the Treatment of Rickets Wilkesden Division Annual Dinner Criterion Restaurant
- 15 Sun London Standing Ethical Subcommittee Lewisham Division St Laurence Vicarage Bromley Road Cliford Dr H. I. Eason on the Relation between the Voluntary Hospitals and the General Practitioner Glasgow and West of Scotland Branch Chival Meeting Royal Hospital for Sick Children Glasgow 3 p.m. Annual Dinner, Fergon and Porter's Restaurant 6.0 for 7 p.m. Halifax Division Local Halifax Infirmary 1 p.m. for 3 p.m. Stewart on Castor, Beer and Cancer 8.0 p.m. Kingston on Thames Division Annual Dinner Nathall's Restaurant King on 8 p.m.
- 17 Tue London Standing Ethical Subcommittee 2.30 p.m. Lewisham Division St Laurence Vicarage Bromley Road Cliford Dr H. I. Eason on the Relation between the Voluntary Hospitals and the General Practitioner 8.45 p.m.
- 18 Wed Glasgow and West of Scotland Branch Chival Meeting Royal Hospital for Sick Children Glasgow 3 p.m. Annual Dinner, Fergon and Porter's Restaurant 6.0 for 7 p.m. Halifax Division Local Halifax Infirmary 1 p.m. for 3 p.m. Stewart on Castor, Beer and Cancer 8.0 p.m. Kingston on Thames Division Annual Dinner Nathall's Restaurant King on 8 p.m.
- 19 Thurs London Insurance Acts Committee 12 noon Croydon Division Queen's Hotel Upper Norwood Dr J. Bright Banister on Some Obsolete Emergencies 4 p.m. Swansea Division General Hospital Swansea Paper by Dr. White on Some Recent Aspects of Glaucoma Therapy 8.15 p.m.
- 20 Fri London Dominions Committee 2.30 p.m. North Northumberland Division Annual Dinner Plough Hotel, Alnwick 6.30 for 7 p.m. Rotherham Division Annual Dinner Crown Hotel, Rotherham, 7.15 for 7.30 p.m.
- 24 Tues London Office Committee and Locum Bureau Subcommittee. Joint Meeting 11 a.m.
- 25 Wed London Insurance Acts Committee 12 noon Croydon Division Queen's Hotel Upper Norwood Dr J. Bright Banister on Some Obsolete Emergencies 4 p.m. Swansea Division General Hospital Swansea Paper by Dr. White on Some Recent Aspects of Glaucoma Therapy 8.15 p.m.
- 26 Thurs London Insurance Acts Committee 12 noon Croydon Division Queen's Hotel Upper Norwood Dr J. Bright Banister on Some Obsolete Emergencies 4 p.m. Swansea Division General Hospital Swansea Paper by Dr. White on Some Recent Aspects of Glaucoma Therapy 8.15 p.m.
- 27 Fri London Public Health Committee 2.30 p.m. Dundee Branch University College Dundee B.M.A. Lecture by Dr. F. A. E. Crew 8.30 p.m.

- 1 Tues City Division Berkeley on the Coventry Division Heat on the South West Road Leyton Nervous Patients 4.30 p.m. Dewsbury Division Man and Saddle Restaurant Dewsbury Paper by Dr. Burrows on Referred Pain from a Distant Site St. Andrew's Hospital 8.15 p.m.
- 2 Wed London Finance Committee 2.30 p.m. Cardiff Division Engineers Institute Cardiff Dr. H. R. Brackenbury on Theory and Practice in British Medical Association Policy 3.40 p.m. Dinner and Dance Cox's Room Cardiff Tronbridge Division Dinner Bear Hotel Devize Mr Cecil Terry on Some Minor Points in Surgery 7.15 for 7.30 p.m.
- 3 Thurs London Journal Committee 2.30 p.m. City Division Annual Dinner Holborn Restaurant 7.15 for 7.30 p.m. Swansea Division General Hospital Swansea Medical Clinic 8.15 p.m.
- 8 Tues Regent Division East Surrey Hospital Address by Dr. H. C. Cameron on Some Complaints of Children 8.5 p.m.
- 9 Wed London B.M.A. Charities Committee 2.30 p.m.

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 2s. which must be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue

BIRTH

JAYIS—At Risalpur North West Frontier Province India on October 15th 1925 to the wife of Captain O. D. Jayi Royal Army Medical Corps a daughter

MARRIAGE

SHRUD—At Risalpur North West Frontier Province India on October 15th 1925 to the wife of Captain O. D. Jayi Royal Army Medical Corps a daughter

DEATH

DAVIDSON—On October 28th at Charmouth Dorsetshire Harold Davidson M.R.C.S. L.P.C.P. of Teddington aged 64 years

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, NOVEMBER 21st, 1925

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National Insurance.

ADMINISTRATION OF MEDICAL BENEFIT

A MEETING of the London Centre of the Faculty of Insurance was held on October 26th, when Mr H LESSER, LL.B., occupied the chair, and Mr C W FOLLOWS, clerk of the Brighton Insurance Committee, gave an address on the administration of medical benefit.

Mr FOLLOWS said it would be impossible for him to deal fully with such a vast subject in the brief time at his disposal and he would therefore touch on one or two of the most important points principally those concerned with practical administration. The early difficulties of compiling medical lists were immense but to-day they had an adequate medical list in every area in spite of almost daily changes. They had withdrawals and they had a large number of admissions. Any doctor registered by the General Medical Council had a statutory right to apply to be placed on the medical list if he accepted the terms of service providing that he had not been removed from the medical list of any other area by the Ministry of Health upon a representation that his continuance on the list would be prejudicial to the interests of insured persons. They had no option but to place every doctor so qualified on the medical list on application and after that if they had any reason to believe that his continuance would be prejudicial steps for his removal had to be taken in accordance with the Regulations. With regard to surgery hours and surgery accommodation the question of accommodation could only be dealt with by somebody on the spot as the type of accommodation varied according to the neighbourhood. Surgery hours also had to be determined by local conditions but he considered, in the interests of the insured persons, the shorter the surgery hours the better so as to leave the doctor the maximum amount of time for visiting. Among other items to be dealt with were the questions of registers and the method of dealing with entry slips exit forms transfer of society and change of name upon marriage. The Index Register was not intended to be an index of the actual insured population in a given area but was really a register of the insured persons who entered insurance in that area or who chose a doctor on removal to that area and had not subsequently chosen a doctor in another area. Originally it was intended to be a register of the actual insured population but it was found impossible to keep a note of all the removals and societies ceased to send the removal slips notifying change of address so that it was not now attempted to get the actual insured population at any time resident in a given area. The register was also a combination of a register and ledger account upon which all the 'credits' to Insurance Committees for the purposes of medical benefit were based.

Mr FOLLOWS then explained how medical cards were issued to insured persons and the subsequent procedure. He also dealt with the medical practitioners' responsibility towards insured persons not on his list to temporary residents and to travellers. With regard to payments each quarter the Insurance Committee advised the doctor of the numbers on his list at the beginning of the previous quarter plus his acceptances less his removals, and it was on the basis of the number at the commencement of the quarter that the doctor received payment so that the Insurance Committee had ample time in which to prepare the doctor's payment. The doctor had ten days to raise any question in regard to the number credited to him and if he did not dispute it in that time he could not raise the matter afterwards. With regard to the general financial settlements there were two during the year—a provisional and a final one. The Ministry made a provisional credit at the beginning of the year, and at the end

a final one, but the principle of the distribution was the same throughout. The money was first of all credited to the Central Practitioners' Fund by the Ministry and that fund was constituted on a basis of 9s a head. The distribution of the money between Insurance Committees was made by the Minister after receiving a report from the Distribution Committee which was set up to satisfy certain interests. The basis of the issue of the funds was the register figure of the Insurance Committee, taken every quarter. That figure, however, had to be adjusted—it had to be either loaded or reduced in respect of temporary residents attended in the area as compared with those attended in other areas, or any other relevant circumstances—and when the final adjustment was made the amount payable to any Insurance Committee was the same proportion of the fund as the ratio of that Committee's units to the total units of all Committees. The Insurance Committee had to divide its local pool amongst the medical practitioners and this was done quarterly. Various adjustments however had to be made—such as the amount allowed for Prel Committee expenses, payment for services rendered by any anaesthetist and any expenses incurred for emergency treatment—and after those deductions had been made the pool was divisible among the doctors for the quarter *pro rata*, so that it was not intended to be 9s on any given amount per head. Doctors with 'limited lists' also had to have a deduction, which was from 2 per cent because they did not share in the responsibility of the treatment of those persons not on a doctor's list as the other doctors did. The 'limited lists' were generally those of resident medical officers in institutions. Deductions had also to be made from the ascertained figure in respect of fees paid by insured persons by way of deposit. After explaining how medical practitioners were remunerated under the Manchester and Salford Schemes (which were the great exceptions to the capitation basis of payment) Mr FOLLOWS concluded his address by saying that he had sufficiently indicated the tremendous amount of work involved in the administration of medical benefit, though he had been able only to touch the fringe of the subject, there was not time to deal with mileage institutions, special arrangements, medicines medical records, service subcommittees representations or title to benefit.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD

BIRMINGHAM BRANCH COVENTRY DIVISION—A meeting of the Coventry Division will be held at the Coventry and Warwickshire Hospital on Tuesday, December 1st, at 8.30 p.m. Dr. Heaf will read a paper on the use of sanocrysin.

BIRMINGHAM BRANCH NUNEATON AND TAMWORTH DIVISION—A meeting of the Nuneaton and Tamworth Division will be held at the Tamworth General Hospital on Thursday, December 17th, when Dr. A. P. Thomson will read a paper on the rheumatic state in childhood.

KENT BRANCH ISLE OF THANET DIVISION—The next meeting of the Isle of Thanet Division will be held on Thursday, November 26th, at 4 p.m. at the Princess Mary's Hospital, Margate, when Dr. Hugh Raven will take the chair. Dr. H. O. West (the medical superintendent) will speak on some present methods of treatment of surgical tuberculosis. Tea will be provided.

KENT BRANCH TUNBRIDGE WELLS DIVISION—The annual dinner of the Tunbridge Wells Division will be held at the Wellington Hotel on Thursday, December 10th, at 7.45 p.m. Tickets 10/- 6d each. Double tickets (lady and gentleman) 20s. Private (medical) guests may be invited. Applications for tickets accompanied by remittance should be made as soon as possible (but not later than December 8th) to the honorary secretary (Dr. D. Davies, 8 Lion d'Or Gardens, Tunbridge Wells). At the conclusion of the dinner an address will be given by Mr. W. E. Kempson (Solicitor to the Association) on some pitfalls in medical practice.

Meeting _____ meeting

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METROPOLITAN COUNTRIES BRANCH will give an address on vitamins at the Metropolitan Division point of view (illustrated by lantern slides) at the Metropolitan Division meeting on Tuesday, December 1st, at 9.30 p.m., when the City Division will speak on the treatment of eclampsia at Kingsland Road, E., on Tuesday, December 3rd at 7.30 p.m.

COUNTRYS BERKELEY OF THE DIVISION will take place at the Holborn Henbury Division—The first place at the Branch

Mr. G. C. ...
The annual dinner ...
Restaurant on Thursday ...
METROPOLITAN COUNTIES Division will ...
annual dinner of the Hendon Division will ...
Bridge Hotel, on Friday, November 27th, at 7 ...
All medical practitioners and their friends ...
It is hoped their friends ...
Sir Richard Terry, Mus. Doc. will join in this ...
Division ...
... 6d each ...
... 24th ...

and bring to the attention of the Society (president) and has kindly arranged for a portion of the programme.

METROPOLITAN COUNTIES BRANCH DINNER LEWISHAM DIVISION, November 1934

The Dinner of the Lewisham Division will be held on Tuesday, November 19th, at 8.45 p.m., at the Parish Room, St. Laurence Vicarage, Bromley.

Dr R. Godwin will occupy the chair and will give a paper on "The Public Medical Service Scheme for London." As this would revolve round the consideration of the public medical service scheme for London, members who earnestly consider the London question in London and in National Insurance should be present.

[illegible]

Medical profession. Among the members of the medical waiting Sir Holburn Waing are Sir William Lees put in the discussion are Mr McAdam Leedes thorne, and Mr McAdam Leedes and are invited to take part in the discussion attending is asked to bring a medical friend

SOUTH WEST ESSEX DIVISION —
South West Essex Division will be held at
Leyton, on Tuesday, December
Holborn will read a paper on the

[illegible]

Medical Association will be held at a short party
their friends will Ladies will be
Redmond Roche, RS, will read all members with
& Elliot Smith, I It is hoped that the success of the
of Lloyd's, this new headquarters, and their friends
tunity of visiting this new headquarters, and their friends
depends on a large attendance. Members and refreshments dancing
Divisions cordially invited. Music, light refreshments dancing
Tickets for member and guest may be had free on
(Or R L Stuart Webb,
W 1), further tickets may be had
many application
and will be held

[illegible]

on pro- North or Engle with a letter. At 8
the Conn Division will be the hotel and entertain
on Wednesday, November 25th, the hotel and entertain
spondence, Medical Secretary's monthly Meeting
representative at Annual Representative Meeting of the
will adjourn to the dining room of the hotel and entertain
to a complimentary supper Mr J Hamilton Barclay, M.D.
to the B.C.S., who will afterwards give an address entitled
emergencies will make the meeting
to friends. To facili

MS, a
castle on Tyne,
Some acute abdominal
ment It is hoped that all members asked to
success by attending arrangements, members, Hillside House, Stanley,
tate catering arrangements, (Dr John Charles, Hillside House, Stanley,
honorary secretary (Dr John Charles, Hillside House, Stanley,
Durham) not later than November 24th of their intention to
the supper. Supper tickets 5s each
BRANCH NORTH NORTHUMBERLAND DIVISION —
Northumberland Division will be held in
November 24th, at 2.30 p.m.
arranged by Mr G Grey common

be present. The North of England Division will be held at the Clarendon Hotel, London, on Tuesday, December 15th, at 7.30 p.m. A meeting of the North of England Division will be held at the Clarendon Hotel, London, on Tuesday, December 15th, at 7.30 p.m. After the business meeting an address will be given by Mr. J. H. Turner, M.S., F.R.C.S., entitled "Some points about the treatment of rectal diseases and their treatment." The annual meeting of the North of England Division will be held at the Clarendon Hotel, London, on Tuesday, December 15th, at 7.30 p.m. After the business meeting an address will be given by Mr. J. H. Turner, M.S., F.R.C.S., entitled "Some points about the treatment of rectal diseases and their treatment." The annual meeting of the North of England Division will be held at the Clarendon Hotel, London, on Tuesday, December 15th, at 7.30 p.m. After the business meeting an address will be given by Mr. J. H. Turner, M.S., F.R.C.S., entitled "Some points about the treatment of rectal diseases and their treatment."

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Shropshire and Mid
and Mid Wales Branch will be in November 27th
Shrewsbury on Friday November to the Mount Vernon, St. Bur
Dr Martin Berry (radiologist to the Mount Vernon, St. Bur
rloo Hospitals, chief assistant x ray department, St. Bur

Courses and Divisions

SOUTHERN BRANCH. JERSEY. Common—Paper
of meetings for 1925 26 have been arranged. Library—Paper
the third Thursday in each month (Chairman of the Division) health and disease
Colonel P. J. Maret (Chairman of the Division) Social evening
discusses of the Island, F.R.C.S. The pupil in Dr. H. Maret. Tins
Dr. A. S. Ferguson, April—Paper by Dr. H. Maret. Chemical
the evening. April—Paper by Dr. H. Maret. Chemical
the evening. April—Paper by Dr. H. Maret. Chemical

Notes on the epidemic of CHOLERA, TYPHOID, CARBUNCLE, and
 evening June 6th at 8.15 p.m. in Cox's Rooms (Chairman at
 opened by Mr G H B Avarne, T.R.C.S. Dr H B Brackenbury will give an address at
 A dinner and dance will be held in the Association's Institute, Park Place,
 Wednesday, December 2nd. The Body of the Engineers
 representative of the British Medical Association policy
 held at 8.15 p.m.

South WALES AND MONMOUTHSHIRE Division will be held at Cardiff, on the 24th and 25th inst. at 3.30 p.m. The evening and practical sessions will be held at 7.30 p.m. on the 24th and 25th inst. respectively.

A meeting of the Swansea Division, on Thursday, December 3rd, at 8 p.m. will be held at the Swansea Central Hotel.

WEST SUFFOLK Division—A clinical meeting of the West Suffolk General Hospital, Ipswich, on Tuesday, November 24th, at 8 p.m. will be held at the Ipswich Hotel.

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chair
London
revolu
nastern
insurance

the West Sussex
Hospital, Bury St
Dr T R Barwell will
of puerperal, and some other pri
3 p.m. Dr T R Barwell will read notes and show specimens
Mr H G Kilner will read notes and show specimens
permits
provided

BRANCH CROZON DIVISION—A meeting of the Crozon
held at 7 p.m., when Dr H W Barber will read
on certain diseases of the skin with

of the Reiga

SURREY will be held at 8.30 p.m. on Wednesday, November 26th, at the Association of Surgeons' Hospital, Reigate. A paper on the association of general medical diseases will be read by Dr H. C. Cameron.

SURREY BRANCH REIGATE DIVISION—A meeting of the division will be held at the East Surrey Hospital, Reigate, on Wednesday, November 26th, at 8.45 p.m. Dr H. C. Cameron will read a paper on the association of general medical diseases.

TOWNBRIDGE DIVISION—The division will be held at 8.45 p.m. on Wednesday, November 26th, at the Association of Surgeons' Hospital, Reigate. A paper on the association of general medical diseases will be read by Dr H. C. Cameron.

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Division —
to hold at the
o'clock, December
a paper on the
Holborn
combined meeting
density, on

YORKSHIRE BRANCH BRADFORD DIVISION—A meeting of the
will be held with the Bradford Medico-Chirurgical Society
Tuesday, December 8th DEWSBURY DIVISION—A meeting of the
YORKSHIRE BRANCH will be held at the Man and Saddle Restaurant
December 1st Dr Burrows (Leeds) will
give a diagnostic standpoint. Supper
will be followed by a visit to the various neighbouring Divisions.

Members from
Wakefield, Pontefract, and Castleford
will be welcomed
The Wakefield, Pontefract, and Castleford
Branch will be held at the Playhouse, Westgate, Wakefield, on
13th, at 3.30 p.m., when Colonel L. W. Harrison
will give a General Dissection to the Ministry of
Agriculture and Fisheries. A cinematograph film

Meetings of Branches and Divisions

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DORSET AND WEST HANTS BRANCH WEST DORSET DIVISION
 of the West Dorset Division was held at the Sherborne
 on the 11th. After formal business Mr. GOWAN
 delivered a most interesting and keen discussion
 on the subject of "Aerial Navigation". A cordial vote of
 thanks was given to Mr. GOWAN for his contribution to the
 cause of the Division. The meeting closed with a vote of
 thanks to Mr. GOWAN for his contribution to the cause of the
 Division. The meeting closed with a vote of thanks to Mr. GOWAN
 for his contribution to the cause of the Division.

A MEETING was held at the Hospital on November 10, 1968, M D, M Chu, Berkeley, M D, M Chu, Berkeley, Medical Association Lecture on puerperal hemorrhage followed in which seven members took part. Thanks to Mr Comyns Berkeley was carried with rectum was kindly provided by Dis McCarthy and Whittingdale meeting place by road travelled by members was over 600 miles

CANBERRA ILL DIVISION
Giles's
St. Stone,

A MEETING of the Metropolitan Counties Branch of the Hospital, Cumberland on November 10th, when Dr W G Marshall, chairman of the Division (Guy's Hospital) gave an address on "some of the problems of tuberculosis in the course of a very interesting and instructive lecture. In the course of the address he emphasized the importance of the first of the signs and symptoms of the disease, and concluded by saying that the only way to prevent the spread of the disease was by early diagnosis and treatment in the hospital, and by the use of the most modern methods of treatment."

SINGAPORE COLLEGE OF MEDICINE—(1) Professor of Biology. (2) Professor of Biochemistry. Salary, \$850—\$1,000 per mensem rising by annual increments of \$50 per mensem (=£1190—£1,400 per annum) with temporary allowance of 10 per cent of salary to unmarried, and 20 per cent to married officers.

SOUTH LONDON HOSPITAL FOR WOMEN Clapham Common, S.W. 4—Radio logist. Honorarium £60 per annum.

UNIVERSITY COLLEGE HOSPITAL Gower Street W.C.1—(1) Medical Registrar, salary £150 per annum. (2) Dental Surgeon.

WELSH NATIONAL SCHOOL OF MEDICINE Cardiff—Lecturer in Pathology and Bacteriology. Salary £750 per annum.

WEST LONDON HOSPITAL, Hammersmith Road W.6—(1) House Physician. (2) House Surgeon. (3) Aural House Surgeon and Casualty Officer (Wales). Salary at the rate of £100 per annum each.

WEST MIDDLESEX HOSPITAL Isleworth—Assistant to the Medical Superintendent. Salary £250 per annum rising to £300.

WILDESDEN GENERAL HOSPITAL Harlesden Road N.W.10—Honorary Physician with charge of outpatients.

WOLK COUNTY HOSPITAL—House Physician. Salary £150 per annum.

CERTIFICATE FACTORY SURGEON—The following vacant appointment is announced: Peterhead (Aberdeenshire). Applications to the Chief Inspector of Factories, Home Office, S.W.1.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

APPOINTMENTS

GILLOW Robert L. M.B. F.R.C.S. Ed. Assistant Surgeon. North Middlesex Hospital N.18.

GRAY Ian M. M.D. Edin. Medical Superintendent. Glasgow Royal Infirmary. Vice J. M. Thomson M.B. M.C. Edin. retired.

McKENNICK W. M.D. D.P.H. Glas. Medical Officer of Health for Colwyn Bay and Assistant Medical Officer of Health for Denbighshire.

ST. THOMAS'S HOSPITAL—Obstetric House Physicians (Senior) J. J. R. Robinson M.B. B.S. (Junior) W. E. Heath M.R.C.S. Ophthalmology House Surgeons (Senior) R. C. Saunders M.R.C.S. (Junior) H. A. Crevade M.B. B.Ch. Chief Residents and Clinical Assistants (Throat) D. F. A. Neilson F.R.C.S. (Chief Assistant) G. A. Amos M.R.C.S. F.C. Hayward M.R.C.S. (Skin) H. T. Iarron M.D. (Chief Assistant) R. Sellick M.R.C.S. B. R. Sworn M.R.C.S. (Far) H. I. Marriner F.R.C.S. Ed. (Chief Assistant) J. C. J. Crey M.R.C.S. (Dental) P. Lloyd Williams M.R.C.S. J.D.S. (Chief Assistant) A. H. Miller M.R.C.S. N. A. Miller M.R.C.S. (Aural Department) B. Shires M.B. Ch.B. (Chief Assistant) R. Sellick M.R.C.S. (Mental Diseases) J. Rickman M.B. B.Ch. (Chief Assistant) (Orthopaedic) E. P. Broelman M.B. Ch. F.R.C.S. (Chief Assistant) J. F. E. Gilliam M.R.C.S. (Children's Medical) C. R. Ames M.R.C.S. D. H. M. R.C.S. R. D. Milford M.R.C.S. A. G. Miller M.R.C.S. (Tuberculosis Department) R. B. Aiston M.R.C.S. (Electrocardiograph) J. H. Gibbons M.R.C.S. (Antenatal) D. H. M. R.C.S. (Ophthalmic) A. D. Bell M.R.C.S. (Neurological Department) F. S. Thornton M.R.C.S. Several other gentlemen received extension of their appointments.

DIARY OF SOCIETIES AND LECTURES

ROYAL SOCIETY OF MEDICINE
Section of Odontology—Mon 8 p.m. Mr. G. B. Pritchard. Exposure of the Pulp of Uncertain Origin. Mr. H. C. Watkin. Evolution of Radiography.

Section of Medicine—Tues 5.30 p.m. Discussion. The Clinical Aspects of Treatment and Prognosis of Nephritis to be opened by Professor H. Maclean.

Section of Comparative Medicine—Wed 5 p.m. Drs. Carey F. Coombs and Hadfield and Mr. G. E. Henson. The Endocarditis of Swine Erysipelas and its Relation to Endocardial Lesions in Man.

Section of Urology—Thurs 8.30 p.m. Clinical and Pathological Evening. Presidential Address.

Section of the International Society (Dr. Gustave Monod) will occupy the chair and the following are expected to take part in the discussion: Sir George Newman, Dr. van Breemen (Director of the Institute for Physical Treatment, Amsterdam), Dr. Kerr Pringle (Harrogate), Dr. Otto May (London), Dr. Buckley (Buxton), Dr. Jansen (Denmark), Dr. Louis Blanc (France), Dr. Schmidt (Czechoslovakia), Dr. L. J. Lickwell (London), Dr. M. B. Ray (London), Dr. Fortescue Fox (London).

Section for the Study of Disease in Children—Fri 8.30 p.m. Discussion. The Diagnosis and Treatment of Splenic Enlargements in Children to be opened by Sir Humphry Rolleston and continued by Dr. G. A. Sutherland, Mr. Arthur Edmunds, Dr. L. G. Parsons and Dr. Hugh Thurstield.

Section of Epidemiology and State Medicine—Fri 8 p.m. Dr. A. J. Chalmers. National Death Rates in Relation to National Differences in Housing.

The Library will remain open on Tues and Fri until 10 p.m.

MEDICAL SOCIETY OF LONDON 11 Chandos Street W.1—8 p.m. Clinical Evening. Exhibition of Cases and Skinograms.

NORTH WESTERN TUBERCULOSIS SOCIETY Tuberculosis Offices Juddrell Street. Dean gate Manchester—Thurs 7.30 p.m. Paper by Dr. G. L. Crevade. Vaccine Therapy with special reference to tubercle.

UNIVERSITY OF LONDON—At University College Hospital W.C. Thurs, 4.15 p.m. Dr. Charles Singer. History of Enteric Fever.

LOST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION
1 Wimpole Street W.1—Fellowship of Medicine. Lecture. Medical Society 11 Chandos Street W. Mon 5.30 p.m. Tuberculosis of the Spine. London Local Hospital Dean Street W. Instruction daily in the out-patient department and lectures. *London Temperance Hospital* (first week as per *Abroad*) 10 p.m. General. 5 p.m. Special Course in Medicine. 10 p.m. Lectures.

and demonstrations in the out-patient department and wards. *West End Hospital for Nervous Diseases* Welbeck Street, W. Lecture demonstrations illustrated by cases daily at 5 p.m.

CENTRAL LONDON THROAT NOSE & EAR HOSPITAL Gray's Inn Road W.C.1—Fri, 4 p.m., Earache.

LONDON SCHOOL OF DERMATOLOGY St. John's Hospital Leicester Square W.C.2—Christiefield Lectures. Tues 5 p.m., Diseases due to Fungi. Thurs, 5 p.m. Bacterial Affections.

NATIONAL HOSPITAL FOR THE PARALYSED AND PHILIPPIQUE Queen Square W.C.1—Mon Tues Thurs and Fri 2 p.m. Out-patient clinics. Mon 12 noon, (a) The Autonomic System. (b) The Growth of the Mind. 3.30 p.m., Alterations in the Visual Fields. Tues 3.30 p.m. Neurosyphilis. Thurs 12 noon Syphilis of the nervous system. 3.30 p.m. Methods of Testing the Eighth Nerve. Fri 3.30 p.m. Cerebral Diplopia. Operations. Tues and Fri 9 a.m.

NORTH EAST LONDON COLLEGE Prince of Wales's General Hospital Tottenham N.15—Thurs, 3 p.m. Demonstration. Investigation of Obstructive Jaundice. Conditions. 4.20 p.m. Lecture. Colon Bacilli. Syphilis. Daily. In-patient and out-patient clinics in general and special departments. Operations etc.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL Marylebone Road, N.W.1—Thurs, 5 p.m. Conditions leading to Obstructed Labour.

ROYAL INSTITUTE OF PUBLIC HEALTH 37 Ranelagh Square W.C.1—Wed, 4 p.m. Infection in Ships and the Prevention of Spread therefrom.

GLAUCOMA SOCIETY 101 Grosvenor Street W.1—At Royal Maternity and Women's Hospital. Wed 4.15 p.m. Obstetrical Cases. At Glasgow Eye Infirmary. Tues and Fri 2 p.m. External Diseases of the Eye.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH St. Andrew's—Tues, 4 p.m. Insulin in the Treatment of Toxic Delirium.

MACEATH ROYAL INFIRMARY—Tues 4.15 p.m., Functions of the Urinary Gland. Fri, 4.15 p.m., Renal Function.

British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE
TAVISTOCK SQUARE W.C.1

Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager) Telegrams Articulate Westcent London.

EDITORIAL SECRETARY (Telegrams Medica Westcent London) Editor *British Medical Journal* (Telegrams Allotique Westcent London).

Telephone numbers of British Medical Association and *British Medical Journal* Bureau 9351 9352 9353 and 9354. (Internal exchange, four lines).

SCOTTISH MEDICAL SECRETARY 6 Drum-bugh Gardens Edinburgh (Telegrams Associate Edinburgh Tel 461 Central).

IRISH MEDICAL SECRETARY 15 South Frederick Street Dublin (Telegrams Baillieu Dublin Tel 4737 Dublin).

Diary of the Association

- 20 Fri London Dominions Committee 2.0 p.m.
24 Tue London Office Committee and Locum Bureau Subcommittee Joint Meeting 11 a.m.
London Organization Committee
Croydon Division Croydon (General Hospital) Dr H. W. Parler on the Association of Certain Diseases of the Skin with General Medical Disease 8.0 p.m.
Ipswich Division St. Laurence Vicarage Bromley Road, 8.45 p.m.
W. The Infirmary Alnwick Mr. J. about Common Rectal Diseases
Meeting West Suffolk General Discussion on Use and Abuse of Insulin 3 p.m.
25 Wed London Medical Editorial Committee 2.30 p.m.
Consett Division Imperial Hotel Stanley Business Meeting 7.0 p.m. Supper 8.30 p.m. afterwards Mr. J. Hamilton Barclay on Some Acute Abdominal Emergencies
Norfolk Branch Norfolk and Norwich Hospital Dr D. H. Hutchinson on Proctology 1.15 p.m.
Oxford Division Annual Meeting Larendon Hotel Oxford, 2.30 p.m. Lunch 1.15 p.m. Dr. A. W. Walker on Some Normal Measurements and their Clinical Value.
26 Thurs Hyde Division Hyde Town Hall Dr G. J. Bond on Vitamin from the Medical and Public Health Point of View 8.30 p.m.
Isle of Thanet Division Princess Mary's Hospital Margate Dr H. O. West on Some Recent Methods of Treatment of Surgical Tuberculosis 4 p.m.
Westminster and Holborn Division Social Evening 8.30 p.m. B.M.A. House Prof. C. Elliot Smith on The Left-handed Lady of Hounds 9 p.m.
27 Fri London Public Health Committee 2.30 p.m.
Dundee Branch University College Dundee B.M.A. Lecture by Dr. F. A. E. Crew 8.30 p.m.
Hendon Division First Annual Dinner Brent Bridge Hotel, 7.15 p.m.
Shropshire and Mid Wales Branch Royal Salop Infirmary, Shrewsbury Dr Martin Berry on Modern Radiotherapy, 3.30 p.m.

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 3s, which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

MARRIAGE

SHAW—MICHAEL—On November 13th 1925 at St. Augustine's Church Kilburn by the Rev W. J. Smith of Northampton Charles C. Shaw B.A. A.R.B.A. of Northampton to Mary Michael M.B. B.S. M.R.C.S., L.R.C.P., of 22A Greville Road St. John's Wood N.W.6.

DEATH

JOHNSTON—On November 9th at 36 Devonshire Road Birkenhead Mary Sibthorpe wife of Dr. Francis Johnston and daughter of the late Henry Pooley J.P. of Liscard Cheshire.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, NOVEMBER 28TH, 1925

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British Medical Association.

CURRENT NOTES

Queen Alexandra

THE following letter of condolence with the King and the Royal Family on the death of Queen Alexandra has been sent on behalf of the British Medical Association by the Chairman of Council for submission to His Majesty

24th November, 1925

My Lord,

On behalf of the members of the British Medical Association throughout the Empire I respectfully beg leave to express to His Most Gracious Majesty the King, our Patron, Her Majesty the Queen, and the members of the Royal Family, the Association's heartfelt sympathy and profound sorrow at the death of Queen Alexandra, whose gracious thoughtfulness and unflinching devotion to the relief of suffering have endeared her to the profession.

The Association joins with the whole Empire in mourning one so greatly beloved, and in expressing to His Majesty its loyalty and devotion.

I am,

Your Lordship's most obedient Servant,

R. A. BOLAN,

Chairman of Council

The Rt. Hon. Lord Stamfordham, G.C.B.,
Buckingham Palace,
S.W.1

Pay and Conditions in the R.N.M.S., R.A.M.C. and R.A.F.M.S.

THE British Medical Association ever since the war has continued to urge upon the various directorates the reasons which, in its opinion, have led to a shortage of candidates for the Royal Naval Medical Service, the Royal Army Medical Corps, and the Royal Air Force Medical Service. Endless delays have occurred in reaching anything like a satisfactory settlement, but it is gratifying to learn definitely, as evidenced by the answer of the Secretary of State for War to a question in the House of Commons, recorded in the Parliamentary Notes in last week's JOURNAL (p. 981), that an interdepartmental committee appointed by the Government is seriously considering the whole question of pay and conditions of service in the medical branches of the Services, and that the British Medical Association is to be asked to send representatives to place its views before the committee.

A Mistaken Fmager

IN the course of the sitting of the Coal Commission on November 7th, Mr. Herbert Smith, president of the Miners' Federation, during his cross examination of Mr. W. A. Leo, who submitted evidence on behalf of the Mining Association, said, "Doctors have to be members of the British Medical Association before they can practise," and asked

whether there was any more harm in the miner being a member of his union. The witness replied that it was one thing to persuade a man to be a member and another to use the sort of persuasion employed by the Miners' Federation. Mr. Smith's statement about the British Medical Association, as members of the medical profession are well aware, is erroneous. We are inclined to think that he might have been expected to know that the British Medical Association is a voluntary body, devoted to the interests—scientific, social, and political—of members of the profession, and that the right to practise is conferred only by the entry of the practitioner's name on the *Medical Register*, a statutory document kept by the General Medical Council (Medical Act of 1858, Sections 25, 26 and 27). It will be seen that the President of that Council in his address (p. 185) at the opening meeting of its session this week, made a passing reference to the confusion which occasionally arises between voluntary societies of medical men and the General Medical Council.

Annual Meeting of Canadian Medical Association 1926

THE annual meeting of the Canadian Medical Association in 1926 will be held at Victoria, British Columbia, on June 21st to 26th, and at the request of the secretary of the Canadian Medical Association the Industrial and Publicity Commissioner for Victoria has forwarded to the British Medical Association copies of the official illustrated descriptive guide to that city. The guide sets forth the many attractions of Victoria, which the Commissioner informs us is often described as "a bit of Old England on the shores of the Pacific," and the Medical Secretary of the British Medical Association will be glad to forward a copy to any member who is thinking of visiting Canada next summer. Under the scheme of affiliation between the British Medical Association and the Canadian Medical Association, any members of the former attending the annual meeting of the Canadian Medical Association will receive as a matter of course all the privileges of membership of the Canadian Medical Association for the period of the meeting. Any members of the Association who are able to attend the meeting of the Canadian Medical Association will find it a most interesting occasion.

Constituencies for Election of Representative Body

THERE will be found on page 182 of the SUPPLEMENT this week the provisional Home Constituencies for election of the Representative Body, 1926-27. It will be seen that the Council proposes to repeat the existing grouping, except that the new St. Pancras Division of the Metropolitan Counties Branch is being made an independent constituency. Any Division objecting to the proposed arrangements should send to the Medical Secretary, British Medical Association House, Tavistock Square, W.C.1, not later than March 1st, 1926, a statement of its objection and of the reason therefor, and of what change the Division would

Association Notices

suggest the Council should make Under By-laws 41 and 43 the Representatives and Deputy-Representatives must be elected not more than nine nor less than two months before the Annual Representative Meeting at Nottingham, commencing on July 16th next. Each constituency in the United Kingdom of not less than 150 members is entitled to elect an additional Representative for each complete number of 100 members in excess of 50.

General Meeting or Postal Vote?

It is a matter for the Executive Committee of the Division—or, where the constituency comprises more than one Division, for a joint meeting of the Executive Committees of the Divisions forming the constituency—to decide whether the Representative(s) and Deputy-Representative(s) shall be elected by a general meeting of the constituency or by postal vote. The meeting must be called (or where the election is by voting papers, the voting papers be issued) by the secretary of the Division forming the constituency, or (in the case of constituencies comprising more Divisions than one) by the secretary of the Division containing the largest number of members. Whichever method of election is adopted, a meeting of the constituency must be held within the period June 18th to July 15th inclusive, to instruct the Representative(s). The names of Representatives and Deputy-Representatives must be notified to the Medical Secretary not later than June 3rd, 1926.

Retired Pay Appointments of Naval Medical Officers

In June last the British Medical Association made representations to the Admiralty in regard to the salaries offered to retired medical officers, R.N., for such services as the examination of recruits on a whole-time basis. The amount offered was £200 per annum. The Association pointed out that even for pensioned officers this salary was considered entirely inadequate and suggested that there should be an addition of at least 50 per cent. No official information has yet reached the Association, but it is understood on good authority that the rate of remuneration has been raised to £300 per annum.

Ophthalmic Benefit Proof of Title

At its meeting on November 12th last the Ophthalmic Committee of the British Medical Association expressed the following opinions, and is asking the Ministry of Health to bring them to the notice of all approved societies which have adopted the ophthalmic benefit scheme, in order that any misunderstanding may be avoided.

- (a) That unless proper credentials are produced by insured persons at the beginning of any consultation there can be no recognition by the specialists on the official list of any obligation to see them at the fee of one guinea.
- (b) That no exception can be made to the foregoing rule even in cases where insured persons forget to produce the proper credentials at the time of examination, but produce them subsequently.

Association Notices

PROVISIONAL HOME CONSTITUENCIES FOR
ELECTION OF REPRESENTATIVE
BODY, 1926-27

(Divisions bracketed together form one Constituency)

- ARBERG—
{ Aberdeen
{ Orkney
{ Shetland
- BATH AND BRISTOL—
Bath
Bristol
- BIRMINGHAM—
{ Bromsgrove
{ Dudley
Central
Coventry
Aston and Tamworth
Warwick and Leamington
West Bromwich
- BORDER COUNTIES—
Dumfries and Galloway
Langh
- CAMBRIDGE AND HUNTINGDON—
{ Cambridge and Huntingdon
{ Isle of Ely
East Hertfordshire
- CONNAGHT—
{ Mid-Connaght
{ North Connaght
{ South Connaght
- DORSET AND WEST HANTS—
Bournemouth
West Dorset
- DUNDEE
- EAST YORK AND NORTH LINCOLN—
East York
North Lincoln
- EDINBURGH—
Edinburgh and Leith
Lothians
South Eastern Counties
- ESSEX—
Mid Essex
North East Essex
South Essex
- FIFE

GLASGOW AND WEST OF SCOT
LAND—

- { Argyllshire
{ Dumfriesshire
Ayrshire
Glasgow Central
Glasgow Eastern
Glasgow North Western
Glasgow Southern
Glasgow
Renfrewshire and Bute

GLOUCESTERSHIRE

- KENT—
Bromley
Dartford
{ Rochester
{ Chatham and
Gillingham
Dover and Folkestone
Isle of Thanet
Maidstone
Tunbridge Wells

LANCASHIRE AND CHESHIRE—

- { Ashton under Lyne
{ Glossop
{ Birkenhead
Blackburn
{ Blackpool
{ Isle of Man
Bolton
Burnley
Bury
{ Chester
{ Crewe
Hyde
Stockport
East Cheshire
{ Leigh
Wigan
Liverpool
Manchester
Mid Cheshire
Oldham
Preston
Rochdale
{ St Helens
{ Warrington
Salford
Southport

LEINSTER—

- Dublin
East Leinster
Mid Leinster
North Leinster
North West Leinster
South East Leinster

METROPOLITAN COUNTIES—

- Camberwell
Chelsea
City
Finsbury
Greenwich and Deptford
Hamstead
Harrow
Hendon
Kensington
Lambeth and Southwark
Lewisham
Marylebone
North Middlesex
St Pancras
South Middlesex
South West Essex
Stratford
Tower Hamlets
Wandsworth
West Hertfordshire
West Middlesex
Westminster and Holborn
Willesden
Woolwich

MIDLAND—

- Chesterfield
Derby
{ Holland
{ Kesteven
Leicester and Rutland
Lincoln
Nottingham

MUNSTER—

- { North Munster
{ South Munster
{ West Munster

NORFOLK—

- East Norfolk
Norwich
West Norfolk

NORTHERN COUNTIES OF SCOT
LAND—

- Banff Elgin and Nairn
Caithness and Sutherland
Inverness
{ Islands
{ Ross and Cromarty

NORTH LANCASHIRE AND SOUTH
WESTMORLAND—

- Farness
Kendal
Lancaster

NORTH OF ENGLAND—

- { Bishop Auckland
Durham
Blyth
Morpeth
Cleveland
{ Consett
{ Hexham
Darlington
Gateshead
{ Hartlepool
Stockton
Newcastle-on Tyne
North Northumberland
{ South Shields
Tyne and Wear
Sunderland

NORTH WALES—

- Denbigh and Flint
N. Carnarvon and Anglesey
S. Carnarvon and Merioneth

OXFORD AND READING—

- Oxford
Reading

PERTH

SHROPSHIRE AND MID-WALES—

- South Eastern of Ireland—
{ Carlow and Kilkenny
{ Waterford

SOUTHERN—

- Guernsey and Alderney
Isle of Wight
Jersey
Portsmouth
Southampton
Winchester

SOUTH MIDLAND—

- Bedford
Buckinghamshire
Northamptonshire

SOUTH WALES AND MONMOUTH
SHIRE—

- Cardiff
Monmouthshire
North Glamorgan and
Brecknock
South West Wales
Swansea

SOUTH WESTERN—

- Barnstaple
East Cornwall
Exeter
Plymouth
Torquay
West Cornwall

STAFFORDSHIRE—

- North Staffordshire
South Staffordshire
Walsall and Lichfield

STIRLING

SUFFOLK—

- North Suffolk
South Suffolk
West Suffolk

SURREY—

- Croydon
Guildford
Kingston-on Thames
Reigate

SUSSEX—

- Brighton
{ Chichester and Worthing
{ Horsham
Eastbourne
Hastings
Lewes and East Grinstead

ULSTER—

- { Ballymoney, North Antrim
{ and South Derry
Derry
{ Enniskillen or co Fermanagh
{ Monaghan and Cavan
Omagh
Portlough and West Down

WEST SOMERSET

WILTSHIRE—

- Salisbury
Swindon
Trowbridge

WORCESTERSHIRE AND HEREFORDSHIRE—

- Hereford
Worcester

YORKSHIRE—

- Barnsley
Barnard Castle
{ Dewsbury
{ Leeds
Halifax
Harrrogate
Huddersfield
Rotham
Scarborough
Sheffield
Wakefield
Pontefract and
Castleford
York

PROPOSED CHANGE OF AREAS OF WINCHESTER, GUILDFORD, AND SOUTHAMPTON DIVISIONS

NOTICE is hereby given to all concerned of the following proposal made by the Winchester Division of the Southern Branch

(1) That the Urban Districts of Aldershot, Wimbomborough, and Fleet, together with that part of the Hartley Wintney Rural District lying east of and including the civil parishes of Crondall, Crookham, Emsay, and Lisle, be transferred to the Guildford Division of the Southern Branch

(2) That the Municipal Borough of Lynton, the Urban Districts of Eastleigh and Bishopstoke, the Rural Districts of South Stoneham, New Forest, Bordingbridge, Ringwood, and Lynton, and the civil parishes of Salisbury and Hook with Walsall in Fareham Rural District be transferred to the Southampton Division of the Southern Branch

Written notice of the proposal has been given to the Guildford and Southampton Divisions, and to the Southern and Surrey Branches, and the matter will be determined in due course by the Council. Any member affected by the proposed change and objecting thereto is requested to send a statement of his or her objection, and of the reason therefor to the Medical Secretary, British Medical Association House, Tavistock Square, London, W C 1, to reach him not later than December 28th, 1925

BRANCH AND DIVISION MEETINGS TO BE HELD

BIRMINGHAM BRANCH COVENTRY DIVISION—A meeting of the Coventry Division will be held at the Coventry and Warwickshire Hospital on Tuesday, December 1st, at 8.30 p.m. Dr. Half will read a paper on the use of sanocrysin.

BIRMINGHAM BRANCH NUNEATON AND TAMWORTH DIVISION—A meeting of the Nuneaton and Tamworth Division will be held at the Tamworth General Hospital on Thursday, December 17th, when Dr. A. P. Thomson will read a paper on the rheumatic state in childhood.

CAMBRIDGE AND HUNTINGDON BRANCH—A British Medical Association Lecture on some points in clinical endocrinology will be given by Dr. Leonard Williams on Wednesday, December 16th, at 3 p.m., in the Pathological Lecture Theatre, Medical Schools, Cambridge. All medical practitioners are cordially invited and it is hoped that as many members as possible will attend.

KENT BRANCH TUNBRIDGE WELLS DIVISION—The annual dinner of the Tunbridge Wells Division will be held at the Wellington Hotel, on Thursday, December 10th, at 7.45 p.m. Tickets 10s. 6d. each. Double tickets (lady and gentleman) 20s. Private (medical) guests may be invited. Applications for tickets accompanied by remittance should be made as soon as possible (but not later than December 8th) to the honorary secretary (Dr. D. Davies, 8 Lonsdale Gardens, Tunbridge Wells). At the conclusion of the dinner an address will be given by Mr. W. E. Hempsen (Solicitor to the Association) on some pitfalls in medical practice. At a meeting of the Division to be held on Friday, December 18th, at 3.30 p.m. at the General Hospital, Tunbridge Wells, a British Medical Association Lecture will be given by Professor A. J. Hall (Sheffield) on some after-effects of encephalitis lethargica.

LANCASHIRE AND CHESHIRE BRANCH—The first annual dinner of the Lancashire and Cheshire Branch will be held at the Midland Hotel, Manchester, on Thursday, December 17th, at 7.30 p.m. The price of tickets has been fixed at 15s. each and members may invite guests (male or medical women only). The Branch Council hopes that each member of the Branch will make every effort to attend. Those intending to be present are asked to notify the honorary secretary (Dr. A. Corsar Sturrock, 14, St. John Street, Manchester) immediately.

METROPOLITAN COUNTIES BRANCH CHELSEA DIVISION—At a meeting of the Chelsea Division to be held on Wednesday, December 2nd, at 4.30 p.m., at the Cancer Hospital, Fulham Road, S.W., Dr. Robert Knox, radiologist to King's College and the Cancer Hospitals, will give an address on x-rays in the diagnosis of the right upper quadrant of the abdomen. Tea will be served before the address. It is hoped that all members will make a special effort to be present on this occasion.

METROPOLITAN COUNTIES BRANCH CITY DIVISION—The next meeting of the City Division will be held at the Metropolitan Hospital, Kingsland Road, E., on Tuesday, December 1st, at 9.30 p.m., when Mr. Comyns Berkeley, chairman of the Metropolitan Counties Branch, will read a paper on the treatment of eclampsia. The annual dinner of the Division will take place at the Holborn Restaurant on Thursday, December 3rd, at 7.15 for 7.30 p.m. Tickets (12s. 6d.) to be obtained from the secretary, Dr. E. Wooley, 43, De Beauvoir Road, N. The next clinical meeting of the Division will be held at the Metropolitan Hospital on Friday, December 11th, at 4 for 4.15 p.m. Dr. Noiman Hill will show cases.

METROPOLITAN COUNTIES BRANCH HENDON DIVISION—The first annual dinner of the Hendon Division arranged to be held at the Brent Bridge Hotel, Hendon, on November 27th, has been postponed till Thursday, December 3rd, at 7 for 7.30 p.m. All medical practitioners and their friends are cordially invited. It is hoped that members will make a special effort to be present and bring their friends. The Hendon Centre of the British Music Society (president, Sir Richard Terry, Mus. Doc.) will join in this function and has kindly arranged to be responsible for the musical part of the programme. Dinner ticket 7s. 6d. each.

METROPOLITAN COUNTIES BRANCH KENSINGTON DIVISION—A general meeting of the Kensington Division will be held in St. Mary Abbott Parish Hall, Vicarage Gate, Kensington, W.8, on Tuesday, December 8th, at 8 for 8.30 p.m. An address will be given by Dr. Percy John Cammidge entitled "The use and abuse of insulin."

METROPOLITAN COUNTIES BRANCH LEWISHAM DIVISION—The Lewisham Division will hold a clinical evening at the South Eastern Children's Hospital, Sydenham, S.E.26, on Tuesday, December 15th. The annual dinner of the Division will take place at the Royal Bell Hotel, Bromley, on Thursday, December 17th, at 7.30 p.m., with Dr. R. Godwin Chase in the chair. Members are invited to bring medical guests. As the Chairman and Committee feel that it is highly desirable to foster the social side of medical practice in the borough it is hoped that all members will endeavour to be present. Dinner ticket 10s. 6d. (exclusive of wine).

METROPOLITAN COUNTIES BRANCH MARYLEBONE DIVISION—A meeting of the Marylebone Division will be held at the British Medical Association House, Tavistock Square, W.C.1, at 8.15 p.m. on Wednesday, December 9th, when a discussion on the relationship of the medical profession to unqualified practice will be opened by Sir Holburt Waring. Among those who have promised to take part in the discussion are Sir William Wilcock, Dr. C. O. Hawthorne and Mr. McAdam Eccles. Non-members will be welcomed and are invited to take part in the discussion. Every member attending is asked to bring a medical friend.

METROPOLITAN COUNTIES BRANCH SOUTH MIDDLESEX DIVISION—The following programme of meetings of the South Middlesex Division has been arranged: Wednesday, December 9th—8.15 p.m. General business, 8.30 p.m. Dr. R. Langdon Down will read a paper on the work of the British Medical Association. Wednesday, December 10th—1926—3.15 p.m. General business, 3.30 p.m. Dr. G. H. Dupont will read a paper on some observations on modern methods of control of scarlet fever and diphtheria. Tea will be provided. Wednesday, March 10th—8.15 p.m., General business, 8.30 p.m. Sir Kenneth Goadby will read a paper on chemistry of the blood as an aid to prognosis and treatment. Wednesday, April 14th—3.15 p.m. through the courtesy of Dr. J. B. Cool, a tour of the West Middlesex Hospital has been arranged. Tea will be provided. Wednesday, May 5th—Annual Meeting, 8.15 p.m., General business, 8.30 p.m. Election of officers, report of the representative and of the honorary secretary. The meetings with the exception of that on April 14th, 1926, will be held at St. John's Hospital, Tickenham. In the event of any special meetings being required or any alteration of the programme being necessary, due notice will be given.

METROPOLITAN COUNTIES BRANCH SOUTH WEST ESSEX DIVISION—A meeting of the South West Essex Division will be held at the Wesleyan Schoolrooms, High Road, Leyton, on Tuesday, December 1st, at 3.30 p.m., when Dr. Millais Culpin will read a paper on the handling of nervous patients.

METROPOLITAN COUNTIES BRANCH WESTMINSTER AND HOLBORN DIVISION—The social evening arranged by the Westminster and Holborn Division for November 26th has been postponed, owing to the death of Queen Alexandra until Wednesday, December 2nd. It will take place at the British Medical Association House, Tavistock Square, W.C.1. Members and their friends will be received at 8.30 p.m. by the chairman, Dr. Redmond Roche. Ladies will be welcomed. At 9 o'clock Professor G. Elliot Smith, I.R.S., will read a short paper on "The left-handed lady of Lloyd's." It is hoped that all members will take this opportunity of visiting the new headquarters. Members and their friends from other Divisions are cordially invited. Music, light refreshments, dancing till midnight. Tickets for a member of the Division and guest may be had free on application to the honorary secretary (Dr. R. E. Stuart Webb, 8 West Chapel Street, Mayfair, W.1). Further tickets may be had for 2s. 6d. each and remittance must accompany application.

MIDLAND BRANCH CHESTERFIELD DIVISION—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield, on Friday, December 11th, at 8.15 p.m., when Dr. J. S. C. Douglas, Professor of Pathology, University of Sheffield, will give an address on passive immunity. Tea and coffee at 8.

NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION—A scientific meeting of the Sunderland Division will be held at Monkwearmouth Hospital, Sunderland, on Tuesday, December 15th, at 7.30 p.m. All members of the Division are invited to be present.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH—A meeting of the North Lancashire and South Westmorland Branch will be held by kind permission of Dr. Hough and the governors of the hospital at the Ethel Hedley Hospital, Ca. Saturday, December 5th, at 3.15 p.m. C.M.G. M.D. (Bristol) will give a British Lecture on insulin treatment of diabetes with particular reference to the complications of diabetes and surgery in diabetes.

SOUTH WALES AND MONMOUTHSHIRE BRANCH CARDIFF DIVISION—A dinner and dance will be held in Cox's Rooms, Cardiff, on Wednesday, December 2nd. Dr. H. B. Brackenbury (Chairman of the Representative Body of the Association) will give an address at 3.30 p.m. the same day in the Engineers' Institute, Park Place, Cardiff, on theory and practice in British Medical Association policy.

SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION—A meeting of the Swansea Division will be held at the General Hospital, Swansea, on Thursday, December 3rd, at 8.15 p.m. Medical clinic.

SOUTHERN BRANCH JERSEY DIVISION—A meeting of the Jersey Division will be held on Thursday, December 17th, when Lieut. Colonel P. J. Marcet, chairman of the Division, will read a paper on common bacillary diseases of the island.

STAFFORDSHIRE BRANCH AND NORTH STAFFORDSHIRE DIVISION—A combined meeting of the North Staffordshire Division will be held at the Central School of Science, Stoke on Trent on Thursday, December 3rd, at 4.45 p.m., when a lecture will be delivered by Dr. Hugh Thursfield on the heart in the child and its prognosis. The meeting will be followed by a dinner at the North Stafford Hotel at 6.30 p.m. (charge for dinner 12s 6d.)

SURREY BRANCH CROYDON DIVISION—A meeting of the Croydon Division will be held at the Croydon General Hospital on Tuesday, December 15th, at 8.30 p.m., when Mr. A. H. Todd, F.R.C.S. will speak on cases collected from the orthopaedic department of the Croydon General Hospital.

SURREY BRANCH GUILDFORD DIVISION—A meeting of the Guildford Division will be held at the Royal Surrey County Hospital, Guildford on Thursday, December 3rd, at 4 p.m., when Dr. H. G. Adamson will give a lecture, illustrated by lantern slides, on the factors which determine the pattern and distribution of skin eruptions. Tea will be served at 3.45.

SURREY BRANCH KINGSTON-ON-THAMES DIVISION—A general meeting of the Kingston-on-Thames Division will be held at Surbiton Hospital on Tuesday, December 1st, at 8.45 p.m. A lecture will be given by Dr. William Brown on psychology and medicine. The committee hopes that the increased interest manifested in these lectures will be more than maintained on this occasion.

SURREY BRANCH REIGATE DIVISION—A meeting of the Reigate Division will be held at the East Surrey Hospital, Reigate, on Tuesday, December 8th, at 8.45 p.m. Dr. H. C. Cameron will read a paper on some complaints of children.

WILTSHIRE BRANCH TROWBRIDGE DIVISION—The Trowbridge Division will hold a dinner at the Bear Hotel, Derizes on Wednesday, December 2nd, at 7.15 for 7.30 p.m. after which Mr. Cecil Terry will read a paper on some minor points in surgery. The price of the dinner exclusive of wine, is 10s. 6d., and members intending to be present are requested to notify Dr. D. Leigh Spence (The Limes, Melksham) by the first post on Saturday, November 28th. As this is the first dinner held by the Division for many years it is hoped that all members will make a special effort to attend. Non-members in the Derizes area are cordially invited.

YORKSHIRE BRANCH BRADFORD DIVISION—A combined meeting will be held with the Bradford Medico-Chirurgical Society on Tuesday, December 8th.

YORKSHIRE BRANCH DEWSBURY DIVISION—A meeting of the Dewsbury Division will be held at the Man and Saddle Restaurant, Dewsbury on Tuesday, December 1st. Dr. Burrows (Leeds) will read a paper on referred pain from a diagnostic standpoint. Supper will be provided at 8.15 p.m. Members from neighbouring Divisions will be welcomed.

YORKSHIRE BRANCH HUDDERSFIELD DIVISION—The medical dance will be held on Wednesday, December 16th, in the Royal Infirmary, from 9 p.m. to 1 a.m. Reception 8.45. For those who do not wish to dance, a bridge drive, commencing at 9.15 will be arranged. Tickets 8s. 6d. each admission by programme. As the dance will only be held if a sufficient number of tickets are sold, it will greatly assist the committee if members will inform the honorary secretary before December 5th of the number of tickets required.

YORKSHIRE BRANCH SHEFFIELD DIVISION—A meeting of the Sheffield Division will be held in the General Lecture Room, The University, Sheffield, on Friday, December 11th, at 8.30 p.m., when a British Medical Association Lecture will be given by Dr. Cramer on the new outlook on cancer. Non-members will be welcomed.

YORKSHIRE BRANCH WAKEFIELD, PONTEFRAC AND CASTLEFORD DIVISION—A meeting of the Wakefield, Pontefract and Castleford Division will be held at the Playhouse, Westgate, Wakefield on Sunday, December 13th, at 3.30 p.m., when Colonel L. W. Harrison (Special Medical Officer for Venereal Diseases to the Ministry of Health) will deliver a British Medical Association Lecture on the management of syphilis, illustrated by a cinematograph film.

Meetings of Branches and Divisions.

METROPOLITAN COUNTIES BRANCH NORTH MIDDLESEX DIVISION
The first meeting of the North Middlesex Division for the season was held on October 28th in the Southgate Council Offices.

A letter was read from Dr. Fairweather, expressing regret at being unable to accept office as vice-chairman, and Dr. Payne was elected in his place. The Divisional gold badges of office for the chairman and secretary, presented by the Executive Committee, were handed round for the inspection of members.

The chairman, Dr. Fuller, took for the subject of his inaugural address Endocrinology, some facts and fancies. He said that the year 1889 was the beginning of modern endocrinology, though the real meaning of Brown Sequard's paper was not appreciated at the time. He then described the better known glands and their functions and illustrated this account with numerous cases of successful treatment by means of them. After discussing some of the recent work on diabetes and insulin and on the parathyroids and gonads, and mentioning especially the treatment of epilepsy and petit mal by parathyroid hormones, Dr. Fuller referred to the attitude of sceptics, gave some hints for treatment taken at random from his notebooks, and concluded with a forecast of what the future of treatment by the ductless glands might become.

Afternoon tea was provided by the kindness of the chairman, and a hearty vote of thanks to him brought the meeting to a close.

The annual dinner took place the following evening in the Criterion Restaurant. There were present fifty-five members and guests, including Dr. C. Courtenay Lord, Assistant Medical Secretary representing the Central Office of the Association. The musical programme after dinner was provided by members of the Division, and a very enjoyable evening was spent.

NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION Annual Dinner

The annual dinner of the Sunderland Division was held on November 12th when Dr. STANLEY RAW, chairman of the Division, presided. The guests included the Mayor, Dr. H. Crichton Miller (London), Dr. James Hudson (president of the North of England Branch), Mr. Luke Thompson M.P., Dr. Elstace Hill (M.O.H. for Durham County), Mr. W. G. Easthope, and the Rev. R. S. McLauchlan.

After the toasts of the King and the Houses of Parliament had been honoured, that of the Corporation and Mayor of Sunderland was proposed by Dr. D. F. Tomp. The Mayor, in reply, said that the municipality was very much in the hands of the medical profession. The valuable assistance rendered by the profession was a priceless asset. Though the health of the borough was not all it might be, the corporation was deeply interested in new devices for the treatment of disease. When they read of members of the medical profession who died through their devotion to science and in their efforts for the deliverance of mankind from suffering, they felt thankful that there were such heroes.

Dr. MONAGH proposed the health of the Association, and referred to his great work in connection with it. Dr. CRICHTON MILLER, in reply, said that it was that he had tried, with some success, to apply his mind to seeing the whole thing and seeing psychoneurosis whole, neither remaining in an objective groove nor becoming a crank.

The toast of the British Medical Association was proposed by His Honour Judge PARRY, who said it was a representative organization of one of the greatest of professions and commanded the esteem and gratitude of the whole community. It was said that the British Medical Association was a trade union the same thing had been said about the law. In a sense it was true for the medical and other great professions included among their objects the economic protection of their members. In one respect, however, the professional organizations differed from the industrial organizations. The former all recognized that the aim of the professions was the performance of a public function, and they made rules not merely for the economic protection of their members, but also rules intended for the better service of the public. Their ideal was that of service and not merely self-protection. No profession had shown that public spirit which dominated professional men more consistently than the medical profession.

Dr. HUNTER, in acknowledging the toast, said that the British Medical Association had been for some years trying to elaborate the distinction between profession and trade union, and he considered it was a very proper distinction to draw. The North of England Branch had over one thousand members which represented 80 per cent of the practitioners in the area. The Association had reached a height of prosperity and usefulness never before achieved, and its membership was now more than 30,000.

Mr. W. G. EASTHOPE, in proposing the toast of 'Prosperity to the Sunderland Division' said that there was no doubt of the respect and admiration in which the outside public held the medical profession. Owing to the Division's policy of reticence, the public knew little of its corporate activities, but they knew the members individually and held them in high esteem.

The CHAIRMAN, in responding, said that the Division, from every point of view, compared favourably with any other Division of the Association and paid tribute to the successful work of its honorary secretary, Dr. DIX.

SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION
On November 5th a clinical meeting of the Swansea Division was held at the Swansea General Hospital, when Dr. URBAN MARKS, chairman of the Division, presided. Several cases of interest were shown by Dr. A. CLARKE BLEG, O.B.E., and Dr. KINGSTON KNIGHT (house physician at the hospital).

SUFFOLK BRANCH SOUTH SUFFOLK DIVISION
A MEETING of the South Suffolk Division was held at the Crown and Anchor Hotel, Ipswich, on October 2nd, when Dr. W. F. ADLEY was in the chair.

The following motion, proposed by the Executive Committee, was adopted unanimously:

That a levy of 2s. 6d. per annum be made for the purpose of paying the expenses of the Representative in Representative Body. Any remaining balance to be carried forward and be credited to a fund for the next year to be used for the same purpose. That the representative be allowed one guinea per day, not to exceed eight days.

It was also resolved that this resolution should apply for the current year only, and be brought up for re-adoption at the annual meeting.

Dr. HARE, in a well-prepared statement intermingled with dry humour, briefly outlined the important discussions at the Annual Representative Meeting which he attended at Bath, and a hearty vote of thanks was unanimously accorded him.

The CHAIRMAN briefly explained the present position adopted by the staff of the Ipswich and East Suffolk Hospital with regard to the new contributory scheme and its relationship to the hospital policy of the Association. The contributory scheme had been submitted to the head office, which asked for the views of the staff.

with regard to the following points: (1) Income limit for the contributors—The staff were unable to express an opinion as to what the income limit should be. (2) The necessity for the patient bringing a note from the doctor—The staff thoroughly agreed to this point. (3) The consultative nature only of the out-patient department—Agreed. (4) The provision for a percentage of contributions passing into a staff fund—The staff do not yet consider it suitable to alter their honorary status.

The general feeling of the meeting was in sympathy with the attitude adopted by the staff.

Dr Addey was warmly thanked for his kindness in providing tea.

SUSSEX BRANCH CHICHESTER AND WORTHING DIVISION Autumn Dinner

The dinner of the Chichester and Worthing Division took place at the Warren Hotel, Worthing, on November 11th, when Dr H. J. M. Milbank Smith presided over a large company, including the Mayor of Worthing, members of local governing bodies, and members of the medical profession. In proposing the health of the guests,

Dr L. A. PARR, honorary secretary of the Brighton Division, referred to the many distinguished persons present and acknowledged with gratefulness the assistance he had received from Dr Helen Boyle, late chairman of the Brighton Division. He congratulated the Division on the latest of its many activities in bringing together such a large number of members of the various governing bodies in the neighbourhood. The work of such bodies and that of the medical profession was, he said, mutually interdependent. Without the assistance of the doctors it was quite impossible for the governing bodies who had so much to do with medicine and the public health to carry on their work. No public body was complete unless it numbered among its members at least one member of the medical profession. The profession on the South Coast was particularly fortunate in its association with the members of public bodies. The Brighton Division had recently been asked by the board of guardians to select six consultants. This he considered was a great compliment to the Association.

The Mayor of Worthing, in acknowledging the toast, expressed his appreciation at being invited to meet such a distinguished body as the Association, and of the great advances achieved through it. In referring to the importance of the health of the child—one of the greatest questions of the day—the Mayor said that in Worthing they had a small body doing excellent work in that direction under Dr Walslow. He urged that medical men should send their patients to the South Coast instead of abroad. Everything possible was being done to encourage visitors to Worthing.

Dr HENRY BOYLE, late chairman of the Brighton Division who also responded, spoke wittily of after-dinner speakers, and quoted Herodotus for a curious and interesting custom. The views of the Greeks on a particular question were obtained after dinner and again the following morning, and on the two statements were founded the decisions made. That was, she held, an appeal to the subconscious mind and the conscious mind.

Alderman FROST, in proposing the toast of "Prosperity to the British Medical Association," said that the Association had rendered very great services both to the medical profession and the community at large. He referred to the high status attained in the profession, and acknowledged the services given to rich and poor alike by its members. The public health service of the country had benefited by its activities as was illustrated by the recent speech of Sir Kingsley Wood when he said that the Government would never think of issuing new health legislation or of modifying the old without seeking the help and experience of the whole medical profession centred in the Association.

Dr G. C. ANDERSON (Deputy Medical Secretary), in reply said he thought the Association deserved a great many of the compliments that had been paid it that evening. Regarding the fundamental differences between trade unionism and professional unionism, he said that the former existed for the interest of a particular class while the latter existed for the interest of the community. Dr Anderson referred to the growth of the Association in the Division and welcomed the presence of members of the local governing bodies as showing that the Association stood for something good.

Sir ST. CLAIR THOMSON, President of the Royal Society of Medicine in proposing the health of the honorary secretary of the Chichester and Worthing Division spoke with pride of his forty-two years' membership of the British Medical Association. He urged that every young man should join it as soon as he was qualified. In responding Dr DUNCAN D. MACKINTOSH called attention to the insignia of office worn by the chairman and himself for the first time that evening. He spoke of the pleasure he found in performing his duties.

The toast of 'The Chairman' was proposed by Dr HINDS who expressed the belief that nothing but good would come out of that meeting. He paid a tribute to Dr Milbank Smith's services on behalf of the Association both in his present position and as secretary. The CHAIRMAN, in reply, expressed the hope that the occasion would be an annual gathering.

Dr HABBERTON LULHAM subsequently gave an interesting lantern lecture on human nature through a doctor's eyes, which was thoroughly enjoyed by the assembly.

NATIONAL INSURANCE

Dr R. GODWIN CHASE, chairman of the Lewisham Division of the British Medical Association, and a member of the London Panel Committee, has been appointed the medical representative of the London County Council on the London Insurance Committee in succession to the late Dr Pring.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1925

THE one hundred and twenty-second session of the General Medical Council was opened at 44, Hallam Street, W., on November 24th. The President, Sir DONALD McALISTER, Bt., K.C.B., was in the chair.

Official notification was received of the appointment of Professor Edward Fawcett, M.D., as representative of the University of Bristol for five years from July 1st, 1925. Professor Fawcett was introduced by Sir Gilbert Baring and took his seat.

Communications were received from Dr Caton, Professor Harvey Littlejohn, and Dr Russell, stating that they were unable to attend the session of the Council owing to illness. The sympathy of the Council was extended to these members. The President said that he thought the Council would wish to send a message of congratulation to Sir Dyce Duckworth, a former treasurer, whose 85th birthday it was. This was agreed to with applause.

THE PRESIDENT'S ADDRESS

The President then proceeded to deliver his address from the chair. The members of the Council and the strangers in the galleries all stood during his opening reference to the death of Queen Alexandra.

Sir DONALD McALISTER said: Gentlemen,—We meet under the shadow of a national bereavement. The death of the Queen Mother Alexandra, revered and beloved by the whole nation, has made us all fellow-mourners with the Royal Family. The Council will join with me in expressing to the Lord President of the Council, as the Minister concerned with our statutory functions, our desire that on a suitable occasion he may convey to Their Majesties a loyal and dutiful assurance of our respectful sympathy and deep regret.

We lose from our counsels a member of exceptionally wide experience and administrative ability by the retirement, after fifteen years' service, of Sir Isambard Owen, the representative of the University of Bristol. Having held high office in that University, and also in the Universities of Cambridge, London, Durham, and Wales, he was able both to frame ideals of academic organization and to embody them in statutes and ordinances. Few men of our profession in this generation have done so much constructive work of an abiding kind in setting the framework and directing the policy of modern universities. We offer him our good wishes in his retirement from his manifold and fruitful labours. His place is taken by the distinguished Dean of the Bristol Faculty of Medicine, Professor Edward Fawcett, F.R.S. His eminence in anatomical science, and his experience as an examiner for many of the licensing bodies, give him a claim to our welcome which the Council willingly records.

The Disciplinary Functions of the Council

In accordance with our practice, the November session will be mainly devoted to the hearing of charges against registered practitioners. These charges are brought before us as "the tribunal, to whom the Legislature has left the decision, as being the best judges in the matter." I quote the words of Chief Justice Cockburn. If I may use in supplement the words of Lord Justice Fry, "the Council are fully aware that [in these inquiries] they are performing judicial duties," and, he added the comment, they "endeavour evidently to perform them in a very admirable manner." The composition of the Council changes slowly, but these authoritative estimates of its jurisdiction, its attitude, and its procedure as a court, are still applicable, as they have been throughout the thirty-six years during which I have had the opportunity to observe the Council from within. Apart from cases of conviction in the criminal courts, the charges to be investigated allege conduct which, in the words of the Act constituting the Council, is "infamous conduct in a

professional respect." These words are sometimes misinterpreted and misapplied by persons ignorant of their history, sometimes even by advocates practising before this tribunal. It is therefore desirable in the common interest that, from time to time, their legal definition should be recalled. The legal definition was not framed by the Council, it was laid down for the direction of the Council by the Supremo Court, and it was picked up by Lord Justice Lopes, Lord Justice Dwyer, and Lord Escher, Master of the Rolls, in consultation. It is thus

"If a medical man in the pursuit of his profession has done something with regard to it which will be reasonably regarded as disgraceful or dishonourable by his professional brethren of good repute and competency, then it is open to the General Medical Council if that is shown, to say that he has been guilty of infamous conduct in a professional respect. The Master of the Rolls added further "The question is not merely whether what the medical man has done would be an infamous thing for anyone else but a medical man to do. He might do an infamous thing which would be infamous in anyone else, but if it is not done in a professional respect, it does not come within Section 29 [of the Act]. Yet, in relation to his profession—that is either with regard to his patients or to his brethren—he does that which may fairly be considered 'infamous conduct in a professional respect,' then I think it is within the Section."

Within the jurisdiction defined by the statute, according to the procedure laid down by the Lords Justices when giving judgement in certain leading cases, and in accordance with the definition of the technical term "infamous conduct" furnished by the same authority, the Council performs its statutory duty as a "domestic forum." If, swayed by fear, favour, or clamour, the Council fails to perform any duty vested in it by law for the protection of the public, the Medical Acts themselves provide that the public shall not go unprotected. The Privy Council may issue its directions to the General Council to make good the default, and, failing compliance, "may exercise any power or do any act or thing vested in or authorized to be done by the General Council." In other words, the Medical Council is a public department, with judicial functions defined by statute and by the courts, working under the supervision of the Privy Council, and subject to supersession by the Privy Council if it defaults. It is not vested with any powers or duties for the "protection" of the medical profession, other than those implied in the preamble to the Medical Act, 1858—namely, "That persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners." For that purpose, which is obviously a purpose of public utility, the Register was set up. The Council's duty to the public is simply to ensure that no one who is not legally qualified by adequate professional training and testing shall get on to the Register, and that no one who by his conduct has forfeited his claim to be entrusted with the status of a legally qualified practitioner shall remain on it.

The legal privileges of the qualified practitioner of medicine and surgery, as compared with the unqualified, are few. He has no monopoly of practice in either branch, such as the law confers on dentists and midwives in their specialties. The "privileges" are rather trusts than advantages. Thus only the qualified can legally grant a valid medical certificate of illness or injury, or of death, or legally prescribe a dangerous drug for a patient. In many cases the attestation of a qualified practitioner is legally equivalent to that of a magistrate or a clergyman. These "privileges" are clearly based on the assumption that members of a learned and honourable profession may be trusted to deal honourably. Whoever, therefore, abuses that trust by misusing the privileges his status confers, or by covertly enabling others for private gain to evade their legal disabilities, is chargeable with misconduct "in a professional respect," and makes himself liable to its penalty of removal from the Register. As the law stands, he is then as free to practise as if he had not been registered, and the public are as free to employ him, if they think fit. But the Council, as the guardians of the Register, have neither the power nor the responsibility of controlling his conduct thereafter. His status is that of an unqualified practitioner, and he is outside the Council's jurisdiction.

The members of the Council will perhaps pardon me for

reporting from this chair what is entirely familiar to them, but there are indications that, both within and without the profession, misunderstandings and confusions exist regarding the Council's functions and limitations. We are, for example, frequently confounded with voluntary organizations and societies of medical men, constituted for scientific and professional purposes, and subserving these purposes with eminent efficiency. These bodies are not, however, charged by statute with our duties and powers, nor we with theirs. We have no professional interest to serve other than the efficient performance of the specific duties laid upon us by the law in furtherance of the public welfare. It appeared to me expedient that, speaking publicly to my colleagues, not for them, I should endeavour to state as briefly and clearly as I can the true facts concerning our position. I need not say that nothing in my remarks has particular reference to any of the cases set down for inquiry this session. In each of these the full evidence on both sides has still to be set forth in open court, in each of them after patient hearing the Council's judicial decision will, as always, be given strictly on the ascertained merits of the case.

I turn to certain matters of interest which have called for attention during the recess.

Southern Ireland

As regards Ireland, I have only to say that the Act of the Free State passed in February, 1925, which made the Medical Acts operative in Southern Ireland for one year, has been working smoothly so far as this office is concerned. We have had no official intimation from the Free State Government, or from the Privy Council, that the Act will be renewed next February. Unofficial communications from members of the Irish Branch Council, and others, indicate that indefinite renewal is improbable, and that conferences on the question are in progress between the Government of the Free State and a committee representative of the Irish medical profession. Until the legislative proposals of the Government in Dublin for the future regulation of medical practice in Southern Ireland are known, it would be inexpedient for this Council to discuss the potential reactions of such legislation on medical education and registration in Great Britain and Northern Ireland. The Free State is autonomous within its own territory, and we must await the decision of its own Government and Parliament.

Italy

The agreement for medical reciprocity with Italy was signed by Signor Mussolini and the British Ambassador, as plenipotentiaries, on May 21st, 1925. Certain difficulties of an administrative—perhaps I might say of a bureaucratic—kind were raised by Italian officials during the summer. These related chiefly to the documents to be furnished by British practitioners desirous of practising in Italy, and to their attestation. With the efficient assistance of the Foreign Office, and of the respective Embassies in Rome and in London, these difficulties were satisfactorily overcome. We now learn from Rome that in the *Italian Official Gazette* of August 28th was published a Royal Decree of June 18th, by which full and entire execution was given, as from May 21st, 1925, to the reciprocity agreement. We may therefore say that the cordial understanding regarding medical reciprocity, which subsisted between Italy and this country from 1910 until the promulgation of the recent Italian law on the subject, has been completely restored.

Canada Saskatchewan

The position taken up by the Province of Saskatchewan, by which it, in effect, denies to British practitioners registered here the privileges granted in this country to provincial licentiates, has been the subject of communications between the Dominions Office and the Deputy Governor-General of Canada on behalf of the Dominion Government. The Dominion authorities propose a conference with the provincial authorities on the subject, and request that action by the Privy Council in regard to the discontinuance of the unreciprocated privilege of Saskatchewan should remain in abeyance, pending such conference. The Executive Committee have assented, being desirous that every opportunity should be afforded for reconsideration of the

anomalous position created by Saskatchewan legislation. The recent parliamentary elections in the Dominion may be accountable for the delay in reaching a settlement. The analogous case of New Brunswick will, no doubt, have to be dealt with in a similar manner.

Indian Universities

The Executive Committee have received communications from the University of Calcutta indicating that the syndicate are now prepared to receive a visitor or inspector of their M.B. examinations, whose report may enable the Committee to form an opinion concerning the "sufficiency" of that degree in terms of the Medical Acts. Colonel Needham, the official inspector approved by the Council, has accordingly been instructed to visit the examinations in question. His report, however, cannot reach the Committee until, at earliest, its meeting in February, 1926, and no decision as to the renewal of recognition can be reported to the Council before the May session. Certain interim reports by Colonel Needham on other Indian universities and colleges have been received, and such action as the Committee deemed suitable has been taken thereupon. In particular, his report on the progress made by the University of the Punjab has justified the Committee in continuing for another year the recognition accorded to its degrees, under the same conditions as before.

Revision of the "British Pharmacopoeia"

The Pharmacopoeia Committee is now in a position to proceed with its preparations for the revision of the *British Pharmacopoeia* 1914, which it has for some time been contemplating. Two recent events have cleared the way. The first is the passing of the Therapeutic Substances Act, 1925, by which Government machinery is provided, in association with the International Commission of the League of Nations, for fixing standards, etc., in relation to preparations requiring biological methods of testing. The second is the issue of the report of the International Conference on Potent Drugs, held at Brussels in September. At this conference the Council was represented by Sir Astor Tirard, who will report to the Pharmacopoeia Committee its proceedings and conclusions. If the latter are accepted, with or without reservations, by the British Government, this acceptance will necessarily involve modifications, some of them important and far-reaching, in the text of the *Pharmacopoeia*.

The Lord President of the Council has been pleased, at the request of the Committee, to enlist the services of the India Office, and of the Dominions and Colonial Office, in transmitting, through the several Governments of the Empire, an invitation to their respective medical and pharmaceutical authorities to communicate to the Council suggestions for the improvement of the *Pharmacopoeia*, with a view to its better adaptation to local requirements. Similar invitations have been addressed directly to the universities and medical corporations in this country. The Pharmaceutical Society of Great Britain has been asked to co-operate in the work of revision by nominating members of a Pharmaceutical Advisory Committee and a Committee of Reference in Pharmacy. Steps will also be taken to procure the nomination of committees of reference in other subjects, such as chemistry, botany, biological methods, pharmacology, and therapeutics.

As the *Pharmacopoeia* has by the nature of the case to serve the purposes of all the parts of the Empire in which it is current, it has to include within its scope a much larger number of drugs and preparations than would be deemed necessary for any one part. A given preparation may be thought obsolete or useless here, and yet be in much demand elsewhere. Any drug, in fact, which is (1) in current use over any considerable area, and (2) requires for the safety of the public that it should be exactly defined in respect of source, preparation, standard of purity, etc., has a claim to admission. The modern freedom of international communication further makes it expedient that, in different countries, the same or equivalent names, especially in the case of potent drugs, shall mean preparations of equivalent strength and composition. In so far as this end can be attained by international agreement, the assimilation makes for public health and

safety. All these considerations have to be kept in mind by the Pharmacopoeia Committee, and it hopes, with the assistance which it has invited from the authorities at home and overseas, and with the co-operation of its expert committees of reference, in the next issue to "afford to the members of the medical profession and to those engaged in the preparation of medicines throughout the British Empire one uniform standard and guide, whereby the nature and composition of substances to be used in medicine may be ascertained and determined."

A vote of thanks to the President for his address was accorded, on the motion of Dr. J. A. Macdonald, seconded by Sir Norman Walker.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE

SURGEON COMMANDER E. D. RUTHERFORD (retired) has been promoted to the rank of Surgeon Captain (retired).
Surgeon Commander H. E. White M.V.O. O.B.E. to the President, additional for three months, not a graduate course.
Surgeon Lieutenant J. V. Williams to the *Edgemon* on joining.

ROYAL ARMY MEDICAL CORPS

Major E. M. Pennefather to be Lieutenant Colonel to complete a tab. *Edgemon*.
Captain G. O. F. Alley M.C. is granted the temporary rank of Major whilst employed as Deputy Assistant Director of Hygiene and Pathology. The following Captains to be Majors: J. C. Sproule O.B.E. with precedence next below N. T. Whitehead M.C. G. F. All on M.C. with precedence next below A. F. C. Martyn (substituted for notification in the *London Gazette* August 8th 1924).
Captain W. P. Croker to be Major January 24th 1925 with precedence next below J. Rowe M.C. (Substituted for notification in the *London Gazette* of February 10th 1925).

ROYAL AIR FORCE MEDICAL SERVICE

Wing Commanders B. A. Payne D.S.O. and W. W. Shorten to R.A.F. Depot pending disposal on transfer to Home Establishment.
Squadron Leaders T. J. Kelly M.C. and J. T. Forbes to R.A.F. Depot on transfer to Home Establishment.
Flight Lieutenants H. McW. Daniel to Aircraft Depot Iraq, V. R. Smith to Helioportia Detachment Egypt, A. F. Barr Sim G. Kinneir T. J. D. Atteridge and J. C. O'burne to R.A.F. Depot on transfer to Home Establishment.
Flying Officer R. W. White is promoted to the rank of Flight Lieutenant.
Flying Officers G. M. Anderson to R.A.F. Depot, B. L. Edwards to R.A.F. Hospital, Halton, L. C. Palmer Jones to Central Flying School, Upavon, R. C. L. Fisher, J. Parry Evans and F. L. White to R.A.F. British Hospital Iraq, H. C. Patten on and B. Pollard to Station Commandant Hinaidi.
Dr. W. D. McKeown has been granted a short service commission as Flying Officer for three years on the Active List.

SUPPLEMENTARY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Major H. B. Walker late temporary Major R.A.M.C., to be Captain.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Captain G. W. B. Shaw R.A.M.C. to be Divisional Adjutant 44th (Home Counties) Division T.A. vice Captain S. R. Reid R.A.M.C. who vacates the appointment.
Captain H. A. Sandiford M.C. R.A.M.C. to be Divisional Adjutant 49th (West Riding) Division T.A. vice Captain C. Lopham R.A.M.C. who vacates the appointment.
Lieutenant H. S. Ward (late M.G. Corps) to be Lieutenant.
Sanitary Companies—Lieutenant G. W. Wright to be Captain.

TERRITORIAL ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Captain J. C. Robb (superannuated for service with the Belfast University Contingent O.T.C.) from the Active List to be Captain.

VACANCIES

ALL SAINTS HOSPITAL FOR GENITO-URINARY DISEASES.—Resident House Surgeon. Salary at the rate of £200 per annum.
BIRMINGHAM CORPORATION.—Senior Assistant Medical Officer (male) at the Infectious Diseases Hospitals. Salary £500 per annum rising to £600.
BIRMINGHAM MATERNITY HOSPITAL.—House Surgeon. Salary at the rate of £75 per annum.
BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Honorary Assistant Physician.
BIRMINGHAM QUEEN'S HOSPITAL.—(1) Anaesthetist (2) Obstetric and Ophthalmic House Surgeon (3) Casualty House Surgeon. Salary for (1) £70 to £100 per annum (2) and (3) £70 per annum.
BRADFORD ROYAL EYE AND EAR HOSPITAL.—Male House Surgeon. Salary £120 per annum.
BRIGHTON HOVE AND PRESTON DISPENSARY AND HOVE HOSPITAL.—Honorary Medical Officer.
CAIRO MEMORIAL OPHTHALMIC LABORATORY.—Ophthalmic Surgeon and Director of Ophthalmic Laboratory. Salary £1,500 per annum.
CAMBRIDGE ADDENBROOKS HOSPITAL.—House Surgeon (male). Salary at the rate of £130 per annum.
CARDIFF CITY MENTAL HOSPITAL, Whitechurch.—Locumtenent (male) for six months. Salary 74 guineas a week.
CHARING CROSS HOSPITAL W.G.2.—Honorary Assistant Radiologist.
CHELSEA HOSPITAL FOR WOMEN, Arthur Street S.W.3.—Junior House Surgeon (male). Salary £100 per annum.
COUNTY MENTAL HOSPITAL, Rainhill.—Temporary Assistant Medical Officer. Salary £7 7s per week.

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SUPPLEMENT

TO THE

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British Medical Association

CURRENT NOTES

ANNUAL MEETING NOTTINGHAM 1926

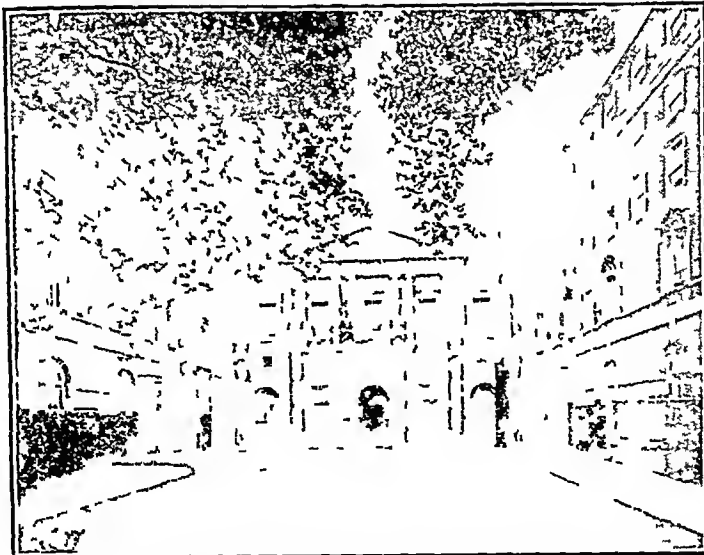
THE ninety-fourth Annual Meeting of the British Medical Association will be held in the latter part of July, 1926, at Nottingham, under the presidency of Mr. R. G. Hogarth, C.B.E., F.R.C.S., senior surgeon to the Nottingham General Hospital. The Annual Representative Meeting will open on Friday, July 16th, the President will give his Address to the Association at the adjourned Annual General Meeting on Tuesday, July 20th, and the Sections will meet on the three following days. The Council, on the advice of the Arrangements Committee, has decided that the scientific and clinical work of the Nottingham meeting shall be divided among thirteen Sections. We print below the names of the Sections and their Presidents, that of Anaesthetics will, it is hoped, be of the nature of an international section. The full list of officers of Sections will appear in a later issue.

Presidents of Sections

Medicine—F. H. JACOB, M.D., F.R.C.P.—(Nottingham)
Surgery—Sir D. ARCY POWER, K.B.E., F.R.C.S.—(London)
Obstetrics and Gynaecology—COMPTON BLKELFY, M.D., M.Chir., F.R.C.I.—(London)
Pathology and Bacteriology—Lieut. General Sir WILLIAM B. FISHMAN, K.C.B., K.C.M.G., F.R.S., F.R.C.I., Director General A.M.S.
Medical Sociology—C. J. DODD, M.C.M.G., F.I.C.S.—(Leicester)
Neurology and Psychology—E. FARQUHAR BUZZARD, M.D., F.R.C.P.—(London)
Ophthalmology—W. G. LANE, M.B., Ch.B., F.R.C.S.—(Nottingham)
Public Health—W. J. HOWARTH, C.B.E., M.D., D.P.H.—(London)
Diseases of Children—HUGH THURSFIELD, M.D., F.R.C.P.—(London)
Laryngology and Otology—A. BROWN, M.B., Ch.B., M.D., D.Sc.—(Glasgow)
Dermatology—H. G. ADAMSON, M.D., F.R.C.P.—(London)
Orthopaedic—E. MURHEAD, LITTLE, F.R.C.S.—(London)
Anaesthetics—SAMUEL JOHNSTON, M.D., C.M.—(Toronto)

THE ROYAL OPENING ON JULY 13th 1925

THE JOURNAL of July 18th, 1925, contained a complete account of the formal opening of the British Medical Association's House in Tavistock Square, London, on Monday, July 13th, by His Majesty the King, accompanied by the Queen. It included also descriptions of the new headquarters and of the several buildings previously occupied by the Association, and historical notes on the site of the new house and on the growth of the Association overseas. These



THE BRITISH MEDICAL ASSOCIATION'S HOUSE, TAVISTOCK SQUARE, LONDON

articles, as well as the report of the opening ceremonies, were very fully illustrated by reproductions of photographs, drawings, and plans, and the SUPPLEMENT was devoted to a facsimile in black and white of pages from the Association's *Roll of Honour*, together with pictures of the new building and of the Memorial Gates opened and dedicated on July 13th by the Archbishop of Canterbury. That issue of the *BRITISH MEDICAL JOURNAL* has, we believe, been preserved by many readers as a souvenir of a day which will ever be memorable in the annals of the Association. For the benefit of new members of the

profession and others who have not yet joined the Association, the following note recalls, very briefly, the main features of the new building.

THE ASSOCIATION'S NEW HOUSE

THE well known building in the Strand, vacated this year, was built in 1908, when the British Medical Association was 76 years old. It is very substantially built, and being the freehold property of the Association, is a most valuable asset, but owing to the immense growth of the work of the Association in recent years it had become far too small to fulfil its functions adequately, so that accommodation originally intended for the use of members generally had to be absorbed for business purposes. Meanwhile the membership had grown from 21,000 in 1908 to 29,000 at the time of the move, and is now over 39,500. The beautiful new building, of red brick with white stone facings, formally opened as the headquarters of the Association on July 13th.

stands back from the north east corner of Tavistock Square on the direct route from Kingsway to King's Cross. Part of the site was formerly occupied by Tavistock House, the home for some years of Charles Dickens. The building, as completed to the design of Sir Edwin Lutyens, R.A., has a total floor area of 58,000 square feet. The main block is supported by two wings, which with it comprise three sides of a quadrangle. Entering from the private roadway, the first objects that strike the eye are the beautiful wrought-iron Memorial Gates, opening into the Court of Honour with its circular grass plot, and behind the Gates the main block with lofty windows and handsome pediment surmounting four pairs of Corinthian columns. Right and left of the central archway on the ground floor of this block are the mahogany-panelled Library of the Association, and the Members' Common Room, most comfortably furnished for conversation, writing, and refreshments. Beneath them are large basement offices with staff dining rooms and storage accommodation. Above is the Great Hall, 130 feet long, and carried to the height of the roof. This splendid hall, with its gallery and dais, can seat more than 500 people, the simplicity of its structure is scarcely less remarkable than the boldness of its scheme of colour decoration. On the first floor of the North Wing, above the Hastings Hall, are the general offices concerned with publishing, subscriptions, and advertisements, on the second floor is further accommodation for the Finance Department, with rooms for the staff of the Medical Insurance Agency, on the third floor is the Editorial Department, and on the fourth is the printing office. The first floor of the South Wing, over the Council Chamber, contains handsome committee rooms, and rooms for the Intelligence Officer and her staff, the second and third floors are allocated to the Medical Department. The Council Chamber on the one side of the Courtyard and the Hastings Hall on the other are alike in shape and size (60 feet long, 30 feet wide, and 30 feet high), but are furnished differently. The former is panelled in oak and its floor rises in tiers placed lengthwise facing the rostrum, the latter, intended for conferences, can seat 150 persons, and its walls will shortly be fitted with oak bookcases. On the north the buildings are flanked by a modern utilitarian garage, on the south by the pleasant Council garden adjoining the grounds of the Mary Ward Settlement, with Dickens's mulberry tree

Garage Accommodation at Headquarters

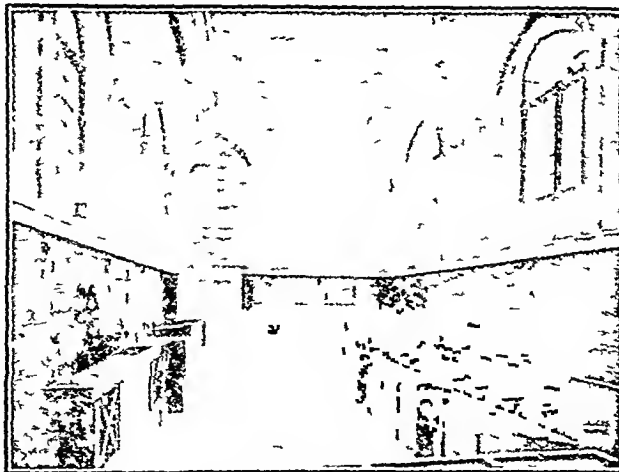
Garage facilities are now available for members in the garage at the rear of the North Wing of the Association's new House in Tavistock Square. Members may garage their cars during the day free of charge, and during the night at a charge of 2s a night. There are also two lock-up garages available, the charges for which are 5s a night, 25s a week, or £40 a year, these may be let for a period of not longer than one year on a three months' notice, or for shorter periods. All applications for garage accommodation should be made to the Financial Secretary and Business Manager. The garage will be accessible only during office hours, except by arrangement with the caretaker. It must be clearly understood that the Association can take no responsibility for cars garaged on the premises.



The Great Hall British Medical Association House

and backed up by a hint that important persons in the neighbourhood have participated, not infrequently leads to acceptance of the offer, the enjoyment of a pleasurable period of anticipation, followed by disillusionment. For instance, a genial and persuasive gentleman calls who is giving away volumes of Shal espeare's works. There is, of course,

no charge, but as an afterthought he suggests that it would be a pity not to have a nice cover to protect them. Such a cover can be had for a matter of a few shillings, which, of course, must be paid in advance. The statement is made that Dr X, who lives hard by, has been supplied with one and is delighted. If the unwary doctor parts with his money he is told that the goods will reach him in a few days. Weeks pass by and inquiry brings the reply that all is well, but that owing to strike, delays in transit, and so forth there has been an unavoidable delay in delivery. Weeks pass into months but the goods do



The Council Chamber

not arrive. A further inquiry through the post comes back marked "Gone—no address." It is the old story—the bird has flown, and the doctor is so much the poorer and possibly wiser. This is no allegory. These things are happening to-day. Should a benefactor of this sort pay any of our readers a visit we advise them to show him the door.

Superannuation of Public Health Medical Officers

The British Medical Association, which for many years past has been pressing for superannuation for all medical officers employed by local health authorities, has accepted an invitation to give evidence before the Select Committee appointed to consider the Local Government and other Officers' Superannuation Act. The Association's evidence will be mainly directed to securing that the Act shall be made compulsory, and that, in consideration of the late age at which medical officers enter the service of public health authorities, legislative provision shall be made for the addition of years of service for medical practitioners employed by local authorities. Without a provision for added years, no doctor engaged whole time in public health work can retire at the age of 60, and very few at the age of 65, with the forty years' service necessary for earning a full pension.

The Central Ethical Committee and Sir Arbuthnot Lane

In some of the newspapers of June 6th last there appeared reports of a speech attributed to Sir Arbuthnot Lane and delivered at a luncheon given by the English Speaking Union to the American and Canadian doctors then visiting this country. The speech, as reported, included an attack on the status, the policy, and the proceedings of the Central Ethical Committee of the British Medical Association. Sir Arbuthnot Lane's attention was called to the newspaper reports, and this led to some correspondence between himself and the Committee. The Committee desired that this correspondence should be published, but regrets that Sir Arbuthnot Lane has not given his assent to this proposal.

Association Notices**BRANCH AND DIVISION MEETINGS TO BE HELD**

ABERDEEN BRANCH ABERDEEN DIVISION—A special meeting of members of the Aberdeen Division will be held at 29 King Street Aberdeen on Tuesday December 8th at 3.30 p.m. The business includes consideration of friendly societies contract practice.

BIRMINGHAM BRANCH COVENTRY DIVISION—A meeting of the Coventry Division will be held at the Coventry and Warwickshire Hospital on Tuesday December 8th at 8.30 p.m. and not December 1st as previously arranged. Dr Wilson will show some cases of Parkinsonian syndrome following epidemic encephalitis, and Dr Hefz will read a paper on the use of sanocrysin.

DORSET AND WEST HANTS BRANCH Bournemouth DIVISION—A meeting of the Bournemouth Division will be held on Monday, December 14th at 4.15 p.m., at St. Peter's Small Hall Bournemouth when Dr J. H. Sequiera will give a British Medical Association Lecture on some common affections of the skin. Tea at 4 p.m.

KENT BRANCH TUNBRIDGE WELLS DIVISION—The annual dinner of the Tunbridge Wells Division will be held at the Wellington Hotel on Thursday December 10th at 7.45 p.m. Tickets 10s. 6d. each. Double tickets (lady and gentleman) 20s. Private (medical) guests may be invited. Applications for tickets accompanied by remittance should be made as soon as possible (but not later than December 8th) to the honorary secretary (Dr D. Davies 8 Lonsdale Gardens Tunbridge Wells). At the conclusion of the dinner an address will be given by Mr W. E. Hempsen (Solicitor to the Association) on some pitfalls in medical practice. At a meeting of the Division to be held on Friday December 18th at 3.30 p.m. at the General Hospital Tunbridge Wells a British Medical Association Lecture will be given by Professor A. J. Hall (Sheffield) on some after effects of encephalitis lethargica.

LANCASHIRE AND CHESTER BRANCH WARRINGTON DIVISION—A meeting of the Warrington Division will be held in the Infirmary on December 11th at 8.30 p.m. Dr Core (Manchester) will read a paper on hysteria as met with in general practice.

METROPOLITAN COUNTIES BRANCH CITY DIVISION—The next clinical meeting of the City Division will be held at the Metropolitan Hospital Kingsland Road E. on Friday December 11th at 4 for 4.15 p.m. when Dr Norman Hill will show cases.

METROPOLITAN COUNTIES BRANCH HAMPSHIRE DIVISION—A Divisional meeting will be held at the Hampshire General Hospital on Thursday December 10th at 8.30 p.m. when an address will be given by Mr Alec W. Bourne, F.R.C.S. assistant gynaecological surgeon to St. Mary's Hospital on recent work on puerperal sepsis.

METROPOLITAN COUNTIES BRANCH KENSINGTON DIVISION—A general meeting of the Kensington Division will be held in St. Mary Abbott's Parish Hall Vicarage Gate Kensington W.8 on Tuesday December 8th at 8 for 8.30 p.m. An address will be given by Dr Percy John Cammidge entitled 'The use and abuse of insulin.'

METROPOLITAN COUNTIES BRANCH MARLBORNE DIVISION—A meeting of the Marlborough Division will be held at the British Medical Association House Tavistock Square W.C.1 at 8.15 p.m. on Wednesday December 9th when a discussion on the relationship of the medical profession to unqualified practice will be opened by Sir Hilbert Waring. Among those who have promised to take part in the discussion are Sir William Wilcock Dr C. O. Hawthorne and Mr Meldrum Eccles. Non-members will be welcomed, and all invited to take part in the discussion. Every member attending is asked to bring a medical friend.

METROPOLITAN COUNTIES BRANCH ST. PANCRAS DIVISION—The next meeting of the St. Pancras Division will be held at the British Medical Association House Tavistock Square W.C.1 on Tuesday, December 8th at 4.30 p.m., when Dr Robert Bronté pathologist to the Home Office, will deliver an address entitled 'A few notes on toxic pathology.' Members of other Divisions who are in the House when this address is being delivered are very cordially invited to attend. Tea will be provided.

METROPOLITAN COUNTIES BRANCH SOUTH MIDDLESEX DIVISION—A meeting of the South Middlesex Division will be held at St. John's Hospital Twickenham, on Wednesday, December 9th at 8.15 p.m. At 8.30 Dr R. Langdon Down will read a paper on the work of the British Medical Association.

MIDLAND BRANCH CHESTERFIELD DIVISION—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield, on Friday December 11th, at 8.15 p.m. when Dr J. S. C. Douglas Professor of Pathology University of Sheffield will give an address on passive immunity. Tea and coffee at 8.

NORTH LANCASHIRE AND SOUTH WESTLONDON BRANCH—A meeting of the North Lancashire and South Westlondond Branch will be held by kind permission of Dr Hough and the governors of the hospital at the Ethel Hedley Hospital Calgarth Windermere, to day (Saturday December 5th) at 3.15 p.m. Professor J. A. Nixon C.M.G., M.D. (Bristol) will give a British Medical Association Lecture on insulin treatment of diabetes with particular reference to the complications of diabetes and surgery in diabetes.

SOUTH WALES AND MONMOUTHSHIRE BRANCH CARDIFF DIVISION—A meeting of the Cardiff Division will be held at the Engineers Institute Cardiff on Wednesday December 16th. Dr J. Stanley White (London) will give a lecture illustrated by lantern slides on recent advances in endocrine therapy.

SOUTH WALES AND MONMOUTHSHIRE BRANCH MONMOUTHSHIRE DIVISION—A meeting of the Monmouthshire Division will be held at the County Hall Newport on Tuesday, December 15th at 2.30 p.m. Agenda: Correspondence to receive and adopt the report of the Executive Committee of the Monmouthshire Division as to the Ebbw Vale Workmen's Medical Society to discuss and vote upon a resolution in connexion therewith address on cancer and its treatment by Mr Duncan C. L. Fitzwilliams C.M.G., F.R.C.S. surgeon to St. Mary's Hospital London.

SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION—An ophthalmic meeting will be held by the Swansea Division at the General Hospital, Swansea, on Thursday, December 17th at 8.15 p.m.

SOUTH WESTERN BRANCH EXETER DIVISION—The next meeting of the Exeter Division will be held in the Library of the Royal Devon and Exeter Hospital on Friday December 11th at 4.30 p.m. A lecture and demonstration on the use of plaster of Paris in the treatment of fractures and other surgical conditions will be given by Mr Norman Lock. Tea at 4 p.m.

STIRLING BRANCH—A clinical meeting of the Stirling Branch will be held on Wednesday December 9th at 3.15 p.m. within the Falkirk Infirmary when surgical cases will be shown by Dr A. L. Hunter and Mr Tennant (Glasgow). Dr Pendleton White will demonstrate a few eye cases and thereafter Dr David Shannon (Glasgow) will open a discussion on some common mistakes of obstetric practice. Tea will be served after the meeting.

SURREY BRANCH REIGATE DIVISION—A meeting of the Reigate Division will be held at the East Surrey Hospital Reigate on Tuesday December 8th at 8.45 p.m. Dr H. C. Cameron will read a paper on some complaints of children.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH HEREFORD DIVISION—A meeting of the Hereford Division will be held at 20, East Street Hereford on Monday, December 7th at 3.30 p.m. It is hoped that every member will endeavour to attend as the agenda is of importance including mileage fees in emergency midwifery cases and the position of school medical officers. A lecture under the auspices of the Division will be given at the Herefordshire General Hospital on Monday December 14th at 3 p.m. by Dr J. Stanley White on some recent aspects of gland therapy. The lecture will be illustrated by lantern slides. A large attendance is hoped for. Tea will be provided.

YORKSHIRE BRANCH BRADFORD DIVISION—A combined meeting will be held with the Bradford Medical-Chirurgical Society on Tuesday December 8th.

YORKSHIRE BRANCH HUBBERTSFIELD DIVISION—The medical dance will be held on Wednesday December 16th in the Royal Infirmary from 9 p.m. to 1 a.m. Reception 8.45. For those who do not wish to dance a bridge drive commencing at 9.15 will be arranged. Tickets 8s. 6d. each admission by programme. As the dance will only be held if a sufficient number of tickets are sold, it will greatly assist the committee if members will inform the honorary secretary before December 5th of the number of tickets required.

YORKSHIRE BRANCH SHEFFIELD DIVISION—A meeting of the Sheffield Division will be held in the General Lecture Room The University Sheffield on Friday December 11th at 8.45 p.m. when a British Medical Association Lecture will be delivered by Dr William Cramer D.Sc. F.R.C. of the Imperial Cancer Research Fund on the present outlook on cancer. A cordial invitation to be present is extended to all members of the medical profession.

YORKSHIRE BRANCH WATFORD POTTERFAC AND CASTLEFORD DIVISION—A meeting of the Watford Potterfack and Castleford Division will be held at the Playhouse Westgate Wakefield on Sunday, December 13th at 3.30 p.m. when Colonel L. W. Harris (Special Medical Officer for Venereal Diseases to the Ministry of Health) will deliver a British Medical Association Lecture on the management of syphilis, illustrated by a cinematograph film.

Meetings of Branches and Divisions

METROPOLITAN COUNTIES BRANCH SOUTH MIDDLESEX DIVISION

An ordinary meeting of the South Middlesex Division was held at St John's Hospital, Twickenham, on November 11th, when Dr GUTHRIE was in the chair.

Address by Dr C P Symonds

After the transaction of Divisional business, Dr C P Symonds, assistant physician for nervous diseases Guy's Hospital, read a paper entitled "Functional or organic? Some points of view." Discussing first the organic point of view, Dr Symonds referred to the belief that the functional nervous disorders would eventually prove to depend upon as yet undiscovered lesions of the brain or cerebellum. He quoted certain cases of encephalitis lethargica as evidence that symptoms of the neurotic type might be due to organic disease but believed that these cases were distinguishable from the main body of neurotics if their symptoms were carefully studied. This led him to the psychogenic point of view which supposed that neurotic symptoms were due to faulty habits of mind, and that if any physical change existed in the brain this was the result rather than the cause of the mental habit. The proof of this lay in the results of treatment, as, for instance, in the case of an hysterical paralysis in which the patient's ability to move the limb depended upon his attitude of mind towards it. He quoted cases of anxiety neurosis in which equally striking relief from symptoms had been obtained by psychotherapy.

Infective and toxic conditions might also be responsible for neurotic symptoms and an example of early tuberculous infection was quoted. But the importance of septic foci in the causation of the neuroses had been much exaggerated. One met with plenty of neurotics who had had tonsils or teeth extracted, but few who obtained from such treatment more than the temporary benefit that might be expected from its suggestive effect.

The striking improvement in the mental state obtained by giving thyroid to cases of myxoedema had led to the notion that the neuroses might depend upon disorders of endocrine balance, but here again the results of treatment had been disappointing. On the whole it must be confessed that the drug houses had profited more than the patients from this line of treatment.

Nervous exhaustion was held by some authorities to be an important factor. The term, unfortunately, was loosely worded. Actually in a number of cases of which he quoted an example, after rest had failed to effect a cure common sense psychotherapy and return to work had succeeded.

It was advisable, therefore to bear in mind that minor mental disorders might result from a variety of causes—organic cerebral disease, toxæmia, endocrine disorder, and exhaustion—but that the most important factor in most cases was failure on the part of the patient to deal with his emotional problems. Dr Symonds believed that a proportion of those who developed later in life the habit of chronic nervous invalidism might have been saved from this fate by psychotherapy in the earlier stages. Unfortunately this entailed some responsibility on the part of the patient who often preferred to be told that the illness depended upon obscure toxicæmic factors outside his own control. Such opinions given often without adequate proof, led in some cases to the opportunity for really effective treatment being missed.

In the discussion that followed the paper Dr GUTHRIE said that he had not found much benefit from vaccines and mentioned one of his cases which had not improved by psychotherapy. Dr CAMPS referred to a case treated by vaccines greatly to the satisfaction of the patient. Dr REID recalled the parallel case of those who cured rheumatism and were not cured themselves. He was of the opinion that the true causes and cure of neurotic symptoms had not yet been discovered, and asked regarding cases where no lesion was found, whether they might not nevertheless be organic. Dr HUME was interested in the case of the student and asked Dr Symonds if this fitted in with the Freudian theory. Dr DAFKE described several cases which had recently come under his observation two of which he thought were due to encephalitis or some form of toxæmia. He asked what degree of nystagmus should be regarded as pathological.

In reply, Dr Symonds stated that with regard to inequality of pupils it was fairly common in normal people, the main significance was its reaction to light and accommodation. Concerning the ice bag, he considered it a useful line of treatment. He was of opinion that there might be disturbance of synaptic junctions in cases with no organic lesions—these cases could be cured by reversing the reaction of mind. The student mentioned by him who was disinclined for work was not of a sexual type. His complaint was due to the fact that his success had been obtained by plodding.

METROPOLITAN COUNTIES BRANCH WILLESDEN DIVISION

Divisional Dinner

The Willesden Division held a most successful dinner on November 15th at the Criterion Restaurant, Piccadilly Circus. There was a good attendance of members, their wives and friends, and the principal guests were Dr H B Brackenbury and Mr George J. Laine, J.P. The chair was occupied by Lieut Colonel H. HINKPATRICK, the chairman of the Division. After an excellent

dinner, the toast of 'The Willesden Division of the British Medical Association' was proposed in cordial terms by Mr G B MOWER WHITE, I.R.C.S., who praised the spirit and work of the Division. The CHAIRMAN responded in the happiest manner and described some of his Indian experiences. The toast of 'The Willesden Hospitals' was proposed by Dr BRACKENBURY in a most instructive speech, in which he described the working of the Hornsey Hospital. In that hospital as he explained there was free right of entrance to all the practitioners in the district, and they were at liberty to bring in their patients and give them the necessary surgical or medical treatment. He showed that the system worked in a completely satisfactory fashion and that thorough efficiency and competence were maintained. A triple reply was made by Mr G J. LURNESS, J.P., Dr A G TROUP, and Dr W L TURNER, all of whom described in an effective way the work of the hospitals. Dr Turner's humour being especially appreciated. The toast of 'The Guests' was proposed by Dr LOCK in a neat speech full of Scotch humour. To this toast two replies were made. On behalf of the ladies Miss A L LAWRENCE, Intelligence Officer of the British Medical Association, spoke with precise brevity and grace. Mr JAMES JOHNSTON, secretary, Middlesex Panel Committee, replying on behalf of the gentlemen, referred to the opportunity which such gatherings gave to a statesman of the profession like Dr Brackenbury to learn the gifts and characteristics of the local units of the profession, and then gave interesting thumbnail sketches of three family physicians with whom he had professional contact. The toast of 'The Chairman' was proposed by Dr STOCKER in a felicitous speech. Suitable acknowledgement was made of the work of Dr LOCK in organizing the dinner and of Drs Scott, Stocker, and Sturridge, who were associated with him.

METROPOLITAN COUNTIES BRANCH CITY DIVISION

In conjunction with the Aesculapian Society, a clinical meeting was held on November 13th at the Metropolitan Hospital. There was a good attendance.

Mr R A RAMSAY F.R.C.S., surgeon to the hospital showed the following cases, with notes and x-ray plates. Excision of knee for old tuberculous disease in a man aged 18. Abdominal swelling, two cases of osteitis deformans, spontaneous fracture of first metatarsal, hairy growth on tongue, talipes calcaneus, Pott's disease of spine, osteo arthritis of hip and elbow, coxa vara (adolescent) haematoma sternomastoid swelling on hip.

The meeting closed with a very hearty vote of thanks to Mr Ramsay, and his house surgeon for the very interesting and instructive afternoon.

BIRMINGHAM BRANCH NUNEATON AND TOMWORTH DIVISION

The second meeting of the session of the Nuneaton and Tomworth Division was held on November 18th at the Nuneaton General Hospital. Mr H BECKWITH WHITEHOUSE M.S. F.R.C.S. (Birmingham) read an exceedingly interesting paper entitled 'Notes from an osteo-clinic.' The meeting was largely attended, and Mr Whitehouse's paper was followed by an animated discussion in which a number of members took part. A vote of thanks to Mr Whitehouse for his very valuable paper was carried by acclamation.

CAPE OF GOOD HOPE (MIDLAND) BRANCH

A GENERAL meeting of the Cape of Good Hope (Midland) Branch was held at the Provincial Hospital, Port Elizabeth on September 20th, when Dr R D LAURIE was in the chair. He exhibited plaster casts and x-ray photographs of a case of hallux valgus before and after osteotomy showing excellent results.

The report of the committee of inquiry on public hospitals and kindred institutions was laid before the meeting. After discussion of the various clauses the report was adopted with the exception of minor clauses, where alternative suggestions were made.

ZANZIBAR BRANCH

A MEETING of the Zanzibar Branch was held on August 20th at the Health Office. Dr Copland was elected president and Dr Semple honorary secretary and treasurer.

The accounts of the preceding year were submitted and agreed to. A communication from the Deputy Medical Secretary of the Association requesting the comments of the Branch on the Medical Practitioners Decree of 1925 (Dent Certificates) was considered. It was pointed out by Mr SPEARMAN, acting director of medical and sanitary services that this death report form had been drawn up in this particular way because in addition to registered medical practitioners, there were also certain other persons licensed to practise and to sign death reports and it was considered that this form would tend to bring to light any irregularities and hence was a necessary measure of protection to the public. The meeting, therefore, came to the unanimous conclusion that members of the Association practising in Zanzibar should agree to make use of this form without requiring a fee.

The new regulations for the East African Medical Service as contained in Colonial Office publication No 1103 were considered. It was pointed out that both medical officers and sanitary officers were thereby deprived of certain financial privileges—namely the right of private practice or an allowance in lieu thereof which were expressly held out as inducements when they joined the service.

On the motion of Dr RANA seconded by Dr COPLAND it was agreed that a memorandum on the subject be prepared for submission to the Council of the Association and requesting the Association to make representations to the Colonial Office to consider and rectify this anomaly by restoring the allowance to medical officers of health and granting a similar allowance to medical officers in those stations where private practice is prohibited.

GENERAL COUNCIL

OR

MEDICAL EDUCATION AND REGISTRATION

WINTER SESSION, 1925

(Continued from page 187)

DISCIPLINARY CASES

Indirect Advertising

THE Council devoted the whole of its sitting on November 28th to the consideration of a charge of indirect advertising, in which the British Medical Association was the complainant, against William Lloyd, F.R.C.S. Ltd., of Brook Street, Grosvenor Square, London. After a hearing which lasted for two and a half hours and a private deliberation of half an hour, the Council decided to instruct the Registrar to erase Mr Lloyd's name from the Register. The charge was as follows:

That being a registered medical practitioner you—
Sought to obtain patients and to promote your own professional advantage by means of an article published in the *Daily Mail* of June 5th, 1925 entitled

HAY FEVER—NEW TREATMENT—SPECIALIST'S REPORT—PATIENTS CURED,
which was based upon materials supplied by you
Sought to obtain as patients certain persons who after reading the article had written to the *Daily Mail* for your name and whose letters were forwarded to you by the *Daily Mail* and to whom you wrote inviting appointments to be made for treatment although they had not themselves communicated with you
And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect

Mr Lloyd appeared in person and was defended by his counsel, Mr J. B. Melville. Mr W. E. Hempton, solicitor, appeared on behalf of the British Medical Association. The President, Sir Donald MacAlister, directed all members of the British Medical Association who were members of the Council to withdraw. About twelve members thereupon retired and took no part in the proceedings.

The Complainant's Case

Mr Hempton in opening said that this case was one of the most important that had ever come before the Council. It was important alike to the profession and the public and for that reason the British Medical Association felt it a duty to bring the facts to the knowledge of the Council. It was specially important in the interests of the public in view of the comments upon the matter of advertising by doctors which appeared from time to time in the press. The latest of these in a London journal published the previous evening referring to a case which had been before the Council declared that doctors like other people, must take the public into their confidence. The article which was the concern of the present inquiry was published in the most conspicuous position in the *Daily Mail* was headed in heavy type and was said to be by a special correspondent. Mr Hempton then proceeded to read the article.

The article began by stating that sufferers from hay fever could take hope for the future for a prominent West End specialist had at last found an absolute cure for this distressing malady. This good news came at a most opportune time when many people were victims. The treatment was carried out by such a simple device as sprays attached to an electrically driven pump which sprayed a healing solution over the inflamed membrane. The relief was almost instantaneous. The writer stated that in his own case the treatment was continued for perhaps twenty minutes, and at the end he walked out quite a different person. There were persons afflicted with this malady that they had been unable to take part in any social occasions but after this treatment with in some cases only one or two applications and in the majority not more than six they were able to lead a normal life. The article went on to state that the specialist had put some of his cases to three severe tests. One of the tests was for a group of former hay fever patients to spend nights in a tent in a hayfield and they had no relapse. It was stated that the composition of the remedy was a secret but there were no ingredients of a harmful nature.

It appeared that in another edition of the *Daily Mail* for the same date some further paragraphs were added, in which the specialist was reported as stating that he condemned any form of injection as useless that it was necessary to go direct to the nasal mucous membrane and the pharynx for the seat of the trouble and that some of his patients had come to him disappointed after the use of much advertised remedies while others had been confident that serums had helped them but on inquiry he had always found that relief was due to other causes such as a change of temperature.

Mr Hempton after reading the article said that without wishing to be unduly severe he could not help thinking that it read like an advertisement by an unqualified person of a secret remedy which he desired to foist upon the public under the aegis of that journal. Information reached the British Medical Association that three persons admittedly suffering from hay fever and seeking some remedy for a very trying complaint communicated with the editor of the *Daily Mail* with a view to ascertaining from him if possible who was the specialist with this complete and assured remedy. The evidence of these persons was set out in three statutory declarations and as he understood from the counsel on the other side that they would not be challenged he had not thought it necessary to retain these persons as witnesses,

though they had in fact been in attendance at the time of hearing originally fixed. The first was a gentleman in Bradford who wrote to the editor stating that he was much impressed by the article and received in reply an undated letter as follows:

Dear Sir—We now have permission from the doctor referred to in our article on hay fever in the *Daily Mail* of Friday June 5th to give his name and address to inquirers. It is as follows: Dr William Lloyd, 58 Brook Street, London W. We regret that this is all we can do to assist.—Yours faithfully The News Editor

On June 26th, about a week after writing his original letter this gentleman in Bradford received a card giving an address and telephone number, and stating

Mr William Lloyd will be pleased to see Mr G— by appointment. Fees 4 guineas and 2 guinea.—(Signed) E. LOVETT, Secretary.

The second declaration was by a lady living in Earl's Court who after her inquiry received an undated letter from the editorial department of the *Daily Mail* stating that her letter had been forwarded to the doctor referred to in their article on hay fever. She sent this letter to the British Medical Association. She also received by post on June 26th a card in the same terms as the one received by the first witness. The third declaration was made by a gentleman in Bury St. Edmunds, who in reply to his inquiry received a letter in the same terms as that received by the lady and later a communication stating that Mr Lloyd would be pleased to see him by appointment. None of the persons decided to put themselves under Mr Lloyd's treatment.

The article was clearly written with Mr Lloyd's knowledge and further, after publication on inquiries being made as to the name of the specialist referred to, he allowed his name to be disclosed. Two persons who had made declarations in this article came from very different parts of the country and it was impossible to conjecture how widely this advertisement had gone and how many others had similarly sought information. He had discovered that the circulation of the *Daily Mail* in June was 1,744,000 copies a day. The announcement in such an organ of a specific cure for a widespread complaint would attract great attention and when the identity of the specialist referred to was disclosed it would probably become the most gigantic advertisement that a member of the medical profession had ever received.

Two letters had been put in on behalf of the respondent both dated October 1925. In one of them Mr Lloyd wrote to the Registrar stating that this matter had caused him considerable annoyance, but that he understood the *Daily Mail* would explain how his name came to be disclosed. Mr Lloyd went on

As several months have passed it is difficult to remember the exact sequence of events but I do remember that a potent of mine a distinguished journalist did ask my permission to incorporate in an article some information I had imparted to him with regard to hay fever. I had no objection to this provided my name was not disclosed. It appeared that subsequently my name was disclosed to a few persons who made inquiries of the *Daily Mail* and some letters were forwarded to me. Apparently owing to a misunderstanding of instructions I gave my secretary appointments were made for me to see two or three of the persons. On an average I saw between twenty and thirty patients a day, the great majority of which are made by my secretary. I do not think I have any personal acquaintance with any of the patients who sent them to me.

The other letter from the manager of the Legal Department of Associated Newspapers Limited (the proprietors of the *Daily Mail*) ran as follows:

Mr W. Lloyd has pointed to us in reference to a communication he has received from you relating to an article which appeared in the *Daily Mail* in June last. A well known member of the staff of the *Daily Mail* was a patient of Mr Lloyd and in course of treatment for hay fever Mr Lloyd mentioned to him some of the points of his treatment which he was incorporating in a book. The member of our staff thought that the matter would make an interesting article and told Mr Lloyd of his intention to write one. Mr Lloyd said he had no objection to an article being written embodying some of the information he had imparted but under no circumstances was his name to be mentioned or any other indication given that the material for the article came from him. The article was written and in due course published but no proof was submitted to Mr Lloyd and in due course published but no proof was submitted to Mr Lloyd. The article attracted considerable attention and we received a large correspondence and many telephone calls from our readers. Unfortunately it appears that some subordinate member of our staff who was aware of the fact that Mr Lloyd had imparted the material for the article communicated over the telephone Mr Lloyd's name to a limited number of those readers. In addition to which it appears that the writer of the article did ask Mr Lloyd to give appointments to a few selected cases which had been brought to his attention. For the oversight on the part of the member of our staff who communicated Mr Lloyd's name in response to some inquiries we can only express our regret for any annoyance caused him.

Mr Hempton said that if the 'subordinate member of the staff' knew that Mr Lloyd had given the information it seemed reasonable to suppose that the information was common property to the staff and that they understood that any sufferer from hay fever should be referred to Mr Lloyd as the person to whom it should go. The extraordinary phrase, 'a few selected cases' was used in this letter. By whom and in what circumstances were these cases selected?

Mr Melville made an objection at this point. He was ready to meet the charge set out against the respondent but it was grossly unfair to import into the case prejudice against Mr Lloyd by reason of a phrase used in a letter on his behalf written by somebody else. The statements in that letter ought not to be made the basis of an additional charge.

The Legal Assessor said that Mr Hempton was entitled to read the comments he had made and later the Council would judge to the weight of those comments.

Mr Hempton regretted that Mr Melville should have used the phrase 'grossly unfair.' He had only wished to point out that there must have been some conference between Mr Lloyd

and the writer of the article as to how inquirers should be selected for treatment. In conclusion he reminded the Council of its Warning Notice in respect to advertising and canvassing.

The Defence

Mr William Lloyd, in evidence, stated in reply to his counsel that he had been in practice for several years as a nose and throat specialist. He stated his qualifications, appointments, contributions to medical journals, and his authorship of a book entitled *Hay Fever, Hay Asthma, Its Causes, Diagnosis, and Treatment*. He was also the inventor of the otoscope. On June 4th last he received a visit from Sir Percival Phillips, who came to be treated for hay fever. In the course of the treatment his patient said, "This would make an interesting article, and added something to the effect, 'If I wrote it would you mind?'" Mr Lloyd replied, "I hope that on no condition will you disclose my name in any shape or form." No proof was sent to him. He saw the distinguished journalist the following day—the day on which the article was published—when he came again for treatment. He gave the *Daily Mail* no permission to write letters to inquirers giving his name and address. He had no communication at all with the *Daily Mail*. Sir Percival Phillips asked him if he would take certain cases from among those which had inquired, and he agreed. Asked how it came about that his professional cards were sent to people who had written to the *Daily Mail*, he denied that he arranged with the *Daily Mail* to send on letters or that he instructed his secretary to send out cards in answer to any letters that might come from the *Daily Mail*. He only wanted her to send the cards to a few selected cases which the writer of the article had sent on. In reply to the President, who asked who was to select the cases, the witness said, "Sir Percival Phillips." He affirmed that it was never his desire to seek any professional advantage by means of this article. "It is too ridiculous to think that I need such a thing as that 'I am too busy.' Does your practice run into some thousands a year?" Many thousands," Mr Lloyd added, that if he had overstepped the limits of professional etiquette he desired to tender his apologies to the Council.

Cross Examination

Mr Hempsen asked how the information given to Sir Percival Phillips was conveyed— orally or in writing—Mr Lloyd said that he imparted the information during treatment—there was no writing at all.

The article gives particulars of groups of cases treated by you. Are the facts stated in the article as to the composition of these groups correct?—Absolutely incorrect—every word.

In the course of the article it is stated the composition of this remedy is of course a secret. Was that told by you to the writer?—I never used the word secret.

There are some paragraphs in the article in which the specialist himself is supposed to be speaking. Was the material contained in those paragraphs supplied by you?—Not one word of it.

Did you give the writer a description of the three tests you had employed?—It is all untrue. I never mentioned it. Sir.

There is scarcely a word of truth in the article is there?—Not one word of it is my wording.

The President: Sir Percival Phillips wrote this article, no doubt in his own words, but the words express something in which he must have got from somewhere. Did he get that something from you?—Yes.

Was the material in connexion with these three tests supplied by you to him?—I do not remember.

Did you say anything about a group of hay fever sufferers spending the night in a tent in a hayfield and having no relapse?—I never said that.

Or anything like it?—Nothing like it.

Mr Hempsen: Then there are many points in the article which are not based on anything he said?—Yes.

Have you seen the writer since the article appeared?—I treated him on three or four occasions after the article appeared.

Did you protest against what had been published as being untrue?—Strongly.

Are you calling Sir Percival Phillips as a witness?—No.

What form did your protest take—by word of mouth or by letter?—By word of mouth.

When was it made?—The day the article appeared and the two subsequent days when the writer came again for treatment.

What was his explanation?—He did not say very much. He seemed to smile.

It was subsequent to your protest being made that you and he selected the patients?—I did not select any.

The President: You protested that he had published an untrue article about you? Was that what you said?—Yes.

But afterwards you agreed with him to receive patients who had applied to him in consequence of that false article?—Yes.

Mr Hempsen: Did he give you a list of the names of those patients?—He said, "I will send a few selected cases to me." When they arrived I told my secretary to receive them and arrange appointments.

The President: What are your uniform consultation fees?—Four guineas for the first visit and two guineas subsequent visits.

Mr Hempsen: When my friend asked you why you did not want your name disclosed you gave the reason, owing to his enormous practice. Was that really the reason?—I did not want my name in any way associated with the affair.

Did you consider the ethical side of the question at all?—Oh, yes.

And did you come to the conclusion that you were justified in doing what you did?—Certainly not. I did not think that anything would come of this. I had no idea that the article would appear.

You did attend a few selected cases?—Yes, on professional terms.

How was your secretary to know which were these selected cases?—They would hand in letters. I told her the previous day that I might have the patients and she was to give them appointments.

On what principle did the selection of patients take place?—It was left to Sir Percival Phillips to send on any cases.

You left it entirely to his judgment to pick out from the mass of those inquiring the few who were to come to you?—Yes.

Questions were then put to Mr Lloyd by members of the Council through the chair.

The President: After all, did you write to the *Daily Mail* protesting against it?—Certainly not.

Why did you say it is a lie?—I said it is a lie.

Why did you not say so to the writer when he came next day?—I did not see him.

What did you say to him?—That I was very much surprised at the wording of the article. It was all so foreign to me. I told him that I thought he might have communicated with me before the article was published. To that he made no reply whatever simply diverted the talk.

You were satisfied with that?—Well, I made a strong protest, and he said he was sorry.

You have said that this article was false from beginning to end and practically that he invented the whole thing?—I can almost say that.

And yet there was no question in your mind that he was referring to you in the article?—The wording is the invention of Sir.

Ah, yes the wording but not the substance?—I gave him the substance during the treatment.

Did he take any notes of the substance?—None at all.

Have you written a book about hay fever?—Yes.

Did you give him a copy?—No.

Did you tell him about the book?—Yes, he saw the book. I handed him a copy to look at.

Could he have got any part of this article out of the book?—He could get out the information about the serum treatment.

Did you talk to him about that?—I told him it had been disappointing and unsatisfactory. I rang up the *Daily Mail* and told them on no account to give my name.

The President: The same day?—It might have been two or three days afterwards.

Then when it is stated by their news editor that you gave permission for your name to be mentioned that is a lie?—A deliberate lie.

A strange statement to make. Remember what the news editor says. We now have permission from the doctor referred to. You say that is a deliberate lie?—It is a deliberate lie.

On another occasion the news editor writes, "I have to acknowledge receipt of your letter and to state that it has been forwarded to the specialist referred to." When the matter arose I told them not to send any letters or give my name in any shape or form.

Sir Percival Phillips had your permission to send you cases which came to the *Daily Mail* or himself which he might select?—His words were, "I would like you to see a few cases."

You gave your permission?—Yes.

In the letter sent on your behalf from the Legal Department of the Associated Newspapers it is stated that Mr Lloyd said he had no objection to an article being written embodying some of the information he had imparted. Is that true?—Yes, he said, "I might write this, and I said, 'Yes as long as you do not mention my name or identify me.'"

The Legal Association: Did you read the article as the morning it was published?—Yes.

Did you protest then?—I told the writer the same day.

And he took no notice?—He only smiled.

Do you wish the Council to understand that you made any protest?—What was the strongest thing you said?—I said that the whole thing was very wrong, that he had come at 4 o'clock in the afternoon in the height of the season when I was very busy, and the article appeared next morning and I was very upset. I repeated the same thing on subsequent days when he came.

And he never made any answer or said that it was untrue that his article was a mixture of fact and falsehood?—He said that he was sorry that I had written what he had written.

What did he say when you told him the article contained a lot of things which were not true?—He expressed his regret and said it would never occur again.

Did he not make any answer to your charge?—He said it made a fine newspaper headline.

Concluding Speeches

Mr Melville at once admitted that his client had been very judicious to give any material at all to journalists, but the case did not amount to infamous conduct. Having regard to Mr Lloyd's busy and lucrative practice there was not sufficient evidence of any desire to enlarge it by such means as these. It was easy when talking to journalists to have things carried up afterwards in a form which, if not entirely untrue at all events conveyed a wrong impression. The protests of people who complained of being misinterpreted formed part of the everyday life of journalism. Not long ago there was a sensation because the Prime Minister as a result of some charity remarks to a journalist found himself the subject of an interview in a Sunday paper in which all manner of things were purported to have been said by him. Mr Lloyd was engaged in the treatment of this distinguished journalist and it occurred to the journalist that there was in Mr Lloyd's method useful material for an article. It would have been wiser if Mr Lloyd had said that nothing must appear but, of course, the article was written in the popular style to be expected in a paper with such an immense sale. It was done to catch the attention of the man in the street who in most cases forgot all about it immediately afterwards. The last thing Mr Lloyd could do in the circumstances was to make any effective protest to the *Daily Mail*. With regard to the rest of the complaint there had been a good deal of surmise and conjecture, but it was incredible that Mr Lloyd was desirous of building up a practice upon this necessarily isolated advertisement. When a certain number of people wrote making inquiries the newspaper was bound to furnish some foundation for what it had published otherwise it would have been open to the reproach of its readers and might well have been challenged by its contemporaries. Therefore a few patients were selected by Sir Percival Phillips out of a large number of inquirers and passed on to Mr Lloyd for treatment. Mr Lloyd wished to express to the Council his regret. In a long professional career not without distinction he had hitherto conducted himself in an honourable manner, and had never before been in a position in which any professional censure could have been directed against him.

Mr Hempsen said that his friend had asked what Mr Lloyd could do about it when he discovered that the article had been published. Well the last thing he should have done was to agree to treat the patients who came through the medium of this advertisement.

Judgement

The Council then deliberated in camera after which the President announced the decision as follows.

Mr Lloyd I have to announce to you that the Council have found the facts alleged against you in the Notice of Inquiry proved to their satisfaction. They have judged you to have been guilty of infamous conduct in a professional respect and have directed the Registrar to erase your name from the Medical Register.

"The Newell Treatment for Tuberculosis"

The Council on November 30th considered the case of Joseph Benson Hooker, LRCS Ed LRCP Ed MD Durh, registered as of 4 Spanish Place, Manchester Square, London, who was summoned on the charge that he had sought to attract to himself patients and to promote his own professional advantage by associating himself with the advertising and canvassing carried on through the medium of articles published in *John Bull* in March, April and May last relating to an alleged 'consumption cure' known as the Newell treatment. It was also charged against Dr Hooker that he had sent circular letters regarding the 'cure' to persons not under his charge, but whom he thereby hoped to secure as patients and that he had endeavoured in his own advantage to induce practitioners to use in the treatment of their patients and to make themselves responsible for a medicament of whose properties and action such practitioners were ignorant, while refusing to disclose to them the compositions or formulae.

The complainant was the Medical Defence Union, represented by Mr Oswald Hempson. Dr Hooker was represented by Mr Freedman.

Mr Hempson, in opening, said that this was a very serious case of consistent advertising. He understood Dr Hooker's defence to be that he was an honourable and reputable member of the profession and that all he did was returned by motives of philanthropy and a desire to combat a national scourge. Mr Hempson thought it might appear from the facts that the motives were not so disinterested. He then read to the Council the articles in *John Bull*. The articles had startling headlines and subheadings and were accompanied by portraits of the Minister of Health, the President of the General Medical Council, Sir George Newman, and others. The claim advanced in these articles was for nothing less than a certain cure of consumption. It was stated that a research chemist, Mr Newell, had prepared a serum which he believed to be an effective antidote to the tubercle bacillus. The article stated that Mr Newell was not a member of the medical profession and believed that his discovery would not receive professional recognition but be consulted at a West End specialist on tuberculosis. The article went on to give details which Mr Hempson submitted could only have been furnished by a medical man. The writer stated that this treatment was either mere quackery or the most stupendous medical discovery of modern times and that in either case it demanded investigation by the General Medical Council, to which a certain offer was made in *John Bull* evidently under a misapprehension as to the Council's functions. In a second article published a week later, it was stated that about fifteen London doctors were already treating their patients with this preparation, and that about a hundred cases had so far been dealt with yielding 95 per cent of cures. It was also stated that the Ministry of Health was prepared to make an investigation, and that those concerned in introducing the remedy were ready to place the formula in the hands of the General Medical Council under the usual pledge of secrecy. *John Bull* was determined to act in the interests of the sufferers, and criticism was directed against the inaction of various medical bodies including the British Medical Association which was 'setting itself against the treatment.' It was also stated that the Ministry of Health had been offered 15,000 treatments for the benefit of the poor but this had been ignored. We deny to officialdom the right to delay the matter any further.

Mr Hempson then went on to read certain correspondence. One letter signed per pro J S Hooker, chairman of the said committee, was to a gentleman stating that his name and address had been received from *John Bull* with an intimation that he was desirous of undergoing the Newell treatment for tuberculosis. Such treatment (the letter proceeded) was only carried out through qualified medical men and on receipt of the name of the correspondent's doctor it could be arranged for him (the doctor) to have supplies of the medicament. If, for any reason the doctor was unable to take up the case the correspondent could be put in touch with another medical man or it might be arranged for a member of the staff to give the treatment. The letter added that a committee of duly qualified medical men are in constant attendance here (at 4, Spanish Place). Another letter, sent to a patient, stated: 'I shall be pleased to send your doctor sufficient treatment to last you for a month on receiving two guineas, which is the charge for the same. This was signed per pro J S Hooker. In reply to a letter from the Registrar, Dr Hooker had written admitting that he had drafted a circular letter putting forward to the medical profession the claims of the treatment but he argued that this letter made it clear that the treatment was only to be used through qualified medical men, and he quite failed to see how this could be called 'outing for patients.' Dr Hooker had added that a few copies of this circular letter were despatched to prospective patients who could not get treatment through ordinary medical channels. He did not know what course he ought to have pursued in regard to these persons in view of the fact that they were suffering from this fell disease for which he believed he had a certain cure. When asked by the Registrar to give the names of the 'duly qualified medical men' who were constantly in attendance at this address to deal with cases by the Newell treatment—for *John Bull* had stated that it was prepared to furnish to the General Medical Council the names of the committee—Dr Hooker replied that he had promised not to divulge the names without the consent of the persons concerned and as they had declined at present to give their permission it was unanimously agreed that it would serve no useful purpose to anyone to acquaint you with such names, at all events until the long

series of test treatments are published to the profession. "If any explanation is needed," added Mr Hempson, "as to why that gentleman stands alone before you it is contained in that letter." When asked in some further correspondence with another party why he did not bring this discovery before the medical societies Dr Hooker wrote: "I have no time to attend such meetings as you mention. Another statement was that although the members of the committee were not at present allowed to divulge the formula, they gave their assurance and guarantee that it had no dangerous reaction whatever. Letters were read from two doctors stating that their names might be removed from the list of those receiving the medicament because they hesitated to use a remedy of the composition of which they were unaware or because there were circumstances in connexion with this matter which they did not like. Mr Hempson also drew attention to a small pamphlet 'The Newell treatment for tuberculosis.' This also bore out that the discovery was kept secret and not offered freely and unconditionally to the profession. It stated however that the remedies employed were quite orthodox and a number of testimonials from patients as well as doctors were appended. Mr Hempson concluded by describing this as the most undoubted case of advertising which had ever come before the Council. The medical societies and journals were amenable to this gentleman but he chose to have recourse to a lay paper of the type of *John Bull*.

Mr Freedman in defence put in a certificate stating that Dr Hooker was suffering from angina pectoris and that he was unfit to stand examination. The Council would be better able to judge than himself whether Dr Hooker would suffer harm by submitting himself to cross examination but he was prepared to go into the box if the Council desired.

The President said that Dr Hooker's counsel must take the responsibility as to whether or not he called his client.

Dr Hooker was not called and his counsel proceeded to read first certain letters and then his statutory declaration. When the case was mooted Dr Hooker wrote to the Registrar stating that 600 medical men were employing the method and these included many tuberculosis officers. We are acting in a humane spirit, and not waiting to obtain the official recognition. I am proud of the privilege of having first introduced this method amongst medical men. In another letter he stated that if he had contravened medical ethics he had done so unwittingly. In his statutory declaration Dr Hooker stated that he was 72 years of age and had been in practice since 1877 and for the last twenty-one years in London. He was not guilty of the charges made against him. He had never sought to attract patients to himself nor had he been associated with advertising or canvassing through the medium of *John Bull*. He admitted the authorship of the circular but he had never sent it to any person in the hope of securing a patient for himself. The letter urged the patient to seek the advice of his own doctor. In 1924 he was introduced to a distinguished medical and chemical researcher Mr Newell who was a man of the utmost integrity, and who had been the means of discovering what he believed to be a possible cure for tuberculosis. He was much interested in Mr Newell's investigations and Mr Newell placed at his disposal the entire formula in order that he might investigate it on his own behalf but this was given to him in strict confidence. The results on patients appeared so remarkable that he sought the aid of another doctor, and eventually of a second doctor, to each of whom by permission of the discoverer the formula was communicated. The results were most gratifying. Success was obtained in from 90 to 95 per cent of cases. A third doctor, who had been on the staff of one of the largest tuberculosis hospitals in this country after a long trial of the treatment pronounced himself enthusiastically in its favour. *John Bull* then heard of the matter and sought an interview with Dr Hooker. Whatever information he gave was on the strict understanding that the names and addresses of the medical men concerned should not be divulged. He was not interested in the publication of any article in *John Bull*, except in so far as it directed attention to a matter of vital importance to the nation. In order that the medical profession might have the benefit of the discovery he drafted the circular letter, which did not bear the construction placed upon it in the charge, because it was clear from that letter that the treatment was only to be issued through qualified medical practitioners. The words 'We may be able to arrange for one of our own staff to give this treatment' were only intended as a last resort in order that patients who had not a medical man prepared to give the treatment should not suffer. When his attention was drawn to the fact that these words were ethically questionable the remaining circular letters were destroyed. A representative of *John Bull* called on him to discuss the possibility of giving the formula to the medical profession and in consequence of that discussion he persuaded the discoverer to consent to give the formula with all records and data, to the General Medical Council, the formula to be furnished from the offices of *John Bull* but the General Medical Council refused the offer. His counsel urged on Dr Hooker's behalf that he had never sought to attract patients to himself. He had been in the profession for nearly fifty years and now he certainly did not wish for an overflow of patients for he had more than he could deal with. He had merely endeavoured to secure for the public the benefit of a great scientific discovery.

After a private deliberation by the Council, the President announced the decision.

I have to announce that the facts alleged in the Notice of Inquiry against Joseph Benson Hooker have been proved to the satisfaction of the Council. The Council have judged Joseph Benson Hooker to have been guilty of infamous conduct in a professional respect and have directed the Registrar to erase from the Medical Register the name of Joseph Benson Hooker.

(To be continued)

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY, DECEMBER 12TH, 1925

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British Medical Association.

CURRENT NOTES

Royal Commission on National Health Insurance
At page 198 of this SUPPLEMENT will be found a Supplementary Memorandum which has been submitted to the Royal Commission on National Health Insurance on behalf of the witnesses of the British Medical Association who appeared before the Commission on April 30th and May 7th, 1925. The Supplementary Memorandum contains some observations on the evidence which has recently been given before the Commission by representatives of the Ministry of Health.

The Medical Secretary's Visit to South Africa
In the SUPPLEMENT of October 31st it was announced that Dr Alfred Cox sailed on October 30th for an organizing tour of all the Branches of the Association in South Africa. He now reports his safe arrival in Capetown and the commencement of the work which he went to South Africa to do. His tour promises to be a strenuous one. Included in the itinerary drawn up for him by the South African Committee (which is, of course, subject to alteration) are visits to the following places: Capetown, Johannesburg, Pretoria, Bulawayo, Victoria Falls, Salisbury, Mafeking, Ladysmith, Pietermaritzburg, Durban, East London, Grahamstown, Port Elizabeth, Kimberley, and Bloemfontein.

A Divisional Social Evening at Headquarters
A "social evening," which it is hoped may be the precursor of others to be arranged by various metropolitan Divisions, was held at the new House of the British Medical Association on Wednesday of last week, when the Westminster and Holborn Division arranged a very successful gathering. The event had been fixed for a week earlier, but was postponed on account of the death of Queen Alexandra. Any of the shades of those genial and accomplished companies who attended the sessions at old Tavistock House in the time of James Peiry, or, later, in that of Charles Dickens, if they still linger about the old haunts, must have been attracted by the stately revelry and entertainment, reminiscent of the good fellowship of years gone by, and have been interested to observe that their own programme for evening parties is still followed, whereby the intellectual and the social are blended—first the feast of reason, and then the flow of soul. After the

members and their friends had been received in the Members' Common Room by Dr Redmond Roche, chairman of the Division, and Mrs Roche, an adjournment was made to the Hastings Hall, where Professor G Elliot Smith, F.R.S., delivered a short address (printed at page 1107 this week) on "The left-handed lady of Lloyd's." The fossilized portions of the skull discovered during recent excavations on the site of the new Lloyd's building were on view, as well as casts of two of the famous prehistoric crania which have been the subject of debate in the anthropological world of recent years. Professor Elliot Smith told his audience how he deduced from these fragments certain information with regard to this distant forerunner of the London woman of to-day. After the lecture, and a very warm vote of thanks to Professor Elliot Smith, the company made their way to the Great Hall, which, with its colour and space, made an ideal setting for the kind of entertainment that was to follow. From the dais an orchestra played excellent dance music. Almost everybody, sooner or later, yielded to the rhythm, and if it was not quite the case that, as Goldsmith put it, "the good grandsire, skilled in gesture lore, was frisking 'neath the burden of fourscore," certainly some very senior members of the profession showed what they could do by way of setting an example to the younger, and kept it up until well past midnight. The centre of the hall was cleared for this purpose, and around this space small tables were arranged in cabaret fashion, at which the company could sort themselves out and enjoy refreshments and conversation, so that the effect was that of a big family party. An item not on the programme was furnished after 11 o'clock by two accomplished dancers, Miss Barbara Helen and M Leon Fiori, from the Shaftesbury School of Dancing, who gave an exhibition of the Spanish or Spanish-American tango, this was greatly enjoyed, as, indeed, was the entire evening, the success of which was due to the officers of the Division, represented by Dr Stuart Webb, the honorary secretary, and the permanent headquarters staff responsible for the arrangements in the House, with Mr Ferris Scott at their head. The number of invitations sent out was 220, and the acceptances could not have fallen far short of this number.

Ophthalmic Benefit.

In conjunction with the Ophthalmic Committee the Insurance Acts Committee has had under consideration the extension of the form which should be used by an insurance practitioner when recommending one of his insured patients to consult an ophthalmic specialist. This, of course, is one of the practitioner's obligations under the terms of service for insurance practitioners. The Insurance Acts Committee

¹ BRITISH MEDICAL JOURNAL SUPPLEMENT May 23rd 1925 p 209
Ibid May 30th 1925 p 233.

has considered the suggestion put forward at the recent Conference of Local Medical and Panel Committees that an official form should be provided for this recommendation, but does not approve the institution of an official form for this purpose. All that is required is a simple expression of opinion that the patient should consult an ophthalmic specialist, and the Committee suggests the following form of words is being suitable for adoption by insurance practitioners in this respect:

To

This is to certify that I have examined you and am of opinion that you should consult an ophthalmic surgeon

Dental Treatment by Insurance Practitioners

Attention was recently drawn to a "dental letter" issued by an approved society, which stated that it was part of an insurance practitioner's contract to give treatment for simple tooth extractions where no anæsthetic was necessary. The Insurance Acts Committee has always maintained that, with the possible exception of emergencies, it is no part of the duty of an insurance practitioner to extract teeth, and the Ministry of Health was asked to take the matter up with the society concerned. The Ministry now states that an assurance has been given that the statement in the society's "dental letter" referred to above will not appear in any future copies.

ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE

SUPPLEMENTARY MEMORANDUM BY THE BRITISH MEDICAL ASSOCIATION.

OBSERVATIONS ON THE EVIDENCE GIVEN BY WITNESSES ON BEHALF OF THE MINISTRY OF HEALTH

1 The witnesses on behalf of the British Medical Association desire to submit for the consideration of the Royal Commission some observations with regard to evidence given by witnesses from the Ministry of Health on certain suggestions made by the Association. They submit these observations, not primarily with the view of criticizing the opinions expressed by the Ministry's witnesses, but rather in the hope that they may make more clear certain points which seem to have been imperfectly understood, and that in this and in other ways they may be helpful in indicating to the Commission the views of the medical profession. Apart from the points touched upon in this Memorandum, it may be taken that the Association's witnesses are in general agreement (and for the most part in actual verbal agreement) with the evidence of the Ministry's witnesses.

2 Suggestions as to the exclusion of certain classes from compulsory health insurance

(i) *The clerical staffs of certain banks, insurance companies and similar employers.* We observe that the Ministry's witnesses admit that this class of insured person is in several respects exceptional, and that societies entering for this special class are very favourably situated. Sir Walter Kinnear agrees that such insured persons "are forced to pay for something that in practice they never get either in respect of statutory benefits or additional benefits." The suggestion put forward by the Ministry to meet these exceptional circumstances is that additional treatment benefits should continue to be available for such insured persons after they have ceased to be insured. While not opposed to this suggestion on principle, we submit (a) that this would merely emphasize the peculiar position of this class among insured persons, (b) that the difficulties implicit in any such arrangement (especially with regard to similar insured persons who do not happen to be members of the select societies) will scarcely be less than those involved by the exclusion of such persons from insurance by certificate of the Ministry as suggested by the Association, (c) that it is exactly in these cases that the temptation would be greatest to grant as an additional benefit the return of the insured person's contributions, so that those who least need help may seem medical attention wholly at the expense of the employer and the State. We urge, therefore, that the preferable method of dealing with this exceptional class is to exclude them altogether by suitable methods as suggested by the Association.

(ii) *Exempt persons.* We desire to emphasize for the information of the Commission the facts (which cannot really be recaptured by any other means than through their medical attendants) (a) that though a large number of this class may avail themselves of certain advantages to which they are entitled it is a common experience that they express themselves as quite willing, or even as preferring to be without them, (b) that by reason of the formalities and conditions of "making their own arrangements" as they have to do, then attendance is more troublesome to practitioners than that on other insured persons

(c) that they have to make, even under their present conditions, considerable payments in many cases towards the cost of their medical attendance. We suggest that if it be not possible to exclude such persons from insurance altogether as a class, they should at least be allowed voluntarily to exclude themselves as individuals. It follows that the Association is strongly opposed to any raising of the income limit for such persons as has been suggested. On the other hand, the Association believes that if employers are still compelled to make a contribution in respect of such persons it would be more advantageous that, in return for such contributions, certain additional treatment benefits or extensions of medical treatment should be available for them, rather than that they should be eligible for ordinary medical benefit.

(iii) *The higher-paid manual worker.* The Association views the national health insurance system primarily as a health service, and it is evident that any unnecessary inclusion of certain persons within its scope must, on financial grounds, diminish the advantages of the service to those who need them most. The only reason advanced against the exclusion of the highly paid manual worker seems to be the formidable administrative difficulties involved. The Association's witnesses, in their evidence, admitted that such difficulties would arise and would be great, but, adopting Sir Walter Kinnear's words with regard to administrative difficulties of a not very dissimilar kind, "we would far from hope that, if the Commission would be good enough to recommend something on the basis we suggest, we should be able to overcome some of the difficulties." It should be noted that, under this heading, we do not propose to exclude any manual worker who has, prior to any new arrangement, paid contributions for an appreciable period.

(iv) *The general income limit for non-manual workers and voluntary contributors.* We note that the Commission has received the suggestion (though not from the Ministry's witnesses) that the income limit should be raised from £250 to £300 or even £350. The Association is very strongly opposed to any such suggestion. Indeed, it suggests that the existing income limit is even now unnecessarily high, and that at least it should be materially lowered for insured persons without dependants.

3 Suggestions as to the inclusion of certain classes of persons not at present included

(i) *Poor persons not under a contract of service.* The Association's witnesses recognize that the situation has been materially modified by the passing of the recent Widows', Orphans', and Old Age Contributory Pensions Act. Under this Act there are considerably increased inducements for poor persons voluntarily to enter or to remain in insurance, and this opportunity is given to other such persons for the first time. We recognize, too, that the adoption of the Ministry's suggestion for the compulsory insurance of certain persons who are described as under a "contract for service" rather than a "contract of service" would further modify the position. Under present circumstances

therefore, we do not desire to press for the compulsory inclusion at an early date of other workers who, though not under a contract of service, are in a like economic position to existing insured persons, though we continue to believe that such inclusion is desirable.

(1) *The dependants of the lower-paid workers.* The need for some general provision of a domiciliary medical service for these dependants does not appear to be contested. Indeed, the Ministry's witnesses have pointed out that, in the absence of such a service, the usefulness of certain other health provisions is lessened and the difficulties of making suitable maternity provision for non-insured wives of insured persons are insuperable. Also that such a service would bridge the gap which in the majority of cases exists between the ages of 14 and 16 years. We would point out that it appears from question and answer 23,851 that the exact nature of our suggestion has not been clearly understood. At the same time we realize that the matter is one of great difficulty, and that in the present economic and financial condition of the country any early extension of the kind indicated may perhaps be considered impossible. We would, however, urge the Commission to consider whether, even if unable to make any proposals for immediate action, they could not recommend that so soon as conditions allow the provision of medical advice and treatment for the dependants of lower-paid workers should be made, and that this provision should be made either under the insurance scheme or by arrangements similar to those in accordance with which medical benefit is given thereunder.

4. *Suggestions as to extensions in the scope of the medical service.*

(1) *Consultant and specialist service.* While very anxious that such a service should be established at the earliest possible moment, it should be made clear that the Association is not in agreement with the proposals put forward by the Ministry's witnesses as to the method of providing it. We note that the Ministry have submitted to the Commission a copy of the "Memorandum of Discussions on Certain Questions of Provision of Medical Services" which was published in 1919 and is now printed as Appendix CLII. It is stated in the Memorandum itself that "the members of the medical profession present participated in the discussions as individuals and not as committing the bodies to which they belonged," and though the Association has not repudiated the provisional conclusions set forth in the Memorandum, and would almost certainly endorse its main arguments and suggestions to-day, experience since 1919 has in one or two important respects modified the attitude of the profession towards certain of these, notably that upon which the evidence of the Ministry's witnesses with regard to the method of providing a specialist service is founded. The difference of attitude will be seen in paragraph 25 of the "Statement of Evidence" submitted on behalf of the Association as compared with paragraphs 31 and 35 of the "Memorandum of Discussions." Opinion within the profession is now very definitely opposed to the provision of a consultant and specialist service founded primarily and mainly upon a series of "clinics" staffed by a limited number of part-time officers. Experience has led us to believe that the conditions of ordinary private practice should be adhered to as far as possible, and, as in the case of arrangements now being made for what is called "ophthalmic benefit," a free choice of specialist, and consultations at the consultant's rooms or at the practitioner's house or surgery or at the patient's home, should not only be an essential part of the scheme, but should be the ordinary and normal procedure to be followed. While agreeing that in some circumstances or places a clinic system, with certain provisos, may be found convenient we would urge the Commission not merely not to separate a domiciliary specialist service from any extension in this direction, but rather to recommend the building up of the whole extended service on the lines of domiciliary arrangements in the widest acceptance of the term.

(2) *Additional treatment benefits.* We have noted with some anxiety that some of the witnesses of the Ministry have spoken loosely of the "provision of special treatment services" by approved societies. It is quite clear—and

this is, of course, endorsed by the Ministry—that any such direct provision would be contrary to Section 14 of the Act of 1911, and that the only form of additional benefit permitted is the defraying of part or the whole of the cost of treatment obtained by members themselves, and not the organization of a service for them. We are emphatically of opinion, in agreement apparently with that of the Ministry, that all treatment benefits should be included as statutory benefits for the whole of the insured population, and it is fundamental with the profession that no such benefit should be organized or administered by approved societies either directly or indirectly, but by some appropriate public statutory body on which there is suitable medical representation. Without this safeguard it is impossible for any extension of the scope of the medical service to be carried to a successful issue.

5. *Modifications of disciplinary powers and procedure.*

The Association's witnesses are unable to accept answer 24,000 as a complete statement on the matter or as one which is entirely accurate in every detail. The evidence of the Ministry's witnesses in this matter does not touch the points on which the profession is profoundly exercised, and we would urge upon the Commission the importance of giving very careful consideration to this subject with a view, we hope, to making recommendations on the lines of paragraphs 41 and 42 of the Association's "Statement of Evidence" as modified in some degree by the evidence of the Association's witnesses.

6. We shall be glad to give any further evidence on the above points that the Commission may desire or to submit any further observations that may be deemed necessary.

Association Notices.

TRANSFER OF CIVIL PARISH OF WARLINGHAM FROM REIGATE TO CROYDON DIVISION OF SURREY BRANCH

NOTICE is hereby given of the following proposal made by the Croydon and Reigate Divisions and the Surrey Branch.

That the Civil Parish of Warlingham be transferred from the Reigate to the Croydon Division of the Surrey Branch.

The matter will be determined in due course by the Council. Any member affected by the proposed change, and objecting thereto, is requested to write, giving reasons therefor, to the Medical Secretary, British Medical Association House, Tavistock Square, W.C.1, not later than January 12th, 1926.

BRANCH AND DIVISION MEETINGS TO BE HELD

BIRMINGHAM BRANCH, NUNEATON AND TAMWORTH DIVISION.—A meeting of the Nuneaton and Tamworth Division will be held at the Tamworth General Hospital on Thursday, December 17th at 3 p.m. when Dr A. P. Thomson will read a paper on the rheumatic state in childhood.

CAMBRIDGE AND HUNTINGDON BRANCH.—A British Medical Association Lecture on some points in clinical endocrinology will be given by Dr Leonard Williams on Wednesday, December 16th at 3 p.m., in the Pathological Lecture Theatre, Medical Schools, Cambridge. All medical practitioners are cordially invited, and it is hoped that as many members as possible will attend.

DORSET AND WEST HANTS BRANCH, BOURNEMOUTH DIVISION.—A meeting of the Bournemouth Division will be held on Monday, December 14th at 4.15 p.m. at St. Peter's Small Hall, Bournemouth when Dr J. H. Sequeira will give a British Medical Association Lecture on some common affections of the skin. Text at 4 p.m.

EDINBURGH BRANCH, SOUTH EASTERN COUNTIES DIVISION.—An ordinary meeting of the South Eastern Counties Division will be held in the Railway Hotel, Newtown St. Boswells on Wednesday, December 23rd at 3 p.m. Business. Arrangements for an annual presentation of badges of office for chairman and secretary of Division by Dr James Morris Menzies (Selkirk) present chairman of the South Eastern Counties Division. Address on ultra violet radiation and its application on medicine by Dr Charles Cameron, medical superintendent of E. T. Fortune Sanatorium.

KENT BRANCH.—The quarterly meeting of the Kent Branch will be held on Wednesday, December 16th at 3 p.m. at the West Kent General Hospital, Maidstone. Dr Alfred Greenwood, county medical officer, will read the paper with which he opened the discussion at a conference called by the county council to consider the treatment of crippled children. Dr Greenwood will also read his scheme for the object presented to and accepted by the Kent County Council in November. As the subject specially affects the medical staffs of hospitals, their attendance is invited as well as that of members of the Branch. Lunch can be obtained at the Royal Star Hotel at 1.45 p.m. at 3.6d each.

KENT BRANCH TUNBRIDGE WELLS DIVISION—A meeting of the Tunbridge Wells Division will be held at the General Hospital, Tunbridge Wells on Friday December 18th at 3.30 p.m. Dr A. J. Hall Professor of Medicine University of Sheffield will give a British Medical Association Lecture on later effects of epidemic encephalitis (illustrated by lantern slides). Tea will be provided. Further lectures will be given on January 20th 1926 by Dr T. A. Fox on some varieties of psychotherapy, and in March by Dr A. White Robertson.

LANCASHIRE AND CHESHIRE BRANCH—The first annual dinner of the Lancashire and Cheshire Branch will be held at the Midland Hotel Manchester on Thursday December 17th at 7.30 p.m. The price of tickets has been fixed at 15s each and members may invite guests (male or medical women only). The Branch Council hopes that each member of the Branch will make every effort to attend. Those intending to be present are asked to notify the honorary secretary (Dr A. Corser Sturrock, 14, St John Street, Manchester) immediately.

LANCASHIRE AND CHESHIRE BRANCH WAERINGTON DIVISION—A meeting of the Warrington Division will be held in the Infirmary to-day (Friday December 11th) at 8.30 p.m. Dr Core (Manchester) will read a paper on hydatid met with in general practice.

METROPOLITAN COUNTIES BRANCH CITY DIVISION—The next clinical meeting of the City Division will be held at the Metropolitan Hospital, Kingsland Road E. to-day (Friday December 11th) at 4 for 4.15 p.m. when Dr Norman Hill will show cases.

METROPOLITAN COUNTIES BRANCH LEWISHAM DIVISION—A meeting of the Lewisham Division will be held on Tuesday December 15th, at 8.45 p.m. at the South Eastern Hospital for Children Sydenham, S.E.26 when Dr R. Godwin Chase will occupy the chair. After transaction of business clinical cases will be shown by the staff of the hospital. Members are invited to show cases. The annual dinner of the Division will take place at the Royal Bell Hotel Bromley on Thursday December 17th, at 7.30 p.m., with Dr R. Godwin Chase in the chair. Members are invited to bring medical gifts. As the Chairman and Committee feel that it is highly desirable to foster the social side of medical practice in the borough it is hoped that all members will endeavour to be present. Dinner ticket 10s. 6d. (exclusive of wine).

METROPOLITAN COUNTIES BRANCH WILLESDEN DIVISION—A meeting of the Willesden Division will be held at the Willesden General Hospital Harlequin Road on Wednesday December 16th at 9 p.m. Agenda: Report of Executive Committee, discussion Willesden hospital policy and the staffing of the Willesden General Hospital.

MIDLAND BRANCH CHESTERFIELD DIVISION—A meeting of the Chesterfield Division will be held at the Maternity Hospital Chesterfield on Friday January 8th 1926 at 8.15 p.m. Mr A. M. Webber F.R.C.S. honorary surgeon Nottingham General Hospital, will give an address on pelvic pain in women. Tea and coffee at 8.

NORTH OF ENGLAND BRANCH SUNDERLAND DIVISION—A scientific meeting of the Sunderland Division will be held at Monkwearmouth Hospital Sunderland on Tuesday, December 15th at 7.30 p.m., all members of the Division are invited to be present.

SOUTH WALES AND MONMOUTHSHIRE BRANCH CARDIFF DIVISION—A meeting of the Cardiff Division will be held at the Engineers' Institute Cardiff on Wednesday December 16th. Dr J. Stanley White (London) will give a lecture, illustrated by lantern slides, on recent advances in endocrine therapy.

SOUTH WALES AND MONMOUTHSHIRE BRANCH MONMOUTHSHIRE DIVISION—A meeting of the Monmouthshire Division will be held at the County Hall Newport on Tuesday December 15th, at 2.30 p.m. Agenda: Correspondence to receive and adopt the report of the Executive Committee of the Monmouthshire Division as to the Ebbw Vale Workmen's Medical Society to discuss and vote upon a resolution in connexion therewith, address on cancer and its treatment by Mr Duncan G. L. Fitzwilliams, C.M.G., F.R.C.S., surgeon to St Mary's Hospital London.

SOUTH WALES AND MONMOUTHSHIRE BRANCH SOUTH WEST WALES DIVISION—A meeting of the South West Wales Division will be held at the Carmarthenshire Infirmary on Wednesday, January 13th, 1926 at 3 p.m. when Professor A. J. Clark will give a British Medical Association Lecture on recent advances in endocrinology.

SOUTH WALES AND MONMOUTHSHIRE BRANCH SWANSEA DIVISION—A meeting will be held by the Swansea Division at the General Hospital Swansea on Thursday December 17th, at 8.15 p.m., when Dr Emily C. N. Paterson will open a discussion on eclampsia.

SOUTHERN BRANCH JERSEY DIVISION—A meeting of the Jersey Division will be held on Thursday, December 17th when Lieut. Colonel P. J. Marett chairman of the Division, will read a paper on common bacillary diseases of the island.

SOUTH WESTERN BRANCH EXETER DIVISION—The next meeting of the Exeter Division will be held in the Library of the Royal Devon and Exeter Hospital to-day (Friday, December 11th) at 4.30 p.m. A lecture and demonstration on the use of plaster of Paris in the treatment of fractures and other surgical conditions will be given by Mr Norman Lock. Tea at 4 p.m.

SURREY BRANCH CROYDON DIVISION—A meeting of the Croydon Division will be held at the Croydon General Hospital on Tuesday, December 15th at 8.30 p.m. when Mr A. H. Todd F.R.C.S. will talk on cases collected from the orthopaedic department of the Croydon General Hospital.

SURREY BRANCH KINGSTON-ON-THAMES DIVISION—At the meeting of the Kingston-on-Thames Division to be held on Tuesday, January 5th 1926 Mr J. G. Turner F.R.C.S., will read a paper on distal p.p.

SURREY BRANCH REIGATE DIVISION—At the meeting of the Reigate Division to be held at the East Surrey Hospital, Reigate,

on Tuesday, January 12th, 1926, at 8.45 p.m. Sir Henry Gauvain will read a paper on conservative treatment in non-pulmonary tuberculosis.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH HEREFORD DIVISION—A lecture under the auspices of the Hereford Division will be given at the Herefordshire General Hospital on Monday, December 14th at 3 p.m., by Dr J. Stanley White on some recent aspects of gland therapy. The lecture will be illustrated by lantern slides. A large attendance is hoped for. Tea will be provided.

WORCESTERSHIRE BRANCH DEWSBURY DIVISION—A meeting of the Dewsbury Division will be held in the Man and Saddle Restaurant, Dewsbury on Tuesday, January 12th, 1926 at 8.15 p.m. Dr W. Fletcher Shaw (Manchester) will read a paper on chronic pelvic pain.

YORKSHIRE BRANCH HALIFAX DIVISION—The next meeting of the Halifax Division will be held in the new X-ray Department (Whitaker Ward) of the Royal Halifax Infirmary on Wednesday, December 16th at 8.30 p.m. Dr Franklin will discuss X-rays and the interpretation of X-ray photographs in general, and will demonstrate the gastric technique.

YORKSHIRE BRANCH HULDERFELD DIVISION—The medical dance will be held on Wednesday, December 16th in the Royal Infirmary from 9 p.m. to 1 a.m. Perception 8.45. For those who do not wish to dance a bridge drive, commencing at 9.15 will be arranged. Tickets 8s. 6d. each, admission by programme.

YORKSHIRE BRANCH SHEFFIELD DIVISION—A meeting of the Sheffield Division will be held in the General Lecture Room The University, Sheffield to-day (Friday, December 11th), at 8.45 p.m., when a British Medical Association Lecture will be delivered by Dr William Cramer D.Sc. F.R.S. of the Imperial Cancer Research Fund on the present outlook on cancer. A cordial invitation to be present is extended to all members of the medical profession.

YORKSHIRE BRANCH WAKEFIELD, POTTERFAC, AND CASTLEFORD DIVISION—The lecture by Colonel L. W. Harrison on the management of syphilis, which was to have been given at the Playhouse Westgate, Wakefield, on Sunday, December 13th, has been postponed.

Meetings of Branches and Divisions

BIRMINGHAM BRANCH BROMSGROVE DIVISION

A clinical meeting of the Bromsgrove Division was held at the Smallwood Hospital Redditch on Thursday November 26th when a most interesting paper was read by Dr P. T. Hughes (Barnsley Hall) on neurasthenia. Numerous questions were subsequently put to Dr Hughes and answered by him. The meeting closed with a vote of thanks to Dr Hughes.

CAPE OF GOOD HOPE—WESTERN PROVINCE BRANCH

A meeting of the Cape of Good Hope—Western Province Branch was held at Capetown on October 30th, when the President, Dr C. H. Kruger, was in the chair.

The Chairman referred to the forthcoming arrival in South Africa of Dr Alfred Cox, the Medical Secretary of the Association and suggested a change in the date of the annual meeting of the Branch in order that Dr Cox might be able to attend. The motion was adopted.

The business of the evening was a symposium on neurosyphilis arranged by Dr F. H. Knox. Dr Knox read the opening paper in which he described the clinical features of neurosyphilis chiefly from a diagnostic point of view. In a lengthy but well-reasoned paper he covered the whole range of a very wide subject.

Dr W. P. Mulligan contributed a paper on the bacteriology and serology of neurosyphilis in which he discussed the various tests at present in use, elaborating Nonne's famous four cardinal tests. Dr E. W. D. Swift discussed neurosyphilis from the psychological point of view and gave an interesting account of modern experiences in the treatment of general paralysis of the insane while Dr J. S. du Toit and Mr J. L. Lunnoff dealt with the ophthalmological and otological aspects respectively.

In a brief contribution Dr Reith Fraser discussed the question of modern treatment of neurosyphilis from the primary stage of the disease onwards. On account of the lateness of the hour discussion was curtailed. Dr H. A. M. Bosman, however, thanked the collaborators for their instructive contributions and made some interesting observations on syphilis in its relation to malaria in the South West African natives.

Dr F. Kruger made some observations on the lucin tests and Dr T. J. W. A. Johnston recounted his experiences of syphilis and neurosyphilis during his long period of practice amongst the natives in the Northern Transvaal. Although he had seen many thousands of cases of syphilis in the native he had seen only two cases of neurosyphilis, both of which were meningeo-vascular in type. He was very grateful to the collaborators for their valuable symposium.

CEYLON BRANCH

The sixth meeting of the Ceylon Branch was held in the Colonial Medical Library on July 8th. Among the business transacted was the appointment of a committee consisting of the President, the Honorary Secretary and Drs E. G. Macleod and F. Cusackera to make arrangements for the annual dinner on September 5th.

The Council was empowered to take effective measures with a view to securing early incorporation of the Branch under the local laws.

Drs H. O. GUNAWARDENA, E. C. ALLES, and LUCIAN DE ZILWA read notes on interesting cases for which they were accorded the thanks of the meeting.

An extraordinary general meeting of the Branch was held in the Colonial Medical Library on September 29th. On the motion of Dr P. J. CUSSELL it was unanimously resolved.

That the action taken by the Legislative Council in passing the motion that apothecaries who joined the Medical Department prior to the promulgation of the Medical Registration Ordinance No. 2 of 1905 should be admitted to the Medical Register is a retrograde step is detrimental to the interests of the public and is derogatory to the medical profession and proposes that if Government decides to permit the apothecaries to practice they should be enrolled in another register and designated licensed practitioners, apothecaries, and that rules should be drawn up for their control by the Ceylon Medical Council.

Dr S. MUTTIAH moved the following resolution, which was carried unanimously.

That the licensing of apothecaries to practice medicine should be abolished after the closing of the Register (suggested in the first resolution) which should be kept open for a period of six months.

The following motion by Dr G. COORE seconded by Dr R. DE ARREW, was unanimously adopted.

That the rules and regulations at present in force at the Ceylon Medical College for the training of apothecaries be abolished and that in their place rules and regulations be framed to permit of the training being such as to fit them to be dispensers or compounders and druggists only.

Copies of the above resolutions were directed to be forwarded to the Hon. the Colonial Secretary, the President of the Ceylon Medical Council, members of the Legislative Council to all the members of the Branch, and to the press.

DUNDEE BRANCH

In University College Dundee on November 27th before an audience restricted by weather and other circumstances to about fifty, Dr F. A. E. CREW, director of the Animal Breeding Research Laboratory, University of Edinburgh, gave a British Medical Association Lecture on the mechanism of inheritance. In clear and cogent fashion he demonstrated on a series of slides taken mainly from experiments with the barnyard fowl (*Gallus gallus*) the possibility of identifying individual chromosomes and proving their association with heritable characters—the particular representation of the genes of individual characters in the chromosome and the local association in the chromosome of characters linked in linkage. He traced the relations of cross and back breeding and the essential mathematical sequence of the numbers exhibiting dominant or recessive characters in the filial generations. The keen appreciation of the audience was expressed in the vote of thanks.

GLASGOW AND WEST OF SCOTLAND BRANCH

A clinical meeting of the Glasgow and West of Scotland Branch was held in the Royal Hospital for Sick Children, Yorkhill, Glasgow, on November 18th. A series of cases illustrating medical and surgical diseases of childhood were demonstrated by Professor LEONARD FINDLAY, Mr. ALEXANDER MACLENNAN, and Mr. WILLIAM PARKIN, the physician and surgeons to the hospital, and the medical superintendent, Dr J. CAMPBELL SUTTIE, gave an exhibit of x-ray films and photographs with special reference to diseases of the lungs. Tea was provided and the governors and staff were recorded a very hearty vote of thanks for the excellent arrangements. The attendance estimated at 125 was not up to standard as owing to the city and surrounding districts being fog-bound travelling was neither pleasant nor safe.

The annual dinner of the Branch was held in the evening at Feiguson and Forsters Restaurant, when Dr GEORGE A. ALLAN, President of the Branch, occupied the chair. On this occasion members were invited to bring their lady friends but owing to climatic conditions only fifty attended. The guests of the evening were Dr JOHN STEVENS (secretary of the Edinburgh Branch), Dr JAMES R. DREVER (Scottish Medical Secretary), and Professor LEONARD FINDLAY, Mr. ALEXANDER MACLENNAN, Mr. WILLIAM PARKIN, and Dr J. CAMPBELL SUTTIE of the Royal Hospital for Sick Children. The toast of the Branch was proposed by Dr STEVENS and replied to by Dr J. G. McCUTCHEON, Branch secretary. The toast of The Guests proposed by the CHAIRMAN was acknowledged by Professor FINDLAY who spoke of the need for more facilities for clinical experience before registration. An excellent musical programme was rendered by Dr. and Mrs. J. Wallace Anderson.

LANCASHIRE AND CHESHIRE BRANCH HYDE DIVISION

The Hyde Division held a 'souper dance' in Hyde Town Hall on November 13th. More than a hundred members and their friends were present and a thoroughly enjoyable evening was spent.

On November 26th Mr C. J. BOND, C.M.G., F.R.C.S. (Leicester) gave an address to the Division in the Town Hall. Mr Bond was received by the Mayor of Hyde and after refreshments had been served in the Mayor's parlour he lectured in the Council Chamber to a large gathering of members and friends from neighbouring Divisions. The subject of his most interesting address was 'Vitamins from the medical and public health points of view.' The lecture was illustrated by lantern slides, which showed the original work carried on by the lecturer on this subject. A vote of thanks to Mr Bond was ably proposed by Mr F. G. PALFREY on behalf of the Division; this was seconded by Mr G. E. WRIGHT and supported by Mr. MANOULIAN on behalf of the visitors.

METROPOLITAN COUNTIES BRANCH ST. PAULS DIVISION

The St. Pauls Division held a very successful meeting at the British Medical Association House on November 10th when Dr KATHLEEN LAMBER, vice-chairman, presided. The Division received

with great regret the resignation of Dr A. F. ROCHE, M.C., chairman of the Division who is leaving the district.

On the recommendation of the Executive Committee Dr Geoffrey EVANS, F.R.C.P., was unanimously elected chairman of the Division. Dr GEOFFREY EVANS then took the chair. The following recommendation of the Executive Committee was carried with acclamation.

That Dr A. R. ROCHE be elected an associate member of the St. Pauls Division with all the privileges of an ordinary member, as that of voting in recognition of his great service in connection with the formation of the Division.

Dr ROBERT A. YOUNG, C.B.E. physician to the Brompton Hospital, delivered a most interesting address on the early recognition of pulmonary tuberculosis which was followed by a discussion in which many members took part. A very cordial vote of thanks to Dr Young was proposed from the chair and carried enthusiastically.

NORTH OF ENGLAND BRANCH CONSETT DIVISION

A combined business and social meeting of the Consett Division was held at the Imperial Hotel, Stanley, on November 20th when Dr JOHN MURRAY (Shotley Bridge) presided. There was a large attendance of members.

Before the business agenda was dealt with the CHAIRMAN referred in feeling terms to the death of the late Dr. Alexander Cook of Catehgate who had acted as president of the Division over a long period of years. He dwelt on the excellent work Dr Cook had done on behalf of the Association during that time and said that the Division had profited on many occasions by his wise and skilful leadership. A vote of condolence and a message of sympathy was directed to be sent to the widow on behalf of the members of the Division.

After the business meeting the members entertained Mr J. Hamilton Barclay, assistant surgeon, Newcastle Royal Infirmary, to a complimentary supper. Thereafter Mr BARCLAY gave an excellent address on the subject of acute abdominal emergencies dealing in an interesting and practical way with the differential diagnosis of gastric and duodenal ulcers, appendicitis, cholecystitis, gall stones, and acute pancreatitis. The address was illustrated by references to one hundred consecutive cases operated upon by Mr Barclay in the Newcastle Royal Infirmary. He emphasized the importance of early diagnosis and prompt operation giving convincing mortality figures in support of his thesis.

The address was well received and led to some discussion. A vote of thanks carried with enthusiasm, brought to an end a most successful and profitable meeting.

METROPOLITAN COUNTIES BRANCH LEWISHAM DIVISION

A meeting of the Lewisham Division was held on November 17th at the Parish Room, St. Laurence, Margate, Catford, when Dr R. GODWIN CHASE was in the chair. The provision of badges for the chairman and secretary was approved. In the course of a discussion on medical attendance at street accidents it was recommended that all medical men should keep a book for recording the time and date of calls received as recently trouble had arisen in connexion with injured persons.

Mr W. L. EASON, C.B., C.M.G., M.D., medical superintendent of Guy's Hospital, then delivered an address entitled 'The relationship between voluntary hospitals and general medical practitioners.' Mr EASON gave his experiences at Guy's and showed charts of attendances at that hospital for the past twenty years. The Insurance Act, he said, caused a large drop in the medical out-patients, but cases of skin and eye disease and of diseases of women had remained about the same, while increases were noted in cases of diseases of the throat and nose, diseases of children, and orthopaedic cases. All patients went before the inquiry officer and it was found that 45 per cent. of out-patients were insured persons and 25 per cent. of in-patients. 46 per cent. of the patients were uninsurable being children or over age. One patient out of five was sent by recommendation of his family medical attendant. In regard to the Hospital Saving Association the income limit was £4 a week for a single man, £5 for a married man without children, and £6 with children. The contribution rate was 3s a week. The only benefit conferred was that no inquiries as to income were made but patients were only admitted on medical grounds. Only 3 per cent. of out-patients were contributors and just 2 per cent. of in-patients. All patients sent to Guy's were treated though a considerable proportion of those sent by medical men would have been ineligible owing to the income limit. Guy's Hospital maintained (1) that it was established to treat the sick poor (2) the out-patient department gave an independent second opinion to the sick poor, which the rich were able to get on payment. In the accessory departments of x-rays and minor surgery moderate fees were charged patients required to be recommended by their own medical man.

Dr CHAS. BEATTIE, WHITE HALLMAN, Trowton, and BETHA joined in the subsequent discussion and Dr CHASEL spoke particularly on the Hospital Saving Association. A vote of thanks was accorded to the lecturer.

A meeting of the Lewisham Division was held on November 24th at the Parish Room, St. Laurence, Margate, Catford, when Dr R. GODWIN CHASE was in the chair and there was a record attendance of members. The CHAIRMAN outlined the scheme of the London Panel Committee for a public medical service for London. It explained that the scheme was for people who could not pay ordinary fees at the time or accounts when rendered. The fee would be 3d a week for each person, all of which went to the doctor, and 9d a quarter extra would be charged for administrative

services. Dr BATTESON, secretary of the London Panel Committee gave full details and reasons why the scheme had been brought forward. Drs BAIN, BEATTIE and JACKSON spoke against the scheme. The Lewisham Panel representatives Drs CHASE HALLINAN, and THOMSON, urged its adoption. Dr WHITE spoke in favour of existing provident dispensaries. Drs BUCHAN CHARLES and GILCHRIST joined in the discussion. A vote of thanks was unanimously passed to Dr Batteson for his address.

NORTH OF ENGLAND BRANCH NORTH NORTHUMBERLAND DIVISION

The annual dinner of the North Northumberland Division was held on November 20th at the Plough Hotel, Alnwick, when a company numbering thirty two members and their guests were present. The toast of the British Medical Association was proposed by Dr R. A. WELSH (Felton) and responded to by Dr JAMES HUNSON, who was the guest of the Division on this occasion. Our Guests was proposed by Dr R. E. MOYES (Broomhall), to which Professor STUART McDONALD (Newcastle) replied.

The number present was the largest on record for the annual dinner of the Division and it was unanimously agreed that a most enjoyable and successful evening had been spent.

A meeting of the North Northumberland Division was held in the Infirmary, Alnwick, on November 24th, when an address was given by Mr G. GREY TURNER, M.S., F.R.C.S. (Newcastle on Tyne), on some points about common rectal diseases and their treatment, illustrated with lantern slides.

At the close of the address Mr. Turner was very heartily thanked on the motion of Dr DEX of Wooler, for his most interesting and instructive lecture, which all those present had greatly enjoyed. Dr. Mason was also thanked for manipulating the lantern slides, which added considerably to the success of the address.

SOUTH WESTERN BRANCH TORQUAY DIVISION

A MEETING of the Torquay Division was held in the Torbay Hospital on November 11th, when Dr SCRASE (Newton Abbot) was in the chair.

Dr H. J. CAMPBELL (Dartmouth) presented his report of the Annual Representative Meeting and replied to several questions that arose in connexion therewith. The revision of the rules of the Division was completed in accordance with the recommendations of the Executive Committee and the honorary secretary was asked to have them printed and circulated to members as soon as possible.

Arrangements have been made to hold a dinner and dance in the Torbay Hotel Torquay on January 7th 1926. Invitations to this function are being sent to all the members and non members in the area of the Division. Any members of the profession who may be in the neighbourhood on that date will be made welcome. Full particulars may be had from the honorary secretary, Dr Cameron Davidson, Avonleigh Aedra Road Torquay (phone Torquay 2728).

SURREY BRANCH CROYDON DIVISION

A MEETING of the Croydon Division was held at the Queen's Hotel, Upper Norwood on November 19th. After the ordinary business the members adjourned for tea.

On resumption Dr BRIGHT BANISTER gave an address on some obstetric emergencies. He emphasized the value of ante natal examination in preventing emergencies, and discussed two clinical types—(1) the patient suffering from acute pain at or about full time (2) the patient suffering from haemorrhages at or about full time. Many members took part in the discussion which followed. A hearty vote of thanks was recorded to Dr Bright Banister.

YORKSHIRE BRANCH HALIFAX DIVISION

At the meeting of the Halifax Division on November 18th Professor STEWART gave a lantern talk on gastric ulcer and cancer. Twenty six members of the Division availed themselves of the opportunity of gaining insight into recent work on the pathology of these two conditions.

YORKSHIRE BRANCH WAKEFIELD, PONTEFRACT, AND CASTLEFORD DIVISION

A MEETING of the Wakefield, Pontefract, and Castleford Division was held at Wakefield on November 12th, when Dr J. SHAW BOLTON, medical director of the West Riding Mental Hospital, Wakefield delivered an address on the diagnosis and certification of mental diseases. It was essentially a practical address and included many useful hints on certification and diagnosis. After a discussion the Chairman (Dr William Steven) tendered to Dr Bolton the hearty thanks of the meeting for his interesting and useful address. Dr Steven also thanked Dr and Mrs Hillman for a beautiful table going which they had presented to the Division.

SUNDERLAND DIVISION DINNER

A Correction

In the report of the annual dinner of the Sunderland Division published in the Supplement of November 28th (p. 184) the remarks of His Honour Judge Moore in proposing the toast of the British Medical Association were incorrectly attributed to His Honour Judge Y. M. who was not present at the dinner. We much regret the error.

GENERAL COUNCIL

OR

MEDICAL EDUCATION AND REGISTRATION

WINTER SESSION, 1925

(Continued from page 195)

COMMITTEE REPORTS

The business of the session was almost entirely occupied with disciplinary cases, and the other business was more or less of a routine character. Sir NORMAN WALKER, for the Examination Committee, made an interim report on the answers received from the licensing bodies with regard to the reports of the Council's visitors on the examinations in anatomy and physiology, and said that a formal report would be made at the next session.

Dr J. Y. MACKAY, for the Education Committee, reported that the leaving certificate of the Department of Education of the Irish Free State, which the Council had recognized subject to its acceptance by one of the universities in place of matriculation, had been so accepted by the National University of Ireland, and the examination had accordingly been added to the list of those recognized by the Council. It was also agreed, on the recommendation of the committee, to circulate the licensing bodies in order to ascertain in what way the new regulations for the curriculum which came into operation at the commencement of 1925 carried out the revised resolutions of the Council with regard to professional education necessary for registrable qualification.

Sir JOHN MOORE presented the report of the Public Health Committee. He summarized certain correspondence which had taken place with a number of licensing bodies with regard to their interpretation of the Council's new regulations for the Diploma in Public Health. The University of Cambridge had been asked to make it quite clear in its regulations that its Diploma in Hygiene (Dip Hyg) was not a diploma registrable by the General Medical Council. In reply to an inquiry from the Welsh National School of Medicine as to the interpretation of Rule 2, which provides that the curriculum for a diploma shall extend over a period of not less than twelve calendar months subsequent to the attainment of a registrable qualification, the committee stated that the period of twelve calendar months might suitably include three months' practical work outside the university session.

A communication was considered from the Registrar of the Triple Board in Scotland, transmitting an application from six practitioners proceeding to America to study public health and sanitation, and proposing to spend one academical year at Harvard University for the degree of Master or Doctor in Public Health. The Triple Board had been asked whether the university was recognized by them to instruct in public health and sanitation. After some discussion the Council approved the view of the committee that the study taken at the University of Harvard could not be so recognized.

Sir GEORGE NEWMAN brought forward a communication, transmitted through the Ministry of Health, from the Society of Medical Officers of Health, giving a considered opinion with regard to the practical training required in the Council's new rules, and it was resolved that the suggestions of the Society should be kept in mind by the committee, and that regard should be paid to them in relation to the interpretation of the rules.

The President introduced the report of the Pharmacopoeia Committee, which embodied the report by Sir Nestor Luard on the second international conference on the unification of the formulae of powerful medicaments, held at Brussels in September last, also the protocol of the conference in the original text. For the better information of the committee on certain general questions arising out of the proposed revision of the *British Pharmacopoeia*, 1914, and on the changes it may be deemed advisable to make, the committee proposed at an early date to invite to a conference delegates from a number of medical, pharmaceutical, and scientific societies likely to be interested.

The Council approved this course, and authorized the payment of the travelling expenses of the delegates

DISCIPLINARY CASES *Cases Adjourned from Former Session*

The Council on November 24th considered two cases in which the pronouncement of its decision had been postponed from the session of November, 1924

The first was that of Alexander Dawson Reid, M.B. Ch.B. Aberdeen registered as of High Street South, East Ham, whom the Council had found to have been convicted by court martial in 1917 on a charge of being drunk in the field and to have since been convicted three times by a civil court—twice for being drunk, and once for driving a motor car in a dangerous manner (SUPPLEMENT, December 13th 1924, p. 220). Mr Oswald Hempson appeared on Dr Reid's behalf, and said that Dr Reid since the hearing of the case, had adhered strictly to the assurance he gave to the Council that he would refrain from drink and intended always to do so. He put in excellent testimonials from two medical men, for each of whom he had acted as locum tenens twice during the past year, and from the manager of a public house or whose ships he had served as a surgeon, all of whom had given a chief further declaration that he did not do so.

The other case was that of John Evans, M.R.C.S. L.R.C.P. London registered as of Newbury, Middlesex, with regard to whom it had been found at the previous hearing that he had signed certain certificates in a lax and careless manner (SUPPLEMENT, December 6th 1924, p. 209). Dr Evans produced testimonials from three professional colleagues as to the high standard of his professional conduct in the interval. The President announced the decision of the Council as follows:

Mr Evans as I warned you a year ago the Council takes a very grave view of any laxity on the part of a registered medical practitioner in giving certificates a privilege which is entrusted to him by the State in the belief that he will exercise it honourably, but having had good reports of your conduct since November last, the Council is now satisfied that you will be more careful in the future, and does not see fit to direct the Registrar to erase your name from the Medical Register.

Misdemeanours

A case in which a technical point was strongly contested on behalf of the defendant was that of Alexander Duguid, M.B., Ch.B. Aberdeen, registered as of Meadow Road, Leeds, who appeared on the charge that as a lieutenant in the Royal Army Medical Corps he had been tried by a field general court martial in 1917 for drunkenness when on active service and found guilty and dismissed the service, and further that at the Leeds city police court in 1922 he had been convicted of disorderly behaviour while drunk, and in 1925 at the same court of being found drunk and incapable, and fined 10s. or seven days' imprisonment in each case.

Mr Oswald Hempson instructed by the Medical Defence Union on behalf of Dr Duguid took up the point that drunkenness should not be classed as a misdemeanour under Section 29 of the Medical Act, 1858. That section confined the Council's powers in the case of a conviction when 'infamous conduct in a professional respect' was not charged to felonies or misdemeanours. Drunkenness was merely an offence not technically a misdemeanour. The Council, by taking up these convictions was exceeding its powers. Drunkenness was constituted an offence under the Licensing Act, 1872, Section 12, and he maintained that unless a statute laid it down that a particular offence should be taken to be a misdemeanour, the word misdemeanour in its general use connoted only those offences less than felonies which were tried upon indictment and were not the subject as in this instance of summary jurisdiction by magistrates. Unless the Council stated in the charge that such offences were infamous conduct in a professional respect it had no power to deal with them, and he intimated that in the event of his objection being overruled the question as to the Council's powers might be brought up in another court.

The Council's Solicitor (Mr Harper) argued that there was no such limitation under Section 29 of the Medical Act. Misdemeanours were clearly of two kinds, indictable and non-indictable, and the Council was as much within its rights in dealing with the second as with the first. He recalled a decision given by Alverstone, J.C., sitting with two other judges in 1907 in which he declared that the word misdemeanour was properly applied to those crimes and offences for which the law had not provided a particular name.

The Legal Assessor (Mr E. W. Hansell) said that for legal authority for his contention Mr Hempson had to go back to a very early date before the passing of the Summary Jurisdiction Acts. Mr Hansell contended that anything that was punishable by fine or imprisonment was a misdemeanour unless it was a felony, and that indictable offences were only one section of misdemeanours. The wide terms of the Medical Act made it allowable to consider misdemeanours in the more general sense.

The President ruled that the words 'any misdemeanour' in the Medical Act meant misdemeanours indictable or non-indictable, and included such charges as were alleged against the present defendant.

The case was then proceeded with. Dr Duguid in evidence said that the court martial took place in East Africa. The circumstances in which the alleged offence arose occurred just after his unit was handed over to the South African forces and he was not on duty on the occasion but was fraternizing with a South African officer who was charged with a similar offence. Dr Duguid strongly denied the charge of drunkenness. The evidence against him was given by East African natives, he did not remember that a white person gave evidence. With regard to the first of the civil convictions he was seeing a wedding party off at the railway station when he was arrested by the station policeman. He had had some

alcohol though he was certainly not intoxicated, but he did not appeal against the magistrate's decision because, he wished the occurrence to escape publicity. But from that day three years ago, he became a total abstemious and had so remained. On the occasion of the second conviction in April last he had taken a drug, dial for sleeplessness, and finding the ordinary dose ineffective, he repeated it twice the same night. The next day while in the street he felt unwell and hailed a cab, but the driver instead of taking him home took him to the police station, where after resting for an hour he recovered and was then told to his astonishment that a charge of being found drunk and incapable must be preferred.

A member of the Council asked what dial was and the President said that it was a synthetic sedative. The defendant remarked that he thought the action of these drugs rather uncertain.

Mr Hempson pointed out that Dr Duguid was not on duty on the occasion of these alleged offences. On both occasions at Leeds he had a locum tenens, and was not a member of the profession at that time so far as his obligations to his patients were concerned. The sentence of the court martial was not passed upon him as a member of the R.A.M.C., but as a commissioned officer, and it was not infamous conduct in a professional respect. He produced testimonials to Dr Duguid's character from the Lord Mayor of Leeds, a Leeds vicar, and a professional colleague.

The Council deliberated in private, after which the President announced the decision as follows:

Mr Duguid I have to announce to you that the Council has considered the charge of infamous conduct made against you (the charge arising out of the finding of the court martial) and the convictions recorded against you for drunkenness. They find that the charge and convictions referred to in the Notice of Inquiry have been proved but in view of the evidence before the Council they have not seen fit to direct the Registrar to remove your name from the Medical Register.

The next case was that of Andrew George Tottenham Hanks, L.R.C.P. and S.I., registered as of Edith Grove, Chelsea, who was summoned on the charge of having been convicted in 1920 of being drunk and riotous, in 1923 of being drunk and incapable, in June 1925 of being drunk whilst in charge of a horse, and in July 1925, of being drunk in charge of a donkey and cart and causing unnecessary suffering to the donkey by beating it with a whip. Dr Hanks was defended by Mr Oswald Hempson in trusted by the Medical Defence Union. Mr Hempson at the outset repeated the objection he had already made in a similar case, that these offences should not be classed as misdemeanours, and thereby be subject to the Council's judgement under Section 29 of the Medical Act, but he did not press the point in view of the previous ruling. On none of the occasions mentioned in these charges was Dr Hanks on professional duty. There were extenuating circumstances. Dr Hanks although a man advanced in years served abroad in the war. His first conviction followed a reunion dinner of his regiment but he strongly denied that he was intoxicated. In 1922 he had a fall from his horse and sustained a head injury which had rendered him deaf and also extremely susceptible to the effect of small amounts of alcohol. An unusually large number of testimonials were put in on Dr Hanks's behalf. The Council found the convictions proved but in order to give Dr Hanks an opportunity of reconsidering his character and conduct in this regard postponed judgement until May 1926, by which date he will be required to furnish the names of some of his professional brethren who may be willing upon application to testify to his habits and conduct in the interval.

Adultery

The next case considered was that of Charles Bertrand Wagstaff, M.R.C.S., L.R.C.P. London, registered as of the National Provincial Bank, Conhill, who was summoned to appear on the charge that being a registered medical practitioner he had abused his position by committing adultery with Lilian Savage, a married woman with whom and with whose family he stood in professional relationship of which adultery he had been found guilty in the Divorce Court on June 11th last in the case of Savage v. Savage and Wagstaff, in which he was the co-respondent.

Dr Wagstaff did not appear, nor was he represented. A letter from him was read, denying that adultery ever took place between Mrs Savage and himself, but adding that the circumstances were such that it was impossible for him to establish this to the jury and he would therefore submit to any action the Council might take.

Mr E. A. Savage, the petitioner in the divorce proceedings, gave evidence that he was requiring a medical practitioner for his wife and was recommending to Dr Wagstaff, who in due course attended Dr Wagstaff remained medical practitioner to his family until 1923 when owing to certain information received by the witness he asked him to discontinue his services, and, on further information, instructed his solicitor to warn him to have no further communication with Mrs Savage. He (the witness) had to go abroad and on his return he learned as the result of inquiries that Dr Wagstaff and Mrs Savage had stayed together. Proceedings for divorce were instituted and a decree nisi was granted with £2,000 damages against the co-respondent.

The Council judged Charles Bertrand Wagstaff to have been guilty of infamous conduct in a professional respect, and directed the Registrar to erase his name from the Register.

Prescribing without seeing the Patient

The Council on November 27th considered a charge against Edward William Dacre Hardy, M.C. M.R.C.S. L.R.C.P. registered as of Durlay Road, Bournemouth, that between June 30th 1924 and April 16th, 1925, he sent thirty-one prescriptions for morphine tablets (each to be supplied on three occasions) and morphine suppositories to a lady who had been a patient of his during the months of May and June 1924 but whom he had never seen after June 24th 1924, the giving of such prescriptions being an abuse of the privileges conferred upon practitioners by the Dangerous Drugs Act and Regulations under it.

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The complainant was the Home Office, represented by Sir Travers Humphreys instructed by the Director of Public Prosecutions. Dr Hardy was defended by Mr Oswald Hampson, instructed by the Medical Defence Union.

Sir Travers Humphreys said that the facts of the case were not in dispute. The Regulations made under the Dangerous Drugs Act were conceived in a spirit of absolute trust in the medical profession. But the Home Office took the view that of drugs they prescribed for any particular patient, that was entirely to their discretion. But the Home Office took the view that of drugs they prescribed for any particular patient, that was entirely to their discretion. But the Home Office took the view that of drugs they prescribed for any particular patient, that was entirely to their discretion.

Dr Hardy had practised in Bournemouth for some 25 years and in a manner highly creditable to himself, and he (Sir Travers) was glad to be the first to say so, but Dr Hardy had taken up a justifying attitude which made it necessary for the Council to be brought before the Council. The patient, now dead, was a lady in Bournemouth who first came under Dr Hardy's care in May 1924. Dr Hardy was asked by another doctor to take her over. She had been taking morphine for some time, but he could not get it lower. For the end of June 1925, Dr Hardy continued to prescribe this minimum amount, but he could not get it lower. For the end of June 1925, Dr Hardy continued to prescribe this minimum amount, but he could not get it lower.

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what to charge for prescriptions given in such circumstances. In reply to Sir Travers Humphreys, he said that he would not dream of doing the same thing again, and he desired that it was not a proper thing to have done. A very fair and well-considered counsel. Dr Hardy also agreed with the President that although such prescriptions, they furnished no control against a minimum amount of morphine.

Dr I. Hyla Gieves, practising as a consultant at Bournemouth, he getting a maximum amount. Dr Hardy intimately for many years, and said that he had known Dr Hardy since he had been a boy. Dr Hardy was held in the high esteem by his colleagues in that town. Whatever the error into which he had been betrayed, they were convinced that he had acted in good faith. Mr Hampson also put in a testimonial signed by thirty-five members of the honorary staff of the Royal Victoria and West-End Hospital, stating that Dr Hardy's personal character and professional conduct had always been exemplary. The British Medical Association placed it on record that the conduct of Dr Hardy had been above reproach, and that he had maintained the highest ideals in all matters connected with the profession. Dr Leeming, a member of the Council of the British Medical Association, and Dr Johnson Smyth, a former member, gave similar testimony, and the Bournemouth Medical Society sent a testimonial to which many signatures were appended.

After the Council had deliberated in camera, the President announced its decision as follows:

Mr Hardy has been very carefully considered the facts alleged against him. The evidence brought forward in your report, and the communications which have been made on your behalf. The Council take a very grave view of any abuse of the Privileges of the Council, which have been made on your behalf. The Council take a very grave view of any abuse of the Privileges of the Council, which have been made on your behalf. The Council take a very grave view of any abuse of the Privileges of the Council, which have been made on your behalf.

On November 30th the Council considered the case of Sesé Kápo, N. B., Ch. B. I. d. n., registered as of Lagos, Nigeria, who was summoned on the charge that he had conspired with one Alhaji Taiwo by supplying to him a fictitious account of £25 for professional services alleged to have been rendered to Taiwo's wife and child, the purpose of the account being to enable Taiwo to withdraw money from the provident fund of the Nigerian Railway, which he could not withdraw without a detached account sent in by a medical practitioner. For this alleged offence Dr Kápo was tried with Taiwo in the district court of Lagos in March last, convicted of conspiracy and of forging the account, and fined £50 or six months' imprisonment. The conviction was upheld on his appeal to the Supreme Court of Nigeria, and as a result of the conviction the other administering the Government in Council directed the registrar of the Nigerian Register to delete Dr Kápo's name from the Council in the Colonial Office on out Dr Kápo was reported to the Council by the Government information received from the officer administering the Government of Nigeria. Dr Kápo appeared in person and was defended by Mr A. Neilson, K. C.

Mr Neilson at the outset contended the right of the Council to hold an inquiry, which was tantamount to a trial in the absence of any witness for the prosecution and of any of the relevant documents on which the trial at Lagos had proceeded. The Legal Assessor, however, thought that the objection should be overruled. What it was proposed to prove to the Council was that the respondent had been convicted in Nigeria, in over which he was struck off the Nigerian Register. The President, in overruling the objection, said that the fact of the conviction of the respondent was sufficient to entitle it to take further action. Mr Neilson made a strong protest and said that such a course would not be tolerated in any other court.

Mr Hurper (the Council's solicitor) then read the lengthy report of the proceedings in Nigeria. From a somewhat involved account of the proceedings in Nigeria, it was found that no record was found of the proceedings in Nigeria, it was found that no record was found of the proceedings in Nigeria, it was found that no record was found of the proceedings in Nigeria.

Dr Kápo in evidence said that he had studied at Guy's and the London hospitals and at Edinburgh. He had been in practice at Lagos, where his professional income was £500 or £600 a year. One night he was called by Taiwo to attend a woman in childbirth whom he assumed to be Taiwo's wife and who, in the absence of other accommodation, was brought to his surgery, where her confinement took place. He attended the woman subsequently, and also the child until some months later, he lost all trace of them. He described his bookkeeping and accounting arrangements which were somewhat singular, but he affirmed that he had never conspired with Taiwo or anyone else and without waiting for any communication from the General Medical Council he wrote asking the case in Nigeria was decided and immediately came to the conclusion that the charge might be investigated and immediately came to the conclusion that the charge might be investigated and immediately came to the conclusion that the charge might be investigated.

Not a single question was asked by the prosecution, nor a single remark made, to suggest any motive on the part of Dr. Kapo and yet in criminal trials it was upon motive that the whole matter hinged.

The President interrupted to point out that the implied motive on Dr. Kapo's part was to secure payment of his account.

Mr. Neil said that they were evidently at cross purposes. In a criminal charge 'motive' meant corrupt or criminal motive. Here no such motive was alleged, and indeed it was difficult to see how it could exist. Even if Dr. Kapo went halves with Taiwo over this fee it would seem inadequate to explain a single fraudulent act in the career of a well-to-do practitioner. The whole trial, in fact, was hopelessly muddled. Its most extraordinary feature was that one of the principal witnesses for the Crown, the real wife of Taiwo, stated in her examination in chief—it was not dragged out of her in cross examination—that at about the time of the alleged events her husband had picked up a second or temporary wife, bigamy being rather common in Nigeria, and also that this woman had disappeared at about the time when, according to Dr. Kapo, he lost sight of his patient. Yet in spite of this extraordinary corroboration from the Crown of the defendant's story hardly a reference was made to it by the presiding judge. The case was marked by a total absence of that strictness in criminal procedure which was characteristic of our own courts, and now it came before the Council resting on sketchy scribbled information without any document other than the record of the proceedings and without even the account supposedly forged on which the whole case turned.

The Council found that the facts alleged against Dr. Kapo that he had conspired to supply a fictitious account, had not been proved, and dismissed the charge.

Charges of 'Covering'

The Council considered a charge against Henry Thompson Keating, M.D., C.M. McGill, registered as of the School of Hygiene, Liverpool, who was summoned on the charge that he had knowingly enabled an unqualified and unregistered person, a Mr. Looker, to attend treat or perform an operation upon a patient or otherwise to engage in professional practice and also that for the promotion of his own professional advantage he had been associated with or employed by an unqualified and unregistered person who solicited advertisements drawing attention to his professional skill or knowledge.

The complainant was the Medical Defence Union represented by Mr. Oswald Hempson who stated that a woman in rather poor circumstances saw an advertisement by "Dr." Looker, who was described as an osteopath offering free consultations in any cases which had not responded to ordinary treatment. This woman had had treatment for some gynaecological trouble, and not being satisfied with her progress decided to avail herself of Mr. Looker's services, believing him to be a registered medical practitioner. On calling at his address in Kensington she described her symptoms, whereupon he said according to her story, that this was a case in which he would ask Dr. Keating, who was associated with him, to see her. Dr. Keating thereupon appeared, and, after examining her, stated that she had not been properly treated when her child was born and that an operation was desirable if the danger of cancer was to be averted. The full operation would cost £25. The woman could not afford this sum but said she would talk it over with her husband and ultimately it was decided that she should undergo the operation suggested. She then received a letter from Dr. Keating from Mr. Looker's address, stating that if she could come in on a particular day 'we will be prepared to do the operation.' Eventually, however, the woman underwent an operation at a hospital at the hands of another surgeon. It was added that on the occasion of the examination she tendered payment to Mr. Looker who, however, said that his work was entirely osteopathy, and that she must pay Dr. Keating, to whom accordingly she handed £15.

Dr. Keating, in evidence said that he was at present living at King's Cross. Before the war he was in practice at Montreal, where he did a good deal of gynaecology. Later he served with the British Canadian Recruiting Mission and was stationed at New York and Philadelphia where he met Dr. Looker who was medical officer with that mission so far as he knew then Looker was a fully qualified man. Quite recently he met him again in London and made three or four purely social visits to his house. On one of these occasions he was asked to see the woman who had called on Mr. Looker and he examined her. He did not wish to take any fee for the examination but the woman pressed the £15 upon him. The projected cost of £25 was made up chiefly of nursing home charges at the rate of even guineas a week. He was not anxious to take the case at all, in view of the age of the woman (54) the complicated nature of the case and the fact that it would probably involve a hysterectomy. He had never given Looker any fee or shared any fee with him. He was aware that Looker's qualifications did not entitle him to enrol on the Medical Register here and that they extended only to certain American States. In some hospitals in Canada and America osteopaths worked side by side with ordinary medical practitioners. He explained that the 'we' in his letter referred not to Mr. Looker and himself, but to himself alone, he always preferred this less egotistical pronoun.

Some corroborative evidence of Dr. Keating's statement was given.

The Council found that the facts had not been proved to its satisfaction and the case was accordingly dismissed.

The Council considered on November 24th, 25th and 26th the case of George Joseph Mary Fraser, I.R.C.P., L.R.C.S. (Irel), registered as of Blenheim Crescent, London who was summoned to appear on the charge that by his presence, countenance, advice or assistance or co-operation he had knowingly enabled an

unqualified and unregistered person, one Ulric Knyvett Hoff to attend treat, or perform operations or otherwise engage in professional practice, and to issue certificates, notifications reports or other documents in his (Dr. Fraser's) name or on his behalf. It was further charged against Dr. Fraser that he had signed the certificates of death stating that he had seen the persons during their last illness, and last saw them alive on particular dates, whereas he had not attended or seen them during their last illness at all. A further charge—which was not proceeded with—related to two convictions for failing to notify in the one instance a case of tuberculosis and in the other the birth of a child.

Dr. Fraser was defended by Mr. Charles Davis.

A number of witnesses were examined in support of the complaint. Dr. James Fenton (M.O.H. Kensington) testified that in a case in which scarlet fever was reported he discovered that

Dr. Hoff had been attending the family though Dr. Fraser had signed the certificates. On referring to the Medical Directory—the Medical Register not being handy—he was unable to find Hoff's name and made inquiries of the practitioner as a result of which both Dr. Fraser and Mr. Hoff came to see him the former appearing rather agitated and the latter explaining the omission of his name by his absence from the country for some years. A daughter of one of the women, a Mrs. Lembo whose death certificate Dr. Fraser had signed testified that Dr. Fraser had never visited her mother during her illness, the one occasion on which he had called at the house was an hour after she had died, the patient was attended throughout by the practitioner whom they knew as Dr. Hoff. Other witnesses who had been in attendance on one or other of the women also declared that they were seen by Dr. Hoff but never by Dr. Fraser and one witness stated that she saw Hoff write what appeared to be the death certificate. An insured patient gave evidence that she was on Dr. Fraser's list but was attended by Hoff who examined her throat, felt her pulse and asked questions about her symptoms. A sergeant of the Criminal Investigation Department, Scotland Yard gave evidence that Dr. Fraser called on him desiring to make a statement to be taken down in writing. This statement which was afterwards read over to Dr. Fraser and signed by him related the circumstances shortly to be given by Dr. Fraser in evidence under which he came into touch with and employed Hoff but an important point in this statement was that when Dr. Fraser met Hoff in 1918 he was aware that he was not a registered man. Later, however, he was led to believe after seeing a number of testimonials that Hoff was a licentiate of Apothecaries Hall, Dublin. It was further stated in support of the complaint that for the thirteen months ending March 1925 there were 5,166 insurance prescriptions issued from this practice of these, 2,668 were given by Dr. Fraser, 612 were given by Hoff and signed 'G. Fraser per pro,' and the remaining 1,886 were in Hoff's writing but were signed 'G. Fraser' alone.

Dr. Fraser, in evidence said that while he was a student in Dublin he was introduced by one of the visiting surgeons at the hospital to Mr. Hoff, and he regarded Hoff at that time as a fully qualified man. The suggestion was even made that he (Dr. Fraser) should go out to India as assistant to Hoff, who had a medical appointment there. After the war he met Hoff, who stated that he had been working with a certain doctor as his assistant. The statement which he had made at Scotland Yard that in 1918 he knew Hoff was not registered was an error. He never thought other than that he was registered, and when in 1924 Hoff called upon him and institutions he had been serving, he engaged him without hesitation as locum tenens. He did not take him on as a cheap assistant, he paid him eight guineas a week, though the sum was afterwards lowered to six, and then to four guineas, because Hoff would not take night work. From March 1924, Hoff acted for him during considerable periods while he (Dr. Fraser) was ill in a nursing home. One of the death certificates complained of related to the beginning of this period. It was complained that he (Dr. Fraser) had given the death certificate stating that he had seen the woman, a Mrs. Jenner in her last illness when in fact he had not seen her at all, but the truth was that at Hoff's request he got up from his sick bed to pay a visit to this woman who was then so near death that nothing could be done for her. In another case that of Mrs. Lembo the woman died just before he got to the house in the third case that of Mrs. Whiting he had not in fact seen the woman. He added that Hoff had come to him apparently straight from a hospital appointment and he certainly knew his work well. It was not until Hoff had been with him for nearly a year in connection with Mrs. Lembo's case that any misgiving arose in his mind. He then learned from Hoff that although he was qualified he was not registered and he then regularized the matter.

The President said that the matter regularized arose that of Mrs. Fraser were before the Council. One was that before engaging Mr. Hoff he had ascertained that he had neglected to register but that he would do so forthwith, the other that until the trouble arose in connection with one of the death certificates he had not thought or troubled about the matter. Which of these versions did Dr. Fraser wish to be accepted? Dr. Fraser said that he wished the second one to be accepted, he had confused together registration and qualification. Asked to explain about the case of the woman whom he declared he had attended on one occasion Dr. Fraser said that Hoff had led him to attend on one occasion suggested that it was thought to be expedient that he should attend and Dr. Fraser agreed.

Mrs. Fraser gave evidence corroborating her husband's story. She stated that Mr. Hoff often referred to the examination of Dr. Fraser and the doctors he had worked for. Mr. Davis, Dr. Fraser's solicitor mentioned the names of about twelve doctors

and institutions in whose service, it was understood Mr Hoff had been, and asked the Council's permission to read their letters. The President said that the letters were simply excuses for declining to give evidence. Mr Davis contended that they were documentary evidence in support of Dr Fraser's statement. It was the fact that Hoff had been employed in various parts of the country in medical capacities. The President said that this was not denied.

Mr Davis urged on behalf of his client that his idea having been fixed in his mind from his experience in his student days that Mr Hoff was a duly qualified practitioner no suspicion was likely to be entertained by him. It was not surprising, in view of his illness and of the anxieties of this case, that his evidence was to some extent confused and contradictory, but it became clearer when it was remembered that Dr Fraser had regarded registration and qualification as synonymous terms.

Mr Harper dwelt upon the death certificate in the case of Mrs Jenner, a case which arose directly Hoff entered the practice. It was denied by the woman in attendance on Mrs Jenner that Dr Fraser had visited the patient. Dr Fraser said that he had got up from his sick bed to visit her on one occasion. It seemed reasonable to suppose that Dr Fraser signed that death certificate because he knew that Hoff was not qualified to do so and matters went on like this for nine months before Hoff left Dr Fraser's service.

The Council found that Dr Fraser had enabled Mr Hoff to attend, treat, or perform operations upon patients in respect of matters requiring professional discretion or skill or otherwise to engage in professional practice as if he were duly qualified and registered, and to issue certificates, notifications, reports, or other documents of a kindred character in his name or on his behalf. They also found that Dr Fraser had signed certificates of death falsely in the case of the three women mentioned.

The Council have judged you to have been guilty in respect of these of infamous conduct in a professional respect and have directed the Registrar to erase your name from the Medical Register.

Alleged Touting for Patients

The case was next considered of Algernon Randolph Upton, M.R.C.S., L.R.C.P. Lond., registered as of Medina Villas, Hove, who was summoned on the charge that whilst acting as locum tenent for Dr Theodore C Pocock of Hove, and subsequently thereto, he had invited Dr Pocock's insurance patients to become his own insurance patients, and had filled in his name on the medical cards of some such patients, without being authorized to do so, in order to have them transferred to his list.

Dr Pocock, the complainant, was represented by Mr Ray Neve, and Dr Upton by Mr F W Gentle.

Mr Neve stated that in 1924 Dr Pocock had to go away from home for some months as the result of a serious breakdown in health, and he engaged Dr Upton as his locum tenent. There was nothing in the agreement to prevent Dr Upton from starting a practice later on in the same locality, and therefore when after Dr Pocock's return, Dr Upton opened a practice in an adjoining street no complaint was put forward on Dr Pocock's behalf. But it was contended that Dr Upton, both while he was in Dr Pocock's service and later, did things which were clearly a breach of professional etiquette, and he proposed to call witnesses to prove that Dr Upton had tried to get Dr Pocock's patients by asking them to come to him, these were patients to whom he was introduced as a result of taking on work as locum tenent.

Dr Pocock, in evidence, said that he had been in practice since 1907. He was away through ill health from May, 1924, onwards until 1925, and Dr Upton did his work. Until the autumn of 1924 Dr Upton was not on the panel, but as a result of representations by the East Sussex Insurance Committee he arranged to go on the panel, and at some time during the period from that date until the end of June, 1925, 73 of his (Dr Pocock's) patients transferred themselves to Dr Upton. The total number of his own insured patients decreased by seven during the year or so that Dr Upton had charge of his practice. In cross examination, Dr Pocock was asked whether any of his patients had complained to him because he had thrust party politics upon them and whether at a time when he was candidato for the Hove Town Council he had not dispensed bottles of medicine bearing the legend "Vote for Pocock." Dr Pocock denied this latter allegation, but admitted that he had given election literature to patients who came to his surgery. It was possible that one of the patients who had transferred to Dr Upton's list had complained that he had come to Dr Pocock's surgery for medicine and not for politics.

In further cross examination, Dr Pocock said that he had no knowledge that Dr Upton had been practising in Hove, at his father's surgery, for nearly two years before he came to him, nor that he carried on any private practice of his own at the time he was his locum tenent.

A number of Dr Pocock's insured patients were then called in support of the complaint. A Miss Boon said that in May, 1925, at the time when Dr Pocock returned to the practice, Dr Upton called at her house and in the presence of other members of her family said that he had already "a good few" of Dr Pocock's patients, and would be pleased to have any members of that family if they cared to change. All they had to do was to bring their cards to him. Another member of the same family corroborated, but a third who was also present at the conversation gave a somewhat different and less definite version of what Dr Upton had said. Other witnesses spoke to having met Dr Upton who told them he was starting practice in Hove or according to one, had opened an office, meaning a surgery, and had said, "If you send me on your panel cards I will get them exchanged and send them back to you." Another stated that she was handed by a boy the street a leaflet announcing that. At the request of several residents of the district it is proposed to form a sick club. Dr

Upton has consented to become the doctor." Another witness also an insured patient on Dr Pocock's list said that she left her medical card by accident at Dr Pocock's house, and some time afterwards she received it back with the name of Dr Upton written upon it.

Dr Upton, in evidence, said that he started practice in Hove in 1922, and went as locum tenent to Dr Pocock eighteen months later. His private practice at that time brought him in not more than £100 a year. He took over Dr Pocock's insurance and private practice, except that certain private patients were left in the hands of two other doctors to complete their treatment. He went on the panel in 1924, but during the time he was with Dr Pocock he had only one insurance patient of his own. He never invited any patients of Dr Pocock's to become patients of his, and he gave a different version to the stories of the conversations which the other witnesses had related. Until the time Dr Pocock came back to his practice every card which the witness signed was on Dr Pocock's behalf and was credited to Dr Pocock. He was under the impression that the number of Dr Pocock's patients had increased during his locum tenency, and it was a surprise to him to learn that day that Dr Pocock's insurance list had fallen from 1,069 in May 1924, to 1,062 in May, 1925. If a circular with regard to the sick club was handed to anyone in the street it was not on his instructions. He had nothing to do with the framing of the circular nor with its distribution. Asked, in cross examination, if the family of witnesses who had given evidence against him were a family of his, he replied that they were a family of partisans. He agreed that he had been in the United States, but he was unaware that in America a doctor's surgery was called "an office," which, counsel suggested, was the term he used in speaking to one of the persons concerned. Those who had come on to his list had come voluntarily and some of them had said that they would go elsewhere if he did not take them on. One person transferred him self and his family because he could not get attendance at Dr Pocock's. Another had told him that he went to see Dr Pocock for some ailment but instead of attending to him Dr Pocock had asked him to vote for him at the forthcoming election, and had said that he would feel better in the morning.

The secretary of the sick club, who was also the landlord of the premises where Dr Upton had his surgery, gave evidence that he himself had formed the club, as a result of representations by patients who called at the surgery, and that Dr Upton had nothing to do with the matter beyond agreeing to act as doctor.

Mr Gentle urged, on behalf of Dr Upton, that the recollection of conversations was apt to be distorted by time. The witnesses had stated that Dr Upton had told them he was starting a practice in Hove, words which he was unlikely to have used seeing that he had had a practice in Hove for some years. Not one patient had been produced who had actually transferred to Dr Upton's list as a result of his solicitations.

Mr Neve, on behalf of the complainant, referred to the great difficulty of proving a charge of this description, but his witnesses had made categorical statements, unshaken in cross examination, that they had been asked by Dr Upton to change their doctor. To all this Dr Upton offered only a bare denial. The sick club circular was very unsatisfactory; it did not appear reasonable that Dr Upton could have remained in ignorance of that circular and its terms.

After the Council had deliberated *in camera*, the President announced its decision as follows:

Mr Upton I have to announce that the facts alleged against you in the Notice of Inquiry have not been proved to the satisfaction of the Council.

Restorations to the Register

The Council, after private deliberation, directed the Registrar to restore to the Medical Register the following names:

Haydn Brown Patrick Joseph Honan, Trevor Owen Williams, and William Mortimer Sheen.

DENTAL EXAMINATIONS

Sir JAMES HODSDON introduced the report of the Dental Education and Examination Committee on the replies received from the licensing bodies to the Council's inquiry on dental examinations. A former resolution of the Council was to the effect that candidates, where possible, should be tested in the mode of administration of general anaesthetics in common use in dental practice, and should be required to perform extractions. The Royal College of Surgeons of England reported that it had always called upon a certain number of candidates in the final examination to perform extractions under anaesthetics. The inspector for the Council, however, had commented upon this test being assigned to very few, only two or three on each day of the practical examination, whereas fifty candidates and sometimes more were examined on the one day. The Council of the College expressed its "strong disapproval" of the suggestion that candidates under examination should be called upon to administer anaesthetics to patients. Sir James Hodson stated that his committee was of opinion that the test of performing extractions in the final examination for a dental qualification was as important as the other practical tests required by the licensing bodies, and that if circumstances permitted it would add greatly to the efficiency of the examination to test candidates in the administration of anaesthetics in common use in dental practice, such as adminis-

tration to be carried out under the personal supervision of the examiners. If the anaesthetics were administered by a skilled anaesthetist the candidate should be questioned on the mode of administration and the possible dangers that might arise therefrom. Another proposed resolution of the Council was that a candidate remitted in any subject of a professional examination should, before he was readmitted to examination thereon, be required to produce satisfactory evidence that he had, during the interval of remission, pursued at a recognized medical school or dental hospital the study of the subject in which he was rejected. The committee now suggested that the application of this resolution should not entail a period of remission of more than six months.

This last recommendation was agreed to by the Council, and it was also resolved to call the attention of the licensing bodies again to the various resolutions of the Council on dental examinations, together with the comments of the committee upon the replies they had already given.

Dentist's Name Erased

On a report from the Dental Board the case was considered of Thomas McGowan, of Blackburn "Dentist, 1921," who at the Liverpool Assizes in October was convicted on a criminal charge and sentenced to twelve months' imprisonment. In accordance with the finding of the Dental Board, the Council decided that the name of Thomas McGowan should be erased from the *Dentists Register*.

Restorations

The names of Stuart Christopher Nicoll and James Edward Smyth were restored to the *Dentists Register*.

National Insurance.

THE ROYAL COMMISSION

THE forty sixth meeting of the Royal Commission on National Health Insurance was held at the Home Office, Whitehall, on November 26th, Sir Arthur Worley, and later Lord Lawrence of Kingsgate, in the chair.

Evidence was heard from the National Confederation of Employers' Organizations (represented by Mr J B Forbes Watson and Mr John A Gregorson) on the financial aspects of the health insurance scheme. The confederation submitted that the present need for relief to industry so as to stimulate employment was so urgent as to warrant a reduction in the weekly contributions of the employers and workers that the present scheme is overfinanced, and that the progressive expenditure on additional benefits is more than this country can afford and more than can be justified on any international comparison.

Hereafter the Commission sat in private to continue its review of the evidence which has been received since it began its work and to consider the questions arising therefrom.

Proof copies of the oral evidence and the relative statements submitted at the meetings of October 22nd 23rd and 29th and November 5th (the forty first forty second forty third and forty fourth days) may be obtained from H M Stationery Office, Adelphi House, Kingsway, London W C2 on remittance of cost (1s 6d, 2s 3d, 2s 3d and 1s 6d respectively) and postage.

CAMBRIDGESHIRE LOCAL MEDICAL AND PANEL COMMITTEES

ON December 2nd, at the University Arms Hotel, Cambridge, a complimentary dinner was given by the panel practitioners of the area to Mr Arthur Wright on the occasion of his retirement from the post of clerk to the Insurance Committee for the County of Cambridge. Mr Wright has held office since the inception of the National Health Insurance Act.

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

SURGEON COMMANDER E McEWAN to the *Falant* on relief.
SURGEON LIEUTENANT COMMANDERS E S Mellor to the *Lucia* M J Aitken to the *Victory* for Portsmouth Dockyard.
SURGEON LIEUTENANT T F Green to the *Indefatigable* A H Hawkins to the *Hospital* South Queensferry J Wolstencroft to the *Pembroke* for Chatham Dockyard A P Anderson Stuart to the *Pembroke* for R N Inshore Boat.
SURGEON LIEUTENANT (hort service) J G Holmes has transferred to the *Immanent* H.

ROYAL NAVAL VOLUNTEER RESERVE

Late temporary Surgeon Lieutenant H Parry Price RN granted a commission as Surgeon Lieutenant and attached to the London Division (merits of August 11th 1921).
Mr T A Brand has entered as probationary Surgeon Sublieutenant and attached to the Bristol Division.

ROYAL ARMY MEDICAL CORPS

Captain G O F Allen MC relinquishes the temporary rank of Major on being ordered to be employed as a Deputy Assistant Director of Hygiene and Pathology.

Captain T C Tibbs is granted the temporary rank of Major whilst employed as a Deputy Assistant Director of Hygiene and Pathology.

Captain H Jacquet MC to be temporary Captain and temporarily relinquishes the rank of Captain.

Captains J A Nicholson MC and W O Tobias retire receiving a gratuity.

ROYAL AIR FORCE MEDICAL SERVICE

Squadron Leaders R W Ryan to Aircraft Depot Egypt F E John on to No 4 Flying Training School, Egypt A J O Wigmore to Headquarters Iraq.

Flight Lieutenant W F Wilson, MC, is promoted to the rank of Squadron Leader.

Flight Lieutenants G H H Maxwell to No 216 Squadron, Egypt J Piendergast to No 24 Squadron Kenley E D D Dick on to R A F British Hospital Iraq, (Honorary Squadron Leader) E Brown to R A F Depot E G Howell to Engine Repair Depot Egypt in stead of to Aircraft Depot as previously notified.

Flying Officers R J K Chatterley to Aeroplane and Armament Experimental Establishment Martineham Heath T Glynn to R A F Depot on transfer to Home Establishment G J Hanly B W Cro J MacC Kilmartin G G J Nicholls and R F G Dick on to Headquarters India W A Beck to Headquarters, Palestine W D McKean to R A F Depot E A Alett and H W Levy to Research Laboratory and Medical Officers School of Instruction Hampstead, on appointment to hort service commissions for short course.

REGULAR ARMY RESERVE OF OFFICERS

ROYAL ARMS MEDICAL CORPS

Captain W W Phillip, late Captain R A MC Special Reserve to be Captain.

INDIAN MEDICAL SERVICE

Captain J Rodger has assumed the duties of Executive Officer Medical Cantonment temporarily in addition to his ordinary duties.
Captain (now Major) J Scott D S O G B to be acting Major from July 19th 1918 to March 26th 1920 while employed with the Egyptian Expeditionary Force.

Captain J W Van Reenan to be Major.
The services of Captain G R McRobert are placed temporarily at the disposal of the Government of Burma.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Captains F W Goodbody and J B Foubister having attained the age limit are retired and retain their rank.

Captain J W Macfarlane MC resigns his commission and retains his rank.

Captain T McCulloch (late R A MC) to be Captain with precedence as from August 23rd 1918.

Captain J A Stenhouse to be Major (prov.)
MC to be Captain (prov.)
Lieut Hugh Miller (late R A T A) to be Major from December 15th 1923.

COLONIAL MEDICAL SERVICE

Dr I Sander on appointed Medical Officer Tanganyika Dr E H Smith S D Stewart A H Brewster C J Milne and W St Clair Thwaites appointed District Medical Officers for Central Province Morua Gran Conda Diego Martin and Bonaire and Mayaro Trinidad respectively.
West African Medical Staff Dr W J Frazer Medical Officer Gold Coast to be a Senior Medical Officer in Nigeria vice Dr J A Bevan deceased Dr S Goodbrand Medical Officer, Gold Coast to be a Senior Medical Officer in Nigeria vice Dr J W Pollard promoted to be an Assistant Director of the Medical Service in that Colony Dr J F Moffatt Medical Officer Gold Coast to be a Senior Medical Officer in that Colony vice Dr R O White retired.

VACANCIES

BRADFORD CITY—Assistant Dentist Salary £450 per annum plus bonus at present £32 16s per annum.
BRISTOL AND HOVE PROVIDENT DENTAL HOSPITAL Queens Road Brighton—Honorary Anaesthetist.
BRISTOL NEW SUSSEX HOSPITAL FOR WOMEN AND CHILDREN—Radiologist (female) Honorarium £100 per annum.
BRISTOL ROYAL ST. JOHN'S HOSPITAL—Third Honorary Anaesthetist.
CANTERBURY HOSPITAL (FRS), Fulkham Road S W 3—Hou Surgeon Salary £100 per annum.
CHURCH ROYAL INFIRMARY—(1) Hou Surgeon (2) Assistant Hou Surgeon Salary £115 and £125 per annum respectively.
CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEART AND LUNGS Victoria Park E 2—Physician to Outpatients. Honorarium is attached to the post.
COVENTRY COVENTRY AND WOLVERHAMPTON HOSPITAL—Hou Surgeon (male) Salary £135 per annum.
DULHAM COUNTY COUNCIL—Medical Superintendent at Holwood Hall Sanatorium Salary £850 per annum.
EAST LONDON HOSPITAL FOR CHILDREN Shadwell E 1—(1) Hou Surgeon (2) Morning Casualty Officer (Males) Salary at the rate of £150 and £120 per annum respectively.
HOSPITAL FOR SICK CHILDREN Great Ormond Street W C 1—(1) President Medical Superintendent Salary £300 per annum (2) Hou Surgeon (male) Salary £150 per annum.
LIVERPOOL UNIVERSITY—Lecturer in Anatomy Salary £200 per annum.
LONDON HOMOEOPATHIC HOSPITAL Great Ormond Street W C 1—The President Medical Officer—Salary at the rate of £100 per annum.
LONDON HOSPITAL E 1—(1) Assistant Obstetric and Gynaecological Surgeon to the Lying in Hospital Stephen Green F 1—(1) Medical Registrar and Outpatient Assistant (2) Surgical Registrar Honorarium at the rate of £50 per annum each.
MIDDELSEX HOSPITAL W C 1 S O L V 1—Two Surgical and one Medical Registrar Salary £100 per annum.

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SUPPLEMENT

TO THE

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LONDON, SATURDAY, DECEMBER 19TH, 1925

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An Address

ON THE

HOSPITAL POLICY OF THE BRITISH MEDICAL ASSOCIATION

Delivered before the Divisions of the Southern Branch

BY

G C ANDERSON, M.D.,
DEPUTY MEDICAL SECRETARY

THE hospital policy of the Association is the result of a slow and steady growth of opinion within the medical profession. An enormous amount of labour has been spent upon the problem, and the policy is based upon the direct experience of members of the profession engaged in the practice of medicine in its widest sense, and in particular of those engaged in hospital work. The policy aims at being a practical and not an academic scheme. It is the result of the work of the members of the Association acting through its deliberating bodies, and it has been discussed and voted upon by members through the Divisions and the Representative Body. It has, moreover, been submitted to the vote of conferences of medical staffs of hospitals throughout the country called together for that particular purpose. The policy, to which practically the final imprimatur was given at the Representative Meeting at Bath, has been distributed in pamphlet form to all the voluntary hospitals of the country, and has been widely commented upon by the newspapers. The press notices were most encouraging, and on the whole it may be taken that the policy as it at present stands has been very well received by the lay public.

We must remember that hospitals were originally established as charities for the indigent, and as a consequence inability to pay for adequate attention was sufficient ground for admission. Many new conditions, however, have arisen during late years, and are still arising, which have very materially changed the standards of admission to voluntary hospitals, and the time has now come when the medical profession should consider seriously the new position. It is not merely the staffs of voluntary hospitals who are concerned, but the medical profession as a whole, and therefore my remarks will be made in the hope that all who are interested in this very important question will give the matter their close attention.

The medical profession, in common with the rest of the community, has in the past viewed the hospital as a charity

¹ Policy Affecting Hospitals Published by the British Medical Association 3d net.

maintained by the benevolent, and all those who could rightly claim to be the objects of such a charity were admitted and treated gratuitously, by the medical staff. Modern progress in medical science, the introduction of costly appliances for diagnosis and treatment, the need for more prolonged clinical observation due to the increased complexity of medical, surgical, and special department work, and many other factors, have driven people, who formerly obtained medical and surgical advice from the private practitioner in their own homes or in a nursing home, to seek admission to a voluntary hospital through sheer inability to meet the demands made upon their purses. It must, therefore, be fully recognized that the clientele of a hospital is now much more widely distributed, and that persons who heretofore would never have contemplated entering a hospital are now only too anxious to obtain treatment there. The indigent or necessitous class is not now, relatively to the population as a whole, nearly so numerous as it used to be in the nineteenth or even in the early part of the twentieth century, and medical attention is now available for every section of the community. The Poor Law medical service, the National Health Insurance service, the school medical service, etc., provide a means whereby medical care is available to the poorer sections of the population, and consequently the truly necessitous who are fit objects for charity do not exist in sufficient numbers to fill the hospital beds. Therefore a large number of beds are available for that part of the community which can and ought to contribute directly or indirectly for treatment and maintenance while in hospital.

In view of this altered state of affairs the position of the medical staff, at any rate so far as gratuitous service is concerned, must be reviewed in a new light. We must, of course, recognize that the purely charitable side of the hospital should be continued, wherein the whole cost of the maintenance of indigent patients is met by voluntary contributions and endowments, and to which the honorary medical staffs give gratuitous services. On the other hand, other patients who cannot be called indigent are being received and treated at our voluntary hospitals because they cannot obtain adequate treatment elsewhere, and for this section of the community payment is being made, or at any rate should be received by the hospital, either from the patient himself or from some third party on his behalf.

Although the whole voluntary system has undergone a gradual change during the past generation or more, the essence of the system still remains in the independent and voluntary management. The British Medical Association believes in the voluntary system, considering it to be to the advantage of the public, of medical science, and of the medical profession, and con-

quently it would view with grave concern any interference with what it believes to be the essence of the system.

In the old days the board of management, the subscribers, and the honorary medical staff gave their services and funds gratuitously to those who were unable to contribute in any way towards their maintenance, medical attendance, and treatment, but as soon as the demand for payment is made, and justly made, for those who are in a position to pay, in part or in whole, by direct or contributory methods then the original understanding becomes fundamentally changed and the voluntary principle as it was once known ceases to operate.

Facts must be faced, and changed conditions must lead to changed views. The voluntary system as it was once known must adapt itself to the new order of things, so that it may continue to be of benefit to those most concerned.

The independent and voluntary management will, as it has done in the past, administer the charitable side of the hospital only in so far as the indigent patients are concerned, but besides this it will now provide hospital benefit for those for whom payment in some form is rightly demanded for services rendered or to be rendered.

At a conference organized by the Labour party, to which were invited all those interested in the hospital problem, and at which was discussed the policy of the Labour party in regard to hospitals, an attempt was made to establish the principle that all hospitals should be State institutions maintained by public funds. The conference was beneficial in many respects, but chiefly because of the views expressed upon this point, and at its termination only a small minority even of the representatives of the Labour party itself was prepared to advocate such a state of affairs. The following resolution was unanimously adopted by the conference:

Some form of public assistance is essential if a complete and adequate hospital system is to be maintained and the development and maintenance of an adequate hospital system should be provided in such fashion as will preserve the best features of the present voluntary system.

Altogether, the voluntary principle is deep rooted in the minds of the people of this country, and the Association, representing the medical profession at large, has expressed the conviction that the system ought still to be maintained.

We must recognize, however, that the source from which hospital funds are to day being received differs somewhat from that of a generation or more ago. Some gratuitous and charitable contributions are given on the distinct understanding that they are to be expended at the discretion of those to whom they are entrusted. But there are also the newer forms of contributions made for services rendered or to be rendered, and these may be paid either by the patients themselves or by someone else on their behalf, it is here that we are face to face with a new order of things. Contributions to hospitals by employers of labour, and massed or periodical contributions by employees, must be looked upon as contributions for services given or to be given. These contributions are made on the understanding that when occasion for hospital benefit arises the need will be met. Again, very few of our hospitals do not now insist upon individual payments from all those patients not otherwise contributing who are in any way regarded as in a position to contribute something towards the cost of maintenance and treatment while in hospital.

Both in the contributory and in the individual method of payment we see a departure from the old established custom. Our hospitals no longer exist for the indigent alone, and the persons availing themselves of the facilities offered at the hospitals are drawn now from classes quite other than the hospital class of former generations. Many of them are obviously not proper recipients of, and indeed do not themselves desire, charity either in the form of hospital accommodation and maintenance or of medical treatment.

A source from which hospitals in increasing numbers are deriving their funds is the contributory method of payment, and contributory schemes for the provision of hospital benefit are springing up all over the country. The Association welcomes this method, but holds that certain safeguards and requirements are essential. A contributory scheme is one under which payments are made for which there is a stated or implied return. A person who is asked to contribute a certain sum weekly naturally does so on the understanding that should occasion arise the necessary accommodation and treatment at the hospital will be forthcoming.

The Association believes that in any scheme for the provision of hospital benefit it is undesirable that the hospital itself should undertake any insurance risk, and therefore it holds that schemes of this nature should be organized by some independent body. The reason for this is that in the voluntary hospital accepts an insurance risk of this nature the primary consideration in the admission of a patient—namely, the suitability of the case on medical grounds—would be prejudiced, and, further, the purely charitable funds of the hospital would run the risk of being used for a purpose for which they were not intended. The provisions of a contributory scheme should be such as to make the scheme self-supporting in order to meet all the demands made upon it by reason of the aid given to the beneficiaries.

The provisions of every contributory scheme should clearly indicate the absence, the limitation, or the presence of any contractual obligation to provide hospital benefit. It should be stated in plain language that the primary consideration in the admission of a patient is the suitability of the case on medical grounds, and that the ordinary hospital routine of admission, transference, and discharge of patients will be adhered to, no preference being given to any member of a contributory scheme.

The Association considers that when a hospital enters into any arrangement under a contributory scheme for the reception of patients such arrangement should be taken to cover the cost of maintenance and medical treatment, and that therefore the payments made to the hospital thereunder should be upon a tariff basis, full allowance being made for provision of accommodation, maintenance, and medical treatment. The consideration for the admission of all patients received on a tariff basis under such an arrangement should be inability to pay for adequate treatment as a private patient either inside or outside hospital, and no patient should be admitted without the recommendation of the attending practitioner, except of course, in emergency. It will therefore be obvious that some income limit should be fixed to determine the eligibility for hospital benefit on tariff rates under a contributory scheme, and the Association has suggested the following scale, which, of course, must be subject to economic and local variation and to periodical revision.

Class 1—Limit of income £200

- (a) Single persons over 16 years of age
- (b) Widow or widower without children under 16 years of age

Class 2—Limit of income £250

- (a) Married couples without children under 16 years of age
- (b) Persons with one dependant under 16 years of age

Class 3—Limit of income £300

- (a) Married couples with a child or children under 16 years of age
- (b) Persons with more than one dependant under 16 years of age

An examination of the various contributory schemes springing up all over the country shows that many of the fundamental conditions enunciated by the Association are being omitted. In some instances the hospital management itself is responsible for and is managing the scheme, while in others, such as the Hospital Saving Association in London, the management of the scheme is in independent hands. Many of these schemes contain no provision for an income limit, nor is there any rule to the effect that a contributor will only be admitted to the hospital upon the recommendation of the attending practitioner. Schemes that omit these two very important provisions are being started in various parts of the country, and the boards of management of the hospitals concerned are under taking to admit and treat contributors (irrespective of their incomes), and thus without consultation with the medical staffs concerned, assuming that they will continue to give their services gratuitously. It is time that the staffs of our voluntary hospitals began to realize what the new order of things is going to mean to them. In some districts the medical men concerned, realizing that the British Medical Association has shown much foresight in this matter, have insisted that the Association's policy shall be followed, but in many other cases schemes have been started without any apparent interest being evinced by those upon whom, after all, the success of any such scheme depends.

If a contributory scheme has no rule to the effect that a patient will not be admitted without a recommendation from his attending practitioner, and if no income limit is fixed for the subscribers to the scheme, do the members of the hospital

staffs concerned realize the situation created? Many persons who in the past have had occasion to seek advice from the members of the hospital staffs in their private capacity, and who have paid for the advice given or the operations performed, will no longer be counted among the clientele of these medical men, but will be able to obtain all the advice and treatment they need by taking advantage of the benefits which they are entitled to as members of the contributory scheme.

To safeguard the position of the medical members of hospital staffs three fundamental principles should be insisted upon:

- 1 That a contributor to a scheme will only be admitted to the hospital upon the recommendation of the attending practitioner.
- 2 That only persons below a definite income limit are entitled to join a contributory scheme for hospital benefit.
- 3 That recognition is made of the services of the medical staff.

The massed or periodical contributions received for a considerable number of years by many of the large voluntary hospitals in large industrial areas are really in the same category as the contributory schemes, for here again the right of entry into the hospitals when need arises is implied, and in some cases explicitly stated. Again, many firms with large numbers of employees contribute to the hospitals in their areas, and although no conditions are attached to their payments it is obviously expected that admission to hospital will be given to any one of their employees who meets with an accident which calls for institutional treatment.

The admission of patients who contribute in some way has changed the character of the voluntary hospitals, and consequently has changed also the arrangements under which the subscribers and the honorary medical staffs agreed to place their funds and services at the disposal of the hospital management.

Hospital in-patients should be divided into three categories—the free or indigent, the tariff, and the private.

Indigent Patients.—As far as the free or indigent class is concerned the services of the honorary medical staffs of the voluntary hospitals will continue to be given gratuitously as heretofore. There should be no misunderstanding on this point, for the medical staffs do not expect and do not intend to ask for any of the hospital funds which are used for the benefit of those who can rightly claim to belong to this class. The free or indigent patient should be defined as one certified by the almoner or other officer of the hospital as unable to contribute in any way towards his maintenance and medical treatment for such persons hospital benefit is provided by the gratuitous contributions placed at the discretion of the hospital management and by the gratuitous services of the honorary medical staff. Persons obviously destitute or those already in receipt of Poor Law relief should, after they have been seen once in the casualty or out-patient department, be referred to the Poor Law relieving officer unless retained by the hospital for treatment. But in the case of patients referred by Poor Law medical officers to hospital for consultation or treatment payment should be required from the Poor Law guardians both for advice and treatment and for maintenance.

Tariff Patients. should be defined as those paying or for whom is paid in part or in whole the tariff cost of maintenance and treatment. This included in this group would be those for whom any payment is made by a public authority, approved society, employer of labour, insurance company or other body, as well as those making payments through a contributory scheme. The tariff cost should cover in full the accommodation, the maintenance, and the medical treatment of the patient while in hospital. The admission of patients under this category should be defined by an income limit which must of necessity vary with local conditions. The income limit suggested I have outlined when discussing contributory schemes.

Private Patients.—All those whose income places them beyond the agreed scale for tariff patients should be admitted to the hospital as private patients when they should be called upon to pay such charges for maintenance as will fully cover every cost to the hospital, the cost of medical treatment being left for arrangement between patient and doctor. If private patients are allowed in the public wards of a voluntary hospital they should be admitted only upon the recommendation of a private practitioner and no preferential treatment should be given them. Where special accommodation in the nature of a nursing home attached to a hospital is available the patient should be allowed to select his own medical attendant.

The amount of work carried on at the out-patient departments of some of our hospitals ought to be curtailed, and only such treatment should be given as cannot consistently with the best interests of the patient be undertaken by a general practitioner of ordinary professional competence and skill. The primary purpose of the out-patient department should be

consultation. If those in charge of the out-patient departments were to refer all cases not suitable for hospital treatment to a practitioner concerned with the case, and to refuse all further treatment which comes within the scope of the practitioner of ordinary competence and skill, there would be less abuse of hospitals. The practice of referring a case to a hospital for advice when the patient is able to pay a fee (modified if necessary) to a consultant seeing the patient at his own home cannot be too strongly condemned. Arrangements should be made for consultations and specialist services for tariff patients whereby these services can be given so far as is possible and consistent with the best interests of the patients by a private practitioner at his own consulting room or at the patient's own home.

Such an arrangement has been instituted in connexion with the administration of ophthalmic benefit as an additional benefit under the National Insurance Act. Cases are referred by approved societies, upon the recommendation of insurance practitioners, to certain ophthalmic surgeons who have agreed to do the work upon certain terms agreed centrally. The ophthalmic surgeon is therefore consulted, not as a member of a hospital staff, but as a consultant in his own private capacity. Some such arrangements should be made in any contributory schemes in order that cases may be referred in the first instance to the individual consultant at his own home, and not, as at present, to the hospital. A proper regulation of the work at the out-patient departments of our hospitals will do much to remove many of the difficulties, financial and otherwise, which face the hospitals.

The demand that patients other than those belonging to the indigent class should pay for their hospital treatment, whether such payment is made by the individual or through some contributory scheme or otherwise, at once raises the question of payment in some form of the members of the medical staff and it is from this aspect that the hospital policy of the Association has been most discussed.

Nearly everyone is now agreed that for the work which a hospital does for the State, the hospital and the medical staff should receive payment. This was recognized in the treatment of discharged and disabled soldiers during the war, and in many hospitals as much as 20 per cent. of their gross receipts under such arrangements was allocated to the medical staffs. Again, it is generally agreed that for cases referred to the hospital for treatment by local authorities, such as the education authority, payment should be made, and that this should include some payment for the services of the medical staff. Indeed, whenever the board of management of a voluntary hospital enters into a financial arrangement with a public authority, an employer of labour, approved society, or insurance company, or under a contributory scheme or otherwise for the reception of patients, such arrangement should be taken to cover the cost of maintenance and medical treatment, and a percentage of all such receipts should be passed into a fund at the disposal of the visiting medical staff of the hospital. A definite financial arrangement having been made by some body or company which has accepted responsibility for the provision of hospital benefit for a group of persons under certain defined conditions, it cannot be expected that the medical staffs of the voluntary hospitals concerned should give their services free and therefore the Association recommends that a percentage of the money received by the hospital under such an arrangement should be allocated to a staff fund at the disposal of the staff. The contract made is for hospital benefit as a whole, and therefore the payment made under any financial arrangement is for treatment as well as for accommodation and maintenance.

If a contributory scheme were run in accordance with the Association's policy and the contributors to the scheme (where occasion demanded it) were treated in the hospital on a tariff basis, the money received by the hospital would be assessable for staff fund purposes. But the schemes springing up all over the country are either organized by the hospital itself or by some group which gives a contribution to the hospital out of the funds collected, in other words, no definite financial arrangement is entered into with the hospital. The same position arises in relation to the contributions for patients made by approved societies, insurance companies and employers of labour. The Association considers that the visiting medical staff should, in these circumstances, also receive recognition for its services either by a percentage passing into a staff fund or

by a fixed honorarium. An honorarium was suggested to meet the objections of those who were definitely opposed to the staff fund proposal in these particular instances. Contributions made to the hospitals by unskilled or periodical payments by employees, such as exist in many of the large mining areas, should, of course, be treated on corresponding lines.

Still another class of case—apart from the purely private patient from whom the hospital receives a contribution—has to be considered here. Individuals, in return for or in anticipation of treatment, are called upon to make a contribution to a hospital, and the Association considers that the visiting medical staffs should receive recognition for their services either in the form of an agreed honorarium or by passing a percentage of all such payments into a special fund, the honorarium or the fund being allocated as the visiting medical staff may determine. Payment is being exacted from patients by the hospital managements in increasing numbers and in increasing amount. A patient is expected to pay as much as he can afford, and his financial position is scrutinized in order that the payment demanded may be justified. As a consequence of this demand the patient believes he is paying for his maintenance and treatment while in hospital, and even although the amount he actually contributes does not cover the full maintenance rate, it is a payment towards the full cost of hospital benefit, which includes treatment as well as accommodation and maintenance. In as far as the patients are treated on a charitable basis, in so far should the medical staffs be prepared to give their services gratuitously, but in as far as the hospital makes a charge in respect of hospital benefit, in so far should the medical staff receive a portion of that charge.

If the medical staff objects to a percentage passing into a staff fund, then the method of an agreed honorarium may be adopted. It is essential that the medical profession should enter its claim and demand a return for services rendered in respect of the classes of cases I have mentioned. The amount of the claim is not at the moment of prime importance, but it is imperative that the principle should be established everywhere without further delay. It may, of course, be said that if payment is insisted upon in some shape for all those outside the free indigent class the present funds of the hospital will be more than enough to provide for the patients of such a class, and a surplus would soon be created for which there would be no outlet. If such a state of affairs ever came to pass (and it is to be hoped it will) the surplus might be used in a variety of ways—for example the extension of existing hospitals or the building of additional hospitals, or the reduction of the tariff rates for the benefit of those who come within this particular category of patient.

Many of the accident cases at our hospitals should not be treated gratuitously, for it must be remembered that there are many accidents for which the patient's medical treatment is covered directly or indirectly by insurance and in these cases the hospital authority should recover from the insurance company, either direct or through the patient, the full cost of maintenance and treatment. Where persons who would ordinarily be regarded as private patients are admitted to hospital solely on account of accident or emergency they should be treated as private patients.

It is surely in the interests of public health that the numbers of practitioners attached to our hospitals should be increased, and that the tenure of office should be modified so as to allow more and younger practitioners to obtain responsible hospital experience. As full opportunity as possible should be given to private practitioners with the necessary qualifications and experience to participate in hospital work. The number of patients wishing to avail themselves of hospital benefit is undoubtedly on the increase, and if satisfactory methods of payment for maintenance and treatment are established there is no reason why this wish should not be granted and the medical staff increased to cope with the work. But it is essential that all who are appointed to the staff in any capacity whatsoever should make their hospital duties their primary consideration and should not permit outside work to interfere with their hospital work. Another important point to be considered is the representation of lay and medical interests on the boards of management of the hospitals. No single interest should be in the majority.

If at any time the State has occasion to contribute to the hospitals, such contributions should be made by way of the Voluntary Hospitals Commission to the local Voluntary Hos-

pitals Committees, set up in accordance with the report of the committee presided over by Viscount Cave. The British Medical Association considers that the scope of these local committees should be extended so as to make them the co-ordinating bodies for all the hospital accommodation (voluntary, municipal, and Poor Law) required within their areas. The three types of hospitals in which provision is made for the treatment and nursing of the sick should be co-ordinated so that the existing anomalies may be amended. The areas covered by the Voluntary Hospitals Committees should be large enough to cover effective hospital districts, and need not be confined to local government areas. The representation of these committees should include representatives of all the hospitals in the area, whether voluntary, municipal, or Poor Law, and, further, the committee should contain representatives from the medical practitioners in the area. Medical representation should be twofold: from the medical staff of the hospital and from the local Advisory Medical Committee, such, for instance, as the local Branch or Division of the British Medical Association. The work of any such Voluntary Hospitals Committee should not interfere with the domestic autonomy of the several hospitals in its area; it should act only in an advisory capacity, advice being given upon the accommodation required in the area as regards both special and general hospitals and municipal and Poor Law hospitals as well, and it should make recommendations for the provision of any additional accommodation needed and the type of such provision. Lastly, the Association considers that the scope of the existing central Voluntary Hospitals Commission should be extended so as to make it a standing consultative hospitals committee for England and Wales which should represent all the local hospitals committees of the several areas and should act as between the Ministry of Health and the local committees in all matters concerned with the hospital policy of the Ministry. Such a permanent Voluntary Hospitals Commission should be charged with the allotment to hospitals not directly supported by the State of any grants the State may decide to make.

It behooves all our Divisions and Branches through the country to give the hospital question their earnest consideration and to set up special hospitals committees representative of all medical interests in their areas, in order that developments in connexion with our hospitals may be watched with a careful eye.

British Medical Association.

CURRENT NOTES

Status of the Insurance Acts Committee.

THE Annual Conference of representatives of Local Medical and Panel Committees on October 22nd, 1925, passed a resolution, with only eleven dissentients out of 179 representatives present, expressing its confidence in the Insurance Acts Committee of the British Medical Association as the one and only medical body authorized to defend the honour and interests of insurance practitioners and to voice their wishes. This resolution also urged its constituent committees to give loyal and undivided support to the Insurance Acts Committee, dissociating themselves from any action taken within the profession which can result in rendering collective bargaining ineffectual. The Insurance Acts Committee has circulated copies of this resolution to all Local Medical and Panel Committees, pointing out that only a small number of those committees have ever taken any such action as is referred to therein, and stating that, before sending representatives to any conferences except those called by the Insurance Acts Committee, and especially before agreeing to any deputation to the Government representing Local Medical and Panel Committees, they should have regard to the above-mentioned opinion of the Annual Conference.

Insurance Practitioners with Limited Lists

Medical officers of hospitals and other institutions are at present allowed to place their names on the local medical list for the purpose of attending the insured members of the staff of the institution. They are not

allowed to undertake the treatment of other insured persons. The question has recently been raised whether such medical officers should be entitled to attend employees of the institution who live outside. The Insurance Acts Committee is of opinion that such medical officers should not be admitted to the list unless their insured patients are confined to the resident employees of the institution. This can be given effect to in Clause 5 of the Model Distribution Scheme.

Subscriptions for 1925

Members of the British Medical Association are reminded that subscriptions fall due on January 1st in each year, and that if each member who receives an application for his or her subscription from the Head Office will send the amount to the Financial Secretary within the first week of the new year the work of the office will be very considerably lightened. Members are also reminded of the claims of charity. The amounts at the disposal of those concerned in the administration of medical benevolence are altogether insufficient to meet the appeals that are received, and the British Medical Association Charities Fund was formed in order to assist. Subscriptions or donations are urgently needed, and every member of the Association is asked to add to his next payment a sum for the credit of the B.M.A. Charities Fund.

SOUTH AFRICAN COMMITTEE

A MEETING of the South African Committee of the British Medical Association was held at Pietermaritzburg on July 6th and July 11th, with Dr D CAMPBELL WATT in the chair, and a copy of the minutes has now been received in London. The following note gives a brief account of the chief items of general interest in the proceedings.

On the subject of Congress Regulations a proposal of the local organizing committee regarding the length of papers at sectional meetings was considered. That committee recommended that papers for opening discussion be limited to forty minutes, and other papers limited to thirty minutes. Sir SPENCER LISTER seconded by Dr H. S. JONES, moved that these times be altered to thirty five minutes and twenty minutes respectively, and after discussion this amendment was carried. It was agreed that a recommendation be made to the Pretoria Branch that notices for the next congress (to be held in Pretoria) be sent out in both official languages.

The resignation of Dr T. D. Greenlees, who has for many years served as a representative of South Africa on the Council of the Association, was accepted with regret, and it was agreed that a letter be sent to him thanking him for his services to South Africa.

The PRESIDENT reported that under the powers conferred upon the South African Committee by the Council of the Association and the resolution of this Committee he had sanctioned the formation of a new Branch with the following area: Humansdorp, Willowmore, Jansenville, Uniondale, Knysna, Port Elizabeth, and Uitenhage, being those districts agreed upon by the two neighbouring Branches. As regards the additional district claimed for the new Branch, a sub-committee was appointed to go into this matter and report. At the adjourned meeting it was agreed that the new Branch should be styled the Midland Branch.

Medical Registration Fee.—A letter was read from the Witwatersrand Branch of the British Medical Association calling the Committee's attention to the proposed alteration contained in the new Medical Bill regarding the amount of the registration fee, and to the fact that the proposed method of financing medical councils left the practitioner's liability unlimited. Dr FRASER moved that it be an instruction from the South African Committee to the Cape Western Province Branch to protest against this method of finance, which left the practitioner with no knowledge of his liability. This was carried.

Payment of Fees to Doctors called to Street Accidents.—Attention was drawn by the Secretary of the Witwatersrand Branch to page 134 of the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of October 11th, 1924, wherein it was stated that the English Home Office had sent a letter to all chief constables asking them to make arrangements for payment of fees to doctors called to street accidents where no such arrangements exist. The Witwatersrand Council desired the South African Committee to consider the matter with a view to making similar arrangements in the Union. It was proposed by Dr GREENBERG, and seconded by Dr CHARLES PORTER, that when the police called in a medical man to attend a street

accident the police authority should be responsible for the payment of a fee. This was carried.

Specialists and Medical Officers' Fees.—The matter of the working of the Railway and Harbour Sick Fund Board in regard to the appointment of medical officers, the payment of fees, and the distribution of patients was brought up by the Cape of Good Hope (Western Province) Branch, there being much dissatisfaction among the medical practitioners in the Cape in connexion therewith. As the matter was of general importance it was thought that it should be dealt with by the South African Committee. After discussion, it was unanimously agreed that each Branch be asked to inquire and report upon the conditions in its own area.

Hospital Commission's Report.—It was agreed that Branches be circularized for their opinion of the Commission's recommendations, and that the matter be left in the hands of the President with power to co-opt, and to take such action as might be necessary.

Congress Resolution.—Among the resolutions received from the Honorary Secretary of this year's South African Medical Congress, and adopted at the business meeting of the Congress, was the following:

That on the retirement of Dr Charles Porter from the office of medical officer of health Johannesburg the South African Medical Congress held at Maritzburg 1925 place on record its appreciation of the great services rendered by Dr Porter to the advancement of public health in Johannesburg and in the Union of South Africa and expresses the hope that he may long be spared to enjoy a well earned leisure and that a copy of this resolution be forwarded to the Town Council Johannesburg.

Association Notices

BANFF, MORAY, AND NAIRN DIVISION

NOTICE is hereby given to all concerned that the Council has changed the name of the Banff, Elgin and Nairn Division to "Banff, Moray and Nairn" Division, the change to take effect as from the date of publication of this notice.

PROPOSED WINDSOR DIVISION

NOTICE is hereby given to all concerned of the following proposal made by the Reading Division:

That there be formed a Windsor Division of the Oxford and Reading Branch, of area as follows:

- (i) The Municipal Boroughs of Maidenhead and Windsor and the Rural Districts of Cookham, Easthampstead and Windsor, which at present form part of the area of the Reading Division of the Oxford and Reading Branch,
- (ii) The Urban Districts of Eton and Slough, and the Rural District of Eton, which at present form part of the area of the Buckinghamshire Division of the South Midland Branch,
- (iii) The Urban Districts of Chertsey and Egham, which at present form part of the area of the Guildford Division of the Surrey Branch.

Written notice of the proposal has been given to the above named existing bodies, and the matter will be determined in due course by the Council. Any member affected by the proposed change, and objecting thereto, is requested to write giving reasons therefor, to the Medical Secretary, British Medical Association House, Tavistock Square, London, W.C.1, not later than January 19th, 1925.

BRANCH AND DIVISION MEETINGS TO BE HELD

EDINBURGH BRANCH SOUTH EASTERN COUNTIES DIVISION.—An ordinary meeting of the South Eastern Counties Division will be held in the Railway Hotel, Newtown St. Boswells on Wednesday, December 23rd, at 3 p.m. Business Arrangements for annual dinner, presentation of badges of office for chairman and secretary of Division by Dr James Morris Menzies (Selkirk), present chairman of the South Eastern Counties Division, address on ultra violet radiation medicine by Dr Charles Cameron, Fortuna Sanatorium.

KENT BRANCH TONBRIDGE WELLS DIVISION.—A meeting of the Tonbridge Wells Division will be held at the General Hospital, Tonbridge Wells, to-day (Friday, December 18th) at 3.30 p.m. Dr A. J. Hall, Professor of Medicine, University of Sheffield will give a British Medical Association Lecture on later effects of epidemic encephalitis (illustrated by lantern slides). Tea will be provided. Further lectures will be given on January 20th 1925 by Dr T. A. Ross on some varieties of psychotherapy and in March by Dr A. White Robertson.

LANCASHIRE AND CHESHIRE BRANCH HYDE DIVISION.—A meeting of the Hyde Division will be held in the Hyde Town Hall on Thursday, January 14th, 1925, at 4 p.m. Agenda: Report of the Executive

Committee as to the scale of minimum commencing salaries for public health medical officers, and proposal that the Division should adopt a resolution in connexion therewith pursuant to the Division Rules

METROPOLITAN COUNTIES BRANCH CITY DIVISION—A meeting of the City Division will be held at the Public Library, Holloway Road, N., on Tuesday, January 5th, 1926, at 9.30 p.m. Lieut. Colonel Spencer Mort will read a paper on interesting surgical cases in relation to general practice (with photographs)

MIDLAND BRANCH CHESTERFIELD DIVISION—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield, on Friday, January 8th, 1926, at 8.15 p.m. Mr. A. M. Webber, I.R.C.S., honorary surgeon Nottingham General Hospital, will give an address on pelvic pain in women. Tea and coffee at 8.

SOUTH MIDLAND BRANCH BEDFORDSHIRE DIVISION—A general meeting of the Bedfordshire Division will be held at the Bedford County Hospital on Tuesday, December 29th, at 3 p.m. Agenda: (a) vice-chairman, (b) additional representative on Branch Council communication regarding badge for chairman and secretary, report of Executive Committee as to the scale of minimum commencing salaries for public health medical officers, and proposal for adoption of a resolution in connexion with the same. Dr. Ross will read notes on a case of renal calculus, and on some abdominal cases. Tea will be provided.

SOUTH WALES AND MONMOUTHSHIRE BRANCH SOUTH WEST WALES DIVISION—A meeting of the South West Wales Division will be held at the Carmarthenshire Infirmary on Wednesday, January 13th, 1926, at 3 p.m., when Professor A. J. Clark will give a British Medical Association Lecture on recent advances in endocrinology.

SUFFOLK BRANCH SOUTH SUFFOLK DIVISION—A meeting of the South Suffolk Division will be held at the Crown and Anchor Hotel, Ipswich, to-day (Friday, December 18th), at 3.30 p.m. A lecture on the heart will be given by Dr. W. T. Addey, M.P.C.P.

SURREY BRANCH KINGSTON ON THAMES DIVISION—At the meeting of the Kingston on Thames Division to be held on Tuesday, January 5th, 1926, Mr. J. G. Turner, I.R.C.S., will read a paper on dental sepsis.

SURREY BRANCH REIGATE DIVISION—At the meeting of the Reigate Division to be held at the East Surrey Hospital, Reigate, on Tuesday, January 12th, 1926, at 8.45 p.m., Sir Henry Gauvain will read a paper on conservative treatment in non-pulmonary tuberculosis.

YORKSHIRE BRANCH DEWBURY DIVISION—A meeting of the Dewbury Division will be held in the Man and Saddo Restaurant, Dewbury, on Tuesday, January 12th, 1926, at 8.15 p.m. Dr. W. Fletcher Shaw (Manchester) will read a paper on chronic pelvic pain.

YORKSHIRE BRANCH WAKEFIELD POTTEFACT, AND CASTLEFORD DIVISION—A meeting of the Wakefield, Pottefact, and Castleford Division will be held in the Bull Restaurant, Westgate, Wakefield, on Thursday, January 14th, 1926, at 8.30 p.m. The chairman (Dr. William Stevens) will open a discussion on the role of the general practitioner in preventive medicine. Supper will be served at 7.15 (charge 2s. 6d.).

Meetings of Branches and Divisions.

KENT BRANCH

Meeting to Discuss Hospital Policy

The Kent Branch of the British Medical Association has undertaken the work of forming a local hospitals committee, as outlined in the Association's pamphlet *Policy Affecting Hospitals* (I). To explain fully the policy of the Association a meeting of the hospital staffs of the East Kent hospitals was held at Ashford on November 4th, with Dr. A. W. G. Woodhouse (Rochester) in the chair. The meeting was addressed by Mr. W. McAdam Eccles, M.S., F.P.C.S., who set out the policy of the British Medical Association, and gave instances of the value of such a committee.

The Chairman explained that the idea in forming this committee was to look after the interests of the hospitals in the county. It might be necessary to make alterations with regard to the representation but that could be done later. Arrangements had been made for two meetings, one for East Kent and one for West Kent in order to make it more possible for members of hospital staffs to attend.

Mr. McAdam Eccles, in the course of his address, said that the great war had wrought many changes, and had even altered the policy of voluntary hospitals. The seven years since the armistice had seen (1) patients asked to contribute towards maintenance while in hospital, (2) voluntary staffs accepting a percentage of payments made to the lay authorities of the hospital by State or municipality towards the cost of treatment and maintenance of patients, (3) voluntary hospitals receiving aid from the Treasury. These radical changes and many other minor ones, had led the Representative Body of the Association to formulate a definite hospital policy. This policy had been gradual in its growth and had caused much labour particularly on the part of the present Treasurer. It aimed at being a practical not an academic scheme. Mr. Eccles explained how every part of the medical profession was concerned with a hospital policy and pointed out that the primary consideration in the admission of a patient to

hospital should be the suitability of the case on medical grounds. The good of the patient should be paramount. But some means of investigation into the circumstances of the applicant for relief, by means of an almoner or other agent should be employed in all medical charities. He then enumerated and discussed the three categories of patients for inpatient treatment—free, tariff and private. While there were three classes of patients who made use of hospitals, there were three types of hospitals for them to make use of—voluntary, municipal, and Poor Law. The interrelation and correlation of the three had a considerable bearing upon the promptness and effectiveness of inpatient hospital treatment. The British Medical Association, appreciating the importance of the bearings of hospitals on the common health and on the work of the general practitioner, had formulated provisions in relation thereto by means of its Hospitals Committee and the Representative Body, and these had now become the policy of the Association.

After explaining briefly certain principles in regard to voluntary, municipal, and Poor Law hospitals, Mr. Eccles made some general observations arising out of the Association's hospital policy. It was, he said, exceedingly desirable that the general practitioner should be brought into closer relationship with the services provided by hospitals. There were at least three ways in which this might be brought about: (a) Every case whether for inpatient or outpatient treatment should apply to the hospital on the recommendation of his medical attendant, whether private or insurance. (b) The hospital out-patient department should become more and more a consultative department to which the general practitioner should send his patient with a note, and from which he should receive a short report upon his patient. (c) General practitioners should be invited by members of the medical staff to attend the wards and operation theatres of the hospital in order to see the progress of their patients while under treatment, while it was difficult for busy practitioners to find time for this, they should at least be given the opportunity of so doing. In all contributory schemes whether financially benefiting the hospital directly or indirectly, abuse of the hospital should be obviated by insisting that the hospital service should be only obtainable through the general practitioner. There should be much more representation of the medical element on the governing bodies of hospitals, and on local voluntary hospital committees.

The Chairman thanked Mr. McAdam Eccles for the clear-cut way in which he had presented the case, and stated that he was in favour of a medical committee for each hospital. Dr. Travers stated that with regard to municipal hospitals Maidstone was coming within this scheme, as a new maternity block had been built on to the West Kent General Hospital. A further example of the usefulness of the late voluntary hospitals staff committee was that by its means pressure was brought to bear on Lord Cave's Committee, and an additional medical member (in the person of its chairman, Dr. Tyson) was added to the Kent Hospitals Committee. Dr. Jordan expressed the opinion that emergency patients were the chief cases of abuse. Dr. Molesworth asked what could be done in the case where a local authority sent patients to hospital (for example child welfare departments), it was difficult to get into communication with the general practitioner. Dr. Tyson, looking back on over forty years of practice, expressed the opinion that out-patient departments should be done away with. Dr. McMaster, as representing the municipal part of the work at Dover, stated that admission was on the recommendation of the medical attendant, the treatment of school children was by arrangement with local authorities. Dr. Starling said that a central county medical staffs committee would unify methods. The medical staffs were not so well organized as they might be and with better organization better and more efficient work could be done. He was in entire approval of the pamphlet which had been circulated.

The meeting closed with votes of thanks to the chairman and Mr. McAdam Eccles.

ABERDEEN BRANCH ABERDEEN DIVISION

A meeting of the Aberdeen Division was held at 29, King Street, on December 8th, to discuss a proposed contract, offering a capital rate of 3s. a head, issued by one of the friendly societies for the treatment of its juvenile members. The meeting was unanimous in refusing such a contract, and passed the following resolution:

That no contract for the attendance on any uninsured person dependants or others should be undertaken at a rate lower than that existing under the National Health Insurance Act with the addition of mileage for distances of over two miles in the country districts.

METROPOLITAN COUNTIES BRANCH CAMBERWELL DIVISION

An ordinary meeting of the Camberwell Division took place at Bermondsey and Rotherhithe Hospital at 9 p.m. on December 8th, and was presided over by Dr. W. G. Storr, chairman of the Division. The chief business of the meeting took the form of a clinical demonstration. A number of interesting cases were shown by members of the staff of the hospital, which was followed by an animated discussion.

METROPOLITAN COUNTIES BRANCH CITY DIVISION

The annual dinner of the City Division was held on December 3rd at the Holborn Restaurant. There was a good attendance and the guests of the Division were Professor Gask, Mr. Conyns Beckley, Dr. C. O. Hawthorne, Sir Bruce Bruce Porter, Professor H. Maclean, and Dr. Edwin Smith. After an excellent dinner the toast of "The King" proposed by the Chairman, having been honoured, that of "The British Medical Association" was proposed.

by Sir B. BRUCE PORTER, who embellished his speech with a few good stories, and Mr. CORNELL REELEY, chairman of the Metropolitan Counties Branch replied. The toast of 'The Guests' was proposed by Dr. PHILIP HAMILL and acknowledged jointly by Prof. G. GASK and Dr. LEWIS SMITH, coroner for North-East London. The toast of 'The Chairman—Dr. G. Clark Trotter,' was in the able hands of Dr. WIGGLESWORTH, the retiring chairman, who alluded in glowing terms to the enthusiasm and thoroughness with which Dr. Clark Trotter entered into any business or pleasure connected with the Division or Association, ably backed by his charming wife. During the evening Miss Doris Vane (soprano), Mr. W. V. ROBINSON (baritone) and Mr. FINDLAY DUNN (entertainer) in the piano gave excellent diversion and a most successful evening terminated with 'Auld lang syne.'

A clinical afternoon was held at the Metropolitan Hospital on December 11th. Cases were shown and demonstrated by Dr. NORMAN H. HILL, assistant physician to the Belgrave and Metropolitan Hospital, a most instructive and interesting afternoon being spent. There was a good attendance. The following cases were exhibited:

1 *Pseudo hypertrophic Muscular Paralysis*—Male, aged 13 years, eldest of four, others so far normal, numerous relations on mother's side affected. Symptoms commenced when 8 years of age. Now typical case. All muscles very weak, enormous hypertrophy of calf muscles, lordosis, waddling gait, typical method of rising from floor, climbing up himself. Characteristic difficulty in picking him up by grasping him under the arms.

2 *Congenital Morbus Cordis in a mongol*—Male, aged 6 years. Frequent attacks of cyanosis and dyspnoea. Typical mongolian a pig, cyanosed, slight clubbing of fingers. Heart shows some degree of enlargement to the right, well marked systolic murmur over the pulmonary area.

3 *Congenital Morbus Cordis—Aortic Stenosis*—Male, aged 4 years, no rheumatic symptoms in the past, has had measles, bronchitis and tonsils and adenoids removed with no untoward symptoms. Has no cardiac symptoms. Well developed, but no cyanosis, no clubbing of the fingers, no dyspnoea. Some left sided enlargement of the heart. Well marked thrill systolic in time over aortic area, together with rough systolic murmur conducted upwards.

4 *Aortic Aneurysm*—Male, aged 49. Swelling of right side of neck noticed one year ago. Well nourished man, many tortuous and dilated veins over thorax and abdomen. No oedema of face now. Large area of dullness to percussion behind and on each side of sternum. No cardiac murmurs. Pupils equal and pulse equal and synchronous. No tracheal tug. Radiogram shows large shadow continuous with that of aorta—the aneurysm involving practically the whole of the aortic arch. Latest radiogram shows aneurysm to have increased in size. Wassermann reaction strongly positive.

5 *Aortic Aneurysm*—Male, aged 68. Three months' vomiting all food immediately after taking. Lately vomiting even fluids. Loss of weight. Thin wasted man. No abnormal physical signs. X rays show local bulging of aortic arch, the walls of which are thickened, causing partial obstruction of the oesophagus. Wassermann reaction strongly positive.

6 *Permeious Anaemia with Recovering Peripheral Neuritis*—Female, aged 33 years. August 1925 typical permeious anaemia, blood count with 14 million red blood corpuscles and symptoms of peripheral neuritis, paraesthesia both legs, weakness and wasting, loss of knee jerks, flexor plantar response. Unable to walk. Blood transfusion August 1925 with 400 c.c. of citrated blood. October 1st red cell count was 5 million. Now looks well, is getting stronger and can walk fairly well. Paraesthesia disappeared and knee jerks returned. There was never any evidence of arsenical neuritis, as she had all her symptoms before taking any drugs.

7 *Progressive Muscular Atrophy*—Male, aged 56. Twelve months' weakness left hand. Shows marked wasting of intrinsic muscles of left hand with great loss of power and feeble grip. There is early involvement of the right hand.

NORTH OF ENGLAND BRANCH, HARTLEPOOL DIVISION

A WELL attended meeting of the Hartlepool Division was held on December 3rd when Dr. J. E. ENGLISH was in the chair. Professor R. P. RANKEN LYLE (Newcastle upon Tyne) gave an address on difficult labour. He laid it down as an axiom at the outset that the aim of the doctor should be to save life. Professor Lyle said he condemned such operations as craniotomy, abortion and sterilization. Pre-maternity work was of the greatest value for the prevention of eclampsia, the rectification of abnormal presentations, and the recognition of anomalies of the female pelvis. He went on to emphasize the fact that the treatment of difficult labour was changing rapidly, and contrasted the almost complete safety of Caesarean section, both for mother and child with the appalling high mortality rates of many of the older methods of treating difficult cases. Caesarean section was the best treatment for (1) contracted pelvis, (2) prolapse of the cord, (3) placenta praevia, (4) threatened rupture of the uterus, (5) repeated death of foetus at or near term, (6) abnormal presentations, (7) primary uterine inertia with rigidity of the os, (8) heart disease and other diseases in the mother. Difficult labour as it was known twenty years ago was he said soon going to become extinct by the perfection of pre-maternity work, and because the general practitioner of the future would hand over such cases to institutions for Caesarean section.

Professor Lyle concluded by demonstrating some useful obstetrical hints. The lecture was of the greatest interest and gave rise to an animated discussion.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH

A MEETING of the North Lancashire and South Westmorland Branch was held at Calgarth, Windermere, on December 5th when Professor J. A. VYON, C.V.G., M.D. physician Bristol Royal Infirmary gave a very interesting lecture entitled 'Insulin treatment of diabetes with particular reference to the complications of diabetes and surgery in diabetes.' This was the first British Medical Association Lecture which the Branch has had the pleasure of hearing, and the very animated discussion after the address showed how highly it was appreciated and how well the complicated subject was handled by the speaker. It is to be regretted that, owing to the whole district being in the grip of a very severe frost, the attendance was not what it would otherwise have been, many more members would certainly have been present if it had been possible. A hearty vote of thanks to Professor Vyon, and to Dr. Hough for presiding, concluded the meeting.

SOUTH WALES AND MONMOUTHSHIRE BRANCH, CARDIFF DIVISION

A MOST interesting address was given by Dr. BRACKENBURY on December 3rd on theory and practice in Association policy.

In the evening a very enjoyable dinner and dance was held at which almost two hundred were present. The toast of 'The Association' was proposed by the Lord Mayor of Cardiff, and was replied to by Dr. BRACKENBURY, that of 'The Visitors' was proposed by the Chairman of the Division Dr. W. D. J. MORRIS and replied to by Sir WILLIAM DIAMOND, chairman of the Cardiff Royal Infirmary, and by Mr. CECIL BROWN, the town clerk of Cardiff.

Dancing went on to 2 a.m. and everyone present seemed to enjoy the function very much.

SOUTHERN BRANCH, PORTSMOUTH DIVISION

A VERY successful meeting of the Portsmouth Division was held at the Queen's Hotel, Southsea, on December 3rd when Dr. A. MEAKINS FRASER was in the chair. The attendance numbered fifty-six of whom forty-six sat down to the customary supper preceding the meeting.

The business part of the meeting dealt with various matters including the discussion of steps to secure that a salary in accordance with the scale of the British Medical Association should be offered for the vacant post of school medical officer in Portsmouth, the rate of remuneration for contract practice, and the question of tendering for public medical appointments. This was followed by a discussion on the diagnosis of functional nervous disease opened by Dr. A. J. WATSON of London in which a number of members took part. The meeting closed with a hearty vote of thanks to Dr. Whiting. During the evening a collection was made to provide Christmas presents for the Portsmouth Queen Victoria Jubilee Nurses.

SUFFOLK BRANCH, NORTH SUFFOLK DIVISION

A CLINICAL meeting of the North Suffolk Division was held at the Lowestoft Hospital on November 24th when Dr. L. B. CASE presided. There was a good attendance.

A number of interesting cases and specimens were shown by Drs. EVANS, HITCHINSON, GARDEN, TITCHERST, BOSWELL, TAPSCOTT, and TISON.

SUFFOLK BRANCH, WEST SUFFOLK DIVISION

A MEETING of the West Suffolk Division was held at the West Suffolk General Hospital, Bury St. Edmunds, on November 24th when Dr. R. W. RIX, chairman of the Division, presided.

Dr. F. R. BARWELL opened a discussion on the use and abuse of pituitrin in labour. He dealt with the different varieties of uterine inertia and the conditions under which pituitrin may be used, explaining that the chief indication was the deficiency of pituitary substances in the blood as indicated by a low blood pressure. The maximum single dose during labour should not exceed 0.5 c.c. and it was preferable to use repeated doses of 0.25 c.c. During the third stage pituitrin should not be employed until after the expulsion of the placenta. The administration should be intramuscular or intravenous, as in this way a much more rapid action was obtained than by subcutaneous injection. Dr. Barwell then described a new method of induction of labour by the use of a No. 20 stomach tube instead of a bougie, the whole of the tube to be introduced through the os. Dr. Barwell stated that he had found this method easy to employ and more satisfactory than the old method. A method of dealing with retained placenta was then described consisting in the slow injection into the umbilical vein of about 10 oz. of fluid by means of a Higginson syringe. Dr. Barwell stated that this method was said to be almost invariably successful. In this connection he stated that in his opinion the natural end of the cord should not be tied as the ligature might cause a positive pressure which might delay separation.

In the subsequent discussion Drs. WILKIN, HAPDOWICK, BRYNNE, RIX, B. E. A. BATT, STUFF and HINNELL took part. Dr. CANNAN gave his experience in connection with the points raised by Dr. Barwell and also described a method for induction of labour which he employed and which consisted in the administration of 6 p.m. of castor oil 2 oz. at 9.10 and 11 p.m. quinine 5 gr. At 9 a.m. the following day pituitrin 0.5 c.c. This to be repeated in one hour, and if necessary, once more at an hour's interval.

On the motion of the CHAIRMAN a vote of thanks was recorded with acclamation to Dr. Barwell.

Dr. H. G. KILMER described three cases with specimens—namely (a) stomach ball consisting of hay weighing 2½ lb., (b) two cases of sarcoma of the small intestine.

Dr. B. E. A. BATT showed two cases: (a) tumour of the occipital bone, (b) enlargement of spleen and liver of doubtful origin.

WILTSHIRE BRANCH TROWBRIDGE DIVISION

A DINNER was held at the Bear Hotel, Devizes, on December 2nd, when twenty six members, two guests, and four non members from the Devizes area were present.

After the loyal toast had been honoured Dr T. WOOD LOCKER in proposing that of the British Medical Association, described some of the advantages of membership, and said that the larger the membership the more could be done to help the public medical services than had been done in the past, though that was very considerable and also the medical officers in the Royal Navy and Army Medical Services. Dr FLEMING in reply, said that he thought the greatest advantage he personally had had from the Association were the many friendships he had made. Dr TREVOR SHOPLAND proposed "The Guests," to which Dr LOCKER COATES replied.

Mr CECIL TERRY FRCS (Bath) subsequently read a most interesting and instructive paper entitled "Some minor points in surgery." This was greatly appreciated by those present. In the short discussion which followed, Drs FLEMING, LAURENCE, COATES, and LOCKER took part.

Dr BOAD proposed a vote of thanks to the honorary secretary and Dr Hamilton for arranging the dinner.

General Medical Council

EXECUTIVE COMMITTEE

A MEETING of the Executive Committee of the General Medical Council was held on November 23rd, Sir DONALD MACALISTER presiding. Several of the matters which came forward for consideration, including the question of reciprocity with Italy, the recognition of Indian universities, and the position in Saskatchewan and New Brunswick with regard to practitioners registered in the United Kingdom, were referred to in sufficient detail in the Presidential Address delivered to the Council on the following day (SUPPLEMENT, November 28th, p. 185).

Reciprocity with Foreign Countries

THE PRIVY COUNCIL had inquired of the Committee as to the practice of medicine in the British Empire by holders of Latvian and of Austrian medical degrees, and had accompanied the inquiry in the case of Austria with the statement that, in view of the overcrowding of the medical profession in Austria, the Supreme Sanitary Council had resolved to consider ways and means of facilitating the emigration of Austrian doctors to foreign countries. The President had directed memorandums to be prepared (which were approved by the Committee) stating that no reciprocity existed in the case either of Latvia or of Austria, so that in order to become a legally qualified practitioner in this country the holder of a Latvian or an Austrian medical degree would have to obtain a recognized British qualification. Persons holding reputable degrees obtained abroad were frequently admitted to examination for a qualification in this country, either without further curriculum or with a short course of study to supplement any subjects which might be deficient. With regard to Austria the President stated that it was understood that at present no foreigner could practise medicine in Austria unless he became an Austrian citizen, and thus, of course, precluded reciprocity. As to the possibility of Austrian practitioners obtaining lucrative employment outside their own country, no information could be given regarding the British Dominions overseas, but so far as Great Britain was concerned the number of registrations during the last three years had been much greater than usual, and some time would probably elapse before the newly qualified practitioners in this country were absorbed in private practice or the public service. It was therefore likely that foreign doctors would have some difficulty in establishing themselves.

Registration of "Drugless Practitioners" in Ontario

TWO measures before the Ontario Parliament were transmitted to the Council from the Dominion Office. One of these was a bill to amend the Ontario Medical Act 1923. A new section in the amending bill lays down certain penalties (fines of not less than 25 dollars nor more than 100 dollars) for unregistered persons who use any title calculated to lead people to infer that they are registered. A second bill provides for the registration of "drugless practitioners." The bill proposes to set up a board of regents to be composed of five persons appointed by the Lieutenant Governor in Council, to register the persons admitted under this statute to prescribe their "allegations" and to provide for their discipline and control. The bill further provides that any person not registered as a

drugless practitioner who practises or holds himself out as practising within the meaning of the statute, or uses affixes or prefixes signifying that he is qualified to practise, is liable to a penalty not exceeding 100 dollars for a first offence and for a subsequent offence within two years of the first conviction to imprisonment for not more than three months. It is provided that nothing in the statute shall affect the position of the practising any profession under other general or special Acts, nurses acting under the direction of a legally qualified medical man, those who furnish first aid or temporary assistance in emergency, or "persons treating human ailments by prayer or spiritual means as an enjoyment or exercise of religious freedom."

Medical Practice in Iraq

THE Colonial Office transmitted to the Council the law of medical practice in Iraq, made at Baghdad in March last, and signed by King Faisal. The law lays down the conditions for the practice of medicine, and defines various categories of professional misconduct—namely, the employment of any unauthorized person as dresser, dental mechanic, vaccinator, midwife, or nurse, advertising and canvassing, or the sanctioning of the same, failure to comply with regulations issued by the director of public health as to notification and other matters, anything detrimental to the honour and interests of the profession, and all contraventions of the practice of medicine coming within the provisions of the Baghdad penal code. The practice of medicine or any of its branches in Iraq, for payment or otherwise, is forbidden except to authorized persons in accordance with this law. Consular certificates as to character and the validity of the diploma are necessary in the case of practitioners not of Iraqi nationality, and such practitioners are required to pay a registration fee of Rs 500 (£50) instead of the Rs 50 required of native doctors or dentists, but any doctor or dentist of either Iraqi or foreign nationality engaged in practice in Iraq on the date of the coming into force of the law is deemed to be registered. The director of public health is authorized to specify from time to time areas in which foreign doctors or dentists other than those already registered may not practise, and any doctor or dentist who contravenes such a regulation is liable to penalty. In Iraq a doctor is not allowed to style himself a specialist in any branch of medicine without permission of the director of public health. The law also contains provisions for the removal of names from the Register, and for penalties (up to fines of Rs 1,000 (£100) or six months imprisonment) against those who, being unregistered, practise or attempt to practise or use styles or titles implying authorization.

Medical Service in Bechuanaland

A communication from the principal medical officer of Bechuanaland was considered relating to the difficulty of providing medical service at out stations in that territory where small groups of European and native populations where qualified medical officers are not available. The officer asked if the Council would devise a form of licence for unqualified European dispensers, and empower himself, with other medical officers, to grant such licences to suitable men. A reply was approved to the effect that if the Government submitted a scheme whereby a competent medical board could license approved persons of the dispenser class to constitute a sort of "subordinate" medical service of an emergency character similar to that which obtained in India, giving good reasons for the formal departure from the legal prohibition of such unqualified practice, the Committee would consider it with every desire to meet the difficulties of the situation in the Bechuanaland Protectorate. A similar reply was recently sent to the Tanganyika authorities, who were in much the same position.

Miscellaneous Business

THE Committee considered the draft charter of incorporation of the Royal Medical Psychological Association of Great Britain, and raised no objection to the granting of the charter. The Committee also considered the question of the separate qualifications granted by the Conjoint Examining Board in London entitling their holders to original registration, and passed a resolution that when a joint qualification examination in medicine, surgery, and midwifery had been held by the two Royal Colleges either College might transmit a list of candidates for its diploma who had passed such examination, and any applicant presenting to the Registrar the diploma of either College, or a certificate showing him to have received such diploma, and whose name was on the list, should be accepted as eligible for registration.

Our report of the winter session of the General Medical Council was completed in the last issue of the SUPPLEMENT.

THE DENTAL BOARD

At the November session of the Dental Board the General Medical Council was asked to approve expenditure by the Board for 1926 of £18,000 for educational grants. The University of Sheffield was informed that the Board, subject to certain conditions, was willing to make a grant of £1,500 for equipment in the dental school. It was reported that 287 students so far had been assisted by individual grants or loans from the Board.

Dental Examinations—The report of the assessor at the ninth series of prescribed examinations held in London in July last was to the effect that many of the candidates presenting themselves found difficulty in attaining the required standard in the more theoretical parts of the examination. The examiners also were of opinion that the candidates were not of the same standard as those who attended the earlier series, further, they appeared to have required their information from textbooks which, in the absence of a teacher, they had not understood, 52 per cent of the candidates satisfied the examiners, and 48 per cent were referred.

Dental Research—The Board received reports on various researches which it is assisting. The Department of Scientific and Industrial Research reported on dental alloys and amalgams, and the Medical Research Council submitted interim reports by several workers on the causes of dental disease. There were also reports from individual investigators on the relation between dental sepsis and blood sugar tolerance, the nutrition of dentine during adult life, and other subjects.

Dental Health Propaganda—The Dental Health Propaganda Committee reported to the Board on various forms of publicity, several of which are already being used, including films, lectures, and travelling exhibits. It has also been arranged to carry out, under the committee's supervision, propaganda in the columns of the press.

National Insurance

THE EXETER INSURANCE INQUIRY

IN THE SUPPLEMENT of October 24th (p. 139) we published a report of the inquiry, held in public at Exeter on October 7th, to investigate a representation which had been made to the Minister of Health by the Exeter Insurance Committee "that the continuance of Dr. Bernard Kelly, upon the medical list is prejudicial to the efficiency of the medical service of insured persons." The Inquiry Committee consisted of Mr. E. H. Findal Atkinson, barrister at law (chairman), Dr. E. Collingwood Andrews, and Dr. A. Forbes.

We have now received from the Ministry of Health a copy of the report of the Inquiry Committee, together with a copy of the formal document embodying the Minister's decision on this case.

The Minister of Health, having read and considered the committee's report, states that he has decided not to remove Dr. Kelly's name from the medical list of the Exeter Insurance Committee. The Minister has further considered the question of costs of the inquiry, and directs that the sum of fifty guineas be paid by the Exeter Insurance Committee towards the costs of Dr. Kelly.

In view of the importance of the case we print below (substantially in full) the Inquiry Committee's report.

THE COMMITTEE'S REPORT

The Inquiry Committee was constituted to investigate a representation made to the Minister of Health by the Exeter Insurance Committee (the complainants) that the continuance upon the complainants' medical list of Dr. Kelly (the respondent) would be prejudicial to the efficiency of the medical service of the insured. The representations were based upon the following facts and grounds:

Facts Alleged

On March 26th, Sidney S. Stevens, a brass works packer, aged 45, an insured person, after removing his tins at night suddenly strained himself when lifting his child and precipitated an old rupture in left groin, which caused him to vomit blood, and was in great pain during the whole night. This continuing, his wife went to the patients' panel doctor at 9 o'clock next morning and acquainted him of what had happened and of her husband's serious condition when without seeing the patient he wrote a prescription for bismuth. In the afternoon, the patient being worse a second message was taken to the surgery, where the dispenser on hearing the symptoms wrote down "Strangulated hernia: urgent." The doctor on returning, read this and visited the patient in bed to whom he expressed much anger at being called and left the house within two minutes. The same evening at his surgery he wrote a second prescription for a fuller bismuth mixture and gave the wife a certificate of

"gastro enteritis," and at the same time blamed her for sending a message as to hernia (which word she had not used) and he told her it was not strangulated hernia, and volunteered to make another visit in the evening, which he did and then apologized for the annoyance shown previously, and said it was his dispenser who had made the mistake. The patient's wife and a neighbour both saw and felt a lump in his left groin. The patient daily got worse and vomited motion on the 28th and afterwards, but beyond the above prescriptions no further medical treatment or remedial measures were provided by the doctor, although he visited him on the following days, during which time the wife told him she was not satisfied, but he assured her there was no need for her being anxious as it was nothing serious. Becoming more alarmed she asked on the 31st that a second doctor should be called in. The respondent brought in a surgeon who on seeing the patient's condition ordered his immediate removal to the hospital for an operation which was performed by himself and the house-surgeon the same afternoon, but the patient died the following evening April 1st. The certificate of death given by the house surgeon stated as the cause of death "(1) Strangulated inguinal hernia (2) intestinal obstruction." There was no post mortem examination.

Grounds for the Representation

(a) The respondent knew the patient had a previous rupture and had worn a truss for ten years, and admitted in his evidence that he "had hernia at the back of his mind." The medical record card returned to the Committee afterwards bears entry of first visit "27th March pain in abdomen hernia inguinal." (b) The respondent evidently connected this illness with the old rupture, as on March 29th he told patient that if they had operated on him when he sent him to the hospital ten years ago it would have saved all this bother. (c) Respondent failed to realize the seriousness of patient's condition, although particulars of the accident accounting for it had been given to him, and there was an absence of accurate methods of diagnosis and treatment. Respondent neglected to ask for or to make any inquiry as to the nature of patient's vomit. (d) Respondent's angry manner to patient and his wife was not consonant with the expected best medical treatment nor conducive to patient's relief within the services required by the Regulations. (e) The operation after a delay of five days was too late to save the patient's life. The operator states that by delay the whole of the bowels had become paralysed by septic poisoning through the obstruction and in his opinion it that had been relieved a day or two earlier there would undoubtedly have been a chance of recovery. (f) The respondent, either in error or undue haste gave a certificate of "gastro enteritis" and treated the patient accordingly on the first day only, 27th but no mention of such fact appears on the medical record card, pointing to a lack of consistency in his diagnosis, no subsequent symptoms and the certified cause of death proved. (g) The respondent's first entry on the medical record card—vide (a)—presumably indicated his then opinion of the symptoms and should have been instantly followed up by appropriate treatment—which was not done. (h) Only by the wife's request was further advice obtained for which she has paid two guineas for medical services that should have been rendered by the respondent himself as a general practitioner under his terms of service and as within the range of skill and experience he was expected to possess. (i) The complaint being of a serious nature raising as it does inferential reflections upon the respondent's professional conduct as a panel practitioner, and also affecting the complaint by her being suddenly left a widow with five children, the Committee are of opinion a fuller inquiry should be made in this case, as well as in the common interest of all insured persons.

The respondent did not submit a formal answer to the aforesaid representation. The inquiry was held by us at Exeter on October 7th.

A Technical Objection Overruled

Before Mr. Mathews opened the complainants' case Mr. Goddard K.C. [representing Dr. Kelly] submitted a technical objection relative to the scope of our duties at the inquiry. He brought to our notice the fact that an inquiry had been held as to this case by the local Medical Service Subcommittee although (a) properly he did not enter it in the report of that subcommittee or refer to its findings in view of the facts that the report was not to be submitted to us by the complainants and that we had not seen or desired to see the same. He referred us to Regulations 28, 29, and 30, and laid stress on the provision contained in Regulation 29 (4) whereby the Insurance Committee shall accept as conclusive any finding of fact of the subcommittee. He contended that this provision was binding on the Insurance Committee in relation to any action taken or to be taken by them under Regulation 30 and more particularly under paragraph 2 (d) of that Regulation, which contemplates the making of a representation to the Minister in the form of that brought before us. He therefore submitted notwithstanding the general terms of Regulation 42 that the scope of the inquiry before us was limited in the sense that we had no power to entertain *de novo* questions of fact already adjudicated upon by the subcommittee and to hear oral evidence thereon, and the complainants were entitled only to submit to us the conclusive findings of fact of the subcommittee and to invite us to report thereon with any inferences which we might think right to submit to the Minister with a view to assisting him in his executive decision.

We ruled against this submission mainly on the ground that Part VI of the Regulations contemplates an inquiry being held by the Inquiry Committee independently of the fact that an

Naval and Military Appointments.

ROYAL ARMY MEDICAL CORPS

Captain R. W. D. Hewson to be temporary Captain, and temporarily relinquishes the rank of Captain.
Captain E. C. Lang, D.S.O., to be Major July 26th 1924 with precedence next below R. A. Flood M.C. (substituted for notification in the London Gazette of August 8th 1924).
Arthur L. Moorby to be temporary Lieutenant.

INDIAN MEDICAL SERVICE

Lieut. Colonel J. W. D. Megaw has been appointed to be Honorary Surgeon to the Viceroy and Governor General vice Colonel R. P. Wilson, C.I.E., whose tenure has expired.
Major A. G. Coulhe has retired from the service.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Major F. W. D. Young, T.D., to be Lieutenant Colonel and to command the 164th (West Lancs.) Field Ambulance.
Lieutenant J. H. Hies to be Captain.
Lieutenant F. R. Sandford M.C. (from supernumerary for service with University of London Contingent O.T.C.), to be Lieutenant as from May 14th 1924.
Douglas C. Vaughan to be Lieutenant.

COLONIAL MEDICAL SERVICE

Dr. T. S. Cochrane appointed Medical Officer Kenya. Dr. F. A. Small, T.H. Nolan and A. J. Imsden appointed Deputy Medical Officers Masaka, Mbari and Kitgum, Uganda, respectively.

VACANCIES

BIRMINGHAM CITY JOINT BOARD OF RESEARCH FOR MENTAL DISEASE—Laboratory Attendant Salary £250 per annum.
BLACKBURN AND EAST LANCASHIRE ROYAL INFIRMARY—Third House Surgeon (male) Salary £150 per annum.
BOURNEMOUTH COUNTY BOROUGH—Assistant Medical Officer of Health and Assistant School Medical Officer Salary £630 per annum with £30 per annum for travelling expenses.
BRADFORD CITY—Assistant Dentist Salary £450 per annum, plus bonus, at present £32 16s per annum.
Bristol General Hospital—Honorary Assistant Surgeon to the Ear, Nose, and Throat Department.
CONSUMPTION SANATORIUM OF SCOTLAND Bridge of Weir—Resident Medical Assistant (male) Salary £200 £250 per annum.
DEPBY UNION INSTITUTION—Resident Medical Officer (unmarried) Salary £450 per annum, with two annual increments of £25.
DURHAM COUNTY COUNCIL—Medical Superintendent at Holywood Hall Sanatorium Salary £850 per annum.
EAST LONDON HOSPITAL FOR CHILDREN Shadwell E.1—(1) House Surgeon (2) Morning Casualty Officer (Males) Salary at the rate of £150 and £120 per annum respectively.
ELIZABETH GARNETT ANDERSON HOSPITAL 144, Euston Road N.W.1—(1) Assistant Radiologist (female) honorarium at the rate of £100 per annum (2) Anaesthetist for the Throat and Ear Department honorarium £5 5s per annum.
HOSPITAL FOR SICK CHILDREN Great Ormond Street, W.C.1—(1) Resident Medical Superintendent salary £300 per annum (2) House Surgeon (male) salary £50 for six months.
HUDDESFIELD ROYAL INFIRMARY—Junior House Surgeon Salary £150 per annum.
IPSWICH EAST SUFFOLK AND IPSWICH HOSPITAL—(1) House Physician (2) House Surgeons Salary at the rate of £400 per annum.
KINGSLY VICTORIA HOSPITAL—Resident Medical Officer Salary at the rate of £180 per annum.
LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.1—Casualty Officer (male) Salary £120 per annum.
MANCHESTER CITY—Junior Medical Assistant at the Monsall Hospital for Infectious Diseases (male unmarried) Salary £350 per annum.
MANCHESTER St Mary's Hospitals—Two House Surgeons for the Whitworth Street West Hospital (Maternity) and three for the Whitworth Park Hospital (gynaecological and children) Salary at the rate of £50 per annum each.
NORWICH NORFOLK AND NORWICH HOSPITAL—Resident Anaesthetist Salary £150 per annum.
PENYDOL COUNTY BOROUGH—Resident Medical Officer of the Didworthy Sanatorium Salary £600 per annum.
PORTRUTH EDUCATION COMMITTEE—School Medical Officer (male) Salary £450 per annum rising to £550.
READING ROYAL BERKSHIRE HOSPITAL—Honorary Anaesthetist.
ROYAL FREE HOSPITAL Gray's Inn Road, W.C.1—District Obstetric Assistant Salary £100.
ST MARK'S HOSPITAL FOR CANCER FISTULA ETC, City Road E.C.1—Anaesthetist Salary £25 per annum.
ST MARK'S HOSPITAL Paddington W.2—Assistant Medical Officer in charge of 1 day Department.
SUNDERBY GENERAL INFIRMARY—House Surgeon (male unmarried) Salary £150 per annum.
SINGAPORE MUNICIPALITY—Assistant Health Officer Salary \$7200 for first year \$7680 for second year and \$8160 for third year.
WEST HILL COUNTY BOROUGH—Second Assistant Medical Officer at the Whitton Fever Hospital Salary £200 and bonus approximately £106 per annum at present.
WATFORD HOSPITAL Hammersmith Road W.6—Honorary Obstetric Registrar.
WATFORD HOSPITAL Broad Sanctuary S.W.—Obstetric Tutor and Registrar Honorarium £50 per annum.

MEDICAL REPTFFER UNDER THE WORKMEN'S COMPENSATION ACT FOR FALKIRK DISTRICT—Applications to the Private Secretary Scottish Office, Whitehall, S.W.1, by January 5th.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

APPOINTMENTS

GPAS E. E. D. M.B. B.S. Lond. Certifying Factory Surgeon for the Taddington District co. Middlesex.
TIVIA Cecil, M.B. M.B. R.C.I. Surgeon to the Plymouth Royal Eye Infirmary.
WILKIN, Arthur C. M.B., Medical Superintendent to the Essex County Council Sanatorium, Harold Court Harold Wood, Essex.

British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQUARE W.C.1

Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager) Telegrams Articulate Western London.
ADMINISTRATIVE SECRETARIES (Telegram Medisera Western London).
LONDON British Medical Journal (Telegrams Aitology Western London).
Telephone numbers of British Medical Association and British Medical Journal Museum 9351 9352 9353 and 9354 (internal exchange four lines).

SCOTTISH MEDICAL SECRETARY 6 Drumhugh Gardens Edinburgh (Telegrams Associate Edinburgh Tel 4261 Central).
IRISH MEDICAL SECRETARY 16 South Frederick Street Dublin (Telegrams Baillieu Dublin Tel 4751 Dublin).

Diary of the Association

- DECEMBER**
- 18 Fri London Voluntary Hospital Accommodation Subcommittee 2.15 p.m.
South Suffolk Division Crown and Anchor Hotel Ipswich
Dr W. P. Addy on the Heart 3.30 p.m.
Tunbridge Wells Division General Hospital B.M.A. Lecture by Professor A. J. Hall on Some Microscopic Effects of Encephalitis 1.15 p.m. 3.30 p.m.
- 23 Wed South Eastern Counties Division Edinburgh Branch Railway Hotel New Town St. Boswells Dr Charles Cameron on Ultra violet Radiation 3 p.m.
- 29 Tuca Bedfordshire Division Bedford County Hospital, 3 p.m.
- JANUARY**
- 5 Tues City Division Public Library, Holloway Road Lieut. Colonel Spencer Mort on Interesting Surgical Cases, 9.30 p.m.
Kingston on Thames Division Mr J. G. Turner on Dental Stips.
- 8 Fri Chesterfield Division Maternity Hospital, Chesterfield Mr A. M. Webber on Pelvic Pain in Women 8.15 p.m.
- 12 Tues Dewsbury Division Man and Saddle Restaurant Dewsbury Dr W. Fletcher Shaw on Chronic Pelvic Pain 8.15 p.m.
Reigate Division East Surrey Hospital Reigate Sir H. Gairdner on Conservative Treatment in Non-pulmonary Tuberculosis 8.45 p.m.
- 13 Wed South West Wales Division Carmarthenshire Infirmary B.M.A. Lecture by Professor A. J. Clark Recent Advances in Endocrinology 3 p.m.
- 14 Thurs Hyde Division Hyde Town Hall 4 p.m.
Castelford Division Bull Restaurant on the Role of the General Practitioner 8.30 p.m.
- 22 Fri London Joint Medical Political and Public Health Committees on Factory Medical Service, 11.30 a.m.

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

BIRTH

THOMSON—On December 5th to the wife of Ian S. Thomson M.D., 55 Overstrand Mansions, S.W.11, a son.

MARRIAGES

COWIE-NICOLSON—At Dumfries on December 2nd Dr Clement A. Cowie of Wolesworth Warwickshire to Janie, daughter of Mr and Mrs Nicol on Corinda Dumfries.
McWILLIAM-TUCKER—On December 17th 1925 at Emmanuel Church Leamington A. D. McWilliam M.D. D.P.H. Belfast of Leicester to Violet Ruth Tucker Parkside Loughborough Leicestershire.
SALSBURY-WRIGHT—December 9th at St Mary's Church, Broughton Tines Walter Salsbury M.S. D. Lond. F.R.C.S. Eng. of Grimsby younger son of Mr and Mrs F. C. Salsbury of Bristol to Constance Mary only child of Mr and Mrs William Wright of Broughton Vale.

DEATHS

BISHOP—On December 13th after short illness at his residence North Dene The Park Buckenham Walter Beacall Bishop (of Alfred Bishop, Jtd.) aged 72.
EDWARDS—On December 4th at 137 Withington Road Whalley Rang Manchester after long illness patiently borne Emily Louise Francis the dearly beloved wife of the late John Edwards, M.R.C.S., J.R.C.I. late Senior Medical Officer N.W. Prison Service.

BRITISH MEDICAL JOURNAL.

LONDON, SATURDAY DECEMBER 26TH 1925

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British Medical Association

CURRENT NOTES

Medical Charities

On the instruction of the Representative Body of the Association a British Medical Association Charities Committee has been formed, the chief function of which is to direct the attention of members, through the machinery of the Association, to the financial and educational positions which arise as a result of misfortune falling on members of the profession, and to appeal for contributions to meet those positions, as explained briefly in a leading article in this week's JOURNAL. The institution of this committee arose from a survey of the resources available for the relief of distress amongst medical men or their families who have fallen on bad times and for the provision of educational facilities for children left without parental support. Existing benevolent organizations have undoubtedly done, and continue to do, good work, but they are greatly hampered by lack of funds. An appeal is therefore made to members of the profession to assist their less fortunate brethren by contributing as liberally as they are able to the British Medical Association Charities Fund in order that the committee administering that fund may be in a position to help existing benevolent organizations—namely, "The Sir Charles Hastings Fund" of the British Medical Association, the Royal Medical Benevolent Fund, the Royal Medical Foundation of Epsom College, and the Royal Medical Benevolent Fund Society of Ireland. Provision is made in the form of application which members will receive on January 1st for the annual subscription to the Association for 1926, whereby contributions to the British Medical Association Charities Committee may be forwarded along with the subscription to the Association. In making use of this, it is suggested that members should place their contributions at the disposal of the committee, though they may earmark them for any particular fund if they so prefer.

The Medical Secretary's Visit to South Africa

We had hoped to be able to publish in the present issue a short report of Dr Alfred Cox's doings in South Africa, but, as we have to go to press earlier owing to the Christmas holiday, this must be postponed until next week. In the SUPPLEMENT for January 2nd members may expect to find some account of the wonderful reception Dr Cox has had from our colleagues in South Africa. A very extensive programme has been arranged out for him and the South African Committee evidently intends to let him see as much of the medical profession in South Africa as is possible in the time at his disposal. Dr Cox is receiving much hospitality, and not from the medical profession alone.

Garage Accommodation at Headquarters

Garage facilities are now available for members in the garage at the rear of the North Wing of the Association's new House in Tavistock Square. Members may garage their cars during the day free of charge, and during the night at a charge of 2s a night. There are also two lock-up garages available, the charges for which are 5s a night, 25s a week or £40 a year, these may be let for a period of not longer than one year on a three months' notice, or for shorter periods. All applications for garage accommodation should be made to the Financial Secretary and Business Manager. The garage is accessible only during office hours, except by arrangement with the caretaker. It must be clearly understood that the Association can take no responsibility for cars garaged on the premises.

Subscriptions for 1926.

Members of the British Medical Association are reminded that subscriptions fall due on January 1st in each year, and that if each member who receives an application for his or her subscription from the Head Office will send the amount to the Financial Secretary within the first week of the New Year the work of the office will be very considerably lightened. Members are also reminded of the claims of charity, to which reference is made elsewhere. The amounts at the disposal of those who administer medical benevolence are altogether insufficient to meet the appeals that are received, and the British Medical Association Charities Fund was formed in order to assist. Subscriptions or donations are urgently needed, and every member of the Association is asked to add to his next payment a sum for the credit of the B.M.A. Charities Fund.

IRISH MEDICAL COMMITTEE

At a meeting of the Irish Medical Committee held on December 8th 1925 in the Royal College of Surgeons Dublin the following members were present: Senator W. O'Sullivan (in the chair), Drs J. M. Dwyer, Denis Dowd, J. T. Elliot, Conor Maguire, J. Mills, E. J. King, R. W. Murphy, J. O'Meara, H. R. B. R. Roche Kelly, R. J. Lowlette, J. P. Shanley, D. Walsh, H. F. Warnock, and Dr F. Hennessy. Medical Secretary Senator W. O'Sullivan was elected (for the 11th time) vice chairman of the Irish Medical Committee.

Among the correspondence read was a letter from the National Health Insurance Commission to approved societies stating that it had been brought to their notice that in certain cases insured persons seeking compensation or damages under the Employers' Liability Act 1880 or the Workmen's Compensation Act 1906 have utilized in support of their claims medical certificates issued to them on Form M.C. 1 by medical certifiers under the National Health Insurance Acts. The Insurance Commission informed the approved societies that an insured person is not entitled to use such certificates for any purpose other than national health insurance purposes, and that such medical certificates should not be returned to insured persons, but should be retained by the society.

Inquiry into Health Insurance and Medical Services

Dr R J Rowlette, representative of the Irish Medical Committee on the Committee of Inquiry, gave an outline of the most important matters dealt with in the report, especially as they affected the medical profession, he also stated that the Committee of Inquiry would resume its sittings in the early part of the coming year as soon as the financial expert had furnished his report with regard to the financial position of the approved societies in the Free State. A warm vote of thanks was passed to Dr Rowlette for his services on the Committee of Inquiry and it was resolved that a copy of the interim report be sent to secretaries of the Local Medical Committees for the information of medical men in the different areas.

Registration of Birth, Deaths, and Marriages

At the last meeting of the Irish Medical Committee a resolution with the inadequacy of the fees for the deaths, and marriages was passed and forwarded to the Ministry of Local Government and Public Health. As no steps had, however, been taken to increase these fees it was resolved that the advisability of registrars resigning then offices be submitted to a meeting of delegates if the Ministry decline to pay dispensary doctors who act as registrars the remuneration paid for similar work in Great Britain to non medical registrars.

Medical Treatment of Postmen

In regard to medical attendance on postmen, the Committee decided to send a communication to the Minister for Posts and Telegraphs protesting against the arrangement whereby a doctor who is medical attendant to the Civic Guards is paid a lesser capitation fee for attending the postmen in his area than if he acted in the latter capacity alone.

County Medical Officer of Health in the Free State

The Executive Committee of the Irish Medical Committee was instructed to confer with the Minister for Local Government and Public Health with regard to the remuneration and conditions of service of county medical officers of health.

Medical Registration

Dr Hennessey gave an account of the present position of medical registration in the Irish Free State. He stated that the Government seemed willing to allow the existing arrangements for medical registration to continue so long as they did not interfere with the establishment of a Medical Council and Register for the Free State. He added that he believed it was the intention of the Government to extend for six or nine months the Medical Act of 1925. The case of students who had already commenced medical studies was made the subject of a special representation to the Government.

Salaries of County Mayo Medical Officers

The Committee decided to inform the Minister for Local Government and Public Health that it was much disappointed at his failure to fix an adequate scale of salaries for the county Mayo medical officers and again requesting him to take into consideration the case of these doctors, who, while living in the largest and most populous districts in Ireland, are paid the most inadequately in the service.

Salaries of Medical Inspectors

With regard to the salaries of medical inspectors the following resolution was adopted:

That the Irish Medical Committee resents the degradation of the Irish medical profession by the recent appointment of medical inspectors at salaries less than were paid fifty years ago and the reduction of the subsistence allowance to less than that fixed for the more highly paid officers.

Copies of this resolution were ordered to be forwarded to the Departments of Finance and Local Government and Public Health.

The Committee also dealt with the questions of medical certification for sickness benefits, lunacy fees, certificates for emigrants, and medical evidence before the Departmental Committee on Workmen's Compensation.

Association Notices**BRANCH AND DIVISION MEETINGS TO BE HELD**

BIRMINGHAM BRANCH, NUNEATON AND TAMWORTH DIVISION—A meeting of the Nuneaton and Tamworth Division will be held at the Nuneaton General Hospital on Wednesday January 20th, 1926. Mr Bernard G Goodwin, FRCS, will read a paper on some modern methods in the diagnosis and treatment of surgical diseases of the urinary system.

BORDER COUNTIES BRANCH, DUMFRIES AND GALLOWAY DIVISION—The next meeting of the Dumfries and Galloway Division will be held in the Castle Douglas Cottage Hospital on Thursday, January 14th, 1926, at 3.30 p.m., when after the routine business Dr D C Welsh will demonstrate the newly installed X-ray apparatus and exhibit skiagrams and cases. Dr Murray B Stewart will read a paper on some modern methods of electrical treatment, and Mr Lachlan J D S, will demonstrate the Guy Roesig's and oxygen unit, these apparatus with cases. Tea will be provided.

LANCASHIRE AND CHESHIRE BRANCH, HYDE DIVISION—A meeting of the Hyde Division will be held in the Hyde Town Hall on Thursday, January 14th, 1926, at 4 p.m. Agenda: Report of the Executive Committee as to the scale of minimum commencing salaries for public health medical officers, and proposal that the Division should adopt a resolution in connection therewith pursuant to the Division Rules.

LANCASHIRE AND CHESHIRE BRANCH, ST HELENS DIVISION—A special meeting of the St Helens Division will be held on Wednesday, December 30th in the Ilceca Hotel St Helens, at 8.30 p.m. Business: Executive Committee's report as to the scale of minimum commencing salaries for public health medical officers, and consider a recommendation in connection with this matter, also question of corresponding action by the Branch Division or not for the local school clinic report of Dinner Committee.

METROPOLITAN COUNTIES BRANCH, CITY DIVISION—A meeting of the City Division will be held at the Public Library, Holloway Road, N. on Tuesday, January 5th, 1926, at 9.30 p.m. Lieut Colonel Spencer Wort will read a paper on interesting surgical cases in relation to general practice (with photographs).

METROPOLITAN COUNTIES BRANCH, LEVISHAM DIVISION—A meeting of the Lewisham Division will be held at the Parish Rooms, St Laurence Vicarage, Catford on Tuesday, January 19th, 1926, at 8.45 p.m. Dr Harold Pritchard will read a paper on chronic infective processes.

MIDLAND BRANCH, CHESTERFIELD DIVISION—A meeting of the Chesterfield Division will be held at the Maternity Hospital, Chesterfield, on Friday, January 8th, 1926, at 8.15 p.m. Mr A V Webber, FRCS, honorary surgeon Nottingham General Hospital, will give an address on pelvic pain in women. Tea and coffee at 8.

SOUTH MIDLAND BRANCH, BEDFORDSHIRE DIVISION—A general meeting of the Bedfordshire Division will be held at the Bedford County Hospital on Tuesday, December 29th, at 3 p.m. Agenda: Elect (a) vice chairman, (b) additional representative on Branch Council communication regarding badges for chairmen and secretaries report of Executive Committee as to the scale of minimum commencing salaries for public health medical officers and proposal for adoption of a resolution in connection with the same. Dr Ross will read notes on a case of renal calculus, and on some abdominal cases. Tea will be provided.

SOUTH WALES AND MONMOUTHSHIRE BRANCH, CARDIFF DIVISION—A clinical meeting will be held by the Cardiff Division in the Medical Unit Lecture Room, Cardiff Royal Infirmary on Wednesday, January 20th, 1926, for short papers and clinical cases.

SOUTH WALES AND MONMOUTHSHIRE BRANCH, SOUTH WEST WALES DIVISION—A meeting of the South West Wales Division will be held at the Carmarthen Infirmary on Wednesday, January 13th, 1926, at 3 p.m., when Prof. or A J Clark will give a British Medical Association Lecture on recent advances in endocrinology.

SOUTHERN BRANCH, PORTSMOUTH DIVISION—A meeting of the Portsmouth Division will be held at the Queen's Hotel, Southsea, on Thursday, January 7th, 1926, at 9.30 p.m. and will be preceded by supper at 9 precisely. At this meeting the Portsmouth branch, which is to be presented by the Division for the Great Hall at British Medical Association headquarters will be on view. A discussion on contraception will take place. Members desirous of attending the supper are asked to notify the honorary secretary (Dr W. W. Wren, Devon, Goldsmith Avenue, Southsea) by January 4th.

SURREY BRANCH, KINGSTON-ON-THAMES DIVISION—At the meeting of the Kingston-on-Thames Division to be held on Tuesday, January 5th, 1926, Mr J G Turner, LRCS, will read a paper on dental sepsis.

SURREY BRANCH, REIGATE DIVISION—At the meeting of the Reigate Division to be held at the East Surrey Hospital, Reigate, on Tuesday, January 12th, 1926, at 8.45 p.m. Sir Henry Gauvain will read a paper on conservative treatment in non-pulmonary tuberculosis.

YORKSHIRE BRANCH, BRADFORD DIVISION—A supper dance will be held by the Bradford Division at the Midland Hotel, Bradford, on Tuesday, January 26th, 1926.

YORKSHIRE BRANCH, DEWSBURY DIVISION—A meeting of the Dewsbury Division will be held in the Man and Saddle Restaurant, Dewsbury, on Tuesday, January 12th, 1926, at 8.15 p.m. Dr W J Fletcher Shaw (Vancouver) will read a paper on chronic pelvic pain.

YORKSHIRE BRANCH, WAKEFIELD, PONTEFRAC AND CASTLEFORD DIVISION—The British Medical Association Lecture by Colonel L W Harrison on the management of syphilis illustrated by a cinematograph film arranged for December 13th, was unavoidably postponed. It will be delivered at a later date of which due notice will be given. The discussion on the role of the general practitioner in preventing disease, originally fixed for January 14th, was held instead on December 10th.

to three years in the case of two years' treatment.—At the suggestion of the Ministry of Health a conference is to be held with representatives of the Ministry and of the Panel and the Committee to discuss the granting of discretionary powers to the Panel Committee in considering claims for payment of emergency treatment submitted by practitioners after the allowed under his provision of the contribution here.

Naval and Military Appointments

ROYAL NAVY MEDICAL SERVICE

SUBSEA COMMUNICATORS F J COWAN to the *Egmont* additional January 1st and to the *Egmont* for Main from date of joining C H DAW to the *Impulse* A B CLARK to the *Irish* for R N Barrack Devonport for duty with Surgeon Rear Admiral, Plymouth as Naval Health Officer F I ATTINSON DSO to the *Hamillies* and as Specialist in Ophthalmology B R BICKFORD DSO to the *Victory* for R N Hospital Haslar and as Specialist in ? ? ? of G S HARVEY to the *Comet* Surgeon ? ? ? W J VICKERS to the *Finchall* Surgeon ? ? ? Surgeon Lieutenant G KIRK to the *Colossus* R M DRENNAN to the *Tamar* W A HOPKINS to the *Finchall* I B HARRIS to the *Wallace* Mr V H ROOBBIE has entered as Surgeon Lieutenant and appointed to R N Hospital Haslar for four years.

POST-NATAL VOLUNTEER RESERVE

Mr J A KERR appointed Probationary Surgeon Lieutenant and attached to the Mersey Division.

ROYAL AIR FORCE MEDICAL SERVICE

Wing Commander W W SHORTEN to RAF Hospital Halton Squadron Leaders B F BEATSON to Inland Area Aircraft Depot Henlow T C St C MORTON to RAF Hospital Halton. The following are granted short service commissions as Flying Officers for three years on the active list: L A ASHLEY R M FLEMING.

INDIAN MEDICAL SERVICE

Lieut Colonel W R BATTIE DSO Agency Surgeon is posted as Administrative Medical Officer in Central India and Recknau Surgeon Indore.

The services of Lieut Colonel J Cunningham an officer of the Medical Research Department are placed temporarily at the disposal of the Director General Indian Medical Service.

Lieut Colonel J Cunningham is appointed Director Institute of India Kasaui.

The services of Major I L SEN MC are placed permanently at the disposal of the Government of Assam.

Captain J B RODGER IMC relinquished the duties of Executive Officer Meenut with effect from October 27th 1925.

Lieut Colonel J W MILES has retired from the service (under the Premature Retirement Rules).

MILITIA

ROYAL ARMY MEDICAL CORPS

Major (provi) H FORREST is confirmed in his rank. Major W T A TURT (Res of Off) to be Major and to command the Medical Unit Belfast University Contingent Senior Division OTC.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Major (provi) H FORREST is confirmed in his rank. Major W T A TURT (Res of Off) to be Major and to command the Medical Unit Belfast University Contingent Senior Division OTC.

TERRITORIAL ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Lieut Colonel (Brevet Colonel) F HATHORN DSO TD having attained the age limit is retired and retains his rank with permission to wear the prescribed uniform.

Lieut Colonel J BARKLEY DSO Majors L A Mackenzie MC A Colledge W S Richardson, and J J McMillan having attained the age limit relinquish their commissions and retain their ranks. General Hospitals—Major C A S RIDGENT having attained the age limit relinquishes his commission and retains his rank.

COLONIAL MEDICAL SERVICE

Dr A I van Someren Senior Medical Officer 1st class has retired. Dr W M HOWLAND Medical Officer Medical Department Gold Coast appointed Medical Officer of Health (Sanitary Branch) Medical Department Gold Coast.

VACANCIES

BIRMINGHAM CIVIL HOSPITAL—Assistant House Surgeon (unmarried male) Salary at the rate of £130 per annum.

DOLFYMOUTH COLLEGE BOURN—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £650 per annum with £30 per annum for travelling expenses.

EDINBURGH TREATMENT CENTRE 31 Speer Street F C 1—(1) Two Medical Officers (2) Two Surgeons (3) Two Surgeons (4) Two Surgeons.

HOSPITAL FOR SICK CHILDREN Great Ormond Street W C 1—Resident Medical Superintendent Salary £300 per annum.

HITCHIN EAST SUFFOLK AND HITCHIN HOSPITAL—(1) House Physician (2) House Surgeon Salary at the rate of £400 per annum.

HIGHLEY VICTORIA HOSPITAL—Resident Medical Officer Salary at the rate of £180 per annum.

LONDON COUNTY COUNCIL—Deputy Medical Superintendent at Maudsley Hospital Denmark Hill S F—Salary £650 a year and temporary addition making compensation for minimum rate approximately £850.

LONDON LOCK HOSPITAL—Honorary Physician.

LONDON TEMPERANCE HOSPITAL Hampstead Road N W 1—Casualty Officer (male) Salary £120 per annum.

MANCHESTER ASYLUM HOSPITAL—Assistant Dental Surgeon.

MANCHESTER EDUCATION COMMITTEE—Assistant School Medical Officer (male) Salary £600 per annum in 1926 £750.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISSEMINATED TUBERCULOSIS—Resident Medical Officer of the Inpatient Department Bowden Salary £200 per annum.

MANCHESTER VICTORIA MEMORIAL HOSPITAL Chatham—Honorary Anaesthetist Honorarium £50 per annum.

MILDMAN MEDICAL DISPENSARY 15 St E 2 Radcliffe.

NOTTINGHAM COLLEGE HOSPITAL—Resident Medical Officer 1st Class Salary £450 per annum.

NEW FREE HOSPITAL 111 St John Road W C 1—Second House Physician.

NEW HOSPITAL FOR GENTLE TREATMENT City Road F C 1—Resident Medical Officer Salary £25 per annum.

ST MARK'S HOSPITAL Paddington W 2—Assistant Medical Officer in charge of Civil Department.

ST MARK'S HOSPITAL Paddington W 2—Research Syndicate Honorarium at the rate of £200 per annum.

SALISBURY GENERAL HOSPITAL—House Surgeon (male, unmarried) Salary £150 per annum.

SINGAPORE MEDICAL CITY—Assistant Health Officer Salary £7200 for first year, £7680 for second year and £8160 for third year.

SOUTHERN COASTAL HOSPITAL AND SPI BATHING ESTABLISHMENT—Resident Medical Superintendent Salary £600 per annum.

SWIFT SERVICES F C 1—Resident Assistant Medical Officer at Heatherwood Hospital Ascol Salary £300 per annum.

WEST LONDON HOSPITAL Hammersmith Road, W 6—Honorary Obstetric Registrar.

WOLVERHAMPTON AND STAFFORDSHIRE HOSPITAL—Resident Surgical Officer Salary £250 per annum.

This list of vacancies is compiled from our advertisement columns where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

APPOINTMENTS

LITTLE C 1 M 1 CH B Certification, Factory Surgeon for the Rhyl District to Flint.

OTTOBY F 1 M 1 B C H D O W S Ophthalmic Surgeon to the Brighton Infirmary Honorary Ophthalmic Surgeon to the Haywards Health Hospital and to the Hove Hospital.

British Medical Association

OFFICES BRITISH MEDICAL ASSOCIATION HOUSE

TAVISTOCK SQUARE W C 1

Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager) Telegraphs Articulate Westcott London.

MEDICAL SECRETARIES (Telegrams Westcott London).

LITERARY BRITISH MEDICAL JOURNAL (Telegrams Articulate Westcott London).

Telephone numbers of British Medical Association and British Medical Journal: M 1001 1002 1003 and 1004 (international exchange four lines).

SCOTTISH MEDICAL SECRETARIES 6 Drumhugh Gardens Edinburgh (Telegrams Articulate Edinburgh Tel 461 Central).

IRISH MEDICAL SECRETARIES 16 South Frederick Street Dublin (Telegrams Articulate Dublin Tel 4741 Dublin).

Diary of the Association

DECEMBER

29 Tues Bedfordshire Division Bedford County Hospital 3 p.m.

30 Wed St Helen's Division Fisco Hotel St Helen 8.30 p.m.

JANUARY

5 Tues London Naval and Military Committee Special Meeting 2.30 p.m.

City Division Public Library Holloway Road Lieut Colonel Spencer Mort on Interesting Surgical Cases 9.30 p.m.

Kingston-on-Thames Division Mr J C Turner on Dental Surgery.

7 Thurs Portsmouth Division Queen's Hotel Southsea 9.30 p.m. preceded by Supper 9 p.m.

8 Fri Chelmsford Division Mater Hospital Chelmsford Mr A M Webster on Uterine Pain in Women 8.15 p.m.

12 Tues Deasbury Division Man and Saddle Restaurant Deasbury Dr W Fletcher Shaw on Chronic Uterine Pain 8.15 p.m.

Riccarton Division East Surrey Hospital Reigate Sir H Cavassan on Conservative Treatment in Non-pulmonary Tuberculosis 8.45 p.m.

13 Wed South West Wales Division Carmarthenshire Infirmary B M A Lecture by Prof or A J Clark Recent Advances in Endocrinology 3 p.m.

14 Thurs Dumfriesshire and Galloway Division Crichton Douglas Cottage Hospital 3.30 p.m.

Hyde Division Hyde Town Hall 4 p.m.

Walsley Division Walsley and Calverton Division Bull Restaurant Walsley Division on the Role of the General Practitioner in Preventive Medicine 8.30 p.m.

19 Tues Truro Division St Lawrence Vicarage Catford Dr Harold Litchard on Chronic Infective Diseases 8.45 p.m.

20 Wed Cardiff Division Clinical Meeting Cardiff Royal Infirmary Nantclaw and Tintern Division Nantclaw General Hospital Mr Bernard C Coolman on Surgical Diseases of the Urinary System.

22 Fri London Joint Health Committees on Factory Medicine.

23 Thurs Bradford Division Hotel Bradford.

28 Thurs London Division.

BIRTHS, MARRIAGES AND DEATHS

The charge for inserting announcement of Births Marriages, and Deaths is 2s which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue.

MARRIAGES

WICKHAM-BRAND—At King College Chapel Aberdeen on December 15th by the Rev Canon Strachan Dufftown Alexander Brandson M B Ch B Chirac Lane to Helen H Brandson elder daughter of Mr and Mrs Robert Brand 66 Leith Road Aberdeen.

DEATHS

McDONALD—On December 17th at 28 Rawmarsh Hill Parkgate Rotherham after a short illness pneumonia Alexander Tyrer McDonald M B Ch B Fdlin aged 42 years dearly beloved husband of Effie McDonald and son of Mrs and the late Captain A Mel McDonald Leamington Terrace Ellonburgh.

STOCKS—On December 19th at the Queen's Hospital Birmingham Reginald Woolley MRC S I R C I Lond D 11 Birm Medical Officer of Health West Bromwich.

